AGENCY REVIEW DRAFT

SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT – PHASE 5
CHELAN CHEVRON
CLEANUP SITE ID: 6660
232 East Woodin Avenue
Chelan, Washington

Apri1 27, 2021

Prepared for:
Washington State Department of Ecology
1250 West Alder Street
Union Gap, Washington 98903

Prepared by:
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On Behalf of:
Resource Environmental, LLC
925 Salida Del Sol Drive
Paso Robles, California 93446

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CHELAN CHEVRON

1. INTRODUCTION AND OBJECTIVES

Leidos, Inc. (Leidos), on behalf of Resource Environmental, LLC (RELLC), an environmental service provider to Chevron Environmental Management and Real Estate Company (Chevron), has prepared this report to summarize the results of Supplemental Remedial Investigation (SRI) activities performed between October 25 and December 18, 2020 at the Chelan Chevron site (the Site) in Chelan, Washington. SRI activities for the Site are being performed pursuant to the terms of Agreed Order No. DE 10629, which was entered into by Chevron and the Washington State Department of Ecology (Ecology) in June 2014.

The SRI activities summarized by this report represent a portion of the planned SRI Phase 5 activities, which were proposed by the following Ecology approved documents:

- *Supplemental Remedial Investigation Workplan – Phase 5*, June 16, 2020, prepared by Arcadis (Arcadis, 2020); and
- *Final Supplemental Remedial Investigation Work Plan – Phase 5 Addendum 1*, September 24, 2020, prepared by Leidos (hereafter referred to as Addendum 1 [Leidos, 2020b]).

Specifically, this report presents the work performed and findings of the following SRI Phase 5 investigation components:

- Shallow soil boring and sampling activities in three suspected petroleum source areas;
- Installation of soil vapor sampling probes at locations north of E. Woodin Avenue;
- Installation of pressure transducers to facilitate an in-depth evaluation of groundwater elevation trends across the Site;
- Collection and analysis of petroleum light non-aqueous phase (LNAPL) samples; and
- Completion of an LNAPL site characterization investigation using Ultra-Violet Optical Screening Tool (UVOST®) and Hydraulic Profiling (HP) technologies developed by Dakota Technologies (hereafter referred to as UVOST-HP).

Results of future SRI Phase 5 soil vapor sampling activities and the on-going groundwater elevation investigation will be presented in future reports submitted to Ecology.

The objective of SRI Phase 5 investigation activities is to address data gaps that have been identified based on the results of previous SRI activities conducted since 2013 to satisfy the requirements of Agreed Order No. DE 10629. References to previous SRI summary reports are included in Section 9.

2. SOIL BORING AND SAMPLING ACTIVITIES

The first phase of SRI Phase 5 field work was conducted between October 25 and November 13, 2020 and consisted of the following investigation activities:

1. Utility locate and geophysical survey;
2. UVOST-HP boring preparation;
3. Shallow soil investigation at 221 E. Woodin Avenue;

4. Shallow soil investigation adjacent to 141 E. Woodin Avenue;
5. Shallow soil investigation at 136 E. Johnson Avenue; and
6. Installation of soil vapor sampling probes at two locations north of E. Woodin Avenue.

SRI Phase 5 investigation locations are shown on Figure 1. Additional details regarding the performance and results of these activities are provided in the following subsections.

2.1 UTILITY LOCATE AND GEOPHYSICAL SURVEY

Prior to the start of any subsurface investigation activities, Leidos notified the Washington Utility Notification Center, and performed a private utility location and geophysical survey in order to finalize all of the proposed investigation boring locations. Utility location and geophysical survey field work was performed on a Sunday (October 25, 2020), in order to facilitate access to the Wells Fargo Bank drive-thru lane and other vehicle parking areas that otherwise would be inaccessible for this work. Utility locating and geophysical survey services were provided by Geophysical Survey LLC of Kennewick, Washington.

The utility location and geophysical survey performed included:

- Location of subsurface utilities in the vicinity of all proposed boring locations utilizing ground penetrating radar (GPR) and electromagnetic line locating methods;
- Relocation and marking of suspected underground storage tanks (USTs) on the property at 221 E. Woodin Avenue; and
- A GPR survey of the off-alley parking area on the property at 136 E. Johnson Avenue to investigate the potential presence of heating oil or diesel USTs that may serve as the source of diesel-range petroleum contamination that is present in the vicinity of monitoring well MW-27.

On the 136 E. Johnson Avenue property, one in-place UST was detected in the northwest portion of the property near the northwest corner of the building. This UST was estimated to be approximately 4 feet in diameter by 8 feet long. A fill port to the UST was also located at the ground surface. In the parking lot to the south of the building, the GPR survey also detected an area approximately 10 feet wide by 17 feet long, in the northern portion of the parking lot, which exhibited broken soil horizons and characteristics typical of fill material that was not similar to the surrounding soils.

For the geophysical survey work performed on the 136. E. Johnson Avenue property, Leidos also hoped to expand the survey onto the adjacent property to the west (128 E. Johnson Avenue), which is known to have a currently active diesel fuel UST, as well as at least one former diesel fuel UST. With assistance from the former property owner, Frontier Communications, Inc. (named as a potentially liable person [PLP] in 2018 for a release of hazardous substances at the Site), Leidos obtained approval by email from the new property owner (Ziply Fiber) to extend the geophysical survey onto the 128 E. Johnson Avenue property. However, at the time that the geophysical survey was conducted, access to perform the work was prevented by three Ziply Fiber service trucks that were parked on the property.

Additional details regarding the procedures and findings of the utility locate and geophysical survey are presented in the summary report prepared by Geophysical Survey LLC, which is included in Appendix A.

2.2 SOIL BORING AND SAMPLING PROCEDURES

Soil boring and sampling activities were performed according to the procedures described in Section 3 of the Sampling and Analysis Plan (SAP) included in Addendum 1 (Leidos, 2020b). Borehole clearance and drilling activities were performed by Anderson Environmental Contracting, LLC (AEC) of Kelso, Washington.

2.2.1 Borehole Clearance

Each soil boring location was initially cleared to a depth of at least 8 feet below ground surface (bgs) using a compressed air/vacuum excavation system (air-knife) to avoid damage to potential buried utility lines or other subsurface infrastructure. Within this interval, soil samples were collected, using a hand-auger, approximately every 2 feet for classification and field screening purposes. Use of the air-knife equipment was stopped at least 6 inches above the top of each sample interval in order to minimize disturbance of the soil interval to be sampled.

2.2.2 Drilling and Sampling Methods

Below the borehole clearance interval (8 feet bgs), soil borings were advanced using a sonic drill rig. Using this equipment, AEC initially attempted to collect soil samples on a continuous basis using a 5-foot long split-core-barrel sampler, as was proposed in the Addendum 1 SAP. However, this technique was later abandoned due to problems with low sample recovery in the core-barrel. Several samples in the first few borings were retrieved with little to no recovery, especially in the upper 20 feet bgs. AEC attempted several modifications to the sample collection method, using different types of sonic drill bits to try to improve sample recovery. However, none were successful. Therefore, the drilling team switched over to conventional sonic drilling methods, by collecting the sample for each 5-foot interval into two 2.5-foot long core bags. This method worked better to improve sample recovery.

2.2.3 Field Screening and Logging of Soil Samples

Soil samples were logged in the field in accordance with the Unified Soil Classification System and field screened for the presence of petroleum hydrocarbons by headspace vapor measurements using a photo-ionization detector (PID) and sheen testing per the procedures described in Section 3.3 of the Addendum 1 SAP.

2.2.4 Soil Sample Analysis

Soil samples selected for laboratory analysis were submitted to Pace Analytical for the following analyses:

- Gasoline-range hydrocarbons (GRO) by Ecology NWTPH-Gx;
- Diesel-range hydrocarbons (DRO) and oil-range organics (ORO) by Ecology NWTPH-Dx;
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyl tertiary butyl ether (MTBE), ethylene dibromide (EDB), and ethylene dichloride (EDC) by USEPA method 8260; and
- Total lead by USEPA method 6010.

Select soil samples (such as those displaying strong field-screening indications of petroleum hydrocarbons, and those which were collected in the vicinity of undocumented USTs) were also submitted for the following additional analyses:

- Naphthalene, 1-methyl naphthalene, and 2-methly naphthalene by USEPA 8270;
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) by USEPA method 8270 SIM;
- Polychlorinated biphenyls (PCBs) by USEPA method 8082; and
- Halogenated volatile organic compounds (HVOCs) by USEPA method 8260.

Field duplicate soil samples were collected at a rate of approximately one per each 20 soil samples and submitted for the above-referenced analyses to ensure QA/QC. Additional QA/QC samples included one trip blank to accompany each sample cooler, and equipment rinse samples to verify equipment decontamination procedures. Equipment rinse sampling was performed by collecting laboratory-supplied distilled water that was used as the final rinse following equipment decontamination procedures. Equipment rinse samples were collected at a rate of one per sample collection method, for a total of two samples. Trip blank and equipment rinse QA/QC samples were submitted for the following analysis:

- GRO by Ecology NWTPH-Gx; and
- BTEX, MTBE, EDB and EDC by USEPA method 8260.

2.3 UVOST-HP BORING PREPARATION

Soil boring and sampling activities included the preparation of six boring locations (UHP-1 through UHP-6) for the UVOST-HP investigation (see Section 5). Preparation of the borings consisted of advancing a preliminary boring from the ground surface through the upper gravel-cobble interval that is typically encountered from approximately 6 to 15 feet bgs throughout much of the Site. This preparation step was required to allow the UVOST-HP equipment to be advanced through this interval without damage to the equipment.

Each UVOST-HP boring location was first cleared to 8 feet bgs using air-knife equipment, as previously described in Section 2.2.1. Following borehole clearance to 8 feet bgs, borings were advanced using sonic drilling equipment through the remainder of the gravel-cobble interval until encountering the approximate upper-contact with the underlying clayey silt interval, which was generally encountered at depths ranging from approximately 12.5 to 17.5 feet bgs. Each boring was then cased from approximately 0.5 foot bgs to the clayey silt contact with 4-inch diameter PVC well casing. Casings were fitted with standard 4-inch diameter expanding well plugs. At the ground surface, the cased and capped borings were covered with drilling sand and finished at the ground surface with a temporary concrete patch to facilitate access for completion of the UVOST-HP investigation activities in December 2020.

2.4 SHALLOW SOIL INVESTIGATION AT 221 E. WOODIN AVENUE

As proposed in Addendum 1, a shallow soil investigation was performed on the property located at 221 E. Woodin Avenue (currently the location of Jerry's Auto Supply) in order to confirm whether suspected orphaned USTs are remaining on the property and to evaluate shallow soil conditions in the vicinity of the suspected UST basin.

2.4.1 UST Confirmation Borings and Contents Sampling

On November 7, 2020, AEC used air-knife equipment to advance shallow "pothole" excavations at each of the three suspected UST locations identified by the geophysical survey. Steel USTs

were confirmed to be present at each of the suspected locations. For the purpose of this investigation, these USTs have been identified as follows (see Figure 2):

- The western-most UST on the 221 E. Woodin Avenue property was designated as UST-1. This UST was estimated to be approximately 4 feet in diameter and 12 feet long, based on GPR survey results. A capped fill port for the UST was located approximately 4 inches below the ground surface, which allowed access to the tank. Residual liquid was visible in the tank and a strong petroleum-like odor was observed. Measurements collected through the fill port indicate that the UST was approximately 4 feet in diameter, and that the top of the tank was approximately 2.5 feet below the ground surface. A disposable bailer was used to collect a sample of the residual liquid that was present in the bottom of the UST. This sample, which was assigned the sample ID - 221E Woodin UST-1, was identified as weathered leaded gasoline by LNAPL forensics analysis (see Section 4 for additional details).
- The central UST encountered on the 221 E. Woodin Avenue property was identified as UST-2. This UST was estimated to be approximately 4 feet in diameter and 5 feet long, based on the GPR survey results. While air-knifing down to this UST, the top of the UST was readily perforated by the high-pressure air wand due to extensive corrosion of the tank walls. The top of the UST was encountered at approximately 3 feet bgs. No evidence of residual liquid in the UST was present. Due to the extensive corrosion of the tank walls, a hand-auger was able to be inserted into the UST to collect a sample of the debris at the bottom of the tank, at a depth of approximately 6 feet bgs. This sample (221EW-UST2-S-201108) was submitted for laboratory analysis, as previously described for soil samples in Section 2.2.4. Laboratory results for this sample indicate that it contained: gasoline-range organics (GRO); diesel-range organics (DRO); heavy-range organics (HRO); benzene, toluene, ethylbenzene, and xylenes (BTEX); naphthalenes; tetrachloroethene (PCE); lead; and carcinogenic polycyclic aromatic hydrocarbons (cPAHs) at concentrations exceeding MTCA Method A cleanup levels. Laboratory analytical results for this samples are summarized in Table 1 and the laboratory report is included in Appendix C.
- The eastern-most UST encountered was identified as UST-3. This UST was estimated to be approximately 5 feet in diameter and 14 feet long, based on the GPR survey results. However, later measurements of the tank's top and bottom depths indicate that this UST was approximately 3.5 feet in diameter. Measurements of the tank's top and bottom depths (33 inches and 75.5 inches bgs, respectively) were made by accessing the tank through an existing fill or vent pipe. No evidence of residual liquid material in the UST was observed. Leidos was not able to assess the extent of tank-bottom debris materials that may have been present due to access limitations through the fill/vent pipe. No samples were able to be collected from UST-3.

2.4.2 UST Basin Delineation Borings

In addition to the UST confirmation borings, Leidos completed three shallow soil borings (SRI5-4, SRI5-5, and SRI5-6) on the property at 221 E. Woodin Avenue in order to evaluate shallow soil conditions in the vicinity of the UST basin and former pump island area. Borehole clearance activities for these borings were conducted on November 7, 2020 and the borings were completed using sonic drilling equipment the following day.

Soil conditions encountered in the three borings at the 221 E. Woodin Avenue property consisted of the following three lithologic intervals: an upper layer of silty soil extending to depths of 7.5 to 10 feet bgs; a middle layer of sand and silt with gravel extending to depths of 15 to 16.5 feet bgs; and a lower layer of clay-rich silt extending to the drilled depths of 25 to 30 feet bgs. Boring logs are presented in Appendix B.

Field screening results indicate that petroleum impacts were first encountered at depths of approximately 15 to 16.5 feet bgs in each of the three borings, at the uppermost contact with the clay-rich silt interval, and extended to depths of at least 20 feet bgs. In each of the borings, elevated PID readings (>1,600 ppm) were measured from samples collected at the top of this silt layer. The samples were described as having a moderate to strong hydrocarbon odor, with a slight to heavy sheen.

Based on field screening results, 14 soil samples (including one duplicate sample) were submitted for laboratory analysis. Soil sampling results are summarized in Table 1 and results for selected indicator compounds (GRO, DRO and benzene) are also presented on Figure 3. As these results indicate, GRO, BTEX, naphthalenes and EDB were detected in the vicinity of the UST basin at concentrations exceeding MTCA Method A cleanup levels, beginning at depths as shallow as 14.5 feet bgs. GRO was detected at concentrations of up to 20,600 mg/kg, and benzene was detected at concentrations of up to 64 mg/kg in this area. These concentrations are on the order of the highest concentrations of these contaminants ever detected at the Site. Concentrations of GRO in soil in 6 of the 14 soil samples collected in this area were above 7,000 mg/kg, which suggests that this area continues to serve as a source of the mobile gasoline LNAPL still being observed in nearby monitoring wells. Laboratory analytical reports for soil sample analyses are presented in Appendix C.

The results of the shallow soil investigation on the 221 E. Woodin Avenue property provide further, and conclusive, evidence that historical service station operations on this property have contributed to petroleum impacts to the Site. Soil sampling results from soil borings SRI5-4, SRI5-5, and SRI5-6 indicate that this area is a significant source for the petroleum impacts to the eastern portion of the Site and is likely a primary source for the continuing presence of mobile LNAPL in monitoring wells in this area.

2.5 SHALLOW SOIL INVESTIGATION ADJACENT TO 141 E WOODIN AVENUE

In the western portion of the Site, west of Emerson Street, Leidos conducted a shallow soil boring investigation in the street and sidewalk right-of-way adjacent to the property at 141 E. Woodin Avenue. This work was performed in order to further delineate shallow soil impacts in the vicinity of four orphaned USTs present in this area, which had been previously confirmed during the SRI Phase 4 field activities conducted by Leidos in October/November 2018. At that time, soil samples collected of the gravelly sand material encountered near the base of the UST basin showed no evidence of petroleum impacts (Leidos, 2019). Therefore, the intent of the SRI Phase 5 investigation activities in this area was to evaluate the potential for petroleum impacts at, and immediately below, the upper contact with the clayey silt soil horizon that is typically encountered at approximately 15 feet bgs throughout the Site.

As proposed in Addendum 1, three soil boring (SRI5-1 through SRI-3) were originally completed in this area on November 10, 2020. Based on field screening results from these borings, which provided indications of significant petroleum impact beginning at depths as

shallow as 10 feet bgs, two additional contingency borings (SRI-5-10 and SRI5-11) were also completed in this area on November 12. These contingency borings were added to further delineate the extent of shallow petroleum impacts further east and northeast of the UST basin. Approximate locations for each of the borings completed are shown on Figure 1.

Soil conditions encountered in the five borings at the 141 E. Woodin Avenue area consisted of the following three lithologic intervals: an upper layer of silty soil extending to depths of 3 to 5 feet bgs; a middle layer of sand with gravel extending to depths of 10 to 14.75 feet bgs; and a lower layer of clay-rich silt extending to the drilled depths of 25 to 35 feet bgs. Boring logs are presented in Appendix B.

Field screening results for the borings in the 141 E. Woodin Avenue area indicate that petroleum impacts were first encountered at the uppermost contact with the clay-rich silt unit at approximately 10 to 14.75 feet bgs. In each of these borings, elevated PID readings (between 1,370 and >15,000 ppm) were measured from samples collected at the top of this silt layer. The samples were described as having a moderate to strong hydrocarbon odor, with a slight to heavy sheen.

A total of 23 soil samples (including two duplicate samples) were submitted for analysis from the five soil borings completed in this area. Soil sampling results are summarized in Table 1 and results for selected indicator compounds (GRO, DRO and benzene) are also presented on Figure 3. As these results indicate, GRO was detected in all five of the borings at concentrations on the order of those exceeding residual saturation levels for LNAPL. Heavy GRO impacts in this area were found to begin at depths as shallow as 10 feet bgs. These concentration data are consistent with the presence of gasoline LNAPL at monitoring well MW-21 since 2016.

The results of the shallow soil investigation adjacent to the 141 E. Woodin Avenue property provide additional evidence that historical service station operations at this property have contributed to gasoline-range petroleum impacts to the central portion of the Site, including the continuing presence of mobile LNAPL in this area.

2.6 SHALLOW SOIL INVESTIGATION AT 136 E. JOHNSON AVENUE

As proposed in Addendum 1, the SRI Phase 5 field activities also included a shallow soil boring investigation on the property located at 136 E. Johnson Avenue, in order to further delineate the lateral and vertical extents of petroleum impacts in the vicinity of monitoring well MW-27. This area was identified for additional investigation due to the long-term presence of diesel-range LNAPL in monitoring well MW-27, the source of which has remained a data gap that had not yet been addressed.

Three soil borings (SRI5-7, SRI5-8, and SRI5-9) were completed in this area between November 10 and 11, 2020 (see Figure 1). Soil borings SRI5-7 and SRI5-8 were completed along the western boundary of the 136 E. Johnson Avenue property in order to evaluate potential impacts to soil to the west of monitoring well MW-27, and in the vicinity of the former and current diesel-fuel USTs on the adjacent Ziply Fiber property (formerly Frontier Communications) to the west. The location of soil boring SRI5-7 was also placed to assess the potential for petroleum contaminant contribution from a suspected heating oil UST located approximately 60 feet to the north on the 136 E. Johnson Avenue Property. This suspected UST was previously identified during the geophysical survey performed on the property on October 25, 2020 (see Section 2.1).

Soil boring SRI5-9 was placed along the eastern boundary of the 136 E. Johnson Avenue Property, in order to investigate the eastern portion of the property, immediately adjacent to the U.S. Postal Service property located at 144 E. Johnson Avenue.

Soil conditions encountered in the three borings at the 136 E. Johnson Avenue property consisted of the following three lithologic intervals: an upper layer of silty soil extending to a depth of 5.5 feet bgs; a middle layer of sand and silt with gravel extending to depths of 14.5 to 15 feet bgs; and a lower layer of clay-rich silt extending to the drilled depths of 25 to 30 feet bgs. Boring logs are presented in Appendix B.

Field screening results for the borings on the 136 E. Johnson Avenue property indicate that petroleum impacts were encountered only in soil borings SRI5-8 and SRI5-9. At these locations, indications of petroleum impact were first encountered at the uppermost contact with the clay-rich silt unit at approximately 14.5 to 15 feet bgs. In both borings, elevated PID readings (>120 ppm) were measured from samples collected at the top of this silt layer. The samples from this interval in these two borings were described as having a moderate to strong hydrocarbon odor, with a moderate to heavy sheen.

Based on field screening results, 9 soil samples were submitted for analysis from the three soil borings completed on the 136 E. Johnson Avenue property. Soil sampling results are summarized in Table 1 and results for selected indicator compounds (GRO, DRO and benzene) are also presented on Figure 3. As these results indicate, GRO, DRO naphthalenes, and cPAHs were detected in soil borings SRI5-8 and SRI5-9 at concentrations exceeding MTCA Method A cleanup levels. These results indicate that in the vicinity of monitoring well MW-27 heavy petroleum impacts are present extending laterally approximately east to west across at least the southern half of the 146 E. Johnson Avenue property. Benzene and xylenes were also detected above cleanup levels in soil boring SRI5-9, adjacent to the U.S. Postal Service property at 144 E. Johnson Avenue. Minor detections of petroleum constituents were detected in boring SRI5-7, but they are all below cleanup levels.

Soil sampling results for soil boring SRI5-8 and SRI5-9 differ considerably from the other SRI Phase 5 sampling results due to the predominance of DRO in these soil samples. DRO was detected in soil boring SRI5-8 at a concentration of 4,530 mg/kg in the sample collected at 14.5 feet bgs (near the upper contact with clay-rich silt). In soil boring SRI5-9, DRO was detected at concentrations of 35,800 mg/kg (15 feet bgs) and 8,820 mg/kg (19 feet bgs). These concentrations are consistent with the long-term and continuing presence of diesel-range LNAPL in nearby monitoring well MW-27.

Impacted soils in this vicinity appear to be primarily present in the uppermost portion of the clay-rich silt interval, which is first encountered at a depth of approximately 15 feet bgs in this area of the Site. Concentrations then generally decrease downward into the silt unit. These borings were free of impacts (below cleanup levels) by depths of 29.5 feet (SRI5-8) and 27 feet (SRI5-9). This pattern of distribution of petroleum concentrations is similar to that seen in data from other areas of the Site. This general pattern suggests that petroleum contamination in source areas migrates downward in the vadose zone to this low-permeability layer. This condition may lead to pooling of LNAPL on this clay-rich silt layer, and then lateral migration along the upper portion of this layer, in addition to gradual infiltration downward into the silt or more rapidly via macropore transport.

2.7 SOIL VAPOR SAMPLING PROBE INSTALLATION

SRI Phase 5 field activities conducted during the November 2020 field event also included construction of two soil vapor sampling probes (SVP-1and SVP-2), which were installed to assess soil vapor conditions in the vicinity of shallow soil impacts present in the vicinity of monitoring wells MW-44 and MW-21, respectively. Soil vapor sampling probe locations are shown on Figure 1.

Soil vapor sampling probe SVP-1 was installed in the northwest corner of the parking lot on the property at 221 E. Woodin Avenue. As proposed in Addendum 1, this sampling probe was constructed with the top of the screen set at a depth of 5 feet bgs in order to be representative of shallow soil conditions near the structures at 217 and 221 E. Woodin Avenue, which do not have subgrade basement areas.

Soil vapor sampling probe SVP-2 was installed in the sidewalk along the north side of E. Woodin Avenue, in the vicinity of the properties at 135 and 137 E. Woodin Avenue. This sampling probe was constructed with the top of the screen set at a depth of 9 feet bgs, in order to be representative of soil vapor conditions that would be present at the approximate bottom depth of the subgrade basement areas present in this vicinity of the Site.

Soil borings for the soil vapor sampling probe installations were completed by a combination of air-knife and hand-auger methods, as described in Section 2.2.1. Use of air-knife equipment for construction of these sampling probes is appropriate because sufficient post-installation time will be allowed prior to sampling for equilibrium of soil vapor conditions. Soil samples were collected for logging and field screening at approximately 2-foot intervals. In each soil vapor boring, one soil sample was collected for laboratory analysis from the same depth interval where the 6-inch vapor screen was placed. Analytical sample results for these soil samples are included in Table 1.

Soil vapor sampling probes were constructed using 6-inch long stainless steel screens equipped with a ¼-inch Swagelok® fitting (AMS, Inc. part number 21013), which were connected to ¼-inch diameter Teflon® tubing and capped at the ground surface using a stainless steel Swagelok® ball-valve. The vapor probe borings were backfilled with 2/12 Monterey sand from the bottom of the boring to a depth of approximately 6 inches above the top of the screen interval. Approximately 12 inches of dry granular bentonite were placed above the sand and the borings were then sealed with pre-hydrated bentonite to a depth of 18 inches bgs, and finished with an 8-inch diameter flush mount well box set in concrete. Boring logs showing the lithologies and vapor point construction details are included in Appendix B.

3. PRESSURE TRANSDUCER INSTALLATION FOR GROUNDWATER ELEVATION STUDY

Per the initial SRI-5 Work Plan (Arcadis, 2020a), the installation of data-logging pressure transducers was proposed to collect a higher resolution data set that is more conducive to evaluating hydraulic connectivity, and to provide better insight regarding how precipitation, lake level fluctuations, and other regional phenomena affect potentiometric surfaces in the water-bearing zones. To achieve this objective, Leidos installed a total of eight pressure transducers in the following existing monitoring well locations (see Figure 1).

- In the eastern portion of the Site, along E. Woodin Avenue, pressure transducers were installed in monitoring wells MW-15 and MW-17, which are both screened within the shallow perched aquifer. Past groundwater monitoring data from monitoring wells in this area of the Site indicate that the shallow perched aquifer does not appear to be affected by changes in the surface level elevation of Lake Chelan.
- In the western portion of the Site, along E. Woodin Avenue, pressure transducers were installed in monitoring wells MW-19 and MW-23. These wells are both screened in the shallow perched aquifer. Past groundwater monitoring data from monitoring wells in this area of the Site indicate that the shallow perched aquifer does appear to be moderately affected by changes in the surface level elevation of Lake Chelan.
- In the southern portion of the Site, along Wapato Avenue, pressure transducers were installed in monitoring wells MW-30 and MW-37, both of which are screened in the deeper water-table aquifer. Past groundwater monitoring data from these wells indicate that groundwater elevation levels in the deeper water-table aquifer are strongly affected by seasonal changes in the surface level elevation of Lake Chelan.
- In the southwestern portion of the Site, in the vicinity of Chelan Riverwalk Park, pressure transducers were installed in monitoring wells MW-39 and MW-40. These wells are screened within the standard range of the seasonal surface level elevation change of Lake Chelan (approximately 1,079 to 1,100 feet). However, past groundwater monitoring data from these monitoring wells indicate that the shallow perched aquifer may not be present in this portion of the Site.

Prior to transducer installation, monitoring wells were checked for water level and an assessment of sediment accumulation was made by "feeling" the bottom of the wells with a water level meter, and checking measured depth-to-bottom values against as-built depths for each monitoring well. Based on the results of this assessment, three monitoring wells (MW-15, MW-17, and MW-23) were redeveloped to remove accumulations of bottom sediment ranging from approximately 1 to 2 feet in thickness. These wells were redeveloped by alternately surging them with a weighted disposable bailer to suspend the sediment in the water column and then bailing the turbid water from the well until most of the sediment was removed.

Leidos utilized Rugged TROLL 200 data logging pressure transducers manufactured by In-Situ Inc. (In-Situ) in each of the eight monitoring wells. To facilitate installation of these units in the monitoring wells (where well lids need to be tightly capped to prevent surface water intrusion), non-vented transducers were used which require barometric compensation to correct for barometric pressure changes. Therefore, an In-Situ Rugged Baro TROLL data logger was also installed at the Site to collect ambient temperature and barometric pressure data.

As specified in the SAP for Addendum 1, pressure transducers were lowered to the bottom of each well using direct-read cables supplied by In-Situ. Each transducer was set to collect absolute pressure and temperature readings once every hour. Pressure transducer installation field activities, including monitoring well redevelopment, were performed between November 4 and 13, 2020.

Data recorded by the pressure transducers will be retrieved approximately every three months and the pressure transducer study is expected to be performed for a period of one year.

4. LNAPL SAMPLING

The objective of the LNAPL sampling investigation was to complete a comprehensive evaluation of LNAPL types present throughout the Site, including further evaluation of chemical compositional differences through forensics analyses, and determination of physical properties that govern LNAPL transport in the subsurface.

LNAPL and groundwater[1] samples were collected from nine monitoring wells (MW-9, MW-10, MW-12, MW-16, MW-19, MW-21, MW-27, MW-44, and RW-2) December 6-8, 2020. At the time of the LNAPL sampling event, measurable LNAPL was also present in monitoring wells MW-22, MW-25, and MW-36. However, these wells were not sampled because they did not contain a sufficient volume of LNAPL for the analyses to be conducted. The following table provides a summary of LNAPL thickness measurements at the Site at the time of the LNAPL sampling event. A map showing LNAPL occurrence at the Site and LNAPL thickness measurements at the time of the sampling invent is also included as Figure 4.

Monitoring Well ID	Depth to LNAPL (feet)	Depth to Water (feet)	LNAPL Thickness (feet)
MW-9	36.51	37.77	2.26
MW-10	30.27	32.81	2.54
MW-12	26.61	32.57	5.96
MW-16	42.11	46.35	4.24
MW-19	28.68	30.80	2.12
MW-21	25.69	36.55	10.86
MW-22*	26.30	26.35	0.05
MW-25*	34.45	34.65	0.20
MW-27	24.99	33.96	8.97
MW-36*	33.31	33.39	0.08
MW-44	27.54	28.43	0.89
RW-2	41.14	42.60	1.46

Notes

* - Indicates monitoring wells that were not sampled due to insufficient LNAPL volume.

[1] Groundwater samples were collected for interfacial tension analysis by ASTM Method D971.

LNAPL samples from each of the nine monitoring wells sampled were submitted for the following analyses:

- Forensics analysis;
- Physical properties; and
- Evaluation of fluorescence response to UVOST.

One additional LNAPL sample (221E Woodin UST-1) was collected from the westernmost UST encountered on the property at 221 E. Woodin Avenue (see Section 2.4.1 for additional details). This sample was also submitted for forensics analysis to allow comparison with the results of LNAPL samples collected from nearby monitoring wells.

4.1 LNAPL FORENSICS ANALYSIS

LNAPL samples for forensics analysis were submitted to Microbial Insights, Inc. (Microbial Insights) of Knoxville, Tennessee for the following analyses:

- C3-C36 Whole Oil Fingerprint by ASTM D3328;
- C3-C12 Semi-Quantitative Characterization for gasoline-range petroleum products by EPA 8260 Modified;
- C8-C40 Full Scan Semi-Quantitative Characterization for diesel-range and heavier-end petroleum products by ASTM D5739; and
- EDB and Organic Lead.

Laboratory data reports, as well as a report presenting Microbial Insight's interpretation of the results, are provided in Appendix D. In summary, Microbial Insights drew the following conclusions based on the results of their work:

- With the exception of two samples from the western margin of the Site (MW-19 and MW-27), all of the LNAPL samples collected were identified as leaded gasoline.
- The LNAPL sample from monitoring well MW-19 was identified as a mix of degraded diesel or #2 fuel oil (home heating oil) and leaded gasoline. The leaded gasoline component of this sample was considered to be too degraded to establish any relationship to the other gasoline samples.
- The LNAPL sample from monitoring well MW-27 was identified as degraded diesel or #2 fuel oil.
- The following similarities and differences were identified between the gasoline LNAPL samples:
    - LNAPL samples from monitoring wells MW-9, MW-10, and MW-16 were identified as similar based on C3-C36 GC/FID chromatogram results and lead concentrations ranging from 1.0 to 1.4 grams of lead per gallon (gPb/gal).
    - The LNAPL sample collected at monitoring well RW-2 was identified as a different gasoline from that at monitoring wells MW-9, MW-10, and MW-16, based on a higher level of iso-octane and lower lead content.
    - LNAPL samples from monitoring wells MW-12 and MW-44 were identified as similar based on C3-C36 GC/FID chromatogram results and lower Octane Ratios and lead content.

- The LNAPL sample from monitoring well MW-21 was identified as somewhat similar to the samples from MW-12 and MW-44, but with even lower Octane Ratio and lead content. This sample had the lowest aromatic hydrocarbon content of all the gasoline samples, suggesting that it is the most water washed.
- Results for the LNAPL sample collected from UST-1 on the 221 E. Woodin Avenue property indicate that water washing of this gasoline has been milder than the other samples and that it is the most evaporated. The lead content and alkyl lead composition of this sample was also different than the other gasoline samples, and this sample contained the manganese additive MMT.

Results of the SRI Phase 5 LNAPL forensics analyses are generally consistent with historical data for the Site, which indicate that the Site has been impacted predominantly by historical releases of leaded gasoline in the eastern portion of the Site (east of Emerson Street) and that both gasoline and diesel-range impacts are present in the area west of Emerson Street (in the area currently defined by monitoring wells MW-19, MW-22, and MW-27). This conclusion is also supported by historical soil and groundwater sampling results, and previous LNAPL forensics work. The presence of diesel-range LNAPL at the Site was previously confirmed by analysis of LNAPL samples from monitoring well MW-22 in 2003 (SAIC, 2006) and MW-27 in 2016.

Figure 5 presents a visual depiction of the distribution of LNAPL product types at the Site, which is based on interpretation of both current and historical LNAPL forensics results. Previous LNAPL forensics results presented in the 2006 RI/FS Report indicate that LNAPL from monitoring wells MW-10 and MW-12 are more similar than suggested by the recent work by Microbial Insights. The results of this earlier work also suggested more distinct areal differences in LNAPL composition across the Site, with an area of alkylate-rich LNAPL in the vicinity of the Chevron service station that was represented by LNAPL samples from monitoring wells MW-7, MW-10, MW-12 and MW-18, and an area of alkylate-poor LNAPL in the vicinity of Emerson Street that was represented by LNAPL samples from monitoring wells MW-15, MW-16, MW-25, and MW-36. This previous model of the compositional differences of LNAPL occurring across the Site aligns well with the more recent discovery of a gasoline LNAPL source from the former service station operations at 141 E. Woodin Avenue. However, the most recent LNAPL forensics results provided by Microbial Insights do not confirm a clear distinction between these two areas of LNAPL occurrence at the Site.

For the gasoline LNAPL sample collected from UST-1 at the 221 E. Woodin Avenue Property, weathering (water washing and evaporation) appear to be responsible for some of the differences between this sample and those collected from nearby monitoring wells, such as MW-12 and MW-44. However, compositional differences observed may also be due to gasoline formation changes that may have occurred during the operation period of the station.

Results of the SRI Phase 5 LNAPL forensics investigation have provided additional evidence to confirm previous results regarding the distribution of gasoline-range and diesel-range LNAPL at the Site, as well as to provide chemical compositional data for LNAPL in monitoring wells that had not been sampled previously (MW-19, MW-44 and RW-2). These data are important in confirming our understanding that the eastern portion of the Site appears to have been impacted by releases of leaded gasoline only, while the western margin of the Site has been impacted by

releases of both leaded gasoline and diesel or #2 heating oil. However, the forensics results for the gasoline LNAPL samples do not provide clear evidence to determine the specific sources from which they originated. Chemical similarities and differences between these samples do not appear to clearly align with their locations, which is likely the result of differences in: weathering; timing of releases; and commingling of products released from multiple sources.

4.2 LNAPL PHYSICAL PROPERTIES ANALYSES

LNAPL samples for physical properties analysis were submitted to Integrated Geosciences Laboratories, LLC in Houston, Texas for the following analyses:

- Density by ASTM D1481;
- Viscosity by ASTM D445; and
- LNAPL/water and LNAPL/air interfacial tension by ASTM D971.

Density, viscosity, and interfacial tension are physical characteristics of LNAPL that govern the LNAPL behavior and transport in the subsurface, and are therefore considered integral components in the development and on-going enhancement of an LNAPL conceptual site model (CSM). Although these data provide an additional line of evidence regarding the differences between LNAPLs encountered in various areas of the Site, their primarily importance is for future evaluation of possible LNAPL recovery and/or cleanup strategies.

The laboratory analytical report for the LNAPL physical properties analyses performed by Integrated Geosciences is included in Appendix E, and discussions of the results are included in the following subsections.

4.2.1 Density

Density is defined as the mass of a substance per unit volume. One way to express the density of a fluid is the specific gravity (S.G.), which is the ratio of the mass of a given volume of substance at a specified temperature to the mass of the same volume of water at the same temperature. If a NAPL has an S.G. less than water, generally less than 1.0, it is less dense than water (i.e., LNAPL) and will float on water. Density not only affects the buoyancy of a liquid, but also the subsurface mobility. The hydraulic conductivity of a porous medium is directly proportional to the density of the fluid in that medium. Therefore, if all other variables remain constant, hydraulic conductivity will increase in response to an increase in fluid density. The density of automotive gasoline generally ranges from 0.72 to 0.76 grams per cubic centimeter (g/cm^3) and the density of # 2 fuel oil (i.e., diesel fuel) generally ranges from 0.87 to 0.95 g/cm^3. (USEPA, 1995)

LNAPL physical properties results are summarized in Table 2 and LNAPL density results are also presented graphically in Chart 1. Density results indicate that seven of the LNAPL samples (MW-9, MW-10, MW-12, MW-16, MW-21, MW-44, and RW-2) generally fell within the standard range for automotive gasoline. The result for monitoring well MW-27 (0.8693 at 70°F) fell within the standard range for diesel fuel, and the result for monitoring well MW-19 (0.8295 at 70°F) fell in between these two ranges. This result is consistent with the LNAPL forensics results presented above, which indicate that LNAPL from monitoring well MW-19 consists of a mixture of gasoline and diesel-range petroleum products.

4.2.2 Viscosity

Viscosity is the resistance of a fluid to flow. The lower the viscosity, the less energy is required for a fluid to flow. Viscosity is highly temperature dependent, with the viscosity of most fluids decreasing as their temperature increases. The hydraulic conductivity of a porous medium is inversely proportional to the viscosity of the fluid in that medium. Therefore, if all other variables remain constant, hydraulic conductivity will increase in response to a decrease in fluid viscosity. The viscosity of automotive gasoline generally ranges from 0.36 to 0.49 centipoise and the viscosity of # 2 fuel oil (i.e., diesel fuel) generally ranges from 1.15 to 1.97 centipoise (USEPA, 1995). However a review of other sources suggests that the viscosity of diesel LNAPL may be in the range of 4.9 centipoise.

Viscosity results for the nine LNAPL samples analyzed are presented in Table 2 and are also presented graphically in Chart 2. A summary of these results is as follows:

- For LNAPL samples collected from monitoring wells MW-9, MW-10, MW-12, MW-16, MW-21, MW-44, and RW-2, which have been identified as predominantly gasoline-range LNAPL, the viscosity results at 70°F ranged from 0.57 to 0.67 centipoise.
- For the LNAPL sample collected from monitoring well MW-19, which has been identified to be a mixture of gasoline-range and diesel-range product, the viscosity result at 70°F was 2.11 centipoise.
- For the LNAPL sample collected from monitoring well MW-27, which has been identified to be predominantly diesel-range product, the viscosity result at 70°F was 4.94 centipoise.

These viscosity analysis results are consistent with our understanding of the LNAPL types present in each of the monitoring wells sampled, based on the results of the LNAPL forensics analysis presented in Section 4.1.

4.2.3 Interfacial Tension

Interfacial tension refers to the tensile force that exists in the interface separating two immiscible fluids. The greater the interfacial tension, the greater the stability of the interface between the liquids.

Interfacial tension is an important parameter in the evaluation of LNAPL transport in the subsurface. It takes pressure for LNAPL to move into or out of soil pores and this pressure is directly proportional to the interfacial tension between the fluids present in those pores. Therefore, interfacial tension governs the movement of LNAPL in the subsurface and the magnitude of residual LNAPL that will remain trapped within a porous medium.

Recovery of LNAPL may be enhanced by methods that reduce interfacial tension, such as injection of surfactants or cosolvents, which result in an increase in mobilization of entrapped LNAPL. Interfacial tension values for NAPL and water are typically between 5 and 35 dynes per centimeter (dynes/cm) [CH2MHILL, 1997].

Interfacial tension results are presented in Table 2, and a summary of the range of results is as follows:

- **Air/Water Interfacial Tension** - 59.69 to 70.23 dynes/cm
- **Air/LNAPL Interfacial Tension** - 20.74 to 27.66 dynes/cm
- **LNAPL/Water Interfacial Tension** - 15.13 to 29.35 dynes/cm

4.3 EVALUATION OF LNAPL FLUORESCENCE RESPONSE TO UVOST

In association with the LNAPL sample analyses summarized above, Leidos also submitted samples of LNAPL from each of the nine monitoring wells sampled to Dakota Technologies for evaluation of LNAPL fluorescence response to UVOST.

Analysis of the LNAPL samples was performed by Randy St. Germain of Dakota Technologies. UVOST logs presenting the results of this analysis are presented in Appendix F.

As indicated by the UVOST logs for the LNAPL samples, each of the samples showed significant fluorescence response to UVOST. These results confirm that any lack of fluorescence response observed in UVOST borings completed at the Site would not be due to the chemical composition of the LNAPLs present.

The results of the LNAPL analysis by Dakota Technologies can also be used as secondary lines of evidence regarding the chemical composition of LNAPLs present at the Site. UVOST can also be utilized to qualitatively evaluate LNAPL type through analysis of the fluorescence waveforms measured by the UVOST system. Similar petroleum products will generate similar fluorescence waveforms. These similarities and/or differences are most clearly identified with the use of cluster plots, which plot the average lifetime of the waveform versus the wavelength balance of the waveform for each data point. The results for similar products will plot in groups within the cluster plot. Cluster plot diagrams are included with the UVOST logs for the LNAPL samples. These cluster plots indicate:

- UVOST results for LNAPL samples collected from monitoring wells MW-9, MW-10, MW-12, MW-16, MW-21, and MW-44 all fall within the lower left portion of the cluster plot diagram, approximately within cell C3.
- The UVOST results for the LNAPL sample collected from monitoring well RW-2 plot slightly higher and further right within the cluster plot diagram. This result is consistent with the LNAPL forensics results presented in Section 4.1, which indicate that the LNAPL present in monitoring well RW-2 appears chemically dissimilar to other gasoline LNAPL samples collected at the Site.
- The UVOST results for the LNAPL samples collected at monitoring wells MW-19 and MW-27 plot still higher and further right than the results for the LNAPL sample from RW-2. These results are consistent with the greater intensity and increased lifetime of waveforms for LNAPLs containing diesel-range petroleum products.

5. UVOST-HP INVESTIGATION

Arcadis initially proposed conducting additional investigation at the Site using Dakota Technologies' UVOST-HP technologies in order to further characterize the lateral and vertical distribution of LNAPL, and to develop a greater understanding of variations in hydraulic conductivity within the subsurface, which might be used to identify transport pathways for mobile LNAPL (Arcadis, 2020). As part of Addendum 1, Leidos proposed reducing the scale of

the UVOST-HP investigation from 12 to 6 boring locations, in order to evaluate the effectiveness of the UVOST-HP technologies at the Site prior to a potential larger-scale deployment (Leidos, 2020b).

Field activities associated with completion of the UVOST-HP investigation were completed December 17-18, 2020. UVOST-HP services and equipment were provided by Dakota Technologies, with direct-push drilling equipment support by AEC.

Six UVOST-HP borings were completed at the locations shown on Figure 1. At each location, the UVOST-HP tooling was first lowered from the ground surface to the upper silt contact, through the cased boring interval that had been previously set as described in Section 2.3. The tooling was then driven to a target depth of approximately 60 feet bgs, or refusal by the direct-push equipment, whichever came first.

A site characterization report, prepared by Dakota Technologies, which presents logs for each of the UVOST-HP borings is included as Appendix G. Appendix G also includes the results of additional review and advanced analysis of the UVOST-HP borings data, including cluster plots of the data, which were prepared by Randy St. Germain of Dakota Technologies. A description and discussion of results for each boring location is provided below.

- **UHP-1** Boring UHP-1 was completed in the southwest portion of the Site, in the parking lot adjacent to the Chelan Riverwalk Park. This boring was located approximately 5 feet west of existing monitoring well MW-39. Boring UHP-1 was previously cased to a depth of 12.5 feet bgs on November 9, 2020 by AEC using a sonic drill rig. Dakota was only able to advance the boring at this location to a depth of 20.4 feet bgs due to shallow refusal in the dense glacial unit. Within the driven interval, no indications of LNAPL fluorescence response were recorded.
- **UHP-2** Boring UHP-2 was completed in the south-central portion of the Site, approximately 10 feet south of existing monitoring well MW-38. This boring was previously cased to 12.5 feet bgs on November 9, 2020. Boring UHP-2 was driven from approximately 12.5 feet to 42.75 feet bgs, before encountering refusal. Within this interval, the UVOST operator made notations in the log of possible staining at depths of 15.92 feet and 19.57 feet bgs. Minor fluorescence response was noted at a depth of 38.46 feet bgs. The cluster plot for this log indicates that the waveform data for this point plotted significantly above and to the left of the other (background) waveform results for this boring. Its location in cell B4 is in the approximate area of the cluster plot where gasoline-range LNAPL would expect to be located. These results suggest that boring UHP-2 may have intercepted a thin interval of gasoline-range LNAPL at this depth. This interval appears to coincide with an area of increased hydraulic conductivity, which was encountered beginning at a depth of approximately 37 feet bgs at this boring location.
- **UHP-3** Boring UHP-3 was completed in the southern portion of the Site, in the parking lot south of the Wells Fargo Bank property. This boring was located approximately 3 feet east of existing monitoring well RW-2 and approximately 17 feet west of monitoring well MW-9. This boring was previously cased to a depth of 15 feet bgs on November 9, 2020. The UVOST-HP log for this boring shows no indications of LNAPL fluorescence response within the driven interval from 15 to 59 feet bgs. These results are surprising, given the presence of measurable LNAPL in both monitoring wells MW-9 and RW-2. At the time that the UHP-3 boring was completed, DTP/DTW measurements for MW-9

were 36.16 feet BTOC/38.09 feet BTOC (LNAPL thickness = 1.93 feet) and DTP/DTW measurements for RW-2 were 41.44 BTOC/42.69 feet BTOC (LNAPL thickness = 1.25 feet).

- **UHP-4** Boring UHP-4 was completed in the northwest portion of the Chelan Chevron service station property. This boring was located approximately 5 feet north of existing monitoring well RW-3. At this location, casing had been previous set to a depth of 17.5 feet on November 9, 2020. The UVOST-HP log for this boring shows no indications of LNAPL fluorescence response within the driven interval from 17.5 to 60 feet bgs. These results are consistent with previous sampling results for the boring for RW-3, which indicated several low to moderate detections of GRO and/or benzene at various depths between approximately 20 and 50 feet bgs. DTW in monitoring well RW-3 at the time of the UHP-4 boring was 29.44 feet BTOC.
- **UHP-5** Boring UHP-5 was completed in the eastern portion of the Site, in the drive-thru lane of the Wells Fargo Bank property (222 E. Woodin Avenue). This boring was located approximately 15 feet south of existing monitoring well RW-1 and approximately 12 feet north of existing monitoring well MW-10. At this location, the boring had previously been cased to a depth of 15 feet bgs on November 11, 2020. The UVOST-HP log for boring UHP-5 shows no indications of LNAPL fluorescence response within the driven interval from 15 to 60 feet bgs. This result is surprising, given the long-term recurrence of measurable LNAPL in monitoring well MW-10 and the detection of GRO at a concentration of 23,000 mg/kg in the boring for RW-1 at a depth of 33 feet bgs. At the time that the UHP-5 boring was completed, DTW in RW-1 was 34.43 feet BTOC. Monitoring well MW-10 contained LNAPL at a thickness of 1.32 feet and DTW was 31.87 feet BTOC.
- **UHP-6** Boring UHP-6 was completed along the north side of E. Woodin Avenue, south of the UST basin at the property at 221 E. Woodin Avenue. This boring was located approximately 5 feet to the west of existing monitoring well MW-44. Boring UHP-6 was previously cased to 13.25 feet bgs on November 10, 2020. The UVOST-HP log for this boring showed minor indications of LNAPL fluorescence response from approximately 15 to 17 feet bgs and again at approximately 30 feet bgs. These results are generally consistent with previous soil sampling data for monitoring well MW-44, which indicated that GRO concentrations of 15,000 mg/kg and 20,000 mg/kg were detected in soil samples collected at 14.5 feet and 16.5 feet bgs, respectively. Measurable LNAPL has also been present in monitoring well MW-44 since at least April 2019. At the time that the UHP-6 boring was completed, DTP/DTW measurements for MW-44 were 27.61 feet BTOC/28.03 feet BTOC (LNAPL thickness = 0.42 feet).

As previously concluded by Leidos based on the results of the UVOST boring investigation performed in 2016 for SRI Phase 2 (Leidos, 2017), Leidos does not recommend the use of the UVOST technology for further subsurface characterization at the Site. In our experience, implementation of this technology is not well suited, nor cost effective, at this Site due to the need to pre-drill each boring location through the gravel-cobble interval that is typically encountered above the clay-rich silt interval. In addition, the results of UVOST borings frequently provide no or very little useful data in comparison to traditional soil sampling methods that provide multiple lines of evidence (i.e., visual, field screening, laboratory results) regarding the presence of petroleum impacts at a boring location.

7. INVESTIGATION-DERIVED WASTE MANAGEMENT

Regulated investigation-derived waste (IDW) generated in association with the SRI Phase 5 activities included:

- (14) Fourteen 55-gallon drums of waste soils generated during borehole clearance and sonic drilling and sampling activities;
- (3) Three 55-gallon drums (contained in 110 gallon over-packs) of waste water generated during monitoring well redevelopment and equipment decontamination activities; and
- (1) One 55-gallon drum of flammable liquid waste generated during LNAPL sampling activities.

Waste soils and water were characterized as non-hazardous waste based on waste characterization data collected as part of the SRI Phase 5 field activities. LNAPL waste was characterized as hazardous waste based on historical LNAPL waste characterization data for the Site. Off-site transportation and disposal for all regulated IDW were handled by Clean Harbors. All 18 regulated IDW drums were picked up on February 17, 2021. Waste soils and water were transported to the Clean Harbors Grassy Mountain LLC facility in Grantsville, Utah, and the flammable liquids waste drum was transported to the Emerald Services, Inc. facility in Tacoma, Washington. RELLC was the generator of record for all regulated IDW generated by the SRI Phase 5 field activities.

Non-regulated IDW, such as nitrile gloves, plastic sheeting, and bailers were bagged and disposed as standard municipal waste.

8. SUMMARY AND CONCLUSIONS

The SRI Phase 5 field activities completed by Leidos between October 25 and December 18, 2020 were successful in furthering our understanding of this geologically and logistically complex multi-source contaminated Site. SRI results collected to date confirm that the Site has been significantly impacted by at least three petroleum sources other than the Chelan Chevron service station facility. These sources include:

- A former service station that was located on the property at 221 E. Woodin Avenue;
- A former service station that was located on the property at 141 E. Woodin Avenue; and
- One or more unknown sources of diesel or #2 heating oil that are expected to be located in the vicinity of the property at 136 E. Johnson Avenue.

Results of the SRI Phase 5 soil sampling investigations indicate that historical petroleum releases from each of these sources have been extensive enough to produce LNAPL saturation conditions in soil sufficient to serve as continuing sources of mobile LNAPL. Gasoline and/or diesel/#2 heating oil LNAPL is currently present in 12 monitoring wells distributed throughout the Site.

Results of LNAPL forensics analysis indicate that overlap or commingling of sources has occurred in the western portion of the Site (west of Emerson Street), as evidenced by the presence of mixed gasoline and diesel-range LNAPL in this area. These results also suggest some degree of commingling of gasoline LNAPL from the Chelan Chevron, 221 E. Woodin, and 141 E. Woodin sources, based on the lack of clearly definable differences in gasoline LNAPL composition in these areas. However, the ambiguity of these gasoline LNAPL forensics data

may also be attributable to differences in long-term degradation and weathering of these products.

Results of the SRI Phase 5 UVOST-HP investigation were consistent with the results of the 2016 SRI Phase 2 UVOST investigation, which indicate that significant intervals of LNAPL saturated soil are generally not present in the areas in close proximity to monitoring wells containing measurable LNAPL. Instead, LNAPL accumulation in these monitoring wells appears to be related to connections to thin intervals of higher permeability fine sands and coarse silts present in the clay-rich silt interval that allow LNAPL to drain to and collect in the low-pressure voids that are provided by these monitoring wells.

The indication of the possible presence of LNAPL in the UHP-2 boring is somewhat surprising, given the 2016 SRI Phase 2 soil sampling results associated with the installation of adjacent monitoring well MW-38 (Leidos, 2017). This would represent the southernmost indication of petroleum impacts to soil at the Site. However, this result should also not be considered anomalous, considering the long-term occurrence of LNAPL at monitoring well MW-16 to the north, and the previous detection of GRO at a concentration of 8,800 mg/kg in the soil boring for monitoring well MW-11 (soil boring B-11) at a depth of 26.5 feet bgs (SAIC, 2006).

Additional SRI data, including assessment of petroleum constituent levels in soil vapor in the vicinity of the 221 E. Woodin and 141 E. Woodin source areas, and groundwater elevation and contaminant concentration data are still in process. These data will be evaluated with the results of previous SRI activities to determine if additional data gaps remain that must be addressed prior to moving forward with the Supplemental Feasibility Study for the Site.

9. REFERENCES

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USEPA (1995). "Ground Water Issue: Light Nonaqueous Phase Liquids." EPA/540/S-95/500, July.

LIMITATIONS

This technical document was prepared on behalf of RELLC and is intended for its sole use and for use by the local, state, or federal regulatory agency that the technical document was sent to by Leidos. Any other person or entity obtaining, using, or relying on this technical document hereby acknowledges that they do so at their own risk, and Leidos shall have no responsibility or liability for the consequences thereof.

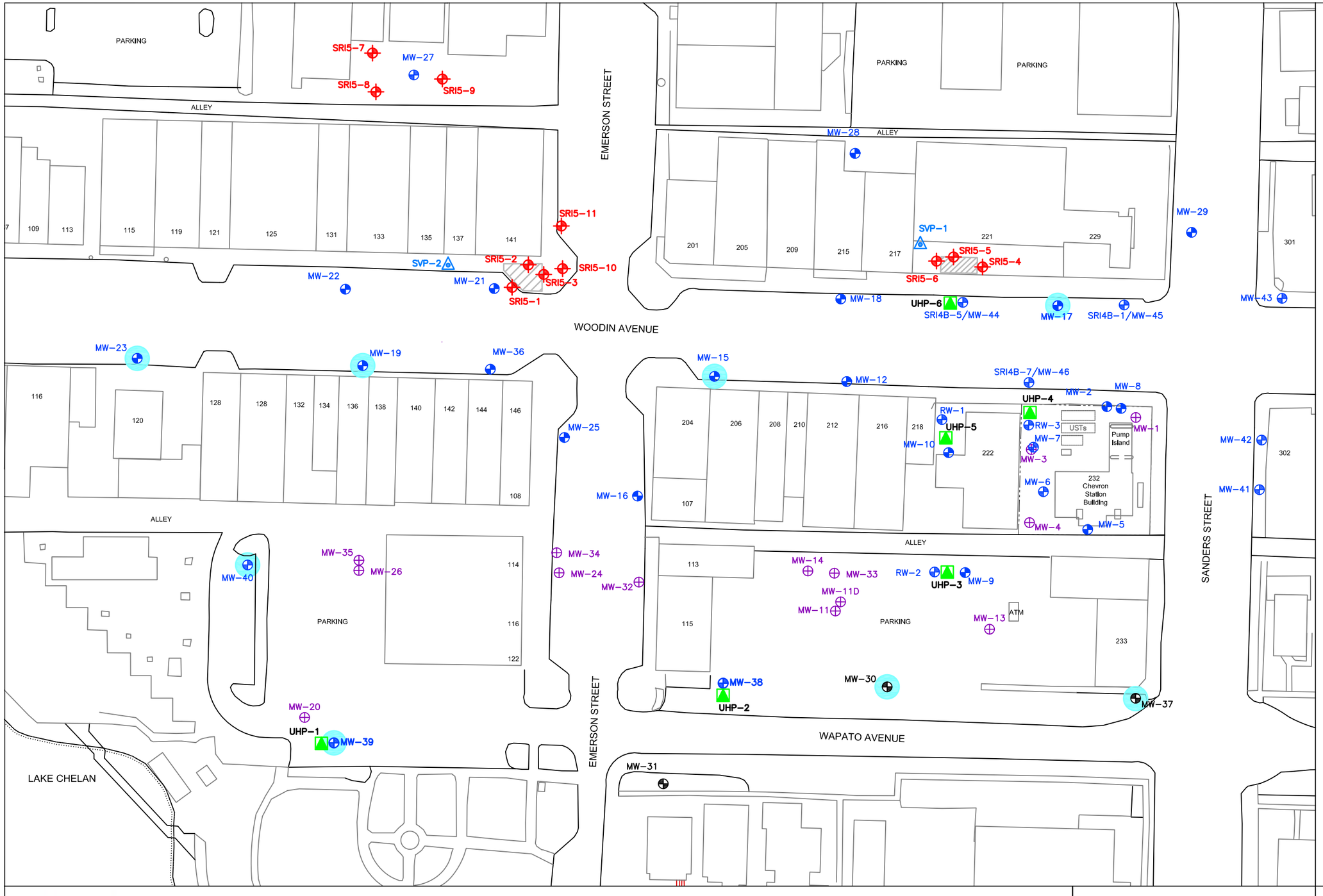
Site history and background information provided in this technical document are based on sources that may include interviews with environmental regulatory agencies and property management personnel and a review of acquired environmental regulatory agency documents and property information obtained from RELLC and others. Leidos has not made, nor has it been asked to make, any independent investigation concerning the accuracy, reliability, or completeness of such information beyond that described in this technical document.

Recognizing reasonable limits of time and cost, this technical document cannot wholly eliminate uncertainty regarding the vertical and lateral extent of impacted environmental media.

Opinions and recommendations presented in this technical document apply only to site conditions and features as they existed at the time of Leidos site visits or site work and cannot be applied to conditions and features of which Leidos is unaware and has not had the opportunity to evaluate.

All sources of information on which Leidos has relied in making its conclusions (including direct field observations) are identified by reference in this technical document or in appendices attached to this technical document. Any information not listed by reference or in appendices has not been evaluated or relied on by Leidos in the context of this technical document. The conclusions, therefore, represent our professional opinion based on the identified sources of information.

Figures



LEGEND

- MW-2 — EXISTING PERCHED GROUNDWATER MONITORING OR RECOVERY WELL
- MW-30 — EXISTING DEEP GROUNDWATER MONITORING WELL
- MW-1 — EXISTING ABANDONED DRY MONITORING WELL
- SRI5-1 — SRI PHASE 5 SHALLOW SOIL BORING LOCATION
- SVP-1 — SRI PHASE 5 SOIL VAPOR SAMPLING PROBE LOCATION
- UHP-1 — SRI PHASE 5 UVOST-HP BORING LOCATION
- APPROXIMATE AREA OF ABANDONED UST BASIN
- MONITORING WELLS EQUIPPED WITH DATA-LOGGING PRESSURE TRANSDUCERS FOR SRI PHASE 5 GROUNDWATER ELEVATION STUDY

N

NOTES

Base Map from City of Chelan, 1994

Additional Reference Material:
Aerial Photograph from September 1991
(Washington State Department of Natural Resources)

0 80' 160'

leidos

Chevron Service Station No. 96590
232 East Woodin Avenue
Chelan, Washington

FIGURE 1

Site Map with SRI Phase 5 Investigation Locations

FILE NAME:	DATE:
Chelan_SRI-5.dwg	3/30/2021

LEGEND

- UST CONFIRMATION "POTHOLE" EXCAVATION LOCATION
- SRI5-4 SRI PHASE 5 SOIL BORING LOCATION
- UHP-6 UVOST-HP BORING LOCATION
- MW-17 MONITORING WELL LOCATION
- SVP-1 SOIL VAPOR SAMPLING PROBE LOCATION
- APPROXIMATE OUTLINE OF CONFIRMED UST AS DELINEATED BY GROUND PENETRATING RADAR

N

0 10' 20'

leidos

Chevron Service Station No. 96590
232 East Woodin Avenue
Chelan, Washington

FIGURE 2
SRI Investigation Locations
221 E. Woodin Avenue

FILE NAME:	DATE:
221 E. Woodin UST Figure.dwg	3/30/2021

SRI5-7

Depth	GRO (mg/kg)	DRO (mg/kg)	Benzene (mg/kg)
15	< 1.53	< 1.81	0.00525
24.5	4.01 J	< 1.63	0.00960

SRI5-9

Depth	GRO (mg/kg)	DRO (mg/kg)	Benzene (mg/kg)
8	12.5	< 1.37	0.0144
15	**1,000**	**35,800**	**0.244**
19	**1,100**	**8,820**	**0.0402 J**
27	20.2	7.21	0.00477

SRI5-8

Depth	GRO (mg/kg)	DRO (mg/kg)	Benzene (mg/kg)
14.5	**912**	**4,530**	0.0137 J
19.5	**54.8**	47.2	0.0214
29.5	< 1.54	< 1.83	0.00477

SRI5-11

Depth	GRO (mg/kg)	DRO (mg/kg)	Benzene (mg/kg)
8	10.8	32.2 J4	0.00521
13.5	**6,090**	310 J4	< 0.0338
15	**8,780**	507 J4	< 0.0338
15 (DUP)	**9,590**	614 J4	< 0.0300
29.5	4.39 B	< 1.76 J4	0.00377

SRI5-6

Depth	GRO (mg/kg)	DRO (mg/kg)	Benzene (mg/kg)
8	6.90	< 1.70	0.0176
16	**20,600**	716	**7.85**
23.5	**9,870**	772	**64.0**

SRI5-5

Depth	GRO (mg/kg)	DRO (mg/kg)	Benzene (mg/kg)
8	1.93 J	2.54 J	0.0184
14.5	< 0.887	< 1.36	0.000678 J
17	**9,750**	528	**12.3**
24	**8,150**	868	**6.40**
24	**7,810**	607	**3.93**
29.5	**18,100**	123	**47.6**

SRI5-2

Depth	GRO (mg/kg)	DRO (mg/kg)	Benzene (mg/kg)
8	1.15 J	< 13.9	< 0.000509
11.5	**3,130**	34.8	< 0.00637
24.5	8.6	< 1.88	**0.0651**

SRI5-10

Depth	GRO (mg/kg)	DRO (mg/kg)	Benzene (mg/kg)
8.5	6.99	< 1.37 J	0.00793
14.5	**5,090**	1,320 J4	< 0.0300
18	**39.2**	2.66 J J4	**0.545**
18 (DUP)	**69.8**	5.56 J J4	**0.616**
21	**8,650**	372 J4	**4.96**
34.5	< 1.48	< 1.77 J4	0.00301

SRI5-4

Depth	GRO (mg/kg)	DRO (mg/kg)	Benzene (mg/kg)
8.5	2.10 J	< 1.82	< 0.00889
14.5	8.17	7.42	**0.0383**
15	**1,330**	4.32 J	**0.833**
17	**294**	28.8	**0.222**
24.5	22.7	< 1.19	**0.0979**

SRI5-1

Depth	GRO (mg/kg)	DRO (mg/kg)	Benzene (mg/kg)
8.5	1.12 J	< 1.37	< 0.000499
15	**1,980**	18.7	0.0193
16.5	**11,500**	502	**4.46**
24.5	15.3	< 1.83	**0.167**

SRI5-3

Depth	GRO (mg/kg)	DRO (mg/kg)	Benzene (mg/kg)
8.5	< 0.938	< 1.40	< 0.000517
10	**4,500**	62.1	< 0.0292
17	**58.8**	1.96 J	**1.84**
25	**1,120**	52.5	**0.423**
34.5	4.28	< 1.82	0.0107

LEGEND

- MW–2 — EXISTING PERCHED GROUNDWATER MONITORING OR RECOVERY WELL
- MW–30 — EXISTING DEEP GROUNDWATER MONITORING WELL
- MW–1 — EXISTING ABANDONED DRY MONITORING WELL
- SRI5–1 — SRI PHASE 5 SHALLOW SOIL BORING LOCATION
- SVP–1 — SRI PHASE 5 SOIL VAPOR SAMPLING PROBE LOCATION
- SRI PHASE 5 UVOST-HP BORING LOCATION
- APPROXIMATE AREA OF ABANDONED UST BASIN

BOLD AND HIGHLIGHTED VALUES IN DATA TABLES INDICATE LABORATORY ANALYTICAL RESULTS EXCEEDING MTCA METHOD A CLEANUP LEVELS. SEE TABLE 1 AND LABORATORY ANALYTICAL REPORTS FOR DATA VALIDATION QUALIFIERS AND ADDITIONAL DETAILS

N

NOTES

Base Map from City of Chelan, 1994

Additional Reference Material:
Aerial Photograph from September 1991
(Washington State Department of Natural Resources)

0 80' 160'

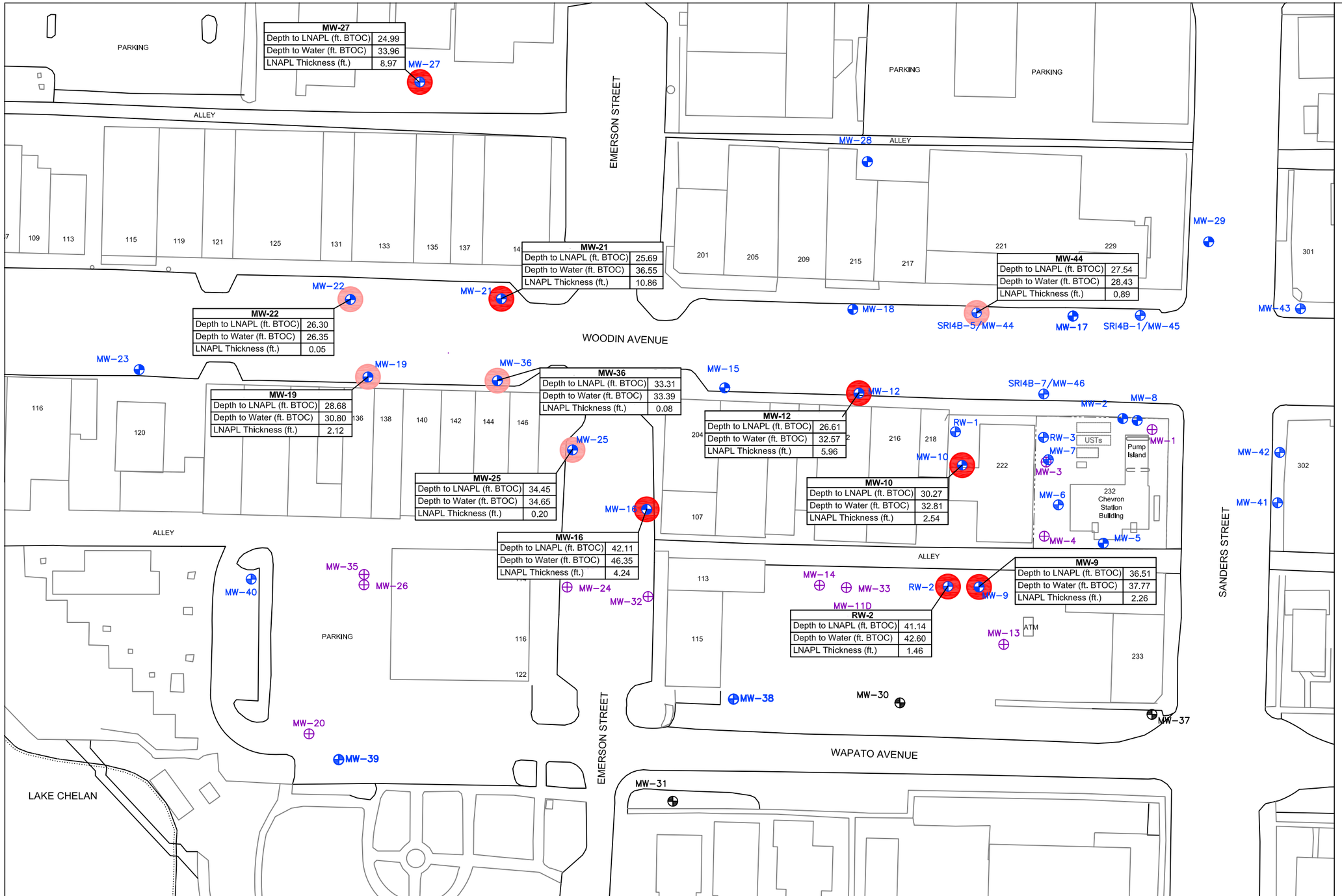
leidos

Chevron Service Station No. 96590
232 East Woodin Avenue
Chelan, Washington

FIGURE 3

SRI Phase 5 - Selected Shallow Soil Boring Sampling Results

FILE NAME:	DATE:
Chelan_SRI-5.dwg	3/30/2021



LEGEND

- MW-2 — PERCHED GROUNDWATER MONITORING WELL
- MW-30 — DEEP GROUNDWATER MONITORING WELL
- MW-1 — ABANDONED DRY MONITORING WELL
- MONITORING WELLS WITH LNAPL THICKNESS TYPICALLY > 1 FOOT
- MONITORING WELLS WITH LNAPL THICKNESS TYPICALLY < 1 FOOT

N

NOTES

Base Map from City of Chelan, 1994

Additional Reference Material:
Aerial Photograph from September 1991
(Washington State Department of Natural Resources)

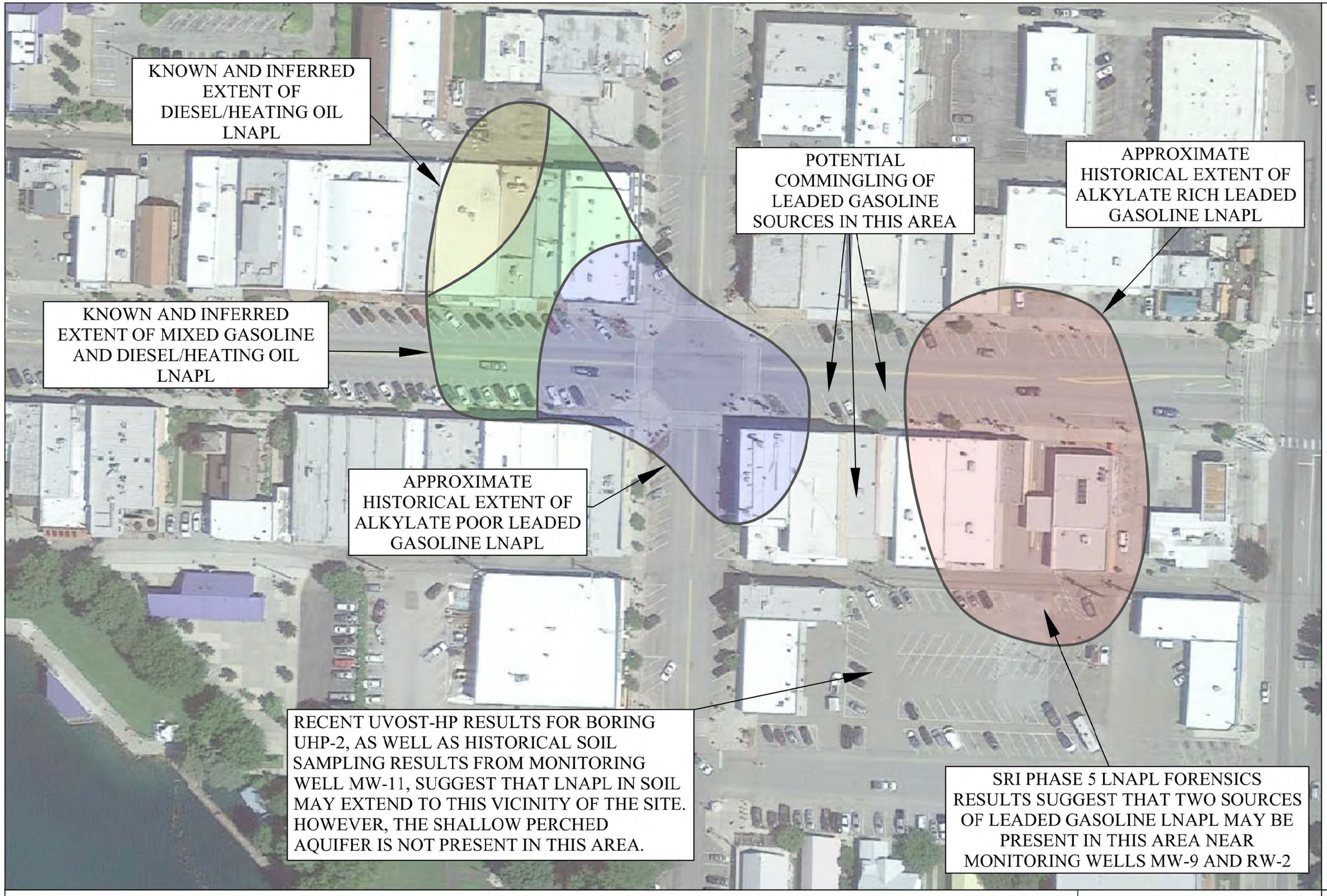
0 80' 160'

leidos

Chevron Service Station No. 96590
232 East Woodin Avenue
Chelan, Washington

FIGURE 4
LNAPL Gauging Results
December 2020

FILE NAME:	DATE:
Chelan_SRI-5.dwg	03/30/2021



N

NOTES

Aerial Photograph Imagery Date: 7/1/2017
Source: Google Earth

0 80' 160'

leidos

Chelan Chevron Site
232 East Woodin Avenue
Chelan, Washington

FIGURE 5
Inferred Extents of Petroleum LNAPL Product Types

FILE NAME: Chelan_SRI-5.dwg

DATE: 4/21/2021

Tables

Table 1
Summary of SRI Phase 5 Soil Sampling Results
Chelan Chevron
232 East Woodin Avenue
Chelan, Washington

Laboratory Analyte			GRO	DRO	HRO	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE	EDB	EDC	1-Methyl-naphthalene	2-Methyl-naphthalene	Naphthalene	PCE	Lead	PCBs	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Indeno (1,2,3-cd) pyrene
			Results Reported in mg/kg dry weight																						
MTCA Method A Cleanup Level			30	2,000	2,000	0.03	7	6	9	0.1	0.005	---	5 (Total Sum of All Naphthalenes)			0.05	250	1	0.1 (Total Sum of All Carcinogenic PAHs)						
Sample Identification	Sample Depth	Date																							
SRI5-1																									
SRI5-1-S-8.5-201105	8.5	11/5/2020	1.12 J	< 1.37	< 3.44	< 0.000499	< 0.00139	< 0.000787	< 0.000940	< 0.000374	< 0.000692	0.000959 J	---	---	---	---	2.30	---	---	---	---	---	---	---	---
SRI5-1-S-15-201110	15	11/10/2020	**1,980**	18.7	< 4.38	0.0193	2.78	4.12	**26.2**	< 0.000483	**< 0.00893**	< 0.00895	---	---	---	---	26.9	---	---	---	---	---	---	---	---
SRI5-1-S-16.5-201110	16.5	11/10/2020	**11,500**	502	< 4.22	**4.26**	**67.7**	**38.3**	**203**	0.0314 J	< 0.00413	< 0.00415	**2.83**	**5.54**	**10.2**	**< 0.0571**	4.79	< 0.0150	< 0.00219	< 0.00227	< 0.00194	< 0.00273	< 0.00294	< 0.00218	< 0.00229
SRI5-1-S-24.5-201110	24.5	11/10/2020	15.3	< 1.83	< 4.59	**0.167**	0.423	0.0898	0.294	< 0.000641	< 0.00118	< 0.00119	---	---	---	---	4.99	---	---	---	---	---	---	---	---
SRI5-2																									
SRI5-2-S-8-201105	8	11/5/2020	1.15 J	< 13.9	< 34.7	< 0.000509	< 0.00142	< 0.000803	0.00109 J	< 0.000381	< 0.000706	0.000707	---	---	---	---	4.03	---	---	---	---	---	---	---	---
SRI5-2-S-11.5-201110	11.5	11/10/2020	**3,130**	34.8	< 4.39	< 0.00637	0.438	2.37	**10.5**	< 0.00477	**< 0.00882**	< 0.00884	0.0919	0.190	0.161	< 0.0122	15.9	< 0.0156	< 0.00228	< 0.00236	< 0.00202	< 0.00284	< 0.00306	< 0.00227	< 0.00239
SRI5-2-S-24.5-201110	24.5	11/10/2020	8.6	< 1.88	< 4.71	**0.0651**	0.157	0.170	0.208	< 0.000668	< 0.00124	< 0.00124	---	---	---	---	5.82	---	---	---	---	---	---	---	---
SRI5-3																									
SRI5-3-S-8.5-201105	8.5	11/5/2020	< 0.938	< 1.40	< 3.50	< 0.000517	< 0.00144	< 0.000815	0.00122 J	< 0.000387	< 0.000717	0.000718	---	---	---	---	1.82	---	---	---	---	---	---	---	---
SRI5-3-S-10-201110	10	11/10/2020	**4,500**	62.1	< 4.17	< 0.0292	0.433	3.71	**11.3**	< 0.0219	**< 0.0405**	< 0.0407	0.115	0.242	0.203	**< 0.0560**	17.8	< 0.0148	< 0.00217	< 0.00224	< 0.00191	< 0.00269	< 0.00290	< 0.00215	< 0.00227
SRI5-3-S-17-201110	17	11/10/2020	**58.8**	1.96 J	< 4.76	**1.84**	2.52	0.441	2.10	< 0.000679	< 0.00126	< 0.00126	---	---	---	---	6.28	---	---	---	---	---	---	---	---
SRI5-3-S-25-201110	25	11/10/2020	**1,120**	52.5	14.6	**0.423**	5.35	4.70	**25.6**	0.00245	**< 0.00982**	< 0.000983	---	---	---	---	7.0	---	---	---	---	---	---	---	---
SRI5-3-S-34.5-201110	34.5	11/10/2020	4.28	< 1.82	< 4.55	0.0107	0.0248	0.00859	0.0421	< 0.000643	< 0.00119	< 0.00119	---	---	---	---	5.68	---	---	---	---	---	---	---	---
SRI5-4																									
SRI5-4-S-8.5-201107	8.5	11/7/2020	2.10 J	< 1.82	< 4.56	0.00889	0.0111	< 0.00141	< 0.00168	< 0.000671	< 0.00124	0.00148 J	---	---	---	---	2.63	---	---	---	---	---	---	---	---
SRI5-4-S-14.5-201108	14.5	11/8/2020	8.17	7.42	< 3.45	**0.0383**	0.132	0.0142	0.0469	< 0.000377	< 0.000698	< 0.000700	---	---	---	---	4.00	---	---	---	---	---	---	---	---
SRI5-4-S-15-201108	15	11/8/2020	**1,330**	4.32 J	< 4.06	**0.833**	**18.0**	**11.6**	**61.4**	< 0.0214	**< 0.0396**	< 0.0397	---	---	---	---	28.3	---	---	---	---	---	---	---	---
SRI5-4-S-17-201108	17	11/8/2020	**294**	28.8	< 4.19	**0.222**	2.78	1.57	7.33	< 0.0218	**< 0.0403**	< 0.0404	---	---	---	---	5.24	---	---	---	---	---	---	---	---
SRI5-4-S-24.5-201108	24.5	11/8/2020	22.7	< 1.19	< 4.48	**0.0979**	0.369	0.0592	0.234	< 0.000622	< 0.00115	< 0.00115	---	---	---	---	4.58	---	---	---	---	---	---	---	---
SRI5-5																									
SRI5-5-S-8-201107	8	11/7/2020	1.93 J	2.54 J	< 4.27	0.0184	0.00266	< 0.00121	0.00280 J	< 0.000643	< 0.00119	< 0.00119	---	---	---	---	2.32	---	---	---	---	---	---	---	---
SRI5-5-S-14.5-201107	14.5	11/8/2020	< 0.887	< 1.36	< 3.40	0.000678 J	0.00339 J	0.00153 J	0.00681	< 0.000366	< 0.000678	< 0.000679	---	---	---	---	2.07	---	---	---	---	---	---	---	---
SRI5-5-S-17-201108	17	11/8/2020	**9,750**	528	< 20.0	**12.3**	**195**	**122**	**682**	< 0.0204	**< 0.0378**	< 0.0379	**2.81**	**14.3**	**21.6**	**< 0.0522**	35.1	< 0.0142	0.00287 J	< 0.00216	< 0.00184	< 0.00259	0.00281 J	< 0.00207	< 0.00218
SRI5-5-S-24-201108	24	11/8/2020	**8,150**	868	< 21.5	**6.40**	**170**	**104**	**632**	< 0.0233	**< 0.0431**	< 0.0432	**11.5**	**24.3**	**38.3**	**< 0.0595**	18.8	< 0.0153	0.00340 J	< 0.00232	< 0.00199	< 0.00279	0.00408 J	< 0.00223	< 0.00235
DUP-1-S-201108	24	11/8/2020	**7,810**	607	< 21.6	**3.93**	**50.4**	**44.7**	**280**	< 0.0236	**< 0.0437**	< 0.0439	**3.10**	**18.9**	**30.0**	**< 0.0604**	16.0	< 0.0154	0.00304 J	< 0.00233	< 0.00199	< 0.00280	0.00352 J	< 0.00224	< 0.00236
SRI5-5-S-29.5-201108	29.5	11/8/2020	**18,100**	123	< 4.48	**47.6**	**345**	**121**	**616**	< 0.0249	**< 0.0460**	< 0.0462	---	---	---	---	18.4	---	---	---	---	---	---	---	---
SRI5-6																									
SRI5-6-S-8-201107	8	11/7/2020	6.90	< 1.70	< 4.25	0.0176	0.0188	< 0.00135	< 0.00144	< 0.000574	< 0.00106	< 0.00106	---	---	---	---	2.31	---	---	---	---	---	---	---	---
SRI5-6-S-16-201108	16	11/8/2020	**20,600**	716	< 21.3	**7.85**	**102**	**90.7**	**672**	< 0.0230	**< 0.0426**	< 0.0428	**17.0**	**36.1**	**32.0**	**< 0.0589**	33.7	< 0.0151	0.00501 J	< 0.00229	< 0.00196	< 0.00275	0.00588 J	< 0.00220	< 0.00232
SRI5-6-S-23.5-201108	23.5	11/8/2020	**9,870**	772	< 22.9	**64.0**	**202**	**109**	**320**	< 0.0257	**1.79**	< 0.0478	---	---	---	---	20.4	---	---	---	---	---	---	---	---
SRI5-7																									
SRI5-7-S-15-201111	15	11/11/2020	< 1.53	< 1.81	< 4.52	0.00525	0.0197	0.00239 J	0.00883 BJ	< 0.000633	< 0.00117	< 0.00117	---	---	---	---	5.66	---	---	---	---	---	---	---	---
SRI5-7-S-24.5-201111	24.5	11/11/2020	4.01 J	< 1.63	< 4.08	0.00960	0.0412	0.00386	0.0135	< 0.000569	< 0.00105	< 0.00106	---	---	---	---	3.40	---	---	---	---	---	---	---	---
SRI5-8																									
SRI5-8-S-14.5-201111	14.5	11/11/2020	**912**	**4,530**	152 J	0.0137 J	0.0647	1.25	3.28	< 0.00505	**< 0.00934**	< 0.00936	**94.1**	**44.7**	**8.61**	< 0.0129	6.07	< 0.0160	0.0387	**< 0.121**	**< 0.104**	**< 0.146**	**0.123**	**< 0.116**	**< 0.123**
SRI5-8-S-19.5-201111	19.5	11/11/2020	**54.8**	47.2	< 4.59	0.0214	0.0579 J	0.0574	0.101 B	< 0.00520	**< 0.00962**	< 0.00964	---	---	---	---	4.87	---	---	---	---	---	---	---	---
SRI5-8-S-29.5-201111	29.5	11/11/2020	< 1.54	< 1.83	< 4.57	0.00477	0.0261	0.00312 J	0.0107 BJ	< 0.000635	< 0.00118	< 0.00118	---	---	---	---	5.35	---	---	---	---	---	---	---	---
SRI5-9																									
SRI5-9-S-8-201110	8	11/10/2020	12.5	< 1.37	< 3.43	0.0144	0.0453	0.00372	0.0145	< 0.000370	< 0.000686	< 0.000687	---	---	---	---	1.46	---	---	---	---	---	---	---	---
SRI5-9-S-15-201111	15	11/11/2020	**1,000**	**35,800**	< 924	**0.244**	1.24	2.61	**11.8**	< 0.0131	**< 0.0242**	< 0.0242	**38.7**	**42.9**	**7.80**	< 0.0334	6.99	< 0.0164	**0.0368**	< 0.00248	< 0.00212	< 0.00298	**0.0662**	< 0.00239	< 0.00251
SRI5-9-S-19-201111	19	11/11/2020	**1,110**	**8,820**	291 J	**0.0402 J**	0.228 J	1.27	**5.33**	< 0.0215	**< 0.0399**	< 0.0400	---	---	---	---	3.11	---	---	---	---	---	---	---	---
SRI5-9-S-27-201111	27	11/11/2020	20.2	7.21	< 4.39	0.00421	0.0140	0.00652	0.0245	< 0.000604	< 0.00112	< 0.00112	---	---	---	---	5.94	---	---	---	---	---	---	---	---
SRI5-10																									
SRI5-10-S-8-201112	8	11/12/2020	6.99	< 1.37 J4	< 3.43	0.00793	0.0252	0.00202 J	0.00738 B	< 0.000371	< 0.000687	< 0.000688	---	---	---	---	2.18	---	---	---	---	---	---	---	---
SRI5-10-S-14.5-201112	14.5	11/12/2020	**5,090**	1,320 J4	< 4.51	**< 0.0330**	5.76	**27.2**	**116**	< 0.0247	**< 0.0458**	< 0.0459	**7.20**	**14.9**	**15.9**	**< 0.0633**	19.8	< 0.0160	< 0.00234	< 0.00243	< 0.00207	< 0.00291	< 0.00314	< 0.00233	< 0.00245
SRI5-10-S-18-201112	18	11/12/2020	**39.2**	2.66 J J4	< 4.51	**0.545**	1.02	0.450	1.65	< 0.0125	**< 0.0233**	< 0.0233	---	---	---	---	5.14	---	---	---	---	---	---	---	---
DUP-2-201112	18	11/12/2020	**69.8**	5.56 J J4	< 4.60	**0.616**	1.11	0.450	1.71	< 0.000653	< 0.00121	< 0.01121	---	---	---	---	6.15	---	---	---	---	---	---	---	---
SRI5-10-S-21-201112	21	11/12/2020	**8,650**	372 J4	7.74 J	**4.96**	**57.7**	**36.0**	**202**	< 0.0214	**< 0.0397**	< 0.0398	---	---	---	---	5.11	---	---	---	---	---	---	---	---
SRI5-10-S-34.5-201112	34.5	11/12/2020	< 1.48	< 1.77 J4	< 4.43	0.00301	0.0106	0.00355 J	0.0161	< 0.000613	< 0.00113	< 0.00114	---	---	---	---	5.95	---	---	---	---	---	---	---	---
SRI5-11																									
SRI5-11-S-8-201112	8	11/12/2020	10.8	32.2 J4	25.4	0.00521	0.0194	0.00268	0.00744	< 0.000369	< 0.000684	< 0.000685	---	---	---	---	1.54	---	---	---	---	---	---	---	---
SRI5-11-S-13.5-201112	13.5	11/12/2020	**6,090**	310 J4	8.27 J	**< 0.0338**	0.937	**12.0**	**41.0**	< 0.0253	**< 0.0468**	< 0.0469	---	---	---	---	9.86	---	---	---	---	---	---	---	---
SRI5-11-S-15-201112	15	11/12/2020	**8,780**	507 J4	7.71 J	**< 0.0308**	**26.0**	**52.9**	**213**	< 0.0231	**< 0.0427**	< 0.0428	**4.27**	**6.68**	**10.9**	**< 0.0590**	4.55	< 0.0153	< 0.00225	< 0.00232	< 0.00199	< 0.00279	< 0.00301	< 0.00223	< 0.00235
DUP-3-201112	15	11/12/2020	**9,590**	614 J4	5.67 J	< 0.0300	**17.2**	**36.5**	**151**	< 0.0225	**< 0.0416**	< 0.0418	**3.56**	**5.88**	**9.20**	**< 0.0575**	4.98	< 0.0151	< 0.00222	< 0.00229	< 0.00196	< 0.00276	< 0.00297	< 0.00220	< 0.00232
SRI5-11-S-29.5-201112	29.5	11/12/2020	4.39 B	< 1.76 J4	6.31 J	0.00377	0.0216	0.00841	0.0451	< 0.000605	< 0.00112	< 0.00112	---	---	---	---	5.63	---	---	---	---	---	---	---	---
SVP-1																									
SVP-1-S-5-201108	5	11/8/2020	< 1.47	< 1.74	< 4.36	< 0.000810	< 0.00226	< 0.00128	< 0.00153	< 0.000606	< 0.00112	< 0.00112	---	---	---	---	1.31	---	---	---	---	---	---	---	---
SVP-2																									
SVP-2-S-9-201109	9	11/9/2020	< 0.914	1.53 J	< 3.44	< 0.000503	< 0.00140	< 0.000793	< 0.000948	< 0.000376	< 0.000697	< 0.000698	---	---	---	---	1.73	---	---	---	---	---	---	---	---
UST-2 (221 E. Woodin Avenue)																									
221EW-UST2-S-201108	6	11/8/2020	**13,600**	**11,000**	**6,340**	**12.1**	**113**	**65.4**	**584 V**	< 0.0497	**< 0.0922**	< 0.0924	**43.6**	**40.0**	**45.7**	**0.291 J**	**3130**	< 0.0147	**0.313**	**0.530**	**0.749**	**0.223**	**0.536**	**0.118**	**0.386**

Table 1
Summary of SRI Phase 5 Soil Sampling Results
Chelan Chevron
232 East Woodin Avenue
Chelan, Washington

Laboratory Analyte			GRO	DRO	HRO	Benzene	Toluene	Ethylbenzene	Xylenes (total)	MTBE	EDB	EDC	1-Methyl-naphthalene	2-Methyl-naphthalene	Naphthalene	PCE	Lead	PCBs	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(k) fluoranthene	Chrysene	Dibenz(a,h) anthracene	Indeno (1,2,3-cd) pyrene
Results Reported in mg/kg dry weight																									
MTCA Method A Cleanup Level			**30**	**2,000**	**2,000**	**0.03**	**7**	**6**	**9**	**0.1**	**0.005**	**---**	**5 (Total Sum of All Naphthalenes)**			**0.05**	**250**	**1**	**0.1 (Total Sum of All Carcinogenic PAHs)**						
Sample Identification	**Sample Depth**	**Date**																							
UHP-1																									
UHP-1-S-8-201103	8	11/3/2020	1.42 J	< 1.70	< 4.27	< 0.000744	< 0.00207	< 0.00117	< 0.00140	< 0.000558	< 0.00103	< 0.00103	---	---	---	---	7.25	---	---	---	---	---	---	---	---
UHP-1-S-12-201109	12	11/9/2020	< 1.48	< 1.76	< 4.42	0.00307	0.00721	< 0.00129	< 0.00154	< 0.000611	< 0.00113	< 0.00113	---	---	---	---	7.41	---	---	---	---	---	---	---	---
UHP-2																									
UHP-2-S-9-201103	9	11/3/2020	< 0.892	< 1.36	< 3.41	< 0.000491	< 0.00137	< 0.000775	< 0.000926	< 0.000368	< 0.000682	< 0.000683	---	---	---	---	1.80	---	---	---	---	---	---	---	---
UHP-2-S-12-201109	12	11/9/2020	2.18 J	< 1.80	< 4.51	0.0137	0.0571	0.00488	0.0175	< 0.000619	< 0.00115	< 0.00115	---	---	---	---	8.05	---	---	---	---	---	---	---	---
UHP-3																									
UHP-3-S-7-201104	7	11/4/2020	1.49 J	< 1.41	5.90 J	< 0.000526	0.00271 J	< 0.000830	< 0.000991	0.000458 J	< 0.000730	< 0.000731	---	---	---	---	2.65	---	---	---	---	---	---	---	---
UHP-3-S-12.5-201109	12.5	11/9/2020	< 1.62	< 1.88	< 4.70	0.00118 J	0.00628 J	< 0.00141	0.00228 J	< 0.000670	< 0.00124	< 0.00124	---	---	---	---	7.61	---	---	---	---	---	---	---	---
UHP-3-S-17-201109	17	11/9/2020	< 1.74	< 1.97	< 4.92	< 0.000960	0.0102 J	< 0.00152	0.00405 J	< 0.000720	< 0.00133	< 0.00133	---	---	---	---	7.53	---	---	---	---	---	---	---	---
UHP-4																									
UHP-4-S-8-201104	8	11/4/2020	< 1.17	< 1.57	11.1 J	< 0.000644	< 0.00179	< 0.00102	< 0.00121	< 0.000483	< 0.000894	< 0.000896	---	---	---	---	2.25	---	---	---	---	---	---	---	---
UHP-4-S-14.5-201109	14.5	11/9/2020	< 0.946	< 1.40	< 3.51	< 0.000521	0.00161 J	< 0.000822	0.00293 J	< 0.000390	< 0.000723	< 0.000724	---	---	---	---	2.11	---	---	---	---	---	---	---	---
UHP-4-S-17.5-201109	17.5	11/9/2020	< 1.14	1.91 J	< 3.86	< 0.000626	< 0.00174	< 0.000988	0.00130 J	< 0.000469	< 0.000868	< 0.000870	---	---	---	---	6.00	---	---	---	---	---	---	---	---
UHP-5																									
UHP-5-S-7.5-201108	7.5	11/8/2020	< 0.911	< 1.38	< 3.44	0.000763 J	0.00153 J	< 0.000792	< 0.000945	< 0.000376	< 0.000696	< 0.000697	---	---	---	---	1.75	---	---	---	---	---	---	---	---
UHP-5-S-14.5-201111	14.5	11/11/2020	< 1.44	< 1.76	< 4.40	0.00411	0.0222	0.00195 J	0.00696 J	< 0.000594	< 0.00110	< 0.00110	---	---	---	---	4.47	---	---	---	---	---	---	---	---
UHP-6																									
UHP-6-S-13-201110	13	11/10/2020	11.9	< 1.38	< 3.46	0.0159	0.0476	0.00523	0.0213	< 0.000378	< 0.000699	< 0.000700	---	---	---	---	1.88	---	---	---	---	---	---	---	---

Symbols and Abbreviations:

87 - Bold and highlighted entries indicate results exceeding MTCA Method A cleanup levels

< 0.074 - Bold text indicates that detection limit was greater than MTCA Method A cleanup level due to necessary sample dilution by the laboratory

GRO = Gasoline-range organics
DRO = Diesel-range organics
HRO = Heavy-range organics
MTBE = Methyl tert-butyl ether
EDB = Ethylene dibromide (1,2-Dibromoethane)
EDC = Ethylene dichloride (1,2-Dichloroethane)
PCE = Tetrachloroethane
PCBs = Polychlorinated Biphenyls
PAHs = Polycyclic aromatic hydrocarbons
--- = Not Analyzed

Laboratory Assigned Data Qualifiers:

B = The same analyte is found in the associated blank.
J = The identification of the analyte is acceptable; the reported value is an estimate.
J4 = The associated batch QC was outside the established quality control range for accuracy.
V = The sample concentration is too high to evaluate accurate spike recoveries.

Table 2
Summary of LNAPL Physical Properties Analytical Results
Chelan Chevron
232 East Woodin Avenue
Chelan, Washington

Sample Location	Sample ID	Sample Date	Sample Time	Specific Gravity (unitless)			Density (grams/cubic centimeter)			Viscosity (centistokes)			Viscosity (centipoise)			Interfacial Tension (dynes/centimeter)		
				70° F	100° F	130° F	70° F	100° F	130° F	70° F	100° F	130° F	70° F	100° F	130° F	GW-Air	LNAPL-Air	GW-LNAPL
Groundwater Samples																		
MW-9	MW-9-201207	12/7/2020	10:10	0.9984	0.9998	0.9958	0.9982	0.9928	0.9819	1.001	0.703	0.531	0.999	0.698	0.521	69.68	---	22.40
MW-10	MW-10-201206	12/6/2020	20:10	0.9987	1.0006	1.0008	0.9985	0.9936	0.9867	0.992	0.709	0.535	0.991	0.705	0.527	70.23	---	17.88
MW-12	MW-12-201207	12/7/2020	7:20	0.9982	1.0003	0.9990	0.9980	0.9934	0.9850	0.997	0.701	0.529	0.995	0.697	0.521	70.03	---	18.85
MW-16	MW-16-201207	12/7/2020	22:30	0.9983	0.9996	0.9985	0.9981	0.9927	0.9845	1.000	0.705	0.532	0.998	0.700	0.524	67.97	---	17.11
MW-19	MW-19-201207	12/7/2020	20:45	0.9984	0.9998	0.9976	0.9982	0.9928	0.9836	1.003	0.703	0.531	1.001	0.698	0.522	68.88	---	18.46
MW-21	MW-21-201208	12/8/2020	6:00	0.9981	0.9998	0.9985	0.9979	0.9928	0.9845	1.004	0.708	0.531	1.002	0.703	0.522	68.93	---	29.35
MW-27	MW-27-201208	12/8/2020	7:20	0.9983	1.0001	1.0001	0.9981	0.9931	0.9861	0.997	0.704	0.530	0.995	0.699	0.523	59.69	---	19.59
MW-44	MW-44-201207	12/7/2020	19:28	0.9984	0.9998	0.9972	0.9982	0.9928	0.9832	0.997	0.700	0.530	0.995	0.695	0.521	68.07	---	15.13
RW-2	RW-2-201207	12/7/2020	9:30	0.9986	1.0007	1.0000	0.9984	0.9938	0.9859	0.998	0.706	0.532	0.997	0.702	0.525	62.27	---	20.53
LNAPL Samples																		
MW-9	MW-9-201207	12/7/2020	10:10	0.7424	0.7331	0.7254	0.7423	0.7281	0.7152	0.81	0.67	0.58	0.60	0.49	0.42	---	22.24	22.40
MW-10	MW-10-201206	12/6/2020	20:10	0.7549	0.7466	0.7382	0.7547	0.7414	0.7279	0.88	0.73	0.62	0.67	0.54	0.45	---	22.41	17.88
MW-12	MW-12-201207	12/7/2020	7:20	0.7628	0.7542	0.7458	0.7627	0.7490	0.7354	0.83	0.70	0.59	0.63	0.52	0.44	---	22.58	18.85
MW-16	MW-16-201207	12/7/2020	22:30	0.7525	0.7436	0.7350	0.7524	0.7384	0.7247	0.78	0.66	0.56	0.59	0.49	0.41	---	20.74	17.11
MW-19	MW-19-201207	12/7/2020	20:45	0.8296	0.8227	0.8166	0.8295	0.8170	0.8051	2.55	1.86	1.46	2.11	1.52	1.17	---	25.05	18.46
MW-21	MW-21-201208	12/8/2020	6:00	0.7566	0.7479	0.7394	0.7565	0.7427	0.7290	0.85	0.71	0.61	0.64	0.53	0.44	---	21.52	29.35
MW-27	MW-27-201208	12/8/2020	7:20	0.8694	0.8642	0.8584	0.8693	0.8582	0.8464	5.68	3.69	2.62	4.94	3.17	2.22	---	27.66	19.59
MW-44	MW-44-201207	12/7/2020	19:28	0.7677	0.7589	0.7510	0.7676	0.7537	0.7404	0.85	0.71	0.61	0.65	0.54	0.45	---	22.90	15.13
RW-2	RW-2-201207	12/7/2020	9:30	0.7459	0.7367	0.7284	0.7458	0.7316	0.7181	0.76	0.64	0.55	0.57	0.47	0.40	---	21.86	20.53

Data Charts

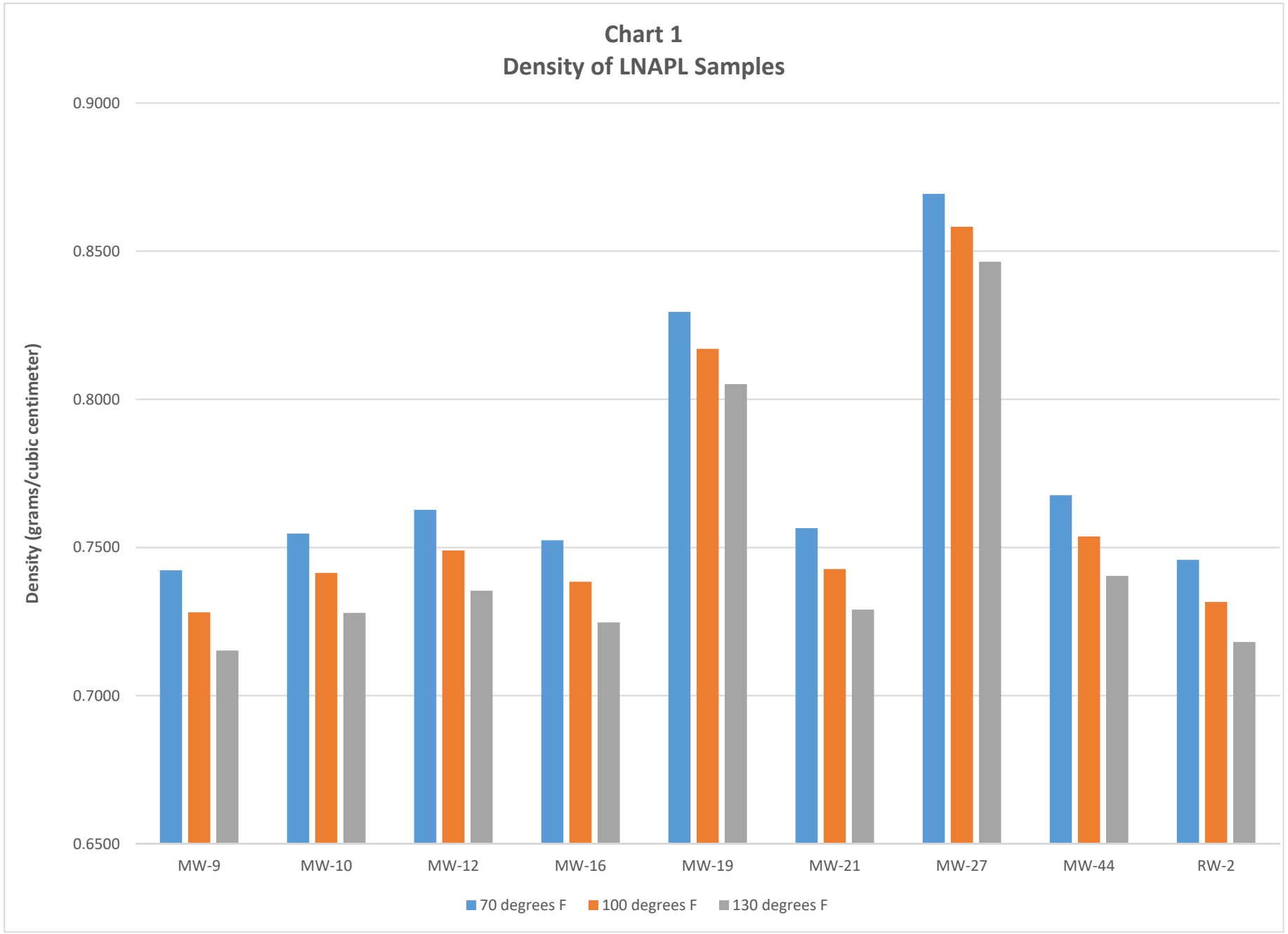


Chart 1
Density of LNAPL Samples
Density (grams/cubic centimeter)
0.9000
0.8500
0.8000
0.7500
0.7000
0.6500
MW-9
MW-10
MW-12
MW-16
MW-19
MW-21
MW-27
MW-44
RW-2
70 degrees F
100 degrees F
130 degrees F

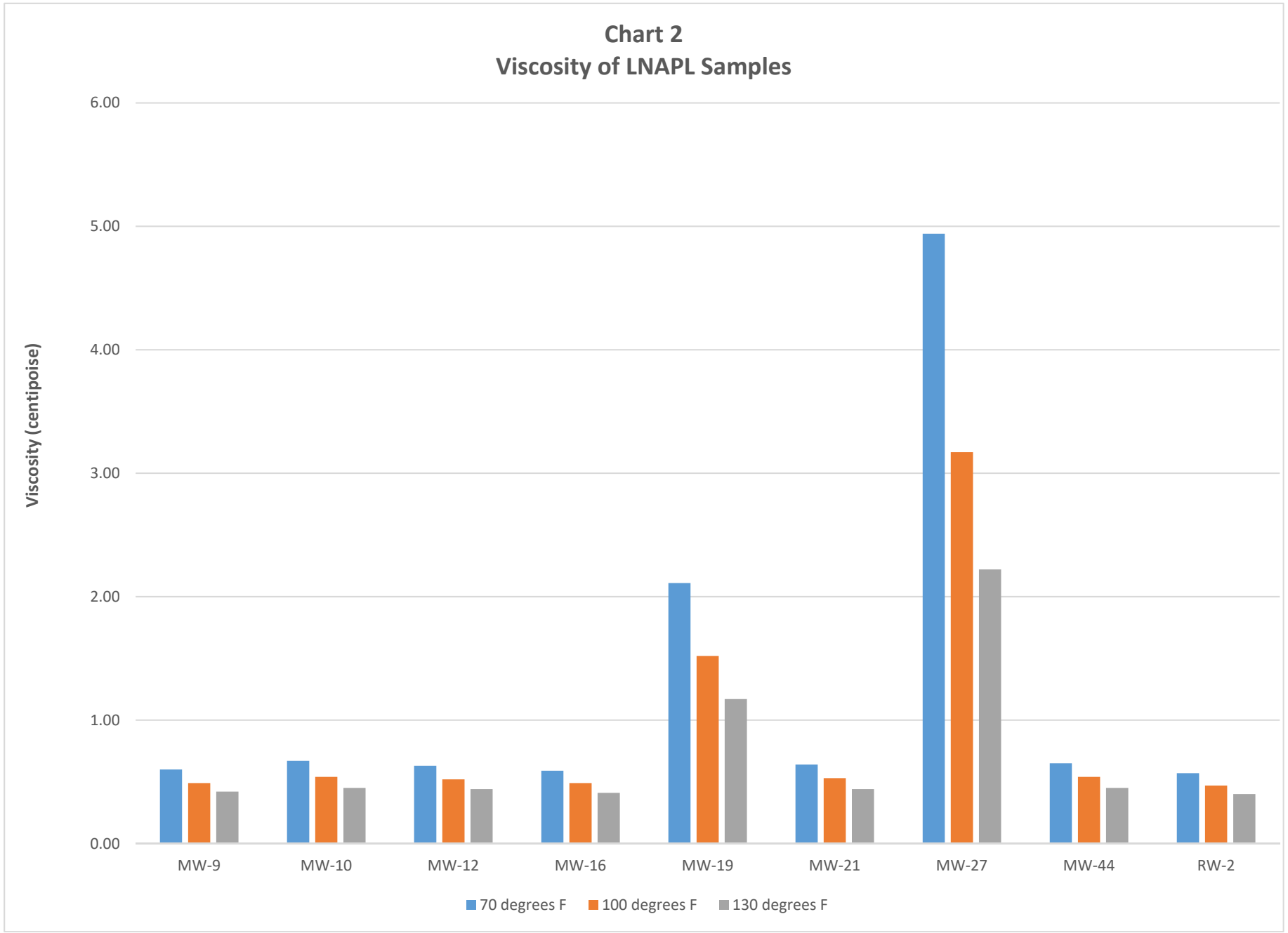


Chart 2
Viscosity of LNAPL Samples
Viscosity (centipoise)
6.00
5.00
4.00
3.00
2.00
1.00
0.00
MW-9
MW-10
MW-12
MW-16
MW-19
MW-21
MW-27
MW-44
RW-2
70 degrees F
100 degrees F
130 degrees F

Appendix A:
Utility Locate Report

Geophysical Survey LLC
711 S Tacoma Street
Kennewick, Washington 99336

December 6, 2020

Russell Shropshire
Leidos
18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Re: ***Utility Locate***
Project #334893.TM.1.000.00.00.00000000
Chelan, WA

Mr. Shropshire:

Geophysical Survey LLC conducted utility locating at eleven locations in Chelan, Washington on October 25, 2020. The objectives of the survey was to detect and delineate subsurface utilities for boring clearance and to re-mark the underground storage tanks (USTs) at the northwest corner of E Woodin Avenue and N Emerson Street and at 221 E. Woodin Avenue.

Methodology

Ground-Penetrating Radar

Ground-penetrating radar (GPR) uses a transducer to transmit FM frequency electromagnetic energy into the ground. Interfaces in the subsurface, defined by contrasts in dielectric constants, magnetic susceptibility, and to some extent, electrical conductivity, reflect the transmitted energy. The GPR system then measures the travel time between transmitted pulses and arrival of reflected energy. Buried objects such as pipes, barrels, foundations, and buried wires can cause all or a portion of the transmitted energy to be reflected back towards a receiving antenna. Geologic features such as cross-bedding, lateral and vertical changes in soil properties, and rock interfaces can also cause reflections of a portion of the EM energy.

The dielectric constant and magnetic susceptibility of the medium primarily control the velocity of the EM energy. Values of EM velocities, for depth calculations, are determined by measurement, experience in an area, by ties to known buried reflectors, and from knowledge of the subsurface medium.

The depth of investigation is a function of the transmit power, receiver sensitivity, frequency of the antenna, and attenuation of the transmitted energy due to the geologic medium. The maximum depth of investigation may vary significantly as a result of the changing soil conditions. High attenuation, and consequent smaller penetration depths, of the EM energy typically occurs where the soil conductivity is greater than 25 milli-

siemens per meter and/or in areas with numerous reflective interfaces. Depth of investigation is also affected by highly conductive material, such as metal drums and pipes that essentially reflect all the energy. The method cannot "see" directly below areas of highly reflective material because all of the energy is reflected.

Electromagnetic Line Locating

Utility line locating equipment operates through the principles of electromagnetics (EM), designed to detect underground utilities constructed of electrically conductive materials. An active signal is applied to the underground utility by means of a radio frequency (RF) transmitter and then traced with a receiver. With direct coupling, an RF signal is applied to a cable or pipe where there is access to a contact point. With no access to the utility, the indirect mode is used. A transmitter is placed on the ground surface above the conductor and the signal is induced through earth onto the pipe or cable.

The active signal is created from current flowing from the transmitter, along the conductor (utility line), and back to the transmitter thru the ground. The signal can also return thru other utility lines. This type of return can distort the electromagnetic field and cause erroneous locations.

Passive signals include power transmission (60Hz) and radio transmission (15kHz-27kHz). 60Hz signals are present in conductors carrying electric current and from utilities carrying return current (indirect induction). Radio signals are created by high power, low frequency communication transmitters. Conductive utilities re-radiate the signal. A receiver is used to trace power and radio transmissions.

FIELD SURVEY

Mapping Control

A Trimble Pro6H GPS with sub-foot level accuracy was used mapping subsurface utility lines and scan area extents.

GPR Data Acquisition

GPR data were acquired with a Geophysical Survey Systems, Inc. (GSSI) SIRG1 control unit and a 350 MHz antenna. GPR data were collected at 18 scans/foot with a 57 nano-Second window (approximately 9 feet with a dielectric constant of 8).

RESULTS AND INTERPRETATION

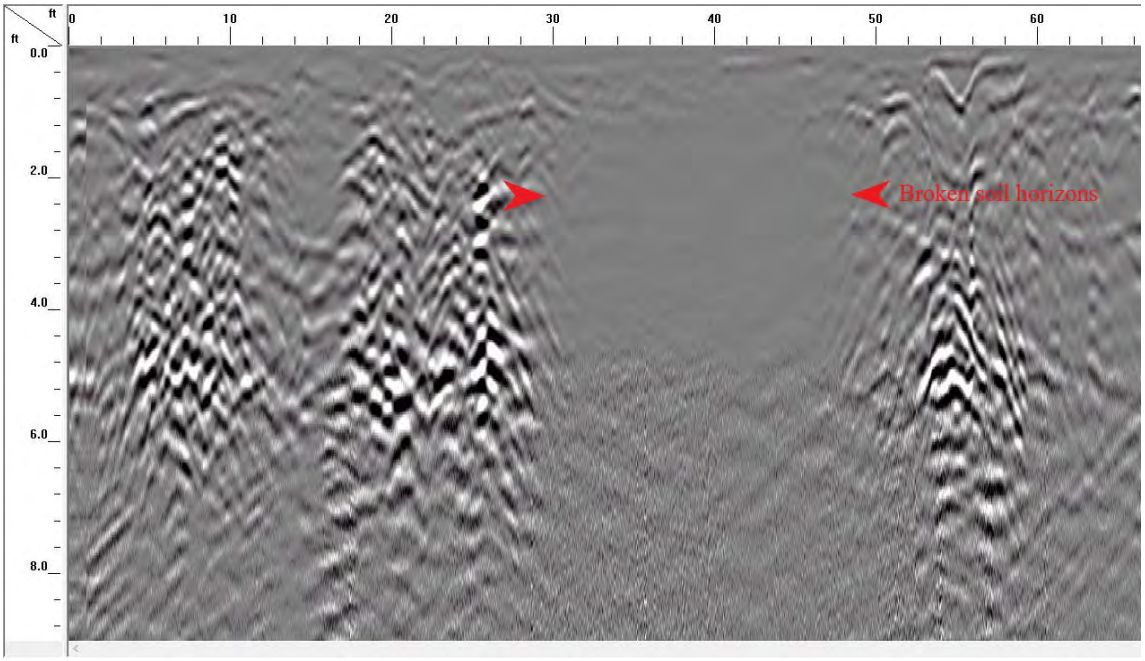
E Woodin Avenue and N Emerson Street :

Three underground storage tanks were re-marked. The approximate size of the tanks from west to east are 4 x 6 feet, 3.5 x 6 feet and 5 x 12 feet. A fourth tank detected during drilling in 2018 between the tank to the west and the center tank was not detected in GPR data. The tank would be located below the north south utility line at a depth of 2.7 feet. The results from this area are shown on Figure 1.

136 Johnson Avenue :

One UST was detected at the northwest corner of the northwest corner of the building. The UST is approximately 4 x 8 feet. A fill port was located at the surface of the UST location.

An area approximately 10 x 17 feet was detected with GPR which exhibited broken soil horizons and characteristics typical of fill material. The area is shown below in image GPR Data 1. The area is shown in Figure 2 as a hatched anomaly labeled as a GPR anomaly.



GPR Data 1

221 E Woodin Avenue

Three underground storage tanks (USTs) were re-marked. The approximate size of the tanks from west to east are 4 x 12 feet, 4 x 5 feet and 5 x 14 feet. The results from this area are shown on Figure 3.

Utilities were marked out at four other locations for boring clearance, the results are shown on Figures 4-7.

CLOSURE

Geophysical surveys performed as part of this survey may or may not successfully detect or delineate any or all subsurface objects or features present. Locations, depths and scale of buried objects or subsurface features mapped as a result of this survey are a result of geophysical interpretation, and should be considered as confirmed, actual, or accurate only where recovered by excavation or drilling.

Geophysical Survey LLC performed this work in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. No warranty, express or implied, beyond exercise of reasonable care and professional diligence, is made. This report is intended for use only in accordance with the purposes of the study described within.

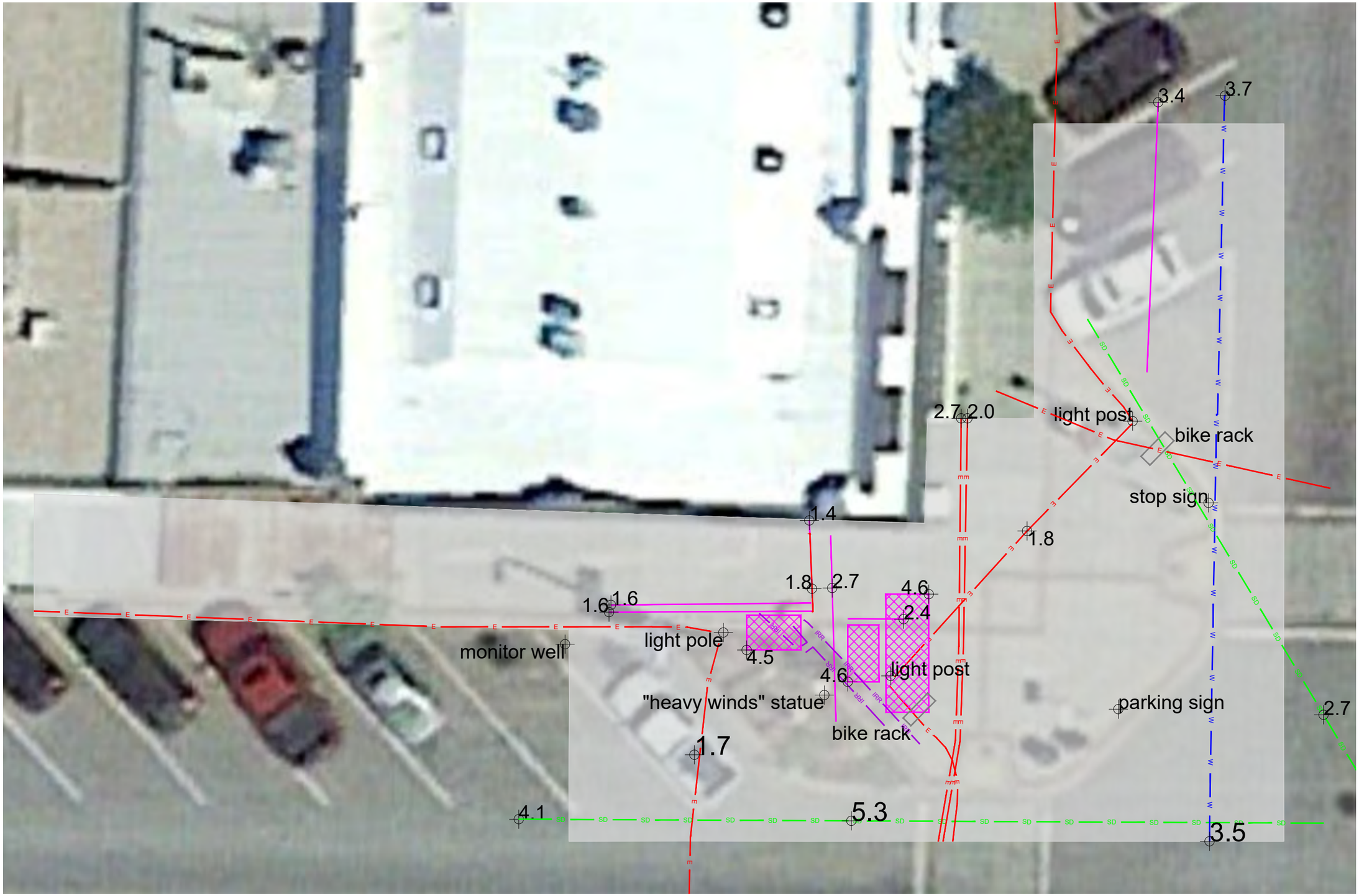
Respectfully,

Geophysical Survey LLC

Mark Villa L.G.
Geophysicist

Utility Locate
Chelan, WA

LIST OF FIGURES



GEOPHYSICAL SURVEY LLC

FIGURE 1
Utility Map
Chelan, WA

1 Inch = 10 Feet

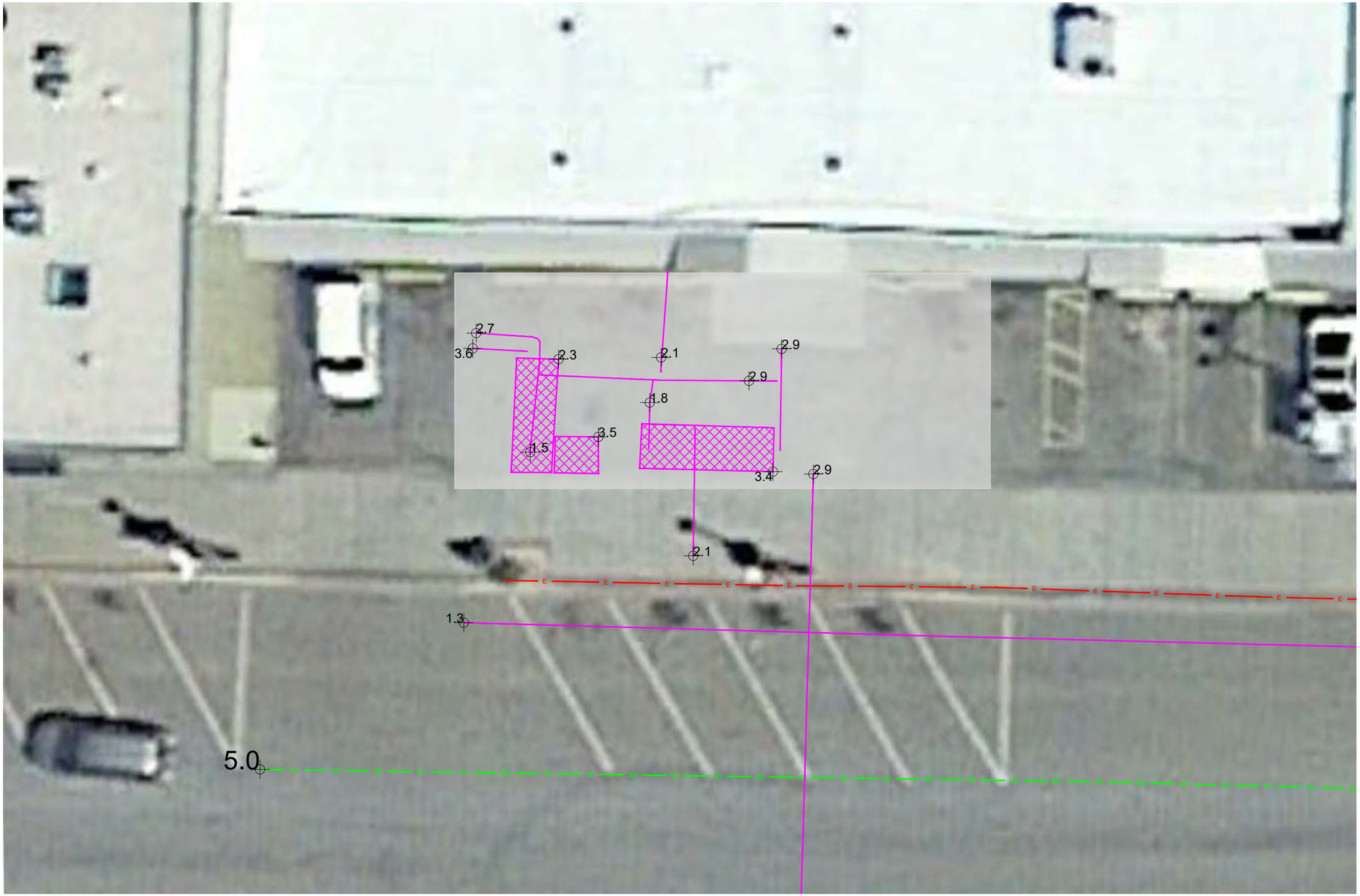
0 10

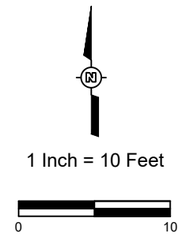
Legend

- 2.0 Depth to top in feet
- Unknown utility
- E Electric line
- W Water line
- SD Storm sewer
- COM Telcom line
- GPR anomaly
- UST

GEOPHYSICAL SURVEY LLC

FIGURE 2
Utility Map
Chelan, WA



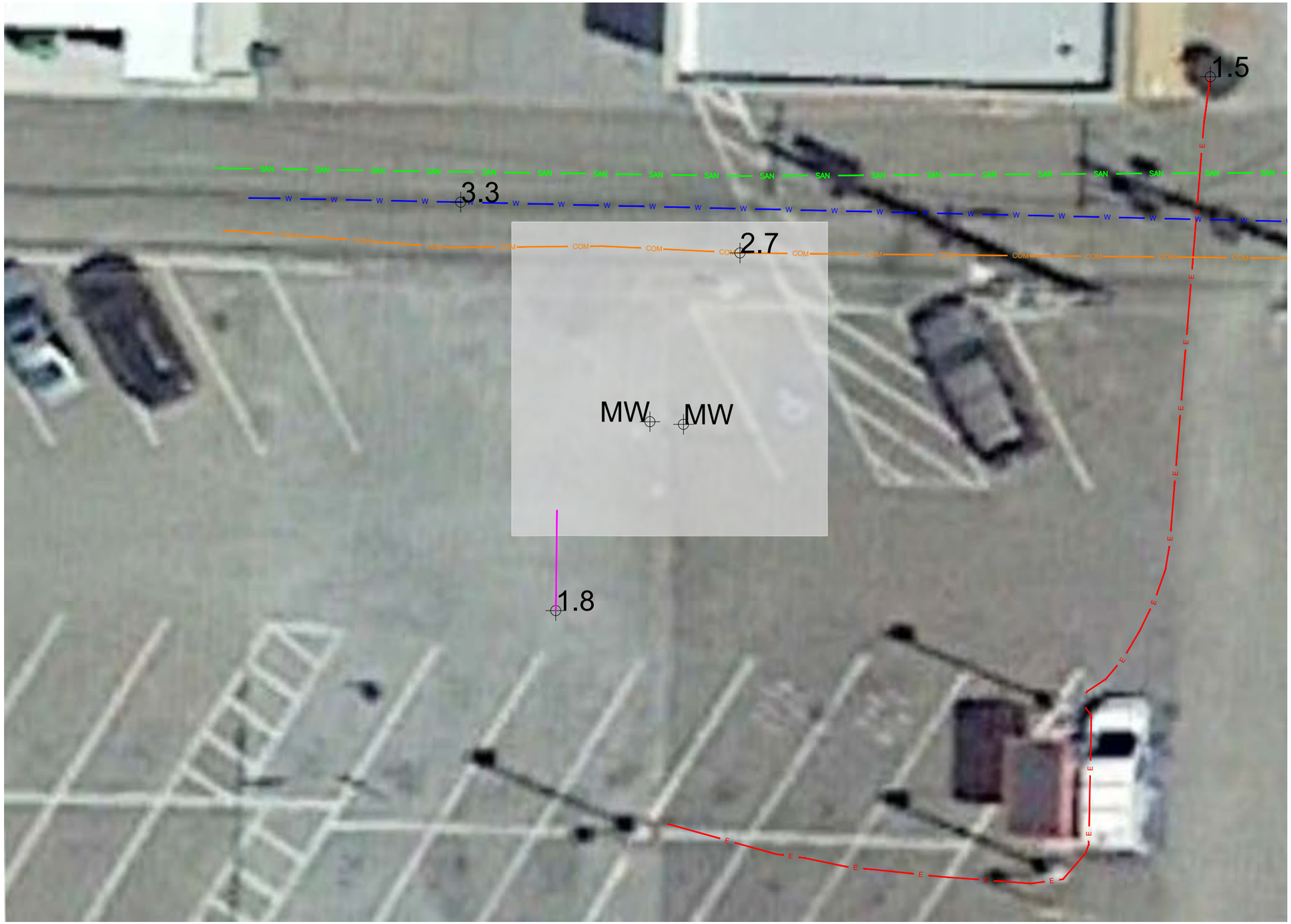


Legend

- 2.0 — Depth to top in feet
- Unknown utility
- Electric line
- Water line
- Storm sewer
- Telcom line
- GPR anomaly
- UST

GEOPHYSICAL SURVEY LLC

FIGURE 3
Utility Map
Chelan, WA



1 Inch = 10 Feet

0 10

Legend

- 2.0 Depth to top in feet
- Unknown utility
- Electric line
- Water line
- Storm sewer
- Telcom line
- GPR anomaly
- UST

GEOPHYSICAL SURVEY LLC

FIGURE 4
Utility Map
Chelan, WA

1 Inch = 10 Feet

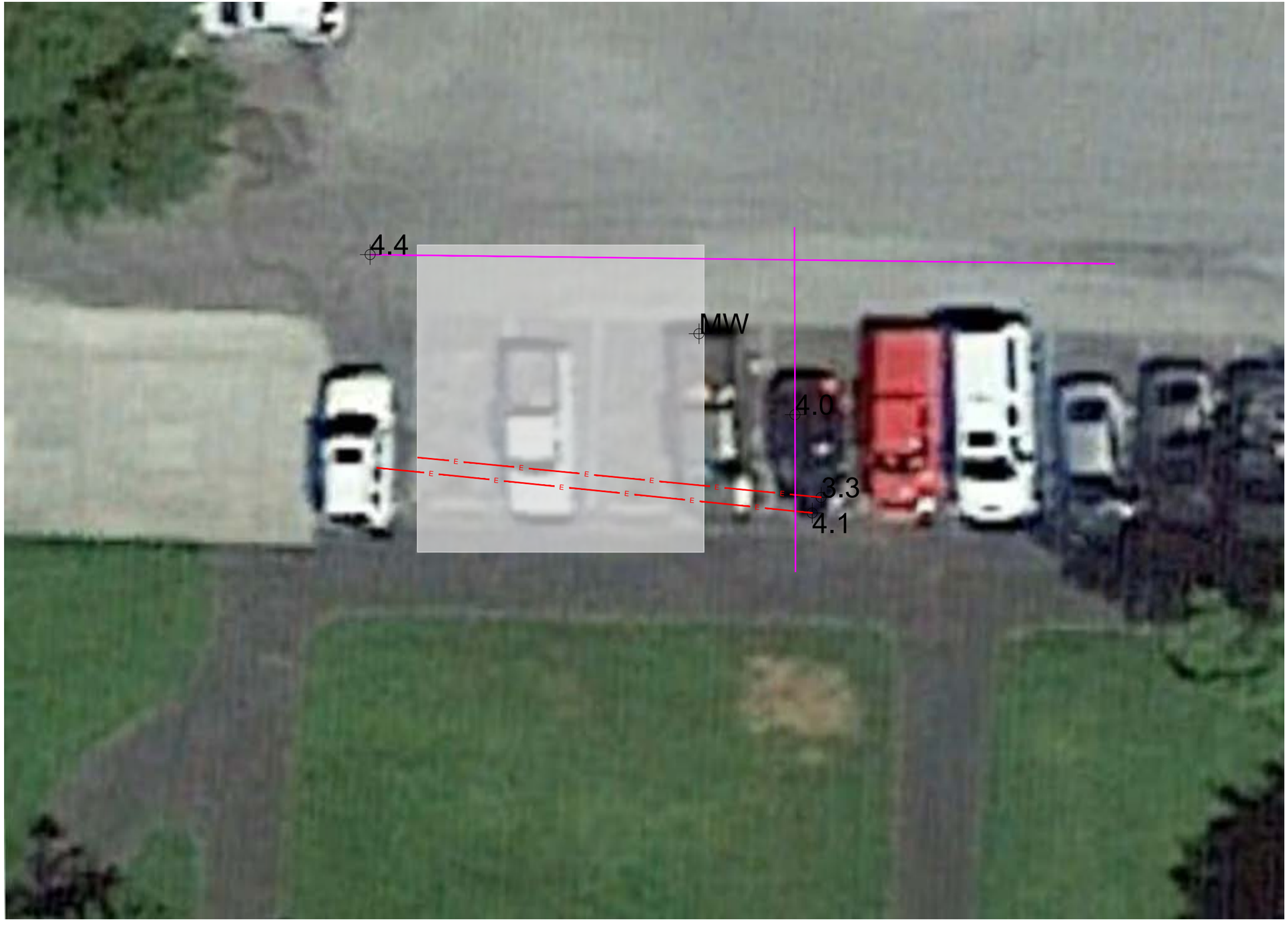
0 10

Legend

- 2.0 — Depth to top in feet
- Unknown utility
- E — Electric line
- W — Water line
- SD — Storm sewer
- COM — Telcom line
- GPR anomaly
- UST

GEOPHYSICAL SURVEY LLC

FIGURE 5
Utility Map
Chelan, WA



1 Inch = 10 Feet

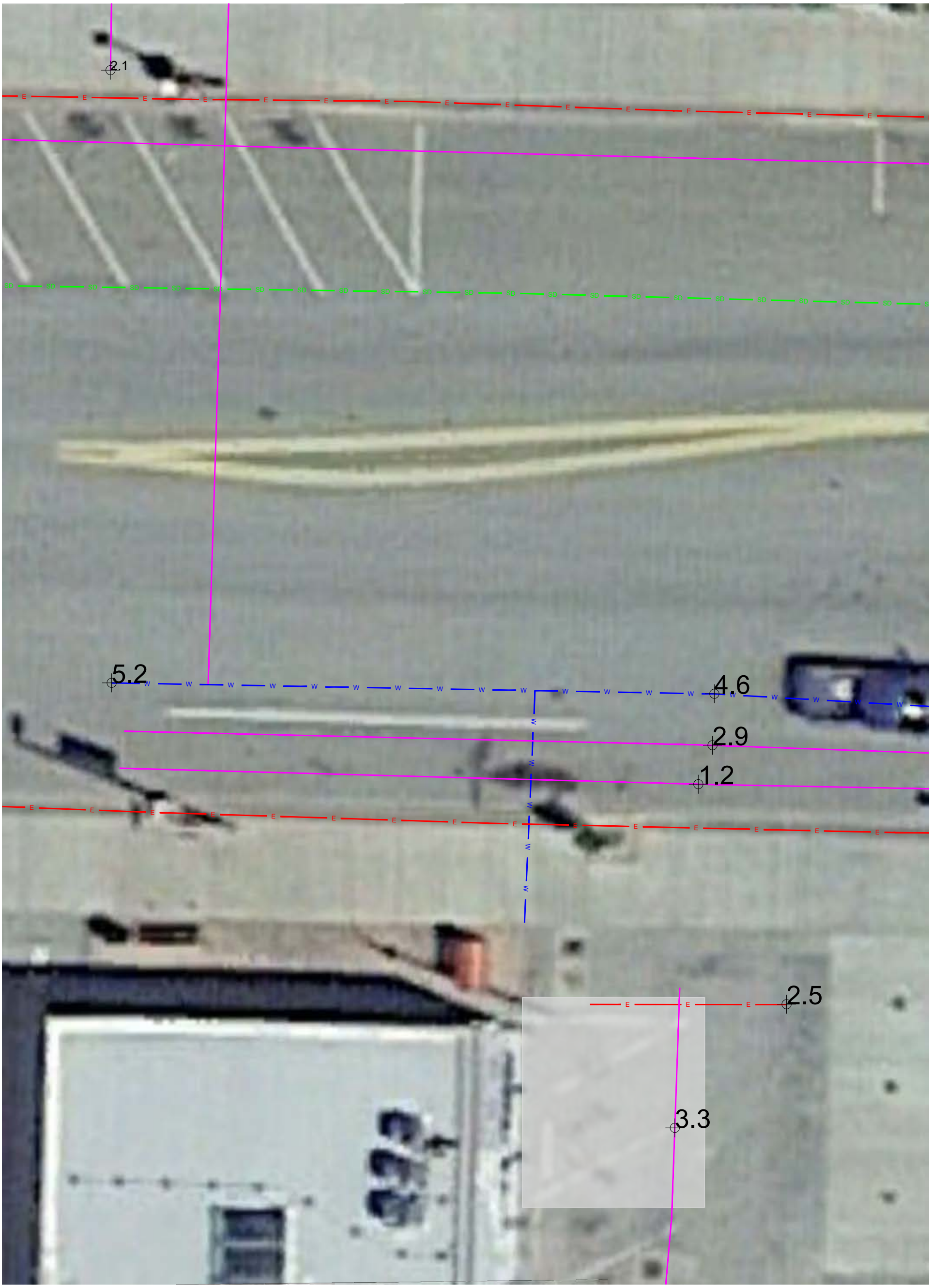
0 10

Legend

- 2.0 — Depth to top in feet
- E — Unknown utility
- E — Electric line
- W — Water line
- SD — Storm sewer
- COM — Telcom line
- GPR anomaly
- UST

GEOPHYSICAL SURVEY LLC

FIGURE 6
Utility Map
Chelan, WA



1 Inch = 10 Feet

0 10

Legend

- 2.0 — Depth to top in feet
- Unknown utility
- E — Electric line
- W — Water line
- SD — Storm sewer
- COM — Telcom line
- GPR anomaly
- UST

GEOPHYSICAL SURVEY LLC

FIGURE 7
Utility Map
Chelan, WA

Appendix B:
Boring Logs

Soil Boring: SRI5-1

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/5/2020
Date Completed: 11/10/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 25 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						0	Asphalt, 5 inches
damp	1.1			ML		1	(ML) 2 - 2.5': Medium brown, coarse (almost very fine sand) SILT with ~5% gravel (up to 1.5 inches), soft; no odor, no sheen
						2	
						3	
moist	1.0			SW-SM		4	(SW-SM) 4 - 4.5': Medium light brown, very fine to coarse SAND with ~5% silt and 10% gravel (up to 1.5 inches), medium dense; no odor, no sheen
						5	
moist	0.8					6	(SW-SM) 6 - 6.5': SAA with ~5% gravel (up to 0.5 inches); no odor, no sheen
						7	A few cobbles in sand, up to 7 inches at 7 feet
						8	
moist	0.9		SRI5-1-8.5	SW		9	(SW) 8.5 - 9': Medium yellowish-gray, fine to very coarse SAND with ~10% gravel (up to 1 inch), dense; no odor, no sheen (SW) 9 - 9.5' (sonic bag): Brown to orange-brown, very fine to very coarse SAND with trace (~1-2%) silt and 12% gravel (up to 4 inches), dense; no odor, no sheen
moist	1.7			Slough		10	(SW) 9.5 - 10' (sonic bag): Light brown, very fine to coarse SAND with ~10% gravel (up to 2 inches), dense; no odor, no sheen (Slough) 10 - 13' (sonic bag): Likely slough of sand, gravel, silt, and anthropogenic debris
						11	

Soil Boring: SRI5-1

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/5/2020
Date Completed: 11/10/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 25 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
				Slough		12	(Slough) 10 - 13' (sonic bag): Likely slough of sand, gravel, silt, and anthropogenic debris *(continued)*
						13	(SW/GW) 13 - 14.75' (sonic bag): Very fine to very coarse SAND and GRAVEL (up to 4.5 inches) with ~4% silt, very dense; very weak to no HC odor, no sheen
moist	2.5			SW/GW		14	
	12.8		SRI5-1-15				
moist	1370			ML		15	(ML) 14.75 - 15' (sonic bag): Medium light brown to greenish-gray SILT, slight plasticity, firm; moderate to strong HC odor, slight sheen (ML) 15 - 16.5' (sonic bag): Medium greenish-gray, coarse SILT, no clay, firm to stiff; strong HC odor, moderate to heavy sheen
moist	2173					16	
moist	2532		SRI5-1-16.5				(ML/CL) 16.5 - 20' (sonic bag): Medium gray-brown SILT with clay, medium plasticity (rolls up to 4 inches), firm; weak HC odor, no to slight sheen
						17	
moist to damp	3650					18	
moist to damp	76.8			ML/CL		19	
moist to damp	111.7					20	(ML/CL) 20 - 25' (sonic bag): SAA; no odor, no sheen
moist to damp	80.6					21	
						22	

Soil Boring: SRI5-1

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/5/2020
Date Completed: 11/10/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 25 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist to damp	44.8			ML/CL		23	(ML/CL) 20 - 25' (sonic bag): Medium gray-brown SILT with clay, medium plasticity (rolls up to 4 inches), firm; no odor, no sheen
moist to damp	81.4						
moist to damp	17.5					24	
moist to damp	24.5		SRI5-1-24.5			25	
							Bottom of borehole at 25.0 feet.
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	

Soil Boring: SRI5-2

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/5/2020
Date Completed: 11/10/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 25 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						0	Asphalt, 4 inches
moist	1.6			ML		1	(ML) 2 - 2.5': Medium dark brown SILT with 15% gravel (up to 1 inch), firm; no odor, no sheen
						3	Some gravel/rock up to 4 inches at 3.5 feet
moist	2.3			SW-SM		4	(SW-SM) 4 - 4.25': Medium dark brown, very fine to coarse SAND with ~7% silt and 10% gravel (up to 2 inches), medium dense; no odor, no sheen
						5	Cobbles up to 10 inches between 4 and 5.75 feet
moist	1.5			ML		6	(ML) 6 - 6.5': Medium dark brown, sandy SILT with very fine to fine sand and ~10% gravel (up to 2 inches), firm; no odor, no sheen
						7	
moist	1.6		SRI5-2-8			8	(SW) 8 - 8.5': Medium yellowish-gray, very fine to very coarse SAND with ~10% gravel (up to 1.5 inches), dense; no odor, no sheen
moist	6.7			SW		9	(SW) 8 - 10' (sonic bag): Medium brown, fine to very coarse SAND with 12% gravel (up to 4 inches), dense; no odor, no sheen
moist	9.6					10	(SW) 10 - 11.25' (sonic bag): SAA; no odor, no sheen
						11	

Soil Boring: SRI5-2

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/5/2020
Date Completed: 11/10/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 25 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist	66.9			SW			
moist	3450		SRI5-2-11.5			12	(ML/CL) 11.25 - 15' (sonic bag): Medium greenish-gray SILT, changing downward at 12 feet to medium gray silt with ~25% clay (clay is light gray), medium plasticity, firm; moderate to strong HC odor, slight to moderate sheen
moist	2902						
moist	1819			ML/CL		13	
moist	2120					14	
	1740					15	(ML?) 15 - 20' (disturbed material in sonic bag, partial slough): Mixed sand and gravel from above, medium gray SILT with some clay (less then above); moderate HC odor, moderate sheen
	(2789)					16	
	(1797)					17	
				ML?		18	
						19	
moist	47.4					20	(ML/CL) 20 - 22' (sonic bag): Medium light brown SILT with clay laminations, medium plasticity, firm; weak HC odor (decreasing with depth), no sheen
moist	46.9			ML/CL		21	
						22	

Soil Boring: SRI5-2

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/5/2020
Date Completed: 11/10/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 25 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist	65.1						(ML/CL) 22 - 25' (sonic bag): Medium light brown SILT with clay laminations, medium plasticity, firm; no HC odor, no sheen
moist	47.9			ML/CL		23	
moist	47.9					24	
moist	66.4		SRI5-2-24.5			25	
							Bottom of borehole at 25.0 feet.
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	

Soil Boring: SRI5-3

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/5/2020
Date Completed: 11/10/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 35 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						0	Asphalt, 3.5 inches
moist	0.9			ML		2	(ML) 2 - 2.5': Medium brown SILT with ~5% gravel (up to 1 inch), firm; no odor, no sheen
dry	1.1			SW		4	(SW) 4 - 4.5': Light gray-brown, very fine to very coarse SAND with ~25% fine gravel (up to 0.7 inches) with ~4% silt (looks like decomposed granite), medium dense; no odor, no sheen
moist	1.1			SW/SM		6	(SW-SM) 6 - 6.5': Medium gray-brown, very fine to very coarse SAND with ~20% gravel (up to 1.5 inches) with ~7% silt (looks like decomposed granite), medium dense; no odor, no sheen
				SW/GW		7	(SW/GW) 7 - 8': Large gravel (up to 6 inches)
moist	0.9		SRI5-3-8.5			8	(SW) 8.5 - 9': Medium gray, very fine to coarse SAND with ~8% gravel (up to 2 inches), dense; no odor, no sheen
moist	7.2			SW		9	(SW) 9 - 10' (sonic bag): Medium gray-brown, very fine to very coarse SAND with trace (<1%) silt and ~20% gravel (up to 5 inches), dense; no odor, no sheen
moist	2558			ML/CL		10	(ML/CL) 10 - 15' (sonic bag): Medium dark greenish-gray, grading down to gray SILT with some clay laminations, coarser silt at top, medium plasticity (rolls up to 4 inches), firm; strong HC odor, moderate to heavy sheen
						11	

Soil Boring: SRI5-3

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/5/2020
Date Completed: 11/10/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 35 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist	2444						(ML/CL) 10 - 15' (sonic bag): Medium dark greenish-gray SILT, grading down at 11 feet to gray SILT with some clay in lamination, coarser silt at top, medium plasticity (rolls up to 4 inches), firm; strong HC odor, moderate to heavy sheen *(continued)*
moist	2148					12	
moist	1941			ML/CL		13	
moist	1204					14	
moist	1254					15	
moist	13.8						(ML) 15 - 20' (sonic bag): Medium dark greenish-gray, grading down to brown-gray SILT with clay content increasing with depth, firm; moderate to weak HC odor, moderate (between 15-18 feet) to slight to no (between 18-20 feet) sheen
moist	11.3			ML		16	
moist	436		SRI5-3-17			17	(ML/CL) 20 - 24.5' (sonic bag): Medium light gray-brown SILT with clay laminations, firm; weak to no HC odor, very slight to no sheen
moist	382					18	
moist	224			ML/CL		19	
moist	1289					20	
moist	31.3						
moist	16.6					21	
						22	

Soil Boring: SRI5-3

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/5/2020
Date Completed: 11/10/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 35 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist	14.4			ML/CL		23	(ML/CL) 20 - 24.5' (sonic bag): Medium light gray-brown SILT with clay laminations, firm; weak to no HC odor, very slight to no sheen *(continued)*
						24	
moist	47.1			ML			(ML) 24.5 - 25' (sonic bag): Medium dark gray (greenish tint) SILT with trace clay, some silt is coarse, firm; moderate HC odor, moderate sheen
moist	2228		SRI5-3-25			25	
moist	15.1						(ML/CL) 25 - 30' (sonic bag): Medium gray-brown SILT with some clay, firm; weak HC odor from 25 - 26.5' (no odor below), no sheen
						26	
moist	134.5						
moist	134.2						
						27	
moist	35.4					28	
						29	
moist	23.4						
moist	136					30	(ML/CL) 30 - 35' (sonic bag): Medium gray-brown SILT with some clay (more than above), laminated, firm; no odor, no sheen
						31	
moist	13.8						
						32	
						33	

Soil Boring: SRI5-3

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/5/2020
Date Completed: 11/10/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 35 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist	14.5					34	(ML/CL) 30 - 35' (sonic bag): Medium gray-brown SILT with some clay (more then above), laminated, firm; no odor, no sheen *(continued)*
moist	14.7		SRI5-3-34.5			35	Bottom of borehole at 35.0 feet.
						36	
						37	
						38	
						39	
						40	
						41	
						42	
						43	
						44	

Soil Boring: SRI5-4

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/7/2020
Date Completed: 11/8/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 25 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						0	Asphalt, 5 inches
moist	1.1					2	(ML) 2 - 2.5': Medium dark brown SILT, firm; no odor, no sheen
moist	0.8					4	(ML) 4 - 4.5': Medium light brown SILT, firm; no odor, no sheen
moist	0.7			ML		6	(ML) 6 - 6.5': Medium light brown, very fine sandy SILT, very coarse silty grading to very fine sand with minor coarser sand, trace gravel (<5%, up to 0.75 inches), firm; no odor, no sheen
moist	0.9		SRI5-4-8.5			8.5	(ML) 8.5 - 9': Medium light brown, very fine sandy SILT with 20% coarser sand; no odor, no sheen
						9	(ML) 9 - 10' (sonic core): Medium brown SILT with ~15% gravel (up to 1 inch), firm to stiff; no odor, no sheen
moist	4.0			SP-SM		10	(SP-SM) 10 - 12.5' (sonic bag): Medium brown, very fine to medium SAND with ~7% coarse silt and 10% gravel (up to 1 inch), medium dense; no odor, no sheen
						11	

Soil Boring: SRI5-4

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/7/2020
Date Completed: 11/8/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 25 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist	10.1			SP-SM		12	(SP-SM) 10 - 12.5' (sonic bag): Medium brown, very fine to medium SAND with ~7% coarse silt and 10% gravel (up to 1 inch), medium dense; no odor, no sheen *(continued)*
						13	(SP-SM) 12.5 - 14' (sonic bag): Medium brown, very fine to medium SAND with ~10% silt and ~5% gravel (up to 0.5 inches), dense; no odor, no sheen
	1.6		SRI5-4-14	SM		14	(SM) 14 - 15' (sonic bag): Medium dark brown, very fine to coarse SAND with ~15% silt and 20% gravel (up to 1.5 inches), dense; no odor, no sheen
moist	522		SRI5-4-15			15	(ML) 15 - 18' (sonic core & bag): Medium gray SILT, low to no plasticity, firm to stiff; moderate HC odor, slight sheen (weaker with depth)
moist	1655					16	
				ML			
moist	558		SRI5-4-17			17	
damp						18	(ML/CL) 18 - 20' (sonic bag): Medium gray SILT with ~20% light gray clay as laminated layers in silt, clay layers with medium plasticity, firm; very weak HC odor, no sheen
damp	12.8			ML/CL		19	
						20	(ML) 20 - 21' (sonic bag): Medium gray SILT with rare gravel (up to 0.7 inches), firm; moderate to weak HC odor, no sheen
moist	498			ML		21	(ML?) 21 - 23' (disturbed material): Likely all soft slough of medium gray silt and sand
				ML?		22	

Soil Boring: SRI5-4

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/7/2020
Date Completed: 11/8/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 25 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
wet	(240)			ML?		23	(ML?) 21 - 23' (disturbed material): Likely all soft slough of silt and sand *(continued)*
moist to damp	13.6		SRI5-4-24.5	ML/CL		24	(ML/CL) 23 - 25' (sonic bag): Medium gray SILT with ~20% clay, firm; no odor, no sheen
						25	Bottom of borehole at 25.0 feet.
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	

Soil Boring: SRI5-5

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/7/2020
Date Completed: 11/8/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 30 ft

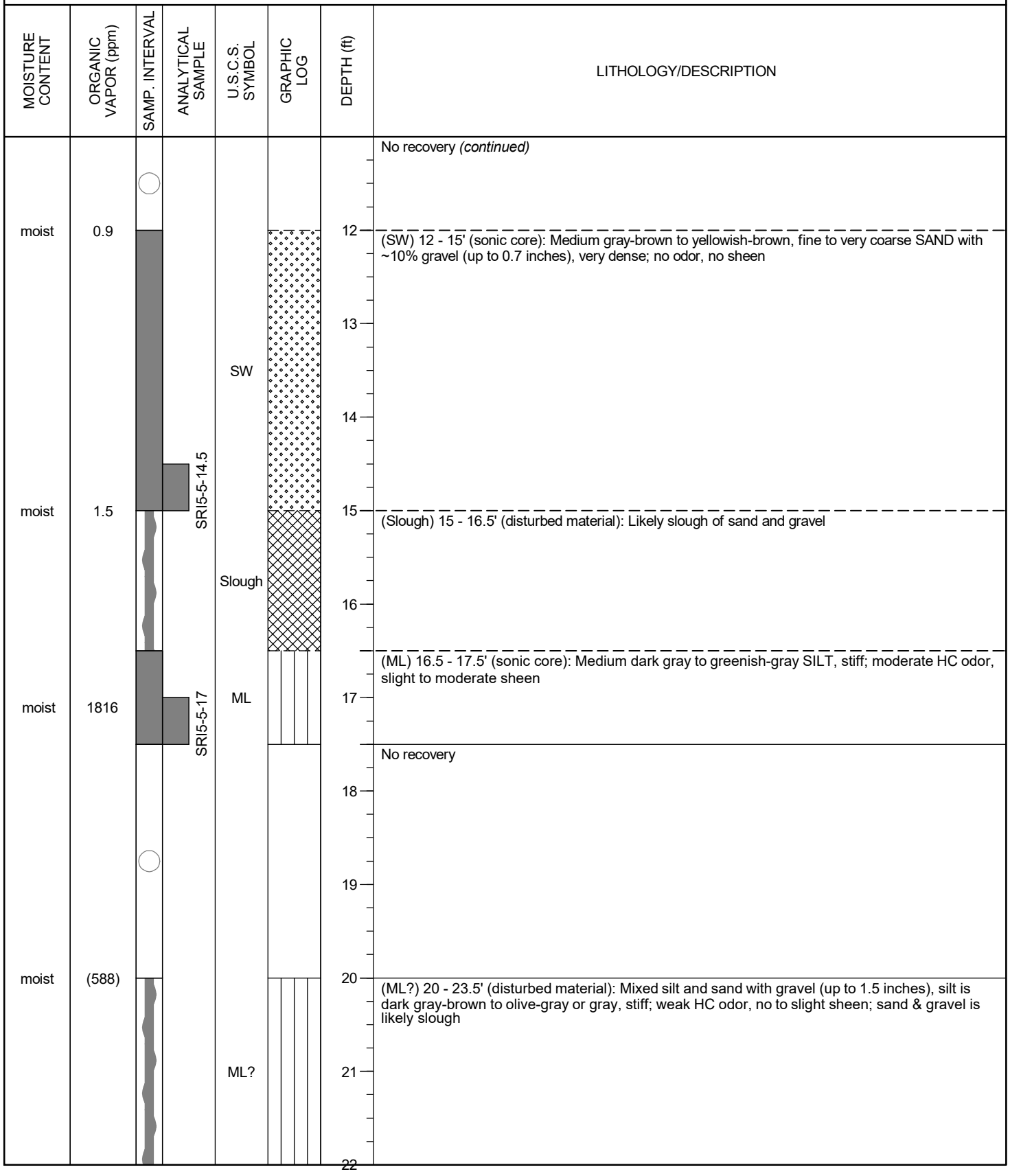
MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
							Asphalt, 6 inches
				ML		1	(ML) Medium dark brown SILT with some gravel/rock up to 5 inches
						2	
moist	2.5						(ML) 2.5 - 3': Medium dark brown SILT with minor rock (up to 2 inches) and minor plant (roots) debris, firm; no odor, no sheen
						3	
moist	2.6			ML		4	(ML) 4 - 4.5': Medium light brown SILT, firm; no odor, no sheen
						5	
moist	2.0					6	(ML) 6 - 6.5': Medium light brown, very fine sandy, very coarse SILT with trace gravel (up to 0.3 inches), firm; no odor, no sheen
moist	2.2					7	(ML) 7 - 7.5' (very soft interval, that opened up in borehole with no airknife activity, fill): Medium light brown, very fine sandy SILT with ~10% coarser sand and ~5% gravel (up to 1 inch), soft; no odor, no sheen
moist	1.4		SRI5-5-8	SM		8	(SM) 8 - 8.5': Medium light brown silty very fine SAND, with 10-15% coarser sand and fine gravel up to 0.5 inch, loose/soft, no odor, no sheen
moist	1.8						
				ML		9	(ML) 8.5 - 9.5' (sonic core): Medium light brown, very fine, sandy SILT with trace coarser sand and ~5% gravel (up to 0.5 inches), stiff; no odor, no sheen
				SW			(SW) 9.5 - 10' (sonic core): Gray-brown to orange (oxidized), fine to very coarse SAND with ~25% gravel (up to 1.5 inches), very dense; no odor, no sheen
moist	2.2					10	No recovery
						11	

Soil Boring: SRI5-5

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/7/2020
Date Completed: 11/8/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 30 ft



Soil Boring: SRI5-5

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/7/2020
Date Completed: 11/8/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 30 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
				ML?		23	(ML?) 20 - 23.5' (disturbed material): Mixed silt and sand with gravel (up to 1.5 inches), silt is dark gray-brown to olive-gray or gray, stiff; weak HC odor, no to slight sheen *(continued)*
moist	(1915)						
						24	(ML) 23.5 - 25' (sonic core): Medium gray or olive gray SILT, stiff to firm; moderate HC odor, slight to moderate sheen
moist	1678		SRI5-5-24	ML			
moist	1626					25	(ML?) 25 - 27' (disturbed material): Mixed SAND and GRAVEL with some silt; moderate to weak HC odor, moderate sheen, sand & gravel is likely slough
						26	
	(1781)			ML?			
damp	1790					27	(ML/CL) 27 - 30' (sonic core): Medium brownish-gray SILT with ~20% clay, firm to stiff; moderate HC odor, moderate to heavy sheen
						28	
				ML/CL			
damp	1724		SRI5-5-29.5			29	
						30	Bottom of borehole at 30.0 feet.
						31	
						32	
						33	

Soil Boring: SRI5-6

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/7/2020
Date Completed: 11/8/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 25 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						0	Asphalt, 6 inches
moist	3.8					2	(ML) 2 - 2.5': Medium dark brown SILT with trace sand and gravel (up to 0.5 inches) and trace plant (root) debris, firm; no odor, no sheen
damp	2.6			ML		4	(ML) 4 - 4.5': Medium light gray-brown SILT, firm; no odor, no sheen
						5	Some large rock/gravel (up to 4 inches) at 5.5 feet
moist	2.2					6	(ML) 6 - 6.5': Medium brown, very coarse SILT with ~20% very fine sand, trace coarser sand and trace fine gravel (up to 0.4 inches), firm; no odor, no sheen
moist	1.6		SRI5-6-8	SM/GM		8	(SM/GM) 8 - 8.25': Medium brown, silty, very fine SAND with 10% coarser sand and gravel (up to 0.5 inches), medium dense to loose; no odor, no sheen Large rocks at 8.25 feet
moist	3.2			ML		9	(ML) 8.75 - 10' (sonic core): Medium dark brown SILT with ~15% very fine sand and some coarser sand and gravel (up to 1 inch), firm to stiff; no odor, no sheen
						10	No recovery
						11	

Soil Boring: SRI5-6

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/7/2020
Date Completed: 11/8/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 25 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						12	No recovery *(continued)*
moist	3.3			ML		13	(ML) 12 - 15' (sonic core): Medium gray-brown SILT with ~20% very fine to coarse sand and ~20% gravel (up to 3.5 inches), firm; no odor, no sheen
moist	1.8					14	
				ML?		15	(ML?) 15 - 16' (disturbed material): Medium dark brown SILT with minor clay, with ~20% very fine to coarse sand and gravel (up to 1.5 inches); no odor, no sheen
moist	1632		SRI5-6-16			16	(ML) 16 - 18': Medium gray to olive-gray (greenish near top) SILT, firm to stiff; moderate to strong HC odor, heavy sheen
moist	1515			ML		17	
moist	1568					18	No recovery
						19	
				ML?		20	(ML?) 20 - 21' (disturbed material): Likely slough of brown silt and sand/gravel
moist to damp	1633					21	21 - 25' (sonic core): Medium dark gray SILT with minor clay zones, stiff to firm; moderate to weak HC odor, moderate to heavy sheen (both decreasing with depth)
						22	

Soil Boring: SRI5-6

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/7/2020
Date Completed: 11/8/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 25 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist to damp	1716		SRI5-6-23.5			23	21 - 25' (sonic core): Medium dark gray SILT with minor clay zones, stiff to firm; moderate to weak HC odor, moderate to heavy sheen *(continued)*
moist to damp	510					24	
						25	Bottom of borehole at 25.0 feet.
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	

Soil Boring: SRI5-7

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/10/2020
Date Completed: 11/11/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 25 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						0	Asphalt, 4 inches
moist	2.1			ML		2	(ML) 2 - 2.5': Dark brown SILT, soft; no odor, no sheen
damp	5.3					4	(ML) 4 - 4.5': Light orange-brown SILT with 5% gravel (up to 0.7 inches), firm; no odor, no sheen
moist	4.9			SM		6	(SM) 5.5 - 6': Medium yellow-brown, silty, very fine to coarse SAND with ~20% gravel (up to 1.5 inches), medium dense; no odor, no sheen
						7	Large rock/cobble at 7.25 feet. Refusal with air knife
damp	0.5					7.25	(ML) 7.25 - 8.5' (sonic core): Medium dark brown SILT with ~20% gravel (up to 2.5 inches), firm; no odor, no sheen
damp	0.8					8	
damp	0.8			ML		8.5	(ML) 8.5 - 11': SAA, but medium dark orange-brown to medium dark brown, firm; no odor, no sheen
damp	1.2					11	

Soil Boring: SRI5-7

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/10/2020
Date Completed: 11/11/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 25 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
				Rock		11	(Rock) 11 - 12' (sonic bag): solid rock(s)
moist	1.1			GW		12	(GW) 12 - 14' (sonic bag): Medium gray rock/gravel (up to 4 inches) with some sand and pulverized rock (silt)
moist	3.3			SW/GW		13	
moist to damp	0.7		SRI5-7-15			14	(SW/GW) 14 - 15': Medium dark yellow-brown, fine to very coarse SAND with some gravel (up to 1 inch) increasing downward; no odor, no sheen
moist to damp	1.5					15	(ML) 15 - 20' (sonic bag): Brown-gray, laminated SILT with ~10% clay layers, some silt is coarse, firm; no odor, no sheen
moist to damp	1.2			ML		16	
moist to damp	1.5					17	
						18	
						19	
				Slough		20	(Slough) 20 - 24.5' (disturbed material): Mostly slough, dark brown SILT with gravel (up to 5 inches) and some sand
						21	
						22	

Soil Boring: SRI5-7

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/10/2020
Date Completed: 11/11/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 25 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist	(1.7)			Slough		23	(Slough) 20 - 24.5' (disturbed material): Mostly slough, dark brown SILT with gravel (up to 5 inches) and some sand *(continued)*
						24	
moist	0.5		SRI5-7-24.5	ML		25	(ML) 24.5 - 25' (sonic bag): Medium dark gray SILT, firm; no odor, no sheen
							Bottom of borehole at 25.0 feet.
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	

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Soil Boring: SRI5-8

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/10/2020
Date Completed: 11/11/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 30 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						0	Asphalt, 4 inches
moist	7.7			ML		2	(ML) 2 - 2.5': Dark brown SILT, firm; no odor, no sheen
damp	12.6					4	(ML) 4 - 4.5': Light orange-brown SILT, firm; no odor, no sheen
moist	4.8			SM		6	(SM) 5.75 - 6': Medium dark brown, silty, gravelly, very fine to coarse SAND, gravel is up to 1.5 inches; no odor, no sheen
						7	(SW) 6.75 - 7': Medium dark brown GRAVEL (up to 2 inches) with some fine to very coarse sand, dense; no odor, no sheen Refusal at 7 feet with hand auger
moist	5.0						(SW) 7 - 10' (sonic bag): Medium brown, fine to very coarse SAND with ~15% gravel (up to 3 inches), dense; no odor, no sheen
moist	8.7			SW		8	
						9	
moist	3.2					10	(SW) 10 - 14.5' (sonic bag): Medium brown, fine to very coarse SAND with ~20% gravel (up to 3 inches) and trace silt (<3%), dense; no odor, no sheen
						11	

Soil Boring: SRI5-8

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/10/2020
Date Completed: 11/11/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 30 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist	35			SW		12	(SW) 10 - 14.5' (sonic bag): Medium brown, fine to very coarse SAND with ~20% gravel (up to 3 inches) and trace silt (<3%), dense; no odor, no sheen (continued)
moist	43					13	
moist	26					14	
moist	79					15	
moist	210		SRI5-8-14.5			16	(ML/CL) 14.5 - 15' (sonic bag): Medium green-gray (oxidized to brown-yellow in top inch) laminated SILT with some clay layers, firm; moderate HC odor, moderate sheen
moist	312					17	(ML/CL) 15 - 17.5' (sonic bag): Medium greenish-gray SILT with clay (increasing with depth), some silt is coarse, firm; weak to moderate HC odor, moderate to slight sheen (decreasing with depth)
moist	218					18	
moist	219					19	
moist	52			ML/CL		20	(ML/CL) 17.5 - 20' (sonic bag): SAA; Medium gray SILT with clay, weak HC odor, slight to no sheen
moist	86					21	
moist	252		SRI5-8-19.5			22	
moist to damp	250						(ML/CL) 20 - 25' (sonic bag, slightly disturbed material): Medium gray-brown SILT with clay, firm; weak HC odor (decreasing with depth), no sheen

Soil Boring: SRI5-8

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/10/2020
Date Completed: 11/11/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 30 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist to damp	12.0					23	(ML/CL) 20 - 25' (sonic bag, slightly disturbed material): Medium gray-brown SILT with clay, firm; weak HC odor (decreasing with depth), no sheen *(continued)*
moist to damp	17.7					24	
moist to damp	16.7			ML/CL		25	(ML/CL) 25 - 30' (sonic bag, slightly disturbed material): Medium brown-gray SILT with clay, firm; weak to no odor, no sheen
moist to damp	1.7					26	
moist to damp	3.7		SRI5-8-29.5			27	
						28	
						29	
						30	Bottom of borehole at 30.0 feet.
						31	
						32	
						33	

Soil Boring: SRI5-9

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/10/2020
Date Completed: 11/11/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 30 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						0	Asphalt, 3 inches
							(ML)
moist	4.4					2	(ML) 2 - 2.5': Dark brown SILT, soft to firm; no odor, no sheen
				ML		3	
damp	5.2					4	(ML) 4 - 4.5': Light yellow-brown SILT, firm; no odor, no sheen
						5	
							(SM)
	3.2			SM		6	(SM) 6 - 6.5': Medium brown, very fine to coarse SAND with ~15% coarse silt and 20% gravel (up to 2.5 inches), dense; no gravel, no sheen
							(SW)
moist				SW		7	(SW) 7 - 7.5': Medium brown, very fine to coarse SAND with ~20% gravel (up to 2 inches), dense; no odor, no sheen
moist							(SP) 7.5 - 7.75': Medium brown, very fine to medium SAND with ~10% gravel (up to 1 inch), dense; no odor, no sheen
	5.3		SRI5-9-8	SP		8	(SP) 8-8.25': SAA
moist	1.7						
				SW/SP		9	(SW/SP) 8.5 - 10' (sonic bag): Medium brown SAND (interbedded very fine to medium and very fine to very coarse) with gravel (up to 2.5 inches) and trace silt, dense, no HC odor, no sheen
moist	0.2					10	(SW) 10 - 15' (sonic bag): Medium brown, very fine to very coarse SAND with ~20% gravel (up to 4 inches), dense; no odor, no sheen
				SW			
						11	

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Soil Boring: SRI5-9

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/10/2020
Date Completed: 11/11/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 30 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist	1.8						(SW) 10 - 15' (sonic bag): Medium brown, very fine to very coarse SAND with ~20% gravel (up to 4 inches), dense; no odor, no sheen *(continued)*
moist	0.9					12	
moist	1.3			SW		13	
						14	
							14.5 - 15': Rock/gravel
moist	2.4		SRI5-9-15			15	(ML/CL) 15 - 17' (sonic bag): Greenish-gray SILT with clay, firm; strong HC odor, heavy sheen
moist to damp	122			ML/CL		16	
moist to damp	9.2					17	(ML/CL) 17 - 18' (sonic bag): Grayish-brown SILT with clay, firm; moderate HC odor, moderate sheen
moist to damp	9.4					18	(ML) 18 - 20' (sonic bag): Greenish-gray SILT, stiff; strong HC odor, heavy sheen
moist to damp	310		SRI5-9-19	ML		19	
moist to damp	199					20	(ML?) 20 - 26.5' (disturbed material): Mixed silt and sand with gravel (up to 4 inches); silt has HC odor, no sheen; sand & gravel is likely slough
				ML?		21	
						22	

Soil Boring: SRI5-9

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/10/2020
Date Completed: 11/11/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 30 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
				ML?		23	(ML?) 20 - 26.5' (disturbed material): Mixed silt and sand with gravel (up to 4 inches); silt has HC odor, no sheen *(continued)*
						24	
						25	
						26	
moist	2.5		SRI5-9-27	ML/CL		27	(ML/CL) 26.5 - 27.5' (sonic bag): Gray-brown SILT with clay, mostly firm; very weak HC odor, no sheen
						28	No recovery
						29	
						30	Bottom of borehole at 30.0 feet.
						31	
						32	
						33	

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Soil Boring: SRI5-10

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/11/2020
Date Completed: 11/12/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 35 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						0	Asphalt, 4 inches
moist	0.6			ML		2	(ML) 2 - 2.5': Dark brown SILT, soft to firm; no odor, no sheen
moist	1.0			SM		5	(SM) 5 - 5.5': Dark brown, silty, very fine to coarse SAND with 10% gravel (up to 2.5 inches), medium dense; no odor, no sheen
						5.5	(SW) 5.5 - 7.5' (sonic bag): Gray-brown, very fine to very coarse SAND with~25% gravel (up to 3 inches), dense; no odor, no sheen
						6	Cobbles encountered at 6 feet
moist	3.4					7	
						7.5	(SW) 7.5 - 10' (sonic bag): SAA with slightly finer sand with 20% gravel (up to 4 inches); no odor, no sheen
moist	5.8		SRI5-10-8	SW		8	
moist	7.3					10	(SW) 10 - 12.5' (sonic bag): SAA sand with ~25% gravel (up to 5 inches); no odor, no sheen

Soil Boring: SRI5-10

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/11/2020
Date Completed: 11/12/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 35 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist	6.0			SW		12	(SW) 10 - 12.5' (sonic bag): SAA sand with ~25% gravel (up to 5 inches); no odor, no sheen *(continued)*
moist	143					13	(SW) 12.5 - 14.5' (sonic bag): SAA, sand with some gravel (up to 2 inches); no odor, no sheen
moist	104					14	
moist to damp	>15K		SRI5-10-14.5			15	(ML/CL) 14.5 - 15' (sonic bag): Medium greenish-gray (oxidized to yellow-brown in top inch) SILT with some clay (lighter greenish-gray), laminated, firm; strong HC odor, heavy sheen (ML/CL) 15 - 16.5' (sonic bag): Medium greenish-gray SILT with clay layers, firm; strong HC odor, heavy sheen
moist to damp	>15K					16	
moist to damp	>15K						(ML/CL) 16.5 - 18.5' (sonic bag): Medium gray SILT with clay layers, firm; moderate HC odor, moderate sheen
moist to damp	1660					17	
moist to damp	2980		SRI5-10-18	ML/CL		18	
moist to damp	754					19	(ML/CL) 18.5 - 20' (sonic bag): Medium gray-brown SILT with clay layers, firm; weak HC odor, no to slight sheen
moist to damp	513					20	(ML/CL) 20 - 21.5' (sonic bag): Greenish-gray SILT with some clay, firm; strong HC odor, heavy to moderate sheen
moist to damp	>15K		SRI5-10-21			21	More strongly greenish, coarse silt in sampled zone at 21-21.5'
							(ML/CL) 21.5 - 25' (sonic bag): Gray brown SILT with some clay, firm; weak or no HC odor, slight to no sheen
						22	

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Soil Boring: SRI5-10

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/11/2020
Date Completed: 11/12/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 35 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist to damp	>15K						(ML/CL) 21.5 - 25' (sonic bag): Gray brown SILT with some clay, firm; weak or no HC odor, slight to no sheen *(continued)*
moist to damp	780					23	
moist to damp	398					24	
moist to damp	390					25	(ML/CL) 25 - 30' (sonic bag): Medium light brown SILT with some clay layers, medium plasticity (rolls up to 2 inches), firm; no odor, no sheen
moist to damp	38.4					26	
moist to damp	42.5			ML/CL		27	
moist to damp	38.0					28	
moist to damp	37.9					29	
moist to damp	19.1 21.5					30	(ML/CL) 30 - 35' (sonic bag): Medium light brown SILT with ~35-40% clay layers, firm; no odor, no sheen
moist to damp	38.8					31	
						32	
						33	

Soil Boring: SRI5-10

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/11/2020
Date Completed: 11/12/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 35 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist to damp	29.5			ML/CL		34	(ML/CL) 30 - 35' (sonic bag): Medium light brown SILT with ~35-40% clay layers, firm; no odor, no sheen *(continued)*
moist to damp	33.6		SRI5-10-34.5			35	Bottom of borehole at 35.0 feet.
						36	
						37	
						38	
						39	
						40	
						41	
						42	
						43	
						44	

Soil Boring: SRI5-11

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/12/2020
Date Completed: 11/12/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 30 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						0	Asphalt, 4 inches
moist	7.6			ML		1	(ML) 2 - 2.5': Dark brown SILT, soft to firm; no odor, no sheen
						2	
moist	5.1					3	(SW) 3.75 - 4.25': Yellow-brown, medium to very coarse SAND with ~25% gravel (up to 3 inches); no odor, no sheen
						4	
moist	4.2					5	(SW) 5 - 5.5': Yellow-brown, very fine to very coarse SAND with ~20% gravel (up to 2 inches); no odor, no sheen
	23.5					6	
						7	Airknife/hand auger refusal on rock at 7.5 feet
				SW			(SW) 7.5 - 12.5' (sonic bag): Yellow-brown, very fine to very coarse SAND with 20% gravel (up to 6 inches), mixed with zones of pulverized rock, dense; no odor, no sheen
moist	23.5		SRI5-11-8			8	
						9	
moist	25.6					10	
						11	

Soil Boring: SRI5-11

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/12/2020
Date Completed: 11/12/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 30 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist	22.5					12	
moist	55.8			SW			(SW) 12.5 - 13.5' (sonic bag): Yellow-brown, very fine to very coarse SAND with ~25% gravel (up to 4 inches); no odor, no sheen
moist	970					13	
moist	>15K		SRI5-11-13.5			14	(ML/CL) 13.5 - 14' (sonic bag): Medium greenish-gray SILT with some clay, soft; strong HC odor, slight sheen
				ML/CL			
moist	>15K		SRI5-11-15	ML		15	(ML) 15 - 15.75' (sonic bag): Greenish-gray coarse SILT, firm; strong HC odor, slight to moderate sheen
						16	(ML?) No recovery, some slough
				ML?		17	
moist to wet	54.8					18	(ML/CL) 17.5 - 25' (sonic bag): Medium gray-brown SILT with some clay, firm; no odor, no sheen (very slight sheen at 17.5')
moist to wet	42.0					19	
moist to wet	43.2			ML/CL		20	
moist to wet	49.9					21	
						22	

Soil Boring: SRI5-11

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/12/2020
Date Completed: 11/12/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 30 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist to wet	72.8			ML/CL		23	(ML/CL) 17.5 - 25' (sonic bag): Medium gray-brown SILT with some clay, firm; no odor, no sheen *(continued)*
moist to wet	50.5					24	
damp to wet	81.2			ML		25	(ML) 25 - 26' (sonic bag): Gray-brown SILT with some brown very fine SAND, firm; no odor, no sheen
damp to wet	40.0					26	(ML/CL) 26 - 30' (sonic bag): Gray-brown SILT with some clay, medium plasticity (rolls up to 4 inches), firm; no odor, no sheen
damp to wet	52.2			ML/CL		27	
						28	
						29	
damp to wet	39.8		SRI5-11-29.5			30	
							Bottom of borehole at 30.0 feet.
						31	
						32	
						33	

Soil Vapor Well: SVP-1

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA
Logged By: TD

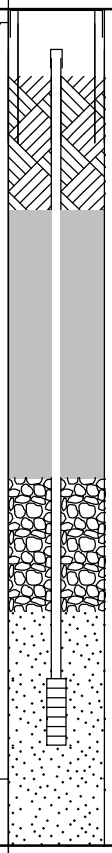
Date Started: 11/8/2020
Date Completed: 11/8/2020
Driller: AEC Drilling
Drill Method: Air Knife

Total Boring Depth: 6.25 ft
Hole Diameter: 3.25 in
Well Depth: 5.5 ft
Well Diameter: 0.25 in

Well Screen: 0.5 in
Filter Pack: Sand
Well Casing: Teflon

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
							0	Asphalt. 1 inch
moist	0.3				ML		2	(ML) 2 - 2.5': Medium dark brown SILT with ~12% rock/gravel (up to 0.7 inches), firm; no odor, no sheen
moist to damp	0.6				ML		4	(ML) 4 - 4.5': Light brown SILT, no sand, no gravel, firm; no odor, no sheen
moist to damp	0.2		SVP-1-5		ML		5	(ML) 5 - 5.5': SAA; no odor, no sheen
moist	0.3				SM		6	(SM) 6 - 6.25': Silty, very fine SAND with ~10-15% coarser sand and gravel, loose; no odor, no sheen
								Bottom of borehole at 6.3 feet.

WELL DIAGRAM



- Well Box
- Cement Seal
- 0.25 inch teflon tubing
- Pre-hydrated granular bentonite slurry
- Dry granular bentonite
- Sand
- 0.75 inch diameter stainless steel screen with 0.0057 inch pore diameter

Soil Vapor Well: SVP-2

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA
Logged By: TD

Date Started: 11/9/2020
Date Completed: 11/9/2020
Driller: AEC Drilling
Drill Method: Air Knife

Total Boring Depth: 10.3 ft
Hole Diameter: 3.25 in
Well Depth: 5.5 ft
Well Diameter: 0.25 in

Well Screen: 0.5 in
Filter Pack: Sand
Well Casing: Teflon

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION	WELL DIAGRAM
							0	Concrete, 5 inches	Well Box
moist	1.2				SM		2	(SM) 2 - 2.5': Medium yellow-brown, very fine to fine SAND with ~15% silt and ~8% coarser sand and gravel (up to 0.4 inches), loose; no odor, no sheen	Cement Seal 0.25 inch teflon tubing
dry to moist	0.7				SM		4	(SM) 4 - 4.5': Light brown, very fine to fine SAND with ~20% coarse silt and ~20% coarser sand and fine gravel (up to 0.4 inches), loose; no odor, no sheen	Pre-hydrated granular bentonite slurry
moist	1.7				SW-SM		6	(SW-SM) 6.75 - 7.25': Medium yellow-brown, very fine to very coarse SAND with ~20% gravel (up to 1 inch) and ~7% silt, dense; no odor, no sheen	
moist	1.3		SVP-2-9		SW		8	(SW) 9 - 9.5': Medium dark orange-brown, fine to very coarse SAND with ~10% gravel (up to 1 inch, one rock a few inches), dense; no odor, no sheen	Dry granulated bentonite Sand 0.75 inch diameter stainless steel screen with 0.0057 inch pore diameter
							10	Bottom of borehole at 10.3 feet.	
							11		

Soil Boring: UHP -1

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/3/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 20.4 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						0	Asphalt. 3 inches
moist	0.2			ML		2	(ML) 2 - 2.5': Medium yellow-brown SILT with ~15% gravel (up to 1 inch), soft; no odor, no sheen
moist	0.4			ML		4	cobble (~8 inches) at 3.8 feet (ML) 4 - 4.5': Medium yellow-brown SILT with ~15% gravel and ~15% very fine to medium sand, soft; no odor, no sheen
moist	0.3			ML		6	(ML) 6 - 6.5': Light brown-gray SILT, no gravel, no sand, firm; no odor, no sheen
moist	0.4		UHP-1-8	ML		8	(ML) 8 - 8.5': SAA
moist	0.7			ML		9	(ML) 8 - 10' (sonic core): Medium brown, laminated SILT with ~10% clay (lighter gray) layers, firm; no odor, no sheen
moist	0.6			ML		10	(ML) 10 - 12.5': SAA; no odor, no sheen

Soil Boring: UHP -1

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/3/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 20.4 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
	0.6					12	
	1.0		UHP-1-12				
						13	4-inch casing set to 12.5 feet, SEE UVOST LOG FOR REMAINDER OF BORING Sonic drilling to 12.5 feet; UVOST-HP direct push boring extended to 20.4 feet
						14	
						15	
						16	
						17	
						18	
						19	
						20	
						21	Bottom of borehole at 20.4 feet.
						22	

Soil Boring: UHP-2

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/3/2020
Date Completed: 12/18/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 42.7 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						0	Asphalt, 3 inches
moist	0.0			ML		2	(ML) 2 - 2.5': Medium dark brown, mostly coarse SILT with ~5% very fine sand, firm; no odor, no sheen
moist	0.9			ML		4	Begin to become rocky at 3.8 feet (ML) 4 - 4.25': Medium olive-gray, coare SILT with ~7% very fine to fine sand and 20% rocks (up to 3 inches), firm; no odor, no sheen At 4 feet hit large rock covering entire area of hole. Refusal. Moved 5 feet south and retry. Continue rocky/cobbles/sand.
damp	0.8			SW		6	(SW) 6 - 6.25': Medium light brown, gravelly, fine to very coarse SAND with trace silt, gravel up to 3 inches, loose; no odor, no sheen
						7	Large cobbles continue to ~7 feet
dry to moist	0.5		UHP-2-9	SW		9	(SW) 9 - 9.5': SAA, gravel up to 1.5 inches; no odor, no sheen
	0.7			SW		10	(SW) 8 - 10' (sonic core): Medium brown, fine to very coarse SAND with ~15% gravel (up to 2 inches), medium dense; no odor, no sheen
						11	

Soil Boring: UHP-2

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/3/2020
Date Completed: 12/18/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 42.7 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist	0.4			SP			(SP) 11 - 11.75': Very fine to fine SAND with a little medium sand, loose; no odor, no sheen
moist	0.3		UHP-2-12	ML		12	(ML) 11.75 - 12.5': Medium gray SILT with some light gray clay layers, firm; no odor, no sheen
							4-inch casing set to 12.5 feet, SEE UVOST LOG FOR REMAINDER OF BORING Sonic drilling to 12.5 feet; UVOST-HP direct push boring extended to 42.7 feet
						13	
						14	
						15	
						16	
						17	
						18	
						19	
						20	
						21	
						22	

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Soil Boring: UHP-2

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/3/2020
Date Completed: 12/18/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 42.7 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						23	
						24	
						25	
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	

Soil Boring: UHP-2

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/3/2020
Date Completed: 12/18/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 42.7 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						34	
						35	
						36	
						37	
						38	
						39	
						40	
						41	
						42	
						43	Bottom of borehole at 42.7 feet.
						44	

Soil Boring: UHP-3

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/4/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 58.8 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	DEPTH (ft)	LITHOLOGY/DESCRIPTION
					0	Asphalt, 2 inches
				ML	1	(ML) Dark brown SILT with minor rock
damp	0.3			ML	2	(ML) 2 - 2.5': Medium dark brown SILT with ~15% rock/gravel (up to 1 inch), firm; no odor, no sheen Becoming more rocky at 2.5 feet
	1.0				3	(GM) 3.5 - 4.25': Medium brown, sandy GRAVEL (up to 4 inches) with 12-15% silt, sand is very fine to coarse, dense; no odor, no sheen
moist	0.2			GM	4	
					5	
moist	0.5			SW	6	(SW) 5.75 - 6.25': Medium olive-gray, fine to very coarse SAND with ~20% gravel (up to 2 inches), dense; no odor, no sheen Lots of gravel/cobble (up to 6-7 inches) below 6 feet
damp	1.4		UHP-3-7	GW-GM	7	(GW-GM) 7 - 7.25': Medium dark yellow-brown, sandy GRAVEL with ~7% silt, sand is very fine to very coarse, gravel is up to 12 inches, very dense; no odor, no sheen Refusal at 7.25 feet
	0.8			ML/GM	8	(ML/GM) 7 - 9' (sonic core): Dark brown SILT with ~25% gravel (up to 4 inches), firm; no odor, no sheen Possible slough from above
moist	1.3				9	(ML/GM) 9 - 10': Light brown SILT with ~30% gravel (up to 2.5 inches) with pulverized rock, soft, loose; no odor, no sheen
dry to moist	2.1			SW	10	(SW) 10 - 12.25': Medium gray-brown, very fine to very coarse SAND with ~20-25% gravel (up to 5 inches) and ~3-5% coarse silt, dense; no odor, no sheen
					11	

Soil Boring: UHP-3

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/4/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 58.8 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist	1.7			SW		12	(SW) 10 - 12.25': Medium gray-brown, very fine to very coarse SAND with ~20-25% gravel (up to 5 inches) and ~3-5% coarse silt, dense; no odor, no sheen *(continued)*
moist to damp	1.7		UHP-3-12.5			13	(ML/CL) 12.25 - 17.5': Medium gray SILT, laminated with interbedded layers of clay (light brown), clay is moderately plastic, firm; no odor, no sheen
moist to damp	2.0			ML/CL		14	
	2.0					15	
moist to damp	1.8		UHP-3-17			16	
						17	
						18	4-inch casing set to 17.5 feet, SEE UVOST LOG FOR REMAINDER OF BORING Sonic drilling to 17.5 feet; UVOST-HP direct push boring extended to 58.8 feet
						19	
						20	
						21	
						22	

Soil Boring: UHP-3

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/4/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 58.8 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						23	
						24	
						25	
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	

Soil Boring: UHP-3

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/4/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 58.8 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						34	
						35	
						36	
						37	
						38	
						39	
						40	
						41	
						42	
						43	
						44	

Soil Boring: UHP-3

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/4/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 58.8 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						45	
						46	
						47	
						48	
						49	
						50	
						51	
						52	
						53	
						54	
						55	

Soil Boring: UHP-3

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/4/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 58.8 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						56	
						57	
						58	
						59	Bottom of borehole at 58.8 feet.
						60	
						61	
						62	
						63	
						64	
						65	
						66	

Soil Boring: UHP-4

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/4/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60.1 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						0	Asphalt, 4 inches
				GW		1	(GW) 0.3 - 1.75': Large cobbles (up to 10 inches) with fine to very coarse sand
moist	3.0			ML		2	(ML) 2 - 2.5': Dark brown SILT, firm; no odor, no sheen
						3	
moist	3.3			ML		4	(ML) 4 - 4.5': Medium dark brown SILT, firm; no odor, no sheen
						5	
moist	2.5			ML		6	(ML) 6 - 6.5': Medium gray-brown SILT, firm, no plasticity; no odor, no sheen
						7	
moist	3.1		UHP-4-8	ML		8	(ML) 8 - 8.5': Medium olive-gray, coarse SILT with ~5% very fine sand and ~10% gravel (up to 1 inch), firm; no odor, no sheen
	0.6					9	(SW) 8 - 9' (sonic core): Medium brown SILT with ~10% very fine sand and ~15% gravel (up to 2.5 inches), firm; no odor, no sheen
				SW			
moist	0.7					10	(SW) 9 - 10': Light brown, very fine to very coarse SAND with ~4% silt and ~15% gravel (up to 3 inches), dense; no odor, no sheen
				SM			(SM) 10 - 11': (Possible slough) Light gray-brown, silty, very fine SAND with ~15% gravel (up to 1 inch), pulverized rock, loose; no odor, no sheen
						11	

Soil Boring: UHP-4

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/4/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60.1 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist	1.3			SW		12	(SW) 11 - 17.25': Medium light brown to orange-brown, fine to very coarse SAND with ~2% silt and ~20% gravel (up to 4 inches), dense; no odor, no sheen
						13	
						14	
moist	0.5		UHP-4-14.5			15	
						16	
moist	1.3						
			UHP-4-17.5			17	
moist	1.0			ML			(ML) 17.25 -17.5': Gray to greenish-gray SILT, firm, slight plasticity; no odor, no sheen
							4-inch casing set to 17.5 feet, SEE UVOST LOG FOR REMAINDER OF BORING Sonic drilling to 17.5 feet; UVOST-HP direct push boring extended to 60.1 feet
						18	
						19	
						20	
						21	
						22	

Soil Boring: UHP-4

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/4/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60.1 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						23	
						24	
						25	
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	

Soil Boring: UHP-4

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/4/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60.1 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						34	
						35	
						36	
						37	
						38	
						39	
						40	
						41	
						42	
						43	
						44	

Soil Boring: UHP-4

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/4/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60.1 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						45	
						46	
						47	
						48	
						49	
						50	
						51	
						52	
						53	
						54	
						55	

Soil Boring: UHP-4

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/4/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60.1 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						56	
						57	
						58	
						59	
						60	
							Bottom of borehole at 60.1 feet.
						61	
						62	
						63	
						64	
						65	
						66	

Soil Boring: UHP-5

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/8/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						0	Asphalt, 3 inches
moist	3.0			ML		2	(ML) 2 - 2.5': Dark brown SILT, soft to firm; no odor, no sheen
moist to damp	2.6			ML		4	(ML) 4 - 4.5': Medium brown SILT, firm; no odor, no sheen
						5	Cobbles start at 5.5 feet
moist	2.7			ML		6	(ML) 6 - 6.25': Dark brown SILT with ~5% very fine to medium sand, some gravel (up to a few inches), firm; no odor, no sheen
moist	1.7			SW		7	(SW) 7 - 7.5': Medium brown, gravelly, fine to very coarse SAND, with trace silt and ~25% gravel (up to a few inches, max 12 inches), dense; no odor, no sheen
			UHP-5-7.5				(SW) 7.5 - 8': SAA; no odor, no sheen
moist	1.1					8	No recovery
				GM		9	(GM) 9.25 - 10': dry, pulverized rock (up to 3.5 inches), gray silt matrix between gravel, with some very fine to medium sand (possible slough); no odor, no sheen
moist	0.1			SW		10	(SW) 10 - 14.5': Medium yellow-brown, gravelly, fine to very coarse SAND, gravel up to 4 inches, trace silt with large rocks/gravel; no odor, no sheen
						11	

Soil Boring: UHP-5

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/8/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist	0.1			SW		12	(SW) 10 - 14.5': Medium yellow-brown, gravelly, fine to very coarse SAND, gravel up to 4 inches, trace silt with large rocks/gravel; no odor, no sheen *(continued)*
moist	0.6					13	
moist	0.3		UHP-5-14.5	ML/CL		14	
						15	(ML/CL) 14.5 - 15': Light brown-gray SILT with clay laminations, firm; no odor, no sheen 4-inch casing set to 15 feet, SEE UVOST LOG FOR REMAINDER OF BORING Sonic drilling to 15 feet; UVOST-HP direct push boring extended to 60.0 feet
						16	
						17	
						18	
						19	
						20	
						21	
						22	

Soil Boring: UHP-5

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/8/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						23	
						24	
						25	
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	

Soil Boring: UHP-5

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/8/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						34	
						35	
						36	
						37	
						38	
						39	
						40	
						41	
						42	
						43	
						44	

Soil Boring: UHP-5

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/8/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						45	
						46	
						47	
						48	
						49	
						50	
						51	
						52	
						53	
						54	
						55	

Soil Boring: UHP-5

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/8/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						56	
						57	
						58	
						59	
						60	
							Bottom of borehole at 60.0 feet.
						61	
						62	
						63	
						64	
						65	
						66	

Soil Boring: UHP-6

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/9/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60.1 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						0	Asphalt, 5 inches
moist	1.4			ML		2	(ML) 2 - 2.5': Dark brown SILT with minor plant debris and ~5% sand and gravel, firm; no odor, no sheen
moist	1.2			ML		4	(ML) 4 - 4.5': Light brown SILT, firm; no odor, no sheen
moist	1.6			SM		6	(SM) 6 - 6.5': Medium light brown, very fine SAND with ~10% coarser sand and gravel (up to 1 inch) and ~25% coarse silt, loose; no odor, no sheen
moist	2.8			SW		8	(SW) 8.25 - 8.75': Medium light brown, very fine to very coarse SAND with gravel up to 2 inches, dense; no odor, no sheen
moist	0.9			SW		9	(SW) 8 - 9' (sonic core): Medium brown very fine to very coarse SAND with 4-5% silt, 10% gravel (up to 1.5 inches), dense; no odor, no sheen
				SP			(SP) 9 - 10': Light brown, very fine to fine SAND with ~3% coarse silt and 4% gravel (up to 0.5 inches), medium dense; no odor, no sheen
moist	2.0			SW		10	(SW) 10 - 12.75': Medium yellow-brown, very fine to very coarse SAND with ~4% silt and 10% gravel (up to 2 inches), dense; no odor, globular (organic) sheen
						11	

Soil Boring: UHP-6

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/9/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60.1 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
moist	1.6			SW		12	(SW) 10 - 12.75': Medium yellow-brown, very fine to very coarse SAND with ~4% silt and 10% gravel (up to 2 inches), dense; no odor, globular (organic) sheen *(continued)*
moist	1.6		UHP-6-13	SP		13	(SP) 12.75 - 13.25': Very fine to medium SAND with trace (<1%) coarse silt and ~10% coarser sand and gravel (up to 0.7 inches), dense; no odor, no sheen
							4-inch casing set to 13.25 feet, SEE UVOST LOG FOR REMAINDER OF BORING Sonic drilling to 13.25 feet; UVOST-HP direct push boring extended to 60.1 feet
						14	
						15	
						16	
						17	
						18	
						19	
						20	
						21	
						22	

Soil Boring: UHP-6

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/9/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60.1 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						23	
						24	
						25	
						26	
						27	
						28	
						29	
						30	
						31	
						32	
						33	

Soil Boring: UHP-6

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/9/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60.1 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						34	
						35	
						36	
						37	
						38	
						39	
						40	
						41	
						42	
						43	
						44	

Soil Boring: UHP-6

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/9/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60.1 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						45	
						46	
						47	
						48	
						49	
						50	
						51	
						52	
						53	
						54	
						55	

Soil Boring: UHP-6

Project: Chevron Service Station #96590
Client: RELLC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: TD
Date Started: 11/9/2020
Date Completed: 12/17/2020

Driller: AEC Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60.1 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
						56	
						57	
						58	
						59	
						60	
							Bottom of borehole at 60.1 feet.
						61	
						62	
						63	
						64	
						65	
						66	

Appendix C:
Laboratory Analysis Reports – Pace Analytical

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

November 23, 2020

Leidos Inc.- Bothell, WA

Sample Delivery Group:	L1285650
Samples Received:	11/13/2020
Project Number:	
Description:	WA-02 Chelan
Site:	96590
Report To:	Russ Shropshire 18939 120th Avenue NE Suite 112 Bothell, WA 98011

Entire Report Reviewed By:

Brian Ford
Project Manager

UHP-1-S-8-201103 L1285650-01 Solid

Collected by: Tom Dube | Collected date/time: 11/03/20 09:30 | Received date/time: 11/13/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579044	1	11/20/20 03:30	11/20/20 03:39	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1576797	1	11/17/20 05:52	11/19/20 18:04	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1577750	25	11/03/20 09:30	11/17/20 14:49	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1577432	1	11/03/20 09:30	11/17/20 05:01	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1577257	1	11/16/20 23:34	11/17/20 09:36	JDG	Mt. Juliet, TN

UHP-2-S-9-201103 L1285650-02 Solid

Collected by: Tom Dube | Collected date/time: 11/03/20 13:30 | Received date/time: 11/13/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579044	1	11/20/20 03:30	11/20/20 03:39	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1576797	1	11/17/20 05:52	11/19/20 18:07	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1577750	25	11/03/20 13:30	11/17/20 15:12	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1577432	1	11/03/20 13:30	11/17/20 05:21	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1577257	1	11/16/20 23:34	11/17/20 10:42	JDG	Mt. Juliet, TN

UHP-3-S-7-201104 L1285650-03 Solid

Collected by: Tom Dube | Collected date/time: 11/04/20 14:40 | Received date/time: 11/13/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579044	1	11/20/20 03:30	11/20/20 03:39	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1576797	1	11/17/20 05:52	11/19/20 18:10	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1577750	25	11/04/20 14:40	11/17/20 15:34	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1577432	1	11/04/20 14:40	11/17/20 05:42	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1577257	1	11/16/20 23:34	11/17/20 20:12	TJD	Mt. Juliet, TN

UHP-4-S-8-201104 L1285650-04 Solid

Collected by: Tom Dube | Collected date/time: 11/04/20 08:50 | Received date/time: 11/13/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579044	1	11/20/20 03:30	11/20/20 03:39	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1576797	1	11/17/20 05:52	11/19/20 18:12	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1577750	25	11/04/20 08:50	11/17/20 15:57	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1577432	1	11/04/20 08:50	11/17/20 06:03	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1577257	1	11/16/20 23:34	11/17/20 20:25	TJD	Mt. Juliet, TN

SRI5-1-S-8.5-201105 L1285650-05 Solid

Collected by: Tom Dube | Collected date/time: 11/05/20 08:40 | Received date/time: 11/13/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579044	1	11/20/20 03:30	11/20/20 03:39	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1576797	1	11/17/20 05:52	11/19/20 18:15	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1577750	25	11/05/20 08:40	11/17/20 16:19	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1577432	1	11/05/20 08:40	11/17/20 06:23	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1577257	1	11/16/20 23:34	11/17/20 11:08	JDG	Mt. Juliet, TN

SRI5-2-S-8-201105 L1285650-06 Solid

Collected by: Tom Dube | Collected date/time: 11/05/20 11:37 | Received date/time: 11/13/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579044	1	11/20/20 03:30	11/20/20 03:39	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1576797	1	11/17/20 05:52	11/19/20 18:18	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1577750	25	11/05/20 11:37	11/17/20 16:41	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1577432	1	11/05/20 11:37	11/17/20 06:43	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1577257	10	11/16/20 23:34	11/17/20 21:17	TJD	Mt. Juliet, TN

SRI5-3-S-8.5-201105 L1285650-07 Solid

Collected by: Tom Dube | Collected date/time: 11/05/20 14:12 | Received date/time: 11/13/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579044	1	11/20/20 03:30	11/20/20 03:39	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1576797	1	11/17/20 05:52	11/19/20 18:26	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1577750	25	11/05/20 14:12	11/17/20 17:07	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1577432	1	11/05/20 14:12	11/17/20 07:04	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1577257	1	11/16/20 23:34	11/17/20 10:55	JDG	Mt. Juliet, TN

SRI5-4-S-8.5-201107 L1285650-08 Solid

Collected by: Tom Dube | Collected date/time: 11/07/20 08:14 | Received date/time: 11/13/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579044	1	11/20/20 03:30	11/20/20 03:39	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1576797	1	11/17/20 05:52	11/19/20 18:29	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1579747	28.2	11/07/20 08:14	11/20/20 11:35	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1577432	1.13	11/07/20 08:14	11/17/20 07:24	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1578128	1	11/18/20 13:47	11/19/20 01:31	CLG	Mt. Juliet, TN

SRI5-5-S-8-201107 L1285650-09 Solid

Collected by: Tom Dube | Collected date/time: 11/07/20 09:42 | Received date/time: 11/13/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579044	1	11/20/20 03:30	11/20/20 03:39	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1576797	1	11/17/20 05:52	11/19/20 18:31	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1579747	30.5	11/07/20 09:42	11/20/20 11:55	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580286	1.22	11/07/20 09:42	11/21/20 10:10	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1578128	1	11/18/20 13:47	11/19/20 01:44	CLG	Mt. Juliet, TN

SRI5-6-S-8-201107 L1285650-10 Solid

Collected by: Tom Dube | Collected date/time: 11/07/20 10:45 | Received date/time: 11/13/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579044	1	11/20/20 03:30	11/20/20 03:39	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1576797	1	11/17/20 05:52	11/19/20 18:34	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1579747	26.5	11/07/20 10:45	11/20/20 12:16	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580286	1.06	11/07/20 10:45	11/21/20 10:29	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1578128	1	11/18/20 13:47	11/19/20 02:22	CLG	Mt. Juliet, TN

TP2-S-9.75-201105 L1285650-11 Solid

Collected by: Tom Dube
Collected date/time: 11/05/20 11:23
Received date/time: 11/13/20 09:00

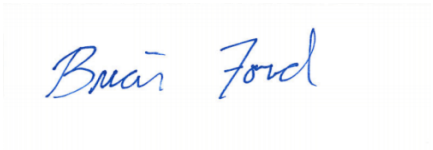
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579045	1	11/20/20 03:20	11/20/20 03:28	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1576797	1	11/17/20 05:52	11/19/20 18:37	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1577750	25	11/05/20 11:23	11/17/20 17:29	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1578177	1	11/05/20 11:23	11/18/20 21:35	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1577257	10	11/16/20 23:34	11/17/20 21:43	TJD	Mt. Juliet, TN

TB-1-201103 L1285650-12 GW

Collected by: Tom Dube
Collected date/time: 11/03/20 12:00
Received date/time: 11/13/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1576494	1	11/14/20 19:09	11/14/20 19:09	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1576892	1	11/15/20 15:03	11/15/20 15:03	ACG	Mt. Juliet, TN

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



Brian Ford
Project Manager

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	78.0		1	11/20/2020 03:39	WG1579044

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	7.25		0.267	0.641	1	11/19/2020 18:04	WG1576797

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	1.42	J	1.35	3.98	25	11/17/2020 14:49	WG1577750
(S) a,a,a-Trifluorotoluene(FID)	*100*			*77.0-120*		*11/17/2020 14:49*	WG1577750

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000744	0.00159	1	11/17/2020 05:01	WG1577432
Toluene	U		0.00207	0.00797	1	11/17/2020 05:01	WG1577432
Ethylbenzene	U		0.00117	0.00398	1	11/17/2020 05:01	WG1577432
Total Xylenes	U		0.00140	0.0104	1	11/17/2020 05:01	WG1577432
Methyl tert-butyl ether	U		0.000558	0.00159	1	11/17/2020 05:01	WG1577432
1,2-Dichloroethane	U		0.00103	0.00398	1	11/17/2020 05:01	WG1577432
1,2-Dibromoethane	U		0.00103	0.00398	1	11/17/2020 05:01	WG1577432
(S) Toluene-d8	*119*			*75.0-131*		*11/17/2020 05:01*	WG1577432
(S) 4-Bromofluorobenzene	*113*			*67.0-138*		*11/17/2020 05:01*	WG1577432
(S) 1,2-Dichloroethane-d4	*94.8*			*70.0-130*		*11/17/2020 05:01*	WG1577432

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.70	5.13	1	11/17/2020 09:36	WG1577257
Residual Range Organics (RRO)	U		4.27	12.8	1	11/17/2020 09:36	WG1577257
(S) o-Terphenyl	*47.4*			*18.0-148*		*11/17/2020 09:36*	WG1577257

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	97.5		1	11/20/2020 03:39	WG1579044

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	1.80		0.213	0.513	1	11/19/2020 18:07	WG1576797

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		0.892	2.63	25	11/17/2020 15:12	WG1577750
(S) a,a,a-Trifluorotoluene(FID)	*99.7*			*77.0-120*		*11/17/2020 15:12*	WG1577750

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000491	0.00105	1	11/17/2020 05:21	WG1577432
Toluene	U		0.00137	0.00526	1	11/17/2020 05:21	WG1577432
Ethylbenzene	U		0.000775	0.00263	1	11/17/2020 05:21	WG1577432
Total Xylenes	U		0.000926	0.00684	1	11/17/2020 05:21	WG1577432
Methyl tert-butyl ether	U		0.000368	0.00105	1	11/17/2020 05:21	WG1577432
1,2-Dichloroethane	U		0.000683	0.00263	1	11/17/2020 05:21	WG1577432
1,2-Dibromoethane	U		0.000682	0.00263	1	11/17/2020 05:21	WG1577432
(S) Toluene-d8	*120*			*75.0-131*		*11/17/2020 05:21*	WG1577432
(S) 4-Bromofluorobenzene	*135*			*67.0-138*		*11/17/2020 05:21*	WG1577432
(S) 1,2-Dichloroethane-d4	*95.3*			*70.0-130*		*11/17/2020 05:21*	WG1577432

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.36	4.10	1	11/17/2020 10:42	WG1577257
Residual Range Organics (RRO)	U		3.41	10.3	1	11/17/2020 10:42	WG1577257
(S) o-Terphenyl	*63.8*			*18.0-148*		*11/17/2020 10:42*	WG1577257

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.5		1	11/20/2020 03:39	WG1579044

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	2.65		0.220	0.529	1	11/19/2020 18:10	WG1576797

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	1.49	J	0.955	2.82	25	11/17/2020 15:34	WG1577750
(S) a,a,a-Trifluorotoluene(FID)	*98.6*			*77.0-120*		*11/17/2020 15:34*	WG1577750

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000526	0.00113	1	11/17/2020 05:42	WG1577432
Toluene	0.00271	J	0.00146	0.00563	1	11/17/2020 05:42	WG1577432
Ethylbenzene	U		0.000830	0.00282	1	11/17/2020 05:42	WG1577432
Total Xylenes	U		0.000991	0.00732	1	11/17/2020 05:42	WG1577432
Methyl tert-butyl ether	0.000458	J	0.000394	0.00113	1	11/17/2020 05:42	WG1577432
1,2-Dichloroethane	U		0.000731	0.00282	1	11/17/2020 05:42	WG1577432
1,2-Dibromoethane	U		0.000730	0.00282	1	11/17/2020 05:42	WG1577432
(S) Toluene-d8	*129*			*75.0-131*		*11/17/2020 05:42*	WG1577432
(S) 4-Bromofluorobenzene	*110*			*67.0-138*		*11/17/2020 05:42*	WG1577432
(S) 1,2-Dichloroethane-d4	*93.3*			*70.0-130*		*11/17/2020 05:42*	WG1577432

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.41	4.23	1	11/17/2020 20:12	WG1577257
Residual Range Organics (RRO)	5.90	J	3.52	10.6	1	11/17/2020 20:12	WG1577257
(S) o-Terphenyl	*63.2*			*18.0-148*		*11/17/2020 20:12*	WG1577257

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	84.6		1	11/20/2020 03:39	WG1579044

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	2.25		0.246	0.591	1	11/19/2020 18:12	WG1576797

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		1.17	3.45	25	11/17/2020 15:57	WG1577750
(S) a,a,a-Trifluorotoluene(FID)	*100*			*77.0-120*		*11/17/2020 15:57*	WG1577750

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000644	0.00138	1	11/17/2020 06:03	WG1577432
Toluene	U		0.00179	0.00690	1	11/17/2020 06:03	WG1577432
Ethylbenzene	U		0.00102	0.00345	1	11/17/2020 06:03	WG1577432
Total Xylenes	U		0.00121	0.00897	1	11/17/2020 06:03	WG1577432
Methyl tert-butyl ether	U		0.000483	0.00138	1	11/17/2020 06:03	WG1577432
1,2-Dichloroethane	U		0.000896	0.00345	1	11/17/2020 06:03	WG1577432
1,2-Dibromoethane	U		0.000894	0.00345	1	11/17/2020 06:03	WG1577432
(S) Toluene-d8	*89.4*			*75.0-131*		*11/17/2020 06:03*	WG1577432
(S) 4-Bromofluorobenzene	*109*			*67.0-138*		*11/17/2020 06:03*	WG1577432
(S) 1,2-Dichloroethane-d4	*95.8*			*70.0-130*		*11/17/2020 06:03*	WG1577432

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.57	4.73	1	11/17/2020 20:25	WG1577257
Residual Range Organics (RRO)	11.1	J	3.93	11.8	1	11/17/2020 20:25	WG1577257
(S) o-Terphenyl	*65.4*			*18.0-148*		*11/17/2020 20:25*	WG1577257

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.7		1	11/20/2020 03:39	WG1579044

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	2.30		0.215	0.517	1	11/19/2020 18:15	WG1576797

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	1.12	J	0.906	2.67	25	11/17/2020 16:19	WG1577750
(S) a,a,a-Trifluorotoluene(FID)	*99.2*			*77.0-120*		*11/17/2020 16:19*	WG1577750

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000499	0.00107	1	11/17/2020 06:23	WG1577432
Toluene	U		0.00139	0.00534	1	11/17/2020 06:23	WG1577432
Ethylbenzene	U		0.000787	0.00267	1	11/17/2020 06:23	WG1577432
Total Xylenes	U		0.000940	0.00694	1	11/17/2020 06:23	WG1577432
Methyl tert-butyl ether	U		0.000374	0.00107	1	11/17/2020 06:23	WG1577432
1,2-Dichloroethane	0.000959	J	0.000693	0.00267	1	11/17/2020 06:23	WG1577432
1,2-Dibromoethane	U		0.000692	0.00267	1	11/17/2020 06:23	WG1577432
(S) Toluene-d8	*103*			*75.0-131*		*11/17/2020 06:23*	WG1577432
(S) 4-Bromofluorobenzene	*108*			*67.0-138*		*11/17/2020 06:23*	WG1577432
(S) 1,2-Dichloroethane-d4	*93.8*			*70.0-130*		*11/17/2020 06:23*	WG1577432

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.37	4.13	1	11/17/2020 11:08	WG1577257
Residual Range Organics (RRO)	U		3.44	10.3	1	11/17/2020 11:08	WG1577257
(S) o-Terphenyl	*65.2*			*18.0-148*		*11/17/2020 11:08*	WG1577257

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.8		1	11/20/2020 03:39	WG1579044

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	4.03		0.217	0.522	1	11/19/2020 18:18	WG1576797

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	1.15	J	0.924	2.72	25	11/17/2020 16:41	WG1577750
(S) a,a,a-Trifluorotoluene(FID)	*99.3*			*77.0-120*		*11/17/2020 16:41*	WG1577750

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000509	0.00109	1	11/17/2020 06:43	WG1577432
Toluene	U		0.00142	0.00545	1	11/17/2020 06:43	WG1577432
Ethylbenzene	U		0.000803	0.00272	1	11/17/2020 06:43	WG1577432
Total Xylenes	0.00109	J	0.000959	0.00708	1	11/17/2020 06:43	WG1577432
Methyl tert-butyl ether	U		0.000381	0.00109	1	11/17/2020 06:43	WG1577432
1,2-Dichloroethane	U		0.000707	0.00272	1	11/17/2020 06:43	WG1577432
1,2-Dibromoethane	U		0.000706	0.00272	1	11/17/2020 06:43	WG1577432
(S) Toluene-d8	*104*			*75.0-131*		*11/17/2020 06:43*	WG1577432
(S) 4-Bromofluorobenzene	*123*			*67.0-138*		*11/17/2020 06:43*	WG1577432
(S) 1,2-Dichloroethane-d4	*93.8*			*70.0-130*		*11/17/2020 06:43*	WG1577432

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		13.9	41.7	10	11/17/2020 21:17	WG1577257
Residual Range Organics (RRO)	U		34.7	104	10	11/17/2020 21:17	WG1577257
(S) o-Terphenyl	*46.8*			*18.0-148*		*11/17/2020 21:17*	WG1577257

Sample Narrative:

L1285650-06 WG1577257: Dilution due to matrix impact during concentration procedure.

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	95.1		1	11/20/2020 03:39	WG1579044

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	1.82		0.219	0.526	1	11/19/2020 18:26	WG1576797

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		0.938	2.77	25	11/17/2020 17:07	WG1577750
(S) a,a,a-Trifluorotoluene(FID)	*98.4*			*77.0-120*		*11/17/2020 17:07*	WG1577750

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000517	0.00111	1	11/17/2020 07:04	WG1577432
Toluene	U		0.00144	0.00553	1	11/17/2020 07:04	WG1577432
Ethylbenzene	U		0.000815	0.00277	1	11/17/2020 07:04	WG1577432
Total Xylenes	0.00122	J	0.000974	0.00719	1	11/17/2020 07:04	WG1577432
Methyl tert-butyl ether	U		0.000387	0.00111	1	11/17/2020 07:04	WG1577432
1,2-Dichloroethane	U		0.000718	0.00277	1	11/17/2020 07:04	WG1577432
1,2-Dibromoethane	U		0.000717	0.00277	1	11/17/2020 07:04	WG1577432
(S) Toluene-d8	*104*			*75.0-131*		*11/17/2020 07:04*	WG1577432
(S) 4-Bromofluorobenzene	*114*			*67.0-138*		*11/17/2020 07:04*	WG1577432
(S) 1,2-Dichloroethane-d4	*95.6*			*70.0-130*		*11/17/2020 07:04*	WG1577432

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.40	4.21	1	11/17/2020 10:55	WG1577257
Residual Range Organics (RRO)	U		3.50	10.5	1	11/17/2020 10:55	WG1577257
(S) o-Terphenyl	*57.5*			*18.0-148*		*11/17/2020 10:55*	WG1577257

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	73.1		1	11/20/2020 03:39	WG1579044

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	2.63		0.285	0.684	1	11/19/2020 18:29	WG1576797

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	2.10	J	1.62	4.78	28.2	11/20/2020 11:35	WG1579747
(S) a,a,a-Trifluorotoluene(FID)	*106*			*77.0-120*		*11/20/2020 11:35*	WG1579747

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.00889		0.000894	0.00191	1.13	11/17/2020 07:24	WG1577432
Toluene	0.0111		0.00249	0.00957	1.13	11/17/2020 07:24	WG1577432
Ethylbenzene	U		0.00141	0.00479	1.13	11/17/2020 07:24	WG1577432
Total Xylenes	U		0.00168	0.0125	1.13	11/17/2020 07:24	WG1577432
Methyl tert-butyl ether	U		0.000671	0.00191	1.13	11/17/2020 07:24	WG1577432
1,2-Dichloroethane	0.00148	J	0.00124	0.00479	1.13	11/17/2020 07:24	WG1577432
1,2-Dibromoethane	U		0.00124	0.00479	1.13	11/17/2020 07:24	WG1577432
(S) Toluene-d8	*99.3*			*75.0-131*		*11/17/2020 07:24*	WG1577432
(S) 4-Bromofluorobenzene	*114*			*67.0-138*		*11/17/2020 07:24*	WG1577432
(S) 1,2-Dichloroethane-d4	*94.7*			*70.0-130*		*11/17/2020 07:24*	WG1577432

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.82	5.47	1	11/19/2020 01:31	WG1578128
Residual Range Organics (RRO)	U		4.56	13.7	1	11/19/2020 01:31	WG1578128
(S) o-Terphenyl	*77.4*			*18.0-148*		*11/19/2020 01:31*	WG1578128

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	78.3		1	11/20/2020 03:39	WG1579044

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	2.32		0.266	0.639	1	11/19/2020 18:31	WG1576797

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	6.90		1.55	4.59	30.5	11/20/2020 11:55	WG1579747
(S) a,a,a-Trifluorotoluene(FID)	*104*			*77.0-120*		*11/20/2020 11:55*	WG1579747

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.0176		0.000859	0.00184	1.22	11/21/2020 10:10	WG1580286
Toluene	0.0188		0.00240	0.00919	1.22	11/21/2020 10:10	WG1580286
Ethylbenzene	U		0.00135	0.00459	1.22	11/21/2020 10:10	WG1580286
Total Xylenes	0.00280	J	0.00161	0.0119	1.22	11/21/2020 10:10	WG1580286
Methyl tert-butyl ether	U		0.000643	0.00184	1.22	11/21/2020 10:10	WG1580286
1,2-Dichloroethane	U		0.00119	0.00459	1.22	11/21/2020 10:10	WG1580286
1,2-Dibromoethane	U		0.00119	0.00459	1.22	11/21/2020 10:10	WG1580286
(S) Toluene-d8	*104*			*75.0-131*		*11/21/2020 10:10*	WG1580286
(S) 4-Bromofluorobenzene	*98.3*			*67.0-138*		*11/21/2020 10:10*	WG1580286
(S) 1,2-Dichloroethane-d4	*89.5*			*70.0-130*		*11/21/2020 10:10*	WG1580286

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.70	5.11	1	11/19/2020 01:44	WG1578128
Residual Range Organics (RRO)	U		4.25	12.8	1	11/19/2020 01:44	WG1578128
(S) o-Terphenyl	*78.5*			*18.0-148*		*11/19/2020 01:44*	WG1578128

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	78.0		1	11/20/2020 03:39	WG1579044

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	2.31		0.267	0.641	1	11/19/2020 18:34	WG1576797

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	1.93	J	1.39	4.10	26.5	11/20/2020 12:16	WG1579747
(S) a,a,a-Trifluorotoluene(FID)	*107*			*77.0-120*		*11/20/2020 12:16*	WG1579747

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.00184		0.000766	0.00164	1.06	11/21/2020 10:29	WG1580286
Toluene	0.00266	J	0.00213	0.00820	1.06	11/21/2020 10:29	WG1580286
Ethylbenzene	U		0.00121	0.00410	1.06	11/21/2020 10:29	WG1580286
Total Xylenes	U		0.00144	0.0107	1.06	11/21/2020 10:29	WG1580286
Methyl tert-butyl ether	U		0.000574	0.00164	1.06	11/21/2020 10:29	WG1580286
1,2-Dichloroethane	U		0.00106	0.00410	1.06	11/21/2020 10:29	WG1580286
1,2-Dibromoethane	U		0.00106	0.00410	1.06	11/21/2020 10:29	WG1580286
(S) Toluene-d8	*105*			*75.0-131*		*11/21/2020 10:29*	WG1580286
(S) 4-Bromofluorobenzene	*97.5*			*67.0-138*		*11/21/2020 10:29*	WG1580286
(S) 1,2-Dichloroethane-d4	*90.3*			*70.0-130*		*11/21/2020 10:29*	WG1580286

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	2.54	J	1.70	5.13	1	11/19/2020 02:22	WG1578128
Residual Range Organics (RRO)	U		4.27	12.8	1	11/19/2020 02:22	WG1578128
(S) o-Terphenyl	*75.2*			*18.0-148*		*11/19/2020 02:22*	WG1578128

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.0		1	11/20/2020 03:28	WG1579045

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	2.71		0.221	0.532	1	11/19/2020 18:37	WG1576797

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	0.978	J	0.961	2.83	25	11/17/2020 17:29	WG1577750
(S) a,a,a-Trifluorotoluene(FID)	*99.5*			*77.0-120*		*11/17/2020 17:29*	WG1577750

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000529	0.00113	1	11/18/2020 21:35	WG1578177
Toluene	U		0.00147	0.00567	1	11/18/2020 21:35	WG1578177
Ethylbenzene	U		0.000835	0.00283	1	11/18/2020 21:35	WG1578177
Total Xylenes	U		0.000997	0.00737	1	11/18/2020 21:35	WG1578177
Methyl tert-butyl ether	U		0.000397	0.00113	1	11/18/2020 21:35	WG1578177
1,2-Dichloroethane	U		0.000735	0.00283	1	11/18/2020 21:35	WG1578177
1,2-Dibromoethane	U		0.000734	0.00283	1	11/18/2020 21:35	WG1578177
(S) Toluene-d8	*105*			*75.0-131*		*11/18/2020 21:35*	WG1578177
(S) 4-Bromofluorobenzene	*98.1*			*67.0-138*		*11/18/2020 21:35*	WG1578177
(S) 1,2-Dichloroethane-d4	*87.8*			*70.0-130*		*11/18/2020 21:35*	WG1578177

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		14.1	42.5	10	11/17/2020 21:43	WG1577257
Residual Range Organics (RRO)	U		35.4	106	10	11/17/2020 21:43	WG1577257
(S) o-Terphenyl	*68.3*			*18.0-148*		*11/17/2020 21:43*	WG1577257

Sample Narrative:

L1285650-11 WG1577257: Dilution due to matrix impact during concentration procedure.

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	52.3	B J	31.6	100	1	11/14/2020 19:09	WG1576494
(S) a,a,a-Trifluorotoluene(FID)	*96.0*			*78.0-120*		*11/14/2020 19:09*	WG1576494

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	11/15/2020 15:03	WG1576892
Toluene	U		0.278	1.00	1	11/15/2020 15:03	WG1576892
Ethylbenzene	U		0.137	1.00	1	11/15/2020 15:03	WG1576892
Total Xylenes	U		0.174	3.00	1	11/15/2020 15:03	WG1576892
Methyl tert-butyl ether	U		0.101	1.00	1	11/15/2020 15:03	WG1576892
1,2-Dichloroethane	U		0.0819	1.00	1	11/15/2020 15:03	WG1576892
1,2-Dibromoethane	U		0.126	1.00	1	11/15/2020 15:03	WG1576892
(S) Toluene-d8	*107*			*80.0-120*		*11/15/2020 15:03*	WG1576892
(S) 4-Bromofluorobenzene	*96.4*			*77.0-126*		*11/15/2020 15:03*	WG1576892
(S) 1,2-Dichloroethane-d4	*92.3*			*70.0-130*		*11/15/2020 15:03*	WG1576892

Method Blank (MB)

(MB) R3595469-1 11/20/20 03:39

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

L1285650-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1285650-01 11/20/20 03:39 • (DUP) R3595469-3 11/20/20 03:39

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	78.0	77.6	1	0.525		10

Laboratory Control Sample (LCS)

(LCS) R3595469-2 11/20/20 03:39

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

Method Blank (MB)

(MB) R3595464-1 11/20/20 03:28

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

L1285651-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1285651-04 11/20/20 03:28 • (DUP) R3595464-3 11/20/20 03:28

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	85.2	83.8	1	1.67		10

Laboratory Control Sample (LCS)

(LCS) R3595464-2 11/20/20 03:28

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

Method Blank (MB)

(MB) R3595294-7 11/20/20 01:30

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Lead	U		0.208	0.500

Laboratory Control Sample (LCS)

(LCS) R3595294-2 11/19/20 17:21

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lead	100	98.2	98.2	80.0-120	

L1285441-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1285441-01 11/19/20 17:24 • (MS) R3595294-5 11/19/20 17:32 • (MSD) R3595294-6 11/19/20 17:35

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lead	108	86.6	131	186	40.7	91.6	1	75.0-125	J6	J3	34.9	20

Method Blank (MB)

(MB) R3593192-2 11/14/20 14:20

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	43.0	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*95.6*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3593192-1 11/14/20 13:19

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5100	92.7	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*87.0*	*78.0-120*	

L1284361-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1284361-01 11/14/20 23:10 • (MS) R3593192-3 11/14/20 23:58 • (MSD) R3593192-4 11/15/20 00:45

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5500	879	4780	4560	70.9	66.9	1	10.0-155			4.71	21
(S) a,a,a-Trifluorotoluene(FID)					*84.0*	*83.5*		*78.0-120*				

Method Blank (MB)

(MB) R3594074-3 11/17/20 12:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	*101*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3594074-2 11/17/20 11:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	6.50	118	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*102*	*77.0-120*	

Method Blank (MB)

(MB) R3595748-2 11/20/20 09:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	*111*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3595748-1 11/20/20 08:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	5.68	103	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*104*	*77.0-120*	

L1285600-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1285600-01 11/20/20 17:28 • (MS) R3595748-3 11/20/20 19:32 • (MSD) R3595748-4 11/20/20 19:53

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	145	1.21	92.7	117	63.1	79.6	25	10.0-149			22.9	27
(S) a,a,a-Trifluorotoluene(FID)					*106*	*103*		*77.0-120*				

Method Blank (MB)

(MB) R3593222-2 11/15/20 10:48

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
1,2-Dibromoethane	U		0.126	1.00
1,2-Dichloroethane	U		0.0819	1.00
Ethylbenzene	U		0.137	1.00
Methyl tert-butyl ether	U		0.101	1.00
Toluene	U		0.278	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	*107*			*80.0-120*
(S) 4-Bromofluorobenzene	*99.6*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*93.9*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3593222-1 11/15/20 10:08

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.54	111	70.0-123	
1,2-Dibromoethane	5.00	4.92	98.4	80.0-122	
1,2-Dichloroethane	5.00	4.81	96.2	70.0-128	
Ethylbenzene	5.00	4.71	94.2	79.0-123	
Methyl tert-butyl ether	5.00	5.16	103	68.0-125	
Toluene	5.00	5.22	104	79.0-120	
Xylenes, Total	15.0	14.7	98.0	79.0-123	
(S) Toluene-d8			*104*	*80.0-120*	
(S) 4-Bromofluorobenzene			*95.4*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*94.1*	*70.0-130*	

Method Blank (MB)

(MB) R3593917-2 11/16/20 23:21

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
1,2-Dibromoethane	U		0.000648	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
Ethylbenzene	U		0.000737	0.00250
Methyl tert-butyl ether	U		0.000350	0.00100
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*89.4*			*75.0-131*
(S) 4-Bromofluorobenzene	*78.4*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3593917-1 11/16/20 22:20

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.122	97.6	70.0-123	
1,2-Dibromoethane	0.125	0.127	102	74.0-128	
1,2-Dichloroethane	0.125	0.132	106	65.0-131	
Ethylbenzene	0.125	0.122	97.6	74.0-126	
Methyl tert-butyl ether	0.125	0.140	112	66.0-132	
Toluene	0.125	0.119	95.2	75.0-121	
Xylenes, Total	0.375	0.368	98.1	72.0-127	
(S) Toluene-d8			*100*	*75.0-131*	
(S) 4-Bromofluorobenzene			*127*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*106*	*70.0-130*	

L1285650-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1285650-08 11/17/20 07:24 • (MS) R3593917-3 11/17/20 08:05 • (MSD) R3593917-4 11/17/20 08:25

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.239	0.00889	0.295	0.307	120	125	1.13	10.0-149			3.94	37
1,2-Dibromoethane	0.239	U	0.274	0.305	115	128	1.13	10.0-148			10.5	34
1,2-Dichloroethane	0.239	0.00148	0.273	0.278	114	116	1.13	10.0-148			1.85	35
Ethylbenzene	0.239	U	0.293	0.302	123	126	1.13	10.0-160			2.85	38
Methyl tert-butyl ether	0.239	U	0.269	0.269	113	113	1.13	11.0-147			0.000	35
Toluene	0.239	0.0111	0.385	0.359	156	146	1.13	10.0-156			6.83	38

L1285650-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1285650-08 11/17/20 07:24 • (MS) R3593917-3 11/17/20 08:05 • (MSD) R3593917-4 11/17/20 08:25

Analyte	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Xylenes, Total	0.717	U	0.872	0.889	122	124	1.13	10.0-160			1.92	38
(S) Toluene-d8					*113*	*102*		*75.0-131*				
(S) 4-Bromofluorobenzene					*125*	*108*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*98.6*	*99.6*		*70.0-130*				

Method Blank (MB)

(MB) R3594816-3 11/18/20 17:48

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
1,2-Dibromoethane	U		0.000648	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
Ethylbenzene	U		0.000737	0.00250
Methyl tert-butyl ether	U		0.000350	0.00100
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*107*			*75.0-131*
(S) 4-Bromofluorobenzene	*98.8*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*83.4*			*70.0-130*

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

(LCS) R3594816-1 11/18/20 16:13 • (LCSD) R3594816-2 11/18/20 16:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.110	0.106	88.0	84.8	70.0-123			3.70	20
1,2-Dibromoethane	0.125	0.117	0.116	93.6	92.8	74.0-128			0.858	20
1,2-Dichloroethane	0.125	0.113	0.110	90.4	88.0	65.0-131			2.69	20
Ethylbenzene	0.125	0.118	0.114	94.4	91.2	74.0-126			3.45	20
Methyl tert-butyl ether	0.125	0.119	0.119	95.2	95.2	66.0-132			0.000	20
Toluene	0.125	0.116	0.112	92.8	89.6	75.0-121			3.51	20
Xylenes, Total	0.375	0.350	0.336	93.3	89.6	72.0-127			4.08	20
(S) Toluene-d8				*102*	*103*	*75.0-131*				
(S) 4-Bromofluorobenzene				*101*	*101*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*89.9*	*90.1*	*70.0-130*				

L1284009-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1284009-01 11/18/20 22:13 • (MS) R3594816-4 11/19/20 00:26 • (MSD) R3594816-5 11/19/20 00:45

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.10	U	1.20	1.27	110	116	8	10.0-149			5.24	37
1,2-Dibromoethane	1.10	U	0.0142	0.0543	1.30	4.96	8	10.0-148	J6	J3 J6	117	34
1,2-Dichloroethane	1.10	U	U	U	0.000	0.000	8	10.0-148	J6	J6	0.000	35
Ethylbenzene	1.10	0.0153	2.70	3.30	245	300	8	10.0-160	J5	J5	20.1	38
Methyl tert-butyl ether	1.10	U	U	U	0.000	0.000	8	11.0-147	J6	J6	0.000	35
Toluene	1.10	U	11.0	13.8	1000	1260	8	10.0-156	J5	J5	22.8	38

L1284009-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1284009-01 11/18/20 22:13 • (MS) R3594816-4 11/19/20 00:26 • (MSD) R3594816-5 11/19/20 00:45

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Xylenes, Total	3.29	0.0255	12.9	15.7	391	478	8	10.0-160	J5	J5	20.1	38
(S) Toluene-d8					*101*	*122*		*75.0-131*				
(S) 4-Bromofluorobenzene					*105*	*128*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*88.3*	*87.1*		*70.0-130*				

Sample Narrative:

OS: Non-target compounds too high to run at a lower dilution.

Method Blank (MB)

(MB) R3595951-2 11/21/20 07:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
1,2-Dibromoethane	U		0.000648	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
Ethylbenzene	U		0.000737	0.00250
Methyl tert-butyl ether	U		0.000350	0.00100
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*107*			*75.0-131*
(S) 4-Bromofluorobenzene	*96.7*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*86.9*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3595951-1 11/21/20 06:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.109	87.2	70.0-123	
1,2-Dibromoethane	0.125	0.118	94.4	74.0-128	
1,2-Dichloroethane	0.125	0.101	80.8	65.0-131	
Ethylbenzene	0.125	0.112	89.6	74.0-126	
Methyl tert-butyl ether	0.125	0.100	80.0	66.0-132	
Toluene	0.125	0.112	89.6	75.0-121	
Xylenes, Total	0.375	0.329	87.7	72.0-127	
(S) Toluene-d8			*101*	*75.0-131*	
(S) 4-Bromofluorobenzene			*101*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*84.8*	*70.0-130*	

L1286265-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286265-01 11/21/20 14:16 • (MS) R3595951-3 11/21/20 16:28 • (MSD) R3595951-4 11/21/20 16:47

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	50.0	11.3	142	131	261	239	400	10.0-149	J5	J5	8.06	37
1,2-Dibromoethane	50.0	U	52.9	47.1	106	94.2	400	10.0-148			11.6	34
1,2-Dichloroethane	50.0	U	49.0	48.1	98.0	96.2	400	10.0-148			1.85	35
Ethylbenzene	50.0	6.42	108	99.2	203	186	400	10.0-160	J5	J5	8.49	38
Methyl tert-butyl ether	50.0	U	43.3	48.7	86.6	97.4	400	11.0-147			11.7	35
Toluene	50.0	23.2	250	217	454	388	400	10.0-156	J5	J5	14.1	38
Xylenes, Total	150	50.7	587	529	358	319	400	10.0-160	J5	J5	10.4	38

L1286265-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286265-01 11/21/20 14:16 • (MS) R3595951-3 11/21/20 16:28 • (MSD) R3595951-4 11/21/20 16:47

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
(S) Toluene-d8					*101*	*102*		*75.0-131*				
(S) 4-Bromofluorobenzene					*101*	*102*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*87.6*	*91.1*		*70.0-130*				

Method Blank (MB)

(MB) R3594118-1 11/17/20 08:57

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
(S) o-Terphenyl	*68.9*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3594118-2 11/17/20 09:10

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	34.5	69.0	50.0-150	
(S) o-Terphenyl			*64.9*	*18.0-148*	

L1284425-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1284425-02 11/17/20 11:48 • (MS) R3594118-3 11/17/20 12:01 • (MSD) R3594118-4 11/17/20 12:17

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	50.0	29.7	47.3	56.5	35.2	53.6	1	50.0-150	J6		17.7	20
(S) o-Terphenyl					*49.8*	*59.3*		*18.0-148*				

Method Blank (MB)

(MB) R3594873-1 11/18/20 22:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
(S) o-Terphenyl	*88.1*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3594873-2 11/18/20 23:11

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	45.2	90.4	50.0-150	
(S) o-Terphenyl			*96.5*	*18.0-148*	

Guide to Reading and Understanding Your Laboratory Report

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

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

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

Qualifier	Description
B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

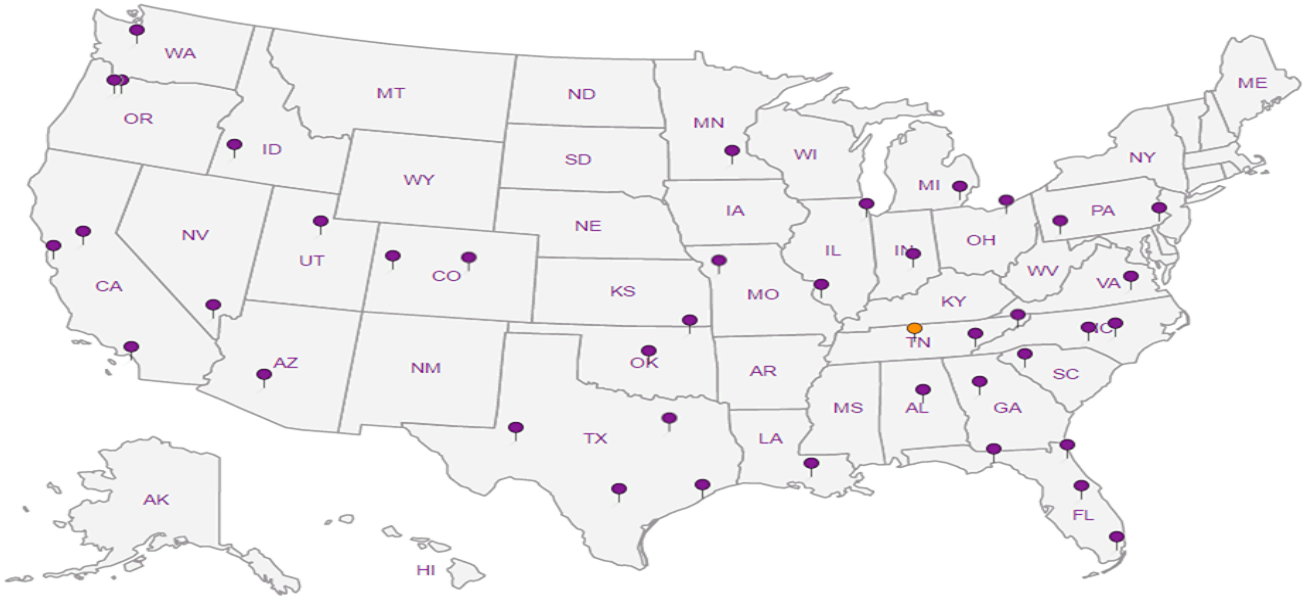
Third Party Federal Accreditations

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

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

Our Locations

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



Leidos Inc.- Bothell, WA

18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Billing Information:
Accounts Payable
18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Pres Chk

Report to: Russ Shropshire

Email To: russell.s.shropshire@leidos.com

Project Description: WA-02 Chelan

City/State Collected: Chelan, WA

Please Circle: (PT) MT CT ET

Phone: 425-482-3323

Client Project #

Lab Project # LEIDOSBWA-CHELAN

Collected by (print): Tom Dubé

Site/Facility ID # 96590

P.O. # P010246476

Collected by (signature):

Immediately Packed on Ice N ___ Y ✓

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

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cu,Ni,Pb,~~Zn~~ 6010 8ozClr-NoPres Lead only	HVOCs 8260 40mlAmb/MeOH10ml/Syr	NWTPHDX NOSGT 8ozClr-NoPres No silica gel	NWTPHGX 40mlAmb/MeOH10ml/Syr	PCBs 8082 4ozClr-NoPres	VOCs 8260* 40mlAmb/MeOH10ml/Syr BTEX, MTBE, EDB, EDC only	cPAHs/Naph 8270ESIM 4ozClr-NoPres				Remarks	Sample # (lab only)
UHP-1-S-8-201103	G	SS		11-3-2020	0930	2	X		X	X		X						-01
UHP-2-S-9-201103	G	SS		11-3-20	1330	2	X		X	X		X						-02
UHP-3-S-7-201104	G	SS		11-4-20	1440	2	X		X	X		X						-03
UHP-4-S-8-201104	G	SS		11-4-20	0850	2	X		X	X		X						-04
SRI5-1-S-8.5-201105	G	SS		11-5-20	0840	2	X		X	X		X						-05
SRI5-2-S-8-201105	G	SS		11-5-20	1137	2	X		X	X		X						-06
SRI5-3-S-8.5-201105	G	SS		11-5-20	1412	2	X		X	X		X						-07
SRI5-4-S-8.5-201107	G	SS		11-7-20	0814	2	X		X	X		X						-08
SRI5-5-S-8-201107	G	SS		11-7-20	0942	2	X		X	X		X						-09
SRI5-6-S-8-201107	G	SS		11-7-20	1045	2	X		X	X		X						-10

Analysis / Container / Preservative

Chain of Custody Page 1 of 2

Pace Analytical® National Center for Testing & Innovation

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

SDG # L1285650
A002

Acctnum: LEIDOSBWA
Template: T176925
Prelogin: P807112
PM: 110 - Brian Ford
PB:
Shipped Via:

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

Remarks: *VOC 8260 list=BTEX, MTBE, EDB, EDC, and n-hexane by EPA 8260.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 1145 2235 3683

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCl / MeOH TBR	If preservation required by Login: Date/Time
Thomas Dubé	11-12-20	1300		2	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
				1.1+0=1.1 CK 22	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK
			DEmm	11/13/20 9:00	

Leidos Inc.- Bothell, WA

18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Billing Information:
Accounts Payable
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Pres Chk

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Email To: **russell.s.shropshire@leidos.com**

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Phone: **425-482-3323**

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P.O. # P010246476

Collected by (signature): Tom Dubé

Immediately
Packed on Ice N ___ Y ✓

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

Quote # —

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	~~Cu,Ni,Pb,Zn~~ Pb 6010 8ozClr-NoPres Lead only	HVOCs 8260 40mlAmb/MeOH10ml/Syr	NWTPHDX NOSGT 8ozClr-NoPres No silica gel	NWTPHGX 40mlAmb/MeOH10ml/Syr	PCBs 8082 4ozClr-NoPres	VOCs 8260* 40mlAmb/MeOH10ml/Syr BTEX, MTBE, EDB, EDC only	cPAHs/Naph 8270ESIM 4ozClr-NoPres	Remarks	Sample # (lab only)
TP2-S-9.75-201105	G	SS		11-5-20	1123	2	X		X	X		X			11
TB-I-201103	G	SS		11-3-20	1200	X2				X		X			12
		SS													
		SS													
		SS													
		SS													
		SS													
		SS													
		SS													
		SS													
		SS													

Thomas Dubé

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

Remarks:*VOC 8260 list=BTEX, MTBE, EDB, EDC, and n-hexane by EPA 8260.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Thomas Dubé	11-12-2020	1300	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			Dawn

Trip Blank Received: Yes / No
HCL / MeoH
TBR

Temp: 1.1 °C 1.1 °C Bottles Received:

Date: 11/13/20 Time: 9:00

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Chain of Custody Page 2 of 2

Pace Analytical®
National Center for Testing & Innovation

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

SDG # L1285450

Table #

Acctnum: **LEIDOSBWA**

Template: **T176925**

Prelogin: **P807112**

PM: **110 - Brian Ford**

PB:

Shipped Via:

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

December 01, 2020

Leidos Inc.- Bothell, WA

Sample Delivery Group:	L1286649
Samples Received:	11/17/2020
Project Number:	
Description:	WA-02 Chelan
Site:	96590
Report To:	Russ Shropshire 18939 120th Avenue NE Suite 112 Bothell, WA 98011

Entire Report Reviewed By:

Brian Ford

Brian Ford
Project Manager

TABLE OF CONTENTS

SRI5-1-S-15-201110 L1286649-01 Solid

Collected by: Tom Dube | Collected date/time: 11/10/20 10:11 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579976	1	11/21/20 05:27	11/21/20 05:35	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 04:59	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581738	1000	11/10/20 10:11	11/24/20 11:16	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580802	8	11/10/20 10:11	11/22/20 23:39	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580726	1	11/23/20 10:30	11/24/20 08:41	JN	Mt. Juliet, TN

SRI5-1-S-16.5-201110 L1286649-02 Solid

Collected by: Tom Dube | Collected date/time: 11/10/20 10:47 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579976	1	11/21/20 05:27	11/21/20 05:35	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:01	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581738	5000	11/10/20 10:47	11/24/20 11:39	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580778	40	11/10/20 10:47	11/23/20 00:11	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580726	1	11/23/20 10:30	11/24/20 08:54	JN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580726	5	11/23/20 10:30	11/24/20 14:18	TJD	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1580730	1	11/23/20 08:21	11/23/20 18:36	AMM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580175	1	11/21/20 07:33	11/22/20 08:06	LEA	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580175	20	11/21/20 07:33	11/23/20 00:32	AAT	Mt. Juliet, TN

SRI5-1-S-24.5-201110 L1286649-03 Solid

Collected by: Tom Dube | Collected date/time: 11/10/20 11:00 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579976	1	11/21/20 05:27	11/21/20 05:35	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:04	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581738	26.3	11/10/20 11:00	11/24/20 12:06	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580802	1.05	11/10/20 11:00	11/22/20 23:20	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580726	1	11/23/20 10:30	11/24/20 09:06	JN	Mt. Juliet, TN

SRI5-2-S-11.5-201110 L1286649-04 Solid

Collected by: Tom Dube | Collected date/time: 11/10/20 14:03 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579976	1	11/21/20 05:27	11/21/20 05:35	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:12	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581738	2500	11/10/20 14:03	11/24/20 12:28	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580778	8	11/10/20 14:03	11/23/20 00:30	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580726	1	11/23/20 10:30	11/24/20 12:36	TJD	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1580730	1	11/23/20 08:21	11/23/20 18:46	AMM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580175	1	11/21/20 07:33	11/22/20 08:23	LEA	Mt. Juliet, TN

SRI5-2-S-24.5-201110 L1286649-05 Solid

Collected by: Tom Dube | Collected date/time: 11/10/20 14:36 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579976	1	11/21/20 05:27	11/21/20 05:35	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:15	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581738	25	11/10/20 14:36	11/24/20 12:51	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581823	1	11/10/20 14:36	11/24/20 14:39	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580726	1	11/23/20 10:30	11/24/20 09:19	JN	Mt. Juliet, TN

SRI5-3-S-10-201110 L1286649-06 Solid

Collected by: Tom Dube | Collected date/time: 11/10/20 15:23 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579976	1	11/21/20 05:27	11/21/20 05:35	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:17	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581218	500	11/10/20 15:23	11/23/20 23:45	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580778	40	11/10/20 15:23	11/23/20 00:49	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580726	1	11/23/20 10:30	11/24/20 12:24	TJD	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1580730	1	11/23/20 08:21	11/23/20 18:56	AMM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580175	1	11/21/20 07:33	11/22/20 08:40	LEA	Mt. Juliet, TN

SRI5-3-S-17-201110 L1286649-07 Solid

Collected by: Tom Dube | Collected date/time: 11/10/20 15:45 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579977	1	11/21/20 05:15	11/21/20 05:24	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:20	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581218	25	11/10/20 15:45	11/24/20 00:07	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580991	1	11/10/20 15:45	11/23/20 12:33	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581349	1	11/10/20 15:45	11/23/20 15:26	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580726	1	11/23/20 10:30	11/24/20 09:32	JN	Mt. Juliet, TN

SRI5-3-S-25-201110 L1286649-08 Solid

Collected by: Tom Dube | Collected date/time: 11/10/20 16:16 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579977	1	11/21/20 05:15	11/21/20 05:24	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:22	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581738	500	11/10/20 16:16	11/24/20 13:13	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580991	1	11/10/20 16:16	11/23/20 12:53	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581349	10	11/10/20 16:16	11/23/20 16:04	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580726	1	11/23/20 10:30	11/24/20 12:49	TJD	Mt. Juliet, TN

SRI5-3-S-34.5-201110 L1286649-09 Solid

Collected by: Tom Dube | Collected date/time: 11/10/20 16:44 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579977	1	11/21/20 05:15	11/21/20 05:24	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:25	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581738	25	11/10/20 16:44	11/24/20 13:36	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581275	1	11/10/20 16:44	11/24/20 04:06	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580726	1	11/23/20 10:30	11/24/20 09:44	JN	Mt. Juliet, TN

SRI5-4-S-14.5-201108 L1286649-10 Solid

Collected by: Tom Dube | Collected date/time: 11/08/20 09:25 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579977	1	11/21/20 05:15	11/21/20 05:24	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:27	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1579992	25	11/08/20 09:25	11/20/20 21:07	TPR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580286	1	11/08/20 09:25	11/21/20 12:42	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580176	1	11/21/20 00:59	11/23/20 01:16	JN	Mt. Juliet, TN

SRI5-4-S-15-201108 L1286649-11 Solid

Collected by: Tom Dube | Collected date/time: 11/08/20 09:40 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579977	1	11/21/20 05:15	11/21/20 05:24	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:30	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1579992	500	11/08/20 09:40	11/20/20 23:01	TPR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580286	40	11/08/20 09:40	11/21/20 14:35	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580176	1	11/21/20 00:59	11/23/20 01:29	JN	Mt. Juliet, TN

SRI5-4-S-17-201108 L1286649-12 Solid

Collected by: Tom Dube | Collected date/time: 11/08/20 10:11 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579977	1	11/21/20 05:15	11/21/20 05:24	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:32	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580333	100	11/08/20 10:11	11/21/20 18:05	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580286	40	11/08/20 10:11	11/21/20 14:54	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580176	1	11/21/20 00:59	11/23/20 01:42	JN	Mt. Juliet, TN

SRI5-4-S-24.5-201108 L1286649-13 Solid

Collected by: Tom Dube | Collected date/time: 11/08/20 11:00 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579977	1	11/21/20 05:15	11/21/20 05:24	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 04:46	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1579992	100	11/08/20 11:00	11/20/20 23:48	TPR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580624	1	11/08/20 11:00	11/22/20 10:57	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580176	1	11/21/20 00:59	11/23/20 01:54	JN	Mt. Juliet, TN

SRI5-5-S-14.5-201108 L1286649-14 Solid

Collected by: Tom Dube | Collected date/time: 11/08/20 13:03 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579977	1	11/21/20 05:15	11/21/20 05:24	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:35	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1579992	25	11/08/20 13:03	11/20/20 21:38	TPR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580286	1	11/08/20 13:03	11/21/20 13:01	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580176	1	11/21/20 00:59	11/23/20 02:07	JN	Mt. Juliet, TN

SRI5-5-S-17-201108 L1286649-15 Solid

Collected by: Tom Dube | Collected date/time: 11/08/20 13:23 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579977	1	11/21/20 05:15	11/21/20 05:24	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:43	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580333	5000	11/08/20 13:23	11/21/20 18:28	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580395	40	11/08/20 13:23	11/22/20 12:06	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580806	800	11/08/20 13:23	11/22/20 19:38	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580176	5	11/21/20 00:59	11/23/20 04:01	JN	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1580730	1	11/23/20 08:21	11/23/20 19:06	AMM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580173	1	11/21/20 07:38	11/22/20 05:19	AAT	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580173	20	11/21/20 07:38	11/23/20 16:08	AAT	Mt. Juliet, TN

SRI5-5-S-24-201108 L1286649-16 Solid

Collected by: Tom Dube | Collected date/time: 11/08/20 14:09 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579977	1	11/21/20 05:15	11/21/20 05:24	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:46	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580333	5000	11/08/20 14:09	11/21/20 18:51	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580395	40	11/08/20 14:09	11/22/20 12:25	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580806	800	11/08/20 14:09	11/22/20 19:56	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580176	5	11/21/20 00:59	11/23/20 04:14	JN	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1580730	1	11/23/20 08:21	11/23/20 19:16	AMM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580173	1	11/21/20 07:38	11/22/20 05:42	AAT	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580173	20	11/21/20 07:38	11/23/20 16:32	AAT	Mt. Juliet, TN

DUP-1-S-201108 L1286649-17 Solid

Collected by: Tom Dube | Collected date/time: 11/08/20 14:12 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579978	1	11/21/20 05:01	11/21/20 05:01	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:48	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580333	5000	11/08/20 14:12	11/21/20 19:14	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580395	40	11/08/20 14:12	11/22/20 12:44	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580825	400	11/08/20 14:12	11/22/20 22:05	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580176	5	11/21/20 00:59	11/23/20 04:27	JN	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1580730	1	11/23/20 08:21	11/23/20 19:26	AMM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580173	1	11/21/20 07:38	11/22/20 06:05	AAT	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580173	20	11/21/20 07:38	11/23/20 16:56	AAT	Mt. Juliet, TN

SRI5-5-S-29.5-201108 L1286649-18 Solid

Collected by: Tom Dube | Collected date/time: 11/08/20 14:45 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579978	1	11/21/20 05:01	11/21/20 05:01	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:51	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580333	10000	11/08/20 14:45	11/21/20 19:37	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580286	40	11/08/20 14:45	11/21/20 15:32	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580624	1000	11/08/20 14:45	11/22/20 11:16	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580176	1	11/21/20 00:59	11/23/20 02:20	JN	Mt. Juliet, TN

SRI5-6-S-16-201108 L1286649-19 Solid

Collected by: Tom Dube | Collected date/time: 11/08/20 16:05 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579978	1	11/21/20 05:01	11/21/20 05:01	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:53	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580603	5000	11/08/20 16:05	11/22/20 16:13	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580395	40	11/08/20 16:05	11/22/20 13:03	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580806	400	11/08/20 16:05	11/22/20 20:16	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580176	5	11/21/20 00:59	11/23/20 05:17	JN	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1580730	1	11/23/20 08:21	11/23/20 19:36	AMM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580173	1	11/21/20 07:38	11/22/20 08:45	AAT	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580173	20	11/21/20 07:38	11/23/20 17:19	AAT	Mt. Juliet, TN

SRI5-6-S-23.5-201108 L1286649-20 Solid

Collected by: Tom Dube | Collected date/time: 11/08/20 16:30 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579978	1	11/21/20 05:01	11/21/20 05:01	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580070	1	11/21/20 08:28	11/24/20 05:56	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580603	5000	11/08/20 16:30	11/22/20 16:34	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580286	40	11/08/20 16:30	11/21/20 15:50	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580624	1000	11/08/20 16:30	11/22/20 11:35	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580176	5	11/21/20 00:59	11/23/20 04:52	JN	Mt. Juliet, TN

SRI5-7-S-15-201111 L1286649-21 Solid

Collected by: Tom Dube | Collected date/time: 11/11/20 11:34 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579978	1	11/21/20 05:01	11/21/20 05:01	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 06:22	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581738	25	11/11/20 11:34	11/24/20 13:58	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581275	1	11/11/20 11:34	11/24/20 04:25	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1582400	1	11/25/20 20:25	11/26/20 09:07	CAG	Mt. Juliet, TN

SRI5-7-S-24.5-201111 L1286649-22 Solid

Collected by: Tom Dube | Collected date/time: 11/11/20 12:12 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579978	1	11/21/20 05:01	11/21/20 05:01	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 06:24	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581738	28.5	11/11/20 12:12	11/24/20 14:20	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581275	1.14	11/11/20 12:12	11/24/20 04:44	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1582400	1	11/25/20 20:25	11/26/20 10:27	CAG	Mt. Juliet, TN

SRI5-8-S-14.5-201111 L1286649-23 Solid

Collected by: Tom Dube | Collected date/time: 11/11/20 14:08 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579978	1	11/21/20 05:01	11/21/20 05:01	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 06:27	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581226	100	11/11/20 14:08	11/23/20 19:51	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580778	8	11/11/20 14:08	11/23/20 01:08	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1582400	20	11/25/20 20:25	11/29/20 05:25	JN	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1580730	1	11/23/20 08:21	11/23/20 19:46	AMM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580419	1	11/22/20 16:36	11/23/20 02:00	AAT	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580419	50	11/22/20 16:36	11/24/20 13:55	LEA	Mt. Juliet, TN

SRI5-8-S-19.5-201111 L1286649-24 Solid

Collected by: Tom Dube | Collected date/time: 11/11/20 14:20 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579978	1	11/21/20 05:01	11/21/20 05:01	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 06:35	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581226	100	11/11/20 14:20	11/23/20 20:12	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581275	8	11/11/20 14:20	11/24/20 06:19	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1582400	1	11/25/20 20:25	11/26/20 09:21	CAG	Mt. Juliet, TN

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

SRI5-8-S-29.5-201111 L1286649-25 Solid

Collected by: Tom Dube | Collected date/time: 11/11/20 15:09 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579978	1	11/21/20 05:01	11/21/20 05:01	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 06:37	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581226	25	11/11/20 15:09	11/23/20 20:32	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581275	1	11/11/20 15:09	11/24/20 05:03	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1582400	1	11/25/20 20:25	11/26/20 09:47	CAG	Mt. Juliet, TN

SRI5-9-S-8-201110 L1286649-26 Solid

Collected by: Tom Dube | Collected date/time: 11/10/20 16:25 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579978	1	11/21/20 05:01	11/21/20 05:01	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 06:40	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581226	25	11/10/20 16:25	11/23/20 20:53	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581275	1	11/10/20 16:25	11/24/20 05:22	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580726	1	11/23/20 10:30	11/24/20 09:57	JN	Mt. Juliet, TN

SRI5-9-S-15-201111 L1286649-27 Solid

Collected by: Tom Dube | Collected date/time: 11/11/20 16:09 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579979	1	11/22/20 03:06	11/22/20 04:05	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 06:42	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581226	250	11/11/20 16:09	11/23/20 21:14	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580778	20	11/11/20 16:09	11/23/20 01:27	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1582400	200	11/25/20 20:25	11/26/20 12:40	JN	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1580730	1	11/23/20 08:21	11/23/20 19:55	AMM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580740	1	11/23/20 13:11	11/24/20 14:36	LEA	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580740	20	11/23/20 13:11	11/25/20 05:22	JNJ	Mt. Juliet, TN

SRI5-9-S-19-201111 L1286649-28 Solid

Collected by: Tom Dube | Collected date/time: 11/11/20 16:27 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579979	1	11/22/20 03:06	11/22/20 04:05	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 06:45	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581226	500	11/11/20 16:27	11/23/20 21:35	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581275	40	11/11/20 16:27	11/24/20 06:38	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1582400	50	11/25/20 20:25	11/29/20 05:50	JN	Mt. Juliet, TN

SRI5-9-S-27-201111 L1286649-29 Solid

Collected by: Tom Dube | Collected date/time: 11/11/20 16:38 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579979	1	11/22/20 03:06	11/22/20 04:05	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 06:48	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581226	25	11/11/20 16:38	11/23/20 21:56	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581275	1	11/11/20 16:38	11/24/20 05:41	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1582400	1	11/25/20 20:25	11/26/20 07:47	CAG	Mt. Juliet, TN

SRI5-10-S-8-201112 L1286649-30 Solid

Collected by: Tom Dube | Collected date/time: 11/12/20 08:51 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579979	1	11/22/20 03:06	11/22/20 04:05	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 06:09	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581230	25	11/12/20 08:51	11/24/20 06:34	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581275	1	11/12/20 08:51	11/24/20 06:00	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1581894	1	11/25/20 16:40	11/26/20 15:11	JDG	Mt. Juliet, TN

SRI5-10-S-14.5-201112 L1286649-31 Solid

Collected by: Tom Dube | Collected date/time: 11/12/20 09:09 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579979	1	11/22/20 03:06	11/22/20 04:05	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 06:50	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581230	500	11/12/20 09:09	11/24/20 06:55	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580778	40	11/12/20 09:09	11/23/20 01:46	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1581894	1	11/25/20 16:40	11/26/20 15:24	JN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1581894	5	11/25/20 16:40	11/27/20 11:07	JN	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1580730	1	11/23/20 08:21	11/23/20 20:07	AMM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580740	1	11/23/20 13:11	11/24/20 14:53	LEA	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580740	20	11/23/20 13:11	11/25/20 05:39	JNJ	Mt. Juliet, TN

SRI5-10-S-18-201112 L1286649-32 Solid

Collected by: Tom Dube | Collected date/time: 11/12/20 09:43 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579979	1	11/22/20 03:06	11/22/20 04:05	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 06:53	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1582038	50	11/12/20 09:43	11/24/20 21:40	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581290	20	11/12/20 09:43	11/24/20 04:40	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1581894	1	11/25/20 16:40	11/26/20 15:37	JDG	Mt. Juliet, TN

DUP-2-201112 L1286649-33 Solid

Collected by: Tom Dube | Collected date/time: 11/12/20 00:00 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579979	1	11/22/20 03:06	11/22/20 04:05	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 06:56	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581230	25	11/12/20 00:00	11/24/20 07:37	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581290	1	11/12/20 00:00	11/24/20 02:47	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1581894	1	11/25/20 16:40	11/26/20 15:49	JN	Mt. Juliet, TN

SRI5-10-S-21-201112 L1286649-34 Solid

Collected by: Tom Dube | Collected date/time: 11/12/20 10:31 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579979	1	11/22/20 03:06	11/22/20 04:05	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 06:58	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1582038	5000	11/12/20 10:31	11/24/20 22:02	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581290	40	11/12/20 10:31	11/24/20 04:59	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1581894	1	11/25/20 16:40	11/26/20 16:02	JN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1581894	5	11/25/20 16:40	11/27/20 11:33	JN	Mt. Juliet, TN

SRI5-10-S-34.5-201112 L1286649-35 Solid

Collected by: Tom Dube | Collected date/time: 11/12/20 11:10 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579979	1	11/22/20 03:06	11/22/20 04:05	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 07:06	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1582038	25	11/12/20 11:10	11/24/20 20:53	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581290	1	11/12/20 11:10	11/24/20 03:06	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1581894	1	11/25/20 16:40	11/26/20 16:15	JDG	Mt. Juliet, TN

SRI5-11-S-8-201112 L1286649-36 Solid

Collected by: Tom Dube | Collected date/time: 11/12/20 13:40 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579979	1	11/22/20 03:06	11/22/20 04:05	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 07:09	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581230	25	11/12/20 13:40	11/24/20 08:39	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581290	1	11/12/20 13:40	11/24/20 03:25	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1581894	1	11/25/20 16:40	11/26/20 16:28	JN	Mt. Juliet, TN

SRI5-11-S-13.5-201112 L1286649-37 Solid

Collected by: Tom Dube | Collected date/time: 11/12/20 13:50 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579980	1	11/22/20 02:48	11/22/20 03:02	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 07:11	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581230	500	11/12/20 13:50	11/24/20 09:00	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581290	40	11/12/20 13:50	11/24/20 05:18	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1581894	1	11/25/20 16:40	11/26/20 16:40	JN	Mt. Juliet, TN

SRI5-11-S-15-201112 L1286649-38 Solid

Collected by: Tom Dube | Collected date/time: 11/12/20 14:28 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579980	1	11/22/20 02:48	11/22/20 03:02	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 07:14	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1582038	5000	11/12/20 14:28	11/24/20 22:26	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580778	40	11/12/20 14:28	11/23/20 02:05	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1581894	1	11/25/20 16:40	11/26/20 17:44	JN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1581894	5	11/25/20 16:40	11/27/20 12:24	JN	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1580730	1	11/23/20 08:21	11/23/20 20:17	AMM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1581271	1	11/24/20 16:29	11/25/20 02:46	JNJ	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1581271	10	11/24/20 16:29	11/25/20 07:05	JNJ	Mt. Juliet, TN

DUP-3-201112 L1286649-39 Solid

Collected by: Tom Dube | Collected date/time: 11/12/20 12:00 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579980	1	11/22/20 02:48	11/22/20 03:02	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 07:16	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1582210	5000	11/12/20 12:00	11/25/20 16:58	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580778	40	11/12/20 12:00	11/23/20 02:24	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1581894	1	11/25/20 16:40	11/26/20 16:53	JN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1581894	5	11/25/20 16:40	11/27/20 11:58	JN	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1580730	1	11/23/20 08:21	11/23/20 20:26	AMM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1581271	1	11/24/20 16:29	11/25/20 03:04	JNJ	Mt. Juliet, TN

DUP-3-201112 L1286649-39 Solid

Collected by: Tom Dube | Collected date/time: 11/12/20 12:00 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1581271	10	11/24/20 16:29	11/25/20 07:22	JNJ	Mt. Juliet, TN

SRI5-11-S-29.5-201112 L1286649-40 Solid

Collected by: Tom Dube | Collected date/time: 11/12/20 14:56 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579980	1	11/22/20 02:48	11/22/20 03:02	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580071	1	11/20/20 17:28	11/24/20 07:19	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1582038	25	11/12/20 14:56	11/24/20 21:16	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581290	1	11/12/20 14:56	11/24/20 03:44	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1581894	1	11/25/20 16:40	11/26/20 17:06	JDG	Mt. Juliet, TN

UHP-1-S-12-201109 L1286649-41 Solid

Collected by: Tom Dube | Collected date/time: 11/09/20 08:55 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579980	1	11/22/20 02:48	11/22/20 03:02	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580077	1	11/21/20 01:41	11/22/20 22:44	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580518	25	11/09/20 08:55	11/21/20 23:46	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580802	1	11/09/20 08:55	11/22/20 17:46	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580176	1	11/21/20 00:59	11/23/20 02:33	JN	Mt. Juliet, TN

UHP-2-S-12-201109 L1286649-42 Solid

Collected by: Tom Dube | Collected date/time: 11/09/20 11:32 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579980	1	11/22/20 02:48	11/22/20 03:02	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580077	1	11/21/20 01:41	11/22/20 22:47	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580518	25	11/09/20 11:32	11/22/20 00:08	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580802	1	11/09/20 11:32	11/22/20 18:05	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580176	1	11/21/20 00:59	11/23/20 02:45	JN	Mt. Juliet, TN

UHP-3-S-12.5-201109 L1286649-43 Solid

Collected by: Tom Dube | Collected date/time: 11/09/20 13:38 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579980	1	11/22/20 02:48	11/22/20 03:02	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580077	1	11/21/20 01:41	11/22/20 22:50	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580518	25	11/09/20 13:38	11/22/20 00:31	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580802	1	11/09/20 13:38	11/22/20 18:24	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580611	1	11/22/20 07:43	11/23/20 08:01	JN	Mt. Juliet, TN

UHP-3-S-17-201109 L1286649-44 Solid

Collected by: Tom Dube | Collected date/time: 11/09/20 13:45 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579980	1	11/22/20 02:48	11/22/20 03:02	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580077	1	11/21/20 01:41	11/22/20 22:52	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580518	25	11/09/20 13:45	11/22/20 00:53	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580802	1	11/09/20 13:45	11/22/20 18:43	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580611	1	11/22/20 07:43	11/23/20 08:14	JN	Mt. Juliet, TN

UHP-4-S-14.5-201109 L1286649-45 Solid

Collected by: Tom Dube | Collected date/time: 11/09/20 15:05 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579980	1	11/22/20 02:48	11/22/20 03:02	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580077	1	11/21/20 01:41	11/22/20 22:55	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580518	25	11/09/20 15:05	11/22/20 01:15	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580802	1	11/09/20 15:05	11/22/20 19:02	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580611	1	11/22/20 07:43	11/23/20 08:27	JN	Mt. Juliet, TN

UHP-4-S-17.5-201109 L1286649-46 Solid

Collected by: Tom Dube | Collected date/time: 11/09/20 15:13 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579980	1	11/22/20 02:48	11/22/20 03:02	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580077	1	11/21/20 01:41	11/22/20 22:58	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580518	25	11/09/20 15:13	11/22/20 01:38	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580802	1	11/09/20 15:13	11/22/20 19:21	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580611	1	11/22/20 07:43	11/23/20 08:40	JN	Mt. Juliet, TN

UHP-5-S-7.5-201108 L1286649-47 Solid

Collected by: Tom Dube | Collected date/time: 11/08/20 11:22 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579981	1	11/22/20 02:24	11/22/20 02:39	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580077	1	11/21/20 01:41	11/22/20 22:13	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580518	25	11/08/20 11:22	11/21/20 19:39	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580802	1	11/08/20 11:22	11/22/20 17:09	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580176	1	11/21/20 00:59	11/23/20 03:11	JN	Mt. Juliet, TN

UHP-5-S-14.5-201111 L1286649-48 Solid

Collected by: Tom Dube | Collected date/time: 11/11/20 09:21 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579981	1	11/22/20 02:24	11/22/20 02:39	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580077	1	11/21/20 01:41	11/22/20 23:00	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581226	25	11/11/20 09:21	11/23/20 22:17	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581290	1	11/11/20 09:21	11/24/20 04:03	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1582400	1	11/25/20 20:25	11/26/20 08:01	CAG	Mt. Juliet, TN

UHP-6-S-13-201110 L1286649-49 Solid

Collected by: Tom Dube | Collected date/time: 11/10/20 08:22 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579981	1	11/22/20 02:24	11/22/20 02:39	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580077	1	11/21/20 01:41	11/22/20 23:03	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581226	25	11/10/20 08:22	11/23/20 22:37	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581290	1	11/10/20 08:22	11/24/20 00:20	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580726	1	11/23/20 10:30	11/24/20 10:10	JN	Mt. Juliet, TN

SVP-1-S-5-201108 L1286649-50 Solid

Collected by: Tom Dube | Collected date/time: 11/08/20 08:40 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579981	1	11/22/20 02:24	11/22/20 02:39	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580077	1	11/21/20 01:41	11/22/20 23:11	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580518	27.3	11/08/20 08:40	11/21/20 20:02	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580802	1.09	11/08/20 08:40	11/22/20 17:27	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580176	1	11/21/20 00:59	11/23/20 02:58	JN	Mt. Juliet, TN

SVP-2-S-9-201109 L1286649-51 Solid

Collected by: Tom Dube | Collected date/time: 11/09/20 13:48 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579981	1	11/22/20 02:24	11/22/20 02:39	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580077	1	11/21/20 01:41	11/22/20 23:13	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580518	25.3	11/09/20 13:48	11/22/20 02:00	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580802	1.01	11/09/20 13:48	11/22/20 19:40	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580611	1	11/22/20 07:43	11/23/20 08:52	JN	Mt. Juliet, TN

221EW-UST2-S-201108 L1286649-52 Solid

Collected by: Tom Dube | Collected date/time: 11/08/20 12:40 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1579981	1	11/22/20 02:24	11/22/20 02:39	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1581511	1	11/23/20 23:26	11/24/20 02:54	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580518	1230	11/08/20 12:40	11/22/20 02:45	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580488	98.4	11/08/20 12:40	11/22/20 06:00	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT	WG1580176	250	11/21/20 00:59	11/24/20 06:59	JN	Mt. Juliet, TN
Polychlorinated Biphenyls (GC) by Method 8082 A	WG1580730	1	11/23/20 08:21	11/23/20 20:36	AMM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1580173	10	11/21/20 07:38	11/23/20 18:06	AAT	Mt. Juliet, TN

ER-1-201112 L1286649-53 GW

Collected by: Tom Dube | Collected date/time: 11/12/20 08:35 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581412	1	11/23/20 23:30	11/23/20 23:30	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581391	1	11/23/20 20:01	11/23/20 20:01	JCP	Mt. Juliet, TN

ER-2-201112 L1286649-54 GW

Collected by: Tom Dube | Collected date/time: 11/12/20 12:15 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1581412	1	11/23/20 23:55	11/23/20 23:55	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1581391	1	11/23/20 20:21	11/23/20 20:21	JCP	Mt. Juliet, TN

PCW-1-W-201113 L1286649-55 GW

Collected by: Tom Dube | Collected date/time: 11/13/20 10:10 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9040C	WG1578810	1	11/21/20 15:00	11/21/20 15:00	JIC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580736	1	11/23/20 04:26	11/23/20 18:06	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1582001	100	11/24/20 22:17	11/24/20 22:17	ADM	Mt. Juliet, TN

PCW-2-W-201113 L1286649-56 GW

Collected by: Tom Dube | Collected date/time: 11/13/20 10:35 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9040C	WG1578810	1	11/21/20 15:00	11/21/20 15:00	JIC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580736	1	11/23/20 04:26	11/23/20 18:09	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580633	1	11/22/20 13:02	11/22/20 13:02	JCP	Mt. Juliet, TN

PCW-3-W-201113 L1286649-57 GW

Collected by: Tom Dube | Collected date/time: 11/13/20 10:40 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9040C	WG1578810	1	11/21/20 15:00	11/21/20 15:00	JIC	Mt. Juliet, TN
Metals (ICP) by Method 6010D	WG1580736	1	11/23/20 04:26	11/23/20 18:12	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580633	1	11/22/20 13:21	11/22/20 13:21	JCP	Mt. Juliet, TN

TB-2-201108 L1286649-58 GW

Collected by: Tom Dube | Collected date/time: 11/08/20 12:00 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580118	1	11/21/20 02:19	11/21/20 02:19	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580529	1	11/21/20 19:50	11/21/20 19:50	JAH	Mt. Juliet, TN

TB-3-201108 L1286649-59 GW

Collected by: Tom Dube | Collected date/time: 11/08/20 12:00 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580118	1	11/21/20 02:43	11/21/20 02:43	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580529	1	11/21/20 20:09	11/21/20 20:09	JAH	Mt. Juliet, TN

TB-4-201108 L1286649-60 GW

Collected by: Tom Dube | Collected date/time: 11/08/20 12:00 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580118	1	11/21/20 03:07	11/21/20 03:07	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580529	1	11/21/20 20:28	11/21/20 20:28	JAH	Mt. Juliet, TN

TB-5-201108 L1286649-61 GW

Collected by: Tom Dube | Collected date/time: 11/08/20 12:00 | Received date/time: 11/17/20 09:00

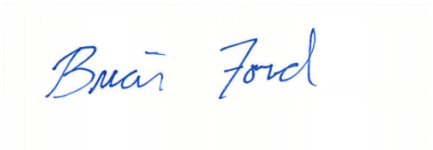
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580118	1	11/21/20 03:31	11/21/20 03:31	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580529	1	11/21/20 20:47	11/21/20 20:47	JAH	Mt. Juliet, TN

TB-6-201108 L1286649-62 GW

Collected by: Tom Dube | Collected date/time: 11/08/20 12:00 | Received date/time: 11/17/20 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1580118	1	11/21/20 03:55	11/21/20 03:55	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1580529	1	11/21/20 21:06	11/21/20 21:06	JAH	Mt. Juliet, TN

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



Brian Ford
Project Manager

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	76.1		1	11/21/2020 05:35	WG1579976

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	26.9		0.273	0.657	1	11/24/2020 04:59	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	1980		58.5	172	1000	11/24/2020 11:16	WG1581738
(S) a,a,a-Trifluorotoluene(FID)	*97.3*			*77.0-120*		*11/24/2020 11:16*	WG1581738

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.0193		0.00645	0.0138	8	11/22/2020 23:39	WG1580802
Toluene	2.78		0.0179	0.0690	8	11/22/2020 23:39	WG1580802
Ethylbenzene	4.12		0.0102	0.0345	8	11/22/2020 23:39	WG1580802
Total Xylenes	26.2		0.0121	0.0897	8	11/22/2020 23:39	WG1580802
Methyl tert-butyl ether	U		0.00483	0.0138	8	11/22/2020 23:39	WG1580802
1,2-Dichloroethane	U		0.00895	0.0345	8	11/22/2020 23:39	WG1580802
1,2-Dibromoethane	U		0.00893	0.0345	8	11/22/2020 23:39	WG1580802
(S) Toluene-d8	*102*			*75.0-131*		*11/22/2020 23:39*	WG1580802
(S) 4-Bromofluorobenzene	*222*	J1		*67.0-138*		*11/22/2020 23:39*	WG1580802
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*		*11/22/2020 23:39*	WG1580802

Sample Narrative:

L1286649-01 WG1580802: Surrogate failure due to matrix interference.

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	18.7		1.75	5.26	1	11/24/2020 08:41	WG1580726
Residual Range Organics (RRO)	U		4.38	13.1	1	11/24/2020 08:41	WG1580726
(S) o-Terphenyl	*56.0*			*18.0-148*		*11/24/2020 08:41*	WG1580726

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	78.9		1	11/21/2020 05:35	WG1579976

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Copper	28.8		0.507	2.54	1	11/24/2020 05:01	WG1580070
Lead	4.79		0.264	0.634	1	11/24/2020 05:01	WG1580070
Nickel	21.6		0.167	2.54	1	11/24/2020 05:01	WG1580070
Zinc	59.3		1.05	6.34	1	11/24/2020 05:01	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	11500		270	798	5000	11/24/2020 11:39	WG1581738
(S) a,a,a-Trifluorotoluene(FID)	*94.3*			*77.0-120*		*11/24/2020 11:39*	WG1581738

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	4.26		0.0298	0.0638	40	11/23/2020 00:11	WG1580778
Bromobenzene	U		0.0574	0.798	40	11/23/2020 00:11	WG1580778
Bromodichloromethane	U		0.0463	0.160	40	11/23/2020 00:11	WG1580778
Bromoform	U		0.0747	1.60	40	11/23/2020 00:11	WG1580778
Bromomethane	U		0.126	0.798	40	11/23/2020 00:11	WG1580778
Carbon tetrachloride	U		0.0573	0.319	40	11/23/2020 00:11	WG1580778
Chlorobenzene	U		0.0134	0.160	40	11/23/2020 00:11	WG1580778
Chlorodibromomethane	U		0.0391	0.160	40	11/23/2020 00:11	WG1580778
Chloroethane	U		0.109	0.319	40	11/23/2020 00:11	WG1580778
Chloroform	U		0.0657	0.160	40	11/23/2020 00:11	WG1580778
Chloromethane	U	C3	0.278	0.798	40	11/23/2020 00:11	WG1580778
2-Chlorotoluene	U		0.0552	0.160	40	11/23/2020 00:11	WG1580778
4-Chlorotoluene	U		0.0287	0.319	40	11/23/2020 00:11	WG1580778
1,2-Dibromo-3-Chloropropane	U		0.249	1.60	40	11/23/2020 00:11	WG1580778
1,2-Dibromoethane	U		0.0413	0.160	40	11/23/2020 00:11	WG1580778
Dibromomethane	U		0.0479	0.319	40	11/23/2020 00:11	WG1580778
1,2-Dichlorobenzene	U		0.0271	0.319	40	11/23/2020 00:11	WG1580778
1,3-Dichlorobenzene	U		0.0383	0.319	40	11/23/2020 00:11	WG1580778
1,4-Dichlorobenzene	U		0.0447	0.319	40	11/23/2020 00:11	WG1580778
Dichlorodifluoromethane	U		0.103	0.160	40	11/23/2020 00:11	WG1580778
1,1-Dichloroethane	U		0.0313	0.160	40	11/23/2020 00:11	WG1580778
1,2-Dichloroethane	U		0.0415	0.160	40	11/23/2020 00:11	WG1580778
1,1-Dichloroethene	U		0.0386	0.160	40	11/23/2020 00:11	WG1580778
cis-1,2-Dichloroethene	U		0.0469	0.160	40	11/23/2020 00:11	WG1580778
trans-1,2-Dichloroethene	U		0.0664	0.319	40	11/23/2020 00:11	WG1580778
1,2-Dichloropropane	U		0.0906	0.319	40	11/23/2020 00:11	WG1580778
1,1-Dichloropropene	U		0.0517	0.160	40	11/23/2020 00:11	WG1580778
1,3-Dichloropropane	U		0.0319	0.319	40	11/23/2020 00:11	WG1580778
cis-1,3-Dichloropropene	U		0.0483	0.160	40	11/23/2020 00:11	WG1580778
trans-1,3-Dichloropropene	U		0.0728	0.319	40	11/23/2020 00:11	WG1580778
2,2-Dichloropropane	U		0.0881	0.160	40	11/23/2020 00:11	WG1580778
Ethylbenzene	38.3		0.0471	0.160	40	11/23/2020 00:11	WG1580778
Hexachloro-1,3-butadiene	U		0.383	1.60	40	11/23/2020 00:11	WG1580778
Methylene Chloride	U	C3	0.424	1.60	40	11/23/2020 00:11	WG1580778
Methyl tert-butyl ether	0.0314	J	0.0223	0.0638	40	11/23/2020 00:11	WG1580778

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.0605	0.160	40	11/23/2020 00:11	WG1580778
1,1,2,2-Tetrachloroethane	U		0.0444	0.160	40	11/23/2020 00:11	WG1580778
1,1,2-Trichlorotrifluoroethane	U		0.0482	0.160	40	11/23/2020 00:11	WG1580778
Tetrachloroethene	U		0.0571	0.160	40	11/23/2020 00:11	WG1580778
Toluene	67.7		0.0830	0.319	40	11/23/2020 00:11	WG1580778
1,2,3-Trichlorobenzene	U	C4	0.468	0.798	40	11/23/2020 00:11	WG1580778
1,2,4-Trichlorobenzene	U	C3	0.281	0.798	40	11/23/2020 00:11	WG1580778
1,1,1-Trichloroethane	U		0.0589	0.160	40	11/23/2020 00:11	WG1580778
1,1,2-Trichloroethane	U		0.0381	0.160	40	11/23/2020 00:11	WG1580778
Trichloroethene	U		0.0373	0.0638	40	11/23/2020 00:11	WG1580778
Trichlorofluoromethane	U		0.0528	0.160	40	11/23/2020 00:11	WG1580778
1,2,3-Trichloropropane	U		0.103	0.798	40	11/23/2020 00:11	WG1580778
Vinyl chloride	U		0.0740	0.160	40	11/23/2020 00:11	WG1580778
Xylenes, Total	203		0.0562	0.415	40	11/23/2020 00:11	WG1580778
(S) Toluene-d8	*119*			*75.0-131*		*11/23/2020 00:11*	WG1580778
(S) 4-Bromofluorobenzene	*131*			*67.0-138*		*11/23/2020 00:11*	WG1580778
(S) 1,2-Dichloroethane-d4	*125*			*70.0-130*		*11/23/2020 00:11*	WG1580778

Sample Narrative:

L1286649-02 WG1580778: Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	502		8.43	25.4	5	11/24/2020 14:18	WG1580726
Residual Range Organics (RRO)	U		4.22	12.7	1	11/24/2020 08:54	WG1580726
(S) o-Terphenyl	*73.7*			*18.0-148*		*11/24/2020 14:18*	WG1580726
(S) o-Terphenyl	*75.2*			*18.0-148*		*11/24/2020 08:54*	WG1580726

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0150	0.0431	1	11/23/2020 18:36	WG1580730
PCB 1221	U		0.0150	0.0431	1	11/23/2020 18:36	WG1580730
PCB 1232	U		0.0150	0.0431	1	11/23/2020 18:36	WG1580730
PCB 1242	U		0.0150	0.0431	1	11/23/2020 18:36	WG1580730
PCB 1248	U		0.00936	0.0216	1	11/23/2020 18:36	WG1580730
PCB 1254	U		0.00936	0.0216	1	11/23/2020 18:36	WG1580730
PCB 1260	U		0.00936	0.0216	1	11/23/2020 18:36	WG1580730
(S) Decachlorobiphenyl	*63.7*			*10.0-135*		*11/23/2020 18:36*	WG1580730
(S) Tetrachloro-m-xylene	*74.9*			*10.0-139*		*11/23/2020 18:36*	WG1580730

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.00219	0.00761	1	11/22/2020 08:06	WG1580175
Benzo(a)pyrene	U		0.00227	0.00761	1	11/22/2020 08:06	WG1580175
Benzo(b)fluoranthene	U		0.00194	0.00761	1	11/22/2020 08:06	WG1580175
Benzo(k)fluoranthene	U		0.00273	0.00761	1	11/22/2020 08:06	WG1580175
Chrysene	U		0.00294	0.00761	1	11/22/2020 08:06	WG1580175
Dibenz(a,h)anthracene	U		0.00218	0.00761	1	11/22/2020 08:06	WG1580175
Indeno(1,2,3-cd)pyrene	U		0.00229	0.00761	1	11/22/2020 08:06	WG1580175
Naphthalene	10.2		0.103	0.507	20	11/23/2020 00:32	WG1580175
1-Methylnaphthalene	2.83		0.00569	0.0254	1	11/22/2020 08:06	WG1580175
2-Methylnaphthalene	5.54		0.108	0.507	20	11/23/2020 00:32	WG1580175

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) Nitrobenzene-d5	*2240*	J1		*14.0-149*		*11/22/2020 08:06*	WG1580175
(S) Nitrobenzene-d5	*0.000*	J7		*14.0-149*		*11/23/2020 00:32*	WG1580175
(S) 2-Fluorobiphenyl	*73.3*	J7		*34.0-125*		*11/23/2020 00:32*	WG1580175
(S) 2-Fluorobiphenyl	*72.6*			*34.0-125*		*11/22/2020 08:06*	WG1580175
(S) p-Terphenyl-d14	*78.1*			*23.0-120*		*11/22/2020 08:06*	WG1580175
(S) p-Terphenyl-d14	*95.5*	J7		*23.0-120*		*11/23/2020 00:32*	WG1580175

Sample Narrative:

L1286649-02 WG1580175: Surrogate failure due to matrix interference

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	72.5		1	11/21/2020 05:35	WG1579976

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	4.99		0.287	0.689	1	11/24/2020 05:04	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	15.3		1.55	4.58	26.3	11/24/2020 12:06	WG1581738
(S) a,a,a-Trifluorotoluene(FID)	*100*			*77.0-120*		*11/24/2020 12:06*	WG1581738

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.167		0.000853	0.00183	1.05	11/22/2020 23:20	WG1580802
Toluene	0.423		0.00237	0.00914	1.05	11/22/2020 23:20	WG1580802
Ethylbenzene	0.0898		0.00135	0.00458	1.05	11/22/2020 23:20	WG1580802
Total Xylenes	0.294		0.00161	0.0119	1.05	11/22/2020 23:20	WG1580802
Methyl tert-butyl ether	U		0.000641	0.00183	1.05	11/22/2020 23:20	WG1580802
1,2-Dichloroethane	U		0.00119	0.00458	1.05	11/22/2020 23:20	WG1580802
1,2-Dibromoethane	U		0.00118	0.00458	1.05	11/22/2020 23:20	WG1580802
(S) Toluene-d8	*106*			*75.0-131*		*11/22/2020 23:20*	WG1580802
(S) 4-Bromofluorobenzene	*99.7*			*67.0-138*		*11/22/2020 23:20*	WG1580802
(S) 1,2-Dichloroethane-d4	*85.3*			*70.0-130*		*11/22/2020 23:20*	WG1580802

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.83	5.52	1	11/24/2020 09:06	WG1580726
Residual Range Organics (RRO)	U		4.59	13.8	1	11/24/2020 09:06	WG1580726
(S) o-Terphenyl	*62.0*			*18.0-148*		*11/24/2020 09:06*	WG1580726

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	75.8		1	11/21/2020 05:35	WG1579976

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Copper	34.4		0.528	2.64	1	11/24/2020 05:12	WG1580070
Lead	15.9		0.274	0.660	1	11/24/2020 05:12	WG1580070
Nickel	26.9		0.174	2.64	1	11/24/2020 05:12	WG1580070
Zinc	74.0		1.10	6.60	1	11/24/2020 05:12	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	3130		144	426	2500	11/24/2020 12:28	WG1581738
(S) a,a,a-Trifluorotoluene(FID)	*99.4*			*77.0-120*		*11/24/2020 12:28*	WG1581738

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.00637	0.0136	8	11/23/2020 00:30	WG1580778
Bromobenzene	U		0.0123	0.170	8	11/23/2020 00:30	WG1580778
Bromodichloromethane	U		0.00988	0.0341	8	11/23/2020 00:30	WG1580778
Bromoform	U		0.0159	0.341	8	11/23/2020 00:30	WG1580778
Bromomethane	U		0.0269	0.170	8	11/23/2020 00:30	WG1580778
Carbon tetrachloride	U		0.0122	0.0681	8	11/23/2020 00:30	WG1580778
Chlorobenzene	U		0.00286	0.0341	8	11/23/2020 00:30	WG1580778
Chlorodibromomethane	U		0.00835	0.0341	8	11/23/2020 00:30	WG1580778
Chloroethane	U		0.0232	0.0681	8	11/23/2020 00:30	WG1580778
Chloroform	U		0.0140	0.0341	8	11/23/2020 00:30	WG1580778
Chloromethane	U	C3	0.0593	0.170	8	11/23/2020 00:30	WG1580778
2-Chlorotoluene	U		0.0118	0.0341	8	11/23/2020 00:30	WG1580778
4-Chlorotoluene	U		0.00613	0.0681	8	11/23/2020 00:30	WG1580778
1,2-Dibromo-3-Chloropropane	U		0.0531	0.341	8	11/23/2020 00:30	WG1580778
1,2-Dibromoethane	U		0.00882	0.0341	8	11/23/2020 00:30	WG1580778
Dibromomethane	U		0.0102	0.0681	8	11/23/2020 00:30	WG1580778
1,2-Dichlorobenzene	U		0.00579	0.0681	8	11/23/2020 00:30	WG1580778
1,3-Dichlorobenzene	U		0.00818	0.0681	8	11/23/2020 00:30	WG1580778
1,4-Dichlorobenzene	U		0.00954	0.0681	8	11/23/2020 00:30	WG1580778
Dichlorodifluoromethane	U		0.0220	0.0341	8	11/23/2020 00:30	WG1580778
1,1-Dichloroethane	U		0.00669	0.0341	8	11/23/2020 00:30	WG1580778
1,2-Dichloroethane	U		0.00884	0.0341	8	11/23/2020 00:30	WG1580778
1,1-Dichloroethene	U		0.00826	0.0341	8	11/23/2020 00:30	WG1580778
cis-1,2-Dichloroethene	U		0.0100	0.0341	8	11/23/2020 00:30	WG1580778
trans-1,2-Dichloroethene	U		0.0142	0.0681	8	11/23/2020 00:30	WG1580778
1,2-Dichloropropane	U		0.0194	0.0681	8	11/23/2020 00:30	WG1580778
1,1-Dichloropropene	U		0.0110	0.0341	8	11/23/2020 00:30	WG1580778
1,3-Dichloropropane	U		0.00683	0.0681	8	11/23/2020 00:30	WG1580778
cis-1,3-Dichloropropene	U		0.0103	0.0341	8	11/23/2020 00:30	WG1580778
trans-1,3-Dichloropropene	U		0.0155	0.0681	8	11/23/2020 00:30	WG1580778
2,2-Dichloropropane	U		0.0187	0.0341	8	11/23/2020 00:30	WG1580778
Ethylbenzene	2.37		0.0100	0.0341	8	11/23/2020 00:30	WG1580778
Hexachloro-1,3-butadiene	U		0.0818	0.341	8	11/23/2020 00:30	WG1580778
Methylene Chloride	U	C3	0.0904	0.341	8	11/23/2020 00:30	WG1580778
Methyl tert-butyl ether	U		0.00477	0.0136	8	11/23/2020 00:30	WG1580778

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.0129	0.0341	8	11/23/2020 00:30	WG1580778
1,1,2,2-Tetrachloroethane	U		0.00947	0.0341	8	11/23/2020 00:30	WG1580778
1,1,2-Trichlorotrifluoroethane	U		0.0103	0.0341	8	11/23/2020 00:30	WG1580778
Tetrachloroethene	U		0.0122	0.0341	8	11/23/2020 00:30	WG1580778
Toluene	0.438		0.0177	0.0681	8	11/23/2020 00:30	WG1580778
1,2,3-Trichlorobenzene	U	C4	0.0998	0.170	8	11/23/2020 00:30	WG1580778
1,2,4-Trichlorobenzene	U	C3	0.0600	0.170	8	11/23/2020 00:30	WG1580778
1,1,1-Trichloroethane	U		0.0126	0.0341	8	11/23/2020 00:30	WG1580778
1,1,2-Trichloroethane	U		0.00814	0.0341	8	11/23/2020 00:30	WG1580778
Trichloroethene	U		0.00795	0.0136	8	11/23/2020 00:30	WG1580778
Trichlorofluoromethane	U		0.0113	0.0341	8	11/23/2020 00:30	WG1580778
1,2,3-Trichloropropane	U		0.0221	0.170	8	11/23/2020 00:30	WG1580778
Vinyl chloride	U		0.0158	0.0341	8	11/23/2020 00:30	WG1580778
Xylenes, Total	10.5		0.0120	0.0886	8	11/23/2020 00:30	WG1580778
(S) Toluene-d8	*122*			*75.0-131*		*11/23/2020 00:30*	WG1580778
(S) 4-Bromofluorobenzene	*231*	J1		*67.0-138*		*11/23/2020 00:30*	WG1580778
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*		*11/23/2020 00:30*	WG1580778

Sample Narrative:

L1286649-04 WG1580778: Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	34.8		1.75	5.28	1	11/24/2020 12:36	WG1580726
Residual Range Organics (RRO)	U		4.39	13.2	1	11/24/2020 12:36	WG1580726
(S) o-Terphenyl	*64.2*			*18.0-148*		*11/24/2020 12:36*	WG1580726

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0156	0.0449	1	11/23/2020 18:46	WG1580730
PCB 1221	U		0.0156	0.0449	1	11/23/2020 18:46	WG1580730
PCB 1232	U		0.0156	0.0449	1	11/23/2020 18:46	WG1580730
PCB 1242	U		0.0156	0.0449	1	11/23/2020 18:46	WG1580730
PCB 1248	U		0.00974	0.0224	1	11/23/2020 18:46	WG1580730
PCB 1254	U		0.00974	0.0224	1	11/23/2020 18:46	WG1580730
PCB 1260	U		0.00974	0.0224	1	11/23/2020 18:46	WG1580730
(S) Decachlorobiphenyl	*50.8*			*10.0-135*		*11/23/2020 18:46*	WG1580730
(S) Tetrachloro-m-xylene	*70.1*			*10.0-139*		*11/23/2020 18:46*	WG1580730

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.00228	0.00792	1	11/22/2020 08:23	WG1580175
Benzo(a)pyrene	U		0.00236	0.00792	1	11/22/2020 08:23	WG1580175
Benzo(b)fluoranthene	U		0.00202	0.00792	1	11/22/2020 08:23	WG1580175
Benzo(k)fluoranthene	U		0.00284	0.00792	1	11/22/2020 08:23	WG1580175
Chrysene	U		0.00306	0.00792	1	11/22/2020 08:23	WG1580175
Dibenz(a,h)anthracene	U		0.00227	0.00792	1	11/22/2020 08:23	WG1580175
Indeno(1,2,3-cd)pyrene	U		0.00239	0.00792	1	11/22/2020 08:23	WG1580175
Naphthalene	0.161		0.00538	0.0264	1	11/22/2020 08:23	WG1580175
1-Methylnaphthalene	0.0919		0.00592	0.0264	1	11/22/2020 08:23	WG1580175
2-Methylnaphthalene	0.190		0.00563	0.0264	1	11/22/2020 08:23	WG1580175
(S) Nitrobenzene-d5	*364*	J1		*14.0-149*		*11/22/2020 08:23*	WG1580175

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) 2-Fluorobiphenyl	*75.2*			*34.0-125*		*11/22/2020 08:23*	WG1580175
(S) p-Terphenyl-d14	*77.5*			*23.0-120*		*11/22/2020 08:23*	WG1580175

Sample Narrative:

L1286649-04 WG1580175: Surrogate failure due to matrix interference

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	70.7		1	11/21/2020 05:35	WG1579976

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	5.82		0.294	0.707	1	11/24/2020 05:15	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	8.61		1.62	4.77	25	11/24/2020 12:51	WG1581738
(S) a,a,a-Trifluorotoluene(FID)	*101*			*77.0-120*		*11/24/2020 12:51*	WG1581738

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.0651		0.000892	0.00191	1	11/24/2020 14:39	WG1581823
Toluene	0.157		0.00248	0.00955	1	11/24/2020 14:39	WG1581823
Ethylbenzene	0.170		0.00141	0.00477	1	11/24/2020 14:39	WG1581823
Total Xylenes	0.208		0.00168	0.0124	1	11/24/2020 14:39	WG1581823
Methyl tert-butyl ether	U		0.000668	0.00191	1	11/24/2020 14:39	WG1581823
1,2-Dichloroethane	U		0.00124	0.00477	1	11/24/2020 14:39	WG1581823
1,2-Dibromoethane	U		0.00124	0.00477	1	11/24/2020 14:39	WG1581823
(S) Toluene-d8	*99.9*			*75.0-131*		*11/24/2020 14:39*	WG1581823
(S) 4-Bromofluorobenzene	*102*			*67.0-138*		*11/24/2020 14:39*	WG1581823
(S) 1,2-Dichloroethane-d4	*92.8*			*70.0-130*		*11/24/2020 14:39*	WG1581823

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.88	5.66	1	11/24/2020 09:19	WG1580726
Residual Range Organics (RRO)	U		4.71	14.1	1	11/24/2020 09:19	WG1580726
(S) o-Terphenyl	*61.6*			*18.0-148*		*11/24/2020 09:19*	WG1580726

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	79.9		1	11/21/2020 05:35	WG1579976

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Copper	27.3		0.501	2.50	1	11/24/2020 05:17	WG1580070
Lead	17.8		0.260	0.626	1	11/24/2020 05:17	WG1580070
Nickel	21.7		0.165	2.50	1	11/24/2020 05:17	WG1580070
Zinc	53.5		1.04	6.26	1	11/24/2020 05:17	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	4500		26.4	78.2	500	11/23/2020 23:45	WG1581218
(S) a,a,a-Trifluorotoluene(FID)	*88.8*			*77.0-120*		*11/23/2020 23:45*	WG1581218

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.0292	0.0625	40	11/23/2020 00:49	WG1580778
Bromobenzene	U		0.0563	0.782	40	11/23/2020 00:49	WG1580778
Bromodichloromethane	U		0.0453	0.156	40	11/23/2020 00:49	WG1580778
Bromoform	U		0.0732	1.56	40	11/23/2020 00:49	WG1580778
Bromomethane	U		0.123	0.782	40	11/23/2020 00:49	WG1580778
Carbon tetrachloride	U		0.0561	0.313	40	11/23/2020 00:49	WG1580778
Chlorobenzene	U		0.0131	0.156	40	11/23/2020 00:49	WG1580778
Chlorodibromomethane	U		0.0383	0.156	40	11/23/2020 00:49	WG1580778
Chloroethane	U		0.106	0.313	40	11/23/2020 00:49	WG1580778
Chloroform	U		0.0644	0.156	40	11/23/2020 00:49	WG1580778
Chloromethane	U	C3	0.272	0.782	40	11/23/2020 00:49	WG1580778
2-Chlorotoluene	U		0.0541	0.156	40	11/23/2020 00:49	WG1580778
4-Chlorotoluene	U		0.0281	0.313	40	11/23/2020 00:49	WG1580778
1,2-Dibromo-3-Chloropropane	U		0.244	1.56	40	11/23/2020 00:49	WG1580778
1,2-Dibromoethane	U		0.0405	0.156	40	11/23/2020 00:49	WG1580778
Dibromomethane	U		0.0469	0.313	40	11/23/2020 00:49	WG1580778
1,2-Dichlorobenzene	U		0.0266	0.313	40	11/23/2020 00:49	WG1580778
1,3-Dichlorobenzene	U		0.0375	0.313	40	11/23/2020 00:49	WG1580778
1,4-Dichlorobenzene	U		0.0438	0.313	40	11/23/2020 00:49	WG1580778
Dichlorodifluoromethane	U		0.101	0.156	40	11/23/2020 00:49	WG1580778
1,1-Dichloroethane	U		0.0306	0.156	40	11/23/2020 00:49	WG1580778
1,2-Dichloroethane	U		0.0407	0.156	40	11/23/2020 00:49	WG1580778
1,1-Dichloroethene	U		0.0378	0.156	40	11/23/2020 00:49	WG1580778
cis-1,2-Dichloroethene	U		0.0460	0.156	40	11/23/2020 00:49	WG1580778
trans-1,2-Dichloroethene	U		0.0650	0.313	40	11/23/2020 00:49	WG1580778
1,2-Dichloropropane	U		0.0888	0.313	40	11/23/2020 00:49	WG1580778
1,1-Dichloropropene	U		0.0507	0.156	40	11/23/2020 00:49	WG1580778
1,3-Dichloropropane	U		0.0313	0.313	40	11/23/2020 00:49	WG1580778
cis-1,3-Dichloropropene	U		0.0474	0.156	40	11/23/2020 00:49	WG1580778
trans-1,3-Dichloropropene	U		0.0713	0.313	40	11/23/2020 00:49	WG1580778
2,2-Dichloropropane	U		0.0863	0.156	40	11/23/2020 00:49	WG1580778
Ethylbenzene	3.71		0.0461	0.156	40	11/23/2020 00:49	WG1580778
Hexachloro-1,3-butadiene	U		0.375	1.56	40	11/23/2020 00:49	WG1580778
Methylene Chloride	U	C3	0.416	1.56	40	11/23/2020 00:49	WG1580778
Methyl tert-butyl ether	U		0.0219	0.0625	40	11/23/2020 00:49	WG1580778

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.0593	0.156	40	11/23/2020 00:49	WG1580778
1,1,2,2-Tetrachloroethane	U		0.0435	0.156	40	11/23/2020 00:49	WG1580778
1,1,2-Trichlorotrifluoroethane	U		0.0472	0.156	40	11/23/2020 00:49	WG1580778
Tetrachloroethene	U		0.0560	0.156	40	11/23/2020 00:49	WG1580778
Toluene	0.433		0.0813	0.313	40	11/23/2020 00:49	WG1580778
1,2,3-Trichlorobenzene	U	C4	0.458	0.782	40	11/23/2020 00:49	WG1580778
1,2,4-Trichlorobenzene	U	C3	0.275	0.782	40	11/23/2020 00:49	WG1580778
1,1,1-Trichloroethane	U		0.0577	0.156	40	11/23/2020 00:49	WG1580778
1,1,2-Trichloroethane	U		0.0374	0.156	40	11/23/2020 00:49	WG1580778
Trichloroethene	U		0.0366	0.0625	40	11/23/2020 00:49	WG1580778
Trichlorofluoromethane	U		0.0518	0.156	40	11/23/2020 00:49	WG1580778
1,2,3-Trichloropropane	U		0.101	0.782	40	11/23/2020 00:49	WG1580778
Vinyl chloride	U		0.0726	0.156	40	11/23/2020 00:49	WG1580778
Xylenes, Total	11.3		0.0550	0.407	40	11/23/2020 00:49	WG1580778
(S) Toluene-d8	*91.7*			*75.0-131*		*11/23/2020 00:49*	WG1580778
(S) 4-Bromofluorobenzene	*98.6*			*67.0-138*		*11/23/2020 00:49*	WG1580778
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*11/23/2020 00:49*	WG1580778

Sample Narrative:

L1286649-06 WG1580778: Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	62.1		1.66	5.01	1	11/24/2020 12:24	WG1580726
Residual Range Organics (RRO)	U		4.17	12.5	1	11/24/2020 12:24	WG1580726
(S) o-Terphenyl	*69.2*			*18.0-148*		*11/24/2020 12:24*	WG1580726

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0148	0.0426	1	11/23/2020 18:56	WG1580730
PCB 1221	U		0.0148	0.0426	1	11/23/2020 18:56	WG1580730
PCB 1232	U		0.0148	0.0426	1	11/23/2020 18:56	WG1580730
PCB 1242	U		0.0148	0.0426	1	11/23/2020 18:56	WG1580730
PCB 1248	U		0.00924	0.0213	1	11/23/2020 18:56	WG1580730
PCB 1254	U		0.00924	0.0213	1	11/23/2020 18:56	WG1580730
PCB 1260	U		0.00924	0.0213	1	11/23/2020 18:56	WG1580730
(S) Decachlorobiphenyl	*60.5*			*10.0-135*		*11/23/2020 18:56*	WG1580730
(S) Tetrachloro-m-xylene	*75.9*			*10.0-139*		*11/23/2020 18:56*	WG1580730

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.00217	0.00751	1	11/22/2020 08:40	WG1580175
Benzo(a)pyrene	U		0.00224	0.00751	1	11/22/2020 08:40	WG1580175
Benzo(b)fluoranthene	U		0.00191	0.00751	1	11/22/2020 08:40	WG1580175
Benzo(k)fluoranthene	U		0.00269	0.00751	1	11/22/2020 08:40	WG1580175
Chrysene	U		0.00290	0.00751	1	11/22/2020 08:40	WG1580175
Dibenz(a,h)anthracene	U		0.00215	0.00751	1	11/22/2020 08:40	WG1580175
Indeno(1,2,3-cd)pyrene	U		0.00227	0.00751	1	11/22/2020 08:40	WG1580175
Naphthalene	0.203		0.00511	0.0250	1	11/22/2020 08:40	WG1580175
1-Methylnaphthalene	0.115		0.00562	0.0250	1	11/22/2020 08:40	WG1580175
2-Methylnaphthalene	0.242		0.00534	0.0250	1	11/22/2020 08:40	WG1580175
(S) Nitrobenzene-d5	*330*	J1		*14.0-149*		*11/22/2020 08:40*	WG1580175

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) 2-Fluorobiphenyl	*73.1*			*34.0-125*		*11/22/2020 08:40*	WG1580175
(S) p-Terphenyl-d14	*72.1*			*23.0-120*		*11/22/2020 08:40*	WG1580175

Sample Narrative:

L1286649-06 WG1580175: Surrogate failure due to matrix interference

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	69.9		1	11/21/2020 05:24	WG1579977

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	6.28		0.297	0.715	1	11/24/2020 05:20	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	58.8		1.65	4.85	25	11/24/2020 00:07	WG1581218
(S) a,a,a-Trifluorotoluene(FID)	*99.6*			*77.0-120*		*11/24/2020 00:07*	WG1581218

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	1.84		0.000906	0.00194	1	11/23/2020 12:33	WG1580991
Toluene	2.52		0.00252	0.00970	1	11/23/2020 12:33	WG1580991
Ethylbenzene	0.441		0.00143	0.00485	1	11/23/2020 15:26	WG1581349
Total Xylenes	2.10		0.00171	0.0126	1	11/23/2020 15:26	WG1581349
Methyl tert-butyl ether	U		0.000679	0.00194	1	11/23/2020 12:33	WG1580991
1,2-Dichloroethane	U		0.00126	0.00485	1	11/23/2020 12:33	WG1580991
1,2-Dibromoethane	U		0.00126	0.00485	1	11/23/2020 12:33	WG1580991
(S) Toluene-d8	*93.3*			*75.0-131*		*11/23/2020 12:33*	WG1580991
(S) Toluene-d8	*108*			*75.0-131*		*11/23/2020 15:26*	WG1581349
(S) 4-Bromofluorobenzene	*112*			*67.0-138*		*11/23/2020 12:33*	WG1580991
(S) 4-Bromofluorobenzene	*106*			*67.0-138*		*11/23/2020 15:26*	WG1581349
(S) 1,2-Dichloroethane-d4	*97.2*			*70.0-130*		*11/23/2020 12:33*	WG1580991
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*		*11/23/2020 15:26*	WG1581349

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	1.96	J	1.90	5.72	1	11/24/2020 09:32	WG1580726
Residual Range Organics (RRO)	U		4.76	14.3	1	11/24/2020 09:32	WG1580726
(S) o-Terphenyl	*59.3*			*18.0-148*		*11/24/2020 09:32*	WG1580726

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	81.6		1	11/21/2020 05:24	WG1579977

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	6.95		0.255	0.613	1	11/24/2020 05:22	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	1120		25.6	75.7	500	11/24/2020 13:13	WG1581738
(S) a,a,a-Trifluorotoluene(FID)	*98.6*			*77.0-120*		*11/24/2020 13:13*	WG1581738

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.423		0.000707	0.00151	1	11/23/2020 12:53	WG1580991
Toluene	5.35		0.0197	0.0757	10	11/23/2020 16:04	WG1581349
Ethylbenzene	4.70		0.0112	0.0379	10	11/23/2020 16:04	WG1581349
Total Xylenes	25.6		0.0133	0.0985	10	11/23/2020 16:04	WG1581349
Methyl tert-butyl ether	0.00245		0.000530	0.00151	1	11/23/2020 12:53	WG1580991
1,2-Dichloroethane	U		0.000983	0.00379	1	11/23/2020 12:53	WG1580991
1,2-Dibromoethane	U		0.00982	0.0379	10	11/23/2020 16:04	WG1581349
(S) Toluene-d8	*91.3*			*75.0-131*		*11/23/2020 12:53*	WG1580991
(S) Toluene-d8	*103*			*75.0-131*		*11/23/2020 16:04*	WG1581349
(S) 4-Bromofluorobenzene	*250*	J1		*67.0-138*		*11/23/2020 12:53*	WG1580991
(S) 4-Bromofluorobenzene	*112*			*67.0-138*		*11/23/2020 16:04*	WG1581349
(S) 1,2-Dichloroethane-d4	*117*			*70.0-130*		*11/23/2020 12:53*	WG1580991
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*11/23/2020 16:04*	WG1581349

Sample Narrative:

L1286649-08 WG1580991: EDB not reportable at lower dilution due to matrix interference.

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	52.5		1.63	4.90	1	11/24/2020 12:49	WG1580726
Residual Range Organics (RRO)	14.6		4.08	12.3	1	11/24/2020 12:49	WG1580726
(S) o-Terphenyl	*60.8*			*18.0-148*		*11/24/2020 12:49*	WG1580726

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	73.2		1	11/21/2020 05:24	WG1579977

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	5.68		0.284	0.683	1	11/24/2020 05:25	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	4.28	J	1.56	4.59	25	11/24/2020 13:36	WG1581738
(S) a,a,a-Trifluorotoluene(FID)	*102*			*77.0-120*		*11/24/2020 13:36*	WG1581738

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.0107		0.000858	0.00184	1	11/24/2020 04:06	WG1581275
Toluene	0.0248		0.00239	0.00918	1	11/24/2020 04:06	WG1581275
Ethylbenzene	0.00859		0.00135	0.00459	1	11/24/2020 04:06	WG1581275
Total Xylenes	0.0421		0.00162	0.0119	1	11/24/2020 04:06	WG1581275
Methyl tert-butyl ether	U		0.000643	0.00184	1	11/24/2020 04:06	WG1581275
1,2-Dichloroethane	U		0.00119	0.00459	1	11/24/2020 04:06	WG1581275
1,2-Dibromoethane	U		0.00119	0.00459	1	11/24/2020 04:06	WG1581275
(S) Toluene-d8	*113*			*75.0-131*		*11/24/2020 04:06*	WG1581275
(S) 4-Bromofluorobenzene	*92.0*			*67.0-138*		*11/24/2020 04:06*	WG1581275
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*11/24/2020 04:06*	WG1581275

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.82	5.47	1	11/24/2020 09:44	WG1580726
Residual Range Organics (RRO)	U		4.55	13.7	1	11/24/2020 09:44	WG1580726
(S) o-Terphenyl	*68.8*			*18.0-148*		*11/24/2020 09:44*	WG1580726

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.6		1	11/21/2020 05:24	WG1579977

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	4.00		0.215	0.518	1	11/24/2020 05:27	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	8.17	B	0.914	2.69	25	11/20/2020 21:07	WG1579992
(S) a,a,a-Trifluorotoluene(FID)	*98.4*			*77.0-120*		*11/20/2020 21:07*	WG1579992

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.0383		0.000503	0.00108	1	11/21/2020 12:42	WG1580286
Toluene	0.132		0.00140	0.00539	1	11/21/2020 12:42	WG1580286
Ethylbenzene	0.0142		0.000794	0.00269	1	11/21/2020 12:42	WG1580286
Total Xylenes	0.0469		0.000949	0.00701	1	11/21/2020 12:42	WG1580286
Methyl tert-butyl ether	U		0.000377	0.00108	1	11/21/2020 12:42	WG1580286
1,2-Dichloroethane	U		0.000700	0.00269	1	11/21/2020 12:42	WG1580286
1,2-Dibromoethane	U		0.000698	0.00269	1	11/21/2020 12:42	WG1580286
(S) Toluene-d8	*106*			*75.0-131*		*11/21/2020 12:42*	WG1580286
(S) 4-Bromofluorobenzene	*99.5*			*67.0-138*		*11/21/2020 12:42*	WG1580286
(S) 1,2-Dichloroethane-d4	*85.0*			*70.0-130*		*11/21/2020 12:42*	WG1580286

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	7.42		1.38	4.14	1	11/23/2020 01:16	WG1580176
Residual Range Organics (RRO)	U		3.45	10.4	1	11/23/2020 01:16	WG1580176
(S) o-Terphenyl	*81.0*			*18.0-148*		*11/23/2020 01:16*	WG1580176

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	82.0		1	11/21/2020 05:24	WG1579977

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	28.3		0.254	0.610	1	11/24/2020 05:30	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	1330		25.8	76.4	500	11/20/2020 23:01	WG1579992
(S) a,a,a-Trifluorotoluene(FID)	*101*			*77.0-120*		*11/20/2020 23:01*	WG1579992

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.833		0.0286	0.0611	40	11/21/2020 14:35	WG1580286
Toluene	18.0		0.0795	0.306	40	11/21/2020 14:35	WG1580286
Ethylbenzene	11.6		0.0451	0.153	40	11/21/2020 14:35	WG1580286
Total Xylenes	61.4		0.0538	0.397	40	11/21/2020 14:35	WG1580286
Methyl tert-butyl ether	U		0.0214	0.0611	40	11/21/2020 14:35	WG1580286
1,2-Dichloroethane	U		0.0397	0.153	40	11/21/2020 14:35	WG1580286
1,2-Dibromoethane	U		0.0396	0.153	40	11/21/2020 14:35	WG1580286
(S) Toluene-d8	*102*			*75.0-131*		*11/21/2020 14:35*	WG1580286
(S) 4-Bromofluorobenzene	*104*			*67.0-138*		*11/21/2020 14:35*	WG1580286
(S) 1,2-Dichloroethane-d4	*85.6*			*70.0-130*		*11/21/2020 14:35*	WG1580286

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	4.32	J	1.62	4.88	1	11/23/2020 01:29	WG1580176
Residual Range Organics (RRO)	U		4.06	12.2	1	11/23/2020 01:29	WG1580176
(S) o-Terphenyl	*65.0*			*18.0-148*		*11/23/2020 01:29*	WG1580176

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	79.5		1	11/21/2020 05:24	WG1579977

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	5.24		0.262	0.629	1	11/24/2020 05:32	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	294		5.27	15.6	100	11/21/2020 18:05	WG1580333
(S) a,a,a-Trifluorotoluene(FID)	*99.0*			*77.0-120*		*11/21/2020 18:05*	WG1580333

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.222		0.0291	0.0622	40	11/21/2020 14:54	WG1580286
Toluene	2.78		0.0809	0.311	40	11/21/2020 14:54	WG1580286
Ethylbenzene	1.57		0.0459	0.156	40	11/21/2020 14:54	WG1580286
Total Xylenes	7.33		0.0548	0.404	40	11/21/2020 14:54	WG1580286
Methyl tert-butyl ether	U		0.0218	0.0622	40	11/21/2020 14:54	WG1580286
1,2-Dichloroethane	U		0.0404	0.156	40	11/21/2020 14:54	WG1580286
1,2-Dibromoethane	U		0.0403	0.156	40	11/21/2020 14:54	WG1580286
(S) Toluene-d8	*102*			*75.0-131*		*11/21/2020 14:54*	WG1580286
(S) 4-Bromofluorobenzene	*100*			*67.0-138*		*11/21/2020 14:54*	WG1580286
(S) 1,2-Dichloroethane-d4	*86.1*			*70.0-130*		*11/21/2020 14:54*	WG1580286

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	28.8		1.67	5.03	1	11/23/2020 01:42	WG1580176
Residual Range Organics (RRO)	U		4.19	12.6	1	11/23/2020 01:42	WG1580176
(S) o-Terphenyl	*77.5*			*18.0-148*		*11/23/2020 01:42*	WG1580176

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	74.4		1	11/21/2020 05:24	WG1579977

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	4.58		0.280	0.672	1	11/24/2020 04:46	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	22.7	B	6.02	17.8	100	11/20/2020 23:48	WG1579992
(S) a,a,a-Trifluorotoluene(FID)	*97.7*			*77.0-120*		*11/20/2020 23:48*	WG1579992

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.0979		0.000830	0.00178	1	11/22/2020 10:57	WG1580624
Toluene	0.369		0.00231	0.00888	1	11/22/2020 10:57	WG1580624
Ethylbenzene	0.0592		0.00131	0.00444	1	11/22/2020 10:57	WG1580624
Total Xylenes	0.234		0.00156	0.0115	1	11/22/2020 10:57	WG1580624
Methyl tert-butyl ether	U		0.000622	0.00178	1	11/22/2020 10:57	WG1580624
1,2-Dichloroethane	U		0.00115	0.00444	1	11/22/2020 10:57	WG1580624
1,2-Dibromoethane	U		0.00115	0.00444	1	11/22/2020 10:57	WG1580624
(S) Toluene-d8	*106*			*75.0-131*		*11/22/2020 10:57*	WG1580624
(S) 4-Bromofluorobenzene	*97.3*			*67.0-138*		*11/22/2020 10:57*	WG1580624
(S) 1,2-Dichloroethane-d4	*91.5*			*70.0-130*		*11/22/2020 10:57*	WG1580624

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.79	5.38	1	11/23/2020 01:54	WG1580176
Residual Range Organics (RRO)	U		4.48	13.4	1	11/23/2020 01:54	WG1580176
(S) o-Terphenyl	*54.3*			*18.0-148*		*11/23/2020 01:54*	WG1580176

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	97.8		1	11/21/2020 05:24	WG1579977

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	2.07		0.213	0.511	1	11/24/2020 05:35	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		0.887	2.61	25	11/20/2020 21:38	WG1579992
(S) a,a,a-Trifluorotoluene(FID)	*97.3*			*77.0-120*		*11/20/2020 21:38*	WG1579992

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.000678	J	0.000488	0.00105	1	11/21/2020 13:01	WG1580286
Toluene	0.00339	J	0.00136	0.00523	1	11/21/2020 13:01	WG1580286
Ethylbenzene	0.00153	J	0.000771	0.00261	1	11/21/2020 13:01	WG1580286
Total Xylenes	0.00681		0.000920	0.00680	1	11/21/2020 13:01	WG1580286
Methyl tert-butyl ether	U		0.000366	0.00105	1	11/21/2020 13:01	WG1580286
1,2-Dichloroethane	U		0.000679	0.00261	1	11/21/2020 13:01	WG1580286
1,2-Dibromoethane	U		0.000678	0.00261	1	11/21/2020 13:01	WG1580286
(S) Toluene-d8	*105*			*75.0-131*		*11/21/2020 13:01*	WG1580286
(S) 4-Bromofluorobenzene	*96.6*			*67.0-138*		*11/21/2020 13:01*	WG1580286
(S) 1,2-Dichloroethane-d4	*82.4*			*70.0-130*		*11/21/2020 13:01*	WG1580286

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.36	4.09	1	11/23/2020 02:07	WG1580176
Residual Range Organics (RRO)	U		3.40	10.2	1	11/23/2020 02:07	WG1580176
(S) o-Terphenyl	*93.8*			*18.0-148*		*11/23/2020 02:07*	WG1580176

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	82.9		1	11/21/2020 05:24	WG1579977

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Copper	28.3		0.482	2.41	1	11/24/2020 05:43	WG1580070
Lead	35.1		0.251	0.603	1	11/24/2020 05:43	WG1580070
Nickel	17.6		0.159	2.41	1	11/24/2020 05:43	WG1580070
Zinc	51.6		1.00	6.03	1	11/24/2020 05:43	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	9750		246	729	5000	11/21/2020 18:28	WG1580333
(S) a,a,a-Trifluorotoluene(FID)	*101*			*77.0-120*		*11/21/2020 18:28*	WG1580333

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	12.3		0.0273	0.0583	40	11/22/2020 12:06	WG1580395
Bromobenzene	U		0.0525	0.729	40	11/22/2020 12:06	WG1580395
Bromodichloromethane	U		0.0423	0.146	40	11/22/2020 12:06	WG1580395
Bromoform	U		0.0682	1.46	40	11/22/2020 12:06	WG1580395
Bromomethane	U		0.115	0.729	40	11/22/2020 12:06	WG1580395
Carbon tetrachloride	U		0.0523	0.292	40	11/22/2020 12:06	WG1580395
Chlorobenzene	U		0.0122	0.146	40	11/22/2020 12:06	WG1580395
Chlorodibromomethane	U		0.0357	0.146	40	11/22/2020 12:06	WG1580395
Chloroethane	U		0.0991	0.292	40	11/22/2020 12:06	WG1580395
Chloroform	U		0.0601	0.146	40	11/22/2020 12:06	WG1580395
Chloromethane	U		0.254	0.729	40	11/22/2020 12:06	WG1580395
2-Chlorotoluene	U		0.0504	0.146	40	11/22/2020 12:06	WG1580395
4-Chlorotoluene	U		0.0262	0.292	40	11/22/2020 12:06	WG1580395
1,2-Dibromo-3-Chloropropane	U		0.227	1.46	40	11/22/2020 12:06	WG1580395
1,2-Dibromoethane	U		0.0378	0.146	40	11/22/2020 12:06	WG1580395
Dibromomethane	U		0.0437	0.292	40	11/22/2020 12:06	WG1580395
1,2-Dichlorobenzene	U		0.0248	0.292	40	11/22/2020 12:06	WG1580395
1,3-Dichlorobenzene	U		0.0350	0.292	40	11/22/2020 12:06	WG1580395
1,4-Dichlorobenzene	U		0.0408	0.292	40	11/22/2020 12:06	WG1580395
Dichlorodifluoromethane	U		0.0939	0.146	40	11/22/2020 12:06	WG1580395
1,1-Dichloroethane	U		0.0286	0.146	40	11/22/2020 12:06	WG1580395
1,2-Dichloroethane	U		0.0379	0.146	40	11/22/2020 12:06	WG1580395
1,1-Dichloroethene	U		0.0353	0.146	40	11/22/2020 12:06	WG1580395
cis-1,2-Dichloroethene	U		0.0429	0.146	40	11/22/2020 12:06	WG1580395
trans-1,2-Dichloroethene	U		0.0606	0.292	40	11/22/2020 12:06	WG1580395
1,2-Dichloropropane	U		0.0828	0.292	40	11/22/2020 12:06	WG1580395
1,1-Dichloropropene	U		0.0472	0.146	40	11/22/2020 12:06	WG1580395
1,3-Dichloropropane	U		0.0292	0.292	40	11/22/2020 12:06	WG1580395
cis-1,3-Dichloropropene	U		0.0442	0.146	40	11/22/2020 12:06	WG1580395
trans-1,3-Dichloropropene	U		0.0665	0.292	40	11/22/2020 12:06	WG1580395
2,2-Dichloropropane	U		0.0805	0.146	40	11/22/2020 12:06	WG1580395
Ethylbenzene	122		0.860	2.92	800	11/22/2020 19:38	WG1580806
Hexachloro-1,3-butadiene	U		0.350	1.46	40	11/22/2020 12:06	WG1580395
Methylene Chloride	U		0.388	1.46	40	11/22/2020 12:06	WG1580395
Methyl tert-butyl ether	U		0.0204	0.0583	40	11/22/2020 12:06	WG1580395

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.0553	0.146	40	11/22/2020 12:06	WG1580395
1,1,2,2-Tetrachloroethane	U		0.0405	0.146	40	11/22/2020 12:06	WG1580395
1,1,2-Trichlorotrifluoroethane	U		0.0440	0.146	40	11/22/2020 12:06	WG1580395
Tetrachloroethene	U		0.0522	0.146	40	11/22/2020 12:06	WG1580395
Toluene	195		1.52	5.83	800	11/22/2020 19:38	WG1580806
1,2,3-Trichlorobenzene	U		0.427	0.729	40	11/22/2020 12:06	WG1580395
1,2,4-Trichlorobenzene	U		0.257	0.729	40	11/22/2020 12:06	WG1580395
1,1,1-Trichloroethane	U		0.0538	0.146	40	11/22/2020 12:06	WG1580395
1,1,2-Trichloroethane	U		0.0348	0.146	40	11/22/2020 12:06	WG1580395
Trichloroethene	U		0.0341	0.0583	40	11/22/2020 12:06	WG1580395
Trichlorofluoromethane	U		0.0483	0.146	40	11/22/2020 12:06	WG1580395
1,2,3-Trichloropropane	U		0.0945	0.729	40	11/22/2020 12:06	WG1580395
Vinyl chloride	U		0.0676	0.146	40	11/22/2020 12:06	WG1580395
Xylenes, Total	682		1.03	7.58	800	11/22/2020 19:38	WG1580806
(S) Toluene-d8	*94.3*			*75.0-131*		*11/22/2020 12:06*	WG1580395
(S) Toluene-d8	*105*			*75.0-131*		*11/22/2020 19:38*	WG1580806
(S) 4-Bromofluorobenzene	*107*			*67.0-138*		*11/22/2020 12:06*	WG1580395
(S) 4-Bromofluorobenzene	*92.7*			*67.0-138*		*11/22/2020 19:38*	WG1580806
(S) 1,2-Dichloroethane-d4	*96.9*			*70.0-130*		*11/22/2020 12:06*	WG1580395
(S) 1,2-Dichloroethane-d4	*114*			*70.0-130*		*11/22/2020 19:38*	WG1580806

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	528		8.02	24.1	5	11/23/2020 04:01	WG1580176
Residual Range Organics (RRO)	U		20.0	60.3	5	11/23/2020 04:01	WG1580176
(S) o-Terphenyl	*63.5*			*18.0-148*		*11/23/2020 04:01*	WG1580176

Sample Narrative:

L1286649-15 WG1580176: Dilution due to matrix.

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0142	0.0410	1	11/23/2020 19:06	WG1580730
PCB 1221	U		0.0142	0.0410	1	11/23/2020 19:06	WG1580730
PCB 1232	U		0.0142	0.0410	1	11/23/2020 19:06	WG1580730
PCB 1242	U		0.0142	0.0410	1	11/23/2020 19:06	WG1580730
PCB 1248	U		0.00890	0.0205	1	11/23/2020 19:06	WG1580730
PCB 1254	U		0.00890	0.0205	1	11/23/2020 19:06	WG1580730
PCB 1260	U		0.00890	0.0205	1	11/23/2020 19:06	WG1580730
(S) Decachlorobiphenyl	*65.2*			*10.0-135*		*11/23/2020 19:06*	WG1580730
(S) Tetrachloro-m-xylene	*75.9*			*10.0-139*		*11/23/2020 19:06*	WG1580730

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	0.00287	J	0.00209	0.00723	1	11/22/2020 05:19	WG1580173
Benzo(a)pyrene	U		0.00216	0.00723	1	11/22/2020 05:19	WG1580173
Benzo(b)fluoranthene	U		0.00184	0.00723	1	11/22/2020 05:19	WG1580173
Benzo(k)fluoranthene	U		0.00259	0.00723	1	11/22/2020 05:19	WG1580173
Chrysene	0.00281	J	0.00280	0.00723	1	11/22/2020 05:19	WG1580173
Dibenz(a,h)anthracene	U		0.00207	0.00723	1	11/22/2020 05:19	WG1580173
Indeno(1,2,3-cd)pyrene	U		0.00218	0.00723	1	11/22/2020 05:19	WG1580173
Naphthalene	21.6		0.0984	0.482	20	11/23/2020 16:08	WG1580173

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	2.81		0.00541	0.0241	1	11/22/2020 05:19	WG1580173
2-Methylnaphthalene	14.3		0.103	0.482	20	11/23/2020 16:08	WG1580173
(S) Nitrobenzene-d5	*0.000*	J7		*14.0-149*		*11/23/2020 16:08*	WG1580173
(S) Nitrobenzene-d5	*0.000*	J2		*14.0-149*		*11/22/2020 05:19*	WG1580173
(S) 2-Fluorobiphenyl	*68.1*	J7		*34.0-125*		*11/23/2020 16:08*	WG1580173
(S) 2-Fluorobiphenyl	*90.5*			*34.0-125*		*11/22/2020 05:19*	WG1580173
(S) p-Terphenyl-d14	*103*			*23.0-120*		*11/22/2020 05:19*	WG1580173
(S) p-Terphenyl-d14	*145*	J7		*23.0-120*		*11/23/2020 16:08*	WG1580173

Sample Narrative:

L1286649-15 WG1580173: Surrogate failure due to matrix interference

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	77.0		1	11/21/2020 05:24	WG1579977

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Copper	33.9		0.519	2.60	1	11/24/2020 05:46	WG1580070
Lead	18.8		0.270	0.649	1	11/24/2020 05:46	WG1580070
Nickel	20.3		0.171	2.60	1	11/24/2020 05:46	WG1580070
Zinc	65.8		1.08	6.49	1	11/24/2020 05:46	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	8150		281	832	5000	11/21/2020 18:51	WG1580333
(S) a,a,a-Trifluorotoluene(FID)	*100*			*77.0-120*		*11/21/2020 18:51*	WG1580333

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	6.40		0.0311	0.0665	40	11/22/2020 12:25	WG1580395
Bromobenzene	U		0.0599	0.832	40	11/22/2020 12:25	WG1580395
Bromodichloromethane	U		0.0482	0.166	40	11/22/2020 12:25	WG1580395
Bromoform	U		0.0778	1.66	40	11/22/2020 12:25	WG1580395
Bromomethane	U		0.131	0.832	40	11/22/2020 12:25	WG1580395
Carbon tetrachloride	U		0.0597	0.333	40	11/22/2020 12:25	WG1580395
Chlorobenzene	U		0.0140	0.166	40	11/22/2020 12:25	WG1580395
Chlorodibromomethane	U		0.0407	0.166	40	11/22/2020 12:25	WG1580395
Chloroethane	U		0.113	0.333	40	11/22/2020 12:25	WG1580395
Chloroform	U		0.0685	0.166	40	11/22/2020 12:25	WG1580395
Chloromethane	U		0.289	0.832	40	11/22/2020 12:25	WG1580395
2-Chlorotoluene	U		0.0575	0.166	40	11/22/2020 12:25	WG1580395
4-Chlorotoluene	U		0.0299	0.333	40	11/22/2020 12:25	WG1580395
1,2-Dibromo-3-Chloropropane	U		0.259	1.66	40	11/22/2020 12:25	WG1580395
1,2-Dibromoethane	U		0.0431	0.166	40	11/22/2020 12:25	WG1580395
Dibromomethane	U		0.0499	0.333	40	11/22/2020 12:25	WG1580395
1,2-Dichlorobenzene	U		0.0283	0.333	40	11/22/2020 12:25	WG1580395
1,3-Dichlorobenzene	U		0.0399	0.333	40	11/22/2020 12:25	WG1580395
1,4-Dichlorobenzene	U		0.0466	0.333	40	11/22/2020 12:25	WG1580395
Dichlorodifluoromethane	U		0.107	0.166	40	11/22/2020 12:25	WG1580395
1,1-Dichloroethane	U		0.0326	0.166	40	11/22/2020 12:25	WG1580395
1,2-Dichloroethane	U		0.0432	0.166	40	11/22/2020 12:25	WG1580395
1,1-Dichloroethene	U		0.0402	0.166	40	11/22/2020 12:25	WG1580395
cis-1,2-Dichloroethene	U		0.0489	0.166	40	11/22/2020 12:25	WG1580395
trans-1,2-Dichloroethene	U		0.0692	0.333	40	11/22/2020 12:25	WG1580395
1,2-Dichloropropane	U		0.0945	0.333	40	11/22/2020 12:25	WG1580395
1,1-Dichloropropene	U		0.0539	0.166	40	11/22/2020 12:25	WG1580395
1,3-Dichloropropane	U		0.0333	0.333	40	11/22/2020 12:25	WG1580395
cis-1,3-Dichloropropene	U		0.0504	0.166	40	11/22/2020 12:25	WG1580395
trans-1,3-Dichloropropene	U		0.0758	0.333	40	11/22/2020 12:25	WG1580395
2,2-Dichloropropane	U		0.0918	0.166	40	11/22/2020 12:25	WG1580395
Ethylbenzene	104		0.981	3.33	800	11/22/2020 19:56	WG1580806
Hexachloro-1,3-butadiene	U		0.399	1.66	40	11/22/2020 12:25	WG1580395
Methylene Chloride	U		0.442	1.66	40	11/22/2020 12:25	WG1580395
Methyl tert-butyl ether	U		0.0233	0.0665	40	11/22/2020 12:25	WG1580395

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.0630	0.166	40	11/22/2020 12:25	WG1580395
1,1,2,2-Tetrachloroethane	U		0.0462	0.166	40	11/22/2020 12:25	WG1580395
1,1,2-Trichlorotrifluoroethane	U		0.0502	0.166	40	11/22/2020 12:25	WG1580395
Tetrachloroethene	U		0.0595	0.166	40	11/22/2020 12:25	WG1580395
Toluene	170		1.73	6.65	800	11/22/2020 19:56	WG1580806
1,2,3-Trichlorobenzene	U		0.487	0.832	40	11/22/2020 12:25	WG1580395
1,2,4-Trichlorobenzene	U		0.293	0.832	40	11/22/2020 12:25	WG1580395
1,1,1-Trichloroethane	U		0.0614	0.166	40	11/22/2020 12:25	WG1580395
1,1,2-Trichloroethane	U		0.0397	0.166	40	11/22/2020 12:25	WG1580395
Trichloroethene	U		0.0389	0.0665	40	11/22/2020 12:25	WG1580395
Trichlorofluoromethane	U		0.0550	0.166	40	11/22/2020 12:25	WG1580395
1,2,3-Trichloropropane	U		0.108	0.832	40	11/22/2020 12:25	WG1580395
Vinyl chloride	U		0.0772	0.166	40	11/22/2020 12:25	WG1580395
Xylenes, Total	632		1.17	8.65	800	11/22/2020 19:56	WG1580806
(S) Toluene-d8	*97.9*			*75.0-131*		*11/22/2020 12:25*	WG1580395
(S) Toluene-d8	*106*			*75.0-131*		*11/22/2020 19:56*	WG1580806
(S) 4-Bromofluorobenzene	*105*			*67.0-138*		*11/22/2020 12:25*	WG1580395
(S) 4-Bromofluorobenzene	*93.6*			*67.0-138*		*11/22/2020 19:56*	WG1580806
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*		*11/22/2020 12:25*	WG1580395
(S) 1,2-Dichloroethane-d4	*114*			*70.0-130*		*11/22/2020 19:56*	WG1580806

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	868		8.63	26.0	5	11/23/2020 04:14	WG1580176
Residual Range Organics (RRO)	U		21.5	64.9	5	11/23/2020 04:14	WG1580176
(S) o-Terphenyl	*82.7*			*18.0-148*		*11/23/2020 04:14*	WG1580176

Sample Narrative:

L1286649-16 WG1580176: Dilution due to matrix.

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0153	0.0441	1	11/23/2020 19:16	WG1580730
PCB 1221	U		0.0153	0.0441	1	11/23/2020 19:16	WG1580730
PCB 1232	U		0.0153	0.0441	1	11/23/2020 19:16	WG1580730
PCB 1242	U		0.0153	0.0441	1	11/23/2020 19:16	WG1580730
PCB 1248	U		0.00958	0.0221	1	11/23/2020 19:16	WG1580730
PCB 1254	U		0.00958	0.0221	1	11/23/2020 19:16	WG1580730
PCB 1260	U		0.00958	0.0221	1	11/23/2020 19:16	WG1580730
(S) Decachlorobiphenyl	*66.3*			*10.0-135*		*11/23/2020 19:16*	WG1580730
(S) Tetrachloro-m-xylene	*74.4*			*10.0-139*		*11/23/2020 19:16*	WG1580730

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	0.00340	J	0.00225	0.00779	1	11/22/2020 05:42	WG1580173
Benzo(a)pyrene	U		0.00232	0.00779	1	11/22/2020 05:42	WG1580173
Benzo(b)fluoranthene	U		0.00199	0.00779	1	11/22/2020 05:42	WG1580173
Benzo(k)fluoranthene	U		0.00279	0.00779	1	11/22/2020 05:42	WG1580173
Chrysene	0.00408	J	0.00301	0.00779	1	11/22/2020 05:42	WG1580173
Dibenz(a,h)anthracene	U		0.00223	0.00779	1	11/22/2020 05:42	WG1580173
Indeno(1,2,3-cd)pyrene	U		0.00235	0.00779	1	11/22/2020 05:42	WG1580173
Naphthalene	38.3		0.106	0.519	20	11/23/2020 16:32	WG1580173

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	11.5		0.117	0.519	20	11/23/2020 16:32	WG1580173
2-Methylnaphthalene	24.3		0.111	0.519	20	11/23/2020 16:32	WG1580173
(S) Nitrobenzene-d5	*0.000*	J7		*14.0-149*		*11/23/2020 16:32*	WG1580173
(S) Nitrobenzene-d5	*0.000*	J2		*14.0-149*		*11/22/2020 05:42*	WG1580173
(S) 2-Fluorobiphenyl	*69.0*	J7		*34.0-125*		*11/23/2020 16:32*	WG1580173
(S) 2-Fluorobiphenyl	*91.3*			*34.0-125*		*11/22/2020 05:42*	WG1580173
(S) p-Terphenyl-d14	*100*			*23.0-120*		*11/22/2020 05:42*	WG1580173
(S) p-Terphenyl-d14	*146*	J7		*23.0-120*		*11/23/2020 16:32*	WG1580173

Sample Narrative:

L1286649-16 WG1580173: Surrogate failure due to matrix interference

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	76.7		1	11/21/2020 05:01	WG1579978

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Copper	36.1		0.521	2.61	1	11/24/2020 05:48	WG1580070
Lead	16.0		0.271	0.651	1	11/24/2020 05:48	WG1580070
Nickel	21.1		0.172	2.61	1	11/24/2020 05:48	WG1580070
Zinc	67.0		1.08	6.51	1	11/24/2020 05:48	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	7810	B	285	844	5000	11/21/2020 19:14	WG1580333
(S) a,a,a-Trifluorotoluene(FID)	*113*			*77.0-120*		*11/21/2020 19:14*	WG1580333

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	3.93		0.0315	0.0675	40	11/22/2020 12:44	WG1580395
Bromobenzene	U		0.0607	0.844	40	11/22/2020 12:44	WG1580395
Bromodichloromethane	U		0.0489	0.169	40	11/22/2020 12:44	WG1580395
Bromoform	U		0.0790	1.69	40	11/22/2020 12:44	WG1580395
Bromomethane	U		0.133	0.844	40	11/22/2020 12:44	WG1580395
Carbon tetrachloride	U		0.0606	0.337	40	11/22/2020 12:44	WG1580395
Chlorobenzene	U		0.0142	0.169	40	11/22/2020 12:44	WG1580395
Chlorodibromomethane	U		0.0413	0.169	40	11/22/2020 12:44	WG1580395
Chloroethane	U		0.115	0.337	40	11/22/2020 12:44	WG1580395
Chloroform	U		0.0695	0.169	40	11/22/2020 12:44	WG1580395
Chloromethane	U		0.294	0.844	40	11/22/2020 12:44	WG1580395
2-Chlorotoluene	U		0.0584	0.169	40	11/22/2020 12:44	WG1580395
4-Chlorotoluene	U		0.0304	0.337	40	11/22/2020 12:44	WG1580395
1,2-Dibromo-3-Chloropropane	U		0.263	1.69	40	11/22/2020 12:44	WG1580395
1,2-Dibromoethane	U		0.0437	0.169	40	11/22/2020 12:44	WG1580395
Dibromomethane	U		0.0506	0.337	40	11/22/2020 12:44	WG1580395
1,2-Dichlorobenzene	U		0.0287	0.337	40	11/22/2020 12:44	WG1580395
1,3-Dichlorobenzene	U		0.0405	0.337	40	11/22/2020 12:44	WG1580395
1,4-Dichlorobenzene	U		0.0472	0.337	40	11/22/2020 12:44	WG1580395
Dichlorodifluoromethane	U		0.109	0.169	40	11/22/2020 12:44	WG1580395
1,1-Dichloroethane	U		0.0331	0.169	40	11/22/2020 12:44	WG1580395
1,2-Dichloroethane	U		0.0439	0.169	40	11/22/2020 12:44	WG1580395
1,1-Dichloroethene	U		0.0408	0.169	40	11/22/2020 12:44	WG1580395
cis-1,2-Dichloroethene	U		0.0496	0.169	40	11/22/2020 12:44	WG1580395
trans-1,2-Dichloroethene	U		0.0702	0.337	40	11/22/2020 12:44	WG1580395
1,2-Dichloropropane	U		0.0958	0.337	40	11/22/2020 12:44	WG1580395
1,1-Dichloropropene	U		0.0547	0.169	40	11/22/2020 12:44	WG1580395
1,3-Dichloropropane	U		0.0337	0.337	40	11/22/2020 12:44	WG1580395
cis-1,3-Dichloropropene	U		0.0511	0.169	40	11/22/2020 12:44	WG1580395
trans-1,3-Dichloropropene	U		0.0769	0.337	40	11/22/2020 12:44	WG1580395
2,2-Dichloropropane	U		0.0931	0.169	40	11/22/2020 12:44	WG1580395
Ethylbenzene	44.7		0.498	1.69	400	11/22/2020 22:05	WG1580825
Hexachloro-1,3-butadiene	U		0.405	1.69	40	11/22/2020 12:44	WG1580395
Methylene Chloride	U		0.449	1.69	40	11/22/2020 12:44	WG1580395
Methyl tert-butyl ether	U		0.0236	0.0675	40	11/22/2020 12:44	WG1580395

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.0639	0.169	40	11/22/2020 12:44	WG1580395
1,1,2,2-Tetrachloroethane	U		0.0469	0.169	40	11/22/2020 12:44	WG1580395
1,1,2-Trichlorotrifluoroethane	U		0.0510	0.169	40	11/22/2020 12:44	WG1580395
Tetrachloroethene	U		0.0604	0.169	40	11/22/2020 12:44	WG1580395
Toluene	50.4		0.877	3.37	400	11/22/2020 22:05	WG1580825
1,2,3-Trichlorobenzene	U		0.494	0.844	40	11/22/2020 12:44	WG1580395
1,2,4-Trichlorobenzene	U		0.297	0.844	40	11/22/2020 12:44	WG1580395
1,1,1-Trichloroethane	U		0.0623	0.169	40	11/22/2020 12:44	WG1580395
1,1,2-Trichloroethane	U		0.0403	0.169	40	11/22/2020 12:44	WG1580395
Trichloroethene	U		0.0395	0.0675	40	11/22/2020 12:44	WG1580395
Trichlorofluoromethane	U		0.0558	0.169	40	11/22/2020 12:44	WG1580395
1,2,3-Trichloropropane	U		0.109	0.844	40	11/22/2020 12:44	WG1580395
Vinyl chloride	U		0.0783	0.169	40	11/22/2020 12:44	WG1580395
Xylenes, Total	280		0.594	4.39	400	11/22/2020 22:05	WG1580825
(S) Toluene-d8	*97.9*			*75.0-131*		*11/22/2020 12:44*	WG1580395
(S) Toluene-d8	*101*			*75.0-131*		*11/22/2020 22:05*	WG1580825
(S) 4-Bromofluorobenzene	*104*			*67.0-138*		*11/22/2020 12:44*	WG1580395
(S) 4-Bromofluorobenzene	*111*			*67.0-138*		*11/22/2020 22:05*	WG1580825
(S) 1,2-Dichloroethane-d4	*95.8*			*70.0-130*		*11/22/2020 12:44*	WG1580395
(S) 1,2-Dichloroethane-d4	*89.4*			*70.0-130*		*11/22/2020 22:05*	WG1580825

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	607		8.66	26.1	5	11/23/2020 04:27	WG1580176
Residual Range Organics (RRO)	U		21.6	65.1	5	11/23/2020 04:27	WG1580176
(S) o-Terphenyl	*79.1*			*18.0-148*		*11/23/2020 04:27*	WG1580176

Sample Narrative:

L1286649-17 WG1580176: Dilution due to matrix.

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0154	0.0443	1	11/23/2020 19:26	WG1580730
PCB 1221	U		0.0154	0.0443	1	11/23/2020 19:26	WG1580730
PCB 1232	U		0.0154	0.0443	1	11/23/2020 19:26	WG1580730
PCB 1242	U		0.0154	0.0443	1	11/23/2020 19:26	WG1580730
PCB 1248	U		0.00962	0.0222	1	11/23/2020 19:26	WG1580730
PCB 1254	U		0.00962	0.0222	1	11/23/2020 19:26	WG1580730
PCB 1260	U		0.00962	0.0222	1	11/23/2020 19:26	WG1580730
(S) Decachlorobiphenyl	*77.2*			*10.0-135*		*11/23/2020 19:26*	WG1580730
(S) Tetrachloro-m-xylene	*85.7*			*10.0-139*		*11/23/2020 19:26*	WG1580730

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	0.00304	J	0.00225	0.00782	1	11/22/2020 06:05	WG1580173
Benzo(a)pyrene	U		0.00233	0.00782	1	11/22/2020 06:05	WG1580173
Benzo(b)fluoranthene	U		0.00199	0.00782	1	11/22/2020 06:05	WG1580173
Benzo(k)fluoranthene	U		0.00280	0.00782	1	11/22/2020 06:05	WG1580173
Chrysene	0.00352	J	0.00302	0.00782	1	11/22/2020 06:05	WG1580173
Dibenz(a,h)anthracene	U		0.00224	0.00782	1	11/22/2020 06:05	WG1580173
Indeno(1,2,3-cd)pyrene	U		0.00236	0.00782	1	11/22/2020 06:05	WG1580173
Naphthalene	30.0		0.106	0.521	20	11/23/2020 16:56	WG1580173

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	3.10		0.00585	0.0261	1	11/22/2020 06:05	WG1580173
2-Methylnaphthalene	18.9		0.111	0.521	20	11/23/2020 16:56	WG1580173
(S) Nitrobenzene-d5	*0.000*	J2		*14.0-149*		*11/22/2020 06:05*	WG1580173
(S) Nitrobenzene-d5	*0.000*	J7		*14.0-149*		*11/23/2020 16:56*	WG1580173
(S) 2-Fluorobiphenyl	*63.6*	J7		*34.0-125*		*11/23/2020 16:56*	WG1580173
(S) 2-Fluorobiphenyl	*84.0*			*34.0-125*		*11/22/2020 06:05*	WG1580173
(S) p-Terphenyl-d14	*146*	J7		*23.0-120*		*11/23/2020 16:56*	WG1580173
(S) p-Terphenyl-d14	*93.4*			*23.0-120*		*11/22/2020 06:05*	WG1580173

Sample Narrative:

L1286649-17 WG1580173: Surrogate failure due to matrix interference

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	74.3		1	11/21/2020 05:01	WG1579978

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	18.4		0.280	0.673	1	11/24/2020 05:51	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	18100		602	1780	10000	11/21/2020 19:37	WG1580333
(S) a,a,a-Trifluorotoluene(FID)	*99.8*			*77.0-120*		*11/21/2020 19:37*	WG1580333

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	47.6		0.0332	0.0711	40	11/21/2020 15:32	WG1580286
Toluene	345		2.31	8.88	1000	11/22/2020 11:16	WG1580624
Ethylbenzene	121		1.31	4.44	1000	11/22/2020 11:16	WG1580624
Total Xylenes	616		1.56	11.5	1000	11/22/2020 11:16	WG1580624
Methyl tert-butyl ether	U		0.0249	0.0711	40	11/21/2020 15:32	WG1580286
1,2-Dichloroethane	U		0.0462	0.178	40	11/21/2020 15:32	WG1580286
1,2-Dibromoethane	U		0.0460	0.178	40	11/21/2020 15:32	WG1580286
(S) Toluene-d8	*104*			*75.0-131*		*11/21/2020 15:32*	WG1580286
(S) Toluene-d8	*103*			*75.0-131*		*11/22/2020 11:16*	WG1580624
(S) 4-Bromofluorobenzene	*105*			*67.0-138*		*11/21/2020 15:32*	WG1580286
(S) 4-Bromofluorobenzene	*95.9*			*67.0-138*		*11/22/2020 11:16*	WG1580624
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*		*11/21/2020 15:32*	WG1580286
(S) 1,2-Dichloroethane-d4	*96.4*			*70.0-130*		*11/22/2020 11:16*	WG1580624

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	123		1.79	5.38	1	11/23/2020 02:20	WG1580176
Residual Range Organics (RRO)	U		4.48	13.5	1	11/23/2020 02:20	WG1580176
(S) o-Terphenyl	*74.8*			*18.0-148*		*11/23/2020 02:20*	WG1580176

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	78.1		1	11/21/2020 05:01	WG1579978

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Copper	29.4		0.512	2.56	1	11/24/2020 05:53	WG1580070
Lead	33.7		0.266	0.640	1	11/24/2020 05:53	WG1580070
Nickel	17.7		0.169	2.56	1	11/24/2020 05:53	WG1580070
Zinc	58.5		1.07	6.40	1	11/24/2020 05:53	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	20600	J3	278	823	5000	11/22/2020 16:13	WG1580603
(S) a,a,a-Trifluorotoluene(FID)	*108*			*77.0-120*		*11/22/2020 16:13*	WG1580603

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	7.85		0.0308	0.0659	40	11/22/2020 13:03	WG1580395
Bromobenzene	U		0.0593	0.823	40	11/22/2020 13:03	WG1580395
Bromodichloromethane	U		0.0477	0.165	40	11/22/2020 13:03	WG1580395
Bromoform	U		0.0770	1.65	40	11/22/2020 13:03	WG1580395
Bromomethane	U		0.130	0.823	40	11/22/2020 13:03	WG1580395
Carbon tetrachloride	U		0.0591	0.329	40	11/22/2020 13:03	WG1580395
Chlorobenzene	U		0.0138	0.165	40	11/22/2020 13:03	WG1580395
Chlorodibromomethane	U		0.0403	0.165	40	11/22/2020 13:03	WG1580395
Chloroethane	U		0.112	0.329	40	11/22/2020 13:03	WG1580395
Chloroform	U		0.0678	0.165	40	11/22/2020 13:03	WG1580395
Chloromethane	U		0.286	0.823	40	11/22/2020 13:03	WG1580395
2-Chlorotoluene	U		0.0570	0.165	40	11/22/2020 13:03	WG1580395
4-Chlorotoluene	U		0.0296	0.329	40	11/22/2020 13:03	WG1580395
1,2-Dibromo-3-Chloropropane	U		0.257	1.65	40	11/22/2020 13:03	WG1580395
1,2-Dibromoethane	U		0.0426	0.165	40	11/22/2020 13:03	WG1580395
Dibromomethane	U		0.0494	0.329	40	11/22/2020 13:03	WG1580395
1,2-Dichlorobenzene	U		0.0280	0.329	40	11/22/2020 13:03	WG1580395
1,3-Dichlorobenzene	U		0.0395	0.329	40	11/22/2020 13:03	WG1580395
1,4-Dichlorobenzene	U		0.0461	0.329	40	11/22/2020 13:03	WG1580395
Dichlorodifluoromethane	U		0.106	0.165	40	11/22/2020 13:03	WG1580395
1,1-Dichloroethane	U		0.0323	0.165	40	11/22/2020 13:03	WG1580395
1,2-Dichloroethane	U		0.0428	0.165	40	11/22/2020 13:03	WG1580395
1,1-Dichloroethene	U		0.0398	0.165	40	11/22/2020 13:03	WG1580395
cis-1,2-Dichloroethene	U		0.0484	0.165	40	11/22/2020 13:03	WG1580395
trans-1,2-Dichloroethene	U		0.0685	0.329	40	11/22/2020 13:03	WG1580395
1,2-Dichloropropane	U		0.0935	0.329	40	11/22/2020 13:03	WG1580395
1,1-Dichloropropene	U		0.0533	0.165	40	11/22/2020 13:03	WG1580395
1,3-Dichloropropane	U		0.0329	0.329	40	11/22/2020 13:03	WG1580395
cis-1,3-Dichloropropene	U		0.0499	0.165	40	11/22/2020 13:03	WG1580395
trans-1,3-Dichloropropene	U		0.0751	0.329	40	11/22/2020 13:03	WG1580395
2,2-Dichloropropane	U		0.0909	0.165	40	11/22/2020 13:03	WG1580395
Ethylbenzene	90.7		0.486	1.65	400	11/22/2020 20:16	WG1580806
Hexachloro-1,3-butadiene	U		0.395	1.65	40	11/22/2020 13:03	WG1580395
Methylene Chloride	U		0.438	1.65	40	11/22/2020 13:03	WG1580395
Methyl tert-butyl ether	U		0.0230	0.0659	40	11/22/2020 13:03	WG1580395

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.0624	0.165	40	11/22/2020 13:03	WG1580395
1,1,2,2-Tetrachloroethane	U		0.0458	0.165	40	11/22/2020 13:03	WG1580395
1,1,2-Trichlorotrifluoroethane	U		0.0497	0.165	40	11/22/2020 13:03	WG1580395
Tetrachloroethene	U		0.0589	0.165	40	11/22/2020 13:03	WG1580395
Toluene	102		0.856	3.29	400	11/22/2020 20:16	WG1580806
1,2,3-Trichlorobenzene	U		0.482	0.823	40	11/22/2020 13:03	WG1580395
1,2,4-Trichlorobenzene	U		0.290	0.823	40	11/22/2020 13:03	WG1580395
1,1,1-Trichloroethane	U		0.0607	0.165	40	11/22/2020 13:03	WG1580395
1,1,2-Trichloroethane	U		0.0393	0.165	40	11/22/2020 13:03	WG1580395
Trichloroethene	U		0.0385	0.0659	40	11/22/2020 13:03	WG1580395
Trichlorofluoromethane	U		0.0545	0.165	40	11/22/2020 13:03	WG1580395
1,2,3-Trichloropropane	U		0.107	0.823	40	11/22/2020 13:03	WG1580395
Vinyl chloride	U		0.0764	0.165	40	11/22/2020 13:03	WG1580395
Xylenes, Total	672		0.580	4.28	400	11/22/2020 20:16	WG1580806
(S) Toluene-d8	*84.2*			*75.0-131*		*11/22/2020 13:03*	WG1580395
(S) Toluene-d8	*108*			*75.0-131*		*11/22/2020 20:16*	WG1580806
(S) 4-Bromofluorobenzene	*100*			*67.0-138*		*11/22/2020 13:03*	WG1580395
(S) 4-Bromofluorobenzene	*93.1*			*67.0-138*		*11/22/2020 20:16*	WG1580806
(S) 1,2-Dichloroethane-d4	*91.6*			*70.0-130*		*11/22/2020 13:03*	WG1580395
(S) 1,2-Dichloroethane-d4	*114*			*70.0-130*		*11/22/2020 20:16*	WG1580806

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	716		8.51	25.6	5	11/23/2020 05:17	WG1580176
Residual Range Organics (RRO)	U		21.3	64.0	5	11/23/2020 05:17	WG1580176
(S) o-Terphenyl	*73.9*			*18.0-148*		*11/23/2020 05:17*	WG1580176

Sample Narrative:

L1286649-19 WG1580176: Dilution due to matrix.

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0151	0.0435	1	11/23/2020 19:36	WG1580730
PCB 1221	U		0.0151	0.0435	1	11/23/2020 19:36	WG1580730
PCB 1232	U		0.0151	0.0435	1	11/23/2020 19:36	WG1580730
PCB 1242	U		0.0151	0.0435	1	11/23/2020 19:36	WG1580730
PCB 1248	U		0.00945	0.0218	1	11/23/2020 19:36	WG1580730
PCB 1254	U		0.00945	0.0218	1	11/23/2020 19:36	WG1580730
PCB 1260	U		0.00945	0.0218	1	11/23/2020 19:36	WG1580730
(S) Decachlorobiphenyl	*58.8*			*10.0-135*		*11/23/2020 19:36*	WG1580730
(S) Tetrachloro-m-xylene	*69.5*			*10.0-139*		*11/23/2020 19:36*	WG1580730

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	0.00501	J	0.00221	0.00768	1	11/22/2020 08:45	WG1580173
Benzo(a)pyrene	U		0.00229	0.00768	1	11/22/2020 08:45	WG1580173
Benzo(b)fluoranthene	U		0.00196	0.00768	1	11/22/2020 08:45	WG1580173
Benzo(k)fluoranthene	U		0.00275	0.00768	1	11/22/2020 08:45	WG1580173
Chrysene	0.00588	J	0.00297	0.00768	1	11/22/2020 08:45	WG1580173
Dibenz(a,h)anthracene	U		0.00220	0.00768	1	11/22/2020 08:45	WG1580173
Indeno(1,2,3-cd)pyrene	U		0.00232	0.00768	1	11/22/2020 08:45	WG1580173
Naphthalene	32.0		0.104	0.512	20	11/23/2020 17:19	WG1580173

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	17.0		0.115	0.512	20	11/23/2020 17:19	WG1580173
2-Methylnaphthalene	36.1		0.109	0.512	20	11/23/2020 17:19	WG1580173
(S) Nitrobenzene-d5	*0.000*	J7		*14.0-149*		*11/23/2020 17:19*	WG1580173
(S) Nitrobenzene-d5	*0.000*	J2		*14.0-149*		*11/22/2020 08:45*	WG1580173
(S) 2-Fluorobiphenyl	*99.4*	J7		*34.0-125*		*11/23/2020 17:19*	WG1580173
(S) 2-Fluorobiphenyl	*95.9*			*34.0-125*		*11/22/2020 08:45*	WG1580173
(S) p-Terphenyl-d14	*227*	J7		*23.0-120*		*11/23/2020 17:19*	WG1580173
(S) p-Terphenyl-d14	*101*			*23.0-120*		*11/22/2020 08:45*	WG1580173

Sample Narrative:

L1286649-19 WG1580173: Surrogate failure due to matrix interference

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	72.5		1	11/21/2020 05:01	WG1579978

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	20.4		0.287	0.689	1	11/24/2020 05:56	WG1580070

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	9870	J3	311	919	5000	11/22/2020 16:34	WG1580603
(S) a,a,a-Trifluorotoluene(FID)	*103*			*77.0-120*		*11/22/2020 16:34*	WG1580603

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	64.0		0.0344	0.0735	40	11/21/2020 15:50	WG1580286
Toluene	202		2.39	9.19	1000	11/22/2020 11:35	WG1580624
Ethylbenzene	109		0.0542	0.184	40	11/21/2020 15:50	WG1580286
Total Xylenes	320		1.62	12.0	1000	11/22/2020 11:35	WG1580624
Methyl tert-butyl ether	U		0.0257	0.0735	40	11/21/2020 15:50	WG1580286
1,2-Dichloroethane	U		0.0478	0.184	40	11/21/2020 15:50	WG1580286
1,2-Dibromoethane	1.79		0.0476	0.184	40	11/21/2020 15:50	WG1580286
(S) Toluene-d8	*112*			*75.0-131*		*11/21/2020 15:50*	WG1580286
(S) Toluene-d8	*105*			*75.0-131*		*11/22/2020 11:35*	WG1580624
(S) 4-Bromofluorobenzene	*114*			*67.0-138*		*11/21/2020 15:50*	WG1580286
(S) 4-Bromofluorobenzene	*94.8*			*67.0-138*		*11/22/2020 11:35*	WG1580624
(S) 1,2-Dichloroethane-d4	*98.7*			*70.0-130*		*11/21/2020 15:50*	WG1580286
(S) 1,2-Dichloroethane-d4	*95.8*			*70.0-130*		*11/22/2020 11:35*	WG1580624

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	772		9.17	27.6	5	11/23/2020 04:52	WG1580176
Residual Range Organics (RRO)	U		22.9	68.9	5	11/23/2020 04:52	WG1580176
(S) o-Terphenyl	*69.7*			*18.0-148*		*11/23/2020 04:52*	WG1580176

Sample Narrative:

L1286649-20 WG1580176: Dilution due to matrix.

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	73.6		1	11/21/2020 05:01	WG1579978

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	5.66		0.283	0.679	1	11/24/2020 06:22	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		1.53	4.52	25	11/24/2020 13:58	WG1581738
(S) a,a,a-Trifluorotoluene(FID)	*101*			*77.0-120*		*11/24/2020 13:58*	WG1581738

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.00525		0.000845	0.00181	1	11/24/2020 04:25	WG1581275
Toluene	0.0197		0.00235	0.00905	1	11/24/2020 04:25	WG1581275
Ethylbenzene	0.00239	J	0.00133	0.00452	1	11/24/2020 04:25	WG1581275
Total Xylenes	0.00883	B J	0.00159	0.0118	1	11/24/2020 04:25	WG1581275
Methyl tert-butyl ether	U		0.000633	0.00181	1	11/24/2020 04:25	WG1581275
1,2-Dichloroethane	U		0.00117	0.00452	1	11/24/2020 04:25	WG1581275
1,2-Dibromoethane	U		0.00117	0.00452	1	11/24/2020 04:25	WG1581275
(S) Toluene-d8	*110*			*75.0-131*		*11/24/2020 04:25*	WG1581275
(S) 4-Bromofluorobenzene	*93.4*			*67.0-138*		*11/24/2020 04:25*	WG1581275
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*11/24/2020 04:25*	WG1581275

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.81	5.43	1	11/26/2020 09:07	WG1582400
Residual Range Organics (RRO)	U		4.52	13.6	1	11/26/2020 09:07	WG1582400
(S) o-Terphenyl	*103*			*18.0-148*		*11/26/2020 09:07*	WG1582400

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	81.5		1	11/21/2020 05:01	WG1579978

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	3.40		0.255	0.613	1	11/24/2020 06:24	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	4.01	J	1.38	4.06	28.5	11/24/2020 14:20	WG1581738
(S) a,a,a-Trifluorotoluene(FID)	*102*			*77.0-120*		*11/24/2020 14:20*	WG1581738

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.00960		0.000759	0.00163	1.14	11/24/2020 04:44	WG1581275
Toluene	0.0412		0.00211	0.00813	1.14	11/24/2020 04:44	WG1581275
Ethylbenzene	0.00386	J	0.00120	0.00406	1.14	11/24/2020 04:44	WG1581275
Total Xylenes	0.0135	B	0.00143	0.0106	1.14	11/24/2020 04:44	WG1581275
Methyl tert-butyl ether	U		0.000569	0.00163	1.14	11/24/2020 04:44	WG1581275
1,2-Dichloroethane	U		0.00106	0.00406	1.14	11/24/2020 04:44	WG1581275
1,2-Dibromoethane	U		0.00105	0.00406	1.14	11/24/2020 04:44	WG1581275
(S) Toluene-d8	*113*			*75.0-131*		*11/24/2020 04:44*	WG1581275
(S) 4-Bromofluorobenzene	*89.4*			*67.0-138*		*11/24/2020 04:44*	WG1581275
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*11/24/2020 04:44*	WG1581275

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.63	4.91	1	11/26/2020 10:27	WG1582400
Residual Range Organics (RRO)	U		4.08	12.3	1	11/26/2020 10:27	WG1582400
(S) o-Terphenyl	*96.3*			*18.0-148*		*11/26/2020 10:27*	WG1582400

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	73.9		1	11/21/2020 05:01	WG1579978

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Copper	32.9		0.541	2.71	1	11/24/2020 06:27	WG1580071
Lead	6.07		0.282	0.677	1	11/24/2020 06:27	WG1580071
Nickel	29.7		0.179	2.71	1	11/24/2020 06:27	WG1580071
Zinc	77.0		1.13	6.77	1	11/24/2020 06:27	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	912		6.11	18.0	100	11/23/2020 19:51	WG1581226
(S) a,a,a-Trifluorotoluene(FID)	*104*			*77.0-120*		*11/23/2020 19:51*	WG1581226

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.0137	J	0.00674	0.0144	8	11/23/2020 01:08	WG1580778
Bromobenzene	U		0.0130	0.180	8	11/23/2020 01:08	WG1580778
Bromodichloromethane	U		0.0105	0.0361	8	11/23/2020 01:08	WG1580778
Bromoform	U		0.0169	0.361	8	11/23/2020 01:08	WG1580778
Bromomethane	U		0.0285	0.180	8	11/23/2020 01:08	WG1580778
Carbon tetrachloride	U		0.0129	0.0721	8	11/23/2020 01:08	WG1580778
Chlorobenzene	U		0.00303	0.0361	8	11/23/2020 01:08	WG1580778
Chlorodibromomethane	U		0.00883	0.0361	8	11/23/2020 01:08	WG1580778
Chloroethane	U		0.0245	0.0721	8	11/23/2020 01:08	WG1580778
Chloroform	U		0.0149	0.0361	8	11/23/2020 01:08	WG1580778
Chloromethane	U	C3	0.0627	0.180	8	11/23/2020 01:08	WG1580778
2-Chlorotoluene	U		0.0125	0.0361	8	11/23/2020 01:08	WG1580778
4-Chlorotoluene	U		0.00649	0.0721	8	11/23/2020 01:08	WG1580778
1,2-Dibromo-3-Chloropropane	U		0.0562	0.361	8	11/23/2020 01:08	WG1580778
1,2-Dibromoethane	U		0.00934	0.0361	8	11/23/2020 01:08	WG1580778
Dibromomethane	U		0.0108	0.0721	8	11/23/2020 01:08	WG1580778
1,2-Dichlorobenzene	U		0.00613	0.0721	8	11/23/2020 01:08	WG1580778
1,3-Dichlorobenzene	U		0.00865	0.0721	8	11/23/2020 01:08	WG1580778
1,4-Dichlorobenzene	U		0.0101	0.0721	8	11/23/2020 01:08	WG1580778
Dichlorodifluoromethane	U		0.0233	0.0361	8	11/23/2020 01:08	WG1580778
1,1-Dichloroethane	U		0.00708	0.0361	8	11/23/2020 01:08	WG1580778
1,2-Dichloroethane	U		0.00936	0.0361	8	11/23/2020 01:08	WG1580778
1,1-Dichloroethene	U		0.00874	0.0361	8	11/23/2020 01:08	WG1580778
cis-1,2-Dichloroethene	U		0.0106	0.0361	8	11/23/2020 01:08	WG1580778
trans-1,2-Dichloroethene	U		0.0150	0.0721	8	11/23/2020 01:08	WG1580778
1,2-Dichloropropane	U		0.0206	0.0721	8	11/23/2020 01:08	WG1580778
1,1-Dichloropropene	U		0.0117	0.0361	8	11/23/2020 01:08	WG1580778
1,3-Dichloropropane	U		0.00723	0.0721	8	11/23/2020 01:08	WG1580778
cis-1,3-Dichloropropene	U		0.0109	0.0361	8	11/23/2020 01:08	WG1580778
trans-1,3-Dichloropropene	U		0.0164	0.0721	8	11/23/2020 01:08	WG1580778
2,2-Dichloropropane	U		0.0198	0.0361	8	11/23/2020 01:08	WG1580778
Ethylbenzene	1.25		0.0106	0.0361	8	11/23/2020 01:08	WG1580778
Hexachloro-1,3-butadiene	U		0.0865	0.361	8	11/23/2020 01:08	WG1580778
Methylene Chloride	U	C3	0.0957	0.361	8	11/23/2020 01:08	WG1580778
Methyl tert-butyl ether	U		0.00505	0.0144	8	11/23/2020 01:08	WG1580778

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.0137	0.0361	8	11/23/2020 01:08	WG1580778
1,1,2,2-Tetrachloroethane	U		0.0100	0.0361	8	11/23/2020 01:08	WG1580778
1,1,2-Trichlorotrifluoroethane	U		0.0109	0.0361	8	11/23/2020 01:08	WG1580778
Tetrachloroethene	U		0.0129	0.0361	8	11/23/2020 01:08	WG1580778
Toluene	0.0647	J	0.0187	0.0721	8	11/23/2020 01:08	WG1580778
1,2,3-Trichlorobenzene	U	C4	0.106	0.180	8	11/23/2020 01:08	WG1580778
1,2,4-Trichlorobenzene	U	C3	0.0635	0.180	8	11/23/2020 01:08	WG1580778
1,1,1-Trichloroethane	U		0.0133	0.0361	8	11/23/2020 01:08	WG1580778
1,1,2-Trichloroethane	U		0.00862	0.0361	8	11/23/2020 01:08	WG1580778
Trichloroethene	U		0.00842	0.0144	8	11/23/2020 01:08	WG1580778
Trichlorofluoromethane	U		0.0119	0.0361	8	11/23/2020 01:08	WG1580778
1,2,3-Trichloropropane	U		0.0234	0.180	8	11/23/2020 01:08	WG1580778
Vinyl chloride	U		0.0167	0.0361	8	11/23/2020 01:08	WG1580778
Xylenes, Total	3.28		0.0127	0.0937	8	11/23/2020 01:08	WG1580778
(S) Toluene-d8	*93.8*			*75.0-131*		*11/23/2020 01:08*	WG1580778
(S) 4-Bromofluorobenzene	*123*			*67.0-138*		*11/23/2020 01:08*	WG1580778
(S) 1,2-Dichloroethane-d4	*113*			*70.0-130*		*11/23/2020 01:08*	WG1580778

Sample Narrative:

L1286649-23 WG1580778: Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	4530		36.0	108	20	11/29/2020 05:25	WG1582400
Residual Range Organics (RRO)	152	J	90.2	271	20	11/29/2020 05:25	WG1582400
(S) o-Terphenyl	*0.000*	J7		*18.0-148*		*11/29/2020 05:25*	WG1582400

Sample Narrative:

L1286649-23 WG1582400: Dilution due to matrix.

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0160	0.0460	1	11/23/2020 19:46	WG1580730
PCB 1221	U		0.0160	0.0460	1	11/23/2020 19:46	WG1580730
PCB 1232	U		0.0160	0.0460	1	11/23/2020 19:46	WG1580730
PCB 1242	U		0.0160	0.0460	1	11/23/2020 19:46	WG1580730
PCB 1248	U		0.00999	0.0230	1	11/23/2020 19:46	WG1580730
PCB 1254	U		0.00999	0.0230	1	11/23/2020 19:46	WG1580730
PCB 1260	U		0.00999	0.0230	1	11/23/2020 19:46	WG1580730
(S) Decachlorobiphenyl	*71.8*			*10.0-135*		*11/23/2020 19:46*	WG1580730
(S) Tetrachloro-m-xylene	*80.7*			*10.0-139*		*11/23/2020 19:46*	WG1580730

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	0.0387		0.00234	0.00812	1	11/23/2020 02:00	WG1580419
Benzo(a)pyrene	U		0.121	0.406	50	11/24/2020 13:55	WG1580419
Benzo(b)fluoranthene	U		0.104	0.406	50	11/24/2020 13:55	WG1580419
Benzo(k)fluoranthene	U		0.146	0.406	50	11/24/2020 13:55	WG1580419
Chrysene	0.123		0.00314	0.00812	1	11/23/2020 02:00	WG1580419
Dibenz(a,h)anthracene	U		0.116	0.406	50	11/24/2020 13:55	WG1580419
Indeno(1,2,3-cd)pyrene	U		0.123	0.406	50	11/24/2020 13:55	WG1580419
Naphthalene	8.61		0.276	1.35	50	11/24/2020 13:55	WG1580419

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	44.7		0.305	1.35	50	11/24/2020 13:55	WG1580419
2-Methylnaphthalene	94.1		0.290	1.35	50	11/24/2020 13:55	WG1580419
(S) Nitrobenzene-d5	*0.000*	J2		*14.0-149*		*11/23/2020 02:00*	WG1580419
(S) Nitrobenzene-d5	*250*	J7		*14.0-149*		*11/24/2020 13:55*	WG1580419
(S) 2-Fluorobiphenyl	*0.000*	J2		*34.0-125*		*11/23/2020 02:00*	WG1580419
(S) 2-Fluorobiphenyl	*61.6*	J7		*34.0-125*		*11/24/2020 13:55*	WG1580419
(S) p-Terphenyl-d14	*244*	J1		*23.0-120*		*11/23/2020 02:00*	WG1580419
(S) p-Terphenyl-d14	*103*	J7		*23.0-120*		*11/24/2020 13:55*	WG1580419

Sample Narrative:

L1286649-23 WG1580419: Surrogate failure due to matrix interference

L1286649-23 WG1580419: IS/SURR failed on lower dilution.

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	72.5		1	11/21/2020 05:01	WG1579978

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	4.87		0.287	0.690	1	11/24/2020 06:35	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	54.8		6.30	18.6	100	11/23/2020 20:12	WG1581226
(S) a,a,a-Trifluorotoluene(FID)	*109*			*77.0-120*		*11/23/2020 20:12*	WG1581226

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.0214		0.00694	0.0149	8	11/24/2020 06:19	WG1581275
Toluene	0.0579	J	0.0193	0.0743	8	11/24/2020 06:19	WG1581275
Ethylbenzene	0.0574		0.0110	0.0371	8	11/24/2020 06:19	WG1581275
Total Xylenes	0.101	B	0.0131	0.0966	8	11/24/2020 06:19	WG1581275
Methyl tert-butyl ether	U		0.00520	0.0149	8	11/24/2020 06:19	WG1581275
1,2-Dichloroethane	U		0.00964	0.0371	8	11/24/2020 06:19	WG1581275
1,2-Dibromoethane	U		0.00962	0.0371	8	11/24/2020 06:19	WG1581275
(S) Toluene-d8	*107*			*75.0-131*		*11/24/2020 06:19*	WG1581275
(S) 4-Bromofluorobenzene	*95.4*			*67.0-138*		*11/24/2020 06:19*	WG1581275
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*11/24/2020 06:19*	WG1581275

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	47.2		1.83	5.52	1	11/26/2020 09:21	WG1582400
Residual Range Organics (RRO)	U		4.59	13.8	1	11/26/2020 09:21	WG1582400
(S) o-Terphenyl	*91.2*			*18.0-148*		*11/26/2020 09:21*	WG1582400

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	72.8		1	11/21/2020 05:01	WG1579978

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	5.35		0.286	0.686	1	11/24/2020 06:37	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		1.54	4.54	25	11/23/2020 20:32	WG1581226
(S) a,a,a-Trifluorotoluene(FID)	*108*			*77.0-120*		*11/23/2020 20:32*	WG1581226

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.00477		0.000847	0.00181	1	11/24/2020 05:03	WG1581275
Toluene	0.0261		0.00236	0.00907	1	11/24/2020 05:03	WG1581275
Ethylbenzene	0.00312	J	0.00134	0.00454	1	11/24/2020 05:03	WG1581275
Total Xylenes	0.0107	B J	0.00160	0.0118	1	11/24/2020 05:03	WG1581275
Methyl tert-butyl ether	U		0.000635	0.00181	1	11/24/2020 05:03	WG1581275
1,2-Dichloroethane	U		0.00118	0.00454	1	11/24/2020 05:03	WG1581275
1,2-Dibromoethane	U		0.00118	0.00454	1	11/24/2020 05:03	WG1581275
(S) Toluene-d8	*110*			*75.0-131*		*11/24/2020 05:03*	WG1581275
(S) 4-Bromofluorobenzene	*89.5*			*67.0-138*		*11/24/2020 05:03*	WG1581275
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*11/24/2020 05:03*	WG1581275

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.83	5.49	1	11/26/2020 09:47	WG1582400
Residual Range Organics (RRO)	U		4.57	13.7	1	11/26/2020 09:47	WG1582400
(S) o-Terphenyl	*76.2*			*18.0-148*		*11/26/2020 09:47*	WG1582400

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	97.2		1	11/21/2020 05:01	WG1579978

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	1.46		0.214	0.514	1	11/24/2020 06:40	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	12.5		0.897	2.65	25	11/23/2020 20:53	WG1581226
(S) a,a,a-Trifluorotoluene(FID)	*98.4*			*77.0-120*		*11/23/2020 20:53*	WG1581226

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.0144		0.000494	0.00106	1	11/24/2020 05:22	WG1581275
Toluene	0.0453		0.00138	0.00529	1	11/24/2020 05:22	WG1581275
Ethylbenzene	0.00372		0.000780	0.00265	1	11/24/2020 05:22	WG1581275
Total Xylenes	0.0145		0.000931	0.00688	1	11/24/2020 05:22	WG1581275
Methyl tert-butyl ether	U		0.000370	0.00106	1	11/24/2020 05:22	WG1581275
1,2-Dichloroethane	U		0.000687	0.00265	1	11/24/2020 05:22	WG1581275
1,2-Dibromoethane	U		0.000686	0.00265	1	11/24/2020 05:22	WG1581275
(S) Toluene-d8	*113*			*75.0-131*		*11/24/2020 05:22*	WG1581275
(S) 4-Bromofluorobenzene	*93.3*			*67.0-138*		*11/24/2020 05:22*	WG1581275
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*		*11/24/2020 05:22*	WG1581275

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.37	4.11	1	11/24/2020 09:57	WG1580726
Residual Range Organics (RRO)	U		3.43	10.3	1	11/24/2020 09:57	WG1580726
(S) o-Terphenyl	*68.7*			*18.0-148*		*11/24/2020 09:57*	WG1580726

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	72.0		1	11/22/2020 04:05	WG1579979

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Copper	40.9		0.555	2.78	1	11/24/2020 06:42	WG1580071
Lead	6.99		0.289	0.694	1	11/24/2020 06:42	WG1580071
Nickel	26.3		0.183	2.78	1	11/24/2020 06:42	WG1580071
Zinc	83.7		1.15	6.94	1	11/24/2020 06:42	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	1000		15.8	46.6	250	11/23/2020 21:14	WG1581226
(S) a,a,a-Trifluorotoluene(FID)	*103*			*77.0-120*		*11/23/2020 21:14*	WG1581226

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.244		0.0174	0.0373	20	11/23/2020 01:27	WG1580778
Bromobenzene	U		0.0336	0.466	20	11/23/2020 01:27	WG1580778
Bromodichloromethane	U		0.0270	0.0933	20	11/23/2020 01:27	WG1580778
Bromoform	U		0.0436	0.933	20	11/23/2020 01:27	WG1580778
Bromomethane	U		0.0735	0.466	20	11/23/2020 01:27	WG1580778
Carbon tetrachloride	U		0.0336	0.187	20	11/23/2020 01:27	WG1580778
Chlorobenzene	U		0.00783	0.0933	20	11/23/2020 01:27	WG1580778
Chlorodibromomethane	U		0.0228	0.0933	20	11/23/2020 01:27	WG1580778
Chloroethane	U		0.0634	0.187	20	11/23/2020 01:27	WG1580778
Chloroform	U		0.0384	0.0933	20	11/23/2020 01:27	WG1580778
Chloromethane	U	C3	0.162	0.466	20	11/23/2020 01:27	WG1580778
2-Chlorotoluene	U		0.0323	0.0933	20	11/23/2020 01:27	WG1580778
4-Chlorotoluene	U		0.0168	0.187	20	11/23/2020 01:27	WG1580778
1,2-Dibromo-3-Chloropropane	U		0.145	0.933	20	11/23/2020 01:27	WG1580778
1,2-Dibromoethane	U		0.0242	0.0933	20	11/23/2020 01:27	WG1580778
Dibromomethane	U		0.0280	0.187	20	11/23/2020 01:27	WG1580778
1,2-Dichlorobenzene	U		0.0159	0.187	20	11/23/2020 01:27	WG1580778
1,3-Dichlorobenzene	U		0.0224	0.187	20	11/23/2020 01:27	WG1580778
1,4-Dichlorobenzene	U		0.0261	0.187	20	11/23/2020 01:27	WG1580778
Dichlorodifluoromethane	U		0.0601	0.0933	20	11/23/2020 01:27	WG1580778
1,1-Dichloroethane	U		0.0183	0.0933	20	11/23/2020 01:27	WG1580778
1,2-Dichloroethane	U		0.0242	0.0933	20	11/23/2020 01:27	WG1580778
1,1-Dichloroethene	U		0.0226	0.0933	20	11/23/2020 01:27	WG1580778
cis-1,2-Dichloroethene	U		0.0274	0.0933	20	11/23/2020 01:27	WG1580778
trans-1,2-Dichloroethene	U		0.0388	0.187	20	11/23/2020 01:27	WG1580778
1,2-Dichloropropane	U		0.0530	0.187	20	11/23/2020 01:27	WG1580778
1,1-Dichloropropene	U		0.0302	0.0933	20	11/23/2020 01:27	WG1580778
1,3-Dichloropropane	U		0.0187	0.187	20	11/23/2020 01:27	WG1580778
cis-1,3-Dichloropropene	U		0.0282	0.0933	20	11/23/2020 01:27	WG1580778
trans-1,3-Dichloropropene	U		0.0425	0.187	20	11/23/2020 01:27	WG1580778
2,2-Dichloropropane	U		0.0515	0.0933	20	11/23/2020 01:27	WG1580778
Ethylbenzene	2.61		0.0274	0.0933	20	11/23/2020 01:27	WG1580778
Hexachloro-1,3-butadiene	U		0.224	0.933	20	11/23/2020 01:27	WG1580778
Methylene Chloride	U	C3	0.248	0.933	20	11/23/2020 01:27	WG1580778
Methyl tert-butyl ether	U		0.0131	0.0373	20	11/23/2020 01:27	WG1580778

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.0354	0.0933	20	11/23/2020 01:27	WG1580778
1,1,2,2-Tetrachloroethane	U		0.0259	0.0933	20	11/23/2020 01:27	WG1580778
1,1,2-Trichlorotrifluoroethane	U		0.0282	0.0933	20	11/23/2020 01:27	WG1580778
Tetrachloroethene	U		0.0334	0.0933	20	11/23/2020 01:27	WG1580778
Toluene	1.24		0.0485	0.187	20	11/23/2020 01:27	WG1580778
1,2,3-Trichlorobenzene	U	C4	0.274	0.466	20	11/23/2020 01:27	WG1580778
1,2,4-Trichlorobenzene	U	C3	0.164	0.466	20	11/23/2020 01:27	WG1580778
1,1,1-Trichloroethane	U		0.0345	0.0933	20	11/23/2020 01:27	WG1580778
1,1,2-Trichloroethane	U		0.0222	0.0933	20	11/23/2020 01:27	WG1580778
Trichloroethene	U		0.0218	0.0373	20	11/23/2020 01:27	WG1580778
Trichlorofluoromethane	U		0.0308	0.0933	20	11/23/2020 01:27	WG1580778
1,2,3-Trichloropropane	U		0.0604	0.466	20	11/23/2020 01:27	WG1580778
Vinyl chloride	U		0.0433	0.0933	20	11/23/2020 01:27	WG1580778
Xylenes, Total	11.8		0.0328	0.242	20	11/23/2020 01:27	WG1580778
(S) Toluene-d8	*93.5*			*75.0-131*		*11/23/2020 01:27*	WG1580778
(S) 4-Bromofluorobenzene	*99.8*			*67.0-138*		*11/23/2020 01:27*	WG1580778
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*		*11/23/2020 01:27*	WG1580778

Sample Narrative:

L1286649-27 WG1580778: Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	35800		369	1110	200	11/26/2020 12:40	WG1582400
Residual Range Organics (RRO)	U		924	2780	200	11/26/2020 12:40	WG1582400
(S) o-Terphenyl	*0.000*	J7		*18.0-148*		*11/26/2020 12:40*	WG1582400

Sample Narrative:

L1286649-27 WG1582400: Dilution due to matrix.

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0164	0.0472	1	11/23/2020 19:55	WG1580730
PCB 1221	U		0.0164	0.0472	1	11/23/2020 19:55	WG1580730
PCB 1232	U		0.0164	0.0472	1	11/23/2020 19:55	WG1580730
PCB 1242	U		0.0164	0.0472	1	11/23/2020 19:55	WG1580730
PCB 1248	U		0.0102	0.0236	1	11/23/2020 19:55	WG1580730
PCB 1254	U		0.0102	0.0236	1	11/23/2020 19:55	WG1580730
PCB 1260	U		0.0102	0.0236	1	11/23/2020 19:55	WG1580730
(S) Decachlorobiphenyl	*65.9*			*10.0-135*		*11/23/2020 19:55*	WG1580730
(S) Tetrachloro-m-xylene	*69.0*			*10.0-139*		*11/23/2020 19:55*	WG1580730

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	0.0368		0.00240	0.00833	1	11/24/2020 14:36	WG1580740
Benzo(a)pyrene	U		0.00248	0.00833	1	11/24/2020 14:36	WG1580740
Benzo(b)fluoranthene	U		0.00212	0.00833	1	11/24/2020 14:36	WG1580740
Benzo(k)fluoranthene	U		0.00298	0.00833	1	11/24/2020 14:36	WG1580740
Chrysene	0.0662		0.00322	0.00833	1	11/24/2020 14:36	WG1580740
Dibenz(a,h)anthracene	U		0.00239	0.00833	1	11/24/2020 14:36	WG1580740
Indeno(1,2,3-cd)pyrene	U		0.00251	0.00833	1	11/24/2020 14:36	WG1580740
Naphthalene	7.80		0.113	0.555	20	11/25/2020 05:22	WG1580740

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1-Methylnaphthalene	38.7		0.125	0.555	20	11/25/2020 05:22	WG1580740
2-Methylnaphthalene	42.9		0.119	0.555	20	11/25/2020 05:22	WG1580740
(S) Nitrobenzene-d5	*942*	J1		*14.0-149*		*11/24/2020 14:36*	WG1580740
(S) Nitrobenzene-d5	*0.000*	J7		*14.0-149*		*11/25/2020 05:22*	WG1580740
(S) 2-Fluorobiphenyl	*8.91*	J2		*34.0-125*		*11/24/2020 14:36*	WG1580740
(S) 2-Fluorobiphenyl	*0.000*	J7		*34.0-125*		*11/25/2020 05:22*	WG1580740
(S) p-Terphenyl-d14	*66.2*			*23.0-120*		*11/24/2020 14:36*	WG1580740
(S) p-Terphenyl-d14	*80.4*	J7		*23.0-120*		*11/25/2020 05:22*	WG1580740

Sample Narrative:

L1286649-27 WG1580740: Surrogate failure due to matrix interference

L1286649-27 WG1580740: IS/SURR failed on lower dilution.

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	79.9		1	11/22/2020 04:05	WG1579979

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	3.11		0.260	0.625	1	11/24/2020 06:45	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	1110		26.0	77.0	500	11/23/2020 21:35	WG1581226
(S) a,a,a-Trifluorotoluene(FID)	*105*			*77.0-120*		*11/23/2020 21:35*	WG1581226

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.0402	J	0.0288	0.0616	40	11/24/2020 06:38	WG1581275
Toluene	0.228	J	0.0800	0.308	40	11/24/2020 06:38	WG1581275
Ethylbenzene	1.27		0.0454	0.154	40	11/24/2020 06:38	WG1581275
Total Xylenes	5.33		0.0542	0.400	40	11/24/2020 06:38	WG1581275
Methyl tert-butyl ether	U		0.0215	0.0616	40	11/24/2020 06:38	WG1581275
1,2-Dichloroethane	U		0.0400	0.154	40	11/24/2020 06:38	WG1581275
1,2-Dibromoethane	U		0.0399	0.154	40	11/24/2020 06:38	WG1581275
(S) Toluene-d8	*104*			*75.0-131*		*11/24/2020 06:38*	WG1581275
(S) 4-Bromofluorobenzene	*102*			*67.0-138*		*11/24/2020 06:38*	WG1581275
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*		*11/24/2020 06:38*	WG1581275

Sample Narrative:

L1286649-28 WG1581275: Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	8820		83.2	250	50	11/29/2020 05:50	WG1582400
Residual Range Organics (RRO)	291	J	208	625	50	11/29/2020 05:50	WG1582400
(S) o-Terphenyl	*0.000*	J7		*18.0-148*		*11/29/2020 05:50*	WG1582400

Sample Narrative:

L1286649-28 WG1582400: Dilution due to matrix.

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	75.9		1	11/22/2020 04:05	WG1579979

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	5.94		0.274	0.659	1	11/24/2020 06:48	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	20.2		1.46	4.31	25	11/23/2020 21:56	WG1581226
(S) a,a,a-Trifluorotoluene(FID)	*105*			*77.0-120*		*11/23/2020 21:56*	WG1581226

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.00421		0.000805	0.00172	1	11/24/2020 05:41	WG1581275
Toluene	0.0140		0.00224	0.00862	1	11/24/2020 05:41	WG1581275
Ethylbenzene	0.00652		0.00127	0.00431	1	11/24/2020 05:41	WG1581275
Total Xylenes	0.0245		0.00152	0.0112	1	11/24/2020 05:41	WG1581275
Methyl tert-butyl ether	U		0.000604	0.00172	1	11/24/2020 05:41	WG1581275
1,2-Dichloroethane	U		0.00112	0.00431	1	11/24/2020 05:41	WG1581275
1,2-Dibromoethane	U		0.00112	0.00431	1	11/24/2020 05:41	WG1581275
(S) Toluene-d8	*108*			*75.0-131*		*11/24/2020 05:41*	WG1581275
(S) 4-Bromofluorobenzene	*99.2*			*67.0-138*		*11/24/2020 05:41*	WG1581275
(S) 1,2-Dichloroethane-d4	*108*			*70.0-130*		*11/24/2020 05:41*	WG1581275

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	7.21		1.75	5.27	1	11/26/2020 07:47	WG1582400
Residual Range Organics (RRO)	U		4.39	13.2	1	11/26/2020 07:47	WG1582400
(S) o-Terphenyl	*96.5*			*18.0-148*		*11/26/2020 07:47*	WG1582400

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	97.1		1	11/22/2020 04:05	WG1579979

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	2.18		0.214	0.515	1	11/24/2020 06:09	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	6.99		0.900	2.65	25	11/24/2020 06:34	WG1581230
(S) a,a,a-Trifluorotoluene(FID)	*102*			*77.0-120*		*11/24/2020 06:34*	WG1581230

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.00793		0.000495	0.00106	1	11/24/2020 06:00	WG1581275
Toluene	0.0252		0.00138	0.00530	1	11/24/2020 06:00	WG1581275
Ethylbenzene	0.00202	J	0.000782	0.00265	1	11/24/2020 06:00	WG1581275
Total Xylenes	0.00738	B	0.000934	0.00690	1	11/24/2020 06:00	WG1581275
Methyl tert-butyl ether	U		0.000371	0.00106	1	11/24/2020 06:00	WG1581275
1,2-Dichloroethane	U		0.000688	0.00265	1	11/24/2020 06:00	WG1581275
1,2-Dibromoethane	U		0.000687	0.00265	1	11/24/2020 06:00	WG1581275
(S) Toluene-d8	*110*			*75.0-131*		*11/24/2020 06:00*	WG1581275
(S) 4-Bromofluorobenzene	*90.6*			*67.0-138*		*11/24/2020 06:00*	WG1581275
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*		*11/24/2020 06:00*	WG1581275

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U	J4	1.37	4.12	1	11/26/2020 15:11	WG1581894
Residual Range Organics (RRO)	U		3.43	10.3	1	11/26/2020 15:11	WG1581894
(S) o-Terphenyl	*64.4*			*18.0-148*		*11/26/2020 15:11*	WG1581894

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	73.8		1	11/22/2020 04:05	WG1579979

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Copper	34.4		0.542	2.71	1	11/24/2020 06:50	WG1580071
Lead	19.8		0.282	0.678	1	11/24/2020 06:50	WG1580071
Nickel	28.9		0.179	2.71	1	11/24/2020 06:50	WG1580071
Zinc	71.9		1.13	6.78	1	11/24/2020 06:50	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	5090		29.9	88.4	500	11/24/2020 06:55	WG1581230
(S) a,a,a-Trifluorotoluene(FID)	*99.3*			*77.0-120*		*11/24/2020 06:55*	WG1581230

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.0330	0.0707	40	11/23/2020 01:46	WG1580778
Bromobenzene	U		0.0636	0.884	40	11/23/2020 01:46	WG1580778
Bromodichloromethane	U		0.0512	0.177	40	11/23/2020 01:46	WG1580778
Bromoform	U		0.0827	1.77	40	11/23/2020 01:46	WG1580778
Bromomethane	U		0.139	0.884	40	11/23/2020 01:46	WG1580778
Carbon tetrachloride	U		0.0634	0.353	40	11/23/2020 01:46	WG1580778
Chlorobenzene	U		0.0148	0.177	40	11/23/2020 01:46	WG1580778
Chlorodibromomethane	U		0.0433	0.177	40	11/23/2020 01:46	WG1580778
Chloroethane	U		0.120	0.353	40	11/23/2020 01:46	WG1580778
Chloroform	U		0.0728	0.177	40	11/23/2020 01:46	WG1580778
Chloromethane	U	C3	0.307	0.884	40	11/23/2020 01:46	WG1580778
2-Chlorotoluene	U		0.0611	0.177	40	11/23/2020 01:46	WG1580778
4-Chlorotoluene	U		0.0318	0.353	40	11/23/2020 01:46	WG1580778
1,2-Dibromo-3-Chloropropane	U		0.276	1.77	40	11/23/2020 01:46	WG1580778
1,2-Dibromoethane	U		0.0458	0.177	40	11/23/2020 01:46	WG1580778
Dibromomethane	U		0.0530	0.353	40	11/23/2020 01:46	WG1580778
1,2-Dichlorobenzene	U		0.0300	0.353	40	11/23/2020 01:46	WG1580778
1,3-Dichlorobenzene	U		0.0424	0.353	40	11/23/2020 01:46	WG1580778
1,4-Dichlorobenzene	U		0.0495	0.353	40	11/23/2020 01:46	WG1580778
Dichlorodifluoromethane	U		0.114	0.177	40	11/23/2020 01:46	WG1580778
1,1-Dichloroethane	U		0.0346	0.177	40	11/23/2020 01:46	WG1580778
1,2-Dichloroethane	U		0.0459	0.177	40	11/23/2020 01:46	WG1580778
1,1-Dichloroethene	U		0.0428	0.177	40	11/23/2020 01:46	WG1580778
cis-1,2-Dichloroethene	U		0.0520	0.177	40	11/23/2020 01:46	WG1580778
trans-1,2-Dichloroethene	U		0.0735	0.353	40	11/23/2020 01:46	WG1580778
1,2-Dichloropropane	U		0.100	0.353	40	11/23/2020 01:46	WG1580778
1,1-Dichloropropene	U		0.0573	0.177	40	11/23/2020 01:46	WG1580778
1,3-Dichloropropane	U		0.0353	0.353	40	11/23/2020 01:46	WG1580778
cis-1,3-Dichloropropene	U		0.0535	0.177	40	11/23/2020 01:46	WG1580778
trans-1,3-Dichloropropene	U		0.0806	0.353	40	11/23/2020 01:46	WG1580778
2,2-Dichloropropane	U		0.0975	0.177	40	11/23/2020 01:46	WG1580778
Ethylbenzene	27.2		0.0521	0.177	40	11/23/2020 01:46	WG1580778
Hexachloro-1,3-butadiene	U		0.424	1.77	40	11/23/2020 01:46	WG1580778
Methylene Chloride	U	C3	0.470	1.77	40	11/23/2020 01:46	WG1580778
Methyl tert-butyl ether	U		0.0247	0.0707	40	11/23/2020 01:46	WG1580778

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.0670	0.177	40	11/23/2020 01:46	WG1580778
1,1,2,2-Tetrachloroethane	U		0.0491	0.177	40	11/23/2020 01:46	WG1580778
1,1,2-Trichlorotrifluoroethane	U		0.0534	0.177	40	11/23/2020 01:46	WG1580778
Tetrachloroethene	U		0.0633	0.177	40	11/23/2020 01:46	WG1580778
Toluene	5.76		0.0919	0.353	40	11/23/2020 01:46	WG1580778
1,2,3-Trichlorobenzene	U	C4	0.518	0.884	40	11/23/2020 01:46	WG1580778
1,2,4-Trichlorobenzene	U	C3	0.311	0.884	40	11/23/2020 01:46	WG1580778
1,1,1-Trichloroethane	U		0.0652	0.177	40	11/23/2020 01:46	WG1580778
1,1,2-Trichloroethane	U		0.0422	0.177	40	11/23/2020 01:46	WG1580778
Trichloroethene	U		0.0413	0.0707	40	11/23/2020 01:46	WG1580778
Trichlorofluoromethane	U		0.0585	0.177	40	11/23/2020 01:46	WG1580778
1,2,3-Trichloropropane	U		0.115	0.884	40	11/23/2020 01:46	WG1580778
Vinyl chloride	U		0.0820	0.177	40	11/23/2020 01:46	WG1580778
Xylenes, Total	116		0.0622	0.459	40	11/23/2020 01:46	WG1580778
(S) Toluene-d8	*106*			*75.0-131*		*11/23/2020 01:46*	WG1580778
(S) 4-Bromofluorobenzene	*114*			*67.0-138*		*11/23/2020 01:46*	WG1580778
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*		*11/23/2020 01:46*	WG1580778

Sample Narrative:

L1286649-31 WG1580778: Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	1320	J4	9.01	27.1	5	11/27/2020 11:07	WG1581894
Residual Range Organics (RRO)	U		4.51	13.6	1	11/26/2020 15:24	WG1581894
(S) o-Terphenyl	*101*			*18.0-148*		*11/27/2020 11:07*	WG1581894
(S) o-Terphenyl	*78.0*			*18.0-148*		*11/26/2020 15:24*	WG1581894

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0160	0.0461	1	11/23/2020 20:07	WG1580730
PCB 1221	U		0.0160	0.0461	1	11/23/2020 20:07	WG1580730
PCB 1232	U		0.0160	0.0461	1	11/23/2020 20:07	WG1580730
PCB 1242	U		0.0160	0.0461	1	11/23/2020 20:07	WG1580730
PCB 1248	U		0.0100	0.0230	1	11/23/2020 20:07	WG1580730
PCB 1254	U		0.0100	0.0230	1	11/23/2020 20:07	WG1580730
PCB 1260	U		0.0100	0.0230	1	11/23/2020 20:07	WG1580730
(S) Decachlorobiphenyl	*66.6*			*10.0-135*		*11/23/2020 20:07*	WG1580730
(S) Tetrachloro-m-xylene	*75.5*			*10.0-139*		*11/23/2020 20:07*	WG1580730

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.00234	0.00813	1	11/24/2020 14:53	WG1580740
Benzo(a)pyrene	U		0.00243	0.00813	1	11/24/2020 14:53	WG1580740
Benzo(b)fluoranthene	U		0.00207	0.00813	1	11/24/2020 14:53	WG1580740
Benzo(k)fluoranthene	U		0.00291	0.00813	1	11/24/2020 14:53	WG1580740
Chrysene	U		0.00314	0.00813	1	11/24/2020 14:53	WG1580740
Dibenz(a,h)anthracene	U		0.00233	0.00813	1	11/24/2020 14:53	WG1580740
Indeno(1,2,3-cd)pyrene	U		0.00245	0.00813	1	11/24/2020 14:53	WG1580740
Naphthalene	15.9		0.111	0.542	20	11/25/2020 05:39	WG1580740
1-Methylnaphthalene	7.20		0.122	0.542	20	11/25/2020 05:39	WG1580740
2-Methylnaphthalene	14.9		0.116	0.542	20	11/25/2020 05:39	WG1580740

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) Nitrobenzene-d5	*1350*	J1		*14.0-149*		*11/24/2020 14:53*	WG1580740
(S) Nitrobenzene-d5	*0.000*	J7		*14.0-149*		*11/25/2020 05:39*	WG1580740
(S) 2-Fluorobiphenyl	*62.0*	J7		*34.0-125*		*11/25/2020 05:39*	WG1580740
(S) 2-Fluorobiphenyl	*63.7*			*34.0-125*		*11/24/2020 14:53*	WG1580740
(S) p-Terphenyl-d14	*68.1*			*23.0-120*		*11/24/2020 14:53*	WG1580740
(S) p-Terphenyl-d14	*77.2*	J7		*23.0-120*		*11/25/2020 05:39*	WG1580740

Sample Narrative:

L1286649-31 WG1580740: Surrogate failure due to matrix interference

L1286649-31 WG1580740: IS/SURR failed on lower dilution.

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	73.8		1	11/22/2020 04:05	WG1579979

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	5.14		0.282	0.678	1	11/24/2020 06:53	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	39.2	B	3.05	8.96	50	11/24/2020 21:40	WG1582038
(S) a,a,a-Trifluorotoluene(FID)	*95.0*			*77.0-120*		*11/24/2020 21:40*	WG1582038

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.545		0.0167	0.0358	20	11/24/2020 04:40	WG1581290
Toluene	1.02		0.0466	0.179	20	11/24/2020 04:40	WG1581290
Ethylbenzene	0.450		0.0263	0.0896	20	11/24/2020 04:40	WG1581290
Total Xylenes	1.65		0.0315	0.233	20	11/24/2020 04:40	WG1581290
Methyl tert-butyl ether	U		0.0125	0.0358	20	11/24/2020 04:40	WG1581290
1,2-Dichloroethane	U		0.0233	0.0896	20	11/24/2020 04:40	WG1581290
1,2-Dibromoethane	U		0.0233	0.0896	20	11/24/2020 04:40	WG1581290
(S) Toluene-d8	*107*			*75.0-131*		*11/24/2020 04:40*	WG1581290
(S) 4-Bromofluorobenzene	*99.5*			*67.0-138*		*11/24/2020 04:40*	WG1581290
(S) 1,2-Dichloroethane-d4	*94.4*			*70.0-130*		*11/24/2020 04:40*	WG1581290

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	2.66	J J4	1.80	5.42	1	11/26/2020 15:37	WG1581894
Residual Range Organics (RRO)	U		4.51	13.6	1	11/26/2020 15:37	WG1581894
(S) o-Terphenyl	*53.3*			*18.0-148*		*11/26/2020 15:37*	WG1581894

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	72.3		1	11/22/2020 04:05	WG1579979

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	6.15		0.288	0.691	1	11/24/2020 06:56	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	69.8		1.58	4.66	25	11/24/2020 07:37	WG1581230
(S) a,a,a-Trifluorotoluene(FID)	*98.6*			*77.0-120*		*11/24/2020 07:37*	WG1581230

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.616		0.000871	0.00187	1	11/24/2020 02:47	WG1581290
Toluene	1.11		0.00243	0.00933	1	11/24/2020 02:47	WG1581290
Ethylbenzene	0.450		0.00137	0.00466	1	11/24/2020 02:47	WG1581290
Total Xylenes	1.71		0.00164	0.0121	1	11/24/2020 02:47	WG1581290
Methyl tert-butyl ether	U		0.000653	0.00187	1	11/24/2020 02:47	WG1581290
1,2-Dichloroethane	U		0.00121	0.00466	1	11/24/2020 02:47	WG1581290
1,2-Dibromoethane	U		0.00121	0.00466	1	11/24/2020 02:47	WG1581290
(S) Toluene-d8	*104*			*75.0-131*		*11/24/2020 02:47*	WG1581290
(S) 4-Bromofluorobenzene	*105*			*67.0-138*		*11/24/2020 02:47*	WG1581290
(S) 1,2-Dichloroethane-d4	*96.1*			*70.0-130*		*11/24/2020 02:47*	WG1581290

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	5.56	J4	1.84	5.53	1	11/26/2020 15:49	WG1581894
Residual Range Organics (RRO)	U		4.60	13.8	1	11/26/2020 15:49	WG1581894
(S) o-Terphenyl	*64.8*			*18.0-148*		*11/26/2020 15:49*	WG1581894

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	80.8		1	11/22/2020 04:05	WG1579979

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	5.11		0.257	0.619	1	11/24/2020 06:58	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	8650		259	765	5000	11/24/2020 22:02	WG1582038
(S) a,a,a-Trifluorotoluene(FID)	*97.8*			*77.0-120*		*11/24/2020 22:02*	WG1582038

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	4.96		0.0286	0.0612	40	11/24/2020 04:59	WG1581290
Toluene	57.7		0.0796	0.306	40	11/24/2020 04:59	WG1581290
Ethylbenzene	36.0		0.0452	0.153	40	11/24/2020 04:59	WG1581290
Total Xylenes	202		0.0539	0.398	40	11/24/2020 04:59	WG1581290
Methyl tert-butyl ether	U		0.0214	0.0612	40	11/24/2020 04:59	WG1581290
1,2-Dichloroethane	U		0.0398	0.153	40	11/24/2020 04:59	WG1581290
1,2-Dibromoethane	U		0.0397	0.153	40	11/24/2020 04:59	WG1581290
(S) Toluene-d8	*92.9*			*75.0-131*		*11/24/2020 04:59*	WG1581290
(S) 4-Bromofluorobenzene	*104*			*67.0-138*		*11/24/2020 04:59*	WG1581290
(S) 1,2-Dichloroethane-d4	*97.2*			*70.0-130*		*11/24/2020 04:59*	WG1581290

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	372	J4	8.23	24.7	5	11/27/2020 11:33	WG1581894
Residual Range Organics (RRO)	7.74	J	4.12	12.4	1	11/26/2020 16:02	WG1581894
(S) o-Terphenyl	*53.7*			*18.0-148*		*11/26/2020 16:02*	WG1581894
(S) o-Terphenyl	*52.0*			*18.0-148*		*11/27/2020 11:33*	WG1581894

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	75.1		1	11/22/2020 04:05	WG1579979

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	5.95		0.277	0.666	1	11/24/2020 07:06	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		1.48	4.38	25	11/24/2020 20:53	WG1582038
(S) a,a,a-Trifluorotoluene(FID)	*95.1*			*77.0-120*		*11/24/2020 20:53*	WG1582038

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.00301		0.000817	0.00175	1	11/24/2020 03:06	WG1581290
Toluene	0.0106		0.00228	0.00875	1	11/24/2020 03:06	WG1581290
Ethylbenzene	0.00355	J	0.00129	0.00438	1	11/24/2020 03:06	WG1581290
Total Xylenes	0.0161		0.00154	0.0114	1	11/24/2020 03:06	WG1581290
Methyl tert-butyl ether	U		0.000613	0.00175	1	11/24/2020 03:06	WG1581290
1,2-Dichloroethane	U		0.00114	0.00438	1	11/24/2020 03:06	WG1581290
1,2-Dibromoethane	U		0.00113	0.00438	1	11/24/2020 03:06	WG1581290
(S) Toluene-d8	*104*			*75.0-131*		*11/24/2020 03:06*	WG1581290
(S) 4-Bromofluorobenzene	*109*			*67.0-138*		*11/24/2020 03:06*	WG1581290
(S) 1,2-Dichloroethane-d4	*94.3*			*70.0-130*		*11/24/2020 03:06*	WG1581290

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U	J4	1.77	5.33	1	11/26/2020 16:15	WG1581894
Residual Range Organics (RRO)	U		4.43	13.3	1	11/26/2020 16:15	WG1581894
(S) o-Terphenyl	*55.8*			*18.0-148*		*11/26/2020 16:15*	WG1581894

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	97.5		1	11/22/2020 04:05	WG1579979

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	1.54		0.213	0.513	1	11/24/2020 07:09	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	10.8		0.895	2.64	25	11/24/2020 08:39	WG1581230
(S) a,a,a-Trifluorotoluene(FID)	*98.9*			*77.0-120*		*11/24/2020 08:39*	WG1581230

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.00521		0.000493	0.00105	1	11/24/2020 03:25	WG1581290
Toluene	0.0194		0.00137	0.00527	1	11/24/2020 03:25	WG1581290
Ethylbenzene	0.00268		0.000778	0.00264	1	11/24/2020 03:25	WG1581290
Total Xylenes	0.00744		0.000928	0.00686	1	11/24/2020 03:25	WG1581290
Methyl tert-butyl ether	U		0.000369	0.00105	1	11/24/2020 03:25	WG1581290
1,2-Dichloroethane	U		0.000685	0.00264	1	11/24/2020 03:25	WG1581290
1,2-Dibromoethane	U		0.000684	0.00264	1	11/24/2020 03:25	WG1581290
(S) Toluene-d8	*104*			*75.0-131*		*11/24/2020 03:25*	WG1581290
(S) 4-Bromofluorobenzene	*105*			*67.0-138*		*11/24/2020 03:25*	WG1581290
(S) 1,2-Dichloroethane-d4	*95.2*			*70.0-130*		*11/24/2020 03:25*	WG1581290

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	32.2	J4	1.36	4.10	1	11/26/2020 16:28	WG1581894
Residual Range Organics (RRO)	25.4		3.42	10.3	1	11/26/2020 16:28	WG1581894
(S) o-Terphenyl	*39.5*			*18.0-148*		*11/26/2020 16:28*	WG1581894

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	73.3		1	11/22/2020 03:02	WG1579980

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	9.86		0.284	0.682	1	11/24/2020 07:11	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	6090		30.5	90.3	500	11/24/2020 09:00	WG1581230
(S) a,a,a-Trifluorotoluene(FID)	*97.8*			*77.0-120*		*11/24/2020 09:00*	WG1581230

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.0338	0.0722	40	11/24/2020 05:18	WG1581290
Toluene	0.937		0.0939	0.361	40	11/24/2020 05:18	WG1581290
Ethylbenzene	12.0		0.0533	0.181	40	11/24/2020 05:18	WG1581290
Total Xylenes	41.0		0.0636	0.469	40	11/24/2020 05:18	WG1581290
Methyl tert-butyl ether	U		0.0253	0.0722	40	11/24/2020 05:18	WG1581290
1,2-Dichloroethane	U		0.0469	0.181	40	11/24/2020 05:18	WG1581290
1,2-Dibromoethane	U		0.0468	0.181	40	11/24/2020 05:18	WG1581290
(S) Toluene-d8	*99.4*			*75.0-131*		*11/24/2020 05:18*	WG1581290
(S) 4-Bromofluorobenzene	*106*			*67.0-138*		*11/24/2020 05:18*	WG1581290
(S) 1,2-Dichloroethane-d4	*94.9*			*70.0-130*		*11/24/2020 05:18*	WG1581290

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	310	J4	1.81	5.46	1	11/26/2020 16:40	WG1581894
Residual Range Organics (RRO)	8.27	J	4.54	13.6	1	11/26/2020 16:40	WG1581894
(S) o-Terphenyl	*46.2*			*18.0-148*		*11/26/2020 16:40*	WG1581894

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	77.1		1	11/22/2020 03:02	WG1579980

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Copper	29.7		0.519	2.60	1	11/24/2020 07:14	WG1580071
Lead	4.55		0.270	0.649	1	11/24/2020 07:14	WG1580071
Nickel	24.4		0.171	2.60	1	11/24/2020 07:14	WG1580071
Zinc	65.4		1.08	6.49	1	11/24/2020 07:14	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	8780		278	824	5000	11/24/2020 22:26	WG1582038
(S) a,a,a-Trifluorotoluene(FID)	*97.5*			*77.0-120*		*11/24/2020 22:26*	WG1582038

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.0308	0.0659	40	11/23/2020 02:05	WG1580778
Bromobenzene	U		0.0593	0.824	40	11/23/2020 02:05	WG1580778
Bromodichloromethane	U		0.0478	0.165	40	11/23/2020 02:05	WG1580778
Bromoform	U		0.0771	1.65	40	11/23/2020 02:05	WG1580778
Bromomethane	U		0.130	0.824	40	11/23/2020 02:05	WG1580778
Carbon tetrachloride	U		0.0592	0.330	40	11/23/2020 02:05	WG1580778
Chlorobenzene	U		0.0138	0.165	40	11/23/2020 02:05	WG1580778
Chlorodibromomethane	U		0.0404	0.165	40	11/23/2020 02:05	WG1580778
Chloroethane	U		0.112	0.330	40	11/23/2020 02:05	WG1580778
Chloroform	U		0.0679	0.165	40	11/23/2020 02:05	WG1580778
Chloromethane	U	C3	0.287	0.824	40	11/23/2020 02:05	WG1580778
2-Chlorotoluene	U		0.0570	0.165	40	11/23/2020 02:05	WG1580778
4-Chlorotoluene	U		0.0297	0.330	40	11/23/2020 02:05	WG1580778
1,2-Dibromo-3-Chloropropane	U		0.257	1.65	40	11/23/2020 02:05	WG1580778
1,2-Dibromoethane	U		0.0427	0.165	40	11/23/2020 02:05	WG1580778
Dibromomethane	U		0.0494	0.330	40	11/23/2020 02:05	WG1580778
1,2-Dichlorobenzene	U		0.0280	0.330	40	11/23/2020 02:05	WG1580778
1,3-Dichlorobenzene	U		0.0395	0.330	40	11/23/2020 02:05	WG1580778
1,4-Dichlorobenzene	U		0.0461	0.330	40	11/23/2020 02:05	WG1580778
Dichlorodifluoromethane	U		0.106	0.165	40	11/23/2020 02:05	WG1580778
1,1-Dichloroethane	U		0.0323	0.165	40	11/23/2020 02:05	WG1580778
1,2-Dichloroethane	U		0.0428	0.165	40	11/23/2020 02:05	WG1580778
1,1-Dichloroethene	U		0.0399	0.165	40	11/23/2020 02:05	WG1580778
cis-1,2-Dichloroethene	U		0.0484	0.165	40	11/23/2020 02:05	WG1580778
trans-1,2-Dichloroethene	U		0.0685	0.330	40	11/23/2020 02:05	WG1580778
1,2-Dichloropropane	U		0.0936	0.330	40	11/23/2020 02:05	WG1580778
1,1-Dichloropropene	U		0.0534	0.165	40	11/23/2020 02:05	WG1580778
1,3-Dichloropropane	U		0.0330	0.330	40	11/23/2020 02:05	WG1580778
cis-1,3-Dichloropropene	U		0.0499	0.165	40	11/23/2020 02:05	WG1580778
trans-1,3-Dichloropropene	U		0.0751	0.330	40	11/23/2020 02:05	WG1580778
2,2-Dichloropropane	U		0.0910	0.165	40	11/23/2020 02:05	WG1580778
Ethylbenzene	52.9		0.0486	0.165	40	11/23/2020 02:05	WG1580778
Hexachloro-1,3-butadiene	U		0.395	1.65	40	11/23/2020 02:05	WG1580778
Methylene Chloride	U	C3	0.438	1.65	40	11/23/2020 02:05	WG1580778
Methyl tert-butyl ether	U		0.0231	0.0659	40	11/23/2020 02:05	WG1580778

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.0624	0.165	40	11/23/2020 02:05	WG1580778
1,1,2,2-Tetrachloroethane	U		0.0458	0.165	40	11/23/2020 02:05	WG1580778
1,1,2-Trichlorotrifluoroethane	U		0.0498	0.165	40	11/23/2020 02:05	WG1580778
Tetrachloroethene	U		0.0590	0.165	40	11/23/2020 02:05	WG1580778
Toluene	26.0		0.0857	0.330	40	11/23/2020 02:05	WG1580778
1,2,3-Trichlorobenzene	U	C4	0.483	0.824	40	11/23/2020 02:05	WG1580778
1,2,4-Trichlorobenzene	U	C3	0.290	0.824	40	11/23/2020 02:05	WG1580778
1,1,1-Trichloroethane	U		0.0608	0.165	40	11/23/2020 02:05	WG1580778
1,1,2-Trichloroethane	U		0.0394	0.165	40	11/23/2020 02:05	WG1580778
Trichloroethene	U		0.0386	0.0659	40	11/23/2020 02:05	WG1580778
Trichlorofluoromethane	U		0.0545	0.165	40	11/23/2020 02:05	WG1580778
1,2,3-Trichloropropane	U		0.107	0.824	40	11/23/2020 02:05	WG1580778
Vinyl chloride	U		0.0765	0.165	40	11/23/2020 02:05	WG1580778
Xylenes, Total	213		0.0580	0.428	40	11/23/2020 02:05	WG1580778
(S) Toluene-d8	*126*			*75.0-131*		*11/23/2020 02:05*	WG1580778
(S) 4-Bromofluorobenzene	*126*			*67.0-138*		*11/23/2020 02:05*	WG1580778
(S) 1,2-Dichloroethane-d4	*115*			*70.0-130*		*11/23/2020 02:05*	WG1580778

Sample Narrative:

L1286649-38 WG1580778: Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	507	J4	8.63	26.0	5	11/27/2020 12:24	WG1581894
Residual Range Organics (RRO)	7.71	J	4.32	13.0	1	11/26/2020 17:44	WG1581894
(S) o-Terphenyl	*56.9*			*18.0-148*		*11/26/2020 17:44*	WG1581894
(S) o-Terphenyl	*50.2*			*18.0-148*		*11/27/2020 12:24*	WG1581894

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0153	0.0441	1	11/23/2020 20:17	WG1580730
PCB 1221	U		0.0153	0.0441	1	11/23/2020 20:17	WG1580730
PCB 1232	U		0.0153	0.0441	1	11/23/2020 20:17	WG1580730
PCB 1242	U		0.0153	0.0441	1	11/23/2020 20:17	WG1580730
PCB 1248	U		0.00958	0.0221	1	11/23/2020 20:17	WG1580730
PCB 1254	U		0.00958	0.0221	1	11/23/2020 20:17	WG1580730
PCB 1260	U		0.00958	0.0221	1	11/23/2020 20:17	WG1580730
(S) Decachlorobiphenyl	*61.9*			*10.0-135*		*11/23/2020 20:17*	WG1580730
(S) Tetrachloro-m-xylene	*72.5*			*10.0-139*		*11/23/2020 20:17*	WG1580730

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.00225	0.00779	1	11/25/2020 02:46	WG1581271
Benzo(a)pyrene	U		0.00232	0.00779	1	11/25/2020 02:46	WG1581271
Benzo(b)fluoranthene	U		0.00199	0.00779	1	11/25/2020 02:46	WG1581271
Benzo(k)fluoranthene	U		0.00279	0.00779	1	11/25/2020 02:46	WG1581271
Chrysene	U		0.00301	0.00779	1	11/25/2020 02:46	WG1581271
Dibenz(a,h)anthracene	U		0.00223	0.00779	1	11/25/2020 02:46	WG1581271
Indeno(1,2,3-cd)pyrene	U		0.00235	0.00779	1	11/25/2020 02:46	WG1581271
Naphthalene	10.9		0.0530	0.260	10	11/25/2020 07:05	WG1581271
1-Methylnaphthalene	4.27		0.00583	0.0260	1	11/25/2020 02:46	WG1581271
2-Methylnaphthalene	6.68		0.0554	0.260	10	11/25/2020 07:05	WG1581271

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) Nitrobenzene-d5	*0.000*	J2		*14.0-149*		*11/25/2020 07:05*	WG1581271
(S) Nitrobenzene-d5	*0.000*	J2		*14.0-149*		*11/25/2020 02:46*	WG1581271
(S) 2-Fluorobiphenyl	*65.2*			*34.0-125*		*11/25/2020 02:46*	WG1581271
(S) 2-Fluorobiphenyl	*59.2*			*34.0-125*		*11/25/2020 07:05*	WG1581271
(S) p-Terphenyl-d14	*75.3*			*23.0-120*		*11/25/2020 07:05*	WG1581271
(S) p-Terphenyl-d14	*69.9*			*23.0-120*		*11/25/2020 02:46*	WG1581271

Sample Narrative:

L1286649-38 WG1581271: Surrogate failure due to matrix interference

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	78.0		1	11/22/2020 03:02	WG1579980

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Copper	29.8		0.513	2.56	1	11/24/2020 07:16	WG1580071
Lead	4.98		0.267	0.641	1	11/24/2020 07:16	WG1580071
Nickel	23.5		0.169	2.56	1	11/24/2020 07:16	WG1580071
Zinc	64.1		1.07	6.41	1	11/24/2020 07:16	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	9590		272	803	5000	11/25/2020 16:58	WG1582210
(S) a,a,a-Trifluorotoluene(FID)	*99.2*			*77.0-120*		*11/25/2020 16:58*	WG1582210

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.0300	0.0643	40	11/23/2020 02:24	WG1580778
Bromobenzene	U		0.0578	0.803	40	11/23/2020 02:24	WG1580778
Bromodichloromethane	U		0.0466	0.161	40	11/23/2020 02:24	WG1580778
Bromoform	U		0.0752	1.61	40	11/23/2020 02:24	WG1580778
Bromomethane	U		0.127	0.803	40	11/23/2020 02:24	WG1580778
Carbon tetrachloride	U		0.0577	0.321	40	11/23/2020 02:24	WG1580778
Chlorobenzene	U		0.0135	0.161	40	11/23/2020 02:24	WG1580778
Chlorodibromomethane	U		0.0394	0.161	40	11/23/2020 02:24	WG1580778
Chloroethane	U		0.109	0.321	40	11/23/2020 02:24	WG1580778
Chloroform	U		0.0662	0.161	40	11/23/2020 02:24	WG1580778
Chloromethane	U	C3	0.280	0.803	40	11/23/2020 02:24	WG1580778
2-Chlorotoluene	U		0.0556	0.161	40	11/23/2020 02:24	WG1580778
4-Chlorotoluene	U		0.0289	0.321	40	11/23/2020 02:24	WG1580778
1,2-Dibromo-3-Chloropropane	U		0.251	1.61	40	11/23/2020 02:24	WG1580778
1,2-Dibromoethane	U		0.0416	0.161	40	11/23/2020 02:24	WG1580778
Dibromomethane	U		0.0482	0.321	40	11/23/2020 02:24	WG1580778
1,2-Dichlorobenzene	U		0.0273	0.321	40	11/23/2020 02:24	WG1580778
1,3-Dichlorobenzene	U		0.0386	0.321	40	11/23/2020 02:24	WG1580778
1,4-Dichlorobenzene	U		0.0450	0.321	40	11/23/2020 02:24	WG1580778
Dichlorodifluoromethane	U		0.103	0.161	40	11/23/2020 02:24	WG1580778
1,1-Dichloroethane	U		0.0315	0.161	40	11/23/2020 02:24	WG1580778
1,2-Dichloroethane	U		0.0418	0.161	40	11/23/2020 02:24	WG1580778
1,1-Dichloroethene	U		0.0389	0.161	40	11/23/2020 02:24	WG1580778
cis-1,2-Dichloroethene	U		0.0472	0.161	40	11/23/2020 02:24	WG1580778
trans-1,2-Dichloroethene	U		0.0668	0.321	40	11/23/2020 02:24	WG1580778
1,2-Dichloropropane	U		0.0913	0.321	40	11/23/2020 02:24	WG1580778
1,1-Dichloropropene	U		0.0521	0.161	40	11/23/2020 02:24	WG1580778
1,3-Dichloropropane	U		0.0321	0.321	40	11/23/2020 02:24	WG1580778
cis-1,3-Dichloropropene	U		0.0487	0.161	40	11/23/2020 02:24	WG1580778
trans-1,3-Dichloropropene	U		0.0733	0.321	40	11/23/2020 02:24	WG1580778
2,2-Dichloropropane	U		0.0887	0.161	40	11/23/2020 02:24	WG1580778
Ethylbenzene	36.5		0.0474	0.161	40	11/23/2020 02:24	WG1580778
Hexachloro-1,3-butadiene	U		0.386	1.61	40	11/23/2020 02:24	WG1580778
Methylene Chloride	U	C3	0.427	1.61	40	11/23/2020 02:24	WG1580778
Methyl tert-butyl ether	U		0.0225	0.0643	40	11/23/2020 02:24	WG1580778

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.0609	0.161	40	11/23/2020 02:24	WG1580778
1,1,2,2-Tetrachloroethane	U		0.0447	0.161	40	11/23/2020 02:24	WG1580778
1,1,2-Trichlorotrifluoroethane	U		0.0485	0.161	40	11/23/2020 02:24	WG1580778
Tetrachloroethene	U		0.0575	0.161	40	11/23/2020 02:24	WG1580778
Toluene	17.2		0.0835	0.321	40	11/23/2020 02:24	WG1580778
1,2,3-Trichlorobenzene	U	C4	0.471	0.803	40	11/23/2020 02:24	WG1580778
1,2,4-Trichlorobenzene	U	C3	0.283	0.803	40	11/23/2020 02:24	WG1580778
1,1,1-Trichloroethane	U		0.0593	0.161	40	11/23/2020 02:24	WG1580778
1,1,2-Trichloroethane	U		0.0384	0.161	40	11/23/2020 02:24	WG1580778
Trichloroethene	U		0.0376	0.0643	40	11/23/2020 02:24	WG1580778
Trichlorofluoromethane	U		0.0532	0.161	40	11/23/2020 02:24	WG1580778
1,2,3-Trichloropropane	U		0.104	0.803	40	11/23/2020 02:24	WG1580778
Vinyl chloride	U		0.0746	0.161	40	11/23/2020 02:24	WG1580778
Xylenes, Total	151		0.0566	0.418	40	11/23/2020 02:24	WG1580778
(S) Toluene-d8	*96.8*			*75.0-131*		*11/23/2020 02:24*	WG1580778
(S) 4-Bromofluorobenzene	*110*			*67.0-138*		*11/23/2020 02:24*	WG1580778
(S) 1,2-Dichloroethane-d4	*111*			*70.0-130*		*11/23/2020 02:24*	WG1580778

Sample Narrative:

L1286649-39 WG1580778: Non-target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	614	J4	8.52	25.6	5	11/27/2020 11:58	WG1581894
Residual Range Organics (RRO)	5.67	J	4.27	12.8	1	11/26/2020 16:53	WG1581894
(S) o-Terphenyl	*67.3*			*18.0-148*		*11/27/2020 11:58*	WG1581894
(S) o-Terphenyl	*71.8*			*18.0-148*		*11/26/2020 16:53*	WG1581894

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0151	0.0436	1	11/23/2020 20:26	WG1580730
PCB 1221	U		0.0151	0.0436	1	11/23/2020 20:26	WG1580730
PCB 1232	U		0.0151	0.0436	1	11/23/2020 20:26	WG1580730
PCB 1242	U		0.0151	0.0436	1	11/23/2020 20:26	WG1580730
PCB 1248	U		0.00946	0.0218	1	11/23/2020 20:26	WG1580730
PCB 1254	U		0.00946	0.0218	1	11/23/2020 20:26	WG1580730
PCB 1260	U		0.00946	0.0218	1	11/23/2020 20:26	WG1580730
(S) Decachlorobiphenyl	*66.7*			*10.0-135*		*11/23/2020 20:26*	WG1580730
(S) Tetrachloro-m-xylene	*81.7*			*10.0-139*		*11/23/2020 20:26*	WG1580730

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	U		0.00222	0.00769	1	11/25/2020 03:04	WG1581271
Benzo(a)pyrene	U		0.00229	0.00769	1	11/25/2020 03:04	WG1581271
Benzo(b)fluoranthene	U		0.00196	0.00769	1	11/25/2020 03:04	WG1581271
Benzo(k)fluoranthene	U		0.00276	0.00769	1	11/25/2020 03:04	WG1581271
Chrysene	U		0.00297	0.00769	1	11/25/2020 03:04	WG1581271
Dibenz(a,h)anthracene	U		0.00220	0.00769	1	11/25/2020 03:04	WG1581271
Indeno(1,2,3-cd)pyrene	U		0.00232	0.00769	1	11/25/2020 03:04	WG1581271
Naphthalene	9.20		0.0523	0.256	10	11/25/2020 07:22	WG1581271
1-Methylnaphthalene	3.56		0.00576	0.0256	1	11/25/2020 03:04	WG1581271
2-Methylnaphthalene	5.88		0.0547	0.256	10	11/25/2020 07:22	WG1581271

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
(S) Nitrobenzene-d5	*0.000*	J2		*14.0-149*		*11/25/2020 03:04*	WG1581271
(S) Nitrobenzene-d5	*0.000*	J2		*14.0-149*		*11/25/2020 07:22*	WG1581271
(S) 2-Fluorobiphenyl	*52.8*			*34.0-125*		*11/25/2020 07:22*	WG1581271
(S) 2-Fluorobiphenyl	*59.3*			*34.0-125*		*11/25/2020 03:04*	WG1581271
(S) p-Terphenyl-d14	*61.9*			*23.0-120*		*11/25/2020 03:04*	WG1581271
(S) p-Terphenyl-d14	*69.7*			*23.0-120*		*11/25/2020 07:22*	WG1581271

Sample Narrative:

L1286649-39 WG1581271: Surrogate failure due to matrix interference

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	75.5		1	11/22/2020 03:02	WG1579980

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	5.63		0.276	0.663	1	11/24/2020 07:19	WG1580071

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	4.39	B	1.47	4.32	25	11/24/2020 21:16	WG1582038
(S) a,a,a-Trifluorotoluene(FID)	*95.3*			*77.0-120*		*11/24/2020 21:16*	WG1582038

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.00377		0.000808	0.00173	1	11/24/2020 03:44	WG1581290
Toluene	0.0216		0.00225	0.00865	1	11/24/2020 03:44	WG1581290
Ethylbenzene	0.00841		0.00127	0.00432	1	11/24/2020 03:44	WG1581290
Total Xylenes	0.0451		0.00152	0.0112	1	11/24/2020 03:44	WG1581290
Methyl tert-butyl ether	U		0.000605	0.00173	1	11/24/2020 03:44	WG1581290
1,2-Dichloroethane	U		0.00112	0.00432	1	11/24/2020 03:44	WG1581290
1,2-Dibromoethane	U		0.00112	0.00432	1	11/24/2020 03:44	WG1581290
(S) Toluene-d8	*107*			*75.0-131*		*11/24/2020 03:44*	WG1581290
(S) 4-Bromofluorobenzene	*104*			*67.0-138*		*11/24/2020 03:44*	WG1581290
(S) 1,2-Dichloroethane-d4	*95.6*			*70.0-130*		*11/24/2020 03:44*	WG1581290

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U	J4	1.76	5.30	1	11/26/2020 17:06	WG1581894
Residual Range Organics (RRO)	6.31	J	4.41	13.3	1	11/26/2020 17:06	WG1581894
(S) o-Terphenyl	*69.1*			*18.0-148*		*11/26/2020 17:06*	WG1581894

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	75.4		1	11/22/2020 03:02	WG1579980

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	7.41		0.276	0.663	1	11/22/2020 22:44	WG1580077

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		1.48	4.36	25	11/21/2020 23:46	WG1580518
(S) a,a,a-Trifluorotoluene(FID)	*99.8*			*77.0-120*		*11/21/2020 23:46*	WG1580518

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.00307		0.000815	0.00175	1	11/22/2020 17:46	WG1580802
Toluene	0.00721	J	0.00227	0.00873	1	11/22/2020 17:46	WG1580802
Ethylbenzene	U		0.00129	0.00436	1	11/22/2020 17:46	WG1580802
Total Xylenes	U		0.00154	0.0113	1	11/22/2020 17:46	WG1580802
Methyl tert-butyl ether	U		0.000611	0.00175	1	11/22/2020 17:46	WG1580802
1,2-Dichloroethane	U		0.00113	0.00436	1	11/22/2020 17:46	WG1580802
1,2-Dibromoethane	U		0.00113	0.00436	1	11/22/2020 17:46	WG1580802
(S) Toluene-d8	*105*			*75.0-131*		*11/22/2020 17:46*	WG1580802
(S) 4-Bromofluorobenzene	*94.8*			*67.0-138*		*11/22/2020 17:46*	WG1580802
(S) 1,2-Dichloroethane-d4	*87.1*			*70.0-130*		*11/22/2020 17:46*	WG1580802

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.76	5.30	1	11/23/2020 02:33	WG1580176
Residual Range Organics (RRO)	U		4.42	13.3	1	11/23/2020 02:33	WG1580176
(S) o-Terphenyl	*59.8*			*18.0-148*		*11/23/2020 02:33*	WG1580176

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	73.9		1	11/22/2020 03:02	WG1579980

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	8.05		0.282	0.677	1	11/22/2020 22:47	WG1580077

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	2.18	J	1.50	4.42	25	11/22/2020 00:08	WG1580518
(S) a,a,a-Trifluorotoluene(FID)	*101*			*77.0-120*		*11/22/2020 00:08*	WG1580518

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.0137		0.000826	0.00177	1	11/22/2020 18:05	WG1580802
Toluene	0.0571		0.00230	0.00884	1	11/22/2020 18:05	WG1580802
Ethylbenzene	0.00488		0.00130	0.00442	1	11/22/2020 18:05	WG1580802
Total Xylenes	0.0175		0.00156	0.0115	1	11/22/2020 18:05	WG1580802
Methyl tert-butyl ether	U		0.000619	0.00177	1	11/22/2020 18:05	WG1580802
1,2-Dichloroethane	U		0.00115	0.00442	1	11/22/2020 18:05	WG1580802
1,2-Dibromoethane	U		0.00115	0.00442	1	11/22/2020 18:05	WG1580802
(S) Toluene-d8	*106*			*75.0-131*		*11/22/2020 18:05*	WG1580802
(S) 4-Bromofluorobenzene	*94.3*			*67.0-138*		*11/22/2020 18:05*	WG1580802
(S) 1,2-Dichloroethane-d4	*89.1*			*70.0-130*		*11/22/2020 18:05*	WG1580802

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.80	5.42	1	11/23/2020 02:45	WG1580176
Residual Range Organics (RRO)	U		4.51	13.5	1	11/23/2020 02:45	WG1580176
(S) o-Terphenyl	*76.1*			*18.0-148*		*11/23/2020 02:45*	WG1580176

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	70.8		1	11/22/2020 03:02	WG1579980

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	7.61		0.294	0.706	1	11/22/2020 22:50	WG1580077

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		1.62	4.79	25	11/22/2020 00:31	WG1580518
(S) a,a,a-Trifluorotoluene(FID)	*99.8*			*77.0-120*		*11/22/2020 00:31*	WG1580518

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.00118	J	0.000894	0.00191	1	11/22/2020 18:24	WG1580802
Toluene	0.00628	J	0.00249	0.00957	1	11/22/2020 18:24	WG1580802
Ethylbenzene	U		0.00141	0.00479	1	11/22/2020 18:24	WG1580802
Total Xylenes	0.00228	J	0.00169	0.0124	1	11/22/2020 18:24	WG1580802
Methyl tert-butyl ether	U		0.000670	0.00191	1	11/22/2020 18:24	WG1580802
1,2-Dichloroethane	U		0.00124	0.00479	1	11/22/2020 18:24	WG1580802
1,2-Dibromoethane	U		0.00124	0.00479	1	11/22/2020 18:24	WG1580802
(S) Toluene-d8	*107*			*75.0-131*		*11/22/2020 18:24*	WG1580802
(S) 4-Bromofluorobenzene	*97.2*			*67.0-138*		*11/22/2020 18:24*	WG1580802
(S) 1,2-Dichloroethane-d4	*91.4*			*70.0-130*		*11/22/2020 18:24*	WG1580802

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.88	5.65	1	11/23/2020 08:01	WG1580611
Residual Range Organics (RRO)	U		4.70	14.1	1	11/23/2020 08:01	WG1580611
(S) o-Terphenyl	*69.1*			*18.0-148*		*11/23/2020 08:01*	WG1580611

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	67.7		1	11/22/2020 03:02	WG1579980

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	7.53		0.307	0.739	1	11/22/2020 22:52	WG1580077

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		1.74	5.14	25	11/22/2020 00:53	WG1580518
(S) a,a,a-Trifluorotoluene(FID)	*100*			*77.0-120*		*11/22/2020 00:53*	WG1580518

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000960	0.00206	1	11/22/2020 18:43	WG1580802
Toluene	0.0102	J	0.00267	0.0103	1	11/22/2020 18:43	WG1580802
Ethylbenzene	U		0.00152	0.00514	1	11/22/2020 18:43	WG1580802
Total Xylenes	0.00405	J	0.00181	0.0134	1	11/22/2020 18:43	WG1580802
Methyl tert-butyl ether	U		0.000720	0.00206	1	11/22/2020 18:43	WG1580802
1,2-Dichloroethane	U		0.00133	0.00514	1	11/22/2020 18:43	WG1580802
1,2-Dibromoethane	U		0.00133	0.00514	1	11/22/2020 18:43	WG1580802
(S) Toluene-d8	*106*			*75.0-131*		*11/22/2020 18:43*	WG1580802
(S) 4-Bromofluorobenzene	*94.1*			*67.0-138*		*11/22/2020 18:43*	WG1580802
(S) 1,2-Dichloroethane-d4	*88.8*			*70.0-130*		*11/22/2020 18:43*	WG1580802

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.97	5.91	1	11/23/2020 08:14	WG1580611
Residual Range Organics (RRO)	U		4.92	14.8	1	11/23/2020 08:14	WG1580611
(S) o-Terphenyl	*72.1*			*18.0-148*		*11/23/2020 08:14*	WG1580611

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	94.9		1	11/22/2020 03:02	WG1579980

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	2.11		0.219	0.527	1	11/22/2020 22:55	WG1580077

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		0.946	2.79	25	11/22/2020 01:15	WG1580518
(S) a,a,a-Trifluorotoluene(FID)	*100*			*77.0-120*		*11/22/2020 01:15*	WG1580518

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000521	0.00112	1	11/22/2020 19:02	WG1580802
Toluene	0.00161	J	0.00145	0.00558	1	11/22/2020 19:02	WG1580802
Ethylbenzene	U		0.000822	0.00279	1	11/22/2020 19:02	WG1580802
Total Xylenes	0.00293	J	0.000982	0.00725	1	11/22/2020 19:02	WG1580802
Methyl tert-butyl ether	U		0.000390	0.00112	1	11/22/2020 19:02	WG1580802
1,2-Dichloroethane	U		0.000724	0.00279	1	11/22/2020 19:02	WG1580802
1,2-Dibromoethane	U		0.000723	0.00279	1	11/22/2020 19:02	WG1580802
(S) Toluene-d8	*106*			*75.0-131*		*11/22/2020 19:02*	WG1580802
(S) 4-Bromofluorobenzene	*95.4*			*67.0-138*		*11/22/2020 19:02*	WG1580802
(S) 1,2-Dichloroethane-d4	*89.1*			*70.0-130*		*11/22/2020 19:02*	WG1580802

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.40	4.22	1	11/23/2020 08:27	WG1580611
Residual Range Organics (RRO)	U		3.51	10.5	1	11/23/2020 08:27	WG1580611
(S) o-Terphenyl	*77.7*			*18.0-148*		*11/23/2020 08:27*	WG1580611

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	86.3		1	11/22/2020 03:02	WG1579980

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	6.00		0.241	0.579	1	11/22/2020 22:58	WG1580077

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		1.14	3.35	25	11/22/2020 01:38	WG1580518
(S) a,a,a-Trifluorotoluene(FID)	*101*			*77.0-120*		*11/22/2020 01:38*	WG1580518

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000626	0.00134	1	11/22/2020 19:21	WG1580802
Toluene	U		0.00174	0.00670	1	11/22/2020 19:21	WG1580802
Ethylbenzene	U		0.000988	0.00335	1	11/22/2020 19:21	WG1580802
Total Xylenes	0.00130	J	0.00118	0.00871	1	11/22/2020 19:21	WG1580802
Methyl tert-butyl ether	U		0.000469	0.00134	1	11/22/2020 19:21	WG1580802
1,2-Dichloroethane	U		0.000870	0.00335	1	11/22/2020 19:21	WG1580802
1,2-Dibromoethane	U		0.000868	0.00335	1	11/22/2020 19:21	WG1580802
(S) Toluene-d8	*107*			*75.0-131*		*11/22/2020 19:21*	WG1580802
(S) 4-Bromofluorobenzene	*95.0*			*67.0-138*		*11/22/2020 19:21*	WG1580802
(S) 1,2-Dichloroethane-d4	*88.1*			*70.0-130*		*11/22/2020 19:21*	WG1580802

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	1.91	J	1.54	4.64	1	11/23/2020 08:40	WG1580611
Residual Range Organics (RRO)	U		3.86	11.6	1	11/23/2020 08:40	WG1580611
(S) o-Terphenyl	*80.6*			*18.0-148*		*11/23/2020 08:40*	WG1580611

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.7		1	11/22/2020 02:39	WG1579981

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	1.75		0.215	0.517	1	11/22/2020 22:13	WG1580077

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		0.911	2.69	25	11/21/2020 19:39	WG1580518
(S) a,a,a-Trifluorotoluene(FID)	*100*			*77.0-120*		*11/21/2020 19:39*	WG1580518

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.000763	J	0.000502	0.00107	1	11/22/2020 17:09	WG1580802
Toluene	0.00153	J	0.00140	0.00537	1	11/22/2020 17:09	WG1580802
Ethylbenzene	U		0.000792	0.00269	1	11/22/2020 17:09	WG1580802
Total Xylenes	U		0.000945	0.00698	1	11/22/2020 17:09	WG1580802
Methyl tert-butyl ether	U		0.000376	0.00107	1	11/22/2020 17:09	WG1580802
1,2-Dichloroethane	U		0.000697	0.00269	1	11/22/2020 17:09	WG1580802
1,2-Dibromoethane	U		0.000696	0.00269	1	11/22/2020 17:09	WG1580802
(S) Toluene-d8	*106*			*75.0-131*		*11/22/2020 17:09*	WG1580802
(S) 4-Bromofluorobenzene	*95.1*			*67.0-138*		*11/22/2020 17:09*	WG1580802
(S) 1,2-Dichloroethane-d4	*83.6*			*70.0-130*		*11/22/2020 17:09*	WG1580802

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.38	4.14	1	11/23/2020 03:11	WG1580176
Residual Range Organics (RRO)	U		3.44	10.3	1	11/23/2020 03:11	WG1580176
(S) o-Terphenyl	*84.0*			*18.0-148*		*11/23/2020 03:11*	WG1580176

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	75.7		1	11/22/2020 02:39	WG1579981

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	4.47		0.275	0.661	1	11/22/2020 23:00	WG1580077

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		1.44	4.25	25	11/23/2020 22:17	WG1581226
(S) a,a,a-Trifluorotoluene(FID)	*107*			*77.0-120*		*11/23/2020 22:17*	WG1581226

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.00411		0.000793	0.00170	1	11/24/2020 04:03	WG1581290
Toluene	0.0222		0.00221	0.00849	1	11/24/2020 04:03	WG1581290
Ethylbenzene	0.00195	J	0.00125	0.00425	1	11/24/2020 04:03	WG1581290
Total Xylenes	0.00696	J	0.00149	0.0110	1	11/24/2020 04:03	WG1581290
Methyl tert-butyl ether	U		0.000594	0.00170	1	11/24/2020 04:03	WG1581290
1,2-Dichloroethane	U		0.00110	0.00425	1	11/24/2020 04:03	WG1581290
1,2-Dibromoethane	U		0.00110	0.00425	1	11/24/2020 04:03	WG1581290
(S) Toluene-d8	*104*			*75.0-131*		*11/24/2020 04:03*	WG1581290
(S) 4-Bromofluorobenzene	*107*			*67.0-138*		*11/24/2020 04:03*	WG1581290
(S) 1,2-Dichloroethane-d4	*92.9*			*70.0-130*		*11/24/2020 04:03*	WG1581290

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.76	5.29	1	11/26/2020 08:01	WG1582400
Residual Range Organics (RRO)	U		4.40	13.2	1	11/26/2020 08:01	WG1582400
(S) o-Terphenyl	*88.4*			*18.0-148*		*11/26/2020 08:01*	WG1582400

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.3		1	11/22/2020 02:39	WG1579981

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	1.88		0.216	0.519	1	11/22/2020 23:03	WG1580077

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	11.9		0.915	2.70	25	11/23/2020 22:37	WG1581226
(S) a,a,a-Trifluorotoluene(FID)	*98.6*			*77.0-120*		*11/23/2020 22:37*	WG1581226

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	0.0159		0.000504	0.00108	1	11/24/2020 00:20	WG1581290
Toluene	0.0476		0.00140	0.00540	1	11/24/2020 00:20	WG1581290
Ethylbenzene	0.00523		0.000795	0.00270	1	11/24/2020 00:20	WG1581290
Total Xylenes	0.0213		0.000950	0.00701	1	11/24/2020 00:20	WG1581290
Methyl tert-butyl ether	U		0.000378	0.00108	1	11/24/2020 00:20	WG1581290
1,2-Dichloroethane	U		0.000700	0.00270	1	11/24/2020 00:20	WG1581290
1,2-Dibromoethane	U		0.000699	0.00270	1	11/24/2020 00:20	WG1581290
(S) Toluene-d8	*104*			*75.0-131*		*11/24/2020 00:20*	WG1581290
(S) 4-Bromofluorobenzene	*104*			*67.0-138*		*11/24/2020 00:20*	WG1581290
(S) 1,2-Dichloroethane-d4	*98.5*			*70.0-130*		*11/24/2020 00:20*	WG1581290

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.38	4.15	1	11/24/2020 10:10	WG1580726
Residual Range Organics (RRO)	U		3.46	10.4	1	11/24/2020 10:10	WG1580726
(S) o-Terphenyl	*73.9*			*18.0-148*		*11/24/2020 10:10*	WG1580726

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	76.5		1	11/22/2020 02:39	WG1579981

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	1.31		0.272	0.654	1	11/22/2020 23:11	WG1580077

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		1.47	4.34	27.3	11/21/2020 20:02	WG1580518
(S) a,a,a-Trifluorotoluene(FID)	*99.9*			*77.0-120*		*11/21/2020 20:02*	WG1580518

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000810	0.00173	1.09	11/22/2020 17:27	WG1580802
Toluene	U		0.00226	0.00867	1.09	11/22/2020 17:27	WG1580802
Ethylbenzene	U		0.00128	0.00434	1.09	11/22/2020 17:27	WG1580802
Total Xylenes	U		0.00153	0.0113	1.09	11/22/2020 17:27	WG1580802
Methyl tert-butyl ether	U		0.000606	0.00173	1.09	11/22/2020 17:27	WG1580802
1,2-Dichloroethane	U		0.00112	0.00434	1.09	11/22/2020 17:27	WG1580802
1,2-Dibromoethane	U		0.00112	0.00434	1.09	11/22/2020 17:27	WG1580802
(S) Toluene-d8	*106*			*75.0-131*		*11/22/2020 17:27*	WG1580802
(S) 4-Bromofluorobenzene	*94.1*			*67.0-138*		*11/22/2020 17:27*	WG1580802
(S) 1,2-Dichloroethane-d4	*86.6*			*70.0-130*		*11/22/2020 17:27*	WG1580802

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	U		1.74	5.23	1	11/23/2020 02:58	WG1580176
Residual Range Organics (RRO)	U		4.36	13.1	1	11/23/2020 02:58	WG1580176
(S) o-Terphenyl	*77.1*			*18.0-148*		*11/23/2020 02:58*	WG1580176

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	96.8		1	11/22/2020 02:39	WG1579981

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Lead	1.73		0.215	0.517	1	11/22/2020 23:13	WG1580077

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	U		0.914	2.70	25.3	11/22/2020 02:00	WG1580518
(S) a,a,a-Trifluorotoluene(FID)	*100*			*77.0-120*		*11/22/2020 02:00*	WG1580518

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	U		0.000503	0.00108	1.01	11/22/2020 19:40	WG1580802
Toluene	U		0.00140	0.00538	1.01	11/22/2020 19:40	WG1580802
Ethylbenzene	U		0.000793	0.00270	1.01	11/22/2020 19:40	WG1580802
Total Xylenes	U		0.000948	0.00699	1.01	11/22/2020 19:40	WG1580802
Methyl tert-butyl ether	U		0.000376	0.00108	1.01	11/22/2020 19:40	WG1580802
1,2-Dichloroethane	U		0.000698	0.00270	1.01	11/22/2020 19:40	WG1580802
1,2-Dibromoethane	U		0.000697	0.00270	1.01	11/22/2020 19:40	WG1580802
(S) Toluene-d8	*105*			*75.0-131*		*11/22/2020 19:40*	WG1580802
(S) 4-Bromofluorobenzene	*96.4*			*67.0-138*		*11/22/2020 19:40*	WG1580802
(S) 1,2-Dichloroethane-d4	*88.4*			*70.0-130*		*11/22/2020 19:40*	WG1580802

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Diesel Range Organics (DRO)	1.53	J	1.37	4.13	1	11/23/2020 08:52	WG1580611
Residual Range Organics (RRO)	U		3.44	10.3	1	11/23/2020 08:52	WG1580611
(S) o-Terphenyl	*81.4*			*18.0-148*		*11/23/2020 08:52*	WG1580611

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	80.3		1	11/22/2020 02:39	WG1579981

Metals (ICP) by Method 6010D

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Copper	380		0.498	2.49	1	11/24/2020 02:54	WG1581511
Lead	3130		0.259	0.623	1	11/24/2020 02:54	WG1581511
Nickel	60.3		0.164	2.49	1	11/24/2020 02:54	WG1581511
Zinc	675		1.04	6.23	1	11/24/2020 02:54	WG1581511

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Gasoline Range Organics-NWTPH	13600		60.3	178	1230	11/22/2020 02:45	WG1580518
(S) a,a,a-Trifluorotoluene(FID)	*89.4*			*77.0-120*		*11/22/2020 02:45*	WG1580518

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

Analyte	Result (dry)	Qualifier	MDL (dry)	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg	mg/kg		date / time	
Benzene	12.1		0.0665	0.142	98.4	11/22/2020 06:00	WG1580488
Bromobenzene	U		0.128	1.78	98.4	11/22/2020 06:00	WG1580488
Bromodichloromethane	U		0.103	0.356	98.4	11/22/2020 06:00	WG1580488
Bromoform	U		0.166	3.56	98.4	11/22/2020 06:00	WG1580488
Bromomethane	U	J4 J5	0.280	1.78	98.4	11/22/2020 06:00	WG1580488
Carbon tetrachloride	U		0.128	0.711	98.4	11/22/2020 06:00	WG1580488
Chlorobenzene	U		0.0299	0.356	98.4	11/22/2020 06:00	WG1580488
Chlorodibromomethane	U		0.0870	0.356	98.4	11/22/2020 06:00	WG1580488
Chloroethane	U		0.241	0.711	98.4	11/22/2020 06:00	WG1580488
Chloroform	U		0.146	0.356	98.4	11/22/2020 06:00	WG1580488
Chloromethane	U	J3	0.619	1.78	98.4	11/22/2020 06:00	WG1580488
2-Chlorotoluene	U	J5	0.123	0.356	98.4	11/22/2020 06:00	WG1580488
4-Chlorotoluene	U		0.0641	0.711	98.4	11/22/2020 06:00	WG1580488
1,2-Dibromo-3-Chloropropane	U		0.555	3.56	98.4	11/22/2020 06:00	WG1580488
1,2-Dibromoethane	U		0.0922	0.356	98.4	11/22/2020 06:00	WG1580488
Dibromomethane	U		0.107	0.711	98.4	11/22/2020 06:00	WG1580488
1,2-Dichlorobenzene	U		0.0604	0.711	98.4	11/22/2020 06:00	WG1580488
1,3-Dichlorobenzene	U		0.0853	0.711	98.4	11/22/2020 06:00	WG1580488
1,4-Dichlorobenzene	U		0.0996	0.711	98.4	11/22/2020 06:00	WG1580488
Dichlorodifluoromethane	U		0.228	0.356	98.4	11/22/2020 06:00	WG1580488
1,1-Dichloroethane	U		0.0698	0.356	98.4	11/22/2020 06:00	WG1580488
1,2-Dichloroethane	U		0.0924	0.356	98.4	11/22/2020 06:00	WG1580488
1,1-Dichloroethene	U		0.0862	0.356	98.4	11/22/2020 06:00	WG1580488
cis-1,2-Dichloroethene	U		0.104	0.356	98.4	11/22/2020 06:00	WG1580488
trans-1,2-Dichloroethene	U		0.147	0.711	98.4	11/22/2020 06:00	WG1580488
1,2-Dichloropropane	U		0.202	0.711	98.4	11/22/2020 06:00	WG1580488
1,1-Dichloropropene	U		0.115	0.356	98.4	11/22/2020 06:00	WG1580488
1,3-Dichloropropane	U		0.0713	0.711	98.4	11/22/2020 06:00	WG1580488
cis-1,3-Dichloropropene	U		0.108	0.356	98.4	11/22/2020 06:00	WG1580488
trans-1,3-Dichloropropene	U		0.162	0.711	98.4	11/22/2020 06:00	WG1580488
2,2-Dichloropropane	U		0.197	0.356	98.4	11/22/2020 06:00	WG1580488
Ethylbenzene	65.4		0.105	0.356	98.4	11/22/2020 06:00	WG1580488
Hexachloro-1,3-butadiene	U		0.853	3.56	98.4	11/22/2020 06:00	WG1580488
Methylene Chloride	U		0.944	3.56	98.4	11/22/2020 06:00	WG1580488
Methyl tert-butyl ether	U		0.0497	0.142	98.4	11/22/2020 06:00	WG1580488

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	U		0.135	0.356	98.4	11/22/2020 06:00	WG1580488
1,1,2,2-Tetrachloroethane	U	J5	0.0989	0.356	98.4	11/22/2020 06:00	WG1580488
1,1,2-Trichlorotrifluoroethane	U	C3	0.107	0.356	98.4	11/22/2020 06:00	WG1580488
Tetrachloroethene	0.291	J	0.128	0.356	98.4	11/22/2020 06:00	WG1580488
Toluene	113		0.185	0.711	98.4	11/22/2020 06:00	WG1580488
1,2,3-Trichlorobenzene	U		1.04	1.78	98.4	11/22/2020 06:00	WG1580488
1,2,4-Trichlorobenzene	U		0.626	1.78	98.4	11/22/2020 06:00	WG1580488
1,1,1-Trichloroethane	U		0.131	0.356	98.4	11/22/2020 06:00	WG1580488
1,1,2-Trichloroethane	U		0.0849	0.356	98.4	11/22/2020 06:00	WG1580488
Trichloroethene	U		0.0831	0.142	98.4	11/22/2020 06:00	WG1580488
Trichlorofluoromethane	U		0.118	0.356	98.4	11/22/2020 06:00	WG1580488
1,2,3-Trichloropropane	U		0.230	1.78	98.4	11/22/2020 06:00	WG1580488
Vinyl chloride	U		0.165	0.356	98.4	11/22/2020 06:00	WG1580488
Xylenes, Total	584	V	0.125	0.925	98.4	11/22/2020 06:00	WG1580488
(S) Toluene-d8	*93.8*			*75.0-131*		*11/22/2020 06:00*	WG1580488
(S) 4-Bromofluorobenzene	*125*			*67.0-138*		*11/22/2020 06:00*	WG1580488
(S) 1,2-Dichloroethane-d4	*95.4*			*70.0-130*		*11/22/2020 06:00*	WG1580488

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-NO SGT

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	11000		415	1250	250	11/24/2020 06:59	WG1580176
Residual Range Organics (RRO)	6340		1040	3120	250	11/24/2020 06:59	WG1580176
(S) o-Terphenyl	*0.000*	J7		*18.0-148*		*11/24/2020 06:59*	WG1580176

Polychlorinated Biphenyls (GC) by Method 8082 A

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
PCB 1016	U		0.0147	0.0424	1	11/23/2020 20:36	WG1580730
PCB 1221	U		0.0147	0.0424	1	11/23/2020 20:36	WG1580730
PCB 1232	U		0.0147	0.0424	1	11/23/2020 20:36	WG1580730
PCB 1242	U		0.0147	0.0424	1	11/23/2020 20:36	WG1580730
PCB 1248	U		0.00920	0.0212	1	11/23/2020 20:36	WG1580730
PCB 1254	U		0.00920	0.0212	1	11/23/2020 20:36	WG1580730
PCB 1260	U		0.00920	0.0212	1	11/23/2020 20:36	WG1580730
(S) Decachlorobiphenyl	*55.7*			*10.0-135*		*11/23/2020 20:36*	WG1580730
(S) Tetrachloro-m-xylene	*57.2*			*10.0-139*		*11/23/2020 20:36*	WG1580730

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Benzo(a)anthracene	0.313		0.0216	0.0748	10	11/23/2020 18:06	WG1580173
Benzo(a)pyrene	0.530		0.0223	0.0748	10	11/23/2020 18:06	WG1580173
Benzo(b)fluoranthene	0.749		0.0191	0.0748	10	11/23/2020 18:06	WG1580173
Benzo(k)fluoranthene	0.223		0.0268	0.0748	10	11/23/2020 18:06	WG1580173
Chrysene	0.536		0.0289	0.0748	10	11/23/2020 18:06	WG1580173
Dibenz(a,h)anthracene	0.118		0.0214	0.0748	10	11/23/2020 18:06	WG1580173
Indeno(1,2,3-cd)pyrene	0.386		0.0226	0.0748	10	11/23/2020 18:06	WG1580173
Naphthalene	45.7		0.0508	0.249	10	11/23/2020 18:06	WG1580173
1-Methylnaphthalene	43.6		0.0559	0.249	10	11/23/2020 18:06	WG1580173
2-Methylnaphthalene	40.0		0.0532	0.249	10	11/23/2020 18:06	WG1580173
(S) Nitrobenzene-d5	*0.000*	J2		*14.0-149*		*11/23/2020 18:06*	WG1580173
(S) 2-Fluorobiphenyl	*0.000*	J2		*34.0-125*		*11/23/2020 18:06*	WG1580173
(S) p-Terphenyl-d14	*110*			*23.0-120*		*11/23/2020 18:06*	WG1580173

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

Analyte	Result (dry) mg/kg	Qualifier	MDL (dry) mg/kg	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch

Sample Narrative:

L1286649-52 WG1580173: Surrogate failure due to matrix interference

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	46.3	B J	31.6	100	1	11/23/2020 23:30	WG1581412
(S) a,a,a-Trifluorotoluene(FID)	*100*			*78.0-120*		*11/23/2020 23:30*	WG1581412

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	11/23/2020 20:01	WG1581391
Toluene	U		0.278	1.00	1	11/23/2020 20:01	WG1581391
Ethylbenzene	U		0.137	1.00	1	11/23/2020 20:01	WG1581391
Total Xylenes	U		0.174	3.00	1	11/23/2020 20:01	WG1581391
Methyl tert-butyl ether	U		0.101	1.00	1	11/23/2020 20:01	WG1581391
1,2-Dichloroethane	U		0.0819	1.00	1	11/23/2020 20:01	WG1581391
1,2-Dibromoethane	U		0.126	1.00	1	11/23/2020 20:01	WG1581391
(S) Toluene-d8	*99.9*			*80.0-120*		*11/23/2020 20:01*	WG1581391
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*11/23/2020 20:01*	WG1581391
(S) 1,2-Dichloroethane-d4	*93.5*			*70.0-130*		*11/23/2020 20:01*	WG1581391

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	51.8	B J	31.6	100	1	11/23/2020 23:55	WG1581412
(S) a,a,a-Trifluorotoluene(FID)	*99.3*			*78.0-120*		*11/23/2020 23:55*	WG1581412

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	11/23/2020 20:21	WG1581391
Toluene	U		0.278	1.00	1	11/23/2020 20:21	WG1581391
Ethylbenzene	U		0.137	1.00	1	11/23/2020 20:21	WG1581391
Total Xylenes	U		0.174	3.00	1	11/23/2020 20:21	WG1581391
Methyl tert-butyl ether	U		0.101	1.00	1	11/23/2020 20:21	WG1581391
1,2-Dichloroethane	U		0.0819	1.00	1	11/23/2020 20:21	WG1581391
1,2-Dibromoethane	U		0.126	1.00	1	11/23/2020 20:21	WG1581391
(S) Toluene-d8	*99.4*			*80.0-120*		*11/23/2020 20:21*	WG1581391
(S) 4-Bromofluorobenzene	*99.6*			*77.0-126*		*11/23/2020 20:21*	WG1581391
(S) 1,2-Dichloroethane-d4	*94.8*			*70.0-130*		*11/23/2020 20:21*	WG1581391

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.99	T8	1	11/21/2020 15:00	WG1578810

Sample Narrative:

L1286649-55 WG1578810: 7.99 at 20.9C

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Copper	22.1		3.68	10.0	1	11/23/2020 18:06	WG1580736
Lead	11.9		2.99	6.00	1	11/23/2020 18:06	WG1580736
Nickel	6.79	J	1.61	10.0	1	11/23/2020 18:06	WG1580736
Zinc	38.8	J	6.52	50.0	1	11/23/2020 18:06	WG1580736

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	U		9.41	100	100	11/24/2020 22:17	WG1582001
(S) Toluene-d8	*99.9*			*80.0-120*		*11/24/2020 22:17*	WG1582001
(S) 4-Bromofluorobenzene	*104*			*77.0-126*		*11/24/2020 22:17*	WG1582001
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*		*11/24/2020 22:17*	WG1582001

Sample Narrative:

L1286649-55 WG1582001: Elevated RL due to foamy matrix.

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.50	T8	1	11/21/2020 15:00	WG1578810

Sample Narrative:

L1286649-56 WG1578810: 7.5 at 19.8C

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Copper	112		3.68	10.0	1	11/23/2020 18:09	WG1580736
Lead	37.6		2.99	6.00	1	11/23/2020 18:09	WG1580736
Nickel	51.9		1.61	10.0	1	11/23/2020 18:09	WG1580736
Zinc	184		6.52	50.0	1	11/23/2020 18:09	WG1580736

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	1.65		0.0941	1.00	1	11/22/2020 13:02	WG1580633
(S) Toluene-d8	*100*			*80.0-120*		*11/22/2020 13:02*	WG1580633
(S) 4-Bromofluorobenzene	*95.6*			*77.0-126*		*11/22/2020 13:02*	WG1580633
(S) 1,2-Dichloroethane-d4	*74.0*			*70.0-130*		*11/22/2020 13:02*	WG1580633

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	9.88	T8	1	11/21/2020 15:00	WG1578810

Sample Narrative:

L1286649-57 WG1578810: 9.88 at 19.8C

Metals (ICP) by Method 6010D

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Copper	25.9		3.68	10.0	1	11/23/2020 18:12	WG1580736
Lead	18.5		2.99	6.00	1	11/23/2020 18:12	WG1580736
Nickel	10.7		1.61	10.0	1	11/23/2020 18:12	WG1580736
Zinc	40.3	J	6.52	50.0	1	11/23/2020 18:12	WG1580736

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	40.6		0.0941	1.00	1	11/22/2020 13:21	WG1580633
(S) Toluene-d8	*101*			*80.0-120*		*11/22/2020 13:21*	WG1580633
(S) 4-Bromofluorobenzene	*95.0*			*77.0-126*		*11/22/2020 13:21*	WG1580633
(S) 1,2-Dichloroethane-d4	*79.4*			*70.0-130*		*11/22/2020 13:21*	WG1580633

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	44.1	B J	31.6	100	1	11/21/2020 02:19	WG1580118
(S) a,a,a-Trifluorotoluene(FID)	*99.8*			*78.0-120*		*11/21/2020 02:19*	WG1580118

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	11/21/2020 19:50	WG1580529
Toluene	U		0.278	1.00	1	11/21/2020 19:50	WG1580529
Ethylbenzene	U		0.137	1.00	1	11/21/2020 19:50	WG1580529
Total Xylenes	U		0.174	3.00	1	11/21/2020 19:50	WG1580529
Methyl tert-butyl ether	U		0.101	1.00	1	11/21/2020 19:50	WG1580529
1,2-Dichloroethane	U		0.0819	1.00	1	11/21/2020 19:50	WG1580529
1,2-Dibromoethane	U		0.126	1.00	1	11/21/2020 19:50	WG1580529
(S) Toluene-d8	*96.6*			*80.0-120*		*11/21/2020 19:50*	WG1580529
(S) 4-Bromofluorobenzene	*111*			*77.0-126*		*11/21/2020 19:50*	WG1580529
(S) 1,2-Dichloroethane-d4	*100*			*70.0-130*		*11/21/2020 19:50*	WG1580529

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	45.2	B J	31.6	100	1	11/21/2020 02:43	WG1580118
(S) a,a,a-Trifluorotoluene(FID)	*99.7*			*78.0-120*		*11/21/2020 02:43*	WG1580118

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	11/21/2020 20:09	WG1580529
Toluene	U		0.278	1.00	1	11/21/2020 20:09	WG1580529
Ethylbenzene	U		0.137	1.00	1	11/21/2020 20:09	WG1580529
Total Xylenes	U		0.174	3.00	1	11/21/2020 20:09	WG1580529
Methyl tert-butyl ether	U		0.101	1.00	1	11/21/2020 20:09	WG1580529
1,2-Dichloroethane	U		0.0819	1.00	1	11/21/2020 20:09	WG1580529
1,2-Dibromoethane	U		0.126	1.00	1	11/21/2020 20:09	WG1580529
(S) Toluene-d8	*100*			*80.0-120*		*11/21/2020 20:09*	WG1580529
(S) 4-Bromofluorobenzene	*100*			*77.0-126*		*11/21/2020 20:09*	WG1580529
(S) 1,2-Dichloroethane-d4	*93.9*			*70.0-130*		*11/21/2020 20:09*	WG1580529

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	46.4	B J	31.6	100	1	11/21/2020 03:07	WG1580118
(S) a,a,a-Trifluorotoluene(FID)	*100*			*78.0-120*		*11/21/2020 03:07*	WG1580118

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	11/21/2020 20:28	WG1580529
Toluene	U		0.278	1.00	1	11/21/2020 20:28	WG1580529
Ethylbenzene	U		0.137	1.00	1	11/21/2020 20:28	WG1580529
Total Xylenes	U		0.174	3.00	1	11/21/2020 20:28	WG1580529
Methyl tert-butyl ether	U		0.101	1.00	1	11/21/2020 20:28	WG1580529
1,2-Dichloroethane	U		0.0819	1.00	1	11/21/2020 20:28	WG1580529
1,2-Dibromoethane	U		0.126	1.00	1	11/21/2020 20:28	WG1580529
(S) Toluene-d8	*102*			*80.0-120*		*11/21/2020 20:28*	WG1580529
(S) 4-Bromofluorobenzene	*100*			*77.0-126*		*11/21/2020 20:28*	WG1580529
(S) 1,2-Dichloroethane-d4	*92.9*			*70.0-130*		*11/21/2020 20:28*	WG1580529

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	38.9	B J	31.6	100	1	11/21/2020 03:31	WG1580118
(S) a,a,a-Trifluorotoluene(FID)	*99.3*			*78.0-120*		*11/21/2020 03:31*	WG1580118

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	11/21/2020 20:47	WG1580529
Toluene	U		0.278	1.00	1	11/21/2020 20:47	WG1580529
Ethylbenzene	U		0.137	1.00	1	11/21/2020 20:47	WG1580529
Total Xylenes	U		0.174	3.00	1	11/21/2020 20:47	WG1580529
Methyl tert-butyl ether	U		0.101	1.00	1	11/21/2020 20:47	WG1580529
1,2-Dichloroethane	U		0.0819	1.00	1	11/21/2020 20:47	WG1580529
1,2-Dibromoethane	U		0.126	1.00	1	11/21/2020 20:47	WG1580529
(S) Toluene-d8	*102*			*80.0-120*		*11/21/2020 20:47*	WG1580529
(S) 4-Bromofluorobenzene	*100*			*77.0-126*		*11/21/2020 20:47*	WG1580529
(S) 1,2-Dichloroethane-d4	*90.1*			*70.0-130*		*11/21/2020 20:47*	WG1580529

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	42.5	B J	31.6	100	1	11/21/2020 03:55	WG1580118
(S) a,a,a-Trifluorotoluene(FID)	*99.3*			*78.0-120*		*11/21/2020 03:55*	WG1580118

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	11/21/2020 21:06	WG1580529
Toluene	U		0.278	1.00	1	11/21/2020 21:06	WG1580529
Ethylbenzene	U		0.137	1.00	1	11/21/2020 21:06	WG1580529
Total Xylenes	U		0.174	3.00	1	11/21/2020 21:06	WG1580529
Methyl tert-butyl ether	U		0.101	1.00	1	11/21/2020 21:06	WG1580529
1,2-Dichloroethane	U		0.0819	1.00	1	11/21/2020 21:06	WG1580529
1,2-Dibromoethane	U		0.126	1.00	1	11/21/2020 21:06	WG1580529
(S) Toluene-d8	*104*			*80.0-120*		*11/21/2020 21:06*	WG1580529
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*11/21/2020 21:06*	WG1580529
(S) 1,2-Dichloroethane-d4	*91.4*			*70.0-130*		*11/21/2020 21:06*	WG1580529

Method Blank (MB)

(MB) R3596280-1 11/21/20 05:35

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

L1286649-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1286649-01 11/21/20 05:35 • (DUP) R3596280-3 11/21/20 05:35

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	76.1	75.6	1	0.667		10

Laboratory Control Sample (LCS)

(LCS) R3596280-2 11/21/20 05:35

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	LCS Qualifier
Total Solids	50.0	49.3	98.6	85.0-115	

Method Blank (MB)

(MB) R3596279-1 11/21/20 05:24

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

L1286649-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1286649-12 11/21/20 05:24 • (DUP) R3596279-3 11/21/20 05:24

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	79.5	79.4	1	0.187		10

Laboratory Control Sample (LCS)

(LCS) R3596279-2 11/21/20 05:24

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

Method Blank (MB)

(MB) R3596275-1 11/21/20 05:01

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

L1286649-23 Original Sample (OS) • Duplicate (DUP)

(OS) L1286649-23 11/21/20 05:01 • (DUP) R3596275-3 11/21/20 05:01

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	73.9	74.9	1	1.42		10

Laboratory Control Sample (LCS)

(LCS) R3596275-2 11/21/20 05:01

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

Method Blank (MB)

(MB) R3596229-1 11/22/20 04:05

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

L1286649-34 Original Sample (OS) • Duplicate (DUP)

(OS) L1286649-34 11/22/20 04:05 • (DUP) R3596229-3 11/22/20 04:05

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	80.8	80.5	1	0.465		10

Laboratory Control Sample (LCS)

(LCS) R3596229-2 11/22/20 04:05

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

Method Blank (MB)

(MB) R3596227-1 11/22/20 03:02

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

L1286649-45 Original Sample (OS) • Duplicate (DUP)

(OS) L1286649-45 11/22/20 03:02 • (DUP) R3596227-3 11/22/20 03:02

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	94.9	94.3	1	0.660		10

Laboratory Control Sample (LCS)

(LCS) R3596227-2 11/22/20 03:02

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

Method Blank (MB)

(MB) R3596226-1 11/22/20 02:39

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

L1286673-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1286673-01 11/22/20 02:39 • (DUP) R3596226-3 11/22/20 02:39

Analyte	Original Result %	DUP Result %	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Total Solids	77.0	78.3	1	1.63		10

Laboratory Control Sample (LCS)

(LCS) R3596226-2 11/22/20 02:39

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

L1286496-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1286496-01 11/21/20 15:00 • (DUP) R3595895-2 11/21/20 15:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.39	6.39	1	0.000		1

Sample Narrative:

OS: 6.39 at 20C

DUP: 6.39 at 20C

L1287383-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1287383-01 11/21/20 15:00 • (DUP) R3595895-3 11/21/20 15:00

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.97	7.94	1	0.377		1

Sample Narrative:

OS: 7.97 at 20.2C

DUP: 7.94 at 20.1C

Laboratory Control Sample (LCS)

(LCS) R3595895-1 11/21/20 15:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	10.1	101	99.0-101	

Sample Narrative:

LCS: 10.06 at 20.1C

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

Method Blank (MB)

(MB) R3596799-1 11/24/20 04:41

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3596799-2 11/24/20 04:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Copper	100	97.3	97.3	80.0-120	
Lead	100	95.8	95.8	80.0-120	
Nickel	100	98.1	98.1	80.0-120	
Zinc	100	95.7	95.7	80.0-120	

L1286649-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286649-13 11/24/20 04:46 • (MS) R3596799-5 11/24/20 04:54 • (MSD) R3596799-6 11/24/20 04:56

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Copper	134	29.7	164	161	99.8	97.8	1	75.0-125			1.64	20
Lead	134	4.58	140	136	100	98.0	1	75.0-125			2.32	20
Nickel	134	17.3	156	152	103	100	1	75.0-125			2.35	20
Zinc	134	63.6	191	188	94.4	92.6	1	75.0-125			1.34	20

Method Blank (MB)

(MB) R3596800-1 11/24/20 06:04

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3596800-2 11/24/20 06:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Copper	100	104	104	80.0-120	
Lead	100	103	103	80.0-120	
Nickel	100	105	105	80.0-120	
Zinc	100	102	102	80.0-120	

L1286649-30 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286649-30 11/24/20 06:09 • (MS) R3596800-5 11/24/20 06:16 • (MSD) R3596800-6 11/24/20 06:19

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Copper	103	17.8	117	117	95.9	95.9	1	75.0-125			0.0170	20
Lead	103	2.18	102	103	96.6	97.6	1	75.0-125			1.03	20
Nickel	103	7.80	109	111	98.5	99.9	1	75.0-125			1.30	20
Zinc	103	32.0	127	127	92.6	91.8	1	75.0-125			0.661	20

Method Blank (MB)

(MB) R3596130-1 11/22/20 22:08

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Lead	U		0.208	0.500

Laboratory Control Sample (LCS)

(LCS) R3596130-2 11/22/20 22:10

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Lead	100	93.0	93.0	80.0-120	

L1286649-47 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286649-47 11/22/20 22:13 • (MS) R3596130-5 11/22/20 22:20 • (MSD) R3596130-6 11/22/20 22:23

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Lead	103	1.75	101	107	96.4	102	1	75.0-125			5.06	20

Method Blank (MB)

(MB) R3596678-1 11/24/20 02:36

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3596678-2 11/24/20 02:39

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Copper	100	99.7	99.7	80.0-120	
Lead	100	97.3	97.3	80.0-120	
Nickel	100	99.2	99.2	80.0-120	
Zinc	100	97.6	97.6	80.0-120	

L1289115-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1289115-01 11/24/20 02:41 • (MS) R3596678-5 11/24/20 02:49 • (MSD) R3596678-6 11/24/20 02:51

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Copper	103	3.35	101	99.9	95.2	94.0	1	75.0-125			1.22	20
Lead	103	3.75	100	100	93.8	94.0	1	75.0-125			0.152	20
Nickel	103	3.57	103	102	96.6	96.1	1	75.0-125			0.471	20
Zinc	103	13.7	111	111	94.6	94.3	1	75.0-125			0.268	20

Method Blank (MB)

(MB) R3596664-1 11/23/20 16:53

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Copper	U		3.68	10.0
Lead	U		2.99	6.00
Nickel	U		1.61	10.0
Zinc	U		6.52	50.0

Laboratory Control Sample (LCS)

(LCS) R3596664-2 11/23/20 16:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Copper	1000	957	95.7	80.0-120	
Lead	1000	969	96.9	80.0-120	
Nickel	1000	992	99.2	80.0-120	
Zinc	1000	967	96.7	80.0-120	

L1286520-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286520-01 11/23/20 16:59 • (MS) R3596664-4 11/23/20 17:04 • (MSD) R3596664-5 11/23/20 17:07

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Copper	1000	4.63	969	960	96.4	95.6	1	75.0-125			0.879	20
Lead	1000	U	992	980	99.2	98.0	1	75.0-125			1.24	20
Nickel	1000	6.09	1030	1020	102	101	1	75.0-125			0.938	20
Zinc	1000	334	1320	1310	98.8	97.9	1	75.0-125			0.736	20

Method Blank (MB)

(MB) R3595668-2 11/20/20 13:56

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	0.0518	J	0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	*96.9*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3595668-1 11/20/20 12:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	6.11	111	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*106*	*77.0-120*	

Method Blank (MB)

(MB) R3595945-2 11/21/20 10:58

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	0.0943	J	0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	*96.3*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3595945-1 11/21/20 08:56

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	5.84	106	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*105*	*77.0-120*	

Method Blank (MB)

(MB) R3595949-2 11/21/20 18:36

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	*101*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3595949-1 11/21/20 17:51

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	5.44	98.9	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*99.1*	*77.0-120*	

Method Blank (MB)

(MB) R3596237-2 11/22/20 13:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	*110*			*77.0-120*

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

(LCS) R3596237-1 11/22/20 12:20 • (LCSD) R3596237-3 11/22/20 14:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	5.50	4.83	5.95	87.8	108	71.0-124		J3	20.8	20
(S) a,a,a-Trifluorotoluene(FID)				*100*	*102*	*77.0-120*				

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

Method Blank (MB)

(MB) R3596764-2 11/23/20 17:08

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	*103*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3596764-1 11/23/20 16:23

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	5.83	106	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*105*	*77.0-120*	

Method Blank (MB)

(MB) R3596766-2 11/23/20 17:57

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	*109*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3596766-1 11/23/20 17:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	6.06	110	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*105*	*77.0-120*	

L1287732-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1287732-03 11/24/20 03:00 • (MS) R3596766-3 11/24/20 03:21 • (MSD) R3596766-4 11/24/20 03:42

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	138	U	117	151	85.1	109	25	10.0-149			24.9	27
(S) a,a,a-Trifluorotoluene(FID)					*103*	*106*		*77.0-120*				

Method Blank (MB)

(MB) R3597014-2 11/24/20 05:42

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	*108*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3597014-1 11/24/20 05:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	5.59	102	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*103*	*77.0-120*	

Method Blank (MB)

(MB) R3596985-2 11/24/20 06:49

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	*104*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3596985-1 11/24/20 06:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	5.87	107	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*103*	*77.0-120*	

Method Blank (MB)

(MB) R3597143-2 11/24/20 15:09

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	0.0877	J	0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	*97.0*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3597143-1 11/24/20 11:40

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	6.26	114	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*106*	*77.0-120*	

Method Blank (MB)

(MB) R3597722-2 11/25/20 14:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	0.0384	J	0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	*97.2*			*77.0-120*

Laboratory Control Sample (LCS)

(LCS) R3597722-1 11/25/20 14:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	6.12	111	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*112*	*77.0-120*	

Method Blank (MB)

(MB) R3595883-2 11/21/20 00:43

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	46.1	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*98.5*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3595883-1 11/20/20 23:31

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4970	90.4	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*89.0*	*78.0-120*	

Method Blank (MB)

(MB) R3597026-2 11/23/20 16:50

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	50.1	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*100*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3597026-1 11/23/20 15:31

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5290	96.2	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*90.2*	*78.0-120*	

Method Blank (MB)

(MB) R3595951-2 11/21/20 07:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
1,2-Dibromoethane	U		0.000648	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
Ethylbenzene	U		0.000737	0.00250
Methyl tert-butyl ether	U		0.000350	0.00100
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*107*			*75.0-131*
(S) 4-Bromofluorobenzene	*96.7*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*86.9*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3595951-1 11/21/20 06:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.109	87.2	70.0-123	
1,2-Dibromoethane	0.125	0.118	94.4	74.0-128	
1,2-Dichloroethane	0.125	0.101	80.8	65.0-131	
Ethylbenzene	0.125	0.112	89.6	74.0-126	
Methyl tert-butyl ether	0.125	0.100	80.0	66.0-132	
Toluene	0.125	0.112	89.6	75.0-121	
Xylenes, Total	0.375	0.329	87.7	72.0-127	
(S) Toluene-d8			*101*	*75.0-131*	
(S) 4-Bromofluorobenzene			*101*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*84.8*	*70.0-130*	

L1286265-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286265-01 11/21/20 14:16 • (MS) R3595951-3 11/21/20 16:28 • (MSD) R3595951-4 11/21/20 16:47

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	50.0	11.3	142	131	261	239	400	10.0-149	J5	J5	8.06	37
1,2-Dibromoethane	50.0	U	52.9	47.1	106	94.2	400	10.0-148			11.6	34
1,2-Dichloroethane	50.0	U	49.0	48.1	98.0	96.2	400	10.0-148			1.85	35
Ethylbenzene	50.0	6.42	108	99.2	203	186	400	10.0-160	J5	J5	8.49	38
Methyl tert-butyl ether	50.0	U	43.3	48.7	86.6	97.4	400	11.0-147			11.7	35
Toluene	50.0	23.2	250	217	454	388	400	10.0-156	J5	J5	14.1	38
Xylenes, Total	150	50.7	587	529	358	319	400	10.0-160	J5	J5	10.4	38

L1286265-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286265-01 11/21/20 14:16 • (MS) R3595951-3 11/21/20 16:28 • (MSD) R3595951-4 11/21/20 16:47

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
(S) Toluene-d8					*101*	*102*		*75.0-131*				
(S) 4-Bromofluorobenzene					*101*	*102*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*87.6*	*91.1*		*70.0-130*				

Method Blank (MB)

(MB) R3596065-3 11/22/20 09:25

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00250
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Methylene Chloride	U		0.00664	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
Tetrachloroethene	U		0.000896	0.00250
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125

Method Blank (MB)

(MB) R3596065-3 11/22/20 09:25

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
Vinyl chloride	U		0.00116	0.00250
(S) Toluene-d8	*103*			*75.0-131*
(S) 4-Bromofluorobenzene	*106*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*95.9*			*70.0-130*

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

(LCS) R3596065-1 11/22/20 08:10 • (LCSD) R3596065-2 11/22/20 08:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.123	0.114	98.4	91.2	70.0-123			7.59	20
Bromobenzene	0.125	0.124	0.125	99.2	100	73.0-121			0.803	20
Bromodichloromethane	0.125	0.127	0.126	102	101	73.0-121			0.791	20
Bromoform	0.125	0.133	0.135	106	108	64.0-132			1.49	20
Bromomethane	0.125	0.122	0.119	97.6	95.2	56.0-147			2.49	20
Carbon tetrachloride	0.125	0.143	0.142	114	114	66.0-128			0.702	20
Chlorobenzene	0.125	0.124	0.125	99.2	100	76.0-128			0.803	20
Chlorodibromomethane	0.125	0.128	0.134	102	107	74.0-127			4.58	20
Chloroethane	0.125	0.125	0.120	100	96.0	61.0-134			4.08	20
Chloroform	0.125	0.130	0.127	104	102	72.0-123			2.33	20
Chloromethane	0.125	0.113	0.106	90.4	84.8	51.0-138			6.39	20
2-Chlorotoluene	0.125	0.132	0.122	106	97.6	75.0-124			7.87	20
4-Chlorotoluene	0.125	0.112	0.120	89.6	96.0	75.0-124			6.90	20
1,2-Dibromo-3-Chloropropane	0.125	0.125	0.123	100	98.4	59.0-130			1.61	20
1,2-Dibromoethane	0.125	0.129	0.131	103	105	74.0-128			1.54	20
Dibromomethane	0.125	0.123	0.124	98.4	99.2	75.0-122			0.810	20
1,2-Dichlorobenzene	0.125	0.119	0.124	95.2	99.2	76.0-124			4.12	20
1,3-Dichlorobenzene	0.125	0.121	0.126	96.8	101	76.0-125			4.05	20
1,4-Dichlorobenzene	0.125	0.119	0.122	95.2	97.6	77.0-121			2.49	20
Dichlorodifluoromethane	0.125	0.103	0.101	82.4	80.8	43.0-156			1.96	20
1,1-Dichloroethane	0.125	0.130	0.126	104	101	70.0-127			3.12	20
1,2-Dichloroethane	0.125	0.109	0.108	87.2	86.4	65.0-131			0.922	20
1,1-Dichloroethene	0.125	0.114	0.110	91.2	88.0	65.0-131			3.57	20
cis-1,2-Dichloroethene	0.125	0.126	0.123	101	98.4	73.0-125			2.41	20

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

(LCS) R3596065-1 11/22/20 08:10 • (LCSD) R3596065-2 11/22/20 08:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
trans-1,2-Dichloroethene	0.125	0.131	0.127	105	102	71.0-125			3.10	20
1,2-Dichloropropane	0.125	0.120	0.124	96.0	99.2	74.0-125			3.28	20
1,1-Dichloropropene	0.125	0.127	0.126	102	101	73.0-125			0.791	20
1,3-Dichloropropane	0.125	0.127	0.129	102	103	80.0-125			1.56	20
cis-1,3-Dichloropropene	0.125	0.122	0.123	97.6	98.4	76.0-127			0.816	20
trans-1,3-Dichloropropene	0.125	0.125	0.128	100	102	73.0-127			2.37	20
2,2-Dichloropropane	0.125	0.147	0.150	118	120	59.0-135			2.02	20
Hexachloro-1,3-butadiene	0.125	0.150	0.134	120	107	57.0-150			11.3	20
Methylene Chloride	0.125	0.131	0.124	105	99.2	68.0-123			5.49	20
Methyl tert-butyl ether	0.125	0.124	0.125	99.2	100	66.0-132			0.803	20
1,1,1,2-Tetrachloroethane	0.125	0.116	0.121	92.8	96.8	74.0-129			4.22	20
1,1,2,2-Tetrachloroethane	0.125	0.118	0.121	94.4	96.8	68.0-128			2.51	20
Tetrachloroethene	0.125	0.149	0.150	119	120	70.0-136			0.669	20
1,1,2-Trichlorotrifluoroethane	0.125	0.110	0.106	88.0	84.8	61.0-139			3.70	20
1,2,3-Trichlorobenzene	0.125	0.123	0.123	98.4	98.4	59.0-139			0.000	20
1,2,4-Trichlorobenzene	0.125	0.129	0.124	103	99.2	62.0-137			3.95	20
1,1,1-Trichloroethane	0.125	0.132	0.132	106	106	69.0-126			0.000	20
1,1,2-Trichloroethane	0.125	0.128	0.134	102	107	78.0-123			4.58	20
Trichloroethene	0.125	0.145	0.141	116	113	76.0-126			2.80	20
Trichlorofluoromethane	0.125	0.107	0.107	85.6	85.6	61.0-142			0.000	20
1,2,3-Trichloropropane	0.125	0.117	0.123	93.6	98.4	67.0-129			5.00	20
Vinyl chloride	0.125	0.120	0.115	96.0	92.0	63.0-134			4.26	20
(S) Toluene-d8				*103*	*105*	*75.0-131*				
(S) 4-Bromofluorobenzene				*102*	*104*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*96.1*	*99.1*	*70.0-130*				

Method Blank (MB)

(MB) R3595965-2 11/21/20 23:08

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00250
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Methylene Chloride	U		0.00664	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250

Method Blank (MB)

(MB) R3595965-2 11/21/20 23:08

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*102*			*75.0-131*
(S) 4-Bromofluorobenzene	*101*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*89.8*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3595965-1 11/21/20 21:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.143	114	70.0-123	
Bromobenzene	0.125	0.124	99.2	73.0-121	
Bromodichloromethane	0.125	0.137	110	73.0-121	
Bromoform	0.125	0.110	88.0	64.0-132	
Bromomethane	0.125	0.188	150	56.0-147	J4
Carbon tetrachloride	0.125	0.143	114	66.0-128	
Chlorobenzene	0.125	0.128	102	76.0-128	
Chlorodibromomethane	0.125	0.118	94.4	74.0-127	
Chloroethane	0.125	0.145	116	61.0-134	
Chloroform	0.125	0.144	115	72.0-123	
Chloromethane	0.125	0.105	84.0	51.0-138	
2-Chlorotoluene	0.125	0.128	102	75.0-124	
4-Chlorotoluene	0.125	0.127	102	75.0-124	
1,2-Dibromo-3-Chloropropane	0.125	0.109	87.2	59.0-130	
1,2-Dibromoethane	0.125	0.119	95.2	74.0-128	
Dibromomethane	0.125	0.137	110	75.0-122	
1,2-Dichlorobenzene	0.125	0.128	102	76.0-124	
1,3-Dichlorobenzene	0.125	0.128	102	76.0-125	
1,4-Dichlorobenzene	0.125	0.126	101	77.0-121	
Dichlorodifluoromethane	0.125	0.148	118	43.0-156	
1,1-Dichloroethane	0.125	0.118	94.4	70.0-127	

Laboratory Control Sample (LCS)

(LCS) R3595965-1 11/21/20 21:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
1,2-Dichloroethane	0.125	0.113	90.4	65.0-131	
1,1-Dichloroethene	0.125	0.105	84.0	65.0-131	
cis-1,2-Dichloroethene	0.125	0.148	118	73.0-125	
trans-1,2-Dichloroethene	0.125	0.136	109	71.0-125	
1,2-Dichloropropane	0.125	0.108	86.4	74.0-125	
1,1-Dichloropropene	0.125	0.145	116	73.0-125	
1,3-Dichloropropane	0.125	0.127	102	80.0-125	
cis-1,3-Dichloropropene	0.125	0.138	110	76.0-127	
trans-1,3-Dichloropropene	0.125	0.128	102	73.0-127	
2,2-Dichloropropane	0.125	0.151	121	59.0-135	
Ethylbenzene	0.125	0.134	107	74.0-126	
Hexachloro-1,3-butadiene	0.125	0.144	115	57.0-150	
Methylene Chloride	0.125	0.126	101	68.0-123	
Methyl tert-butyl ether	0.125	0.148	118	66.0-132	
1,1,1,2-Tetrachloroethane	0.125	0.126	101	74.0-129	
1,1,2,2-Tetrachloroethane	0.125	0.118	94.4	68.0-128	
Tetrachloroethene	0.125	0.131	105	70.0-136	
Toluene	0.125	0.129	103	75.0-121	
1,1,2-Trichlorotrifluoroethane	0.125	0.0949	75.9	61.0-139	
1,2,3-Trichlorobenzene	0.125	0.124	99.2	59.0-139	
1,2,4-Trichlorobenzene	0.125	0.134	107	62.0-137	
1,1,1-Trichloroethane	0.125	0.144	115	69.0-126	
1,1,2-Trichloroethane	0.125	0.129	103	78.0-123	
Trichloroethene	0.125	0.142	114	76.0-126	
Trichlorofluoromethane	0.125	0.109	87.2	61.0-142	
1,2,3-Trichloropropane	0.125	0.131	105	67.0-129	
Vinyl chloride	0.125	0.144	115	63.0-134	
Xylenes, Total	0.375	0.393	105	72.0-127	
(S) Toluene-d8			*98.4*	*75.0-131*	
(S) 4-Bromofluorobenzene			*102*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*94.0*	*70.0-130*	

L1286649-52 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286649-52 11/22/20 06:00 • (MS) R3595965-3 11/22/20 06:20 • (MSD) R3595965-4 11/22/20 06:41

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	17.8	12.1	31.5	32.5	109	115	98.4	10.0-149			3.16	37
Bromobenzene	17.8	U	19.7	21.3	111	120	98.4	10.0-156			7.77	38

L1286649-52 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286649-52 11/22/20 06:00 • (MS) R3595965-3 11/22/20 06:20 • (MSD) R3595965-4 11/22/20 06:41

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromodichloromethane	17.8	U	20.7	22.0	116	124	98.4	10.0-143			6.10	37
Bromoform	17.8	U	16.3	17.6	91.9	99.2	98.4	10.0-146			7.66	36
Bromomethane	17.8	U	28.5	28.2	160	159	98.4	10.0-149	J5	J5	1.02	38
Carbon tetrachloride	17.8	U	21.1	21.5	119	121	98.4	10.0-145			2.03	37
Chlorobenzene	17.8	U	17.8	18.8	100	106	98.4	10.0-152			5.53	39
Chlorodibromomethane	17.8	U	16.0	17.2	90.2	96.7	98.4	10.0-146			6.96	37
Chloroethane	17.8	U	18.9	19.5	107	110	98.4	10.0-146			3.01	40
Chloroform	17.8	U	22.8	23.3	128	131	98.4	10.0-146			1.88	37
Chloromethane	17.8	U	14.2	7.58	79.9	42.6	98.4	10.0-159		J3	60.9	37
2-Chlorotoluene	17.8	U	28.8	31.2	162	176	98.4	10.0-159	J5	J5	8.19	38
4-Chlorotoluene	17.8	U	18.9	20.2	107	114	98.4	10.0-155			6.64	39
1,2-Dibromo-3-Chloropropane	17.8	U	17.5	19.7	98.4	111	98.4	10.0-151			11.7	39
1,2-Dibromoethane	17.8	U	17.8	18.2	100	102	98.4	10.0-148			2.41	34
Dibromomethane	17.8	U	21.3	23.0	120	129	98.4	10.0-147			7.84	35
1,2-Dichlorobenzene	17.8	U	18.7	20.4	105	115	98.4	10.0-155			8.89	37
1,3-Dichlorobenzene	17.8	U	18.5	19.8	104	111	98.4	10.0-153			6.79	38
1,4-Dichlorobenzene	17.8	U	18.5	19.8	104	111	98.4	10.0-151			6.79	38
Dichlorodifluoromethane	17.8	U	23.6	21.0	133	118	98.4	10.0-160			11.7	35
1,1-Dichloroethane	17.8	U	17.2	17.9	96.7	101	98.4	10.0-147			4.12	37
1,2-Dichloroethane	17.8	U	17.1	17.9	95.9	101	98.4	10.0-148			4.96	35
1,1-Dichloroethene	17.8	U	16.5	16.8	92.7	94.3	98.4	10.0-155			1.74	37
cis-1,2-Dichloroethene	17.8	U	21.1	21.7	119	122	98.4	10.0-149			2.70	37
trans-1,2-Dichloroethene	17.8	U	18.8	18.9	106	107	98.4	10.0-150			0.766	37
1,2-Dichloropropane	17.8	U	17.1	17.1	95.9	95.9	98.4	10.0-148			0.000	37
1,1-Dichloropropene	17.8	U	21.0	22.8	118	128	98.4	10.0-153			8.58	35
1,3-Dichloropropane	17.8	U	17.6	18.5	99.2	104	98.4	10.0-154			4.80	35
cis-1,3-Dichloropropene	17.8	U	20.4	21.4	115	120	98.4	10.0-151			4.84	37
trans-1,3-Dichloropropene	17.8	U	17.1	17.8	95.9	100	98.4	10.0-148			4.15	37
2,2-Dichloropropane	17.8	U	21.5	23.3	121	131	98.4	10.0-138			7.74	36
Ethylbenzene	17.8	65.4	76.8	81.8	64.2	92.7	98.4	10.0-160			6.38	38
Hexachloro-1,3-butadiene	17.8	U	22.3	25.0	125	141	98.4	10.0-160			11.6	40
Methylene Chloride	17.8	U	16.5	16.3	92.7	91.9	98.4	10.0-141			0.881	37
Methyl tert-butyl ether	17.8	U	20.5	21.4	115	120	98.4	11.0-147			4.14	35
1,1,1,2-Tetrachloroethane	17.8	U	17.2	18.4	96.7	103	98.4	10.0-149			6.50	39
1,1,2,2-Tetrachloroethane	17.8	U	26.5	28.6	149	161	98.4	10.0-160		J5	7.87	35
Tetrachloroethene	17.8	0.291	16.3	16.8	90.2	92.7	98.4	10.0-156			2.62	39
Toluene	17.8	113	118	126	26.8	72.4	98.4	10.0-156			6.64	38
1,1,2-Trichlorotrifluoroethane	17.8	U	7.11	7.78	40.0	43.7	98.4	10.0-160			8.93	36
1,2,3-Trichlorobenzene	17.8	U	17.6	22.4	99.2	126	98.4	10.0-160			23.8	40

L1286649-52 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286649-52 11/22/20 06:00 • (MS) R3595965-3 11/22/20 06:20 • (MSD) R3595965-4 11/22/20 06:41

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,2,4-Trichlorobenzene	17.8	U	18.9	21.8	107	123	98.4	10.0-160			14.2	40
1,1,1-Trichloroethane	17.8	U	19.8	22.0	111	124	98.4	10.0-144			10.4	35
1,1,2-Trichloroethane	17.8	U	24.9	25.7	140	145	98.4	10.0-160			3.43	35
Trichloroethene	17.8	U	20.0	21.0	112	118	98.4	10.0-156			4.95	38
Trichlorofluoromethane	17.8	U	17.6	18.2	99.2	102	98.4	10.0-160			3.23	40
1,2,3-Trichloropropane	17.8	U	21.1	21.8	119	123	98.4	10.0-156			3.37	35
Vinyl chloride	17.8	U	20.4	21.1	115	119	98.4	10.0-160			3.48	37
Xylenes, Total	53.4	584	586	632	2.71	89.4	98.4	10.0-160	V		7.60	38
(S) Toluene-d8					*91.0*	*89.4*		*75.0-131*				
(S) 4-Bromofluorobenzene					*125*	*128*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*98.2*	*96.5*		*70.0-130*				

Method Blank (MB)

(MB) R3596055-3 11/22/20 03:43

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
1,2-Dibromoethane	U		0.000648	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
Ethylbenzene	U		0.000737	0.00250
Methyl tert-butyl ether	U		0.000350	0.00100
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*105*			*75.0-131*
(S) 4-Bromofluorobenzene	*94.7*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*86.1*			*70.0-130*

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

(LCS) R3596055-1 11/22/20 02:27 • (LCSD) R3596055-2 11/22/20 02:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.119	0.117	95.2	93.6	70.0-123			1.69	20
1,2-Dibromoethane	0.125	0.120	0.120	96.0	96.0	74.0-128			0.000	20
1,2-Dichloroethane	0.125	0.114	0.117	91.2	93.6	65.0-131			2.60	20
Ethylbenzene	0.125	0.124	0.119	99.2	95.2	74.0-126			4.12	20
Methyl tert-butyl ether	0.125	0.121	0.119	96.8	95.2	66.0-132			1.67	20
Toluene	0.125	0.120	0.116	96.0	92.8	75.0-121			3.39	20
Xylenes, Total	0.375	0.356	0.344	94.9	91.7	72.0-127			3.43	20
(S) Toluene-d8				*101*	*102*	*75.0-131*				
(S) 4-Bromofluorobenzene				*98.6*	*99.9*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*88.8*	*89.6*	*70.0-130*				

Method Blank (MB)

(MB) R3596735-2 11/22/20 19:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00250
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Methylene Chloride	U		0.00664	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250

Method Blank (MB)

(MB) R3596735-2 11/22/20 19:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*95.8*			*75.0-131*
(S) 4-Bromofluorobenzene	*94.1*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*109*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3596735-1 11/22/20 18:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.106	84.8	70.0-123	
Bromobenzene	0.125	0.118	94.4	73.0-121	
Bromodichloromethane	0.125	0.121	96.8	73.0-121	
Bromoform	0.125	0.106	84.8	64.0-132	
Bromomethane	0.125	0.109	87.2	56.0-147	
Carbon tetrachloride	0.125	0.118	94.4	66.0-128	
Chlorobenzene	0.125	0.109	87.2	76.0-128	
Chlorodibromomethane	0.125	0.111	88.8	74.0-127	
Chloroethane	0.125	0.113	90.4	61.0-134	
Chloroform	0.125	0.109	87.2	72.0-123	
Chloromethane	0.125	0.0899	71.9	51.0-138	
2-Chlorotoluene	0.125	0.112	89.6	75.0-124	
4-Chlorotoluene	0.125	0.121	96.8	75.0-124	
1,2-Dibromo-3-Chloropropane	0.125	0.106	84.8	59.0-130	
1,2-Dibromoethane	0.125	0.109	87.2	74.0-128	
Dibromomethane	0.125	0.117	93.6	75.0-122	
1,2-Dichlorobenzene	0.125	0.104	83.2	76.0-124	
1,3-Dichlorobenzene	0.125	0.110	88.0	76.0-125	
1,4-Dichlorobenzene	0.125	0.108	86.4	77.0-121	
Dichlorodifluoromethane	0.125	0.122	97.6	43.0-156	
1,1-Dichloroethane	0.125	0.105	84.0	70.0-127	

Laboratory Control Sample (LCS)

(LCS) R3596735-1 11/22/20 18:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
1,2-Dichloroethane	0.125	0.114	91.2	65.0-131	
1,1-Dichloroethene	0.125	0.112	89.6	65.0-131	
cis-1,2-Dichloroethene	0.125	0.0951	76.1	73.0-125	
trans-1,2-Dichloroethene	0.125	0.0963	77.0	71.0-125	
1,2-Dichloropropane	0.125	0.113	90.4	74.0-125	
1,1-Dichloropropene	0.125	0.115	92.0	73.0-125	
1,3-Dichloropropane	0.125	0.109	87.2	80.0-125	
cis-1,3-Dichloropropene	0.125	0.120	96.0	76.0-127	
trans-1,3-Dichloropropene	0.125	0.119	95.2	73.0-127	
2,2-Dichloropropane	0.125	0.109	87.2	59.0-135	
Ethylbenzene	0.125	0.108	86.4	74.0-126	
Hexachloro-1,3-butadiene	0.125	0.107	85.6	57.0-150	
Methylene Chloride	0.125	0.0963	77.0	68.0-123	
Methyl tert-butyl ether	0.125	0.101	80.8	66.0-132	
1,1,1,2-Tetrachloroethane	0.125	0.0990	79.2	74.0-129	
1,1,2,2-Tetrachloroethane	0.125	0.104	83.2	68.0-128	
Tetrachloroethene	0.125	0.109	87.2	70.0-136	
Toluene	0.125	0.103	82.4	75.0-121	
1,1,2-Trichlorotrifluoroethane	0.125	0.108	86.4	61.0-139	
1,2,3-Trichlorobenzene	0.125	0.0870	69.6	59.0-139	
1,2,4-Trichlorobenzene	0.125	0.0814	65.1	62.0-137	
1,1,1-Trichloroethane	0.125	0.116	92.8	69.0-126	
1,1,2-Trichloroethane	0.125	0.107	85.6	78.0-123	
Trichloroethene	0.125	0.119	95.2	76.0-126	
Trichlorofluoromethane	0.125	0.123	98.4	61.0-142	
1,2,3-Trichloropropane	0.125	0.124	99.2	67.0-129	
Vinyl chloride	0.125	0.107	85.6	63.0-134	
Xylenes, Total	0.375	0.301	80.3	72.0-127	
(S) Toluene-d8			*95.0*	*75.0-131*	
(S) 4-Bromofluorobenzene			*98.0*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*105*	*70.0-130*	

Method Blank (MB)

(MB) R3596182-3 11/22/20 15:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
1,2-Dibromoethane	U		0.000648	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
Ethylbenzene	U		0.000737	0.00250
Methyl tert-butyl ether	U		0.000350	0.00100
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*108*			*75.0-131*
(S) 4-Bromofluorobenzene	*96.1*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*85.6*			*70.0-130*

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

(LCS) R3596182-1 11/22/20 13:47 • (LCSD) R3596182-2 11/22/20 14:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.117	0.123	93.6	98.4	70.0-123			5.00	20
1,2-Dibromoethane	0.125	0.117	0.125	93.6	100	74.0-128			6.61	20
1,2-Dichloroethane	0.125	0.125	0.130	100	104	65.0-131			3.92	20
Ethylbenzene	0.125	0.117	0.123	93.6	98.4	74.0-126			5.00	20
Methyl tert-butyl ether	0.125	0.129	0.126	103	101	66.0-132			2.35	20
Toluene	0.125	0.113	0.125	90.4	100	75.0-121			10.1	20
Xylenes, Total	0.375	0.342	0.351	91.2	93.6	72.0-127			2.60	20
(S) Toluene-d8				*99.6*	*104*	*75.0-131*				
(S) 4-Bromofluorobenzene				*100*	*93.9*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*99.3*	*96.4*	*70.0-130*				

Method Blank (MB)

(MB) R3596258-3 11/22/20 14:17

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*112*			*75.0-131*
(S) 4-Bromofluorobenzene	*87.5*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*

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

(LCS) R3596258-1 11/22/20 13:01 • (LCSD) R3596258-2 11/22/20 13:20

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	0.125	0.133	0.137	106	110	74.0-126			2.96	20
Toluene	0.125	0.137	0.138	110	110	75.0-121			0.727	20
Xylenes, Total	0.375	0.403	0.384	107	102	72.0-127			4.83	20
(S) Toluene-d8				*104*	*108*	*75.0-131*				
(S) 4-Bromofluorobenzene				*92.4*	*90.3*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*113*	*112*	*70.0-130*				

Method Blank (MB)

(MB) R3596172-2 11/22/20 20:53

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*103*			*75.0-131*
(S) 4-Bromofluorobenzene	*107*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*94.9*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3596172-1 11/22/20 19:57

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Ethylbenzene	0.125	0.128	102	74.0-126	
Toluene	0.125	0.121	96.8	75.0-121	
Xylenes, Total	0.375	0.383	102	72.0-127	
(S) Toluene-d8			*102*	*75.0-131*	
(S) 4-Bromofluorobenzene			*104*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*95.8*	*70.0-130*	

Method Blank (MB)

(MB) R3596417-2 11/23/20 08:36

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	0.00136		0.000467	0.00100
1,2-Dibromoethane	U		0.000648	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
Methyl tert-butyl ether	U		0.000350	0.00100
Toluene	0.00581		0.00130	0.00500
(S) Toluene-d8	*102*			*75.0-131*
(S) 4-Bromofluorobenzene	*103*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*92.5*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3596417-1 11/23/20 06:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.129	103	70.0-123	
1,2-Dibromoethane	0.125	0.116	92.8	74.0-128	
1,2-Dichloroethane	0.125	0.108	86.4	65.0-131	
Methyl tert-butyl ether	0.125	0.124	99.2	66.0-132	
Toluene	0.125	0.120	96.0	75.0-121	
(S) Toluene-d8			*97.5*	*75.0-131*	
(S) 4-Bromofluorobenzene			*101*	*67.0-138*	
(S) 1,2-Dichloroethane-d4			*94.6*	*70.0-130*	

Method Blank (MB)

(MB) R3596816-3 11/23/20 23:02

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
1,2-Dibromoethane	U		0.000648	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
Ethylbenzene	U		0.000737	0.00250
Methyl tert-butyl ether	U		0.000350	0.00100
Toluene	U		0.00130	0.00500
Xylenes, Total	0.00100	J	0.000880	0.00650
(S) Toluene-d8	*111*			*75.0-131*
(S) 4-Bromofluorobenzene	*92.7*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*

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

(LCS) R3596816-1 11/23/20 21:08 • (LCSD) R3596816-2 11/23/20 21:27

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.129	0.129	103	103	70.0-123			0.000	20
1,2-Dibromoethane	0.125	0.131	0.128	105	102	74.0-128			2.32	20
1,2-Dichloroethane	0.125	0.128	0.130	102	104	65.0-131			1.55	20
Ethylbenzene	0.125	0.131	0.128	105	102	74.0-126			2.32	20
Methyl tert-butyl ether	0.125	0.144	0.146	115	117	66.0-132			1.38	20
Toluene	0.125	0.137	0.128	110	102	75.0-121			6.79	20
Xylenes, Total	0.375	0.378	0.380	101	101	72.0-127			0.528	20
(S) Toluene-d8				*108*	*106*	*75.0-131*				
(S) 4-Bromofluorobenzene				*93.7*	*95.4*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*109*	*112*	*70.0-130*				

L1287850-26 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1287850-26 11/24/20 03:47 • (MS) R3596816-4 11/24/20 06:57 • (MSD) R3596816-5 11/24/20 07:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.207	0.0141	0.111	0.105	46.8	43.9	1.65	10.0-149			5.56	37
1,2-Dibromoethane	0.207	U	0.170	0.167	82.1	80.7	1.65	10.0-148			1.78	34
1,2-Dichloroethane	0.207	U	0.145	0.149	70.0	72.0	1.65	10.0-148			2.72	35
Ethylbenzene	0.207	0.0107	0.107	0.103	46.5	44.6	1.65	10.0-160			3.81	38
Methyl tert-butyl ether	0.207	0.0370	0.192	0.207	74.9	82.1	1.65	11.0-147			7.52	35
Toluene	0.207	0.0936	0.176	0.167	39.8	35.5	1.65	10.0-156			5.25	38
Xylenes, Total	0.619	0.0459	0.323	0.334	44.8	46.5	1.65	10.0-160			3.35	38

L1287850-26 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1287850-26 11/24/20 03:47 • (MS) R3596816-4 11/24/20 06:57 • (MSD) R3596816-5 11/24/20 07:33

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
(S) Toluene-d8					*109*	*108*		*75.0-131*				
(S) 4-Bromofluorobenzene					*89.8*	*93.9*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*102*	*111*		*70.0-130*				

Method Blank (MB)

(MB) R3596867-3 11/23/20 23:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
1,2-Dibromoethane	U		0.000648	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
Ethylbenzene	U		0.000737	0.00250
Methyl tert-butyl ether	U		0.000350	0.00100
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*104*			*75.0-131*
(S) 4-Bromofluorobenzene	*108*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*95.9*			*70.0-130*

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

(LCS) R3596867-1 11/23/20 20:04 • (LCSD) R3596867-2 11/23/20 20:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.109	0.100	87.2	80.0	70.0-123			8.61	20
1,2-Dibromoethane	0.125	0.143	0.132	114	106	74.0-128			8.00	20
1,2-Dichloroethane	0.125	0.104	0.0961	83.2	76.9	65.0-131			7.90	20
Ethylbenzene	0.125	0.123	0.114	98.4	91.2	74.0-126			7.59	20
Methyl tert-butyl ether	0.125	0.125	0.116	100	92.8	66.0-132			7.47	20
Toluene	0.125	0.120	0.109	96.0	87.2	75.0-121			9.61	20
Xylenes, Total	0.375	0.365	0.343	97.3	91.5	72.0-127			6.21	20
(S) Toluene-d8				*106*	*106*	*75.0-131*				
(S) 4-Bromofluorobenzene				*103*	*102*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*99.9*	*96.1*	*70.0-130*				

L1286673-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286673-02 11/24/20 05:56 • (MS) R3596867-4 11/24/20 06:15 • (MSD) R3596867-5 11/24/20 06:33

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	1.33	3.49	3.66	3.62	12.8	10.3	8	10.0-149			0.939	37
1,2-Dibromoethane	1.33	U	0.737	1.02	55.3	76.3	8	10.0-148			32.0	34
1,2-Dichloroethane	1.33	U	0.749	0.730	56.2	54.7	8	10.0-148			2.54	35
Ethylbenzene	1.33	217	202	209	0.000	0.000	8	10.0-160	E V	E V	3.33	38
Methyl tert-butyl ether	1.33	U	0.844	0.884	63.3	66.3	8	11.0-147			4.55	35
Toluene	1.33	0.525	0.897	0.933	27.9	30.6	8	10.0-156			3.92	38

L1286673-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286673-02 11/24/20 05:56 • (MS) R3596867-4 11/24/20 06:15 • (MSD) R3596867-5 11/24/20 06:33

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Xylenes, Total	4.00	287	267	279	0.000	0.000	8	10.0-160	V	V	4.39	38
(S) Toluene-d8					*71.3*	*72.3*		*75.0-131*	J2	J2		
(S) 4-Bromofluorobenzene					*84.7*	*86.9*		*67.0-138*				
(S) 1,2-Dichloroethane-d4					*108*	*106*		*70.0-130*				

Method Blank (MB)

(MB) R3596581-3 11/23/20 14:51

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
1,2-Dibromoethane	U		0.000648	0.00250
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*113*			*75.0-131*
(S) 4-Bromofluorobenzene	*102*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*

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

(LCS) R3596581-1 11/23/20 13:35 • (LCSD) R3596581-2 11/23/20 13:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,2-Dibromoethane	0.125	0.127	0.135	102	108	74.0-128			6.11	20
Ethylbenzene	0.125	0.127	0.137	102	110	74.0-126			7.58	20
Toluene	0.125	0.121	0.126	96.8	101	75.0-121			4.05	20
Xylenes, Total	0.375	0.359	0.414	95.7	110	72.0-127			14.2	20
(S) Toluene-d8				*107*	*108*	*75.0-131*				
(S) 4-Bromofluorobenzene				*102*	*105*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*115*	*112*	*70.0-130*				

Method Blank (MB)

(MB) R3596982-3 11/24/20 12:47

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
1,2-Dibromoethane	U		0.000648	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
Ethylbenzene	U		0.000737	0.00250
Methyl tert-butyl ether	U		0.000350	0.00100
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	*99.1*			*75.0-131*
(S) 4-Bromofluorobenzene	*103*			*67.0-138*
(S) 1,2-Dichloroethane-d4	*93.6*			*70.0-130*

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

(LCS) R3596982-1 11/24/20 11:25 • (LCSD) R3596982-2 11/24/20 11:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.138	0.136	110	109	70.0-123			1.46	20
1,2-Dibromoethane	0.125	0.123	0.126	98.4	101	74.0-128			2.41	20
1,2-Dichloroethane	0.125	0.115	0.113	92.0	90.4	65.0-131			1.75	20
Ethylbenzene	0.125	0.126	0.127	101	102	74.0-126			0.791	20
Methyl tert-butyl ether	0.125	0.133	0.130	106	104	66.0-132			2.28	20
Toluene	0.125	0.125	0.125	100	100	75.0-121			0.000	20
Xylenes, Total	0.375	0.366	0.371	97.6	98.9	72.0-127			1.36	20
(S) Toluene-d8				*98.2*	*98.8*	*75.0-131*				
(S) 4-Bromofluorobenzene				*102*	*102*	*67.0-138*				
(S) 1,2-Dichloroethane-d4				*95.1*	*95.4*	*70.0-130*				

Method Blank (MB)

(MB) R3595971-2 11/21/20 18:21

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
1,2-Dibromoethane	U		0.126	1.00
1,2-Dichloroethane	U		0.0819	1.00
Ethylbenzene	U		0.137	1.00
Methyl tert-butyl ether	U		0.101	1.00
Toluene	U		0.278	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	*105*			*80.0-120*
(S) 4-Bromofluorobenzene	*96.8*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*90.8*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3595971-1 11/21/20 17:44

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	4.60	92.0	70.0-123	
1,2-Dibromoethane	5.00	4.84	96.8	80.0-122	
1,2-Dichloroethane	5.00	4.55	91.0	70.0-128	
Ethylbenzene	5.00	4.56	91.2	79.0-123	
Methyl tert-butyl ether	5.00	5.04	101	68.0-125	
Toluene	5.00	4.68	93.6	79.0-120	
Xylenes, Total	15.0	13.3	88.7	79.0-123	
(S) Toluene-d8			*104*	*80.0-120*	
(S) 4-Bromofluorobenzene			*96.9*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*94.1*	*70.0-130*	

Method Blank (MB)

(MB) R3596537-2 11/22/20 05:29

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
(S) Toluene-d8	*126*	J1		*80.0-120*
(S) 4-Bromofluorobenzene	*111*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*82.3*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3596537-1 11/22/20 04:04

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	4.46	89.2	70.0-123	
(S) Toluene-d8			*103*	*80.0-120*	
(S) 4-Bromofluorobenzene			*91.4*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*84.6*	*70.0-130*	

Method Blank (MB)

(MB) R3597092-2 11/23/20 18:59

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
1,2-Dibromoethane	U		0.126	1.00
1,2-Dichloroethane	U		0.0819	1.00
Ethylbenzene	U		0.137	1.00
Methyl tert-butyl ether	U		0.101	1.00
Toluene	U		0.278	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	*99.6*			*80.0-120*
(S) 4-Bromofluorobenzene	*102*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*93.4*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3597092-1 11/23/20 18:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	5.15	103	70.0-123	
1,2-Dibromoethane	5.00	4.86	97.2	80.0-122	
1,2-Dichloroethane	5.00	4.37	87.4	70.0-128	
Ethylbenzene	5.00	4.60	92.0	79.0-123	
Methyl tert-butyl ether	5.00	5.45	109	68.0-125	
Toluene	5.00	4.56	91.2	79.0-120	
Xylenes, Total	15.0	13.7	91.3	79.0-123	
(S) Toluene-d8			*97.4*	*80.0-120*	
(S) 4-Bromofluorobenzene			*101*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*96.9*	*70.0-130*	

Method Blank (MB)

(MB) R3597262-4 11/24/20 16:55

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
(S) Toluene-d8	*102*			*80.0-120*
(S) 4-Bromofluorobenzene	*101*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*

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

(LCS) R3597262-1 11/24/20 15:37 • (LCSD) R3597262-2 11/24/20 15:57

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	5.71	5.54	114	111	70.0-123			3.02	20
(S) Toluene-d8				*102*	*101*	*80.0-120*				
(S) 4-Bromofluorobenzene				*103*	*102*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*118*	*109*	*70.0-130*				

Method Blank (MB)

(MB) R3595985-2 11/22/20 07:26

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
(S) o-Terphenyl	*94.0*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3595985-1 11/22/20 06:48

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	42.3	84.6	50.0-150	
(S) o-Terphenyl			*86.8*	*18.0-148*	

L1286045-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286045-03 11/23/20 03:24 • (MS) R3596187-1 11/23/20 03:36 • (MSD) R3596187-2 11/23/20 03:49

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	50.1	3.94	37.7	42.6	67.4	77.2	1	50.0-150			12.2	20
(S) o-Terphenyl					*69.5*	*81.4*		*18.0-148*				

Method Blank (MB)

(MB) R3596261-1 11/23/20 06:46

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
(S) o-Terphenyl	*88.7*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3596261-2 11/23/20 06:58

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	46.6	93.2	50.0-150	
(S) o-Terphenyl			*90.5*	*18.0-148*	

Method Blank (MB)

(MB) R3596684-1 11/23/20 23:30

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
(S) o-Terphenyl	*78.4*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3596684-2 11/23/20 23:43

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	43.9	87.8	50.0-150	
(S) o-Terphenyl			*89.2*	*18.0-148*	

L1285998-24 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1285998-24 11/24/20 10:23 • (MS) R3596684-3 11/24/20 13:01 • (MSD) R3596684-4 11/24/20 13:14

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	50.4	U	49.2	47.4	97.6	93.5	1	50.0-150			3.84	20
(S) o-Terphenyl					*65.6*	*64.8*		*18.0-148*				

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

Method Blank (MB)

(MB) R3597746-1 11/26/20 04:03

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
(S) o-Terphenyl	*74.6*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3597746-2 11/26/20 04:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	20.7	41.4	50.0-150	J4
(S) o-Terphenyl			*41.7*	*18.0-148*	

L1286649-38 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286649-38 11/26/20 17:44 • (MS) R3597746-3 11/26/20 17:57 • (MSD) R3597746-4 11/26/20 18:10

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	65.0	729	1230	1060	770	514	1	50.0-150	E V	E V	15.1	20
(S) o-Terphenyl					*95.4*	*73.8*		*18.0-148*				

Method Blank (MB)

(MB) R3597711-1 11/26/20 06:54

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
(S) o-Terphenyl	*97.1*			*18.0-148*

Laboratory Control Sample (LCS)

(LCS) R3597711-2 11/26/20 07:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	52.6	105	50.0-150	
(S) o-Terphenyl			*129*	*18.0-148*	

Method Blank (MB)

(MB) R3596723-1 11/23/20 16:34

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
PCB 1016	U		0.0118	0.0340
PCB 1221	U		0.0118	0.0340
PCB 1232	U		0.0118	0.0340
PCB 1242	U		0.0118	0.0340
PCB 1248	U		0.00738	0.0170
PCB 1254	U		0.00738	0.0170
PCB 1260	U		0.00738	0.0170
(S) Decachlorobiphenyl	*39.9*			*10.0-135*
(S) Tetrachloro-m-xylene	*49.2*			*10.0-139*

Laboratory Control Sample (LCS)

(LCS) R3596723-2 11/23/20 16:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
PCB 1260	0.167	0.0954	57.1	37.0-145	
PCB 1016	0.167	0.109	65.3	36.0-141	
(S) Decachlorobiphenyl			*57.8*	*10.0-135*	
(S) Tetrachloro-m-xylene			*70.3*	*10.0-139*	

L1286084-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1286084-01 11/23/20 17:36 • (MS) R3596723-3 11/23/20 17:46 • (MSD) R3596723-4 11/23/20 17:56

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
PCB 1260	0.167	U	0.122	0.145	73.1	86.8	1	10.0-160			17.2	38
PCB 1016	0.167	U	0.365	0.292	219	175	1	10.0-160	J5 P	J5 P	22.2	37
(S) Decachlorobiphenyl					*70.6*	*106*		*10.0-135*				
(S) Tetrachloro-m-xylene					*76.4*	*83.9*		*10.0-139*				

Method Blank (MB)

(MB) R3596183-2 11/22/20 02:13

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
(S) Nitrobenzene-d5	*139*			*14.0-149*
(S) 2-Fluorobiphenyl	*84.3*			*34.0-125*
(S) p-Terphenyl-d14	*102*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3596183-1 11/22/20 01:50

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzo(a)anthracene	0.0800	0.0674	84.3	45.0-120	
Benzo(a)pyrene	0.0800	0.0627	78.4	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0678	84.8	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0703	87.9	49.0-125	
Chrysene	0.0800	0.0691	86.4	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0625	78.1	47.0-125	
Indeno(1,2,3-cd)pyrene	0.0800	0.0657	82.1	46.0-125	
Naphthalene	0.0800	0.0716	89.5	50.0-120	
1-Methylnaphthalene	0.0800	0.0709	88.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0696	87.0	50.0-120	
(S) Nitrobenzene-d5			*144*	*14.0-149*	
(S) 2-Fluorobiphenyl			*96.5*	*34.0-125*	
(S) p-Terphenyl-d14			*111*	*23.0-120*	

Method Blank (MB)

(MB) R3596012-2 11/22/20 02:34

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
(S) Nitrobenzene-d5	*87.5*			*14.0-149*
(S) 2-Fluorobiphenyl	*73.1*			*34.0-125*
(S) p-Terphenyl-d14	*76.6*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3596012-1 11/22/20 02:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzo(a)anthracene	0.0800	0.0723	90.4	45.0-120	
Benzo(a)pyrene	0.0800	0.0640	80.0	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0649	81.1	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0692	86.5	49.0-125	
Chrysene	0.0800	0.0740	92.5	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0672	84.0	47.0-125	
Indeno(1,2,3-cd)pyrene	0.0800	0.0647	80.9	46.0-125	
Naphthalene	0.0800	0.0722	90.3	50.0-120	
1-Methylnaphthalene	0.0800	0.0713	89.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0687	85.9	50.0-120	
(S) Nitrobenzene-d5			*93.6*	*14.0-149*	
(S) 2-Fluorobiphenyl			*74.9*	*34.0-125*	
(S) p-Terphenyl-d14			*78.3*	*23.0-120*	

L1285956-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1285956-02 11/22/20 04:20 • (MS) R3596012-3 11/22/20 04:38 • (MSD) R3596012-4 11/22/20 04:55

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzo(a)anthracene	0.0760	U	0.0621	0.0658	81.7	87.0	1	10.0-139			5.79	30
Benzo(a)pyrene	0.0760	U	0.0594	0.0660	78.2	87.3	1	10.0-141			10.5	31
Benzo(b)fluoranthene	0.0760	U	0.0567	0.0632	74.6	83.6	1	10.0-140			10.8	36
Benzo(k)fluoranthene	0.0760	U	0.0612	0.0650	80.5	86.0	1	10.0-137			6.02	31
Chrysene	0.0760	U	0.0645	0.0708	84.9	93.7	1	10.0-145			9.31	30
Dibenz(a,h)anthracene	0.0760	U	0.0560	0.0601	73.7	79.5	1	10.0-132			7.06	31
Indeno(1,2,3-cd)pyrene	0.0760	U	0.0546	0.0627	71.8	82.9	1	10.0-137			13.8	32
Naphthalene	0.0760	U	0.0641	0.0694	84.3	91.8	1	10.0-135			7.94	27
1-Methylnaphthalene	0.0760	U	0.0646	0.0692	85.0	91.5	1	10.0-142			6.88	28
2-Methylnaphthalene	0.0760	U	0.0602	0.0665	79.2	88.0	1	10.0-137			9.94	28
(S) Nitrobenzene-d5					*81.7*	*88.7*		*14.0-149*				
(S) 2-Fluorobiphenyl					*68.9*	*78.7*		*34.0-125*				
(S) p-Terphenyl-d14					*74.5*	*80.6*		*23.0-120*				

Method Blank (MB)

(MB) R3596239-2 11/22/20 20:56

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
(S) Nitrobenzene-d5	*87.3*			*14.0-149*
(S) 2-Fluorobiphenyl	*58.8*			*34.0-125*
(S) p-Terphenyl-d14	*76.6*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3596239-1 11/22/20 20:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzo(a)anthracene	0.0800	0.0659	82.4	45.0-120	
Benzo(a)pyrene	0.0800	0.0605	75.6	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0607	75.9	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0813	102	49.0-125	
Chrysene	0.0800	0.0729	91.1	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0611	76.4	47.0-125	
Indeno(1,2,3-cd)pyrene	0.0800	0.0644	80.5	46.0-125	
Naphthalene	0.0800	0.0706	88.3	50.0-120	
1-Methylnaphthalene	0.0800	0.0665	83.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0644	80.5	50.0-120	
(S) Nitrobenzene-d5			*101*	*14.0-149*	
(S) 2-Fluorobiphenyl			*62.6*	*34.0-125*	
(S) p-Terphenyl-d14			*77.9*	*23.0-120*	

L1287633-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1287633-01 11/22/20 21:20 • (MS) R3596239-3 11/22/20 21:43 • (MSD) R3596239-4 11/22/20 22:07

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzo(a)anthracene	0.0764	U	0.0831	0.0628	109	81.3	1	10.0-139			27.8	30
Benzo(a)pyrene	0.0764	0.00211	0.0835	0.0634	107	79.4	1	10.0-141			27.4	31
Benzo(b)fluoranthene	0.0764	0.00247	0.0958	0.0639	122	79.6	1	10.0-140		J3	39.9	36
Benzo(k)fluoranthene	0.0764	U	0.0767	0.0641	100	83.0	1	10.0-137			17.9	31
Chrysene	0.0764	U	0.0836	0.0650	109	84.2	1	10.0-145			25.0	30
Dibenz(a,h)anthracene	0.0764	U	0.0620	0.0565	81.2	73.2	1	10.0-132			9.28	31
Indeno(1,2,3-cd)pyrene	0.0764	0.00189	0.0803	0.0604	103	75.8	1	10.0-137			28.3	32
Naphthalene	0.0764	U	0.0646	0.0653	84.6	84.6	1	10.0-135			1.08	27
1-Methylnaphthalene	0.0764	U	0.0635	0.0629	83.1	81.5	1	10.0-142			0.949	28
2-Methylnaphthalene	0.0764	U	0.0634	0.0650	83.0	84.2	1	10.0-137			2.49	28
(S) Nitrobenzene-d5					*100*	*124*		*14.0-149*				
(S) 2-Fluorobiphenyl					*61.8*	*71.8*		*34.0-125*				
(S) p-Terphenyl-d14					*71.1*	*80.9*		*23.0-120*				

Method Blank (MB)

(MB) R3597082-2 11/24/20 08:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
(S) Nitrobenzene-d5	*66.4*			*14.0-149*
(S) 2-Fluorobiphenyl	*63.1*			*34.0-125*
(S) p-Terphenyl-d14	*76.7*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3597082-1 11/24/20 08:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzo(a)anthracene	0.0800	0.0527	65.9	45.0-120	
Benzo(a)pyrene	0.0800	0.0474	59.3	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0487	60.9	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0547	68.4	49.0-125	
Chrysene	0.0800	0.0567	70.9	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0482	60.3	47.0-125	
Indeno(1,2,3-cd)pyrene	0.0800	0.0463	57.9	46.0-125	
Naphthalene	0.0800	0.0466	58.3	50.0-120	
1-Methylnaphthalene	0.0800	0.0485	60.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0473	59.1	50.0-120	
(S) Nitrobenzene-d5			*58.3*	*14.0-149*	
(S) 2-Fluorobiphenyl			*54.0*	*34.0-125*	
(S) p-Terphenyl-d14			*59.4*	*23.0-120*	

L1287485-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1287485-04 11/24/20 15:10 • (MS) R3597082-3 11/24/20 15:27 • (MSD) R3597082-4 11/24/20 15:45

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzo(a)anthracene	0.101	U	0.0655	0.0666	64.6	65.4	1	10.0-139			1.78	30
Benzo(a)pyrene	0.101	U	0.0639	0.0642	63.0	62.9	1	10.0-141			0.408	31
Benzo(b)fluoranthene	0.101	U	0.0605	0.0608	59.7	59.6	1	10.0-140			0.431	36
Benzo(k)fluoranthene	0.101	U	0.0632	0.0613	62.4	60.1	1	10.0-137			3.15	31
Chrysene	0.101	U	0.0751	0.0734	74.1	72.1	1	10.0-145			2.29	30
Dibenz(a,h)anthracene	0.101	U	0.0605	0.0604	59.7	59.2	1	10.0-132			0.216	31
Indeno(1,2,3-cd)pyrene	0.101	U	0.0589	0.0595	58.1	58.3	1	10.0-137			0.883	32
Naphthalene	0.101	0.0105	0.0427	0.0597	31.8	48.3	1	10.0-135		J3	33.2	27
1-Methylnaphthalene	0.101	U	0.0439	0.0536	43.3	52.6	1	10.0-142			19.8	28
2-Methylnaphthalene	0.101	U	0.0439	0.0554	43.3	54.4	1	10.0-137			23.2	28
(S) Nitrobenzene-d5					*75.6*	*57.4*		*14.0-149*				
(S) 2-Fluorobiphenyl					*66.9*	*50.8*		*34.0-125*				
(S) p-Terphenyl-d14					*73.2*	*55.8*		*23.0-120*				

Method Blank (MB)

(MB) R3597187-2 11/24/20 22:11

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzo(a)anthracene	U		0.00175	0.00606
Benzo(a)pyrene	U		0.00181	0.00606
Benzo(b)fluoranthene	U		0.00155	0.00606
Benzo(k)fluoranthene	U		0.00217	0.00606
Chrysene	U		0.00234	0.00606
Dibenz(a,h)anthracene	U		0.00174	0.00606
Indeno(1,2,3-cd)pyrene	U		0.00183	0.00606
Naphthalene	U		0.00412	0.0202
1-Methylnaphthalene	U		0.00453	0.0202
2-Methylnaphthalene	U		0.00431	0.0202
(S) Nitrobenzene-d5	*48.3*			*14.0-149*
(S) 2-Fluorobiphenyl	*44.2*			*34.0-125*
(S) p-Terphenyl-d14	*47.7*			*23.0-120*

Laboratory Control Sample (LCS)

(LCS) R3597123-1 11/24/20 18:33

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzo(a)anthracene	0.0812	0.0768	94.6	45.0-120	
Benzo(a)pyrene	0.0812	0.0722	88.9	42.0-120	
Benzo(b)fluoranthene	0.0812	0.0745	91.7	42.0-121	
Benzo(k)fluoranthene	0.0812	0.0841	104	49.0-125	
Chrysene	0.0812	0.0789	97.2	49.0-122	
Dibenz(a,h)anthracene	0.0812	0.0803	98.9	47.0-125	
Indeno(1,2,3-cd)pyrene	0.0812	0.0787	96.9	46.0-125	
Naphthalene	0.0812	0.0732	90.1	50.0-120	
1-Methylnaphthalene	0.0812	0.0811	99.9	51.0-121	
2-Methylnaphthalene	0.0812	0.0805	99.1	50.0-120	
(S) Nitrobenzene-d5			*62.6*	*14.0-149*	
(S) 2-Fluorobiphenyl			*59.0*	*34.0-125*	
(S) p-Terphenyl-d14			*67.3*	*23.0-120*	

Laboratory Control Sample (LCS)

(LCS) R3597187-1 11/24/20 21:53

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzo(a)anthracene	0.0812	0.0696	85.7	45.0-120	
Benzo(a)pyrene	0.0812	0.0617	76.0	42.0-120	
Benzo(b)fluoranthene	0.0812	0.0682	84.0	42.0-121	
Benzo(k)fluoranthene	0.0812	0.0716	88.2	49.0-125	
Chrysene	0.0812	0.0766	94.3	49.0-122	
Dibenz(a,h)anthracene	0.0812	0.0650	80.0	47.0-125	
Indeno(1,2,3-cd)pyrene	0.0812	0.0642	79.1	46.0-125	
Naphthalene	0.0812	0.0743	91.5	50.0-120	
1-Methylnaphthalene	0.0812	0.0754	92.9	51.0-121	
2-Methylnaphthalene	0.0812	0.0709	87.3	50.0-120	
(S) Nitrobenzene-d5			*72.4*	*14.0-149*	
(S) 2-Fluorobiphenyl			*58.1*	*34.0-125*	
(S) p-Terphenyl-d14			*60.9*	*23.0-120*	

L1285890-27 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1285890-27 11/24/20 22:28 • (MS) R3597187-3 11/24/20 22:45 • (MSD) R3597187-4 11/24/20 23:02

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzo(a)anthracene	0.0800	U	0.0639	0.0683	79.9	85.4	1	10.0-139			6.66	30
Benzo(a)pyrene	0.0800	U	0.0642	0.0682	80.3	85.3	1	10.0-141			6.04	31
Benzo(b)fluoranthene	0.0800	U	0.0627	0.0677	78.4	84.6	1	10.0-140			7.67	36
Benzo(k)fluoranthene	0.0800	U	0.0662	0.0712	82.8	89.0	1	10.0-137			7.28	31
Chrysene	0.0800	U	0.0697	0.0758	87.1	94.8	1	10.0-145			8.38	30
Dibenz(a,h)anthracene	0.0800	U	0.0589	0.0638	73.6	79.8	1	10.0-132			7.99	31
Indeno(1,2,3-cd)pyrene	0.0800	U	0.0583	0.0630	72.9	78.8	1	10.0-137			7.75	32
Naphthalene	0.0800	U	0.0646	0.0686	80.7	85.8	1	10.0-135			6.01	27
1-Methylnaphthalene	0.0800	U	0.0666	0.0691	83.3	86.4	1	10.0-142			3.68	28
2-Methylnaphthalene	0.0800	U	0.0617	0.0656	77.1	82.0	1	10.0-137			6.13	28
(S) Nitrobenzene-d5					*64.0*	*68.5*		*14.0-149*				
(S) 2-Fluorobiphenyl					*60.9*	*61.8*		*34.0-125*				
(S) p-Terphenyl-d14					*67.1*	*71.1*		*23.0-120*				

Guide to Reading and Understanding Your Laboratory Report

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

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

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

Qualifier	Description
B	The same analyte is found in the associated blank.
C3	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
C4	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Data is likely to show a low bias concerning the result.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
P	RPD between the primary and confirmatory analysis exceeded 40%.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	90010	South Carolina	84004
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana [1]	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

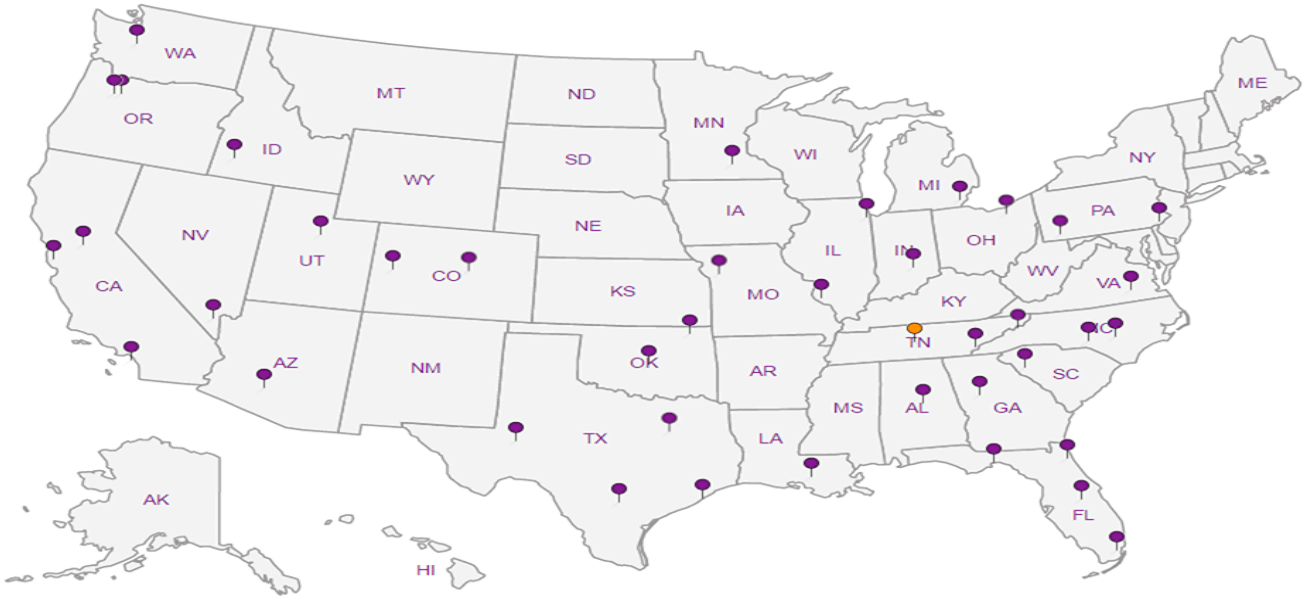
Third Party Federal Accreditations

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

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

Our Locations

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



Leidos Inc.- Bothell, WA

18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Billing Information:
Accounts Payable
18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Pres Chk

Report to: Russ Shropshire

Email To: russell.s.shropshire@leidos.com

Project Description: WA-02 Chelan

City/State Collected: Chelan, WA

Please Circle: (PT) MT CT ET

Phone: 425-482-3323

Client Project # —

Lab Project # LEIDOSBWA-CHELAN

Collected by (print): Tom Dubé

Site/Facility ID # 96590

P.O. # P010246476

Collected by (signature): Tom Dubé

Immediately Packed on Ice N ___ Y ✓

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

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cu,Ni,Pb,Zn 6010 8ozClr-NoPres (2 jars = Pb only)	HVOCs 8260 40mlAmb/MeOH10ml/Syr	NWTPHDX NOSGT 8ozClr-NoPres no silica gel	NWTPHGX 40mlAmb/MeOH10ml/Syr	PCBs 8082 4ozClr-NoPres	VOCs 8260* 40mlAmb/MeOH10ml/Syr BTEX, MTBE, EDB, EDC only	cPAHs/Naph 8270ESIM 4ozClr-NoPres	VOC 8260 HVOCs, BTEX, MTBE, EDB, EDC	8082 PCB Aroclors	Remarks	Sample # (lab only)
SRI5-1-S-15-201110	G	SS		11-10-20	1011	2	X		X	X		X					-01
SRI5-1-S-16.5-201110	G	SS		11-10-20	1047	3	X	X	X	X	X		X	X	X		-02
SRI5-1-S-24.5-201110	G	SS		11-10-20	1100	2	X		X	X		X					-03
SRI5-2-S-11.5-201110	G	SS		11-10-20	1403	3	X	X	X	X	X		X	X	X		-04
SRI5-2-S-24.5-201110	G	SS		11-10-20	1436	2	X		X	X		X					-05
SRI5-3-S-10-201110	G	SS		11-10-20	1523	3	X	X	X	X	X		X	X	X		-06
SRI5-3-S-17-201110	G	SS		11-10-20	1545	2	X		X	X		X					-07
SRI5-3-S-25-201110	G	SS		11-10-20	1616	2	X		X	X		X					-08
SRI5-3-S-34.5-201110	G	SS		11-10-20	1644	2	X		X	X		X					-09
SRI5-4-S-14.5-201108	G	SS		11-8-20	0925	2	X		X	X		X					-10

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

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

SDG # L1281649

Table # A061

Acctnum: LEIDOSBWA

Template: T176925

Prelogin: P807112

PM: 110 - Brian Ford

PB:

Shipped Via:

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

Remarks: *VOC 8260 list=BTEX, MTBE, EDB, EDC, and n-hexane by EPA 8260.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS X FedEx __ Courier _____

Tracking # 114522353764, 3742, 3786, 3709, 3720

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Tom Dubé	11-16-20	1530	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			B. Barnes

Trip Blank Received: (Yes) / No
11
HCl / MeOH
TBR

Temp 1092 °C
672=8

Bottles Received: 150

Date: 11-17-20 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: (NCF) / OK

Leidos Inc.- Bothell, WA

18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Billing Information:
Accounts Payable
18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Pres Chk

Report to: Russ Shropshire

Email To: russell.s.shropshire@leidos.com

Project Description: WA-02 Chelan

City/State Collected: Chelan, WA

Please Circle: (PT) MT CT ET

Phone: 425-482-3323

Client Project # —

Lab Project # LEIDOSBWA-CHELAN

Collected by (print): Tom Dubé

Site/Facility ID # 96590

P.O. # P010246476

Collected by (signature): Tom Dubé

Immediately Packed on Ice N ___ Y ✓

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

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 2 of 7

Pace Analytical®
National Center for Testing & Innovation

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

SDG # L1286049

Table #

Acctnum: LEIDOSBWA

Template: T176925

Prelogin: P807112

PM: 110 - Brian Ford

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cu,Ni,Pb,Zn 6010 8ozClr-NoPres (2 jars = Pb only)	HVOCs 8260 40mlAmb/MeOH10ml/Syr	NWTPHDX NOSGT 8ozClr-NoPres no silica gel	NWTPHGX 40mlAmb/MeOH10ml/Syr	PCBs 8082 4ozClr-NoPres	VOCs 8260* 40mlAmb/MeOH10ml/Syr BTEX, MTBE, EDB, EDC only	cPAHs/Naph 8270ESIM 4ozClr-NoPres	VOCs 8260 HVOCs, BTEX, MTBE, EDB, EDC			Remarks	Sample # (lab only)
SRI5-4-S-15-201108	G	SS		11-8-20	0940	2	X		X	X		X		TR				-11
SRI5-4-S-17-201108	G	SS		11-8-20	1011	2	X		X	X		X						-12
SRI5-4-S-24.5-201108	G	SS		11-8-20	1100	2	X		X	X		X						-13
SRI5-5-S-14.5-201108	G	SS		11-8-20	1303	2	X		X	X		X						-14
SRI5-5-S-17-201108	G	SS		11-8-20	1323	3	X	X	X	X	X		X	X				-15
SRI5-5-S-24-201108	G	SS		11-8-20	1409	3	X	X	X	X	X		X	X				-16
DUP-1-S-201108	G	SS		11-8-20	1412	3	X	X	X	X	X		X	X				-17
SRI5-5-S-29.5-201108	G	SS		11-8-20	1445	2	X		X	X		X						-18
SRI5-6-S-16-201108	G	SS		11-8-20	1605	3	X	X	X	X	X		X	X				-19
SRI5-6-S-23.5-201108	G	SS		11-8-20	1630	2	X		X	X		X						-20

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

Remarks: *VOC 8260 list=BTEX, MTBE, EDB, EDC, and n-hexane by EPA 8260.

pH ___ Temp ___

Flow ___ Other ___

Samples returned via: __ UPS X FedEx __ Courier ___

Tracking #

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date: 11-16-20	Time: 1530	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4PA2 °C 6.2-8	Bottles Received: 150
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) B. Barnes	Date: 11-17-20	Time: 0900

Hold: Condition: (NCF) / OK

Leidos Inc.- Bothell, WA

18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Billing Information:
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18939 120th Avenue NE
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Bothell, WA 98011

Pres Chk

Report to: Russ Shropshire

Email To: russell.s.shropshire@leidos.com

Project Description: WA-02 Chelan

City/State Collected: Chelan, WA

Please Circle: (PT) MT CT ET

Phone: 425-482-3323

Client Project # —

Lab Project # LEIDOSBWA-CHELAN

Collected by (print): Tom Dubé

Site/Facility ID # 96590

P.O. #

Collected by (signature): Thomas Dubé

Immediately Packed on Ice N ___ Y ✓

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

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Chain of Custody Page 3 of 7

Pace Analytical®
National Center for Testing & Innovation

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

SDG # L1286649

Table #

Acctnum: LEIDOSBWA

Template: T176925

Prelogin: P807112

PM: 110 - Brian Ford

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cu,Ni,Pb,Zn 6010 8ozClr-NoPres (2 jars = Pb only)	HVOCs 8260 40mlAmb/MeOH10ml/Syr	NWTPHDX NOSGT 8ozClr-NoPres	NWTPHGX 40mlAmb/MeOH10ml/Syr	PCBs 8082 4ozClr-NoPres	VOCs 8260* 40mlAmb/MeOH10ml/Syr BTEX, MTBE, EDB, EDC only	cPAHs/Naph 8270ESIM 4ozClr-NoPres	VOCs 8260 HVOCs, BTEX, MTBE, EDB, EDC	Remarks	Sample # (lab only)
SRI5-7-S-15-201111	G	SS		11/11/20	1134	2	X		X	X		X		TB		-21
SRI5-7-S-24.5-201111	G	SS		11/11/20	1212	2	X		X	X		X				-22
SRI5-8-S-14.5-201111	G	SS		11/11/20	1408	3	X	X	X	X	X		X	X		-23
SRI5-8-S-19.5-201111	G	SS		11/11/20	1420	2	X		X	X		X				-24
SRI5-8-S-29.5-201111	G	SS		11/11/20	1509	2	X		X	X		X				-25
SRI5-9-S-8-201110	G	SS		11/10/20	1625	2	X		X	X		X				-26
SRI5-9-S-15-201111	G	SS		11/11/20	1609	3	X	X	X	X	X		X	X		-27
SRI5-9-S-19-201111	G	SS		11/11/20	1627	2	X		X	X		X				-28
SRI5-9-S-27-201111	G	SS		11/11/20	1638	2	X		X	X		X				-29
SRI5-10-S-8-201112	G	SS		11/12/20	0851	2	X		X	X		X				-36

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

Remarks:*VOC 8260 list=BTEX, MTBE, EDB, EDC, and n-hexane by EPA 8260.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Thomas Dubé	11-16-20	1530	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			B. Barnes

Trip Blank Received: (Yes) / No
HCl / MeoH
TBR
11

Temp: HNP2 °C .6 .9 -.5

Bottles Received: 150

Date: 11-17-20 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: (NCF) / OK

Leidos Inc.- Bothell, WA

18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Billing Information:
Accounts Payable
18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Pres Chk

Report to: **Russ Shropshire**

Email To: **russell.s.shropshire@leidos.com**

Project Description: WA-02 Chelan

City/State Collected: Chelan, WA

Please Circle: (PT) MT, CT ET

Phone: **425-482-3323**

Client Project # —

Lab Project # **LEIDOSBWA-CHELAN**

Collected by (print): Tom Dubé

Site/Facility ID # 96590

P.O. # PO10246476

Collected by (signature): Thomas Dubé

Immediately Packed on Ice N ___ Y ✓

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

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cu,Ni,Pb,Zn 6010 8ozClr-NoPres (2 jars = Pb only)	HVOCs 8260 40mlAmb/MeOH10ml/Syr	NWTPHDX NOSGT 8ozClr-NoPres nosilica gel	NWTPHGX 40mlAmb/MeOH10ml/Syr	PCBs 8082 4ozClr-NoPres	VOCs 8260* 40mlAmb/MeOH10ml/Syr BTEX, MTBE, EDB, EDC only	cPAHs/Naph 8270ESIM 4ozClr-NoPres	VOCs 8260 TBA, DIPE, TAME, ETBE, TBF, TAA, BTEX, MTBE, EDB, EDC			Remarks	Sample # (lab only)
SRI5-10-S-14,5-201112	G	SS		11/12/20	0909	3	X	X	X	X	X		X					-31
SRI5-10-S-18-201112	G	SS		11/12/20	0943	2	X		X	X		X						-32
DUP-2-201112	G	SS		11/12/20	—	2	X		X	X		X						-33
SRI5-10-S-21-201112	G	SS		11/12/20	1031	2	X		X	X		X						-34
SRI5-10-S-34,5-201112	G	SS		11/12/20	1110	2	X		X	X		X						-35
SRI5-11-S-8-201112	G	SS		11/12/20	1340	2	X		X	X		X						-36
SRI5-11-S-13,5-201112	G	SS		11/12/20	1350	2	X		X	X		X						-37
SRI5-11-S-15-201112	G	SS		11/12/20	1428	3	X	X	X	X	X		X					-38
DUP-3-201112	G	SS		11/12/20	1200	3	X	X	X	X	X		X					-39
SRI5-11-S-29,5-201112	G	SS		11/12/20	1456	2	X		X	X		X						-40

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

Remarks: *VOC 8260 list=BTEX, MTBE, EDB, EDC, and n-hexane by EPA 8260.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS X FedEx __ Courier _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Jon Dubé	11-16-20	1530	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			B. Banas

Trip Blank Received: (Yes) / No
HCl / MeoH
TBR

Temp: 1.4, 6.2=8 °C

Bottles Received: 150

Date: 11-17-20 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: (NCF) / OK

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

Chain of Custody Page 4 of 7

Pace Analytical®
National Center for Testing & Innovation

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

SDG # L1286649

Table #

Acctnum: **LEIDOSBWA**

Template: **T176925**

Prelogin: **P807112**

PM: **110 - Brian Ford**

PB:

Shipped Via:

Leidos Inc.- Bothell, WA

18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Billing Information:
Accounts Payable
18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Pres Chk

Report to: Russ Shropshire

Email To: russell.s.shropshire@leidos.com

Project Description: WA-02 Chelan

City/State Collected: Chelan, WA

Please Circle: (PT) MT CT ET

Phone: 425-482-3323

Client Project #: —

Lab Project #: LEIDOSBWA-CHELAN

Collected by (print): Tom Dubé

Site/Facility ID #: 96590

P.O. #: P010246476

Collected by (signature): Tom Dubé

Immediately Packed on Ice N ___ Y ✓

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

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cu,Ni,Pb,Zn 6010 8ozClr-NoPres (2 jars = Pb only)	HVOCs 8260 40mlAmb/MeOH10ml/Syr	NWTPHDX NOSGT 8ozClr-NoPres no silica gel	NWTPHGX 40mlAmb/MeOH10ml/Syr	PCBs 8082 4ozClr-NoPres	VOCs 8260* 40mlAmb/MeOH10ml/Syr BTEX, MTBE, EDB, EDC only	cPAHs/Naph 8270ESIM 4ozClr-NoPres	Remarks	Sample # (lab only)
UHP-1-S-12-201109	G	SS		11/9/20	0855	2	X		X	X		X			-41
UHP-2-S-12-201109	G	SS		11/9/20	1132	2	X		X	X		X			-42
UHP-3-S-12,5-201109	G	SS		11/9/20	1338	2	X		X	X		X			-43
UHP-3-S-17-201109	G	SS		11/9/20	1345	2	X		X	X		X			-44
UHP-4-S-14,5-201109	G	SS		11/9/20	1505	2	X		X	X		X			-45
UHP-4-S-17,5-201109	G	SS		11/9/20	1513	2	X		X	X		X			-46
UHP-5-S-7,5-201108	G	SS		11/8/20	1122	2	X		X	X		X			-47
UHP-5-S-14,5-201111	G	SS		11/11/20	0921	2	X		X	X		X			-48
UHP-6-S-13-201110	G	SS		11/10/20	0822	2	X		X	X		X			-49
SVP-1-S-5-201108	G	SS		11/8/20	0840	2	X		X	X		X			-50

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

Remarks:*VOC 8260 list=BTEX, MTBE, EDB, EDC, and n-hexane by EPA 8260.

pH ___ Temp ___

Flow ___ Other ___

Samples returned via: ___ UPS ✓ FedEx ___ Courier ___

Tracking #

Relinquished by : (Signature) — Date: 11-16-20 — Time: 1530

Received by: (Signature)

Relinquished by : (Signature) — Date: — Time:

Received by: (Signature)

Relinquished by : (Signature) — Date: — Time:

Received for lab by: (Signature) B. Barlas — Date: 11-17-20 — Time: 0900

Trip Blank Received: (Yes) No — HCl / MeoH — TBR

Temp: MOM °C — Bottles Received: 150

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

If preservation required by Login: Date/Time

Hold:

Condition: (NCF) / OK

Chain of Custody Page 5 of 7

Pace Analytical®
National Center for Testing & Innovation

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

SDG # L1286649

Table #

Acctnum: LEIDOSBWA

Template: T176925

Prelogin: P807112

PM: 110 - Brian Ford

PB:

Shipped Via:

Leidos Inc.- Bothell, WA

18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Billing Information:
Accounts Payable
18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Pres Chk

Report to: Russ Shropshire

Email To: russell.s.shropshire@leidos.com

Project Description: WA-02 Chelan

City/State Collected: Chelan, WA

Please Circle: (PT) MT CT ET

Phone: 425-482-3323

Client Project # —

Lab Project # LEIDOSBWA-CHELAN

Collected by (print): Tom DuBe

Site/Facility ID # 96590

P.O. # P010246476

Collected by (signature): Thomas DuBe

Immediately Packed on Ice N ___ Y V

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

Quote #

Date Results Needed

Analysis / Container / Preservative

Chain of Custody Page 6 of 7

Pace Analytical®
National Center for Testing & Innovation

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

SDG # L1286649

Table #

Acctnum: LEIDOSBWA

Template: T176925

Prelogin: P807112

PM: 110 - Brian Ford

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cu,Ni,Pb,Zn 6010 8ozClr-NoPres (2 jars=Pb only)	HVOCs 8260 40mlAmb/MeOH10ml/Syr	NWTPHDX NOSGT 8ozClr-NoPres no silica gel	NWTPHGX 40mlAmb/MeOH10ml/Syr	PCBs 8082 4ozClr-NoPres	VOCs 8260* 40mlAmb/MeOH10ml/Syr BTEX, MTBE, EDB, EDC only	cPAHs/Naph 8270ESIM 4ozClr-NoPres	8260 Benzene only	pH		Remarks	Sample # (lab only)
SVP-2-S-9-201109	G	SS		11/9/20	1348	2	X		X	X								-51
221EW-UST2-S-201108	G	SS		11/8/20	1240	3	X	X	X	X	X		X					-52
ER-1-201112	G	SSW		11/12/20	0835	9				X		X						-53
ER-1-201112	G	SSW		11/12/20	1215	9				X		X						-54
PCW-1-W-201113	G	SSWW		11/13/20	1010	5	X							X	X			-55
PCW-2-W-201113	G	SSWW		11/13/20	1035	5	X							X	X			-56
PCW-3-W-201113	G	SSWW		11/13/20	1040	5	X							X	X			-57
TB-2-201108	G	SSW		11/8/20	1200	2				X								-58
TB-3-201108	G	SSW		11/8/20	1200	2				X								-59
TB-4-201108	G	SSW		11/8/20	1200	2				X								-60

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

Remarks: *VOC 8260 list=BTEX, MTBE, EDB, EDC, and n-hexane by EPA 8260.

pH ____ Temp ____

Flow ____ Other ____

Samples returned via:
__ UPS X FedEx __ Courier ____

Tracking #

Relinquished by : (Signature) Thomas DuBe — Date: 11-16-20 — Time: 1530

Received by: (Signature)

Relinquished by : (Signature) — Date: — Time:

Received by: (Signature)

Relinquished by : (Signature) — Date: — Time:

Received for lab by: (Signature) B. Barnes

Trip Blank Received: (Yes) / No
HCl / MeOH
TBR

Temp: IR#2 °C -0.4,2.5

Bottles Received: 150

Date: 11-17-20 Time: 0900

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y N
COC Signed/Accurate:		Y N
Bottles arrive intact:		Y N
Correct bottles used:		Y N
Sufficient volume sent:		Y N
If Applicable		
VOA Zero Headspace:		Y N
Preservation Correct/Checked:		Y N
RAD Screen <0.5 mR/hr:		Y N

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Leidos Inc.- Bothell, WA

18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Billing Information:
Accounts Payable
18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Pres Chk

Report to: **Russ Shropshire**

Email To: **russell.s.shropshire@leidos.com**

Project Description: WA-02 Chelan

City/State Collected: Chelan, WA

Please Circle: (PT) MT CT ET

Phone: **425-482-3323**

Client Project #: —

Lab Project #: **LEIDOSBWA-CHELAN**

Collected by (print): Tom Dubé

Site/Facility ID #: 96590

P.O. #: P0102464 76

Collected by (signature): Tom Dubé

Immediately Packed on Ice N ___ Y ✓

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

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cu,Ni,Pb,Zn 6010 8ozClr-NoPres	HVOCs 8260 40mlAmb/MeOH10ml/Syr	NWTPHDX NOSGT 8ozClr-NoPres	NWTPHGX 40mlAmb/MeOH10ml/Syr	PCBs 8082 4ozClr-NoPres	VOCs 8260* 40mlAmb/MeOH10ml/Syr BTEX, MTBE, EDB, EDC only	cPAHs/Naph 8270ESIM 4ozClr-NoPres	Remarks	Sample # (lab only)
TB-5-20 1108	G	~~SS~~ W		11/8/20	1200	2			X	X		X			-61
TB-6-201108	G	DW		11/8/20	1200	3			X	X		X			-62

Thomas Dubé 11-16-20

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

Remarks: *VOC 8260 list=BTEX, MTBE, EDB, EDC, and n-hexane by EPA 8260.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via: __ UPS ✓ FedEx __ Courier _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Thomas Dubé	11-16-20	1530	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			B. Barua

Trip Blank Received: Yes / (No) HCl / MeOH TBR

Temp: 1.2 °C Bottles Received: 150

Date: 11-17-20 Time: 0900

If preservation required by Login: Date/Time

Hold:

Condition: (NCF) / OK

Sample Receipt Checklist

COC Seal Present/Intact:	NP	Y / N
COC Signed/Accurate:		Y / N
Bottles arrive intact:		Y / N
Correct bottles used:		Y / N
Sufficient volume sent:		Y / N
If Applicable		
VOA Zero Headspace:		Y / N
Preservation Correct/Checked:		Y / N
RAD Screen <0.5 mR/hr:		Y / N

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

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

SDG # L1281649

Table #

Acctnum: **LEIDOSBWA**

Template: **T176925**

Prelogin: **P807112**

PM: **110 - Brian Ford**

PB:

Shipped Via:

Leidos Inc.- Bothell, WA

18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Billing Information:
Accounts Payable
18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Pres Chk

Report to: Russ Shropshire

Email To: russell.s.shropshire@leidos.com

Project Description: WA-02 Chelan

City/State Collected: Chelan, WA

Please Circle: (PT) MT CT ET

Phone: 425-482-3323

Client Project # ——

Lab Project # LEIDOSBWA-CHELAN

Collected by (print): Tom Dubé

Site/Facility ID # 96590

P.O. # P010246476

Collected by (signature): Tom Dubé

Immediately Packed on Ice N ___ Y ✓

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

Date Results Needed

Quote #

Analysis / Container / Preservative

Chain of Custody Page 1 of 7

Pace Analytical® National Center for Testing & Innovation

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

SDG #

Table #

Acctnum: LEIDOSBWA

Template: T176925

Prelogin: P807112

PM: 110 - Brian Ford

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cu,Ni,Pb,Zn 6010 8ozClr-NoPres (Cu,Pb,Zn = Pb only)	HVOCs 8260 40mlAmb/MeOH10ml/Syr	NWTPHDX NOSGT 8ozClr-NoPres no silica gel	NWTPHGX 40mlAmb/MeOH10ml/Syr	PCBs 8082 4ozClr-NoPres	VOCs 8260* 40mlAmb/MeOH10ml/Syr BTEX, MTBE, EDB, EDC only	cPAHs/Naph 8270ESIM 4ozClr-NoPres	VOCs 8260 HVOCs, BTEX, MTBE, EDB, EDC	8082 PCB Aroclors	Remarks	Sample # (lab only)
SRI5-1-S-15-201110	G	SS		11-10-20	1011	2	X		X	X		X					
SRI5-1-S-16.5-201110	G	SS		11-10-20	1047	3	X	X	X	X	X	X	X	X	X		
SRI5-1-S-24.5-201110	G	SS		11-10-20	1100	2	X		X	X		X					
SRI5-2-S-11.5-201110	G	SS		11-10-20	1403	3	X	X	X	X	X	X	X	X	X		
SRI5-2-S-24.5-201110	G	SS		11-10-20	1436	2	X		X	X		X					
SRI5-3-S-10-201107	G	SS		11-10-20	1523	3	X	X	X	X	X	X	X	X	X		
SRI5-3-S-17-201110	G	SS		11-10-20	1545	2	X		X	X		X					
SRI5-3-S-25-201110	G	SS		11-10-20	1616	2	X		X	X		X					
SRI5-3-S-34.5-201110	G	SS		11-10-20	1644	2	X		X	X		X					
SRI5-4-S-14.5-201108	G	SS		11-8-20	0945	2	X		X	X		X					

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

Remarks: *VOC 8260 list=BTEX, MTBE, EDB, EDC, and n-hexane by EPA 8260.

revised COC received 11/17/20-bjf

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist

COC Seal Present/Intact:	__NP __Y __N
COC Signed/Accurate:	__Y __N
Bottles arrive intact:	__Y __N
Correct bottles used:	__Y __N
Sufficient volume sent:	__Y __N
If Applicable	
VOA Zero Headspace:	__Y __N
Preservation Correct/Checked:	__Y __N
RAD Screen <0.5 mR/hr:	__Y __N

Relinquished by : (Signature) Tom Dubé	Date: 11-16-20	Time: 1530	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

Leidos Inc.- Bothell, WA

18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Billing Information:
Accounts Payable
18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Report to: **Russ Shropshire**

Email To: **russell.s.shropshire@leidos.com**

Project Description: WA-02 Chelan

City/State Collected: Chelan, WA

Please Circle: PT MT CT ET

Phone: **425-482-3323**

Client Project #

Lab Project # **LEIDOSBWA-CHELAN**

Collected by (print): Tom Dubé

Site/Facility ID # 96590

P.O. # P010246476

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

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

Date Results Needed

Quote #

Analysis / Container / Preservative

Chain of Custody Page 2 of 2

Pace Analytical® National Center for Testing & Innovation

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

SDG #

Table #

Acctnum: **LEIDOSBWA**
Template: **T176925**
Prelogin: **P807112**
PM: **110 - Brian Ford**
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cu,Ni,Pb,Zn 6010 8ozClr-NoPres (2 jars = Pb only)	HVOCs 8260 40mlAmb/MeOH 10ml/Syr	NWTPHDX NOSGT 8ozClr-NoPres no Silica gel	NWTPHGX 40mlAmb/MeOH10ml/Syr	PCBs 8082 4ozClr-NoPres	VOCs 8260* 40mlAmb/MeOH10ml/Syr BTEX, MTBE, EDB, EDC only	cPAHs/Naph 8270ESIM 4ozClr-NoPres	VOCs 8260 HVOCs BTEX, MTBE, EDB, EDC	Remarks	Sample # (lab only)
SRI5-4-S-15-201108	G	SS		11-8-20	0940	2	X		X	X		X				
SRI5-4-S-17-201108	G	SS		11-8-20	1011	2	X		X	X		X				
SRI5-4-S-24.5-201108	G	SS		11-8-20	1100	2	X		X	X		X				
SRI5-5-S-14.5-201108	G	SS		11-8-20	1303	2	X		X	X		X				
SRI5-5-S-17-201108	G	SS		11-8-20	1323	3	X	X	X	X	X	X	X	X		
SRI5-5-S-24-201108	G	SS		11-8-20	1409	3	X	X	X	X	X	X	X	X		
DUP-1-S-201108	G	SS		11-8-20	1412	3	X	X	X	X	X	X	X	X		
SRI5-5-S-29.5-201108	G	SS		11-8-20	1445	2	X		X	X		X				
SRI5-6-S-16-201108	G	SS		11-8-20	1605	3	X	X	X	X	X	X	X	X		
SRI5-6-S-23.5-201108	G	SS		11-8-20	1630	2	X		X	X		X				

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

Remarks:*VOC 8260 list=BTEX, MTBE, EDB, EDC, and n-hexane by EPA 8260.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Tom Dubé	11-16-20	1530			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / OK

Leidos Inc.- Bothell, WA

18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Billing Information:
Accounts Payable
18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Pres Chk

Report to: **Russ Shropshire**

Email To: **russell.s.shropshire@leidos.com**

Project Description: WA-02 Chelan

City/State Collected: Chelan, WA

Please Circle: (PT) MT CT ET

Phone: **425-482-3323**

Client Project #: —

Lab Project #: **LEIDOSBWA-CHELAN**

Collected by (print): Tom Dubé

Site/Facility ID #: 96590

P.O. #

Collected by (signature): Thomas Dubé
Immediately Packed on Ice N ___ Y ✓

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

Date Results Needed

Quote #

Analysis / Container / Preservative

Chain of Custody Page 3 of 4

Pace Analytical® National Center for Testing & Innovation

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

SDG #

Table #

Acctnum: **LEIDOSBWA**
Template: **T176925**
Prelogin: **P807112**
PM: **110 - Brian Ford**
PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cu,Ni,Pb,Zn 6010 8ozClr-NoPres (2 jars = Pb only)	HVOCs 8260 40mlAmb/MeOH 10ml/Syr	NWTPHDX NOSGT 8ozClr-NoPres	NWTPHGX 40mlAmb/MeOH10ml/Syr	PCBs 8082 4ozClr-NoPres	VOCs 8260* 40mlAmb/MeOH10ml/Syr BTEX, MTBE, EDB, EDC only	cPAHs/Naph 8270ESIM 4ozClr-NoPres	VOCs 8260 HVOCs, BTEX, MTBE, EDB, EDC			Remarks	Sample # (lab only)
SRI5-7-S-15-201111	G	SS		11/11/20	1134	2	X		X	X		X						
SRI5-7-S-24.5-201111	G	SS		11/11/20	1212	2	X		X	X		X						
SRI5-8-S-14.5-201111	G	SS		11/11/20	1408	3	X	X	X	X	X	X	X	X				
SRI5-8-S-19.5-201111	G	SS		11/11/20	1420	2	X		X	X		X						
SRI5-8-S-29.5-201111	G	SS		11/11/20	1509	2	X		X	X		X						
SRI5-9-S-8-201110	G	SS		11/10/20	1625	2	X		X	X		X						
SRI5-9-S-15-201111	G	SS		11/11/20	1609	3	X	X	X	X	X	X	X	X				
SRI5-9-S-19-201111	G	SS		11/11/20	1627	2	X		X	X		X						
SRI5-9-S-27-201111	G	SS		11/11/20	1638	2	X		X	X		X						
SRI5-10-S-8-201112	G	SS		11/12/20	0851	2	X		X	X		X						

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

Remarks:*VOC 8260 list=BTEX, MTBE, EDB, EDC, and n-hexane by EPA 8260.

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist

COC Seal Present/Intact:	__NP	__Y __N
COC Signed/Accurate:		__Y __N
Bottles arrive intact:		__Y __N
Correct bottles used:		__Y __N
Sufficient volume sent:		__Y __N
If Applicable		
VOA Zero Headspace:		__Y __N
Preservation Correct/Checked:		__Y __N
RAD Screen <0.5 mR/hr:		__Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Thomas Dubé	11-16-20	1530			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

Leidos Inc.- Bothell, WA

18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Billing Information:
Accounts Payable
18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Pres Chk

Report to: **Russ Shropshire**

Email To: **russell.s.shropshire@leidos.com**

Project Description: WA-02 Chelan

City/State Collected: Chelan, WA

Please Circle: (PT) MT CT ET

Phone: **425-482-3323**

Client Project #: —

Lab Project #: **LEIDOSBWA-CHELAN**

Collected by (print): Tom Dubé

Site/Facility ID #: 96590

P.O. #: P010246476

Collected by (signature): Tom Dubé

Immediately Packed on Ice N ___ Y ✓

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

Date Results Needed

Quote #

Analysis / Container / Preservative

Chain of Custody Page 4 of 7

Pace Analytical®
National Center for Testing & Innovation

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

SDG #

Table #

Acctnum: **LEIDOSBWA**

Template: **T176925**

Prelogin: **P807112**

PM: **110 - Brian Ford**

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cu,Ni,Pb,Zn 6010 8ozClr-NoPres (2 jars a Pb only)	HVOCs 8260 40mlAmb/MeOH 10ml/Syr	NWTPHDX NOSGT 8ozClr-NoPres silica gel	NWTPHGX 40mlAmb/MeOH10ml/Syr	PCBs 8082 4ozClr-NoPres	VOCs 8260* 40mlAmb/MeOH10ml/Syr BTEX, MTBE, EDB, EDC only	cPAHs/Naph 8270ESIM 4ozClr-NoPres	TOT-VOCs 8260 PIVOES, BTEX, MTBE, EDB, EDC	Remarks	Sample # (lab only)
SRI5-10-S-14.5-201112	G	SS		11/12/20	0909	3	X	X	X	X	X	X	X			
SRI5-10-S-18-201112	G	SS		11/12/20	0943	2	X		X	X		X				
DUP-2-201112	G	SS		11/12/20	—	2	X		X	X		X				
SRI5-10-S-21-201112	G	SS		11/12/20	1031	2	X		X	X		X				
SRI5-10-S-34.5-201112	G	SS		11/12/20	1110	2	X		X	X		X				
SRI5-11-S-8-201112	G	SS		11/12/20	1340	2	X		X	X		X				
SRI5-11-S-13.5-201112	G	SS		11/12/20	1350	2	X		X	X		X				
SRI5-11-S-15-201112	G	SS		11/12/20	1428	3	X	X	X	X	X	X	X			
DUP-3-201112	G	SS		11/12/20	1200	3	X	X	X	X	X	X	X			
SRI5-11-S-29.5-201112	G	SS		11/12/20	1456	2	X		X	X		X				

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

Remarks:*VOC 8260 list=BTEX, MTBE, EDB, EDC, and n-hexane by EPA 8260.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Tom Dubé	11-16-20	1530			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

Leidos Inc.- Bothell, WA

18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Billing Information:
Accounts Payable
18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Pres Chk

Report to: **Russ Shropshire**

Email To: **russell.s.shropshire@leidos.com**

Project Description: WA-02 Chelan

City/State Collected: Chelan WA

Please Circle: PT MT CT ET

Phone: **425-482-3323**

Client Project #

Lab Project # **LEIDOSBWA-CHELAN**

Collected by (print): Tom Dubé

Site/Facility ID # 96590

P.O. # P010246476

Collected by (signature):

Immediately Packed on Ice N ____ Y ✓

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

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical® National Center for Testing & Innovation

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

SDG #

Table #

Acctnum: **LEIDOSBWA**

Template: **T176925**

Prelogin: **P807112**

PM: **110 - Brian Ford**

PB:

Shipped Via:

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cu,Ni,Pb,Zn 6010 8ozClr-NoPres (2 jars = Pb only)	HVOCs 8260 40mlAmb/MeOH10ml/Syr	NWTPHDX NOSGT 8ozClr-NoPres no silica gel	NWTPHGX 40mlAmb/MeOH10ml/Syr	PCBs 8082 4ozClr-NoPres	VOCs 8260* 40mlAmb/MeOH10ml/Syr BTEX, MTBE, EDB, EDC only	cPAHs/Naph 8270ESIM 4ozClr-NoPres	Remarks	Sample # (lab only)
UHP-1-S-12-201109	G	SS		11/9/20	0855	2	X		X	X		X			
UHP-2-S-12-201109	G	SS		11/9/20	1132	2	X		X	X		X			
UHP-3-S-12,5-201109	G	SS		11/9/20	1338	2	X		X	X		X			
UHP-3-S-17-201109	G	SS		11/9/20	1345	2	X		X	X		X			
UHP-4-S-14,5-201109	G	SS		11/9/20	1505	2	X		X	X		X			
UHP-4-S-17,5-201109	G	SS		11/9/20	1513	2	X		X	X		X			
UHP-5-S-7,5-201108	G	SS		11/8/20	1127	2	X		X	X		X			
UHP-5-S-14,5-201111	G	SS		11/11/20	0921	2	X		X	X		X			
UHP-6-S-13-201110	G	SS		11/10/20	0822	2	X		X	X		X			
SVP-1-S-5-201108	G	SS		11/8/20	0840	2	X		X	X		X			

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

Remarks:*VOC 8260 list=BTEX, MTBE, EDB, EDC, and n-hexane by EPA 8260.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist

COC Seal Present/Intact:	__NP __Y __N
COC Signed/Accurate:	__Y __N
Bottles arrive intact:	__Y __N
Correct bottles used:	__Y __N
Sufficient volume sent:	__Y __N
If Applicable	
VOA Zero Headspace:	__Y __N
Preservation Correct/Checked:	__Y __N
RAD Screen <0.5 mR/hr:	__Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Tom Dubé	11 16 20	1530			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

Leidos Inc.- Bothell, WA

18939 120th Avenue NE
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Bothell, WA 98011

Billing Information:
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18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Pres Chk

Report to: **Russ Shropshire**

Email To: **russell.s.shropshire@leidos.com**

Project Description: WA-02 Chelan

City/State Collected: Chelan, WA

Please Circle: PT MT CT ET

Phone: **425-482-3323**

Client Project #

Lab Project # **LEIDOSBWA-CHELAN**

Collected by (print): Tom Dulc

Site/Facility ID # 96590

P.O. # R610246476

Collected by (signature): Tom Dulc

Immediately Packed on Ice N ___ Y V

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

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cu,Ni,Pb,Zn 6010 8ozClr-NoPres (2 jars=Pb only)	HVOCs 8260 40mlAmb/MeOH10ml/Syr	NWTPHDX NOSGT 8ozClr-NoPres no silica gel	NWTPHGX 40mlAmb/MeOH10ml/Syr	PCBs 8082 4ozClr-NoPres	VOCs 8260* 40mlAmb/MeOH10ml/Syr BTEX, MTBE, EDB, EDC only	cPAHs/Naph 8270ESIM 4ozClr-NoPres	8260 Benzene only	pH		Remarks	Sample # (lab only)
SVP-2-S-9-201109	G	SS		11/9/20	1348	2	X		X	X		X						
221EW-UST2-S-201108	G	SS		11/8/20	1240	2	X	X	X	X	X	X	X					
ER-1-201112	G	SS W		11/12/20	0835	9				X		X						
ER-1-201112	G	SS W		11/12/20	1215	9				X		X						
PCW-1-W-201113	G	SS WW		11/13/20	1010	5	X							X	X			
PCW-2-W-201113	G	SS WW		11/13/20	1035	5	X							X	X			
PCW-3-W-201113	G	SS WW		11/13/20	1040	5	X							X	X			
TB-2-201108	G	SS W								X		X						
TB-3-201108	G	SS W		11/8/20	1200	2				X		X						
TB-4-201108	G	SS W		11/8/20	1200	2				X		X						

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

Remarks: *VOC 8260 list=BTEX, MTBE, EDB, EDC, and n-hexane by EPA 8260.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: __Y __N
Bottles arrive intact: __Y __N
Correct bottles used: __Y __N
Sufficient volume sent: __Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: __Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
Tom Dulc	11-16-20	1530			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

Chain of Custody

Pace Analytical® National Center for Testing & Innovation

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

SDG #

Table #

Acctnum: **LEIDOSBWA**
Template: **T176925**
Prelogin: **P807112**
PM: **110 - Brian Ford**
PB:

Shipped Via:

Leidos Inc.- Bothell, WA

18939 120th Avenue NE
Suite 112
Bothell, WA 98011

Billing Information:
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Suite 112
Bothell, WA 98011

Pres Chk

Report to: **Russ Shropshire**

Email To: **russell.s.shropshire@leidos.com**

Project Description: WA-02 Chelan

City/State Collected: Chelan, WA

Please Circle: (PT) MT CT ET

Phone: **425-482-3323**

Client Project #

Lab Project # **LEIDOSBWA-CHELAN**

Collected by (print): Tom Dubé

Site/Facility ID # 96590

P.O. # PO1024647 6

Collected by (signature): Tom Dubé

Immediately Packed on Ice N ___ Y ✓

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

Date Results Needed

Quote #

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cu,Ni,Pb,Zn 6010 8ozClr-NoPres	HVOCs 8260 40mlAmb/MeOH10ml/Syr	NWTPHDX NOSGT 8ozClr-NoPres	NWTPHGX 40mlAmb/MeOH10ml/Syr	PCBs 8082 4ozClr-NoPres	VOCs 8260* 40mlAmb/MeOH10ml/Syr BTEX, MTBE, EDB, EDC only	cPAHs/Naph 8270ESIM 4ozClr-NoPres				Remarks	Sample # (lab only)
TB-S-20 1108	G	SS W		11/8/20	1200	2			X	X		X						
TB-S-20 1108	G	GW		11/8/20	1200	3			X	X		X						

Thomas Dubé 11-16-20

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

Remarks:*VOC 8260 list=BTEX, MTBE, EDB, EDC, and n-hexane by EPA 8260.

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
Thomas Dubé	11-16-20	1530		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

Sample Receipt Checklist

COC Seal Present/Intact:	__NP __Y __N
COC Signed/Accurate:	__Y __N
Bottles arrive intact:	__Y __N
Correct bottles used:	__Y __N
Sufficient volume sent:	__Y __N
If Applicable	
VOA Zero Headspace:	__Y __N
Preservation Correct/Checked:	__Y __N
RAD Screen <0.5 mR/hr:	__Y __N

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

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

SDG #

Table #

Acctnum: **LEIDOSBWA**
Template:**T176925**
Prelogin: **P807112**
PM: **110 - Brian Ford**
PB:

Shipped Via:

Hailey Melson

Pace Analytical®
National Center for Testing & Innovation

Login #: L1286649	Client: LEIDOSBWA	Date: 11/17/2020	Evaluated by: Billy B.

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time	1	Login Clarification Needed		**If Broken Container:**
	Temperature not in range		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	pH not in range.		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Cour
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.	2	Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
	Broken container		Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments:

1) Received 3 nathio vials for ER-1-201112 @0835 and ER-1-201112 @1215 but was not marked for analysis on COC. Sent vials to SVOCs.
2) ER-1-201112 @1215 was received with a label that reads ER-2-201112. Currently logged per container label.

Client informed by:		Call		Email x		Voice Mail		Date:11/18/20	Time:1230
TSR Initials:bjf	Client Contact: PMs								

Login Instructions:

1) EDB will be analyzed by 8260 rather than 8011, SV8011 not needed.
2) Log as ER-2-201112

Appendix D:
Laboratory Analysis Reports – Microbial Insights

10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
Web: www.microbe.com

SITE LOGIC Report

Petroleum Forensics Study

Contact: Russ Shropshire
Phone: 425-482-3323
Address: Leidos, Inc.
18939 129th Avenue NE, Suite 112
Bothell, WA 98011
Email: russell.s.shropshire@leidos.com

MI Identifier: 075RL
Report Date: February 15, 2021

Project: Chelan Chevron Site, #334893.TM.1.000.00.00.000
Comments:

Petroleum Forensics Study

Ten product samples, labeled MW-10-201206, MW-12-201207, RW-2-201207, MW-9-201207, MW-44-201207, MW-19-201207, MW-16-201207, MW-21-201208, MW-27-201208, and 22IE Woodin UST-1, were received on December 11, 2020 for characterization and comparison of petroleum products in the samples. The following analyses were performed:

Client ID	Lab ID	Date Collected	Date Received	Whole Oil	EDB and Organic Lead	C3-C12 PIANO	C8-C40 Full Scan
MW-10-201206	075RL-1	12/06/20	12/11/20	X	X	X	X
MW-12-201207	075RL-2	12/07/20	12/11/20	X	X	X	X
RW-2-201207	075RL-3	12/07/20	12/11/20	X	X	X	X
MW-9-201207	075RL-4	12/07/20	12/11/20	X	X	X	X
MW-44-201207	075RL-5	12/07/20	12/11/20	X	X	X	X
MW-19-201207	075RL-6	12/07/20	12/11/20	X	X	X	X
MW-16-201207	075RL-7	12/07/20	12/11/20	X	X	X	X
MW-21-201208	075RL-8	12/08/20	12/11/20	X	X	X	X
MW-27-201208	075RL-9	12/08/20	12/11/20	X	X	X	X
22IE Woodin UST-1	075RL-10	11/07/20	12/11/20	X	X	X	X

1. C_3-C_{36} Whole-Oil Molecular Characterization Gas Chromatography "Fingerprint" by GC/FID *Appendix 1*
2. EDB, MMT, and alkyl lead concentrations by GC/ECD *Appendix 2*
3. C_3-C_{12} Quantitative Molecular Characterization by GC/MS- full scan mode *Appendix 3*
4. C_8-C_{40} hydrocarbon semiquantitative analysis by GC/MS (ASTM D5739) *Appendix 4*

The complete laboratory data report is presented as appendices to this report.

10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
www.microbe.com

Analytical Methodology

C3-C36 Whole Oil Fingerprint by GC/FID (ASTM D3328)
The analysis is used to generate a hydrocarbon fingerprint as a screening technique to identify unknown products and assess general weathering attributes by comparison to profiles of known hydrocarbon products. As prescribed by ASTM D3328, the method employs GC separation and flame ionization detector (FID) to provide a chromatographic fingerprint revealing the carbon range and general hydrocarbon composition. A flame photometric detector (FPD) may also be used for sulfur compounds.

C3-C12 PIANO Quantitative Petroleum Characterization by GC/MS (EPA 8260 Modified)
This GC/MS method is used to determine the concentrations of 109 gasoline range compounds that include oxygenated additives—methyl tertiary butyl ether (MTBE), diisopropyl ether (DIPE), tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), along with lead scavenger additives—ethyl dibromide (EDB) and ethylene dichloride (EDC). This analysis also includes individual constituents of the five hydrocarbon classes—paraffins, isoparaffins, aromatics, naphthenes, and olefins (PIANO). Samples are purged with conditions as prescribed in EPA Method 5030A. To bring all analytes within the range defined by the calibration curve, dilutions are performed as required.

Oxygenated Blending Agents (EPA 1624 Modified)
The analysis is used to identify and quantify fuel oxygenates which may aid in age constraining and source investigations of unleaded gasoline. The method uses isotope dilution and GC/MS for analysis of volatile and semivolatile organic priority pollutants including oxygenated fuel additives such as ethanol, MTBE, DIPE, ETBE, and TAME. Isotope dilution employs stable, isotopically labeled analogs of the compounds of interest as internal standards in the analysis. Purge and trap is utilized as described in EPA 1624 to introduce compounds into the GC for separation (2.8 · 0.4 m x 2 · 0.5 mm I.D. glass, packed with 1% SP-1000 on Carbopak B, 60/80 mesh, or equivalent) and detection by MS. The GC/MS system is calibrated with internal standards. A compound is identified when its retention time and mass spectrum agree with the library retention time and spectrum.

EDB and Organic Lead analysis by GC/ECD (EPA 8080 Modified)
Product samples are directly injected into a GC equipped with a 60-meter DB1 column. Tetramethyllead, trimethylethyllead, dimethyldiethyllead, methyltriethyllead, tetraethyllead, methylcyclopentadienyl manganese tricarbonyl, and ethylene dibromide are detected with an electron capture detector (ECD) interfaced to the GC.

Parent and Alkylated PAHs (EPA 8270 SIM Modified)
Often used in risk assessment, the analysis provides a full panel of forensics grade polycyclic aromatic hydrocarbon (PAH) characterization to identify creosote and MGP residues or urban runoff and other pyrogenic products to distinguish them from petroleum products. As with EPA 8270, semivolatile compounds are analyzed by GC/MS (30m silicone-coated fused-silica capillary column - DB-5) with identification by comparison of mass spectra with mass spectra of authentic standards while quantitation is accomplished by comparing the response of a major (quantitation) ion relative to an internal standard.

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To achieve low detection limits however, the GC/MS is operated in Selected Ion Monitoring (SIM) mode so that data is masses of interest rather than filtering over a large mass range thereby improving sensitivity.

C8-C40 Full Scan Semi-Quantitative Characterization by GC/MS (ASTM D5739 Modified)

Extracts are diluted, then injected into a GC equipped with a 60-meter DB-1 column to separate the hydrocarbons, which are detected with a mass spectrometer (MS) in full scan mode, interfaced to the GC. Hydrocarbons in the C8 to C40 range are identified. By scanning the ion fragments shown in the following table, labeled chromatograms and numerical values of some hydrocarbons are generated. Aromatic hydrocarbons are identified by scanning over a large number of ion fragments, and the results are normalized in a bar diagram. This analysis also allows for tentative IDs of unknown compounds with NIST mass spectra library.

Ion (m/z)	Compound Class
TIC	All Compounds
85	n-Alkanes
113	Iso-Alkanes and Isoprenoids
83	Alkylcyclohexanes
134	C4-Benzenes
123	Bicyclanes
191	Terpanes
217	Steranes
253	Monoaromatic Steranes
231	Triaromatic Steranes
Bar Diagram	Aromatic Hydrocarbons

Additional Analyses

Sulfur Content (ASTM D2622/D4927)

Crude oil typically contains between 0.5 and 5% sulfur. For environmental considerations, the sulfur content of petroleum products is subject to US EPA mandates and has decreased over time. Therefore, the sulfur content provides an opportunity for dating releases. The standard method for determining total sulfur content is Wavelength Dispersive X-Ray Fluorescence (WDXRF). As detailed in ASTM D2622, the source (X-ray tube) directly irradiates the sample and the resulting sample fluorescence is measured at characteristic wavelengths.

Viscosity (ASTM D445)

The kinematic viscosity of liquid petroleum products, both transparent and opaque, is determined by measuring the time for a volume of liquid to flow under gravity through a calibrated glass capillary viscometer. The dynamic viscosity can be obtained by multiplying the kinematic viscosity by the density of the liquid.

Specific Gravity (ASTM D1217)

Standard method for determining density and specific gravity of liquids by Bingham Pycnometer.

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Surface Tension (ASTM D971)
Standard method for the determination of interfacial tension against water by the Ring method. A force tensiometer measures the force required to raise the platinum the ring from the liquid surface.

Simulated Distillation (ASTM D2887 or D86)
Simulated distillation is a GC technique to determine the boiling point range of petroleum products. For petroleum forensics, the boiling range provides useful information for identifying the fuel type present and the relative amount of each fuel type in a mixture. The GC is equipped with a non-polar chromatographic column and a FID. Sample hydrocarbons are separated in order of their boiling points which are correlated with the retention times, through a calibration curve obtained by running under the same conditions a known mixture of hydrocarbons, usually n-alkanes, covering the boiling range expected in the sample. Results are reported as a correlation between the boiling points and the percentages of the sample eluted from the column. Alternatively, ASTM D86 is the atmospheric distillation of petroleum products using a laboratory batch distillation unit to quantitatively determine the boiling range characteristic of the products such as automotive fuels with and without oxygenates, aviation fuels, and diesel fuels.

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Results and Discussion

The C_3-C_{36} GC/FID chromatograms of MW-10, MW-9, and MW-16 in Figs. 1 and 2 show hydrocarbons from 7 min to 50 min retention time in the carbon range C5-C12, indicative of a volatile product. A key to the full compound identifications is given in Appendix 1. Only traces of heavier hydrocarbons were detected. The hydrocarbons include trimethylpentanes, which are alkylate compounds that are blended into automobile gasoline to increase octane levels.

The gasoline compositions contain prominent n-alkanes and methylcycloalkanes, which are major constituents of straight run naphtha, the base stock for gasoline. Historic leaded gasoline was characterized by high naphtha contents, and the three samples did contain relatively high lead concentrations, as shown in Table 1. Table 1 also shows the similarity in the three samples of the Octane Ratio (iso-octane/methylcyclohexane), which is controlled by the formulation of the gasoline. Figs. 1 and 2 show the similarity of the hydrocarbon compositions in MW-10, MW-9, and MW-16, except that in MW-10, C5 and C6 hydrocarbons have been depleted by evaporation, and methylcyclohexane is reduced. All three samples have very low concentrations of BTEX (benzene, toluene, ethylbenzene, xylenes) and other aromatic hydrocarbons. This is likely due to loss of these soluble hydrocarbons by dissolution in groundwater (water washing). This may account for the lower methylcyclohexane in MW-10

The C_3-C_{36} chromatogram of RW-2 in Fig. 2 is dominated by iso-octane, and has a higher Octane Ratio than MW-10, MW-9, and MW-16, as shown in Table 1. This, combined with its lower lead content, indicates that RW-2 is a different gasoline from MW-10, MW-9, and MW-16. RW-2 also shows loss of aromatics by water washing.

The C_3-C_{36} chromatograms of MW-12 and MW-44 in Fig. 3 are similar to each other. These samples have significantly lower Octane Ratios and lead contents than the samples above, as shown in Table 1, indicating that they contain a different gasoline. They are less water washed than the samples above.

The C3-C36 chromatogram of MW-21 in Fig. 4 shows some similarities to MW-12 and MW-44, but the gasoline in MW-21 has an even lower Octane Ratio and lead content. The C3-C12 GC/MS analysis, shown in Appendix 3, confirms the presence of iso-octane in MW-21. This sample had the lowest aromatic hydrocarbon content of all the gasoline samples, suggesting that it is the most water washed.

The C3-C36 chromatogram of 22IE Woodin UST-1 in Fig. 4 shows a very different hydrocarbon composition from the other gasoline samples. It contains relatively abundant BTEX hydrocarbons, indicating that water washing of this gasoline has been milder than the other samples. However, it is the most evaporated, with hydrocarbon below C7 being severely depleted. The main compositional difference from the samples above is the low lead content and its alkyl lead composition. In all the samples above, tetraethyl lead (TEL) dominates the alkyl lead composition, whereas in 22IE Woodin UST-1, TEL is minor with larger amount of other alkyl lead compounds. This indicates that 22IE Woodin UST-1 contains a different lead package than the other leaded gasoline samples. 22IE Woodin UST-1 also contains the manganese additive MMT.

The C3-C36 chromatogram of MW-19 in Fig. 5 shows gasoline hydrocarbons from 7 min to about 40 min retention time, but differs from the samples above in also showing heavier hydrocarbons from 40 min to 70 min in the carbon range C11-C24, indicative of a middle distillate such as diesel or #2 fuel oil. These products can have very similar hydrocarbon compositions and are difficult to distinguish in unknown samples. MW-19 contains a small concentration of TEL, indicating that the gasoline is leaded. The n-alkanes in the gasoline are significantly reduced compared to the samples above, probably by biodegradation. The Octane Ratio is very low, similar to MW-21, but the gasoline may be too degraded to establish any relationship to the other samples. The diesel/#2 fuel oil is dominated by isoalkanes (iC13, iC14, iC15, iC16, iC18, pristane, phytane). These hydrocarbons are more resistant to biodegradation than n-alkanes, which dominate fresh diesel and #2 fuel

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oil but are the most readily biodegraded hydrocarbons in petroleum products. The absence of n-alkanes indicates that the diesel/#2 fuel oil has been in the environment long enough to be significantly degraded.

The C3-C36 chromatogram of MW-27 is similar to MW-19 in showing a diesel/#2 fuel oil. However, there is only a trace of gasoline in MW-27, which was identified in the C3-C12 GC/MS analysis shown in Appendix 3. The hydrocarbon composition of the diesel/#2 fuel oil in MW-27 is very similar to MW-19. This is confirmed by the C8-C40 GC/MS analyses in Appendix 4, which show chromatograms of the individual hydrocarbon classes in the samples - n-alkanes, isoalkanes, alkylcyclohexanes, C4-alkylbenzenes, bicyclanes, steranes, terpanes, and aromatic hydrocarbons. In particular, the pristane/phytane ratios, which are inherited by petroleum products from the crude oil from which the products were refined, were similar (2.2 and 2.4). This, combined with the other compositional similarities, indicates that the two samples contain the same diesel or #2 fuel oil.

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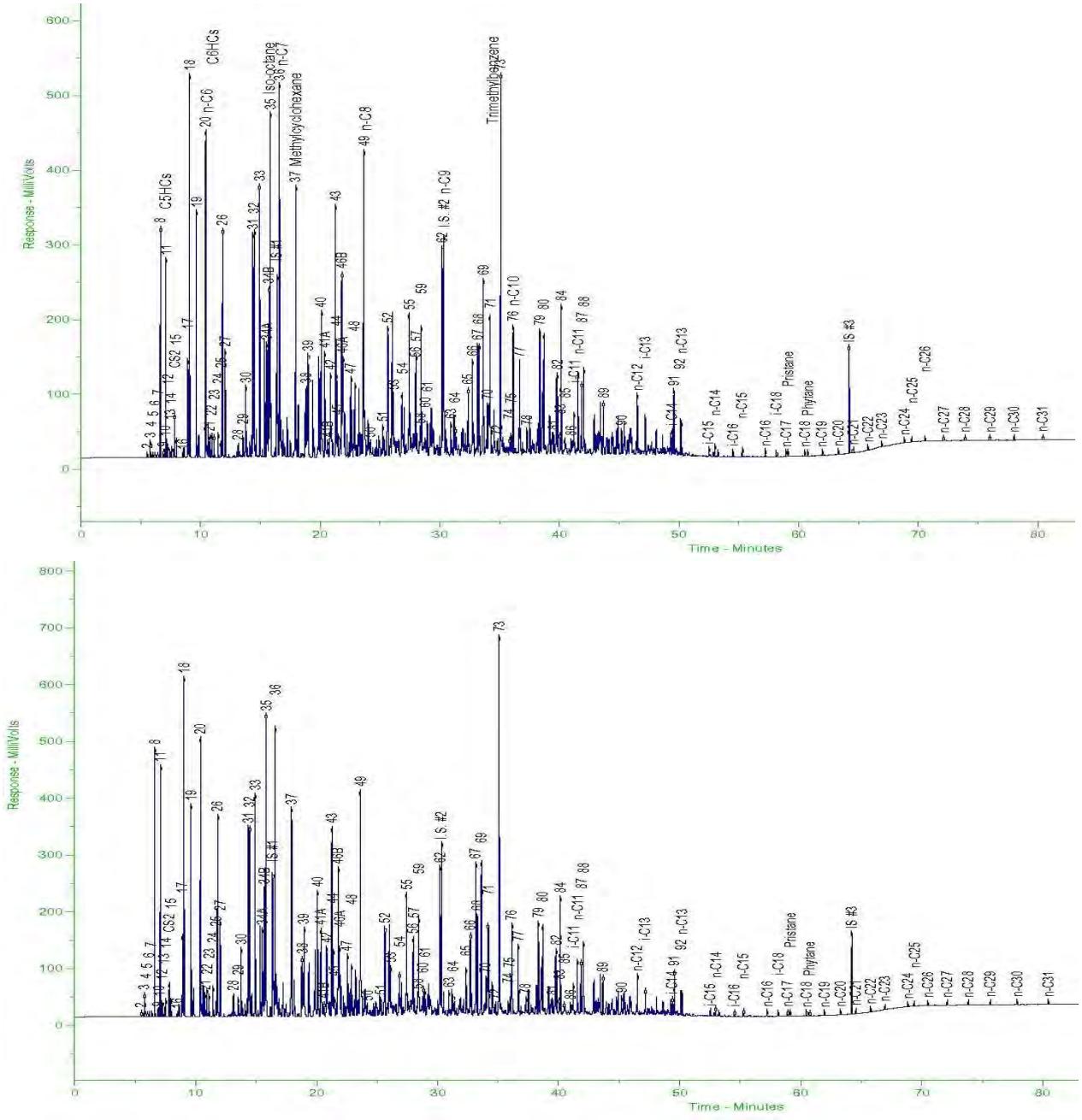

Figure 1. C3-C36 GC/FID hydrocarbon compositions in MW-9 (upper) and MW-16 (lower) product samples. Note the similarity.

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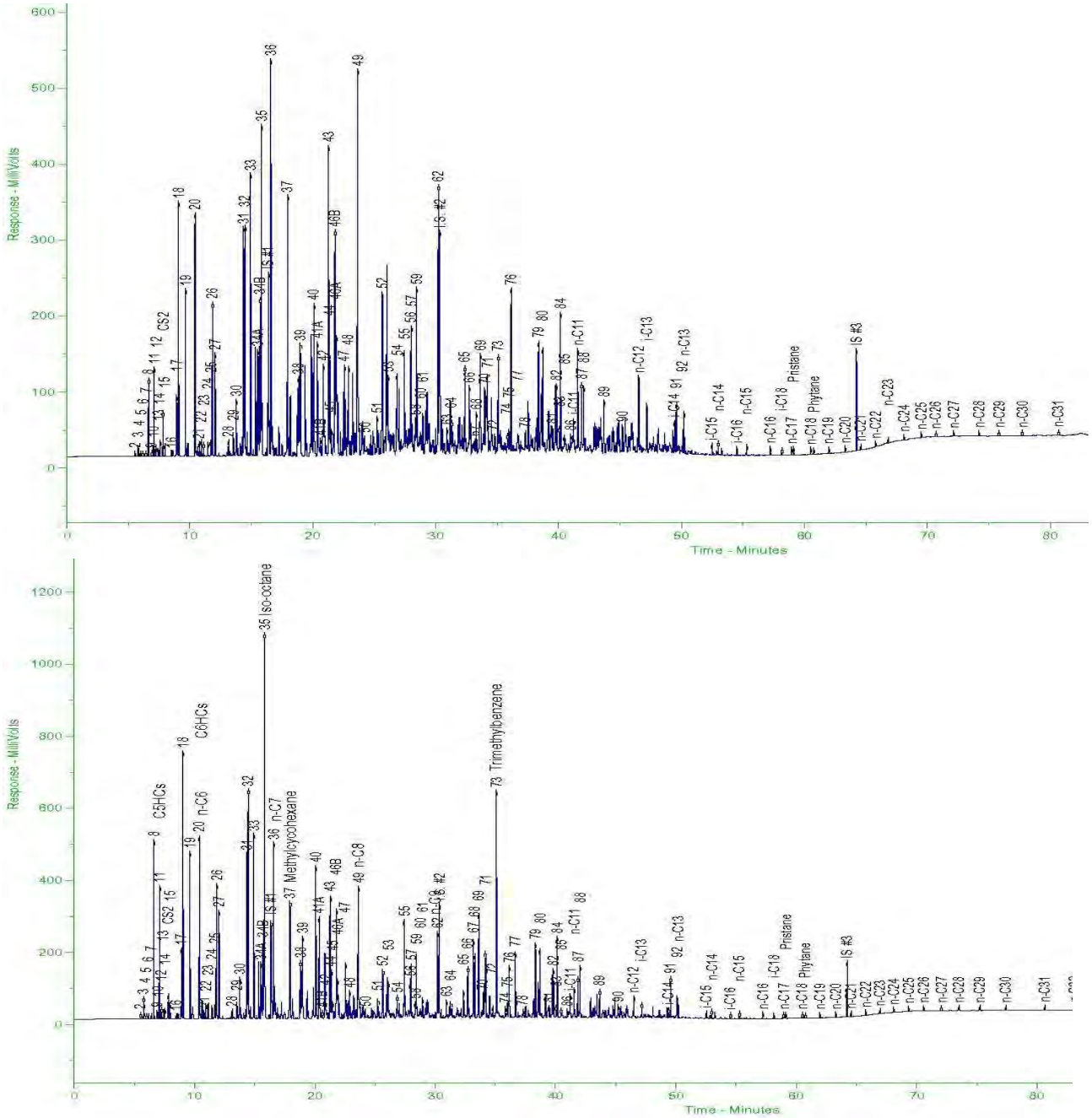

Figure 2. C3-C36 GC/FID hydrocarbon compositions in MW-10 (upper) and RW-2 (lower) product samples. Note the similarity of MW-10 to MW-9 and MW-16 in Fig. 1, and the much higher iso-octane in RW-2.

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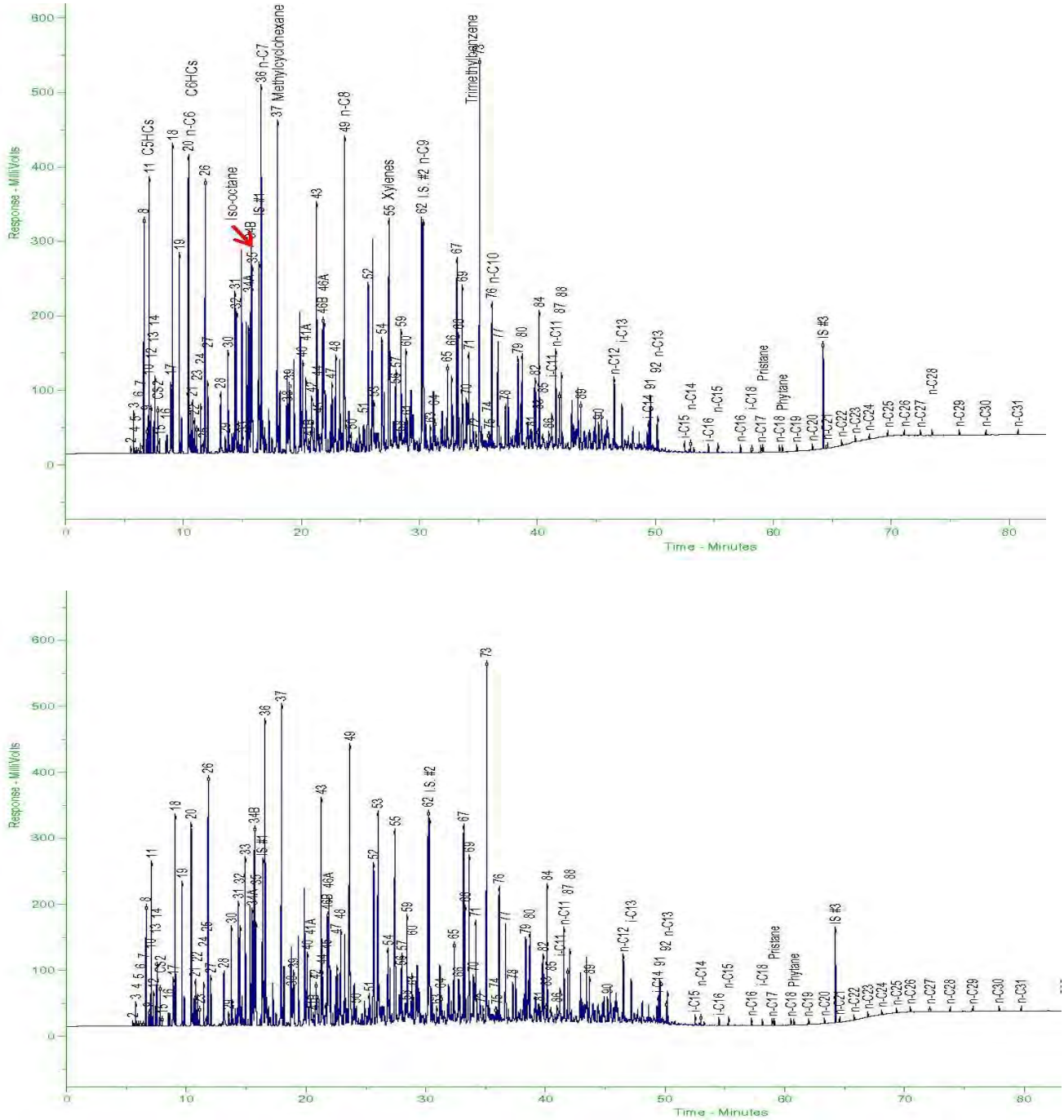

Figure 3. C_3-C_{36} GC/FID hydrocarbon compositions in MW-12 (upper) and MW-44 (lower) product samples. Note their similarity and lower iso-octane than Figs. 1 and 2.

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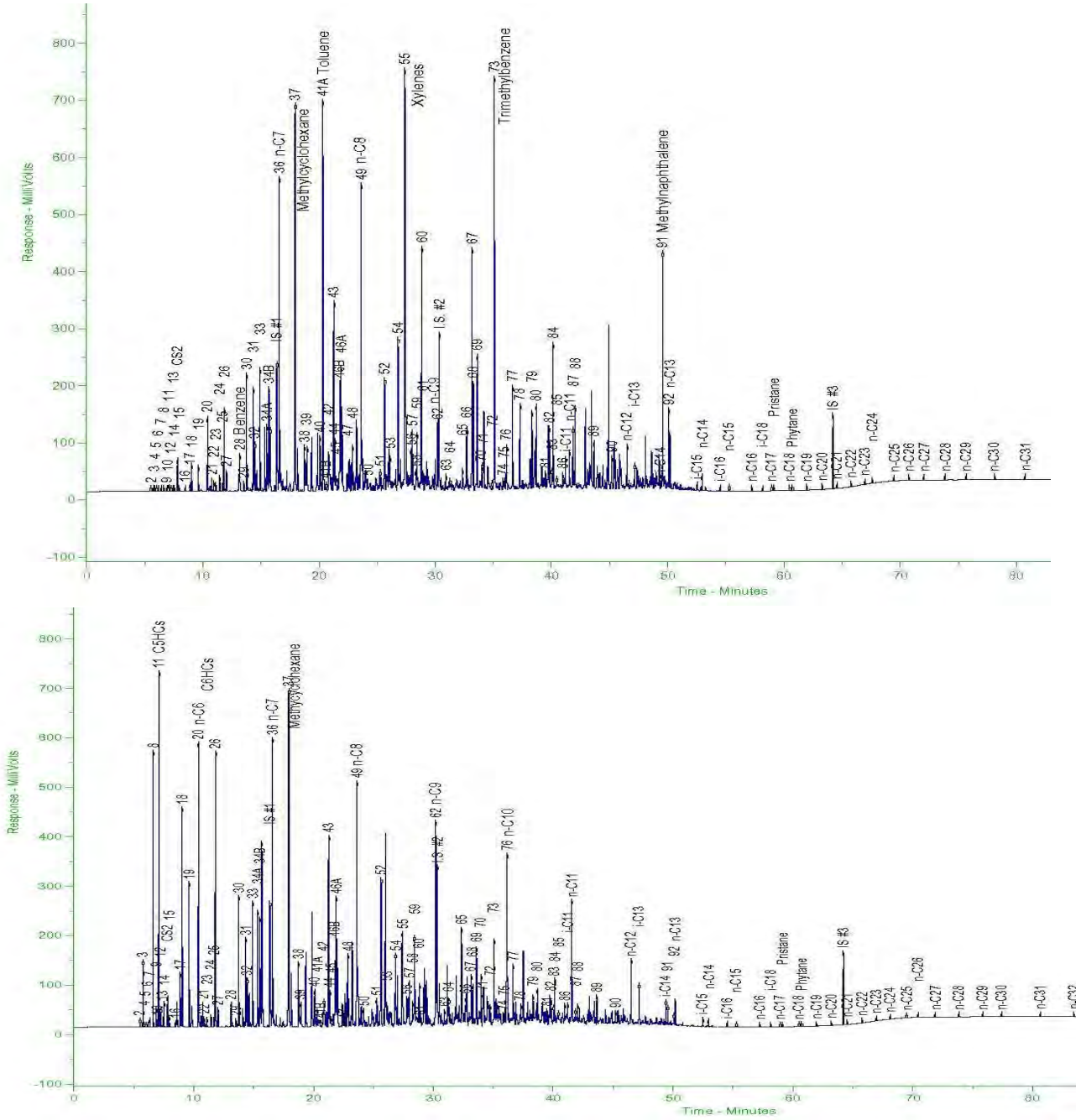

Figure 4. C_3-C_{36} GC/FID hydrocarbon compositions in 21IE Woodin UST-1 (upper) and MW-21 (lower) product samples. Note the relative abundance of aromatics in Wooden and very low iso-octane in both samples.

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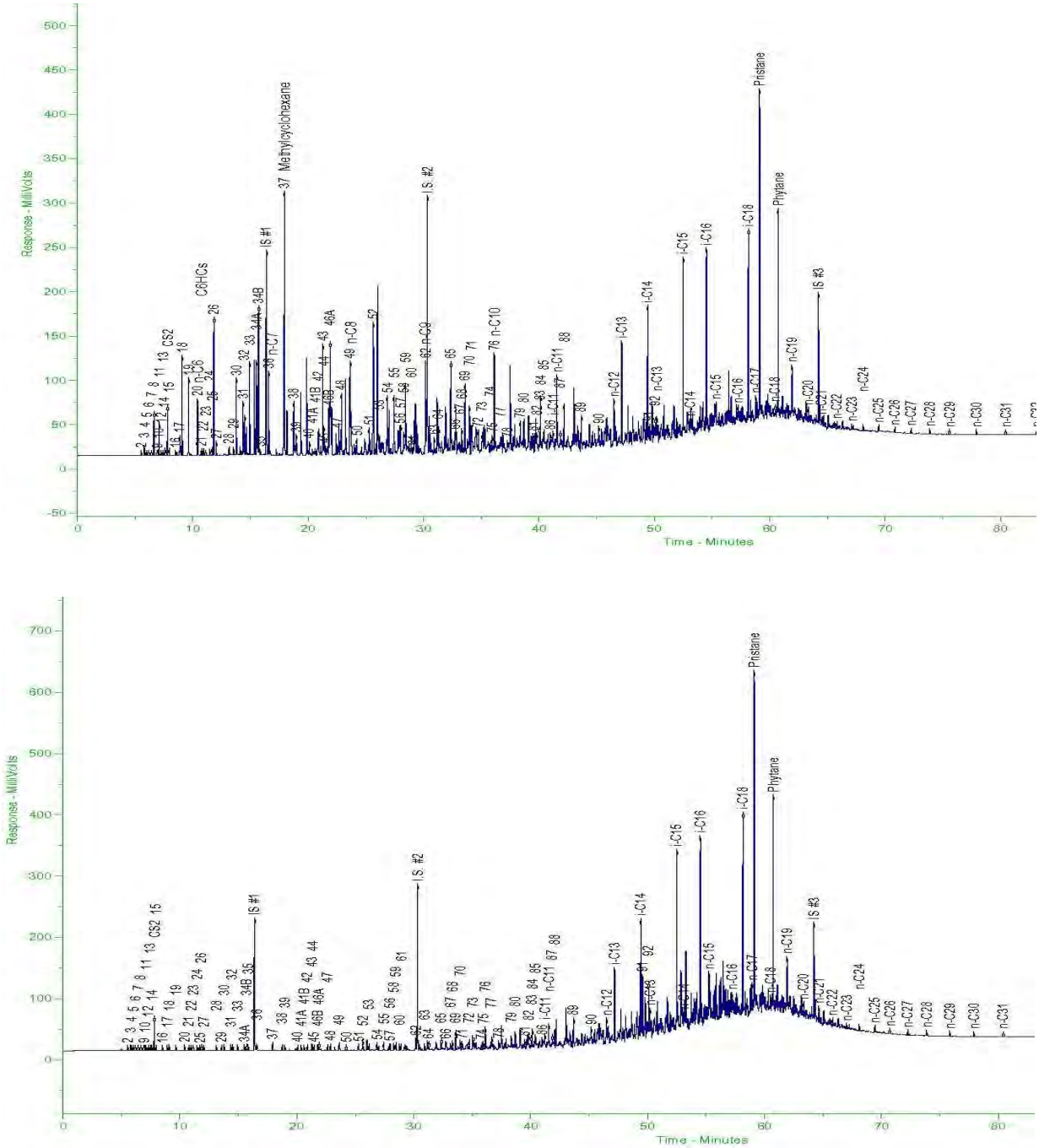

Figure 5. C_3-C_{36} GC/FID hydrocarbon compositions in MW-19 (upper) and MW-27 (lower) product samples. Note the similarity of the composition of the diesel/#2 fuel oil.

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Table 1: Gasoline and diesel source ratios and alkyl lead concentrations

Client ID	MW-10	MW-12	RW-2	MW-9	MW-44	MW-19	MW-16	MW-21	MW-27	22IE Woodin UST-1
Octane Ratio[1]	1.1	0.5	3.5	1.2	0.3	0.1	1.5	0.1	ND	0.2
EDB (mg/kg)	<0.7	2	<0.7	<0.7	8	<0.7	<0.7	2	<0.7	<0.7
TML (mg/kg)	<7	7	<7	<7	<7	<7	<7	<7	<7	<7
TMEL (mg/kg)	<7	<7	<7	<7	<7	<7	<7	<7	<7	22
DMDEL (mgkg)	<7	<7	26	<7	<7	<7	16	<7	<7	53
MTEL (mg/kg)	<7	<7	<7	<7	<7	<7	29	<7	<7	<7
TEL (mg/kg)	690	254	311	580	264	30	739	158	0	12
MMT (mg/kg)	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7	16
Lead conc. (gPb/gal)[2]	1.2	0.4	0.6	1.0	0.5	0.05	1.4	0.3	0	0.17
Pristane/Phytane	ND	ND	ND	ND	ND	2.2	ND	ND	2.4	ND

[1]iso-octane (2,2,4-trimethylpentane)/methylcyclohexane

[2]Hydrocarbons have been lost from the gasolines by weathering, concentrating alkyl leads in the residue. Concentrations in the fresh gasoline may have been lower.

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Conclusion

The ten product samples discussed in this report contain the following six different petroleum products:

1. MW-10, MW-9, and MW-16 contains a leaded gasoline with lead concentrations in the range 1.0-1.4 gPb/gal.

2. RW-2 contains a leaded gasoline with a higher Octane Ratio, and a lead concentration of 0.6 gPb/gal.

3. MW-12 and MW-44 contains a leaded gasoline with an Octane Ratio lower than those above and lead concentrations in the range 0.4-0.5 gPb/gal.

4. MW-21 contains a leaded gasoline with an even lower Octane Ratio and a lead concentration of 0.3 gPb/gal.

5. 22IE Woodin UST-1 contains a leaded gasoline with a lead concentration of 0.17 gPb/gal. and a different alkyl lead package than the samples above.

6. MW-19 and MW-27 contain a degraded diesel or #2 fuel oil. MW-19 also contains a leaded gasoline, which may be too degraded to establish any relationship to the gasolines in the other samples.

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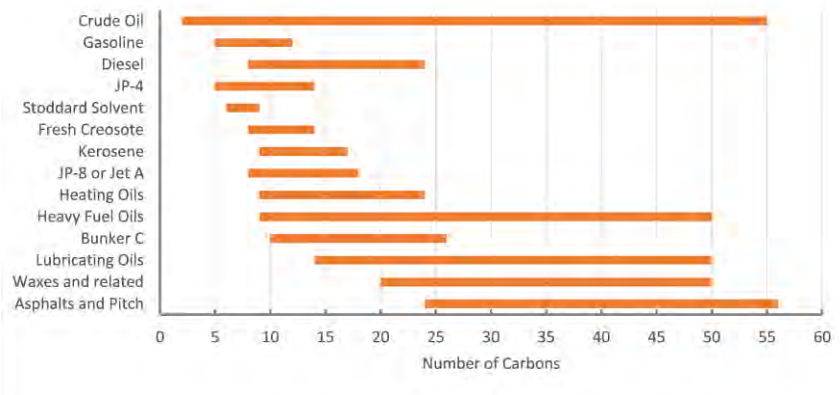
General Reference Information

C3-C36 Whole Oil Fingerprint by GC/FID (ASTM D3328; Product Samples)

C3-C36 Whole Oil Fingerprint results are used as a screening method to evaluate the likely products present in the sample based on comparisons to chromatograms of known petroleum products. For more in depth analysis, the GC/MS methods C3-C12 Semi-Quantitative Petroleum Characterization (PIANO) or C8-C40 Full Scan Semi Quantitative Characterization are recommended. Below are general characteristics including the hydrocarbon size range for various petroleum products.



Automotive gasoline is a complex mixture of natural volatile hydrocarbons C4 – C12 that has been supplemented with refined hydrocarbon stocks rich in C5 – C7 olefins, low molecular weight monoaromatics (BTEX), octane boosters (e.g. isooctane), and other additives including oxygenates, organic lead compounds, and lead scavengers. Mineral spirits (C7 – C12) and Stoddard solvents (C8 – C14) are characterized by enrichment of n-paraffins, isoparaffins, and naphthenes with lower proportions of aromatics.

Kerosene, originally used for household heating and lighting, ranges from C6 to C16 and has been used as a jet fuel or primary component of jet fuels since the 1950s. JP-4 used for military planes prior to 1998 was a mixture of kerosene (C6 – C16) and light naphtha (C5 – C6). Diesel #1 (Arctic diesel) has a hydrocarbon range of C6 – C18. The primary aromatics in diesel #1 and kerosene are naphthalene as well as methylated naphthalenes and alkylated benzenes. Diesel #1 can at times be differentiated from kerosene by the presence of pristine (Pr) and phytane (Ph).

Diesel #2 has a hydrocarbon range of C8-C25, a mid-distillate. Paraffins are present in the highest proportion in Diesel #2 followed by isoparaffins and naphthenes. Polycyclic aromatic hydrocarbons (PAHs), most notably naphthalene and methylated homologues, are more abundant than BTEX and three ringed PAHs are also present. Please note that #2 fuel oil and home heating oil have a very similar hydrocarbon composition.

Heating oil #4 is a high boiling fraction with a hydrocarbon range from C20 to C35. Heating oil #6 (Bunker C) has a hydrocarbon range of C30 to greater than C35, however it is frequently diluted with lighter fractions. More specifically, heating oil #6 is often cut with mid distillates in the diesel #2 range C8-C25 or a light oil. The net effect is that the carbon range is from C8 to over C35. PAHs present in heating oil #6 span from naphthalene to the four ringed (fluroanthene, chrysene, and pyrene) and five ringed compounds (benzo(e)pyrene and benzo(b)fluroanthene).

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Lubricating oil and hydraulic fluids are composed primarily of branched and cyclic paraffins. PAHs are generally not present in unused fluids but are found in used lubricating oil. Chromatographs of both products tend to have a large unresolved complex mixture forming a hump in the plot. Creosote and coal tar oil are composed primarily of PAHs along with polar compounds like phenols and nitrogen-containing aromatics. Indene is the most abundant PAH generally followed by naphthalene, phenanthrene, and fluoranthene.

While semi-quantitative, the C3-C36 Whole Oil Fingerprint (GC/FID) report includes screening of over 90 gasoline range paraffins, isoparaffins, aromatics, naphthenes, and olefins (PIANO). Since different hydrocarbons are more susceptible to environmental processes including evaporation, dissolution, and biodegradation than others, ratios of specific hydrocarbons and groups of hydrocarbons are used to assess the extent of weathering (Table 1). The bulk composition PIANO groups is also a useful tool for differentiating fuel types (Table 2).

Table 1. Examples of Changes in Weathering Ratios (Whole Oil Report)[1]

Process and Parameter	Fresh Gasoline	Ratio Trend
Evaporation		
n-Pentane / n-Heptane	0.5 - 2	Decreases with increasing evaporation
2-Methylpentane / 2-Methylheptane	3 - 8	Decreases with increasing evaporation
Waterwashing (Dissolution)		
Benzene / Cyclohexane	0.5 - 2	Decreases with increasing dissolution
Toluene / Methylcyclohexane	2 - 10	Decreases with increasing dissolution
Aromatics / Total Paraffins (n+iso+cyc)	0.9	Decreases with increasing dissolution
Aromatics / Naphthenes	7.8	Decreases with increasing dissolution
Biodegradation		
(C4 – C8 Para+Isopara) / C4 - C8 Olefins		
3-Methylhexane / n-Heptane	0.5 – 2.0	Increases with increasing biodegradation
Methylcyclohexane / n-Heptane	0.5 – 0.8	Increases with increasing biodegradation
Isoparaffins+Naphthenes / Paraffins	2 - 10	Increases with increasing biodegradation
(C4 - C8 Para + Isopara) / C4 - C8 Olefins		
Octane Rating		
2,2,4-Trimethylpentane / Methylcyclohexane		Low Octane (87) < 2.5, Intermediate 2.5-5, and Premium (92 octane) > 5

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Table 2. Bulk Composition of Freshly Dispensed Reference Fuels (Whole Oil Report)[1]

	Regular Leaded Range	Regular Unleaded Range	Unleaded Plus	Premium Unleaded	JP-4 Jet Fuel	Aviation Gasoline
PIANO Composition						
% Paraffinic	10.4 - 11	8.4 - 11.3	8.7 - 13.3	7.1 - 13.6	29.34	3.33
% Isoparaffinic	31.7 - 32.5	32.5 - 40.3	34.5 - 40.0	26.2 - 39.7	31.02	74.22
% Aromatic	44.1 - 45.3	32.9 - 43.7	40.0 - 42.9	43.4 - 59.8	23.90	21.92
% Naphthenic	7.5 - 8.0	3.2 - 9.7	3.6 - 6.6	1.2 - 5.3	13.16	0.51
% Olefinic	4.3 - 5.0	1.5 - 13.7	2.9 - 9.6	1.0 - 7.3	2.58	0.01

Gasoline

C3-C12 PIANO Quantitative Petroleum Characterization by GC/MS (EPA 8260 Modified, Product, Water, Soil)
Weathering processes including evaporation, dissolution, and biodegradation will alter the composition of a released gasoline. Since a specific hydrocarbon may be more susceptible to each of these environmental processes than another, the ratios of specific hydrocarbons and groups of hydrocarbons increase or decrease providing an estimate of the extent of weathering. In addition, the bulk composition of a sample revealing the major hydrocarbon groups is a useful tool for differentiating fuel types. Tables 3 and 4 below summarize trends in weathering ratios and bulk PIANO compositions.

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Table 3. Examples of Changes in Weathering Ratios (PIANO)[1]

Process and Parameter	Fresh Gasoline	Ratio Trend/Rationale
Evaporation		
n-Pentane / n-Heptane	0.5 - 2	Decreases with increasing evaporation
2-Methylpentane / 2-Methylheptane	3 - 8	Decreases with increasing evaporation
Waterwashing (Dissolution)		
Benzene / Cyclohexane	0.5 - 2	Decreases with increasing dissolution
Toluene / Methylcyclohexane	2 - 10	Decreases with increasing dissolution
Aromatics / Total Paraffins (n+iso+cyc)	0.9	Decreases with increasing dissolution
Aromatics / Naphthenes	7.8	Decreases with increasing dissolution
Biodegradation		
(C4 – C8 Para+Isopara) / C4-C8 Olefins	8.4	
3-Methylhexane / n-Heptane	0.5 – 2.0	Increases with increasing biodegradation
Methylcyclohexane / n-Heptane	0.5 – 0.8	Increases with increasing biodegradation
Isoparaffins+Naphthenes / Paraffins	2 - 10	Increases with increasing biodegradation
Diagnostic Ratios (Refining Properties)		
2,2,4-Trimethylpentane/(2,2,4-Trimethylpentane +Methylcyclohexane)		
2,2,4-Trimethylpentane/Total TMPs		Hydrofluoric acid alkylation = 0.54 – 0.73 Sulfuric acid alkylation = 0.39 – 0.45
n-C9/Isopropylbenzene		
n-C10/1-Methyl-2-ethylbenzene		
n-C11/1,4-Dimethyl-2-ethylbenzene		
i-C5/(i-C5+n-C5)	>0.70	Isomerization of straight-chain molecules to higher-octane branched molecules for blending into gasoline or as a feed into alkylation units.
(2-methylhexane+2,3-dimethylpentane)/(3-methylhexane+2,4-dimethylpentane)		
Naphthalene/(Naphthalene+n-C12)		
Methylcyclohexane/(Methylcyclohexane+Toluene)		
Toluene/n-Octane		
Octane Rating		
2,2,4-Trimethylpentane / Methylcyclohexane		Low Octane (87) < 2.5, Intermediate 2.5-5, and Premium (92 octane) > 5
(2,2,4-trimethylpentane + Toluene)/ (n-C7+n-C8)		Value increases with octane rating

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Table 4. Bulk PIANO Composition of Freshly Dispensed Gasolines and Gasolines in Environmental Samples[1]

PIANO Composition	Freshly Dispensed Gasoline				Gasoline in Environmental Samples		
	Regular Leaded Range	Regular Unleaded Range	Unleaded Plus Range	Premium Unleaded Range	Gasoline as Free Product Range	Gasoline in Soil Range	Gasoline in Water Range
% Paraffins	10.4 - 11	8.4 - 11.3	8.7 - 13.3	7.1 - 13.6	4.3 - 18.3	0 - 5.3	0.8 - 10.9
% Isoparaffins	31.7 - 32.5	32.5 - 40.3	34.5 - 40.0	26.2 - 39.7	20.9 - 40.2	0 - 31.6	2.2 - 56.9
% Aromatic	44.1 - 45.3	32.9 - 43.7	40.0 - 42.9	43.4 - 59.8	27.1 - 70.1	60.4 - 98.7	26.8 - 94.3
% Naphthenes	7.5 - 8.0	3.2 - 9.7	3.6 - 6.6	1.2 - 5.3	1.2 - 9.0	0 - 2.6	1.1 - 16.6
% Olefins	4.3 - 5.0	1.5 - 13.7	2.9 - 9.6	1.0 - 7.3	1.9 - 5.7	0.8 - 2.1	0.2 - 19.6

Oxygenated Blending Agents[4]

Regulatory mandates for the introduction or elimination of fuel additives and blending agents can provide an important line of evidence when age dating hydrocarbon fuels. As lead additives were beginning to be phased out in the 1980s, oxygenates such as such as methyl tert-butyl ether (MTBE), tert-amyl-methyl ether (TAME), and ethanol were increasingly utilized. Although in use on the East Coast of the US in the early 1980s, national use of MTBE became widespread after 1987 and accelerated with the Clean Air Amendments of 1990. MTBE concentrations reached as high as 15 vol% in some locations but was reduced to 11 vol% MTBE in reformulated gasoline in 1995 (Gibbs, 1996). TAME was first used in gasoline in the early 1990s and while MTBE was dominant, TAME, ethyl tert-butyl ether (ETBE), and diisopropylether (DIPE) were all blended with gasoline by different refineries. Between 2000 and 2007, 23 states instituted partial or complete bans on MTBE blended gasolines resulting in the phase out of the oxygenate in the US.

Organic Lead and Lead Scavengers[4]

Alkyl lead and lead scavengers are important additives for fingerprinting purposes and as time markers. As early as 1923, tetraethyl lead (TEL) was added to gasoline as an anti-knock agent. Beginning in 1960 with the introduction of tetramethyl lead (TML), combinations of TEM-TML sometimes called the Physical Mixture (PM) were used. Over the course of the 1960s, PM was replaced by the Reaction Mixture (RM) containing not only TML plus TEL but also the intermediates trimethyl ethyl lead (TMEL), dimethyl diethyl lead (DMDEL), and methyl triethyl lead (MTEL). In 1973, EPA mandated a phased reduction of the lead content of grades of gasoline and in 1974 required the availability of at least one grade of unleaded gasoline. With federal regulations, maximum levels gradually decreased to 1.0 g Pb/gal in 1980, 0.5 g Pb/gal in 1985 and 0.1 g Pb/gal in 1988 (Gibbs, 1993). During the lead phase out, TEL became the most abundant lead-alkyl additive with decreasing amounts of TML usage until about 1985-1987. While there were waivers, a number of states had completely eliminated the manufacture of leaded gasoline by the end of 1992. In 1996, EPA officially banned the use of leaded fuel for on-road vehicles. Note that TEL is still used as an antiknock additive in some aviation fuels.

Lead scavengers ethylene dibromide (EDB) and ethylene dichloride (EDC, also commonly known as 1,2-DCA) are also important markers. Beginning in 1928, EDB and EDC were introduced to combat the adverse effects of forming lead oxide deposits after fuel combustion. While the composition changed over the years, a typical mix for automotive gasoline additives in the 1980s consisted of about 62% TEL (or a redistribution reaction mixture of lead alkyls), 18% EDB, 18% EDC,

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and 2% of other inactive ingredients. For aviation piston engines, lead is still permitted (TEL) and the scavenger consists entirely of EDB. Both EDB and EDC are soluble and will be dissolved into the aqueous phase. Lead alkyls will adsorb to the soil and are hydrolyzed by water. Therefore, without the presence of NAPL, the detection of lead scavengers in aqueous samples may be the only evidence for the release of a leaded gasoline.

Methylcyclopentadienyl manganese tricarbonyl (MMT)[4]

Beginning in 1959, the organic manganese derivative known as MMT was used in combination with TEL as an antiknock additive and to boost octane without exceeding the lead concentration limit. As lead began to be phased out and with catalyst-equipped cars using unleaded gasoline, MMT was used alone. MMT was no longer used in unleaded gasoline after 1978. During the final lead phase out, MMT was permitted in leaded gasoline at a concentration of 0.1 g Mn/gal.

Sulfur Containing Hydrocarbons[4]

In 1995 the EPA published a set of guidelines to further improve air quality by stipulating a gasoline formulation known as Reformulated gasoline I (RFG I). Along with regulating total aromatic content, benzene content, sulfur concentrations were also reduced. With RFG II in 2000, sulfur concentrations were further reduced enabling use of new emission control technologies. With the Tier 3 program, sulfur content of gasoline was limited to a maximum of 10 ppm in 2017 (https://www.epa.gov/gasoline-standards/gasoline-sulfur).

Heavier Hydrocarbons

C8-C40 Full Scan Semi-Quantitative Characterization (GC/MS)

GC/MS results provide more detailed information that can be used to identify the presence of various products, determine the degree of weathering, and can aid in age dating. Table 5 below summarizes the compound classes analyzed.

Table 5. Summary of Ion m/z Ratios and Corresponding Compound Classes.

Ion (m/z)	Compound Class
TIC	All
85	n-paraffins
113	Iso-paraffins
83	Alkylcyclohexanes
134	C3-C4 Monoaromatics
123	Bicyclanes
191	Terpanes
217	Steranes
253	Monoaromatic Steranes
231	Triaromatic Steranes
Bar Diagram	Monoaromatic and Polyaromatic Hydrocarbon Distribution

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Various classes of petroleum hydrocarbons differ in their susceptibility to biodegradation. Table 6 below adapted from Kaplan et al 1997 summarizes the general trends in the chemical composition of example petroleum products as biodegradation proceeds from slightly degraded (1) to severely degraded (10).

Table 6. General Changes in Composition of Petroleum Fuels as Biodegradation Proceeds.[1]

Bunker C	Diesel	Gasoline	Level of Biodegradation	Chemical Composition as Biodegradation Increases
	X	X	1	Abundant n-alkanes
	X	X	2	Light end n-alkanes removed
X	X	X	3	Middle range n-alkanes, olefins, benzene and toluene removed
X	X	X	4	More than 90% of n-alkanes removed
X	X	X	5	Alkylcyclohexanes and alkybenzenes removed. Isoprenoids and C0-naphthalene reduced
X	X		6	Isoprenoids, C1-naphthalenes, benzothiophene and alkylbenzothiophenes removed. C2-naphthalenes selectively reduced
X	X		7	Phenanthrene, dibenzothiophenes and other PAH reduced
X			8	Tricyclic terpanes enriched. Regular steranes selectively removed, C31 to C35 homohopanes reduced
X			9	Tricyclic terpanes, diasteranes and aromatic steranes abundant
X			10	Aromatic steranes and demethylated hopanes* predominant

The n-alkanes (m/z 85) are generally the most susceptible to biodegradation. Following release, the lighter end alkanes are biodegraded first leaving the mid-range and heavier alkanes as well as the alkylbenzenes (m/z 134), alkylcyclohexanes (m/z 83), and isoparaffins and isoprenoids (m/z 113). The isoparaffin groups have been found to be especially important in estimating degree of biodegradation with the n-C17/pristane (Pr) ratio suggested for estimated the age of diesel release (Table 7). After moderate degradation, n-alkanes may no longer be detected and the alkylcyclohexanes and alkylbenzenes will be reduced and ultimately removed. As degradation continues to become more severe, the lower molecular weight isoprenoids are preferentially removed leaving the larger isoprenes (phytane and pristane). While biodegradation occurs, phytane and pristane have similar stability so the ratios of the larger isoprenoids are generally constant (Table 7).

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Table 7. Additional Biodegradation Ratios for Heavier Hydrocarbons.

	Fresh Diesel	Ratio Trend/Rationale
Biodegradation		
n-C17 / Pristane (Pr)	2.18	Decreases with biodegradation
n-C18 / Phytane (Ph)	3.27	Decreases with biodegradation
n-C17 / Farnesane	5.29	Decreases with biodegradation
n-C17 / 2,6,10-tmt	4.91	Decreases with biodegradation
n-C18 / nor-Pr	2.95	Decreases with biodegradation
n-C18 / Ph	3.27	Decreases with biodegradation
Pr / nor-Pr	1.55	Constant with biodegradation
Pr / Ph	1.72	Constant with biodegradation
Pr / 2,6,10-tmt	2.26	Constant with biodegradation
nor-Pr / Ph	1.11	Constant with biodegradation
nor-Pr / 2,6,10-tmt	1.46	Constant with biodegradation
Pr / Farnesane	2.43	Constant with biodegradation
nor-Pr / Farnesane	1.57	Constant with biodegradation

In addition to alkybenzenes, diesel fuel and heavier petroleum products also contain a wide range of PAH from naphthalenes and phenanthrenes to benzo(B+K)fluoranthene, and benzo(E+A)pyrene as well as the sulfur-containing aromatics, such as benzothiophene and dibenzothiophene. As summarized in Table 8, preferential biodegradation of alkylbenzenes and naphthalenes relative to alkylphenanthrenes leads to changes in ratios of these compounds in degraded diesel fuel. Likewise, preferential biodegradation is also evident with larger PAHs found in Bunker C.

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Table 8. Biodegradation Ratios for Diesel and Bunker C[1]

Ratio	Fresh Diesel	Fresh Bunker C	Ratio Trend
Biodegradation			
C4-Alkylbenzenes/C2-Phenanthrenes	1.6		Decreases
C2-Naphthalenes/C2-Phenanthrenes	4.3		Decreases
C2-Dibenzothiophenes/C2-Phenanthrenes		0.4	Increases
1+9-Methylphenanthrene/2+3-methylphenanthrene		0.5	Increases

The terpanes (m/z 191) and steranes (m/z 217) are high-molecular- weight hydrocarbons commonly considered biomarkers (Peters and Moldowan 1993). Due to their particular structure (chiral centers and side chains), these biomarkers represent a large number of different chemical compounds as well as a set of isomers (or enantiomers) of the same compound which are used for stability considerations and comparison of fuel patterns. Although highly resistant, terpanes and steranes have been shown to be degraded to a degree under severe weathering conditions. After extensive degradation, regular steranes are selectively removed, C31 to C35-homohopanes are reduced, and tricyclic terpanes are enriched, (Table 6). Among the terpanes, the C30-pentacyclic terpane (hopane) and certain tricyclic terpanes are the most stable (Butler et al. 1991). Even under extensive degradation, these tricyclic terpanes, diasteranes, and monoaromatic steranes (MAS, m/z 253) and triaromatic steranes (TAS, m/z 231) are highly resistant and remain.

Parent and Alkylated PAHs (EPA 8270 SIM Modified)

Often used in risk assessment, the analysis provides a full panel of forensics grade polycyclic aromatic hydrocarbon (PAH) characterization to identify creosote, MGP residues, and urban runoff. A number of diagnostic ratios have been developed to differentiate pyrogenic PAHs from petrogenic sources including phenanthrene/anthracene and fluoranthene/pyrene (Benlachen et al 1997). Wang et al (1999) proposed a Pyrogenic Index (PI) for the differentiation of pyrogenic products from petroleum products. The PI is the sum of other three- to six-ring EPA PAHs to the sum of 5 alkylated PAHs. The pyrogenic index values were determined to be 0.004 and 0.009-0.019 for the diesel and residues, but in a range of 0.8-2.0 for the six soot samples.

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SITE LOGIC Report

C3-C36 Whole Oil Molecular Characterization by GC/FID

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MI Identifier: 075RL
Report Date: December 18, 2020

Project: Chelan Chevron Site, 334893.TM.1.000.00.00.000
Comments:

Results

Table 1. Summary of the results obtained for Whole Oil Analysis.

Sample Information	MW-10-201206	MW-12-201207	RW-2-201207	MW-9-201207	MW-44-201207
Type	Product	Product	Product	Product	Product
Sample Date	12/06/2020	12/07/2020	12/07/2020	12/07/2020	12/07/2020
MI ID	075RL-1	075RL-2	075RL-3	075RL-4	075RL-5
Evaporation					
n-Pentane / n-Heptane	0.11	0.39	0.39	0.27	0.27
2-Methylpentane / 2-Methylheptane	0.56	0.89	1.54	1.06	0.67
Waterwashing					
Benzene / Cyclohexane	0.24	0.61	0.15	0.15	0.78
Toluene + 2,3,3-Trimethylpentane / Methylcyclohexane	0.45	0.31	0.94	0.40	0.25
Aromatics / Total Paraffins (n+iso+cyc)	0.31	0.53	0.41	0.45	0.50
Aromatics / Naphthenes	1.72	2.22	2.68	2.38	2.06
Biodegradation					
(C4 - C8 Para + Isopara) / C4 - C8 Olefins	63.12	15.63	45.72	42.42	17.81
3-Methylhexane / n-Heptane	0.69	0.00	1.04	0.71	0.54
Methylcyclohexane / n-Heptane	0.79	1.08	0.69	0.87	1.26
Isoparaffins + Naphthenes / Paraffins	3.20	2.71	4.52	3.51	3.19
Octane rating					
2,2,4,-Trimethylpentane / Methylcyclohexane	1.13	0.54	3.53	1.16	0.33
Relative percentages - Bulk hydrocarbon composition as PIANO					
% Paraffinic	17.88	16.97	12.63	15.02	15.33
% Isoparaffinic	43.79	30.94	46.55	40.06	33.23
% Aromatic	23.06	33.42	28.43	30.27	32.42
% Naphthenic	13.37	15.07	10.62	12.70	15.72
% Olefinic	1.90	3.59	1.78	1.95	3.30

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Table 2. Summary of the results obtained for Whole Oil Analysis.

Sample Information	MW-19-201207	MW-16-201207	MW-21-201208	MW-27-201208	22IE Woodin UST-1
Type	Product	Product	Product	Product	Product
Sample Date	12/07/2020	12/07/2020	12/08/2020	12/08/2020	11/07/2020
MI ID	075RL-6	075RL-7	075RL-8	075RL-9	075RL-10
Evaporation					
n-Pentane / n-Heptane	0.19	0.45	0.64	0.28	0.00
2-Methylpentane / 2-Methylheptane	0.62	1.28	0.81	0.23	0.09
Waterwashing					
Benzene / Cyclohexane	0.09	0.26	0.17	0.09	0.29
Toluene + 2,3,3-Trimethylpentane / Methylcyclohexane	0.00	0.49	0.04	0.04	1.03
Aromatics / Total Paraffins (n+iso+cyc)	0.35	0.45	0.28	4.30	1.19
Aromatics / Naphthenes	1.03	2.55	1.11	29.53	3.82
Biodegradation					
(C4 - C8 Para + Isopara) / C4 - C8 Olefins	110.19	31.50	30.62	0.00	70.71
3-Methylhexane / n-Heptane	1.13	0.75	0.42	0.77	0.38
Methylcyclohexane / n-Heptane	3.91	0.76	1.36	4.56	1.38
Isoparaffins + Naphthenes / Paraffins	4.46	3.41	2.43	1.97	3.12
Octane rating					
2,2,4,-Trimethylpentane / Methylcyclohexane	0.00	1.47	0.52	0.10	0.16
Relative percentages - Bulk hydrocarbon composition as PIANO					
% Paraffinic	13.43	15.25	22.24	6.20	11.01
% Isoparaffinic	35.11	40.13	34.74	9.54	20.26
% Aromatic	25.46	30.43	21.52	79.19	53.70
% Naphthenic	24.81	11.91	19.34	2.68	14.04
% Olefinic	1.19	2.29	2.15	2.38	0.99

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Table 3. Summary of the results obtained for Whole Oil Analysis.

	Sample Information	MW-10-201206	MW-12-201207	RW-2-201207	MW-9-201207	MW-44-201207
	Type	Product	Product	Product	Product	Product
	Sample Date	12/06/2020	12/07/2020	12/07/2020	12/07/2020	12/07/2020
	MI ID	075RL-1	075RL-2	075RL-3	075RL-4	075RL-5
		Relative % area	Relative % area	Relative % area	Relative % area	Relative % area
1	Propane	0.00	0.00	0.00	0.00	0.00
2	Isobutane	0.00	0.01	0.01	0.00	0.00
3	Isobutene	0.03	0.16	0.13	0.05	0.10
4	Butane/Methanol	0.00	0.00	0.00	0.00	0.00
5	trans-2-Butene	0.00	0.00	0.00	0.00	0.00
6	cis-2-Butene	0.00	0.00	0.00	0.00	0.00
7	3-Methyl-1-butene	0.00	0.02	0.00	0.00	0.00
8	Isopentane	0.39	1.16	1.53	1.12	0.64
9	1-Pentene	0.00	0.11	0.04	0.02	0.07
10	2-Methyl-1-butene	0.03	0.17	0.04	0.02	0.16
11	Pentane	0.48	1.48	1.21	1.03	0.94
12	trans-2-Pentene	0.03	0.24	0.07	0.04	0.18
13	cis-2-Pentene/t-Butanol	0.02	0.13	0.05	0.02	0.10
14	2-Methyl-2-butene	0.07	0.45	0.06	0.04	0.40
15	2,2-Dimethylbutane	0.05	0.06	0.12	0.09	0.00
16	Cyclopentane	0.01	0.05	0.00	0.00	0.06
17	2,3-Dimethylbutane/MTBE	0.59	0.62	1.03	0.82	0.74
18	2-Methylpentane	2.00	2.40	3.42	2.82	1.79
19	3-Methylpentane	1.37	1.56	2.24	1.89	1.21
20	Hexane	2.18	2.73	2.72	2.81	2.04
21	trans-2-Hexene	0.08	0.41	0.06	0.15	0.38
22	3-Methylcyclopentene	0.15	0.26	0.16	0.22	0.38
23	3-Methyl-2-pentene	0.08	0.20	0.14	0.15	0.14
24	cis-2-Hexene	0.09	0.40	0.13	0.18	0.38
25	3-Methyl-trans-2-pentene	0.11	0.07	0.14	0.11	0.05
26	Methylcyclopentane	1.46	2.49	2.08	2.03	2.46
27	2,4-Dimethylpentane	1.01	0.71	1.74	0.99	0.53
28	Benzene	0.14	0.61	0.10	0.10	0.82
29	5-Methyl-1-hexene	0.20	0.15	0.22	0.21	0.13
30	Cyclohexane	0.57	1.00	0.65	0.69	1.06
31	2-Methylhexane/TAME	2.47	1.65	2.95	2.27	1.38
32	2,3-Dimethylpentane	2.46	1.44	4.01	2.28	1.08
33	3-Methylhexane	3.01	0.00	3.24	2.71	1.86
34A	1-trans-3-Dimethylcyclopentane	1.10	1.26	1.34	1.11	1.64
34B	1-cis-3-Dimethylcyclopentane	1.73	2.20	1.25	1.76	2.24
35	2,2,4-Trimethylpentane	3.84	2.23	7.63	3.87	1.42
36	n-Heptane	4.34	3.82	3.12	3.81	3.45
37	Methylcyclohexane	3.41	4.14	2.16	3.33	4.35
38	2,5-Dimethylhexane	0.85	0.47	1.21	0.70	0.53
39	2,4-Dimethylhexane	1.53	0.97	1.57	1.34	0.66
40	2,3,4-Trimethylpentane	1.96	1.45	3.07	1.93	1.24
41A	Toluene/2,3,3-Trimethylpentane	1.54	1.29	2.04	1.32	1.10
41B	2,3,3-Trimethylpentane	0.23	0.16	0.12	0.20	0.16
42	2,3-Dimethylhexane	1.92	1.31	0.00	1.60	1.22
43	2-Methylheptane	3.55	2.69	2.23	2.66	2.66
44	4-Methylheptane	1.10	0.67	0.82	0.84	0.84
45	3,4-Dimethylhexane	0.42	0.25	0.39	0.34	0.41
46A	3-Ethyl-3-methylpentane	2.48	2.34	1.33	2.40	2.44
46B	1,4-Dimethylcyclohexane	2.51	1.40	1.96	1.90	1.27
47	3-Methylheptane	1.06	0.77	1.01	0.86	0.72
48	2,2,5-Trimethylhexane	0.99	1.05	0.45	0.77	1.11
49	n-Octane	5.53	4.49	2.91	3.52	4.43
50	2,2-Dimethylheptane	0.39	0.35	0.18	0.30	0.37
51	2,4-Dimethylheptane	0.42	0.24	0.50	0.31	0.46
52	Ethylcyclohexane	2.58	2.52	1.16	1.88	2.65
53	2,6-Dimethylheptane	1.40	0.55	0.93	0.69	3.46
54	Ethylbenzene	1.21	2.27	0.63	1.40	0.99

(continued ...)

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Table 3 (continued). Summary of the results obtained for Whole Oil Analysis.

	Sample Information	MW-10-201206	MW-12-201207	RW-2-201207	MW-9-201207	MW-44-201207
	Type	Product	Product	Product	Product	Product
	Sample Date	12/06/2020	12/07/2020	12/07/2020	12/07/2020	12/07/2020
	MI ID	075RL-1	075RL-2	075RL-3	075RL-4	075RL-5
		Relative % area	Relative % area	Relative % area	Relative % area	Relative % area
55	m+p Xylenes	1.44	2.52	1.79	1.59	2.33
56	4-Methyloctane	1.21	0.74	0.00	0.90	0.70
57	2-Methyloctane	1.44	0.86	1.73	1.05	0.82
58	3-Ethylheptane	0.40	0.00	0.24	0.30	0.21
59	3-Methyloctane	2.30	1.72	1.30	1.89	2.02
60	o-Xylene	0.40	1.28	0.20	0.32	0.79
61	1-Nonene	0.69	0.53	0.41	0.51	0.53
62	n-Nonane	3.33	2.73	1.70	2.39	2.73
63	Isopropylbenzene	0.32	0.30	0.34	0.38	0.23
64	3,3,5-Trimethylheptane	0.44	0.39	0.29	0.33	0.38
65	2,4,5-Trimethylheptane	1.28	1.17	0.57	0.91	1.21
66	n-Propylbenzene	0.90	0.91	0.97	1.10	0.61
67	1-Methyl-3-ethylbenzene	0.20	2.11	1.47	1.20	2.36
68	1-Methyl-4-ethylbenzene	0.57	1.33	1.13	1.20	1.44
69	1,3,5-Trimethylbenzene	1.81	2.28	2.19	2.35	2.48
70	3,3,4-Trimethylheptane	0.78	0.60	0.42	0.57	0.60
71	1-Methyl-2-ethylbenzene	1.00	1.17	1.22	1.56	1.34
72	3-Methylnonane	0.42	0.37	0.29	0.33	0.36
73	1,2,4-Trimethylbenzene	1.20	4.58	4.46	4.34	4.65
74	Isobutylbenzene	0.33	0.28	0.21	0.26	0.28
75	sec-Butylbenzene	0.47	0.37	0.33	0.37	0.36
76	n-Decane	2.01	1.71	0.98	1.46	1.73
77	1,2,3-Trimethylbenzene	0.21	1.59	1.49	1.41	1.43
78	Indan	0.56	0.63	0.26	0.50	0.61
79	1,3-Diethylbenzene	1.72	1.40	1.54	1.65	1.41
80	1,4-Diethylbenzene	1.34	1.40	1.27	1.38	1.44
81	n-Butylbenzene	0.43	0.26	0.23	0.32	0.25
82	1,3-Dimethyl-5-ethylbenzene	1.05	1.10	0.99	1.11	1.17
83	1,4-Dimethyl-2-ethylbenzene	0.34	0.26	0.19	0.26	0.26
84	1,3-Dimethyl-4-ethylbenzene	1.71	1.60	1.50	1.65	1.73
85	1,2-Dimethyl-4-ethylbenzene	0.29	0.26	0.40	0.60	0.69
86	Undecene	0.31	0.29	0.13	0.23	0.30
87	1,2,4,5-Tetramethylbenzene	0.88	0.69	0.74	0.83	0.70
88	1,2,3,5-Tetramethylbenzene	0.95	1.01	1.00	1.05	1.04
89	1,2,3,4-Tetramethylbenzene	0.80	0.69	0.60	0.72	0.71
90	Naphthalene	0.52	0.48	0.28	0.42	0.50
91	2-Methyl-naphthalene	0.51	0.51	0.58	0.59	0.46
92	1-Methyl-naphthalene	0.22	0.23	0.27	0.30	0.22

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Table 4. Summary of the results obtained for Whole Oil Analysis.

	Sample Information	MW-19-201207	MW-16-201207	MW-21-201208	MW-27-201208	22IE Woodin UST-1
	Type	Product	Product	Product	Product	Product
	Sample Date	12/07/2020	12/07/2020	12/08/2020	12/08/2020	11/07/2020
	MI ID	075RL-6	075RL-7	075RL-8	075RL-9	075RL-10
		Relative % area	Relative % area	Relative % area	Relative % area	Relative % area
1	Propane	0.00	0.00	0.00	0.00	0.00
2	Isobutane	0.00	0.01	0.02	0.00	0.00
3	Isobutene	0.05	0.10	0.39	0.00	0.00
4	Butane/Methanol	0.00	0.00	0.00	0.00	0.00
5	trans-2-Butene	0.00	0.00	0.00	0.00	0.00
6	cis-2-Butene	0.00	0.00	0.00	0.00	0.00
7	3-Methyl-1-butene	0.00	0.01	0.03	0.00	0.00
8	Isopentane	0.48	1.60	1.99	0.03	0.00
9	1-Pentene	0.00	0.02	0.12	0.00	0.00
10	2-Methyl-1-butene	0.01	0.04	0.04	0.00	0.00
11	Pentane	0.38	1.62	2.79	0.04	0.00
12	trans-2-Pentene	0.00	0.08	0.12	0.00	0.00
13	cis-2-Pentene/t-Butanol	0.00	0.04	0.05	0.00	0.00
14	2-Methyl-2-butene	0.04	0.10	0.19	0.00	0.00
15	2,2-Dimethylbutane	0.04	0.10	0.07	0.00	0.00
16	Cyclopentane	0.00	0.00	0.02	0.00	0.00
17	2,3-Dimethylbutane/MTBE	0.51	0.81	0.87	0.03	0.05
18	2-Methylpentane	1.74	3.12	2.41	0.06	0.22
19	3-Methylpentane	1.44	2.00	1.64	0.05	0.21
20	Hexane	1.06	3.01	3.50	0.06	0.79
21	trans-2-Hexene	0.03	0.20	0.26	0.00	0.08
22	3-Methylcyclopentene	0.05	0.25	0.13	0.00	0.08
23	3-Methyl-2-pentene	0.00	0.19	0.07	0.00	0.04
24	cis-2-Hexene	0.03	0.28	0.11	0.00	0.12
25	3-Methyl-trans-2-pentene	0.08	0.11	0.07	0.00	0.03
26	Methylcyclopentane	3.01	2.21	3.65	0.12	0.93
27	2,4-Dimethylpentane	0.23	1.10	0.23	0.02	0.21
28	Benzene	0.16	0.21	0.32	0.01	0.43
29	5-Methyl-1-hexene	0.10	0.22	0.08	0.00	0.07
30	Cyclohexane	1.85	0.81	1.90	0.10	1.47
31	2-Methylhexane/TAME	1.22	2.36	1.27	0.07	1.30
32	2,3-Dimethylpentane	0.91	2.33	0.69	0.06	0.61
33	3-Methylhexane	2.26	2.72	1.85	0.11	1.58
34A	1-trans-3-Dimethylcyclopentane	2.64	1.04	1.72	0.16	1.07
34B	1-cis-3-Dimethylcyclopentane	3.85	1.64	1.89	0.20	1.36
35	2,2,4-Trimethylpentane	0.00	4.04	3.09	0.07	0.93
36	n-Heptane	2.01	3.62	4.37	0.14	4.19
37	Methylcyclohexane	7.84	2.76	5.95	0.65	5.79
38	2,5-Dimethylhexane	1.53	0.73	1.14	0.09	0.55
39	2,4-Dimethylhexane	0.59	1.37	0.46	0.06	0.61
40	2,3,4-Trimethylpentane	0.42	2.05	0.60	0.06	1.07
41A	Toluene/2,3,3-Trimethylpentane	0.03	1.34	0.23	0.02	5.98
41B	2,3,3-Trimethylpentane	0.06	0.20	0.05	0.00	0.09
42	2,3-Dimethylhexane	1.18	1.55	0.85	0.17	1.14
43	2-Methylheptane	2.83	2.44	2.99	0.26	2.61
44	4-Methylheptane	0.66	0.81	0.51	0.07	0.66
45	3,4-Dimethylhexane	0.23	0.33	0.15	0.04	0.23
46A	3-Ethyl-3-methylpentane	4.22	1.65	2.96	0.84	2.33
46B	1,4-Dimethylcyclohexane	1.10	1.88	0.96	0.14	1.44
47	3-Methylheptane	0.19	0.81	0.00	0.12	0.38
48	2,2,5-Trimethylhexane	1.59	0.64	1.13	0.28	0.59
49	n-Octane	4.43	3.67	5.19	0.92	4.39
50	2,2-Dimethylheptane	0.55	0.26	0.38	0.14	0.26
51	2,4-Dimethylheptane	0.81	0.28	0.54	0.28	0.30
52	Ethylcyclohexane	4.51	1.57	3.25	1.31	1.98
53	2,6-Dimethylheptane	0.52	0.98	0.35	0.24	0.71
54	Ethylbenzene	1.62	1.02	1.27	0.54	2.52

(continued ...)

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Table 4 (continued). Summary of the results obtained for Whole Oil Analysis.

	Sample Information	MW-19-201207	MW-16-201207	MW-21-201208	MW-27-201208	22IE Woodin UST-1
	Type	Product	Product	Product	Product	Product
	Sample Date	12/07/2020	12/07/2020	12/08/2020	12/08/2020	11/07/2020
	MI ID	075RL-6	075RL-7	075RL-8	075RL-9	075RL-10
		Relative % area	Relative % area	Relative % area	Relative % area	Relative % area
55	m+p Xylenes	1.95	1.65	3.07	0.64	9.13
56	4-Methyloctane	0.74	2.18	0.86	0.29	0.55
57	2-Methyloctane	0.76	0.00	1.29	0.27	0.84
58	3-Ethylheptane	0.86	0.28	0.59	0.53	0.32
59	3-Methyloctane	2.62	1.50	1.94	0.94	0.90
60	o-Xylene	0.63	0.48	0.83	0.30	3.52
61	1-Nonene	0.11	0.45	0.00	0.44	0.30
62	n-Nonane	2.69	2.08	3.46	1.47	0.98
63	Isopropylbenzene	0.37	0.33	0.27	0.29	0.25
64	3,3,5-Trimethylheptane	0.71	0.29	0.47	0.74	0.13
65	2,4,5-Trimethylheptane	3.19	0.83	2.08	1.32	0.39
66	n-Propylbenzene	0.61	1.13	0.57	0.86	0.88
67	1-Methyl-3-ethylbenzene	0.26	2.06	0.82	0.45	3.49
68	1-Methyl-4-ethylbenzene	0.85	1.29	0.84	1.31	1.43
69	1,3,5-Trimethylbenzene	2.31	2.40	1.79	3.33	1.94
70	3,3,4-Trimethylheptane	1.26	0.50	0.83	0.99	0.36
71	1-Methyl-2-ethylbenzene	0.66	1.25	0.46	0.63	0.44
72	3-Methylnonane	0.75	0.28	0.44	1.33	0.12
73	1,2,4-Trimethylbenzene	0.58	5.31	1.52	1.95	6.34
74	Isobutylbenzene	0.40	0.22	0.29	0.65	0.22
75	sec-Butylbenzene	0.67	0.33	0.43	1.16	0.19
76	n-Decane	2.87	1.25	2.93	3.57	0.65
77	1,2,3-Trimethylbenzene	0.63	1.25	1.27	2.13	1.68
78	Indan	0.56	0.40	0.51	1.49	1.30
79	1,3-Diethylbenzene	1.71	1.46	1.12	3.87	1.25
80	1,4-Diethylbenzene	0.87	1.24	0.62	4.00	1.23
81	n-Butylbenzene	0.56	0.21	0.35	1.39	0.26
82	1,3-Dimethyl-5-ethylbenzene	0.84	1.06	0.73	3.33	1.22
83	1,4-Dimethyl-2-ethylbenzene	0.65	0.22	0.36	1.75	0.34
84	1,3-Dimethyl-4-ethylbenzene	1.49	1.58	0.78	2.94	2.08
85	1,2-Dimethyl-4-ethylbenzene	0.92	0.50	0.82	5.49	0.22
86	Undecene	0.69	0.19	0.50	1.94	0.28
87	1,2,4,5-Tetramethylbenzene	0.54	0.75	0.30	2.06	0.95
88	1,2,3,5-Tetramethylbenzene	1.34	1.05	0.43	2.94	1.31
89	1,2,3,4-Tetramethylbenzene	1.20	0.63	0.65	5.80	0.86
90	Naphthalene	1.13	0.35	0.42	4.68	0.59
91	2-Methyl-naphthalene	0.91	0.48	0.29	13.47	2.77
92	1-Methyl-naphthalene	1.00	0.24	0.16	11.71	0.89

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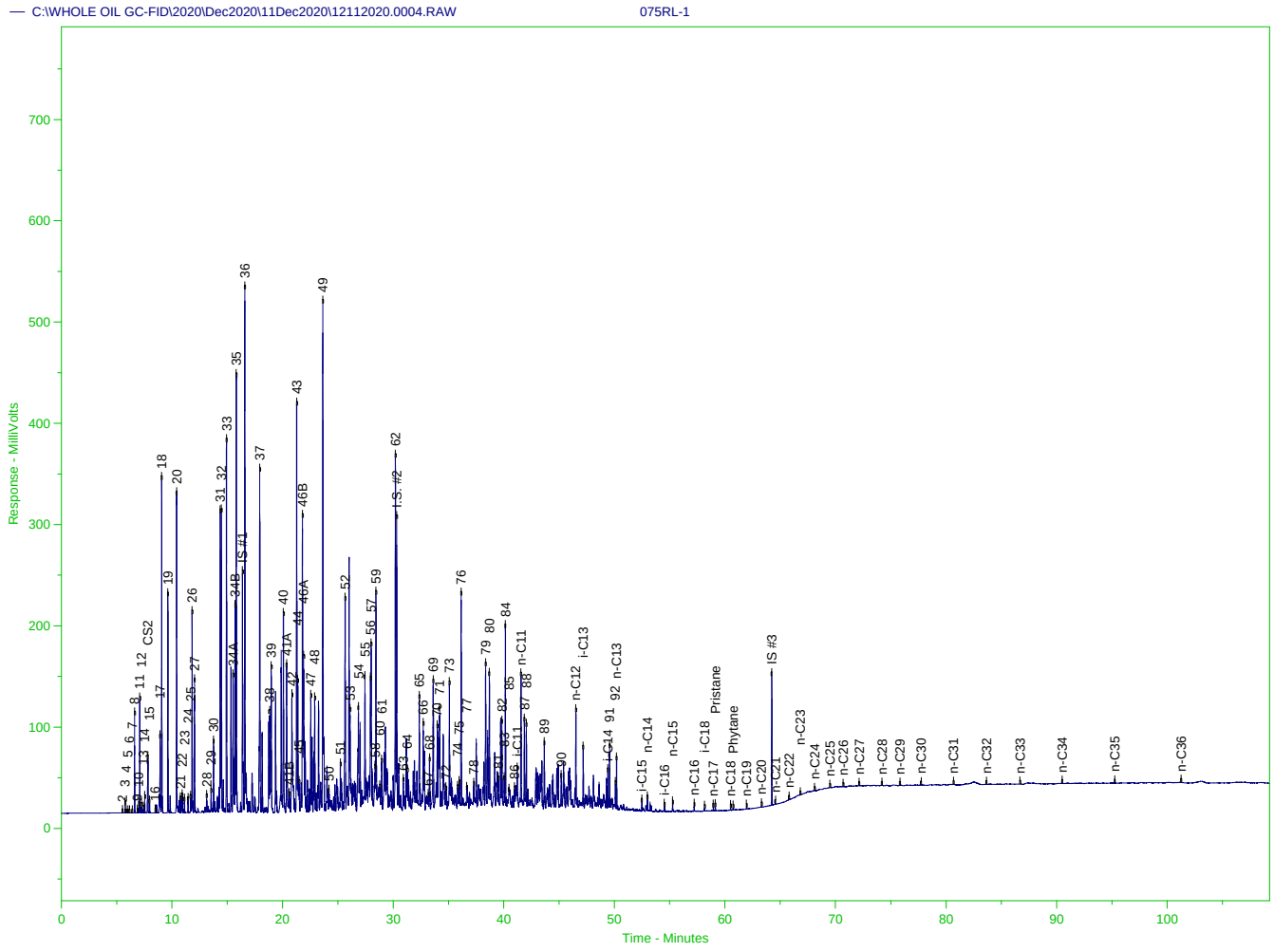

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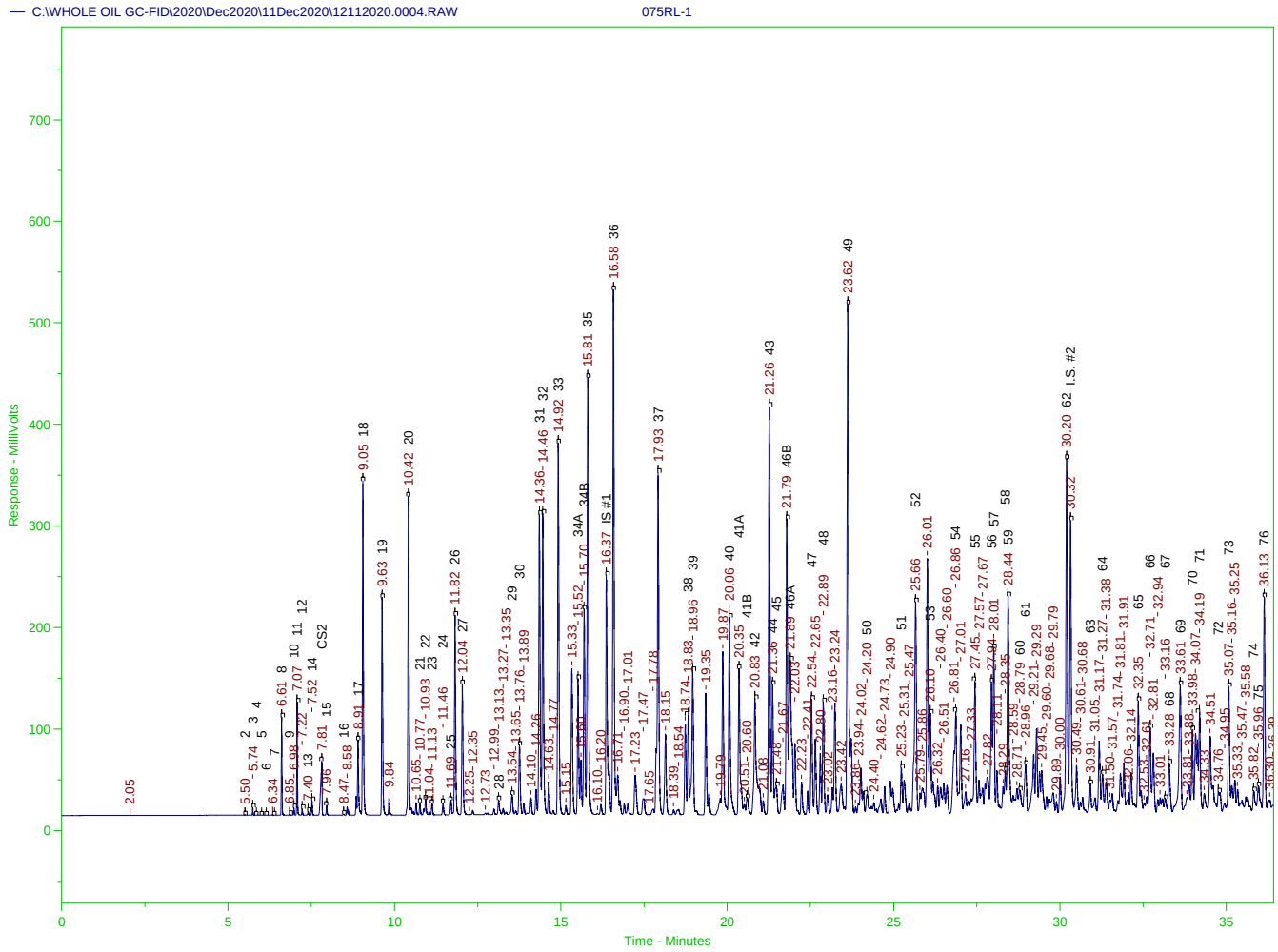

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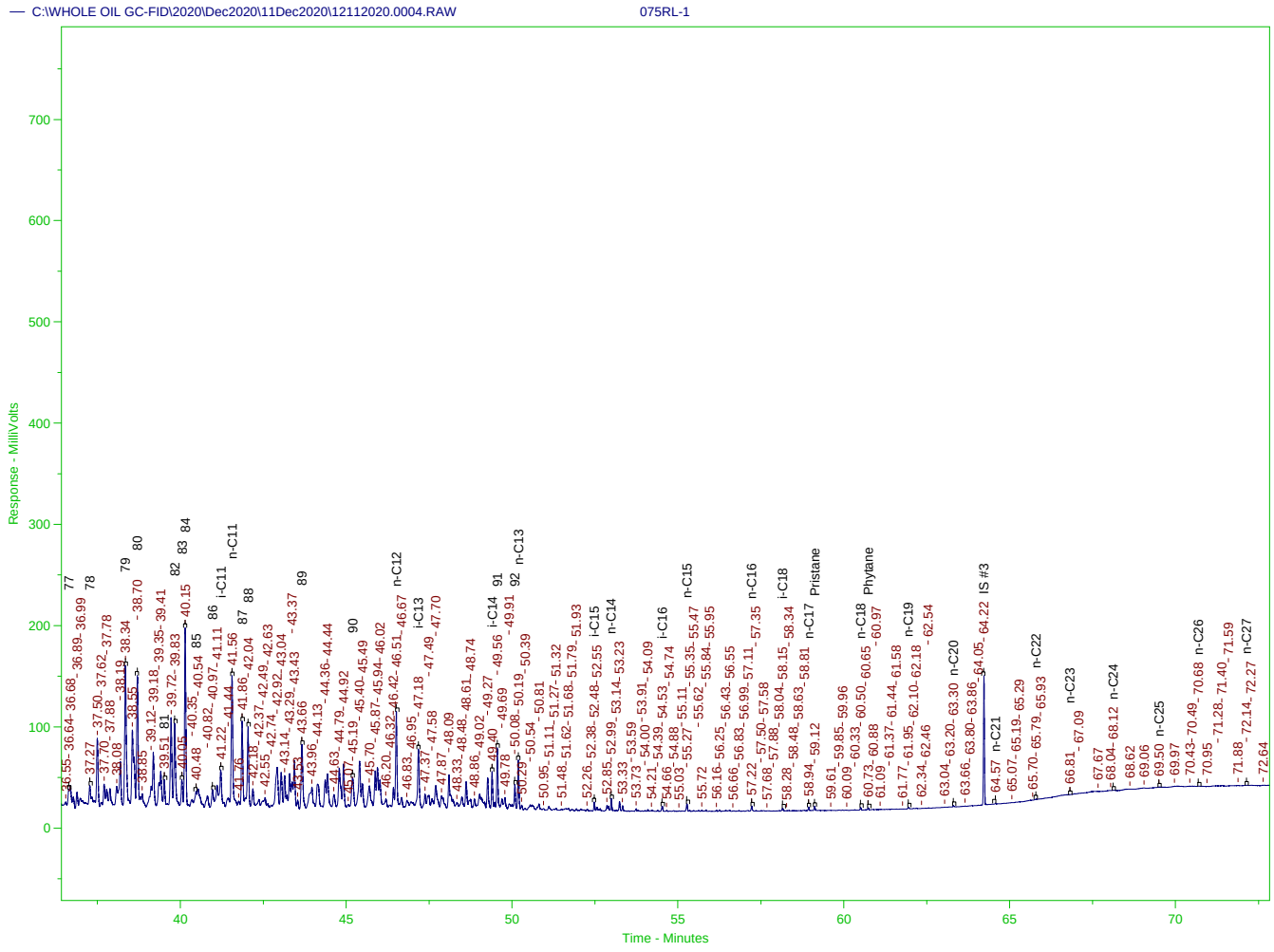

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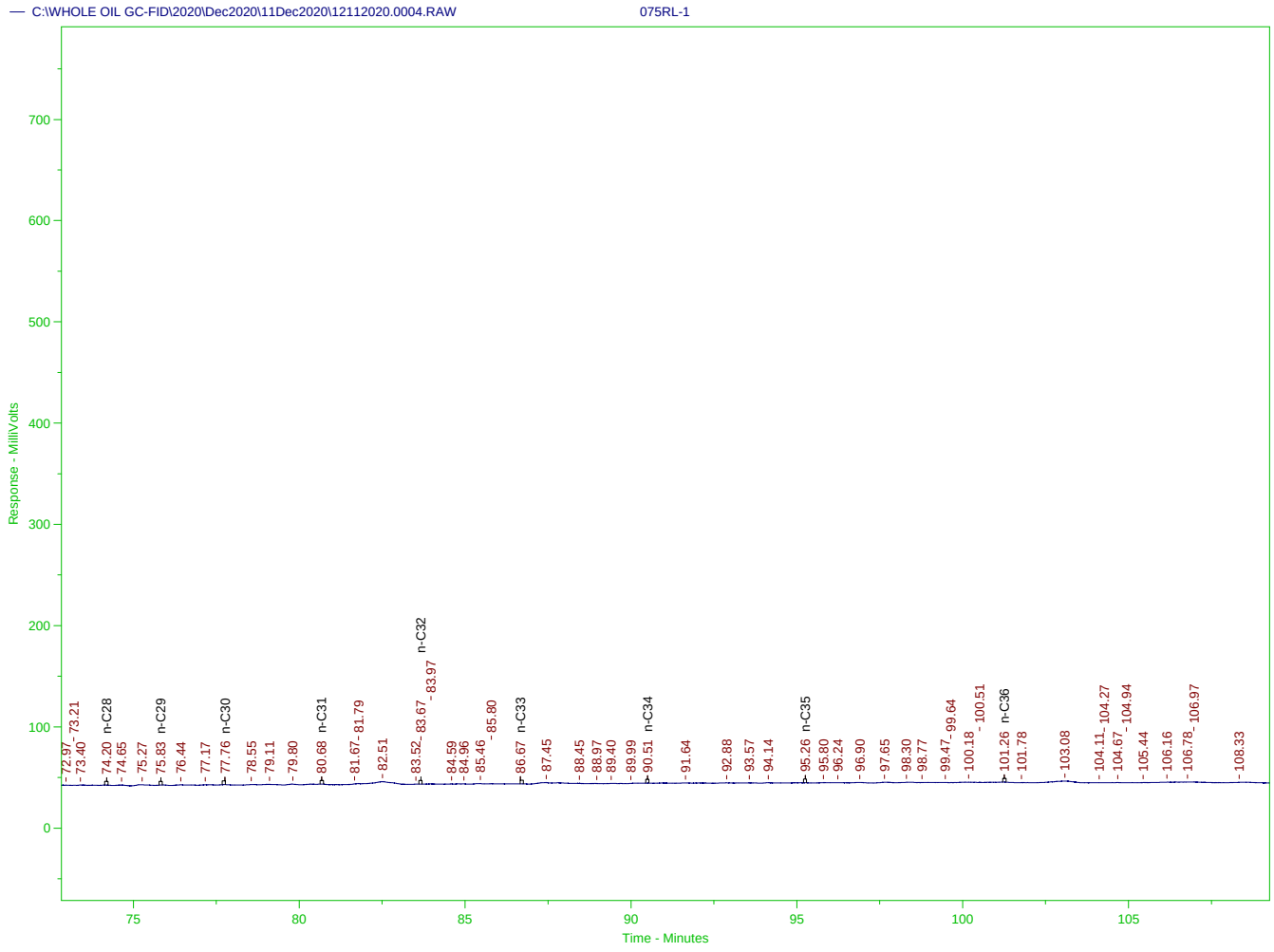

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Sample Name = **075RL-1**

Instrument = Instrument 1 Acquisition Port = DP#
Heading 1 =
Heading 2 =

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Method File Name = C:\1 - A Backup\C3442020.met Method Version = 22
Calibration File Name = C:\1 - A Backup\CALIBRATIONS\2020\12112020.cal Calibration Version = 1

Peak Name	Ret. Time	Area %	Area
	2.05	0.0003	200.97
2	5.50	0.0008	544.33
3	5.74	0.0141	9219.20
	6.34	0.0013	859.90
8	6.61	0.2008	131555.00
9	6.85	0.0014	942.47
10	6.98	0.0160	10455.27
11	7.07	0.2510	164428.30
12	7.22	0.0150	9825.41
13	7.40	0.0098	6402.12
14	7.52	0.0363	23769.18
CS2	7.81	0.2433	159406.00
15	7.96	0.0249	16343.78
16	8.47	0.0026	1728.80
	8.58	0.0376	24651.77
17	8.91	0.3034	198795.40
18	9.05	1.0344	677716.20
19	9.63	0.7091	464618.70
	9.84	0.0574	37592.84
20	10.42	1.1296	740088.40
	10.65	0.0426	27918.57
21	10.77	0.0440	28800.14
22	10.93	0.0779	51062.49
	11.04	0.0119	7815.72
23	11.13	0.0419	27467.31
24	11.46	0.0454	29730.74
25	11.69	0.0558	36557.03
26	11.82	0.7545	494346.10
27	12.04	0.5247	343774.70
	12.25	0.0030	1933.84
	12.35	0.0239	15632.65
	12.73	0.0226	14812.32
	12.99	0.0271	17755.85
28	13.13	0.0729	47792.14
	13.27	0.0272	17845.69
	13.35	0.0147	9605.31
29	13.54	0.1051	68879.92
	13.65	0.0183	12003.92
30	13.76	0.2978	195117.20
	13.89	0.0628	41140.08
	14.10	0.0733	48051.70
	14.26	0.1104	72327.72
31	14.36	1.2819	839890.10
32	14.46	1.2766	836403.90
	14.63	0.1451	95046.73
	14.77	0.0210	13750.22
33	14.92	1.5597	1021878.00
	15.15	0.0445	29144.57
	15.33	0.6233	408365.40
34A	15.52	0.5719	374719.60
	15.60	0.2312	151456.00
34B	15.70	0.8983	588570.20
35	15.81	1.9920	1305131.00
	16.10	0.0084	5487.39
	16.20	0.0519	34010.35
IS #1	16.37	1.2245	802273.20
36	16.58	2.2515	1475190.00
	16.71	0.2749	180085.90

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Peak Name	Ret. Time	Area %	Area
	16.90	0.0483	31646.81
	17.01	0.0629	41234.88
	17.23	0.2497	163632.10
	17.47	0.1216	79669.84
	17.65	0.0035	2280.93
	17.78	0.0383	25116.97
37	17.93	1.7675	1158037.00
	18.15	0.4158	272442.30
	18.39	0.0234	15355.17
	18.54	0.0421	27553.94
	18.74	0.3868	253438.00
38	18.83	0.4424	289861.30
39	18.96	0.7953	521045.30
	19.35	0.6413	420173.10
	19.79	0.1223	80097.06
	19.87	0.8158	534509.90
40	20.06	1.0163	665893.40
41A	20.35	0.7990	523524.30
	20.51	0.0525	34422.90
41B	20.60	0.1200	78610.43
42	20.83	0.9969	653169.60
	21.08	0.0665	43552.67
43	21.26	1.8409	1206122.00
44	21.36	0.5721	374859.90
45	21.48	0.2191	143532.30
	21.67	0.2186	143238.10
46B	21.79	1.3008	852250.90
46A	21.89	1.2865	842898.20
	22.03	0.3316	217259.50
	22.23	0.1512	99076.16
	22.41	0.1071	70143.57
47	22.54	0.5471	358484.00
	22.65	0.3687	241589.80
	22.80	0.2632	172428.50
48	22.89	0.5131	336163.70
	23.02	0.1192	78128.99
	23.16	0.1242	81345.26
	23.24	0.5244	343569.70
	23.42	0.2913	190860.80
49	23.62	2.8654	1877350.00
	23.86	0.0321	21058.67
	23.94	0.0459	30069.04
	24.02	0.3523	230818.90
50	24.20	0.2038	133515.80
	24.40	0.0894	58559.10
	24.62	0.1178	77169.13
	24.73	0.1325	86830.27
	24.90	0.4070	266670.70
51	25.23	0.2168	142054.40
	25.31	0.2229	146015.40
	25.47	0.0794	51990.45
52	25.66	1.3390	877290.80
	25.79	0.0974	63807.27
	25.86	0.2448	160359.40
	26.01	1.1981	784993.40
53	26.10	0.7232	473833.70
	26.32	0.1454	95250.97
	26.40	0.1827	119710.50
	26.51	0.1695	111048.30
	26.60	0.1719	112597.90
	26.81	0.3609	236463.60
54	26.86	0.6276	411176.80
	27.01	0.4470	292900.00
	27.16	0.1641	107500.60
	27.33	0.1607	105274.60
55	27.45	0.7460	488763.30
	27.57	0.1804	118210.00
	27.67	0.1880	123170.80
	27.82	0.4277	280195.60
56	27.94	0.6292	412260.30

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Peak Name	Ret. Time	Area %	Area
57	28.01	0.7489	490647.30
	28.11	0.2580	169014.60
	28.29	0.1340	87770.49
58	28.35	0.2092	137062.00
59	28.44	1.1946	782704.70
	28.59	0.1555	101862.70
	28.71	0.1405	92062.73
60	28.79	0.2084	136563.60
61	28.96	0.3582	234677.80
	29.21	0.4537	297262.30
	29.29	0.4397	288075.10
	29.45	0.4804	314785.40
	29.60	0.0902	59101.01
	29.68	0.0727	47664.84
	29.79	0.1834	120135.60
	29.89	0.0620	40595.66
	30.00	0.1899	124404.80
62	30.20	1.7265	1131167.00
I.S. #2	30.32	1.4512	950826.10
	30.49	0.3060	200483.40
	30.61	0.0602	39433.64
	30.68	0.1156	75745.05
63	30.91	0.1657	108535.50
	31.05	0.1291	84592.19
	31.17	0.3780	247687.70
64	31.27	0.2302	150828.50
	31.38	0.2176	142557.50
	31.50	0.0774	50733.21
	31.57	0.1330	87116.30
	31.74	0.0721	47221.89
	31.81	0.2447	160344.40
	31.91	0.2629	172255.00
	32.06	0.1681	110162.50
	32.14	0.2992	196022.20
65	32.35	0.6647	435523.10
	32.53	0.0607	39772.12
	32.61	0.0977	63989.29
66	32.71	0.4650	304657.90
	32.81	0.3632	237943.40
	32.94	0.0747	48956.84
	33.01	0.1664	109034.60
67	33.16	0.1056	69199.98
68	33.28	0.2950	193302.40
69	33.61	0.9379	614516.40
	33.81	0.1360	89124.06
	33.88	0.1849	121141.80
70	33.98	0.4064	266267.00
	34.07	0.6764	443179.40
71	34.19	0.5187	339833.40
	34.33	0.1675	109731.40
	34.51	0.6543	428676.00
72	34.76	0.2173	142359.40
	34.95	0.0864	56630.91
73	35.07	0.6244	409116.40
	35.16	0.1548	101433.10
	35.25	0.1919	125743.10
	35.33	0.1356	88817.30
	35.47	0.1465	95981.16
	35.58	0.2236	146489.20
74	35.82	0.1697	111208.50
75	35.96	0.2412	158052.90
76	36.13	1.0439	683952.60
	36.30	0.1488	97484.40
	36.39	0.0685	44859.18
	36.55	0.0961	62984.57
77	36.64	0.1079	70711.63
	36.68	0.2274	148970.60
	36.89	0.1075	70453.80
	36.99	0.2518	164960.40
78	37.27	0.2913	190847.70

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Peak Name	Ret. Time	Area %	Area
	37.50	0.3816	249994.60
	37.62	0.0604	39585.81
	37.70	0.1432	93834.23
	37.78	0.1408	92265.89
	37.88	0.1996	130799.40
	38.08	0.1612	105586.50
	38.19	0.3355	219807.20
79	38.34	0.8919	584389.40
	38.55	0.6294	412407.50
80	38.70	0.6967	456493.20
	38.85	0.1490	97609.10
	39.12	0.2230	146120.40
	39.18	0.3297	215996.90
	39.35	0.1549	101490.90
	39.41	0.2294	150277.00
81	39.51	0.2252	147568.50
	39.72	0.5192	340155.40
82	39.83	0.5432	355929.40
83	40.05	0.1764	115554.20
84	40.15	0.8841	579261.20
	40.35	0.1003	65733.43
85	40.48	0.1485	97285.91
	40.54	0.2583	169210.80
	40.82	0.1530	100218.70
86	40.97	0.1616	105866.10
	41.11	0.1905	124826.80
i-C11	41.22	0.3421	224161.50
	41.44	0.1300	85186.37
n-C11	41.56	0.7679	503147.80
	41.76	0.0673	44082.22
87	41.86	0.4558	298645.70
88	42.04	0.4928	322845.70
	42.18	0.1623	106315.30
	42.37	0.1199	78586.55
	42.49	0.0863	56572.98
	42.55	0.0851	55734.78
	42.63	0.0498	32622.95
	42.74	0.0426	27924.18
	42.92	0.4073	266858.60
	43.04	0.2293	150225.00
	43.14	0.2683	175771.20
	43.29	0.1991	130459.10
	43.37	0.1457	95445.35
	43.43	0.2589	169598.50
	43.53	0.0640	41958.00
89	43.66	0.4140	271237.60
	43.96	0.3302	216311.70
	44.13	0.2795	183153.00
	44.36	0.1771	116029.60
	44.44	0.2655	173940.10
	44.63	0.1321	86552.80
	44.79	0.3339	218796.10
	44.92	0.2505	164104.30
	45.07	0.0547	35829.82
90	45.19	0.2691	176324.80
	45.40	0.3602	235969.40
	45.49	0.1614	105746.80
	45.70	0.2760	180839.20
	45.87	0.2095	137264.80
	45.94	0.2272	148874.20
	46.02	0.1835	120204.30
	46.20	0.1344	88033.07
	46.32	0.0565	37002.63
	46.42	0.1199	78559.65
n-C12	46.51	0.4829	316413.30
	46.67	0.1252	82008.09
	46.83	0.0957	62709.73
	46.95	0.1216	79699.01
i-C13	47.18	0.3913	256398.30
	47.37	0.1155	75692.41

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Peak Name	Ret. Time	Area %	Area
	47.49	0.1405	92085.30
	47.58	0.0925	60610.27
	47.70	0.2284	149647.90
	47.87	0.1829	119831.90
	48.09	0.3280	214919.30
	48.33	0.0788	51640.82
	48.48	0.1318	86381.14
	48.61	0.1600	104800.70
	48.74	0.1122	73509.68
	48.86	0.1007	65990.87
	49.02	0.2557	167517.90
	49.27	0.1813	118794.10
i-C14	49.40	0.2035	133344.90
91	49.56	0.2635	172635.20
	49.69	0.0713	46738.32
	49.78	0.0959	62811.56
	49.91	0.0911	59711.57
92	50.08	0.1158	75886.41
n-C13	50.19	0.1951	127796.60
	50.29	0.0350	22960.14
	50.39	0.0193	12655.81
	50.54	0.1119	73301.21
	50.81	0.0649	42549.52
	50.95	0.0195	12785.03
	51.11	0.0464	30409.23
	51.27	0.0171	11213.07
	51.32	0.0251	16440.76
	51.48	0.0219	14359.49
	51.62	0.0213	13942.45
	51.68	0.0215	14056.10
	51.79	0.0189	12392.79
	51.93	0.0450	29510.08
	52.26	0.0142	9289.17
	52.38	0.0050	3295.32
i-C15	52.48	0.0357	23387.47
	52.55	0.0402	26351.22
	52.85	0.0446	29190.30
n-C14	52.99	0.0500	32782.59
	53.14	0.0067	4363.34
	53.23	0.0357	23395.02
	53.33	0.0248	16262.09
	53.59	0.0051	3329.57
	53.73	0.0174	11407.34
	53.91	0.0031	2005.80
	54.00	0.0044	2898.53
	54.09	0.0071	4650.54
	54.21	0.0101	6627.73
	54.39	0.0050	3255.83
i-C16	54.53	0.0222	14518.57
	54.66	0.0037	2450.66
	54.74	0.0025	1610.75
	54.88	0.0059	3895.46
	55.03	0.0027	1775.34
	55.11	0.0034	2257.58
n-C15	55.27	0.0283	18523.24
	55.35	0.0042	2746.44
	55.47	0.0044	2864.52
	55.62	0.0057	3712.65
	55.72	0.0047	3080.65
	55.84	0.0046	3036.32
	55.95	0.0021	1396.58
	56.16	0.0039	2541.18
	56.25	0.0057	3720.27
	56.43	0.0059	3852.56
	56.55	0.0060	3920.00
	56.66	0.0036	2326.25
	56.83	0.0038	2501.25
	56.99	0.0012	770.04
	57.11	0.0048	3135.71
n-C16	57.22	0.0192	12585.46

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	57.35	0.0035	2278.90
	57.50	0.0020	1336.19
	57.58	0.0032	2096.70
	57.68	0.0026	1677.18
	57.88	0.0006	384.12
	58.04	0.0024	1581.08
i-C18	58.15	0.0112	7350.41
	58.28	0.0013	881.97
	58.34	0.0020	1281.83
	58.48	0.0032	2085.04
	58.63	0.0010	643.39
	58.81	0.0038	2485.59
n-C17	58.94	0.0133	8725.99
Pristane	59.12	0.0186	12178.73
	59.61	0.0011	690.96
	59.85	0.0031	2001.23
	59.96	0.0015	997.68
	60.09	0.0019	1230.32
	60.33	0.0018	1192.39
n-C18	60.50	0.0077	5031.60
	60.65	0.0014	916.63
Phytane	60.73	0.0076	4953.24
	60.88	0.0028	1810.97
	60.97	0.0025	1637.51
	61.09	0.0040	2644.44
	61.37	0.0012	766.75
	61.44	0.0023	1512.53
	61.58	0.0010	662.41
	61.77	0.0014	893.64
n-C19	61.95	0.0068	4435.74
	62.10	0.0019	1255.23
	62.18	0.0030	1952.74
	62.34	0.0009	583.90
	62.46	0.0007	477.22
	62.54	0.0010	651.87
	63.04	0.0046	3001.55
	63.20	0.0027	1797.87
n-C20	63.30	0.0043	2785.95
	63.66	0.0031	2020.86
	63.80	0.0023	1498.84
	63.86	0.0025	1642.20
	64.05	0.0047	3078.80
IS #3	64.22	0.3873	253778.00
n-C21	64.57	0.0254	16636.57
	65.07	0.0392	25657.04
	65.19	0.0118	7746.35
	65.29	0.0148	9725.14
	65.70	0.0789	51680.38
n-C22	65.79	0.0287	18780.27
	65.93	0.0425	27818.05
n-C23	66.81	0.4089	267933.40
	67.09	0.1647	107920.80
	67.67	0.4265	279451.70
	68.04	0.2203	144347.10
n-C24	68.12	0.1726	113076.00
	68.62	0.2476	162256.70
	69.06	0.3019	197769.30
n-C25	69.50	0.4466	292637.20
	69.97	0.2091	136977.20
	70.43	0.1485	97307.80
	70.49	0.1025	67182.73
n-C26	70.68	0.1851	121276.10
	70.95	0.0559	36653.85
	71.28	0.1937	126933.40
	71.40	0.0954	62529.48
	71.59	0.0618	40479.18
	71.88	0.2047	134144.20
n-C27	72.14	0.1229	80528.80
	72.27	0.1584	103803.40
	72.64	0.0760	49786.51

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Peak Name	Ret. Time	Area %	Area
	72.97	0.1922	125925.40
	73.21	0.0732	47959.98
	73.40	0.1995	130724.80
n-C28	74.20	0.1068	69978.16
	74.65	0.0776	50810.17
	75.27	0.0511	33452.74
n-C29	75.83	0.0015	970.48
	76.44	0.0092	6034.81
	77.17	0.0017	1099.75
n-C30	77.76	0.0111	7276.10
	78.55	0.0199	13032.31
	79.11	0.0293	19217.61
	79.80	0.0205	13435.19
n-C31	80.68	0.0479	31358.59
	81.67	0.0081	5327.69
	81.79	0.0145	9484.23
	82.51	0.1871	122607.20
	83.52	0.0074	4846.21
n-C32	83.67	0.0051	3367.32
	83.97	0.0146	9578.04
	84.59	0.0056	3698.31
	84.96	0.0151	9878.08
	85.46	0.0185	12099.21
	85.80	0.0183	11979.06
n-C33	86.67	0.0100	6577.19
	87.45	0.0657	43045.02
	88.45	0.0135	8872.59
	88.97	0.0052	3439.68
	89.40	0.0117	7652.49
	89.99	0.0005	332.60
n-C34	90.51	0.0017	1118.05
	91.64	0.0075	4912.12
	92.88	0.0210	13766.95
	93.57	0.0136	8897.64
	94.14	0.0102	6651.94
n-C35	95.26	0.0013	883.67
	95.80	0.0024	1561.58
	96.24	0.0057	3733.70
	96.90	0.0152	9980.97
	97.65	0.0114	7449.36
	98.30	0.0018	1190.99
	98.77	0.0009	612.98
	99.47	0.0012	805.76
	99.64	0.0008	503.08
	100.18	0.0185	12095.00
	100.51	0.0017	1106.61
n-C36	101.26	0.0084	5525.74
	101.78	0.0011	747.97
	103.08	0.1016	66568.93
	104.11	0.0015	983.58
	104.27	0.0006	372.39
	104.67	0.0012	807.53
	104.94	0.0010	635.70
	105.44	0.0066	4324.89
	106.16	0.0113	7377.10
	106.78	0.0236	15448.11
	106.97	0.0161	10528.15
	108.33	0.0005	360.18

Total Area = 6.551902E+07 Total Height = 1.753248E+07 Total Amount = 0

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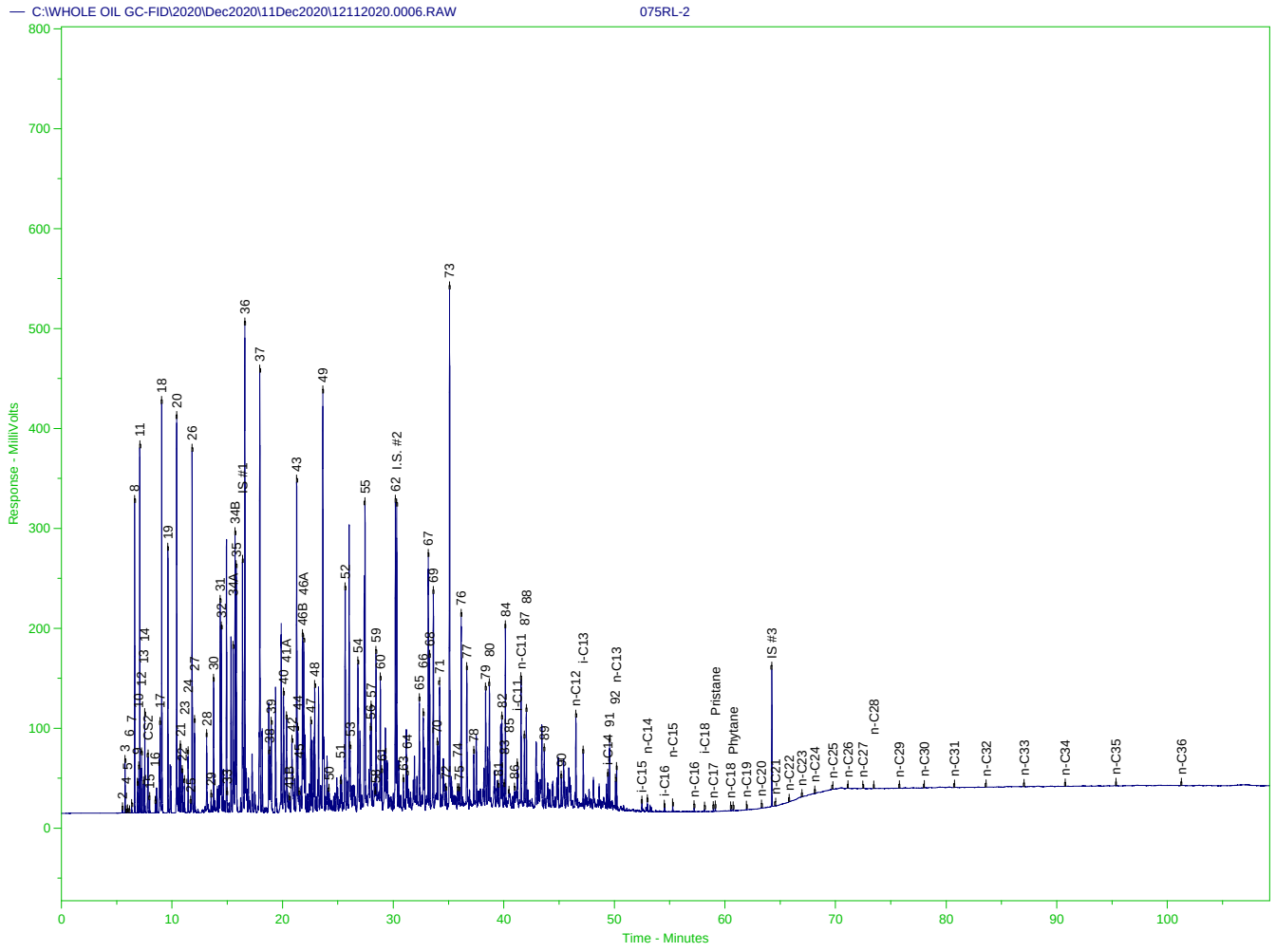

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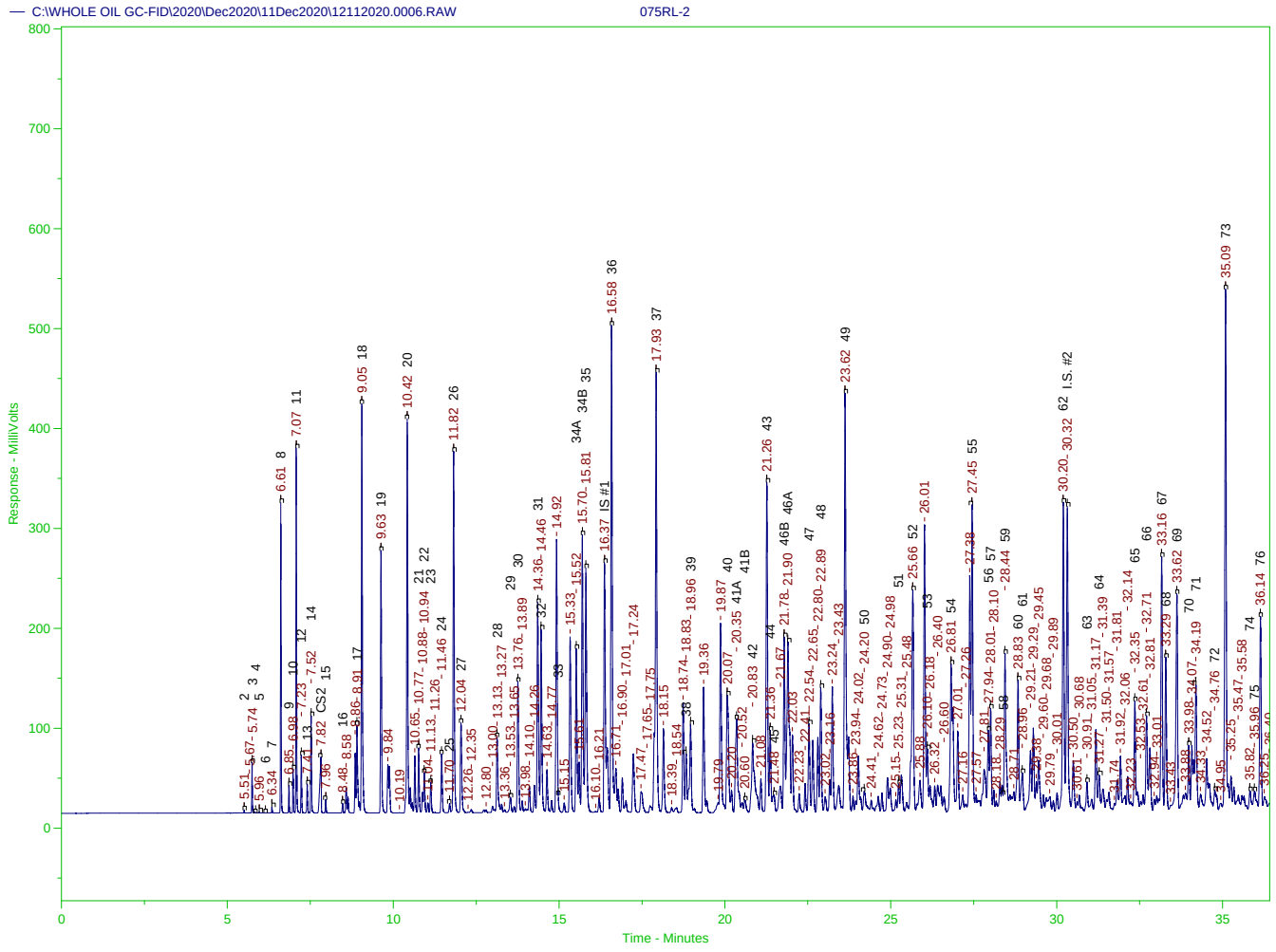

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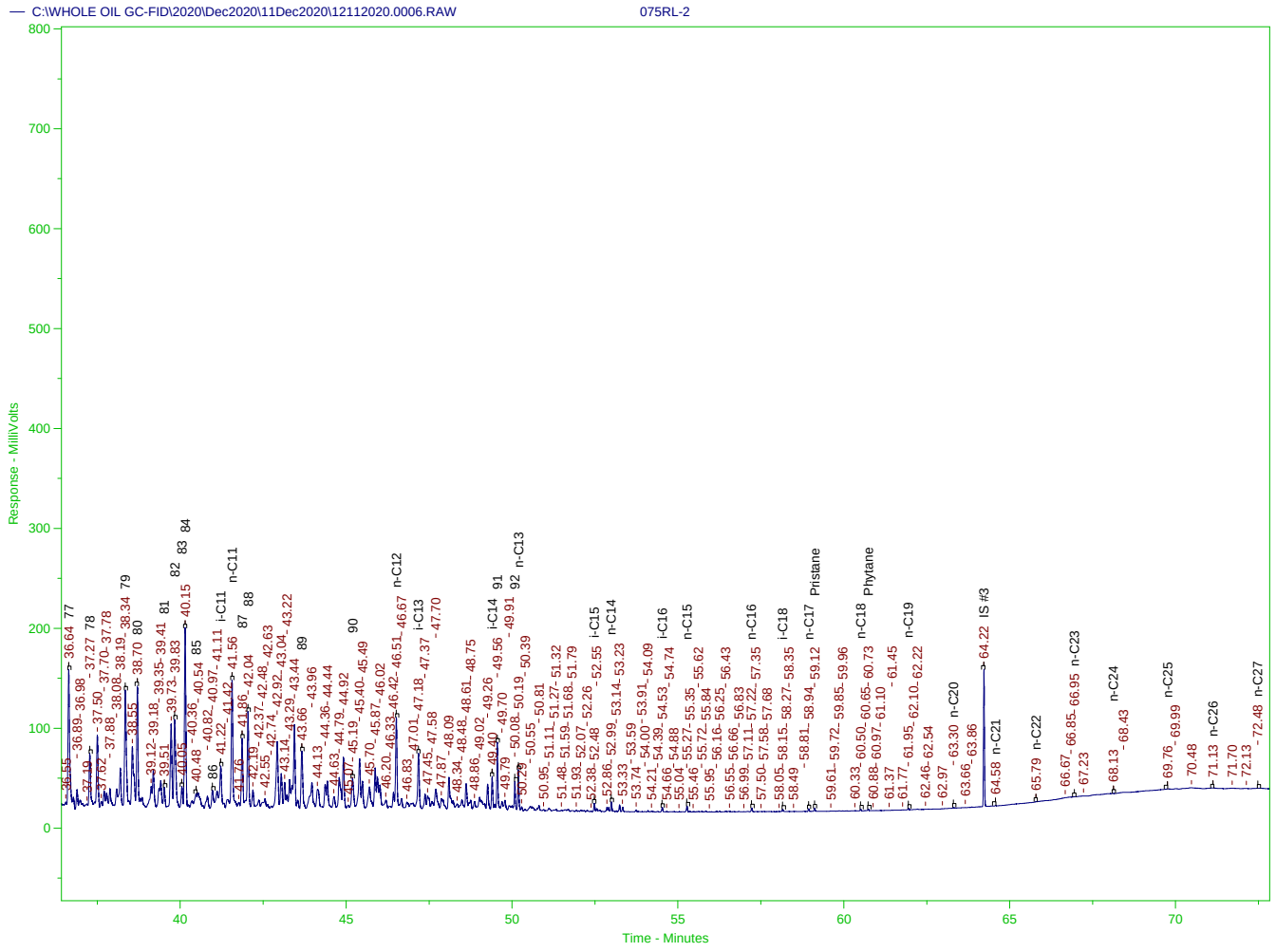

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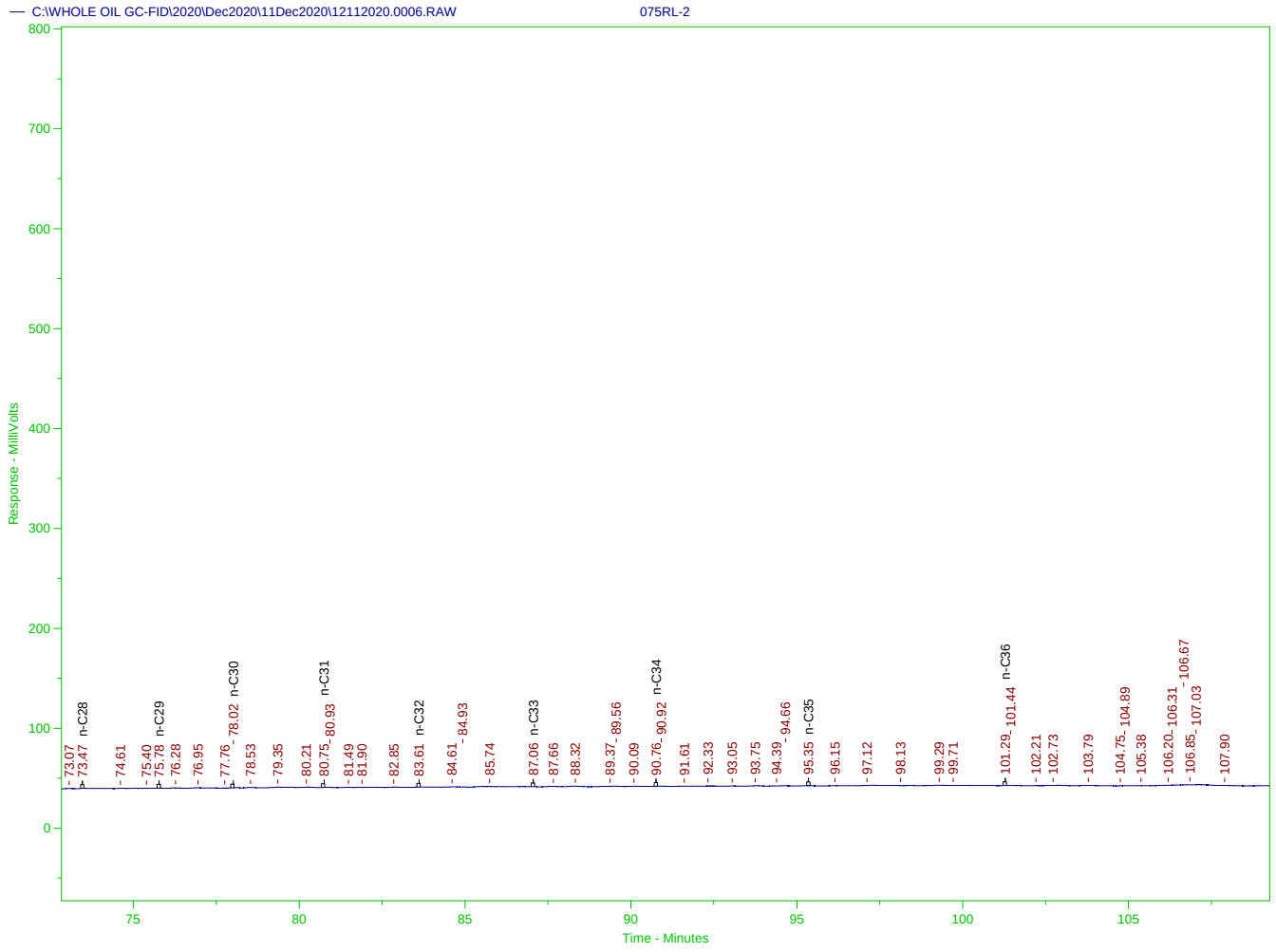

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Sample Name = **075RL-2**

Instrument = Instrument 1 Acquisition Port = DP#
Heading 1 =
Heading 2 =

Raw File Name = **C:\WHOLE OIL GC-FID\2020\Dec2020\11Dec2020\12112020.0006.RAW** Date Acquired (End) = 12/12/2020 5:28:48 AM
Method File Name = C:\1 - A Backup\C3442020.met Method Version = 23
Calibration File Name = C:\1 - A Backup\CALIBRATIONS\2020\12112020.cal Calibration Version = 1

Peak Name	Ret. Time	Area %	Area
2	5.51	0.0052	3512.43
	5.67	0.0007	488.43
3	5.74	0.0881	59707.78
5	5.96	0.0020	1350.09
7	6.34	0.0121	8215.49
8	6.61	0.6211	420984.10
9	6.85	0.0571	38674.36
10	6.98	0.0938	63569.58
11	7.07	0.7928	537345.00
12	7.23	0.1286	87184.98
13	7.41	0.0709	48036.25
14	7.52	0.2422	164128.80
CS2	7.82	0.2554	173122.60
15	7.96	0.0348	23600.40
16	8.48	0.0255	17259.59
	8.58	0.1123	76140.51
	8.86	0.1620	109808.80
17	8.91	0.3318	224874.60
18	9.05	1.2884	873227.50
19	9.63	0.8350	565935.10
	9.84	0.2984	202230.00
	10.19	0.0014	933.17
20	10.42	1.4674	994512.10
	10.65	0.1911	129523.50
21	10.77	0.2197	148874.70
	10.88	0.0689	46671.31
22	10.94	0.1405	95211.85
	11.04	0.0358	24293.31
23	11.13	0.1049	71121.87
	11.26	0.0021	1432.84
24	11.46	0.2140	145015.40
25	11.70	0.0364	24691.01
26	11.82	1.3384	907073.10
27	12.04	0.3797	257334.10
	12.26	0.0034	2327.15
	12.35	0.0219	14845.04
	12.80	0.0313	21228.73
	13.00	0.0412	27949.93
28	13.13	0.3292	223091.00
	13.27	0.0357	24164.21
	13.36	0.0161	10941.14
29	13.53	0.0828	56132.83
	13.65	0.0261	17686.82
30	13.76	0.5394	365556.80
	13.89	0.0510	34592.16
	13.98	0.0323	21888.38
	14.10	0.1124	76164.21
	14.26	0.1165	78948.58
31	14.36	0.8845	599502.20
32	14.46	0.7715	522915.80
	14.63	0.1863	126273.80
	14.77	0.0542	36715.00
	14.92	1.1321	767296.90
	15.15	0.0471	31932.78
	15.33	0.7362	498973.50
34A	15.52	0.6748	457368.10
	15.61	0.2154	145961.70
34B	15.70	1.1790	799090.70

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35	15.81	1.1956	810290.30
	16.10	0.0110	7469.84
	16.21	0.0733	49711.84
IS #1	16.37	1.3592	921199.10
36	16.58	2.0517	1390516.00
	16.71	0.3305	223972.00
	16.90	0.1441	97632.07
	17.01	0.0747	50624.12
	17.24	0.3259	220898.40
	17.47	0.1630	110459.50
	17.65	0.0043	2911.10
	17.75	0.0496	33598.23
37	17.93	2.2239	1507219.00
	18.15	0.4005	271444.40
	18.39	0.0249	16873.18
	18.54	0.0385	26126.95
	18.74	0.4655	315519.10
38	18.83	0.2545	172502.20
39	18.96	0.5197	352208.60
	19.36	0.6055	410378.70
	19.79	0.0739	50117.55
	19.87	0.9100	616752.30
40	20.07	0.7774	526850.10
	20.20	0.0990	67086.05
41A	20.35	0.6948	470899.20
	20.52	0.0521	35333.37
41B	20.60	0.0866	58707.36
42	20.83	0.7045	477505.50
	21.08	0.1529	103614.80
43	21.26	1.4447	979148.50
44	21.36	0.3585	242992.50
45	21.48	0.1341	90864.49
	21.67	0.2158	146265.70
46B	21.78	0.7542	511171.60
46A	21.90	1.2556	851009.20
	22.03	0.3558	241162.20
	22.23	0.0936	63445.95
	22.41	0.1293	87641.38
47	22.54	0.4156	281691.80
	22.65	0.3404	230725.50
	22.80	0.3242	219700.80
48	22.89	0.5618	380780.40
	23.02	0.0969	65646.42
	23.16	0.1397	94654.20
	23.24	0.5771	391151.60
	23.43	0.2509	170060.00
49	23.62	2.4129	1635345.00
	23.86	0.0695	47135.13
	23.94	0.0475	32164.04
	24.02	0.3446	233550.80
50	24.20	0.1892	128210.40
	24.41	0.0827	56069.63
	24.62	0.1145	77569.93
	24.73	0.0903	61168.22
	24.90	0.1844	124985.30
	24.98	0.1365	92535.49
	25.15	0.0652	44159.89
51	25.23	0.1310	88751.66
	25.31	0.2320	157268.00
	25.48	0.0658	44609.75
52	25.66	1.3541	917771.80
	25.88	0.2576	174600.30
	26.01	1.3094	887449.80
53	26.10	0.2970	201293.10
	26.18	0.1788	121204.60
	26.32	0.1283	86926.80
	26.40	0.3212	217714.90
	26.60	0.0936	63470.79
54	26.81	1.2196	826601.10
	27.01	0.4090	277212.50

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Peak Name	Ret. Time	Area %	Area
	27.16	0.1150	77916.85
	27.26	0.0576	39043.85
	27.38	1.0270	696020.80
55	27.45	1.3517	916086.10
	27.57	0.1874	127004.40
	27.81	0.4043	274002.70
56	27.94	0.3958	268257.80
57	28.01	0.4594	311364.20
	28.10	0.1010	68442.18
	28.18	0.0539	36497.68
	28.29	0.2843	192668.50
59	28.44	0.9242	626400.60
	28.71	0.2591	175582.20
60	28.83	0.6851	464333.50
61	28.96	0.2824	191388.20
	29.21	0.4077	276331.60
	29.29	0.4132	280051.80
	29.38	0.1408	95426.99
	29.45	0.3173	215038.00
	29.60	0.0883	59836.61
	29.68	0.1067	72289.46
	29.79	0.1029	69712.77
	29.89	0.0550	37280.20
	30.01	0.1020	69160.04
62	30.20	1.4675	994575.80
I.S. #2	30.32	1.5026	1018359.00
	30.50	0.3025	205032.00
	30.61	0.0529	35832.67
	30.68	0.1162	78721.73
63	30.91	0.1617	109585.60
	31.05	0.1018	69015.62
	31.17	0.4123	279404.60
64	31.27	0.2085	141277.90
	31.39	0.1668	113033.30
	31.50	0.0654	44354.32
	31.57	0.1277	86543.88
	31.74	0.0485	32875.93
	31.81	0.1814	122936.40
	31.92	0.2748	186213.70
	32.06	0.1456	98674.05
	32.14	0.1881	127510.80
	32.23	0.0729	49392.62
65	32.35	0.6290	426279.50
	32.53	0.0569	38595.92
	32.61	0.0936	63447.01
66	32.71	0.4880	330753.30
	32.81	0.3680	249443.00
	32.94	0.0631	42774.86
	33.01	0.1399	94832.61
67	33.16	1.1306	766244.10
68	33.29	0.7162	485404.80
	33.43	0.0369	24997.90
69	33.62	1.2240	829586.60
	33.88	0.2609	176827.30
70	33.98	0.3195	216531.40
	34.07	0.5052	342417.80
71	34.19	0.6297	426748.80
	34.33	0.1542	104536.90
	34.52	0.5290	358506.70
72	34.76	0.1978	134067.50
	34.95	0.0721	48836.64
73	35.09	2.4601	1667350.00
	35.25	0.3280	222293.70
	35.47	0.1577	106893.30
	35.58	0.2028	137472.60
74	35.82	0.1503	101873.00
75	35.96	0.1994	135133.10
76	36.14	0.9206	623948.10
	36.25	0.1428	96787.77
	36.40	0.1078	73084.84

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Peak Name	Ret. Time	Area %	Area
	36.55	0.0559	37911.91
77	36.64	0.8535	578458.80
	36.89	0.1168	79138.13
	36.98	0.1368	92735.42
	37.19	0.0734	49737.20
78	37.27	0.3405	230743.80
	37.50	0.4414	299132.80
	37.62	0.0631	42770.73
	37.70	0.1118	75799.60
	37.78	0.1147	77729.29
	37.88	0.1965	133203.20
	38.08	0.1476	100031.90
	38.19	0.2857	193621.90
79	38.34	0.7528	510192.20
	38.55	0.4829	327281.30
80	38.70	0.7541	511118.30
	39.12	0.2102	142435.40
	39.18	0.2400	162681.50
	39.35	0.1281	86811.24
	39.41	0.1697	115026.90
81	39.51	0.1393	94442.21
	39.73	0.5127	347469.40
82	39.83	0.5902	400004.30
83	40.05	0.1408	95429.05
84	40.15	0.8609	583477.10
	40.36	0.0904	61235.73
85	40.48	0.1400	94899.53
	40.54	0.2197	148906.50
	40.82	0.1453	98506.03
86	40.97	0.1536	104096.10
	41.11	0.1541	104463.90
i-C11	41.22	0.3492	236675.20
	41.42	0.1168	79177.64
n-C11	41.56	0.7273	492905.30
	41.76	0.0611	41391.42
87	41.86	0.3684	249655.30
88	42.04	0.5401	366076.90
	42.19	0.1452	98438.40
	42.37	0.1138	77104.36
	42.48	0.0760	51489.17
	42.55	0.0827	56061.71
	42.63	0.0491	33308.23
	42.74	0.0393	26666.56
	42.92	0.4811	326084.40
	43.04	0.2207	149555.30
	43.14	0.1562	105832.20
	43.22	0.0764	51804.43
	43.29	0.1721	116634.10
	43.44	0.6107	413934.30
89	43.66	0.3694	250361.80
	43.96	0.3327	225515.80
	44.13	0.2400	162683.20
	44.36	0.1580	107070.00
	44.44	0.2052	139064.80
	44.63	0.1207	81797.95
	44.79	0.2822	191238.00
	44.92	0.2785	188755.30
	45.07	0.0510	34565.90
90	45.19	0.2558	173380.50
	45.40	0.3549	240512.30
	45.49	0.1693	114743.80
	45.70	0.2612	177016.60
	45.87	0.4014	272066.60
	46.02	0.1601	108522.90
	46.20	0.1274	86356.10
	46.33	0.0529	35873.64
	46.42	0.0974	66045.85
n-C12	46.51	0.4487	304090.40
	46.67	0.1173	79503.66
	46.83	0.0853	57787.88

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Peak Name	Ret. Time	Area %	Area
	47.01	0.1144	77530.51
i-C13	47.18	0.3495	236876.00
	47.37	0.1110	75258.59
	47.45	0.1326	89897.40
	47.58	0.0756	51266.46
	47.70	0.2007	136057.60
	47.87	0.1557	105551.00
	48.09	0.2910	197238.20
	48.34	0.0704	47699.04
	48.48	0.1171	79342.96
	48.61	0.1531	103753.30
	48.75	0.0991	67186.27
	48.86	0.0696	47183.18
	49.02	0.2287	155018.00
	49.26	0.1470	99650.05
i-C14	49.40	0.1779	120597.90
91	49.56	0.2726	184760.10
	49.70	0.0572	38777.26
	49.79	0.0794	53839.31
	49.91	0.0771	52238.48
92	50.08	0.1224	82955.59
n-C13	50.19	0.1595	108109.80
	50.29	0.0285	19287.53
	50.39	0.0169	11441.50
	50.55	0.0908	61509.42
	50.81	0.0525	35607.21
	50.95	0.0172	11633.62
	51.11	0.0382	25921.70
	51.27	0.0156	10558.70
	51.32	0.0223	15091.67
	51.48	0.0175	11845.77
	51.59	0.0165	11170.59
	51.68	0.0191	12944.96
	51.79	0.0152	10296.52
	51.93	0.0151	10248.61
	52.07	0.0211	14332.83
	52.26	0.0112	7590.54
	52.38	0.0047	3163.11
i-C15	52.48	0.0320	21675.08
	52.55	0.0303	20556.47
	52.86	0.0362	24534.87
n-C14	52.99	0.0396	26841.10
	53.14	0.0057	3853.77
	53.23	0.0256	17321.95
	53.33	0.0225	15230.91
	53.59	0.0038	2552.16
	53.74	0.0135	9151.76
	53.91	0.0026	1744.58
	54.00	0.0034	2312.45
	54.09	0.0051	3447.41
	54.21	0.0076	5163.35
	54.39	0.0038	2578.82
i-C16	54.53	0.0185	12522.76
	54.66	0.0026	1779.37
	54.74	0.0023	1528.77
	54.88	0.0043	2897.27
	55.04	0.0044	2985.31
n-C15	55.27	0.0214	14510.57
	55.35	0.0030	2047.98
	55.46	0.0026	1756.78
	55.62	0.0043	2906.16
	55.72	0.0030	2041.97
	55.84	0.0036	2447.82
	55.95	0.0016	1105.51
	56.16	0.0028	1870.68
	56.25	0.0042	2848.92
	56.43	0.0048	3227.38
	56.55	0.0045	3061.24
	56.66	0.0026	1761.04
	56.83	0.0028	1889.34

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Peak Name	Ret. Time	Area %	Area
	56.99	0.0009	611.75
	57.11	0.0029	1934.65
n-C16	57.22	0.0136	9251.02
	57.35	0.0025	1721.20
	57.50	0.0015	997.97
	57.58	0.0019	1312.06
	57.68	0.0021	1447.71
	58.05	0.0018	1252.37
i-C18	58.15	0.0090	6098.88
	58.27	0.0010	685.24
	58.35	0.0015	1015.85
	58.49	0.0015	1042.00
	58.81	0.0019	1298.34
n-C17	58.94	0.0088	5974.79
Pristane	59.12	0.0121	8205.31
	59.61	0.0012	807.82
	59.72	0.0008	566.40
	59.85	0.0017	1135.75
	59.96	0.0010	667.30
	60.33	0.0013	860.81
n-C18	60.50	0.0055	3751.49
	60.65	0.0010	656.62
Phytane	60.73	0.0056	3812.57
	60.88	0.0010	676.23
	60.97	0.0007	481.73
	61.10	0.0009	636.73
	61.37	0.0006	436.60
	61.45	0.0010	681.88
	61.77	0.0010	645.44
n-C19	61.95	0.0056	3809.81
	62.10	0.0017	1132.46
	62.22	0.0036	2409.21
	62.46	0.0019	1275.46
	62.54	0.0010	680.81
	62.97	0.0005	323.12
n-C20	63.30	0.0047	3162.23
	63.66	0.0028	1916.17
	63.86	0.0012	820.08
IS #3	64.22	0.3891	263698.10
n-C21	64.58	0.0037	2539.68
n-C22	65.79	0.0891	60371.50
	66.67	0.2252	152615.70
	66.85	0.0732	49625.84
n-C23	66.95	0.0414	28044.75
	67.23	0.1509	102243.10
n-C24	68.13	0.3976	269504.40
	68.43	0.2066	140050.70
n-C25	69.76	0.7687	521007.80
	69.99	0.1010	68440.31
	70.48	0.4221	286094.90
n-C26	71.13	0.2335	158282.50
	71.70	0.1790	121342.50
	72.13	0.0695	47070.18
n-C27	72.48	0.1032	69961.65
	73.07	0.0499	33811.22
n-C28	73.47	0.0190	12875.73
	74.61	0.0039	2638.72
	75.40	0.0013	863.55
n-C29	75.78	0.0054	3647.88
	76.28	0.0123	8344.71
	76.95	0.0115	7814.05
	77.76	0.0005	324.85
n-C30	78.02	0.0011	741.34
	78.53	0.0140	9501.80
	79.35	0.0429	29074.98
	80.21	0.0182	12351.42
n-C31	80.75	0.0026	1729.13
	80.93	0.0099	6722.73
	81.49	0.0067	4558.87
	81.90	0.0160	10832.56

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Peak Name	Ret. Time	Area %	Area
	82.85	0.0116	7831.57
n-C32	83.61	0.0011	715.32
	84.61	0.0079	5321.55
	84.93	0.0038	2595.88
	85.74	0.0221	14994.53
n-C33	87.06	0.0008	523.88
	87.66	0.0098	6618.30
	88.32	0.0234	15845.03
	89.37	0.0121	8220.49
	89.56	0.0125	8460.89
	90.09	0.0087	5907.47
n-C34	90.76	0.0020	1347.50
	90.92	0.0072	4869.36
	91.61	0.0060	4085.95
	92.33	0.0008	522.88
	93.05	0.0034	2290.15
	93.75	0.0114	7715.40
	94.39	0.0008	519.51
	94.66	0.0074	5020.49
n-C35	95.35	0.0148	10022.75
	96.15	0.0039	2614.05
	97.12	0.0017	1134.83
	98.13	0.0003	222.32
	99.29	0.0076	5129.98
	99.71	0.0011	754.59
n-C36	101.29	0.0017	1124.90
	101.44	0.0068	4617.07
	102.21	0.0017	1143.87
	102.73	0.0008	524.50
	103.79	0.0189	12839.98
	104.75	0.0007	474.08
	104.89	0.0005	342.60
	105.38	0.0008	531.39
	106.20	0.0014	931.84
	106.31	0.0007	504.94
	106.67	0.0016	1087.59
	106.85	0.0011	738.54
	107.03	0.0011	764.62
	107.90	0.0021	1410.70

Total Area = 6.777512E+07 Total Height = 1.922429E+07 Total Amount = 0

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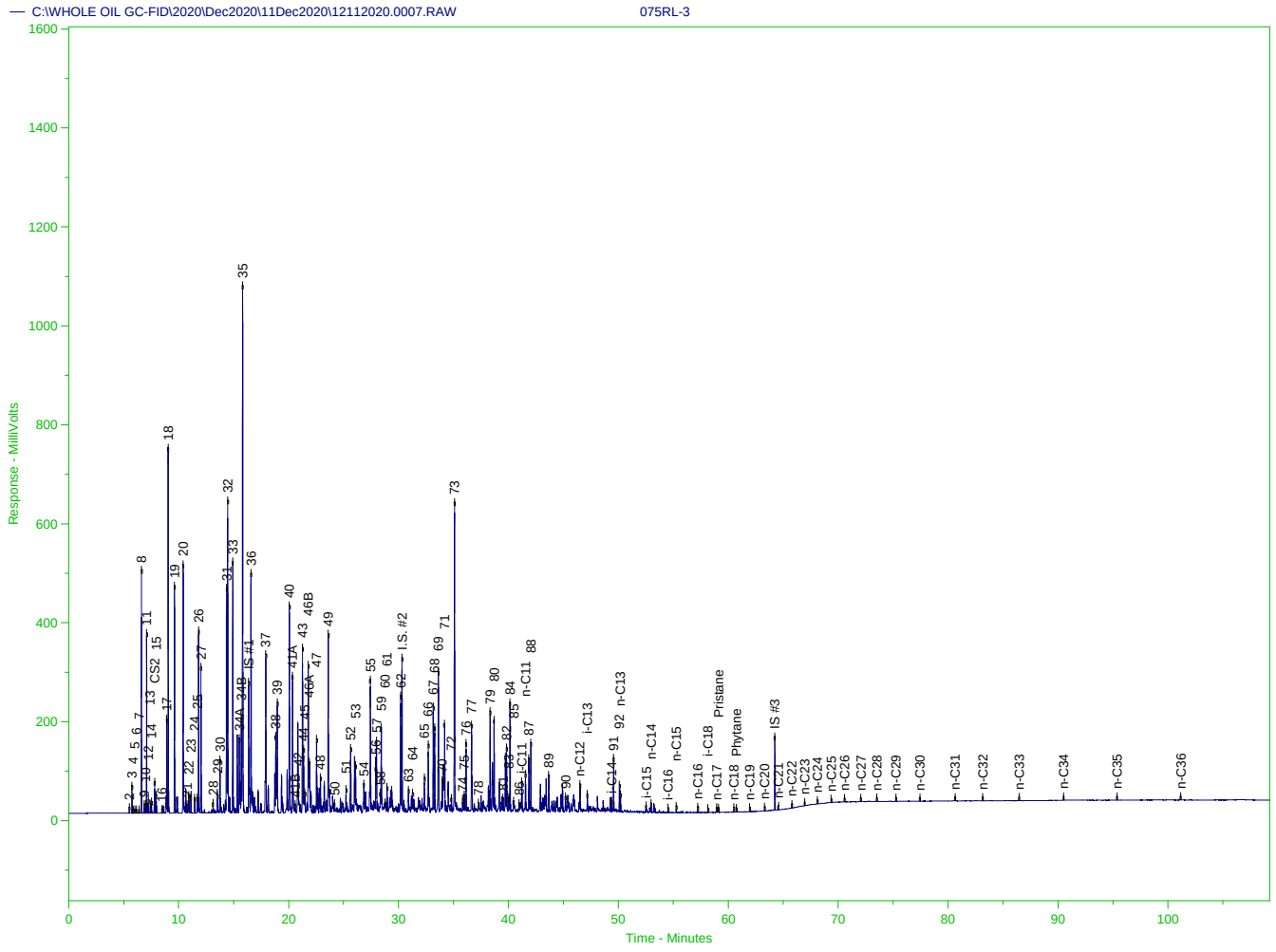

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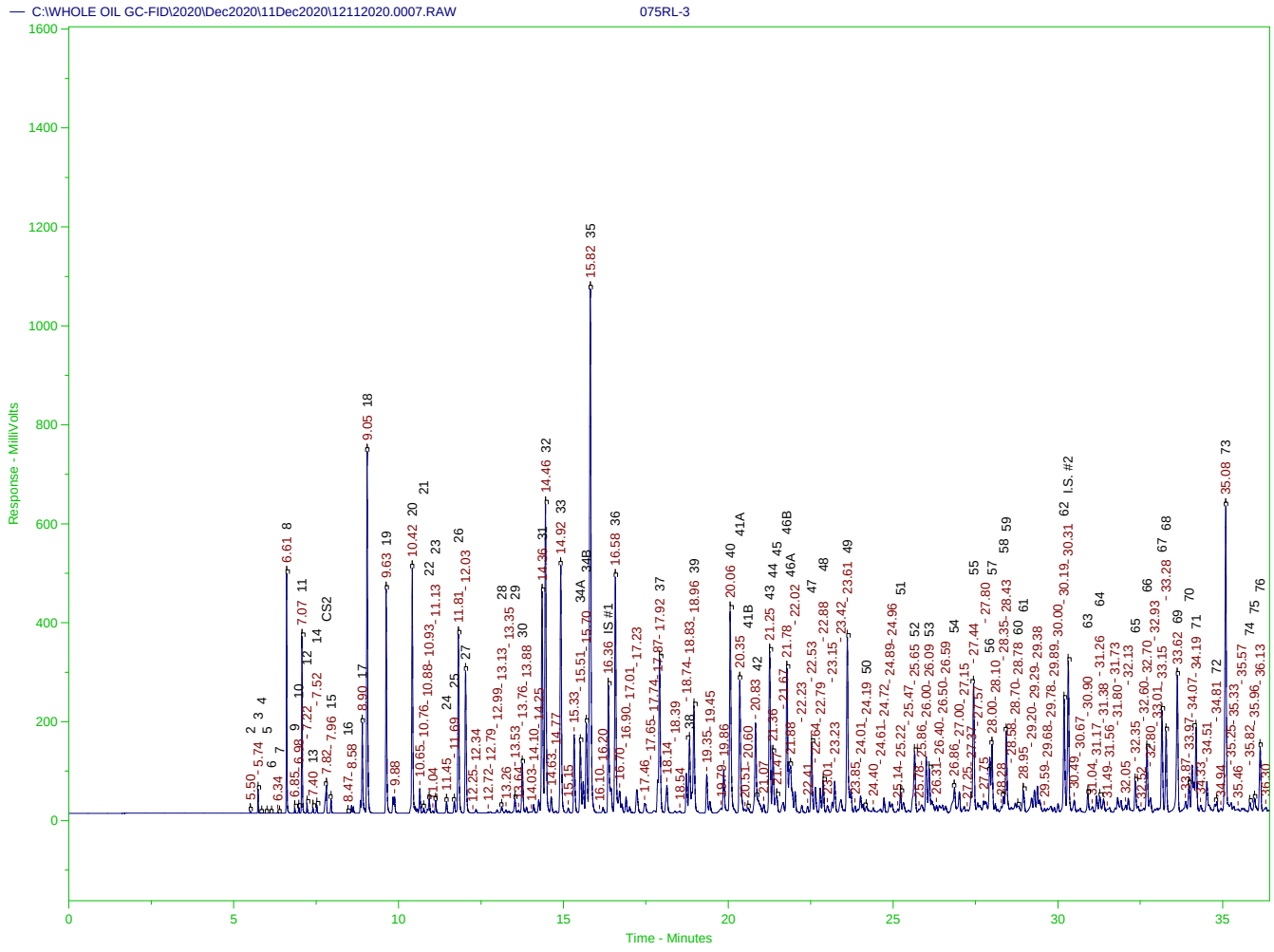

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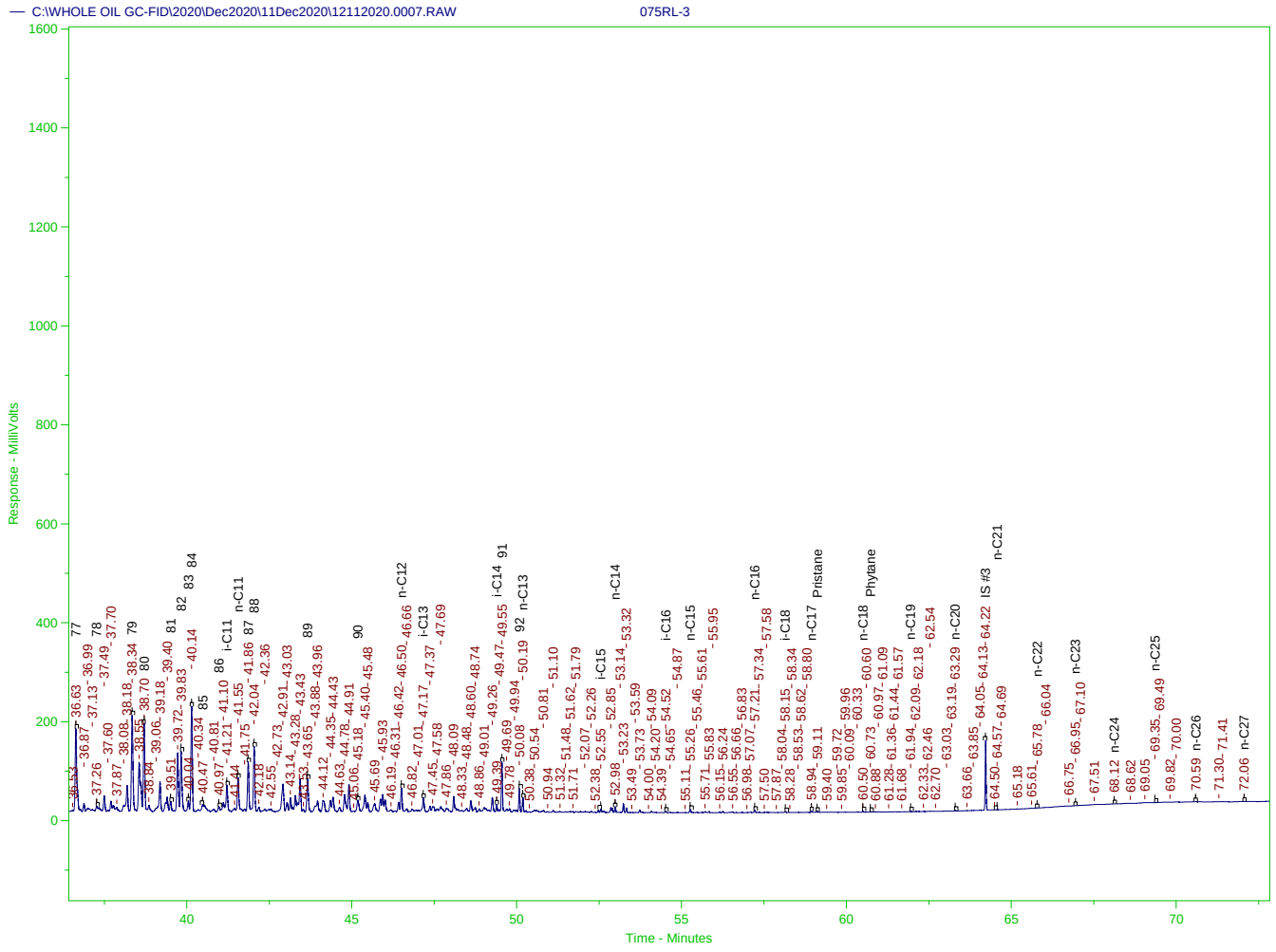

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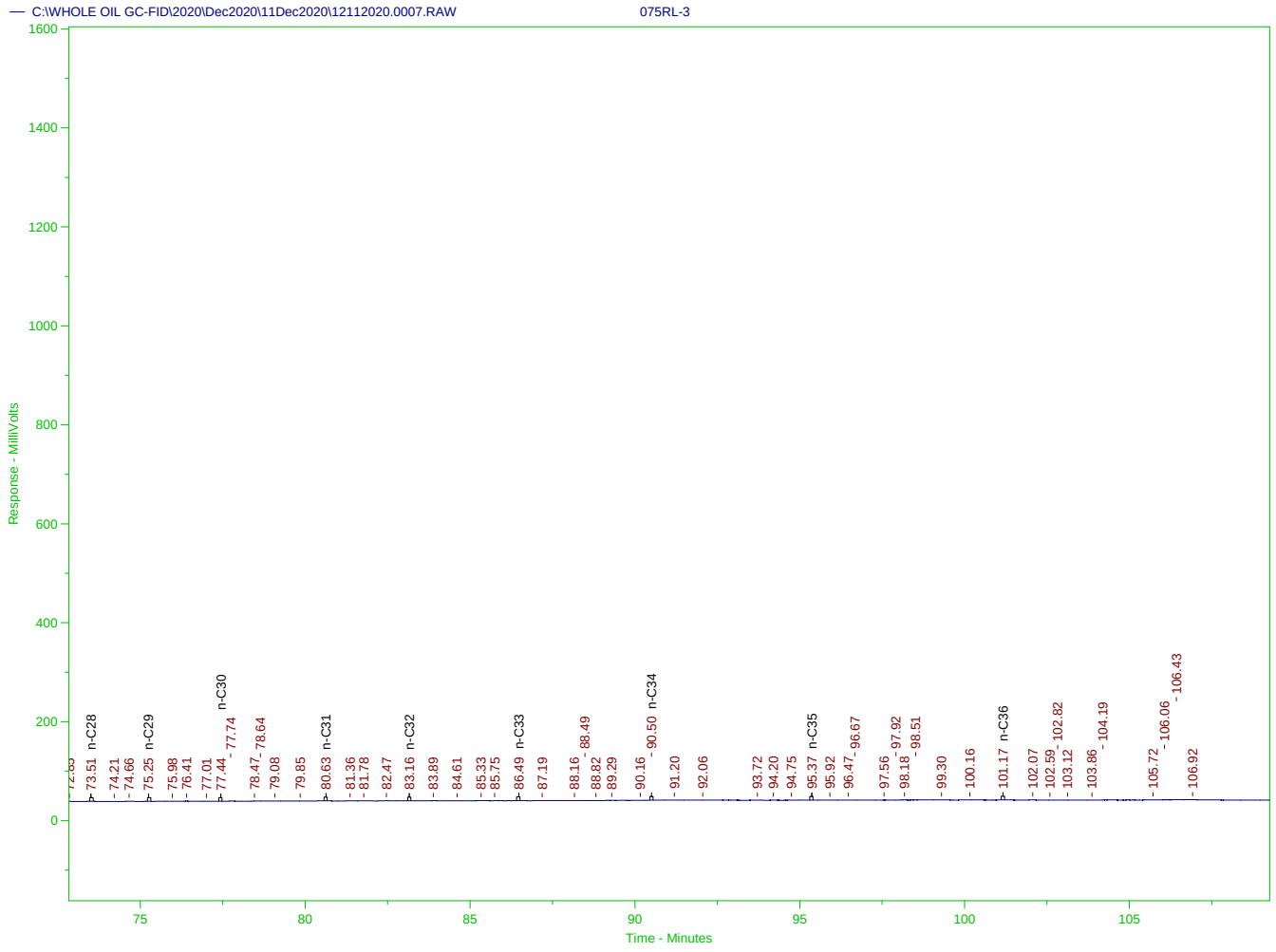
Chrom Perfect Chromatogram Report



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Sample Name = **075RL-3**

Instrument = Instrument 1 Acquisition Port = DP#
Heading 1 =
Heading 2 =

Raw File Name = **C:\WHOLE OIL GC-FID\2020\Dec2020\11Dec2020\12112020.0007.RAW** Date Acquired (end) = 12/12/2020 7:30:26 AM
Method File Name = C:\1 - A Backup\C3442020.met Method Version = 23
Calibration File Name = C:\1 - A Backup\CALIBRATIONS\2020\12112020.cal Calibration Version = 1

Peak Name	Ret. Time	Area %	Area
2	5.50	0.0083	5484.25
3	5.74	0.0851	56266.38
	6.34	0.0042	2794.63
8	6.61	1.0043	664361.60
9	6.85	0.0234	15448.02
10	6.98	0.0255	16858.14
11	7.07	0.7945	525626.10
12	7.22	0.0466	30813.98
13	7.40	0.0306	20231.67
14	7.52	0.0422	27910.32
CS2	7.82	0.2661	176066.00
15	7.96	0.0765	50632.76
16	8.47	0.0030	1961.24
	8.58	0.0799	52849.65
17	8.90	0.6760	447176.10
18	9.05	2.2513	1489356.00
19	9.63	1.4742	975257.00
	9.88	0.2122	140394.30
20	10.42	1.7908	1184705.00
	10.65	0.1703	112636.00
21	10.76	0.0373	24686.06
	10.88	0.0263	17426.17
22	10.93	0.1053	69653.06
	11.04	0.0168	11104.62
23	11.13	0.0952	62954.64
24	11.45	0.0877	57990.93
25	11.69	0.0919	60794.13
26	11.81	1.3677	904780.90
27	12.03	1.1452	757583.70
	12.25	0.0036	2384.46
	12.34	0.0344	22731.48
	12.72	0.0117	7755.56
	12.79	0.0139	9216.66
	12.99	0.0323	21343.00
28	13.13	0.0639	42273.29
	13.26	0.0297	19670.97
	13.35	0.0172	11348.82
29	13.53	0.1432	94708.34
	13.64	0.0237	15699.08
30	13.76	0.4307	284930.70
	13.88	0.0541	35804.69
	14.03	0.0186	12281.86
	14.10	0.0747	49409.27
	14.25	0.1169	77334.68
31	14.36	1.9426	1285109.00
32	14.46	2.6405	1746780.00
	14.63	0.1486	98307.24
	14.77	0.0218	14410.97
33	14.92	2.1321	1410497.00
	15.15	0.0496	32803.88
	15.33	0.6812	450667.80
34A	15.51	0.8853	585678.70
34B	15.70	0.8260	546442.40
35	15.82	5.0223	3322442.00
	16.10	0.0080	5279.52
	16.20	0.0599	39602.78
IS #1	16.36	1.3455	890076.40
36	16.58	2.0534	1358407.00

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Peak Name	Ret. Time	Area %	Area
	16.70	0.3199	211601.10
	16.90	0.1361	90008.20
	17.01	0.0697	46077.21
	17.23	0.2674	176922.60
	17.46	0.1490	98542.38
	17.65	0.0034	2223.31
	17.74	0.0353	23383.51
	17.87	0.2340	154789.10
37	17.92	1.4215	940357.80
	18.14	0.3140	207714.70
	18.39	0.0198	13070.34
	18.54	0.0285	18850.04
	18.74	0.3457	228707.80
38	18.83	0.7970	527264.40
39	18.96	1.0321	682754.90
	19.35	0.3463	229067.00
	19.45	0.1076	71165.98
	19.79	0.0762	50441.98
	19.86	0.4566	302051.20
40	20.06	2.0227	1338111.00
41A	20.35	1.3426	888182.60
	20.51	0.0376	24854.20
41B	20.60	0.0765	50603.29
	20.83	1.1512	761576.10
	21.07	0.0827	54727.09
43	21.25	1.4658	969657.00
44	21.36	0.5375	355577.70
45	21.47	0.2563	169528.70
	21.67	0.1588	105027.90
46B	21.78	1.2900	853368.40
46A	21.88	0.8780	580817.60
	22.02	0.2092	138381.10
	22.23	0.0773	51166.33
	22.41	0.0628	41514.41
47	22.53	0.6657	440375.30
	22.64	0.2598	171849.60
	22.79	0.2205	145886.50
48	22.88	0.2983	197350.30
	23.01	0.0882	58327.25
	23.15	0.0999	66058.49
	23.23	0.3025	200106.60
	23.42	0.2392	158233.70
49	23.61	1.9171	1268269.00
	23.85	0.0927	61327.60
	24.01	0.2656	175709.70
50	24.19	0.1205	79744.60
	24.40	0.0675	44664.13
	24.61	0.0666	44026.57
	24.72	0.1438	95121.24
	24.89	0.1147	75864.52
	24.96	0.1154	76343.84
	25.14	0.0457	30237.28
51	25.22	0.3264	215918.80
	25.47	0.0420	27791.47
52	25.65	0.7658	506620.70
	25.78	0.0380	25141.57
	25.86	0.1319	87255.24
	26.00	0.5259	347929.30
53	26.09	0.6120	404865.50
	26.31	0.0787	52061.63
	26.40	0.1095	72413.26
	26.50	0.0837	55339.27
	26.59	0.0855	56570.58
54	26.86	0.4179	276435.90
	27.00	0.2514	166285.00
	27.15	0.0927	61292.14
	27.25	0.0454	30061.57
	27.37	0.2057	136061.40
55	27.44	1.1818	781823.90
	27.57	0.2089	138225.90

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Peak Name	Ret. Time	Area %	Area
	27.75	0.1131	74815.89
	27.80	0.1645	108806.40
57	28.00	1.1359	751459.60
	28.10	0.1248	82584.38
	28.28	0.0636	42075.30
58	28.35	0.1579	104424.40
59	28.43	0.8543	565132.30
	28.58	0.0846	55935.79
	28.70	0.1165	77062.20
60	28.78	0.1328	87827.99
61	28.95	0.2709	179243.70
	29.20	0.2315	153141.00
	29.29	0.2349	155374.10
	29.38	0.4160	275217.70
	29.59	0.0469	31054.85
	29.68	0.0428	28327.73
	29.78	0.1145	75722.72
	29.89	0.0515	34094.20
	30.00	0.0951	62897.29
62	30.19	1.1213	741766.10
I.S. #2	30.31	1.4138	935265.30
	30.49	0.1626	107590.20
	30.67	0.0953	63075.08
63	30.90	0.2209	146127.30
	31.04	0.0779	51533.79
	31.17	0.1770	117080.70
64	31.26	0.1918	126908.60
	31.38	0.1659	109734.50
	31.49	0.0393	25985.99
	31.56	0.0732	48451.71
	31.73	0.0513	33952.29
	31.80	0.3170	209733.20
	32.05	0.1092	72258.77
	32.13	0.2004	132579.40
65	32.35	0.3742	247546.30
	32.52	0.0310	20503.75
	32.60	0.0514	33977.64
66	32.70	0.6374	421646.60
	32.80	0.1749	115698.10
	32.93	0.0396	26200.15
	33.01	0.0489	32363.69
67	33.15	0.9710	642356.80
68	33.28	0.7412	490317.30
69	33.62	1.4433	954783.50
	33.87	0.2003	132516.10
70	33.97	0.2781	183950.90
	34.07	0.6867	454291.00
71	34.19	0.8024	530839.70
	34.33	0.1077	71259.99
	34.51	0.4365	288741.80
72	34.81	0.1927	127483.70
	34.94	0.0643	42514.75
73	35.08	2.9360	1942284.00
	35.25	0.1281	84760.71
	35.33	0.1000	66141.69
	35.46	0.0534	35310.98
	35.57	0.1278	84562.80
74	35.82	0.1352	89425.94
75	35.96	0.2144	141839.90
76	36.13	0.6420	424700.80
	36.30	0.1372	90764.45
	36.53	0.0437	28927.12
77	36.63	0.9783	647188.90
	36.87	0.0963	63687.54
	36.99	0.1074	71035.30
	37.13	0.0582	38522.21
78	37.26	0.1716	113538.90
	37.49	0.1829	120969.00
	37.60	0.0325	21504.73
	37.70	0.2184	144449.70

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Peak Name	Ret. Time	Area %	Area
	37.87	0.0958	63384.78
	38.08	0.0975	64478.01
	38.18	0.3174	209982.20
79	38.34	1.0154	671697.10
	38.55	0.7355	486590.80
80	38.70	0.8347	552209.30
	38.84	0.1152	76222.75
	39.06	0.0599	39634.95
	39.18	0.3729	246720.60
	39.40	0.2789	184535.50
81	39.51	0.1512	100039.60
	39.72	0.6082	402347.60
82	39.83	0.6546	433049.30
83	40.04	0.1283	84908.52
84	40.14	0.9887	654072.10
	40.34	0.0506	33472.82
85	40.47	0.2631	174074.90
	40.81	0.0754	49891.68
86	40.97	0.0864	57129.82
	41.10	0.1409	93213.80
i-C11	41.21	0.3330	220300.90
	41.44	0.0796	52664.84
n-C11	41.55	0.4091	270629.40
	41.75	0.0465	30754.42
87	41.86	0.4900	324136.90
88	42.04	0.6570	434628.90
	42.18	0.0729	48239.92
	42.36	0.0726	48009.63
	42.55	0.1207	79843.62
	42.73	0.0204	13520.90
	42.91	0.4227	279601.00
	43.03	0.1264	83627.27
	43.14	0.1986	131370.10
	43.28	0.2737	181059.50
	43.43	0.3275	216655.90
	43.53	0.0351	23215.82
89	43.65	0.3935	260334.10
	43.88	0.0766	50666.71
	43.96	0.1730	114471.30
	44.12	0.2177	144013.70
	44.35	0.1297	85813.56
	44.43	0.1950	128986.60
	44.63	0.0782	51723.99
	44.78	0.2452	162208.50
	44.91	0.2768	183108.50
	45.06	0.0269	17802.36
90	45.18	0.1838	121590.90
	45.40	0.2454	162334.50
	45.48	0.1137	75245.30
	45.69	0.1722	113931.30
	45.93	0.4660	308249.80
	46.19	0.0513	33958.72
	46.31	0.0304	20089.29
	46.42	0.0993	65722.34
n-C12	46.50	0.2440	161399.80
	46.66	0.0687	45447.12
	46.82	0.0576	38102.41
	47.01	0.0659	43591.59
i-C13	47.17	0.1992	131800.30
	47.37	0.0771	50979.54
	47.45	0.1022	67580.23
	47.58	0.0560	37058.55
	47.69	0.1180	78031.78
	47.86	0.1043	68999.66
	48.09	0.2322	153598.60
	48.33	0.0398	26313.18
	48.48	0.0827	54730.39
	48.60	0.1264	83651.61
	48.74	0.0786	51998.55
	48.86	0.0617	40824.21

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	49.01	0.1512	100048.30
	49.26	0.1555	102851.80
i-C14	49.39	0.0711	47045.86
	49.47	0.0287	18970.43
91	49.55	0.3843	254210.70
	49.69	0.0528	34958.21
	49.78	0.0458	30312.29
	49.94	0.0598	39559.54
92	50.08	0.1807	119567.40
n-C13	50.19	0.1373	90832.21
	50.38	0.0115	7584.14
	50.54	0.0829	54851.15
	50.81	0.0445	29437.94
	50.94	0.0152	10048.46
	51.10	0.0366	24217.64
	51.32	0.0327	21624.46
	51.48	0.0194	12859.02
	51.62	0.0188	12435.43
	51.71	0.0154	10209.34
	51.79	0.0209	13857.97
	52.07	0.0477	31572.26
	52.26	0.0154	10166.60
	52.38	0.0052	3424.19
i-C15	52.55	0.0766	50653.84
	52.85	0.0707	46748.05
n-C14	52.98	0.0468	30928.00
	53.14	0.0057	3765.70
	53.23	0.0632	41803.26
	53.32	0.0384	25382.09
	53.49	0.0039	2608.92
	53.59	0.0055	3661.72
	53.73	0.0298	19738.95
	54.00	0.0032	2102.46
	54.09	0.0140	9280.59
	54.20	0.0067	4447.31
	54.39	0.0036	2364.61
i-C16	54.52	0.0128	8443.15
	54.65	0.0073	4861.69
	54.87	0.0060	3969.93
	55.11	0.0054	3540.85
n-C15	55.26	0.0295	19526.24
	55.46	0.0060	3939.85
	55.61	0.0050	3291.63
	55.71	0.0075	4962.02
	55.83	0.0100	6612.85
	55.95	0.0015	1012.85
	56.15	0.0064	4248.86
	56.24	0.0076	5026.54
	56.55	0.0143	9489.89
	56.66	0.0019	1225.53
	56.83	0.0058	3848.89
	56.98	0.0016	1060.15
	57.07	0.0063	4188.00
n-C16	57.21	0.0184	12179.03
	57.34	0.0035	2291.60
	57.50	0.0020	1339.76
	57.58	0.0041	2693.65
	57.87	0.0006	416.60
	58.04	0.0023	1517.49
i-C18	58.15	0.0073	4854.38
	58.28	0.0014	894.79
	58.34	0.0012	795.44
	58.53	0.0038	2493.74
	58.62	0.0022	1450.30
	58.80	0.0039	2600.06
n-C17	58.94	0.0160	10599.93
Pristane	59.11	0.0107	7053.84
	59.40	0.0095	6282.09
	59.72	0.0008	526.56
	59.85	0.0018	1214.78

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Peak Name	Ret. Time	Area %	Area
	59.96	0.0019	1225.08
	60.09	0.0013	892.16
	60.33	0.0031	2055.20
n-C18	60.50	0.0079	5214.95
	60.60	0.0012	786.78
Phytane	60.73	0.0042	2765.19
	60.88	0.0034	2248.55
	60.97	0.0028	1852.69
	61.09	0.0019	1248.46
	61.28	0.0018	1185.17
	61.36	0.0013	835.27
	61.44	0.0017	1114.20
	61.57	0.0009	567.63
	61.68	0.0006	402.88
n-C19	61.94	0.0059	3871.53
	62.09	0.0035	2296.70
	62.18	0.0038	2534.58
	62.33	0.0017	1107.74
	62.46	0.0010	679.35
	62.54	0.0029	1913.91
	62.70	0.0005	333.97
	63.03	0.0027	1759.77
	63.19	0.0008	514.51
n-C20	63.29	0.0038	2544.63
	63.66	0.0022	1467.97
	63.85	0.0045	2980.93
	64.05	0.0032	2091.79
	64.13	0.0018	1219.41
IS #3	64.22	0.4128	273097.10
	64.50	0.0021	1419.49
n-C21	64.57	0.0024	1585.53
	64.69	0.0010	665.15
	65.18	0.0089	5867.47
	65.61	0.0208	13765.26
n-C22	65.78	0.0162	10728.58
	66.04	0.0294	19423.92
	66.75	0.1548	102437.00
n-C23	66.95	0.0527	34892.04
	67.10	0.0543	35928.74
	67.51	0.1500	99241.70
n-C24	68.12	0.2085	137960.60
	68.62	0.1958	129527.10
	69.05	0.1724	114035.90
n-C25	69.35	0.0490	32420.45
	69.49	0.0475	31430.13
	69.82	0.1226	81089.43
	70.00	0.0878	58097.17
n-C26	70.59	0.1202	79514.16
	71.30	0.0466	30849.94
	71.41	0.0201	13325.40
n-C27	72.06	0.0042	2773.41
	72.85	0.0211	13926.55
n-C28	73.51	0.0215	14202.61
	74.21	0.0080	5324.75
	74.66	0.0189	12524.73
n-C29	75.25	0.0106	7010.51
	75.98	0.0230	15214.95
	76.41	0.0181	11954.38
	77.01	0.0210	13923.64
n-C30	77.44	0.0041	2724.03
	77.74	0.0165	10910.07
	78.47	0.0075	4993.48
	78.64	0.0179	11848.50
	79.08	0.0182	12069.20
	79.85	0.0246	16243.23
n-C31	80.63	0.0312	20623.74
	81.36	0.0140	9238.31
	81.78	0.0112	7379.67
	82.47	0.0153	10109.44
n-C32	83.16	0.0009	567.25

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Peak Name	Ret. Time	Area %	Area
	83.89	0.0088	5820.13
	84.61	0.0035	2309.36
	85.33	0.0132	8725.17
	85.75	0.0080	5277.22
n-C33	86.49	0.0107	7067.49
	87.19	0.0173	11436.71
	88.16	0.0053	3531.23
	88.49	0.0041	2738.45
	88.82	0.0010	655.29
	89.29	0.0024	1558.07
	90.16	0.0039	2564.69
n-C34	90.50	0.0182	12032.29
	91.20	0.0182	12049.36
	92.06	0.0029	1950.45
	93.72	0.0063	4162.22
	94.20	0.0008	533.58
	94.75	0.0051	3344.89
n-C35	95.37	0.0073	4805.62
	95.92	0.0074	4870.28
	96.47	0.0016	1087.16
	96.67	0.0025	1650.27
	97.56	0.0026	1732.92
	97.92	0.0010	629.58
	98.18	0.0022	1437.66
	98.51	0.0006	374.79
	99.30	0.0033	2188.53
	100.16	0.0215	14190.55
n-C36	101.17	0.0008	530.59
	102.07	0.0042	2765.19
	102.59	0.0010	641.70
	102.82	0.0010	630.36
	103.12	0.0009	624.83
	103.86	0.0011	738.51
	104.19	0.0006	392.83
	105.72	0.0026	1705.47
	106.06	0.0033	2181.97
	106.43	0.0015	1002.11
	106.92	0.0030	1961.93

Total Area = 6.615406E+07 Total Height = 2.027148E+07 Total Amount = 0

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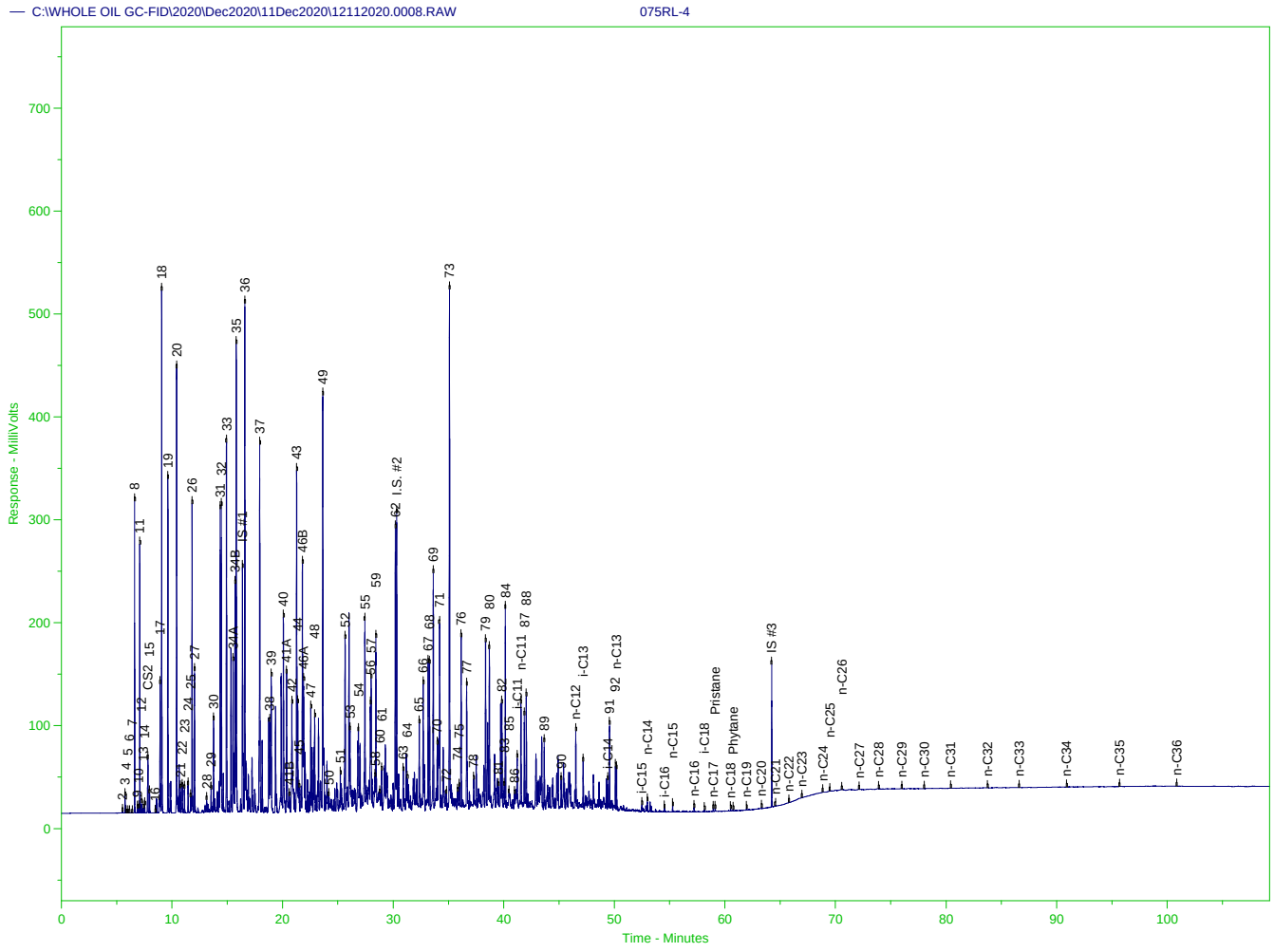

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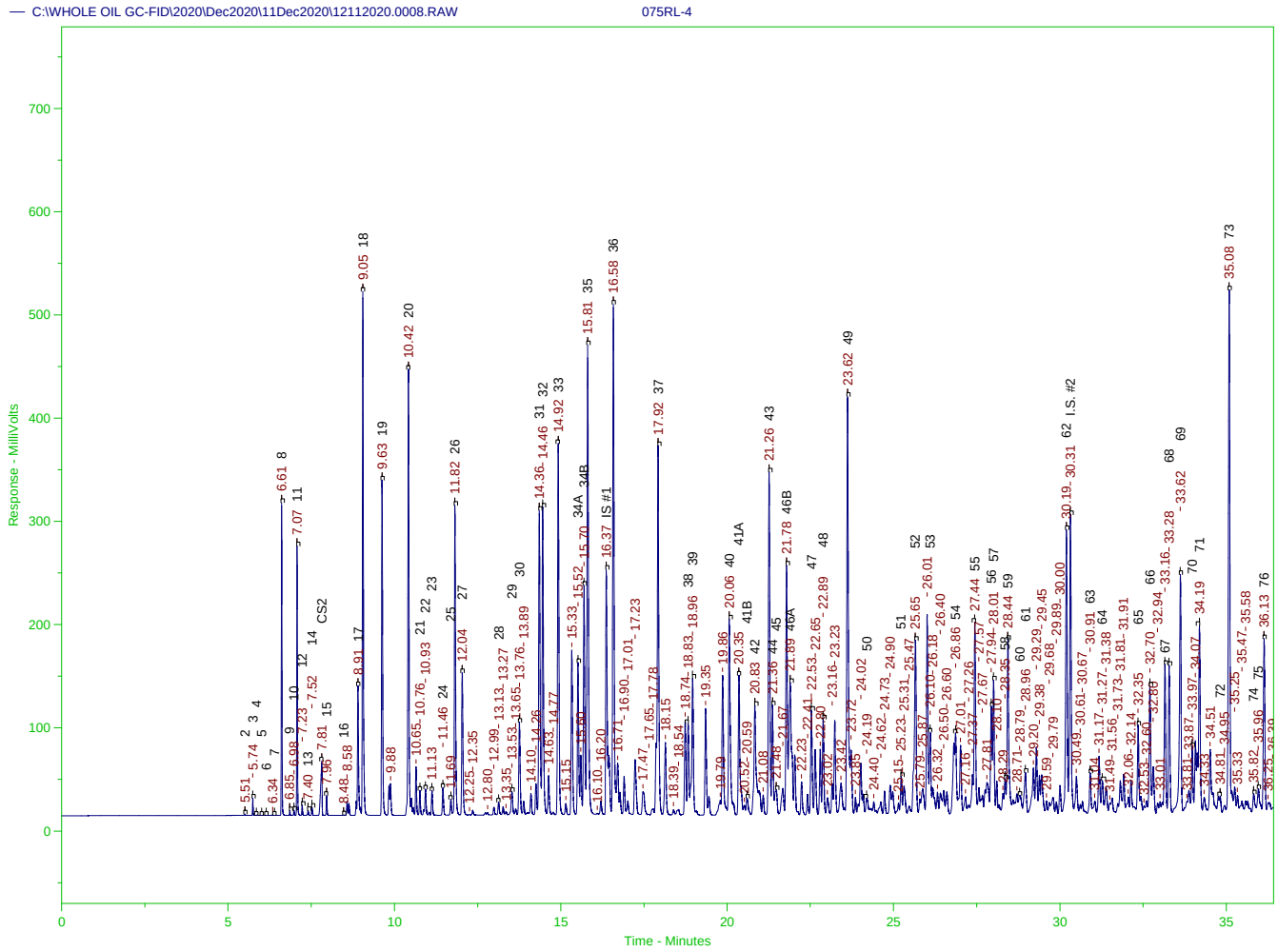

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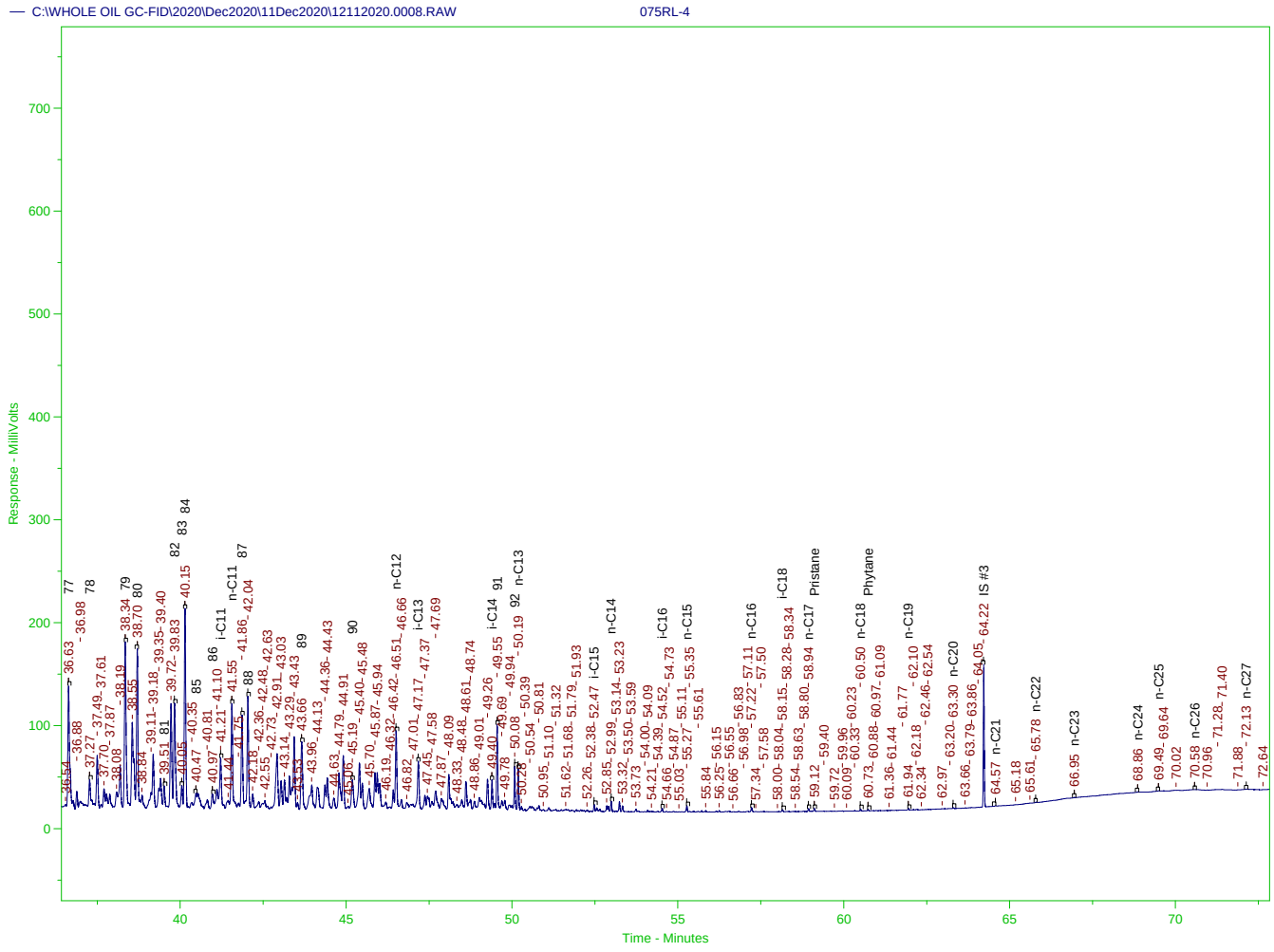

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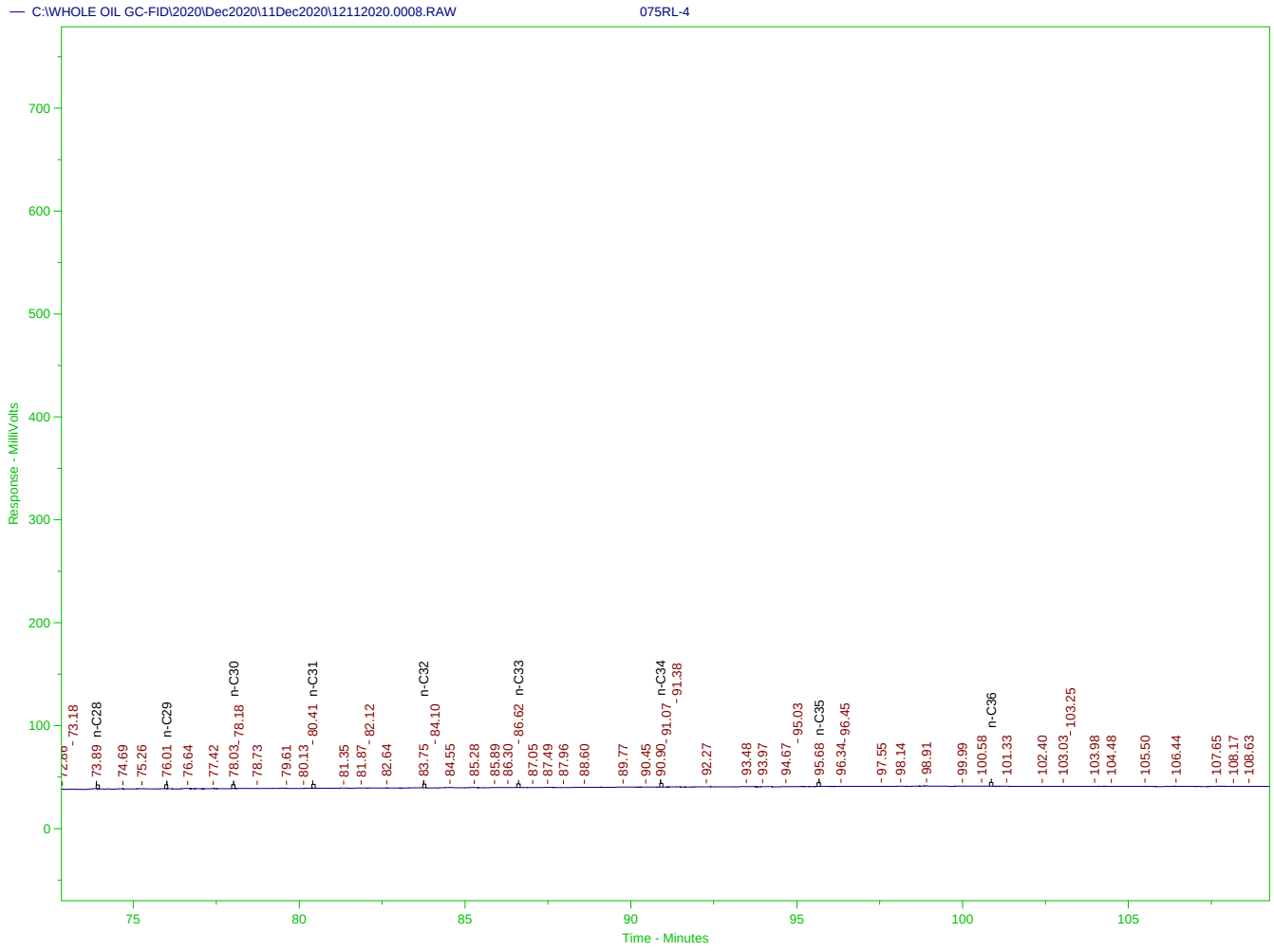

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Sample Name = **075RL-4**

Instrument = Instrument 1 Acquisition Port = DP#
Heading 1 =
Heading 2 =

Raw File Name = **C:\WHOLE OIL GC-FID\2020\Dec2020\11Dec2020\12112020.0003.RAW** Date & Time (end) = 12/12/2020 9:32:04 AM
Method File Name = C:\1 - A Backup\C3442020.met Method Version = 23
Calibration File Name = C:\1 - A Backup\CALIBRATIONS\2020\12112020.cal Calibration Version = 1

Peak Name	Ret. Time	Area %	Area
2	5.51	0.0025	1650.64
3	5.74	0.0292	19270.45
	6.34	0.0019	1262.04
8	6.61	0.6293	415140.50
9	6.85	0.0100	6592.74
10	6.98	0.0108	7145.60
11	7.07	0.5785	381613.70
12	7.23	0.0230	15179.37
13	7.40	0.0136	8972.41
14	7.52	0.0201	13257.83
CS2	7.81	0.2420	159617.80
15	7.96	0.0508	33532.46
16	8.48	0.0013	862.57
	8.58	0.0714	47090.57
17	8.91	0.4592	302932.00
18	9.05	1.5873	1047162.00
19	9.63	1.0607	699773.60
	9.88	0.1943	128158.90
20	10.42	1.5794	1041924.00
	10.65	0.1603	105721.10
21	10.76	0.0848	55949.55
22	10.93	0.1217	80266.02
23	11.13	0.0860	56762.53
24	11.46	0.1001	66035.46
25	11.69	0.0599	39508.25
26	11.82	1.1394	751644.30
27	12.04	0.5591	368838.10
	12.25	0.0037	2459.90
	12.35	0.0258	17034.56
	12.80	0.0272	17920.41
	12.99	0.0356	23514.55
28	13.13	0.0564	37236.82
	13.27	0.0349	23044.78
	13.35	0.0182	12017.18
29	13.53	0.1197	78967.35
	13.65	0.0270	17788.97
30	13.76	0.3881	256005.80
	13.89	0.0791	52155.47
	14.10	0.0921	60773.39
	14.26	0.1344	88689.16
31	14.36	1.2737	840295.90
32	14.46	1.2838	846933.70
	14.63	0.1708	112688.80
	14.77	0.0170	11210.55
33	14.92	1.5227	1004550.00
	15.15	0.0559	36858.25
	15.33	0.6874	453488.50
34A	15.52	0.6235	411349.60
	15.60	0.2546	167985.80
34B	15.70	0.9868	651025.20
35	15.81	2.1746	1434615.00
	16.10	0.0116	7646.82
	16.20	0.0711	46892.70
IS #1	16.37	1.3030	859606.00
36	16.58	2.1418	1412934.00
	16.71	0.3655	241153.80
	16.90	0.1617	106663.20
	17.01	0.0818	53939.36

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Peak Name	Ret. Time	Area %	Area
	17.23	0.3236	213455.40
	17.47	0.1753	115616.00
	17.65	0.0044	2895.39
	17.78	0.0469	30926.45
37	17.92	1.8727	1235424.00
	18.15	0.3691	243487.50
	18.39	0.0271	17869.47
	18.54	0.0449	29636.93
	18.74	0.4005	264222.10
38	18.83	0.3963	261458.10
39	18.96	0.7548	497922.20
	19.35	0.5499	362774.30
	19.79	0.1072	70731.55
	19.86	0.6949	458435.30
40	20.06	1.0838	714983.90
41A	20.35	0.7421	489592.30
	20.52	0.0490	32355.56
41B	20.59	0.1119	73808.73
42	20.83	0.8971	591832.10
	21.08	0.0910	60017.41
43	21.26	1.4942	985761.80
44	21.36	0.4707	310542.40
45	21.48	0.1907	125800.30
	21.67	0.1977	130404.60
46B	21.78	1.0693	705420.60
46A	21.89	1.3488	889810.30
	22.23	0.1522	100423.60
	22.41	0.0923	60907.51
47	22.53	0.4843	319521.70
	22.65	0.3126	206218.80
	22.80	0.2789	183973.30
48	22.89	0.4304	283971.30
	23.02	0.1047	69074.99
	23.16	0.1389	91645.98
	23.23	0.4366	288030.80
	23.42	0.2824	186330.60
49	23.62	1.9764	1303848.00
	23.72	0.3225	212776.10
	23.85	0.0742	48982.29
	24.02	0.3964	261503.80
50	24.19	0.1688	111338.40
	24.40	0.0871	57459.56
	24.62	0.1011	66718.30
	24.73	0.1099	72477.02
	24.90	0.3000	197933.80
	25.15	0.0670	44183.64
51	25.23	0.1733	114297.00
	25.31	0.1840	121376.10
	25.47	0.0653	43060.50
52	25.65	1.0592	698773.20
	25.79	0.0709	46793.41
	25.87	0.2121	139922.70
	26.01	0.9121	601697.00
53	26.10	0.3891	256714.80
	26.18	0.1912	126115.80
	26.32	0.1138	75086.00
	26.40	0.1530	100952.80
	26.50	0.1274	84016.92
	26.60	0.1337	88221.92
54	26.86	0.7882	520000.30
	27.01	0.3944	260168.20
	27.16	0.1277	84242.99
	27.26	0.0674	44452.74
	27.37	0.2108	139070.70
55	27.44	0.8914	588070.00
	27.57	0.1367	90154.59
	27.67	0.1428	94181.10
	27.81	0.3575	235826.70
56	27.94	0.5032	331987.90
57	28.01	0.5913	390115.70

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	28.10	0.2062	136004.80
	28.29	0.1029	67877.10
58	28.35	0.1667	109985.80
59	28.44	1.0601	699327.90
	28.71	0.1169	77106.87
60	28.79	0.1782	117551.10
61	28.96	0.2886	190399.60
	29.20	0.3489	230201.00
	29.29	0.3377	222759.50
	29.38	0.1814	119685.50
	29.45	0.2492	164431.40
	29.59	0.0696	45908.98
	29.68	0.0589	38835.60
	29.79	0.1455	95981.84
	29.89	0.0613	40413.60
	30.00	0.1467	96770.51
62	30.19	1.3464	888211.70
I.S. #2	30.31	1.4220	938105.60
	30.49	0.2354	155267.60
	30.61	0.0500	32980.53
	30.67	0.0906	59791.15
63	30.91	0.2140	141160.80
	31.04	0.1027	67773.86
	31.17	0.2967	195741.30
64	31.27	0.1880	124038.00
	31.38	0.1768	116611.20
	31.49	0.0623	41072.73
	31.56	0.1063	70145.65
	31.73	0.0584	38525.15
	31.81	0.1977	130448.70
	31.91	0.2007	132380.70
	32.06	0.1347	88830.54
	32.14	0.2376	156752.80
65	32.35	0.5111	337183.80
	32.53	0.0450	29677.70
	32.60	0.0757	49927.45
66	32.70	0.6169	406986.30
	32.80	0.2757	181868.40
	32.94	0.0566	37361.24
	33.01	0.1224	80723.09
67	33.16	0.6720	443302.10
68	33.28	0.6723	443540.00
69	33.62	1.3188	870057.00
	33.81	0.0993	65504.44
	33.87	0.1480	97642.57
70	33.97	0.3220	212404.50
	34.07	0.5578	367989.80
71	34.19	0.8798	580399.00
	34.33	0.1327	87535.55
	34.51	0.5139	339056.60
72	34.81	0.1828	120601.10
	34.95	0.0700	46157.48
73	35.08	2.4390	1609063.00
	35.25	0.1535	101237.40
	35.33	0.1022	67415.13
	35.47	0.1259	83028.59
	35.58	0.1764	116396.60
74	35.82	0.1440	94993.49
75	35.96	0.2067	136364.90
76	36.13	0.8219	542219.70
	36.25	0.1236	81565.88
	36.39	0.0549	36235.45
	36.54	0.0717	47280.38
77	36.63	0.7921	522533.80
	36.88	0.1074	70829.18
	36.98	0.2033	134100.20
78	37.27	0.2796	184428.40
	37.49	0.2886	190391.70
	37.61	0.0481	31764.64
	37.70	0.2330	153729.70

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	37.87	0.1522	100412.80
	38.08	0.1287	84883.71
	38.19	0.2943	194129.30
79	38.34	0.9287	612701.50
	38.55	0.6403	422427.00
80	38.70	0.7771	512635.00
	38.84	0.1304	86023.72
	39.11	0.1679	110752.40
	39.18	0.3080	203164.10
	39.35	0.1246	82179.38
	39.40	0.1867	123175.80
81	39.51	0.1809	119340.90
	39.72	0.5548	365988.10
82	39.83	0.6247	412152.80
83	40.05	0.1454	95931.59
84	40.15	0.9304	613793.60
	40.35	0.0788	51964.97
85	40.47	0.3361	221729.30
	40.81	0.1197	78943.05
86	40.97	0.1306	86148.55
	41.10	0.1580	104244.40
i-C11	41.21	0.3601	237577.30
	41.44	0.1084	71539.07
n-C11	41.55	0.6026	397540.30
	41.75	0.0582	38379.99
87	41.86	0.4668	307949.30
88	42.04	0.5907	389663.40
	42.18	0.1193	78682.65
	42.36	0.1035	68302.06
	42.48	0.0674	44433.98
	42.55	0.0678	44737.27
	42.63	0.0388	25605.34
	42.73	0.0324	21394.58
	42.91	0.4335	286000.20
	43.03	0.1802	118900.70
	43.14	0.2277	150240.40
	43.29	0.1899	125310.80
	43.43	0.4713	310928.80
	43.53	0.0529	34917.63
89	43.66	0.4060	267848.60
	43.96	0.3087	203621.20
	44.13	0.2419	159603.00
	44.36	0.1512	99760.53
	44.43	0.2287	150859.20
	44.63	0.1066	70337.84
	44.79	0.2828	186552.00
	44.91	0.2788	183895.50
	45.06	0.0438	28880.16
90	45.19	0.2373	156572.70
	45.40	0.3289	216960.10
	45.48	0.1545	101926.90
	45.70	0.2384	157299.70
	45.87	0.1948	128521.40
	45.94	0.3756	247802.20
	46.19	0.0872	57520.57
	46.32	0.0448	29552.03
	46.42	0.1071	70663.02
n-C12	46.51	0.3834	252955.00
	46.66	0.1039	68528.23
	46.82	0.0801	52844.64
	47.01	0.1024	67570.48
i-C13	47.17	0.3098	204350.40
	47.37	0.1043	68807.96
	47.45	0.1295	85406.30
	47.58	0.0750	49503.89
	47.69	0.1854	122313.70
	47.87	0.1526	100651.00
	48.09	0.2954	194852.20
	48.33	0.0650	42914.01
	48.48	0.1140	75236.52

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	48.61	0.1607	105987.00
	48.74	0.1016	67053.27
	48.86	0.0849	56027.75
	49.01	0.2135	140880.90
	49.26	0.1703	112347.50
i-C14	49.40	0.1653	109077.10
91	49.55	0.3323	219221.80
	49.69	0.0611	40276.53
	49.78	0.0807	53251.16
	49.94	0.0821	54162.23
92	50.08	0.1712	112964.10
n-C13	50.19	0.1605	105891.50
	50.28	0.0290	19125.41
	50.39	0.0163	10721.43
	50.54	0.0964	63592.25
	50.81	0.0554	36526.62
	50.95	0.0174	11469.07
	51.10	0.0400	26417.94
	51.32	0.0385	25367.67
	51.62	0.0370	24408.33
	51.68	0.0173	11426.16
	51.79	0.0186	12249.02
	51.93	0.0423	27879.59
	52.26	0.0134	8848.22
	52.38	0.0053	3482.98
i-C15	52.47	0.0657	43325.00
	52.85	0.0450	29714.30
n-C14	52.99	0.0423	27873.00
	53.14	0.0055	3660.07
	53.23	0.0362	23863.47
	53.32	0.0252	16604.95
	53.50	0.0033	2184.17
	53.59	0.0045	2963.08
	53.73	0.0198	13076.61
	54.00	0.0034	2220.91
	54.09	0.0085	5613.14
	54.21	0.0066	4344.23
	54.39	0.0041	2673.50
i-C16	54.52	0.0166	10934.57
	54.66	0.0031	2050.98
	54.73	0.0021	1372.06
	54.87	0.0048	3158.45
	55.03	0.0019	1251.15
	55.11	0.0027	1786.08
n-C15	55.27	0.0226	14929.73
	55.35	0.0033	2207.14
	55.61	0.0084	5521.87
	55.84	0.0116	7635.97
	56.15	0.0037	2463.74
	56.25	0.0046	3028.31
	56.55	0.0107	7077.49
	56.66	0.0025	1641.79
	56.83	0.0037	2421.45
	56.98	0.0010	684.21
	57.11	0.0044	2933.36
n-C16	57.22	0.0159	10510.11
	57.34	0.0027	1789.57
	57.50	0.0020	1303.86
	57.58	0.0049	3245.08
	58.00	0.0011	742.53
	58.04	0.0013	878.85
i-C18	58.15	0.0080	5308.63
	58.28	0.0010	665.99
	58.34	0.0014	914.07
	58.54	0.0027	1748.77
	58.63	0.0007	478.57
	58.80	0.0024	1613.96
n-C17	58.94	0.0123	8112.03
Pristane	59.12	0.0139	9155.62
	59.40	0.0023	1498.10

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	59.72	0.0007	473.12
	59.96	0.0028	1857.42
	60.09	0.0009	573.10
	60.23	0.0006	406.27
	60.33	0.0023	1509.81
n-C18	60.50	0.0064	4221.03
Phytane	60.73	0.0045	2958.65
	60.88	0.0017	1153.93
	60.97	0.0015	984.70
	61.09	0.0016	1057.72
	61.36	0.0012	780.40
	61.44	0.0012	822.94
	61.77	0.0010	659.70
n-C19	61.94	0.0051	3342.66
	62.10	0.0018	1216.81
	62.18	0.0025	1682.20
	62.34	0.0007	453.74
	62.46	0.0006	391.91
	62.54	0.0015	960.80
	62.97	0.0034	2273.64
	63.20	0.0017	1152.65
n-C20	63.30	0.0037	2470.00
	63.66	0.0021	1355.55
	63.79	0.0014	951.48
	63.86	0.0016	1070.23
	64.05	0.0028	1870.21
IS #3	64.22	0.4085	269459.80
n-C21	64.57	0.0163	10772.23
	65.18	0.0573	37772.07
	65.61	0.0678	44745.66
n-C22	65.78	0.0547	36110.11
n-C23	66.95	0.4402	290427.80
n-C24	68.86	1.5054	993106.20
n-C25	69.49	0.3263	215237.90
	69.64	0.1756	115862.10
	70.02	0.3220	212439.30
n-C26	70.58	0.5805	382959.00
	70.96	0.0824	54368.42
	71.28	0.2498	164792.30
	71.40	0.3002	198020.20
	71.88	0.0813	53649.94
n-C27	72.13	0.3110	205153.40
	72.64	0.0837	55185.31
	72.86	0.1510	99644.13
	73.18	0.2952	194727.80
n-C28	73.89	0.3001	198001.80
	74.69	0.1385	91388.80
	75.26	0.2514	165879.70
n-C29	76.01	0.1310	86435.85
	76.64	0.1353	89283.79
	77.42	0.0478	31506.98
n-C30	78.03	0.0119	7820.32
	78.18	0.0035	2314.29
	78.73	0.0018	1165.17
	79.61	0.0043	2854.81
	80.13	0.0009	567.16
n-C31	80.41	0.0084	5516.09
	81.35	0.0051	3386.11
	81.87	0.0035	2323.63
	82.12	0.0005	335.94
	82.64	0.0063	4164.73
n-C32	83.75	0.0099	6502.61
	84.10	0.0009	605.33
	84.55	0.0141	9334.30
	85.28	0.0080	5288.23
	85.89	0.0047	3108.11
	86.30	0.0025	1641.28
n-C33	86.62	0.0038	2503.44
	87.05	0.0019	1244.42
	87.49	0.0085	5609.33

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	87.96	0.0008	539.29
	88.60	0.0036	2378.18
	89.77	0.0045	2989.47
	90.45	0.0004	288.75
n-C34	90.90	0.0008	512.17
	91.07	0.0021	1366.45
	91.38	0.0054	3568.72
	92.27	0.0014	925.28
	93.48	0.0039	2554.00
	93.97	0.0003	202.04
	94.67	0.0023	1498.68
	95.03	0.0007	439.27
n-C35	95.68	0.0015	994.50
	96.34	0.0010	627.53
	96.45	0.0009	587.61
	97.55	0.0019	1238.86
	98.14	0.0012	778.88
	98.91	0.0067	4449.98
	99.99	0.0002	118.77
	100.58	0.0054	3568.71
	101.33	0.0022	1464.89
	102.40	0.0017	1125.17
	103.03	0.0012	808.31
	103.25	0.0009	581.06
	103.98	0.0004	294.76
	104.48	0.0009	588.06
	105.50	0.0021	1406.82
	106.44	0.0036	2381.11
	107.65	0.0057	3772.12
	108.17	0.0008	516.86
	108.63	0.0003	184.71

Total Area = 6.597103E+07 Total Height = 1.831833E+07 Total Amount = 0

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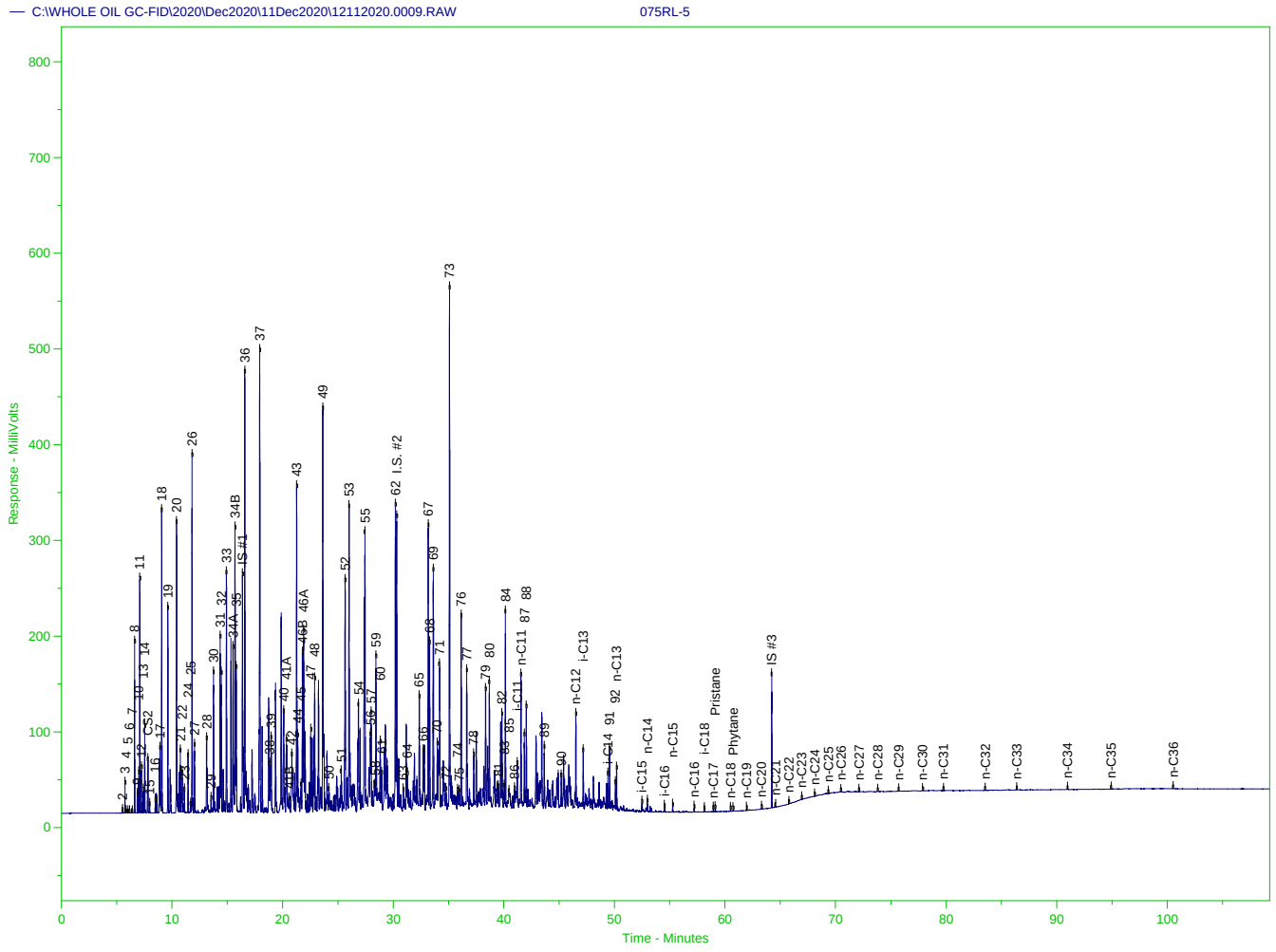

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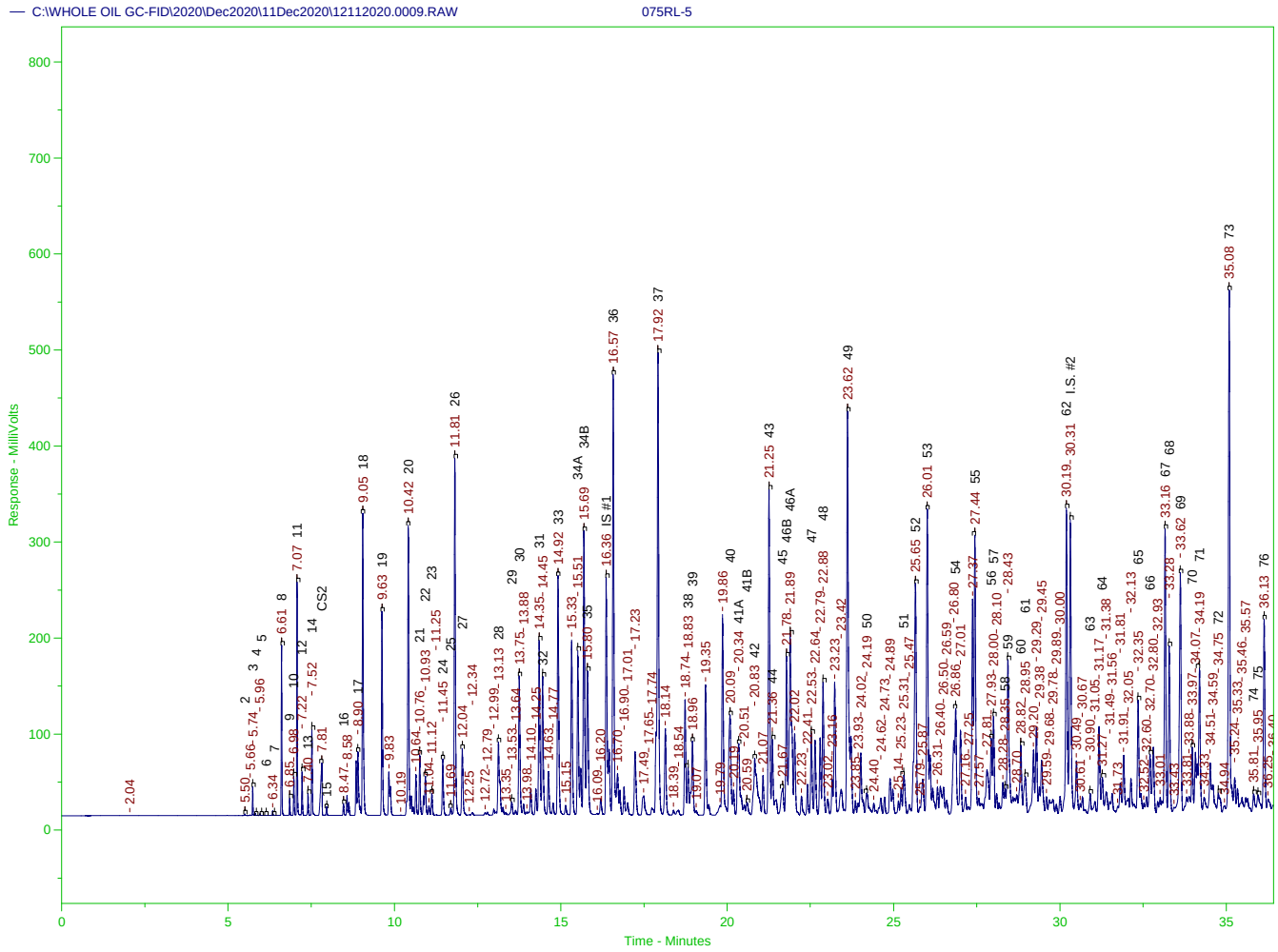

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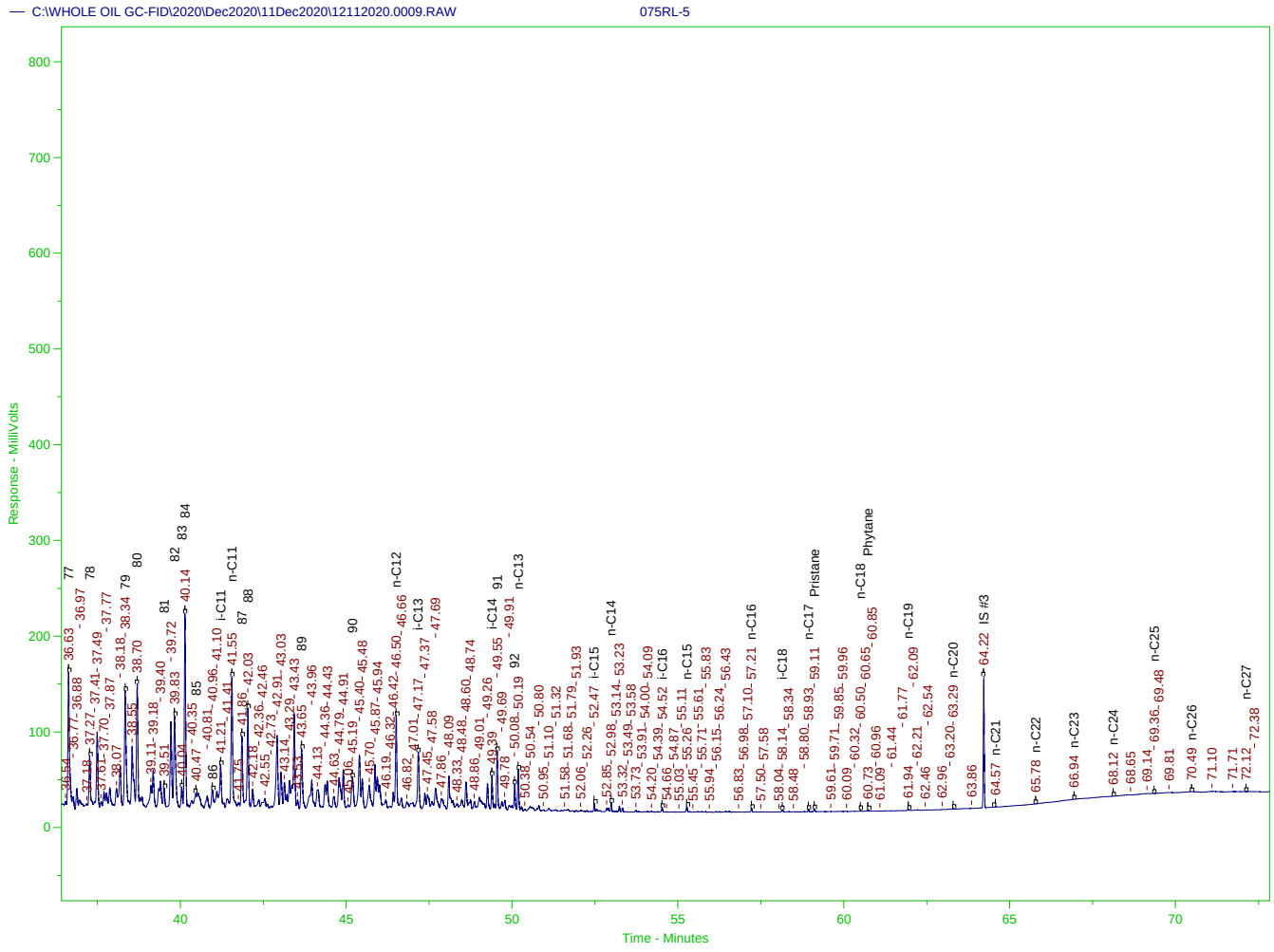

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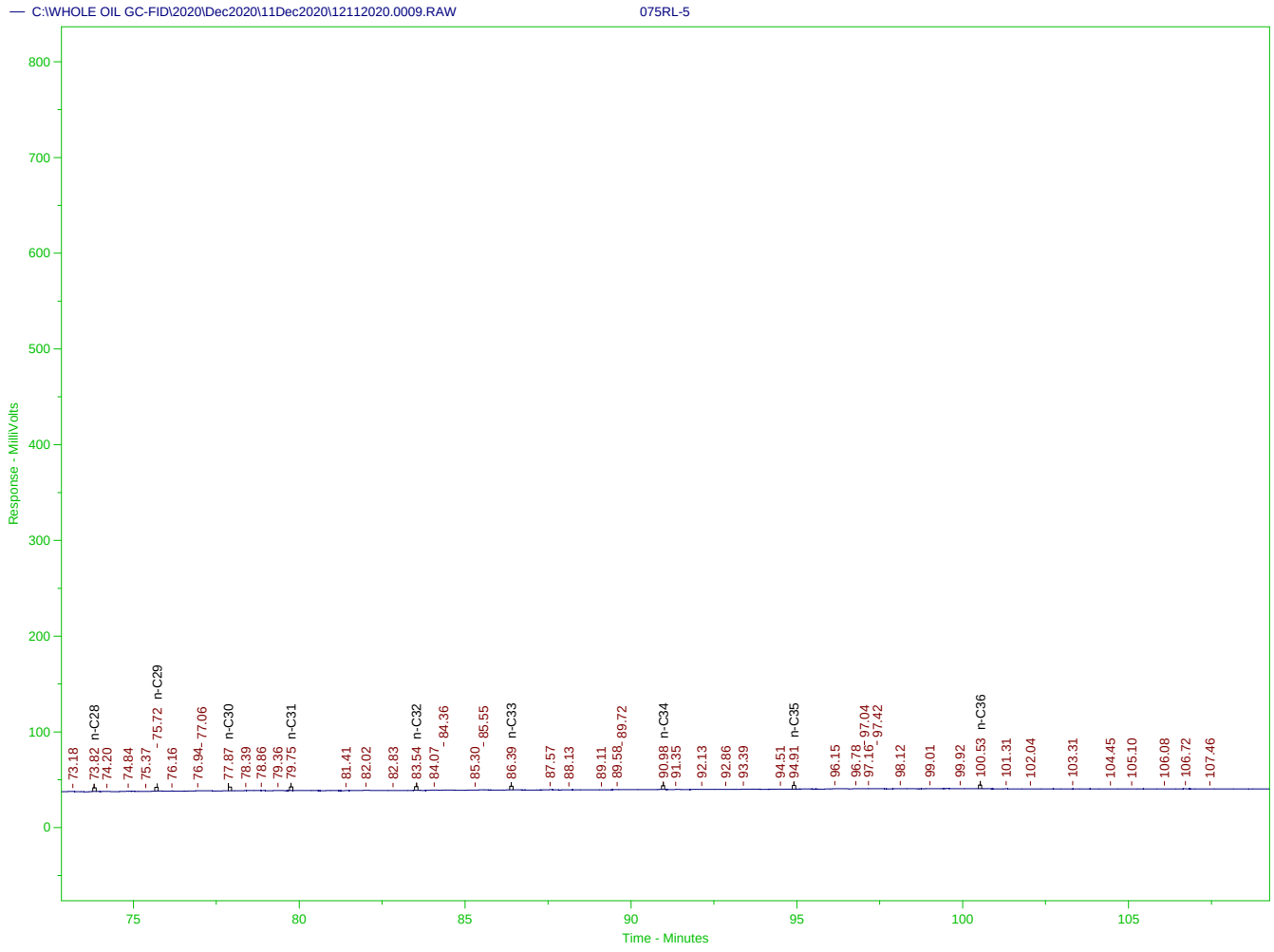

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Sample Name = **075RL-5**

Instrument = Instrument 1 Acquisition Port = DP#
Heading 1 =
Heading 2 =

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Calibration File Name = C:\1 - A Backup\CALIBRATIONS\2020\12112020.cal Calibration Version = 1

Peak Name	Ret. Time	Area %	Area
	2.04	0.0020	1365.10
2	5.50	0.0025	1753.50
	5.66	0.0011	797.97
3	5.74	0.0520	36107.03
	5.96	0.0034	2376.67
	6.34	0.0092	6408.09
8	6.61	0.3465	240480.30
9	6.85	0.0368	25505.71
10	6.98	0.0853	59217.57
11	7.07	0.5141	356758.20
12	7.22	0.1004	69662.74
13	7.40	0.0545	37804.23
14	7.52	0.2172	150756.80
CS2	7.81	0.2708	187940.80
16	8.47	0.0319	22120.98
	8.58	0.0913	63380.12
17	8.90	0.4058	281625.40
18	9.05	0.9750	676625.90
19	9.63	0.6601	458046.20
	9.83	0.2328	161516.10
	10.19	0.0016	1142.58
20	10.42	1.1144	773339.90
	10.64	0.1395	96832.88
21	10.76	0.2095	145388.80
22	10.93	0.2062	143067.20
	11.04	0.0348	24126.55
23	11.12	0.0787	54624.74
	11.25	0.0032	2207.32
24	11.45	0.2080	144364.10
25	11.69	0.0288	19964.62
26	11.81	1.3428	931818.00
27	12.04	0.2887	200349.00
	12.25	0.0034	2356.84
	12.34	0.0182	12653.83
	12.72	0.0140	9686.21
	12.79	0.0160	11087.85
	12.99	0.0263	18217.93
28	13.13	0.4492	311736.50
	13.35	0.0153	10604.02
29	13.53	0.0726	50380.64
	13.64	0.0221	15328.63
30	13.75	0.5788	401628.90
	13.88	0.0487	33828.11
	13.98	0.0276	19168.24
	14.10	0.1110	77046.64
	14.25	0.1160	80504.96
31	14.35	0.7543	523469.70
32	14.45	0.5906	409839.20
	14.63	0.1923	133459.00
	14.77	0.0579	40158.07
33	14.92	1.0129	702886.30
	15.15	0.0518	35942.03
	15.33	0.7455	517309.50
34A	15.51	0.8923	619220.60
34B	15.69	1.2240	849398.50
35	15.80	0.7727	536241.90
	16.09	0.0143	9929.02
	16.20	0.0835	57934.84

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Peak Name	Ret. Time	Area %	Area
IS #1	16.36	1.3335	925371.70
36	16.57	1.8823	1306219.00
	16.70	0.3287	228083.40
	16.90	0.1188	82448.19
	17.01	0.0743	51562.46
	17.23	0.3436	238456.30
	17.49	0.1539	106828.60
	17.65	0.0042	2927.88
	17.74	0.0531	36835.59
37	17.92	2.3695	1644309.00
	18.14	0.4116	285659.00
	18.39	0.0258	17925.99
	18.54	0.0398	27637.96
	18.74	0.4925	341732.80
38	18.83	0.2886	200277.30
39	18.96	0.3610	250512.80
	19.07	0.0236	16398.25
	19.35	0.6282	435942.30
	19.79	0.0718	49806.20
	19.86	0.9744	676153.10
40	20.09	0.6773	469998.30
	20.19	0.1169	81154.60
41A	20.34	0.6010	417057.40
	20.51	0.0558	38742.96
41B	20.59	0.0865	60024.54
42	20.83	0.6631	460135.00
	21.07	0.1797	124706.10
43	21.25	1.4528	1008138.00
44	21.36	0.4572	317237.80
45	21.67	0.2232	154860.20
46B	21.78	0.6911	479563.90
46A	21.89	1.3316	924067.60
	22.02	0.3747	260023.50
	22.23	0.0960	66595.38
	22.41	0.1396	96870.30
47	22.53	0.3906	271030.00
	22.64	0.3566	247448.60
	22.79	0.3389	235191.60
48	22.88	0.6079	421862.30
	23.02	0.1000	69400.90
	23.16	0.1576	109389.90
	23.23	0.6167	427969.90
	23.42	0.2500	173498.70
49	23.62	2.4159	1676491.00
	23.85	0.0629	43658.58
	23.93	0.0522	36211.00
	24.02	0.3689	255979.40
50	24.19	0.2008	139308.70
	24.40	0.0818	56762.51
	24.62	0.1224	84952.49
	24.73	0.0850	58982.77
	24.89	0.3400	235927.50
	25.14	0.0709	49231.81
	25.23	0.1235	85672.17
51	25.31	0.2483	172297.00
	25.47	0.0700	48567.25
52	25.65	1.4443	1002284.00
	25.79	0.0314	21813.48
	25.87	0.2412	167406.20
53	26.01	1.8850	1308082.00
	26.31	0.1349	93613.09
	26.40	0.1981	137464.30
	26.50	0.1399	97114.46
	26.59	0.0923	64046.55
	26.80	0.4152	288121.50
54	26.86	0.5384	373596.20
	27.01	0.4263	295819.60
	27.16	0.1169	81116.02
	27.25	0.0565	39180.01
	27.37	0.9468	657029.10

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55	27.44	1.2701	881386.00
	27.57	0.1791	124269.30
	27.81	0.4236	293985.00
56	27.93	0.3805	264044.50
57	28.00	0.4457	309284.00
	28.10	0.1573	109162.00
	28.28	0.1754	121750.50
58	28.35	0.1172	81326.14
59	28.43	1.1008	763872.90
	28.70	0.1048	72738.17
60	28.82	0.4306	298802.30
61	28.95	0.2874	199450.40
	29.20	0.4273	296490.10
	29.29	0.4428	307289.80
	29.38	0.1293	89713.17
	29.45	0.3395	235582.90
	29.59	0.0924	64135.95
	29.68	0.1154	80047.29
	29.78	0.1015	70436.27
	29.89	0.0529	36698.00
	30.00	0.0986	68401.61
62	30.19	1.4899	1033895.00
I.S. #2	30.31	1.4865	1031560.00
	30.49	0.3181	220764.00
	30.61	0.0563	39036.98
	30.67	0.1237	85834.28
63	30.90	0.1257	87205.37
	31.05	0.1045	72489.10
	31.17	0.4482	310997.60
64	31.27	0.2097	145503.70
	31.38	0.1691	117341.20
	31.49	0.0717	49742.29
	31.56	0.1341	93027.59
	31.73	0.0468	32503.37
	31.81	0.1823	126500.90
	31.91	0.2934	203582.00
	32.05	0.1528	106063.80
	32.13	0.2698	187203.50
65	32.35	0.6574	456218.30
	32.52	0.0597	41404.32
	32.60	0.0978	67874.09
66	32.70	0.3348	232308.80
	32.80	0.3998	277402.80
	32.93	0.0642	44548.59
	33.01	0.1497	103916.50
67	33.16	1.2870	893116.80
68	33.28	0.7836	543798.00
	33.43	0.0404	28032.45
69	33.62	1.3508	937369.00
	33.81	0.1447	100383.90
	33.88	0.1221	84705.77
70	33.97	0.3256	225945.10
	34.07	0.4882	338747.00
71	34.19	0.7291	505942.20
	34.33	0.1572	109100.90
	34.51	0.3167	219775.10
	34.59	0.2274	157791.00
72	34.75	0.1987	137861.90
	34.94	0.0738	51242.56
73	35.08	2.5358	1759675.00
	35.24	0.1986	137823.00
	35.33	0.1420	98546.83
	35.46	0.1658	115038.00
	35.57	0.2116	146807.40
74	35.81	0.1517	105270.50
75	35.95	0.1971	136772.00
76	36.13	0.9407	652806.90
	36.25	0.1481	102752.30
	36.40	0.1157	80322.25
	36.54	0.0595	41314.57

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77	36.63	0.7807	541761.40
	36.77	0.0890	61731.11
	36.88	0.1244	86333.52
	36.97	0.1425	98856.30
	37.18	0.0760	52726.24
78	37.27	0.3340	231784.30
	37.41	0.0531	36836.31
	37.49	0.4140	287286.10
	37.61	0.0664	46052.89
	37.70	0.1091	75679.65
	37.77	0.1178	81744.42
	37.87	0.2103	145959.00
	38.07	0.1501	104179.10
	38.18	0.3027	210024.90
79	38.34	0.7704	534614.90
	38.55	0.4711	326895.20
80	38.70	0.7866	545859.70
	39.11	0.2258	156669.40
	39.18	0.2458	170543.70
	39.40	0.3031	210318.50
81	39.51	0.1389	96379.93
	39.72	0.5358	371820.20
82	39.83	0.6374	442337.90
83	40.04	0.1412	97986.77
84	40.14	0.9430	654386.70
	40.35	0.0946	65662.99
85	40.47	0.3788	262868.90
	40.81	0.1545	107228.10
86	40.96	0.1636	113521.30
	41.10	0.1543	107075.00
i-C11	41.21	0.3674	254945.30
	41.41	0.1235	85694.53
n-C11	41.55	0.7572	525482.90
	41.75	0.0656	45537.52
87	41.86	0.3839	266428.20
88	42.03	0.5691	394930.30
	42.18	0.1501	104155.70
	42.36	0.1236	85776.93
	42.46	0.0736	51106.82
	42.55	0.1423	98745.32
	42.73	0.0413	28677.49
	42.91	0.5186	359909.60
	43.03	0.2293	159148.70
	43.14	0.2436	169040.50
	43.29	0.3014	209144.20
	43.43	0.4807	333557.00
	43.53	0.0725	50278.68
89	43.65	0.3889	269901.20
	43.96	0.3614	250756.60
	44.13	0.2459	170643.90
	44.36	0.1627	112870.70
	44.43	0.2132	147929.60
	44.63	0.1265	87770.15
	44.79	0.2910	201966.20
	44.91	0.2318	160822.40
	45.06	0.0544	37727.53
90	45.19	0.2709	187995.10
	45.40	0.3790	263012.00
	45.48	0.1851	128476.10
	45.70	0.2788	193444.30
	45.87	0.2400	166560.50
	45.94	0.3544	245960.90
	46.19	0.1331	92384.77
	46.32	0.0551	38241.56
	46.42	0.1005	69727.46
n-C12	46.50	0.4722	327674.20
	46.66	0.1212	84108.24
	46.82	0.0933	64765.91
	47.01	0.1210	83960.30
i-C13	47.17	0.3666	254369.00

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Peak Name	Ret. Time	Area %	Area
	47.37	0.1198	83160.14
	47.45	0.1396	96855.71
	47.58	0.0787	54599.31
	47.69	0.2121	147196.90
	47.86	0.1636	113546.90
	48.09	0.3084	214036.40
	48.33	0.1000	69398.24
	48.48	0.0960	66591.10
	48.60	0.1671	115989.70
	48.74	0.1029	71396.21
	48.86	0.0738	51182.95
	49.01	0.2377	164952.70
	49.26	0.1544	107147.10
i-C14	49.39	0.1858	128923.20
91	49.55	0.2532	175719.30
	49.69	0.0602	41741.76
	49.78	0.0815	56540.73
	49.91	0.0822	57010.54
92	50.08	0.1177	81654.80
n-C13	50.19	0.1942	134753.60
	50.38	0.0171	11873.74
	50.54	0.0936	64981.23
	50.80	0.0543	37659.52
	50.95	0.0173	11987.13
	51.10	0.0393	27292.91
	51.32	0.0401	27856.16
	51.58	0.0340	23585.29
	51.68	0.0196	13598.36
	51.79	0.0151	10461.79
	51.93	0.0156	10793.70
	52.06	0.0215	14928.75
	52.26	0.0162	11267.94
i-C15	52.47	0.0620	43015.57
	52.85	0.0339	23524.71
n-C14	52.98	0.0397	27572.83
	53.14	0.0060	4169.96
	53.23	0.0226	15693.22
	53.32	0.0187	12984.97
	53.49	0.0027	1888.16
	53.58	0.0038	2670.79
	53.73	0.0124	8632.00
	53.91	0.0026	1827.88
	54.00	0.0035	2409.71
	54.09	0.0055	3839.65
	54.20	0.0068	4720.73
	54.39	0.0042	2935.98
i-C16	54.52	0.0190	13187.28
	54.66	0.0023	1612.62
	54.87	0.0070	4868.00
	55.03	0.0018	1219.01
	55.11	0.0026	1794.98
n-C15	55.26	0.0241	16738.79
	55.45	0.0023	1565.30
	55.61	0.0044	3029.83
	55.71	0.0034	2374.08
	55.83	0.0027	1897.50
	55.94	0.0019	1290.58
	56.15	0.0022	1495.16
	56.24	0.0030	2061.64
	56.43	0.0119	8278.49
	56.83	0.0028	1920.52
	56.98	0.0008	549.50
	57.10	0.0023	1630.55
n-C16	57.21	0.0128	8891.89
	57.50	0.0015	1038.00
	57.58	0.0029	1980.98
	58.04	0.0011	762.36
i-C18	58.14	0.0083	5747.27
	58.34	0.0023	1576.92
	58.48	0.0022	1535.70

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	58.80	0.0014	959.96
n-C17	58.93	0.0088	6085.00
Pristane	59.11	0.0129	8962.75
	59.61	0.0013	920.27
	59.71	0.0008	584.18
	59.85	0.0016	1115.32
	59.96	0.0009	618.77
	60.09	0.0011	729.23
	60.32	0.0016	1135.15
n-C18	60.50	0.0052	3611.07
	60.65	0.0011	732.66
Phytane	60.73	0.0053	3691.00
	60.85	0.0008	531.50
	60.96	0.0006	439.52
	61.09	0.0008	532.33
	61.44	0.0010	666.44
	61.77	0.0008	537.77
n-C19	61.94	0.0049	3396.03
	62.09	0.0011	782.39
	62.21	0.0030	2088.56
	62.46	0.0005	373.43
	62.54	0.0009	597.71
	62.96	0.0006	424.43
	63.20	0.0009	641.36
n-C20	63.29	0.0029	1985.91
	63.86	0.0020	1372.31
IS #3	64.22	0.3824	265361.00
n-C21	64.57	0.0100	6916.03
n-C22	65.78	0.1202	83402.43
n-C23	66.94	0.3771	261650.90
n-C24	68.12	0.6311	437910.80
	68.65	0.3505	243229.30
	69.14	0.3554	246611.90
n-C25	69.36	0.1233	85536.05
	69.48	0.0819	56842.26
	69.81	0.3135	217530.40
n-C26	70.49	0.5827	404348.30
	71.10	0.4706	326543.70
	71.71	0.2701	187404.10
n-C27	72.12	0.0862	59822.16
	72.38	0.1741	120810.40
	73.18	0.3637	252412.20
n-C28	73.82	0.1396	96852.62
	74.20	0.1222	84765.85
	74.84	0.1221	84738.66
	75.37	0.0312	21673.41
n-C29	75.72	0.0393	27267.99
	76.16	0.0388	26914.11
	76.94	0.0151	10502.75
	77.06	0.0023	1610.71
n-C30	77.87	0.0099	6870.30
	78.39	0.0046	3211.42
	78.86	0.0108	7485.19
	79.36	0.0058	4034.26
n-C31	79.75	0.0006	391.26
	81.41	0.0009	638.22
	82.02	0.0018	1221.97
	82.83	0.0006	441.23
n-C32	83.54	0.0023	1573.90
	84.07	0.0041	2876.00
	84.36	0.0003	188.09
	85.30	0.0018	1224.17
	85.55	0.0034	2367.26
n-C33	86.39	0.0016	1079.45
	87.57	0.0061	4248.87
	88.13	0.0009	643.90
	89.11	0.0029	2024.16
	89.58	0.0021	1469.83
	89.72	0.0009	636.28
n-C34	90.98	0.0079	5476.28

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Chrom Perfect Chromatogram Report

Peak Name	Ret. Time	Area %	Area
	91.35	0.0040	2766.55
	92.13	0.0046	3164.06
	92.86	0.0006	447.17
	93.39	0.0008	545.27
	94.51	0.0010	720.92
n-C35	94.91	0.0005	321.09
	96.15	0.0011	752.05
	96.78	0.0024	1692.24
	97.04	0.0048	3355.12
	97.16	0.0060	4136.43
	97.42	0.0055	3836.14
	98.12	0.0043	3000.06
	99.01	0.0010	724.60
	99.92	0.0025	1764.68
n-C36	100.53	0.0019	1324.17
	101.31	0.0012	804.67
	102.04	0.0013	899.13
	103.31	0.0003	228.61
	104.45	0.0005	355.51
	105.10	0.0016	1091.31
	106.08	0.0005	345.90
	106.72	0.0053	3660.27
	107.46	0.0005	373.99

Total Area = 6.9394E+07 Total Height = 1.884504E+07 Total Amount = 0

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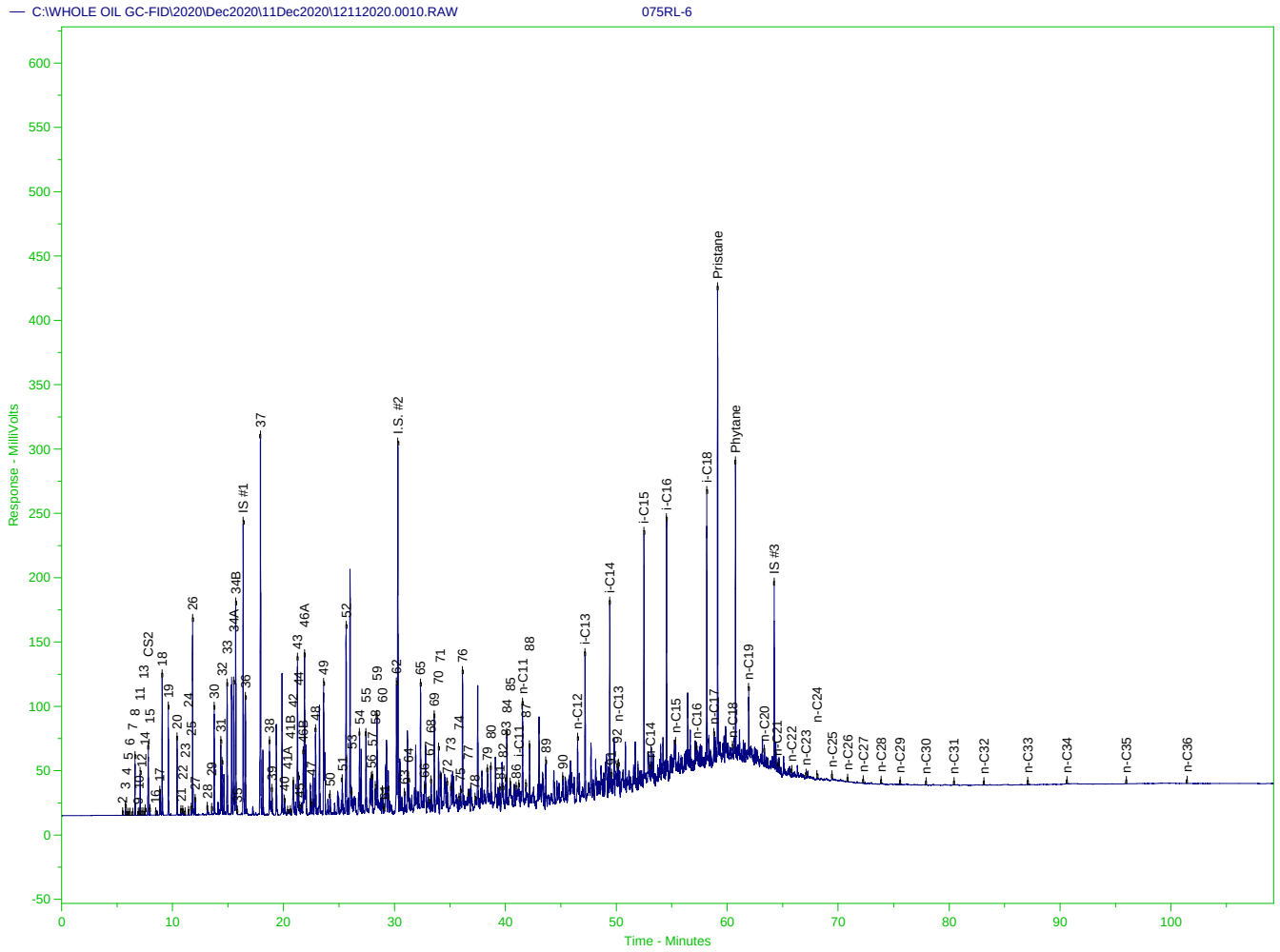
Chrom Perfect Chromatogram Report



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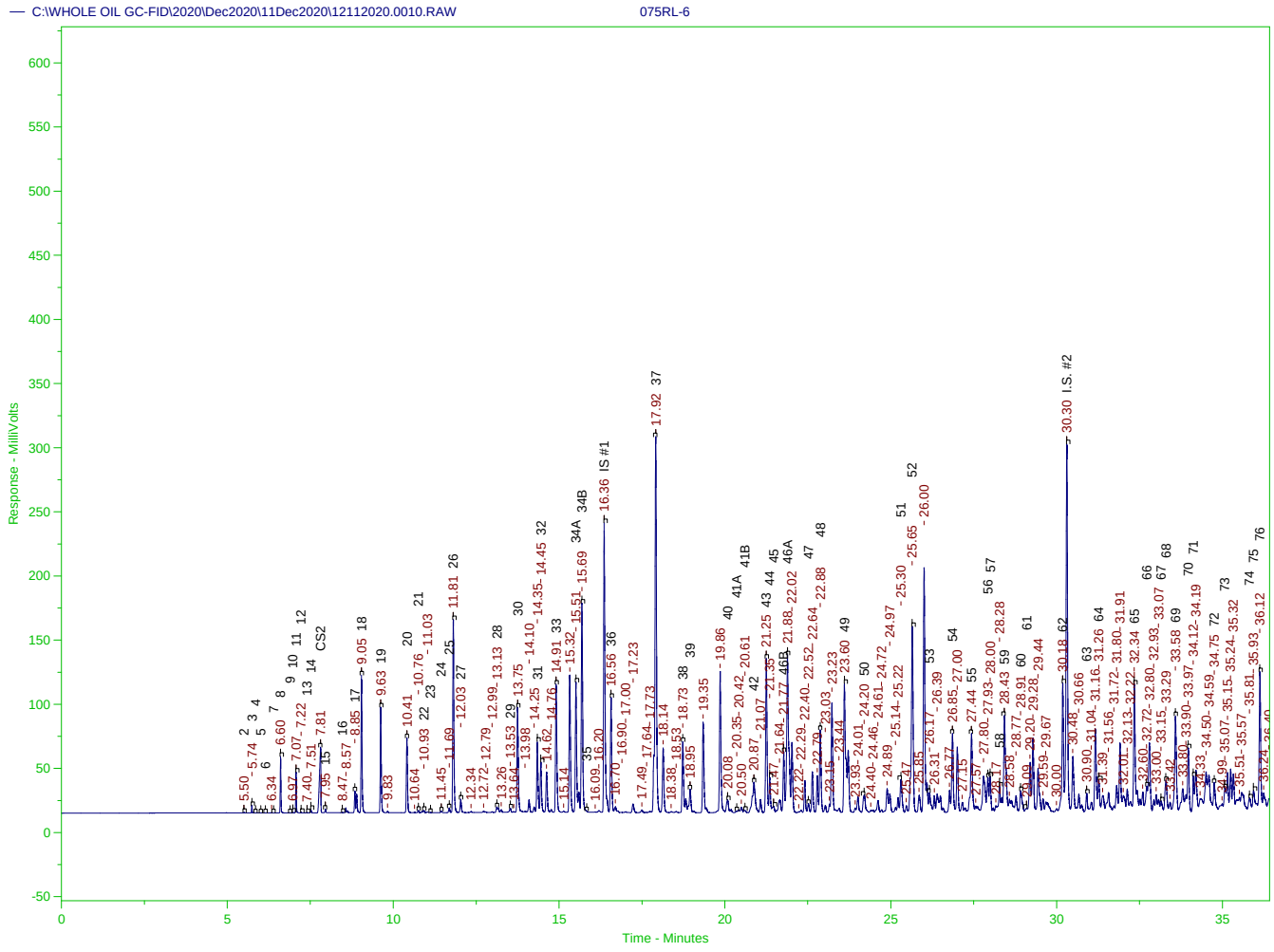

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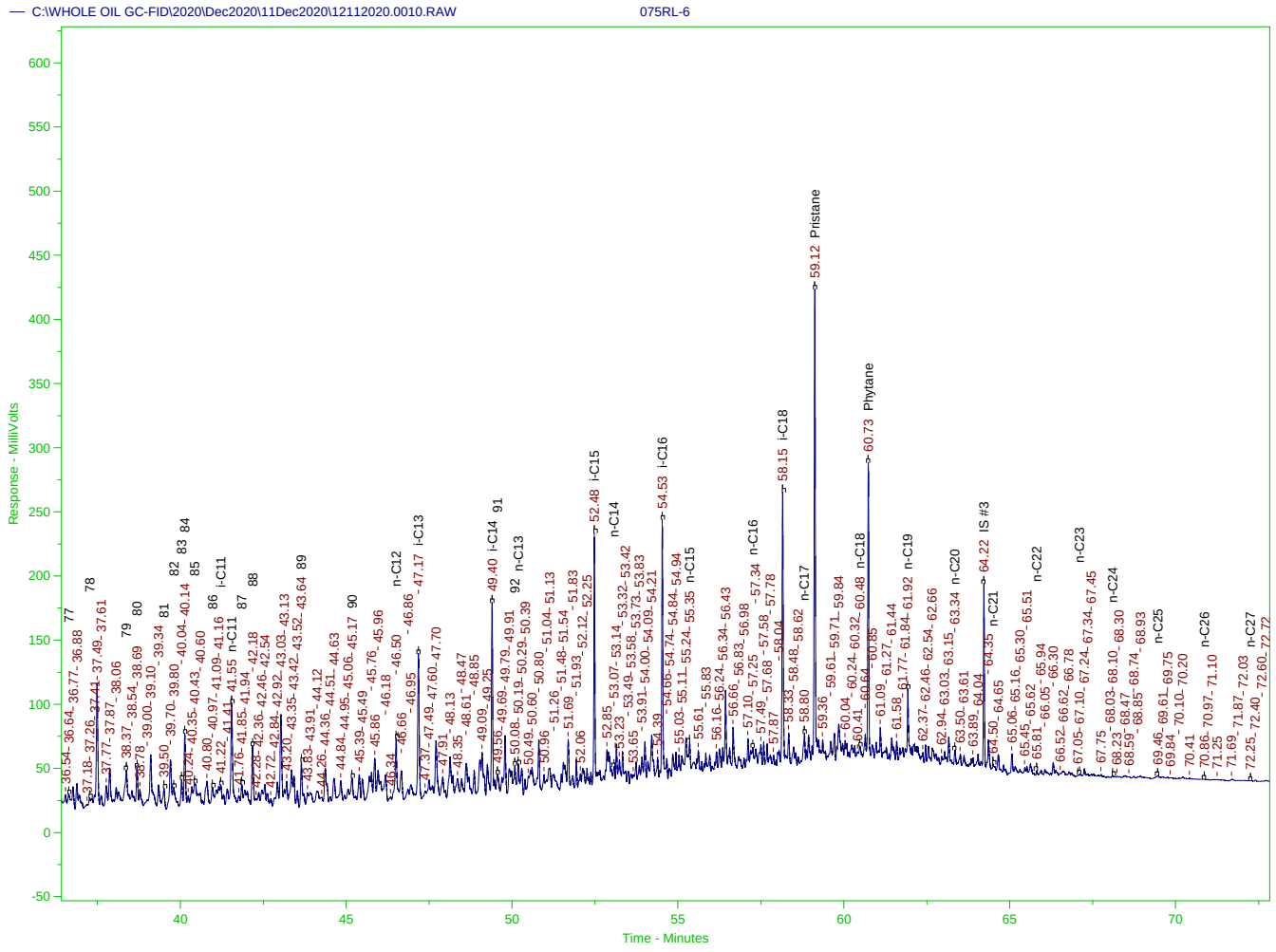
Chrom Perfect Chromatogram Report



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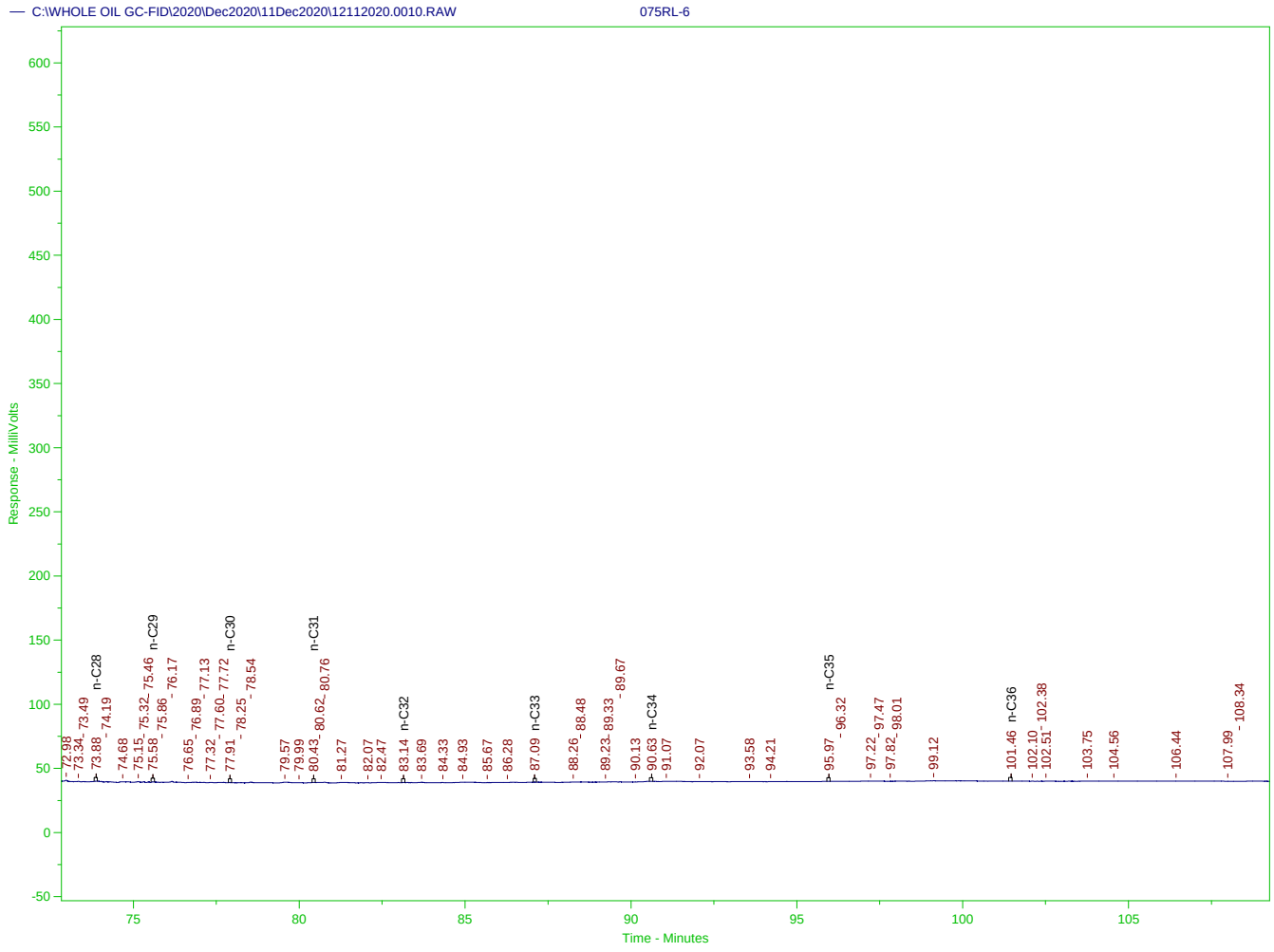
Chrom Perfect Chromatogram Report



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Sample Name = **075RL-6**

Instrument = Instrument 1 Acquisition Port = DP#
Heading 1 =
Heading 2 =

Raw File Name = **C:\WHOLE OIL GC-FID\2020\Dec2020\11Dec2020\12112020.001.RAW** Date Taken (End) = 12/12/2020 1:38:57 PM
Method File Name = C:\1 - A Backup\C3442020.met Method Version = 23
Calibration File Name = C:\1 - A Backup\CALIBRATIONS\2020\12112020.cal Calibration Version = 1

Peak Name	Ret. Time	Area %	Area
2	5.50	0.0007	376.03
3	5.74	0.0116	6579.77
	6.34	0.0007	421.08
8	6.60	0.1055	59987.80
10	6.97	0.0013	715.67
11	7.07	0.0820	46591.29
12	7.22	0.0011	596.79
13	7.40	0.0007	395.17
14	7.51	0.0077	4378.33
CS2	7.81	0.2666	151550.80
15	7.95	0.0090	5125.85
16	8.47	0.0010	572.90
	8.57	0.0175	9949.74
17	8.85	0.1116	63405.70
18	9.05	0.3804	216183.50
19	9.63	0.3146	178783.30
	9.83	0.0049	2763.23
20	10.41	0.2315	131579.00
	10.64	0.0013	754.10
21	10.76	0.0075	4277.78
22	10.93	0.0115	6560.75
	11.03	0.0037	2081.78
24	11.45	0.0057	3221.15
25	11.69	0.0165	9369.12
26	11.81	0.6567	373262.70
27	12.03	0.0504	28633.72
	12.34	0.0040	2282.28
	12.72	0.0058	3284.97
	12.79	0.0034	1933.05
	12.99	0.0037	2117.50
28	13.13	0.0359	20405.93
	13.26	0.0136	7733.91
29	13.53	0.0216	12274.54
	13.64	0.0048	2713.75
30	13.75	0.4034	229254.50
	13.98	0.0063	3595.45
	14.10	0.0518	29439.01
	14.25	0.0226	12833.98
31	14.35	0.2667	151584.10
32	14.45	0.1982	112667.30
	14.62	0.1608	91407.07
	14.76	0.0138	7819.32
33	14.91	0.4932	280311.30
	15.14	0.0087	4916.50
	15.32	0.5316	302125.30
34A	15.51	0.5762	327468.20
34B	15.69	0.8407	477842.30
	16.09	0.0041	2319.11
	16.20	0.0117	6631.33
IS #1	16.36	1.1599	659218.70
36	16.56	0.4375	248657.30
	16.70	0.0357	20279.00
	16.90	0.0014	784.56
	17.00	0.0049	2778.98
	17.23	0.0421	23927.71
	17.49	0.0124	7067.03
	17.64	0.0016	886.74
	17.73	0.0080	4554.03

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Peak Name	Ret. Time	Area %	Area
37	17.92	1.7099	971852.70
	18.14	0.2731	155196.30
	18.38	0.0055	3104.41
	18.53	0.0057	3266.29
38	18.73	0.3341	189911.90
39	18.95	0.1295	73615.32
	19.35	0.3874	220178.50
	19.86	0.6057	344241.70
40	20.08	0.0910	51709.11
41A	20.35	0.0074	4184.14
	20.42	0.0120	6845.77
	20.50	0.0269	15312.78
41B	20.61	0.0131	7427.34
42	20.87	0.2564	145699.60
	21.07	0.0536	30453.15
43	21.25	0.6166	350432.00
44	21.35	0.1448	82324.71
45	21.47	0.0512	29122.09
	21.64	0.0871	49492.17
46B	21.77	0.2394	136043.50
46A	21.88	0.9202	522982.70
	22.02	0.2906	165169.40
	22.22	0.0029	1636.31
	22.29	0.0105	5987.77
	22.40	0.1317	74867.76
47	22.52	0.0414	23556.58
	22.64	0.1665	94655.71
	22.79	0.1450	82418.43
48	22.88	0.3467	197024.60
	23.03	0.0341	19360.21
	23.15	0.0304	17258.11
	23.23	0.4780	271675.00
	23.44	0.0213	12103.15
49	23.60	0.9669	549523.80
	23.93	0.0176	10027.11
	24.01	0.0782	44456.39
50	24.20	0.1194	67835.80
	24.40	0.0098	5570.82
	24.46	0.0115	6528.75
	24.61	0.0655	37203.78
	24.72	0.0120	6838.37
	24.89	0.1157	65780.88
	24.97	0.0904	51367.24
	25.14	0.0236	13437.66
	25.22	0.0615	34946.18
51	25.30	0.1762	100146.80
	25.47	0.0311	17700.26
52	25.65	0.9847	559666.80
	25.85	0.0918	52184.02
	26.00	1.1420	649077.70
53	26.17	0.1134	64479.51
	26.31	0.0693	39366.53
	26.39	0.2038	115815.30
	26.77	0.0957	54384.29
54	26.85	0.3537	201032.30
	27.00	0.2741	155802.10
	27.15	0.0736	41858.61
55	27.44	0.4244	241203.20
	27.57	0.0570	32413.56
	27.80	0.2728	155076.20
56	27.93	0.1616	91846.31
57	28.00	0.1655	94052.76
	28.17	0.0253	14381.42
58	28.28	0.1884	107092.60
59	28.43	0.5706	324285.70
	28.58	0.1343	76310.50
	28.77	0.0832	47272.79
60	28.91	0.1380	78448.50
61	29.09	0.0233	13228.18
	29.20	0.2468	140264.10

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	29.28	0.3247	184544.40
	29.44	0.2460	139810.50
	29.59	0.0579	32880.30
	29.67	0.1055	59941.48
	30.00	0.0171	9740.53
62	30.18	0.5873	333796.30
I.S. #2	30.30	1.6028	910957.50
	30.48	0.3032	172317.60
	30.66	0.1113	63265.64
63	30.90	0.0804	45684.14
	31.04	0.0572	32534.89
	31.16	0.3781	214887.60
64	31.26	0.1556	88409.80
	31.39	0.1082	61512.08
	31.56	0.1525	86676.56
	31.72	0.0273	15493.13
	31.80	0.1287	73138.27
	31.91	0.3000	170488.10
	32.01	0.1289	73279.53
	32.13	0.1053	59833.69
	32.22	0.0654	37193.51
65	32.34	0.6954	395231.70
	32.60	0.0964	54801.66
66	32.72	0.1329	75556.01
	32.80	0.3725	211690.80
	32.93	0.0489	27787.00
	33.00	0.0775	44028.87
	33.07	0.0557	31657.15
67	33.15	0.0574	32597.34
68	33.29	0.1845	104860.50
	33.42	0.0460	26142.84
69	33.58	0.5046	286783.60
	33.80	0.1663	94509.02
	33.90	0.0792	45035.46
70	33.97	0.2759	156813.50
71	34.12	0.1431	81330.52
	34.19	0.2223	126325.70
	34.33	0.1297	73744.06
	34.50	0.2287	129986.30
	34.59	0.2608	148222.70
72	34.75	0.1631	92689.62
	34.99	0.0652	37060.69
73	35.07	0.1273	72350.74
	35.15	0.1730	98336.53
	35.24	0.1821	103494.60
	35.32	0.1771	100636.40
	35.51	0.1345	76452.05
	35.57	0.1734	98527.42
74	35.81	0.0883	50168.50
75	35.93	0.1467	83402.28
76	36.12	0.6258	355662.60
	36.24	0.1245	70740.59
	36.40	0.0898	51030.79
	36.54	0.1074	61066.76
77	36.64	0.1369	77789.58
	36.77	0.1095	62260.42
	36.88	0.2368	134571.70
	37.18	0.0439	24942.11
78	37.26	0.1223	69537.05
	37.41	0.0605	34359.79
	37.49	0.5810	330218.10
	37.61	0.0875	49732.79
	37.77	0.1462	83112.99
	37.87	0.2745	156011.60
	38.06	0.2685	152582.00
79	38.37	0.3737	212369.80
	38.54	0.1661	94431.86
80	38.69	0.1895	107709.80
	38.78	0.1286	73099.37
	39.00	0.0807	45876.13

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	39.10	0.4053	230372.90
	39.34	0.1390	79012.08
81	39.50	0.1217	69143.90
	39.70	0.2942	167190.30
82	39.80	0.1831	104090.80
83	40.04	0.1410	80152.37
84	40.14	0.3250	184737.10
	40.24	0.0659	37449.23
	40.35	0.1343	76331.40
85	40.43	0.2018	114675.40
	40.60	0.1769	100526.00
	40.80	0.2175	123636.40
86	40.97	0.1504	85498.75
	41.09	0.1090	61932.51
	41.16	0.0995	56565.63
i-C11	41.22	0.1897	107821.20
	41.41	0.1211	68856.30
n-C11	41.55	0.5980	339875.00
	41.76	0.0696	39573.22
87	41.85	0.1187	67442.62
	41.94	0.2101	119424.00
88	42.18	0.2914	165642.50
	42.28	0.0427	24274.44
	42.36	0.0839	47673.61
	42.46	0.1104	62746.15
	42.54	0.1866	106084.10
	42.72	0.0427	24287.22
	42.84	0.0477	27100.34
	42.92	0.1428	81161.34
	43.03	0.4477	254427.20
	43.13	0.0854	48564.09
	43.20	0.1233	70084.25
	43.35	0.2386	135609.90
	43.42	0.1377	78241.78
	43.52	0.0688	39103.51
89	43.64	0.2614	148541.70
	43.83	0.0786	44659.45
	43.91	0.1192	67763.86
	44.12	0.1534	87189.63
	44.26	0.0660	37490.58
	44.36	0.2833	161022.00
	44.51	0.0477	27137.31
	44.63	0.2152	122319.10
	44.84	0.1814	103082.00
	44.95	0.0577	32768.71
	45.06	0.0989	56186.15
90	45.17	0.2466	140149.70
	45.39	0.1721	97812.00
	45.49	0.1466	83315.38
	45.76	0.3547	201587.40
	45.86	0.2492	141650.20
	45.96	0.3224	183217.50
	46.18	0.2506	142408.60
	46.34	0.0521	29589.34
n-C12	46.50	0.4255	241818.80
	46.66	0.2114	120153.90
	46.86	0.1168	66371.90
	46.95	0.2043	116144.30
i-C13	47.17	0.6890	391587.50
	47.37	0.0943	53580.26
	47.49	0.1655	94064.30
	47.60	0.1110	63068.19
	47.70	0.4048	230056.50
	47.91	0.2390	135851.50
	48.13	0.4368	248248.70
	48.35	0.2186	124226.40
	48.47	0.1621	92125.36
	48.61	0.4001	227410.00
	48.85	0.1770	100596.40
	49.09	0.6120	347844.80

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	49.25	0.2384	135511.20
i-C14	49.40	0.8002	454818.40
91	49.56	0.1993	113269.20
	49.69	0.1083	61540.46
	49.79	0.3439	195443.40
	49.91	0.3181	180768.80
92	50.08	0.2172	123466.30
n-C13	50.19	0.2003	113821.70
	50.29	0.1772	100740.10
	50.39	0.0890	50577.56
	50.49	0.1226	69666.12
	50.60	0.3787	215233.80
	50.80	0.3569	202843.20
	50.96	0.1423	80862.86
	51.04	0.1036	58906.67
	51.13	0.2520	143229.60
	51.26	0.3456	196412.40
	51.48	0.1065	60540.15
	51.54	0.3126	177690.20
	51.69	0.2905	165135.00
	51.83	0.1672	95009.37
	51.93	0.1840	104580.60
	52.06	0.1657	94168.49
	52.12	0.2403	136593.40
	52.25	0.3271	185897.80
i-C15	52.48	1.2485	709623.80
	52.85	0.7719	438706.90
n-C14	53.07	0.1529	86879.53
	53.14	0.2129	121007.60
	53.23	0.2593	147348.30
	53.32	0.2029	115323.60
	53.42	0.1547	87928.24
	53.49	0.1406	79937.09
	53.58	0.1329	75547.66
	53.65	0.0846	48098.76
	53.73	0.1985	112825.90
	53.83	0.2057	116913.60
	53.91	0.2087	118602.80
	54.00	0.2961	168283.00
	54.09	0.2180	123913.60
	54.21	0.4779	271607.80
	54.39	0.2632	149585.20
i-C16	54.53	1.1602	659404.60
	54.66	0.1703	96771.05
	54.74	0.1878	106732.30
	54.84	0.2796	158919.40
	54.94	0.1649	93737.49
	55.03	0.2669	151720.90
	55.11	0.3178	180599.00
	55.24	0.4198	238613.60
n-C15	55.35	0.2859	162487.30
	55.61	0.8706	494810.80
	55.83	0.3615	205454.40
	56.16	0.7659	435303.30
	56.24	0.3023	171802.80
	56.34	0.1926	109475.40
	56.43	0.9073	515692.80
	56.66	0.4928	280109.40
	56.83	0.4248	241430.00
	56.98	0.1940	110246.40
	57.10	0.5745	326548.90
n-C16	57.25	0.3026	171961.50
	57.34	0.3100	176169.00
	57.49	0.4498	255637.70
	57.58	0.2295	130414.40
	57.68	0.2996	170287.90
	57.78	0.3111	176825.20
	57.87	0.3577	203296.20
	58.04	0.3267	185710.00
i-C18	58.15	1.4416	819343.40

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	58.33	0.3431	195020.00
	58.48	0.5621	319502.70
	58.62	0.3140	178470.50
n-C17	58.80	1.1862	674180.40
Pristane	59.12	2.2579	1283279.00
	59.36	0.6594	374763.70
	59.61	0.4337	246470.00
	59.71	0.5099	289825.70
	59.84	0.7864	446968.20
	60.04	0.5923	336637.80
	60.24	0.3516	199826.30
	60.32	0.2362	134232.90
	60.41	0.2568	145957.30
n-C18	60.48	0.3832	217778.80
	60.64	0.3804	216230.70
Phytane	60.73	1.2684	720880.50
	60.85	0.3387	192488.10
	61.09	0.7893	448578.60
	61.27	0.6909	392690.40
	61.44	0.5086	289057.10
	61.58	0.2786	158363.50
	61.77	0.4976	282791.60
	61.84	0.2212	125734.30
n-C19	61.92	1.4842	843556.10
	62.37	0.2674	151999.50
	62.46	0.2167	123154.40
	62.54	0.3491	198393.30
	62.66	0.6856	389680.80
	62.94	0.2238	127214.60
	63.03	0.2756	156658.50
	63.15	0.4609	261977.40
n-C20	63.34	0.2915	165688.30
	63.50	0.2483	141139.20
	63.61	0.3988	226658.70
	63.89	0.4067	231150.00
	64.04	0.3956	224868.10
IS #3	64.22	0.6586	374338.30
	64.35	0.3975	225929.10
n-C21	64.50	0.1848	105012.80
	64.65	0.5145	292420.10
	65.06	0.2072	117739.00
	65.16	0.1583	89947.48
	65.30	0.1337	76006.04
	65.45	0.1133	64380.07
	65.51	0.0869	49374.54
	65.62	0.2302	130822.20
n-C22	65.81	0.0949	53965.50
	65.94	0.1291	73389.95
	66.05	0.1691	96096.08
	66.30	0.2560	145478.20
	66.52	0.0621	35279.29
	66.62	0.1211	68815.68
	66.78	0.2098	119214.20
	67.05	0.0515	29252.34
n-C23	67.10	0.0757	43049.27
	67.24	0.0834	47418.62
	67.34	0.0709	40305.10
	67.45	0.1270	72160.48
	67.75	0.1669	94882.56
	68.03	0.0276	15672.70
n-C24	68.10	0.0588	33443.56
	68.23	0.0290	16474.59
	68.30	0.0392	22298.25
	68.47	0.0739	42013.81
	68.59	0.0293	16678.19
	68.74	0.0452	25686.48
	68.85	0.0206	11725.87
	68.93	0.1076	61136.20
n-C25	69.46	0.0710	40371.27
	69.61	0.0282	16053.85

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	69.75	0.0171	9731.34
	69.84	0.0322	18280.37
	70.10	0.0113	6400.51
	70.20	0.0241	13721.91
	70.41	0.0063	3584.82
n-C26	70.86	0.0034	1923.35
	70.97	0.0022	1226.38
	71.10	0.0065	3717.53
	71.25	0.0132	7493.95
	71.69	0.0142	8095.72
	71.87	0.0063	3584.43
	72.03	0.0100	5659.91
n-C27	72.25	0.0068	3856.13
	72.40	0.0073	4167.45
	72.60	0.0017	951.99
	72.72	0.0106	6000.05
	72.98	0.0124	7028.02
	73.34	0.0034	1929.69
	73.49	0.0024	1388.21
n-C28	73.88	0.0082	4644.74
	74.19	0.0019	1056.35
	74.68	0.0049	2769.26
	75.15	0.0089	5038.55
	75.32	0.0047	2697.54
	75.46	0.0040	2257.39
n-C29	75.58	0.0100	5675.16
	75.86	0.0033	1881.01
	76.17	0.0157	8938.84
	76.65	0.0018	1010.37
	76.89	0.0075	4277.94
	77.13	0.0023	1312.20
	77.32	0.0030	1693.11
	77.60	0.0044	2518.01
	77.72	0.0037	2113.38
n-C30	77.91	0.0025	1394.71
	78.25	0.0021	1185.42
	78.54	0.0068	3850.34
	79.57	0.0187	10632.23
	79.99	0.0053	2991.24
n-C31	80.43	0.0090	5105.59
	80.62	0.0070	3971.47
	80.76	0.0110	6241.32
	81.27	0.0032	1803.67
	82.07	0.0011	619.52
	82.47	0.0171	9726.92
n-C32	83.14	0.0090	5133.77
	83.69	0.0083	4693.74
	84.33	0.0015	857.81
	84.93	0.0029	1674.83
	85.67	0.0006	342.18
	86.28	0.0034	1922.05
n-C33	87.09	0.0033	1896.98
	88.26	0.0042	2375.29
	88.48	0.0085	4816.08
	89.23	0.0007	421.07
	89.33	0.0009	524.78
	89.67	0.0006	335.69
	90.13	0.0007	400.11
n-C34	90.63	0.0096	5441.04
	91.07	0.0006	355.75
	92.07	0.0009	519.92
	93.58	0.0005	304.49
	94.21	0.0008	465.84
n-C35	95.97	0.0050	2868.70
	96.32	0.0007	416.07
	97.22	0.0050	2824.15
	97.47	0.0035	1965.35
	97.82	0.0003	164.92
	98.01	0.0003	168.02
	99.12	0.0118	6728.45

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Chrom Perfect Chromatogram Report

Peak Name	Ret. Time	Area %	Area
n-C36	101.46	0.0003	151.61
	102.10	0.0005	287.63
	102.38	0.0005	260.59
	102.51	0.0011	601.64
	103.75	0.0005	302.54
	104.56	0.0020	1163.26
	106.44	0.0008	444.18
	107.99	0.0007	387.20
	108.34	0.0005	302.54

Total Area = 5.683604E+07 Total Height = 1.293265E+07 Total Amount = 0

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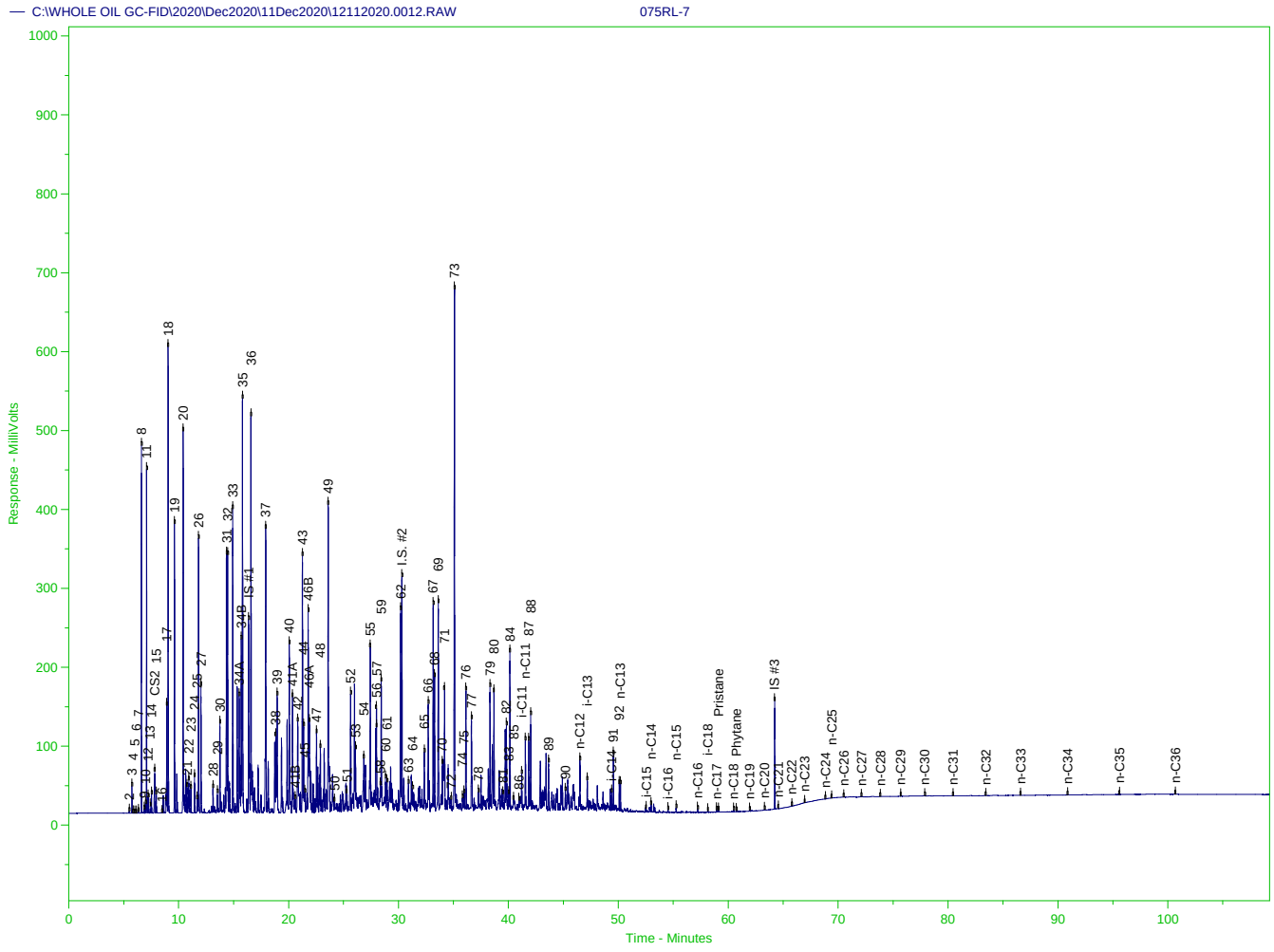

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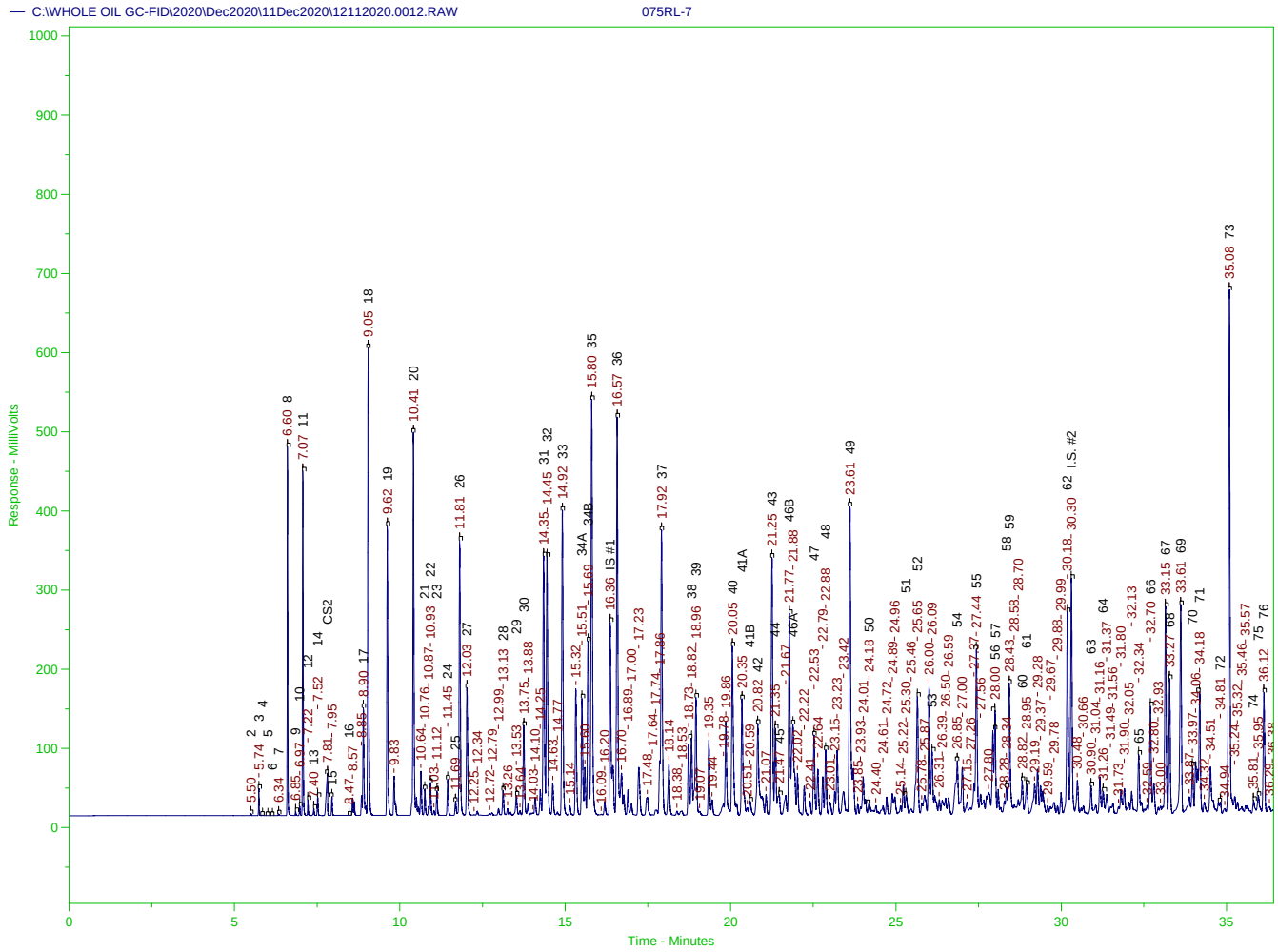

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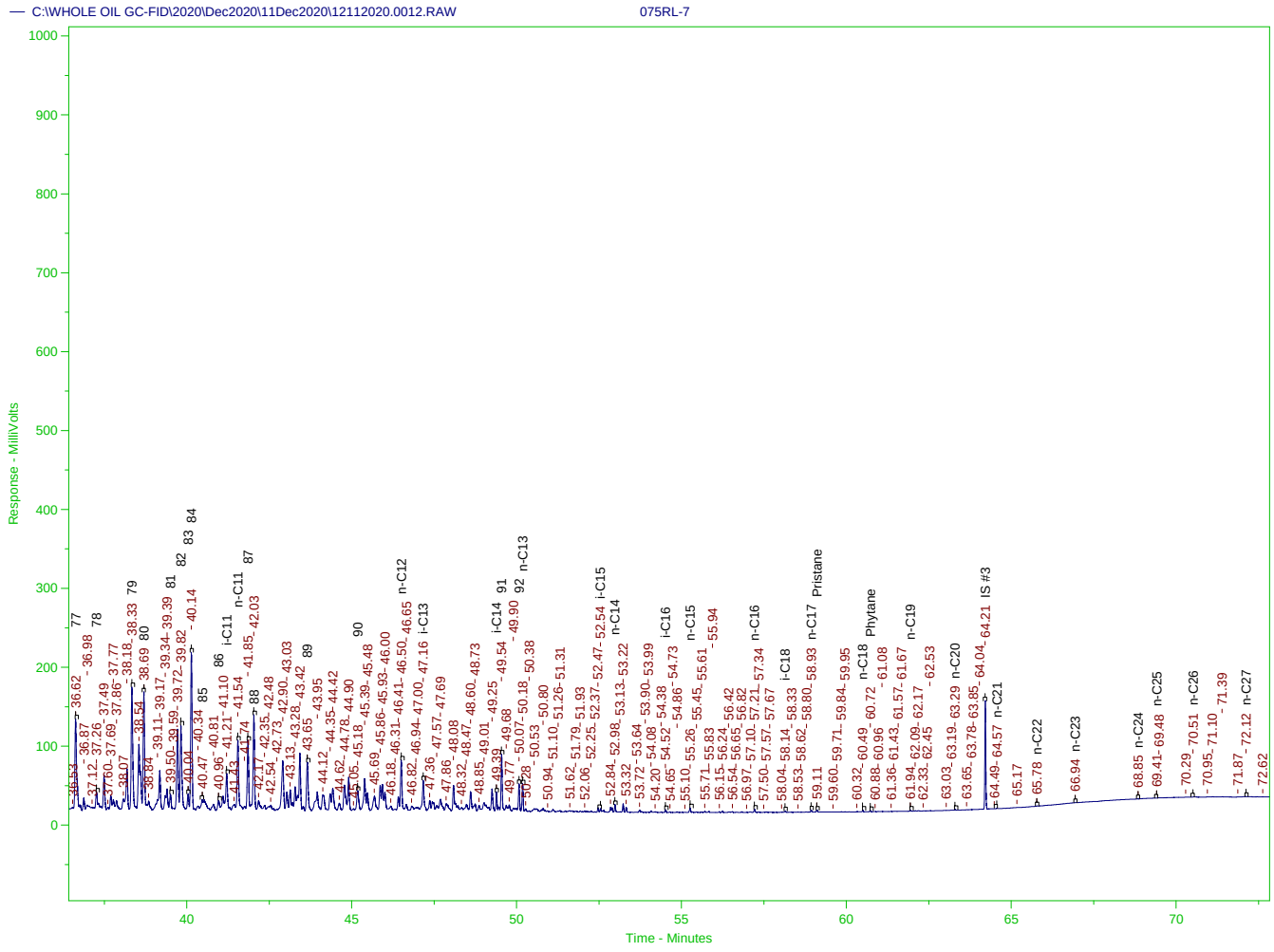

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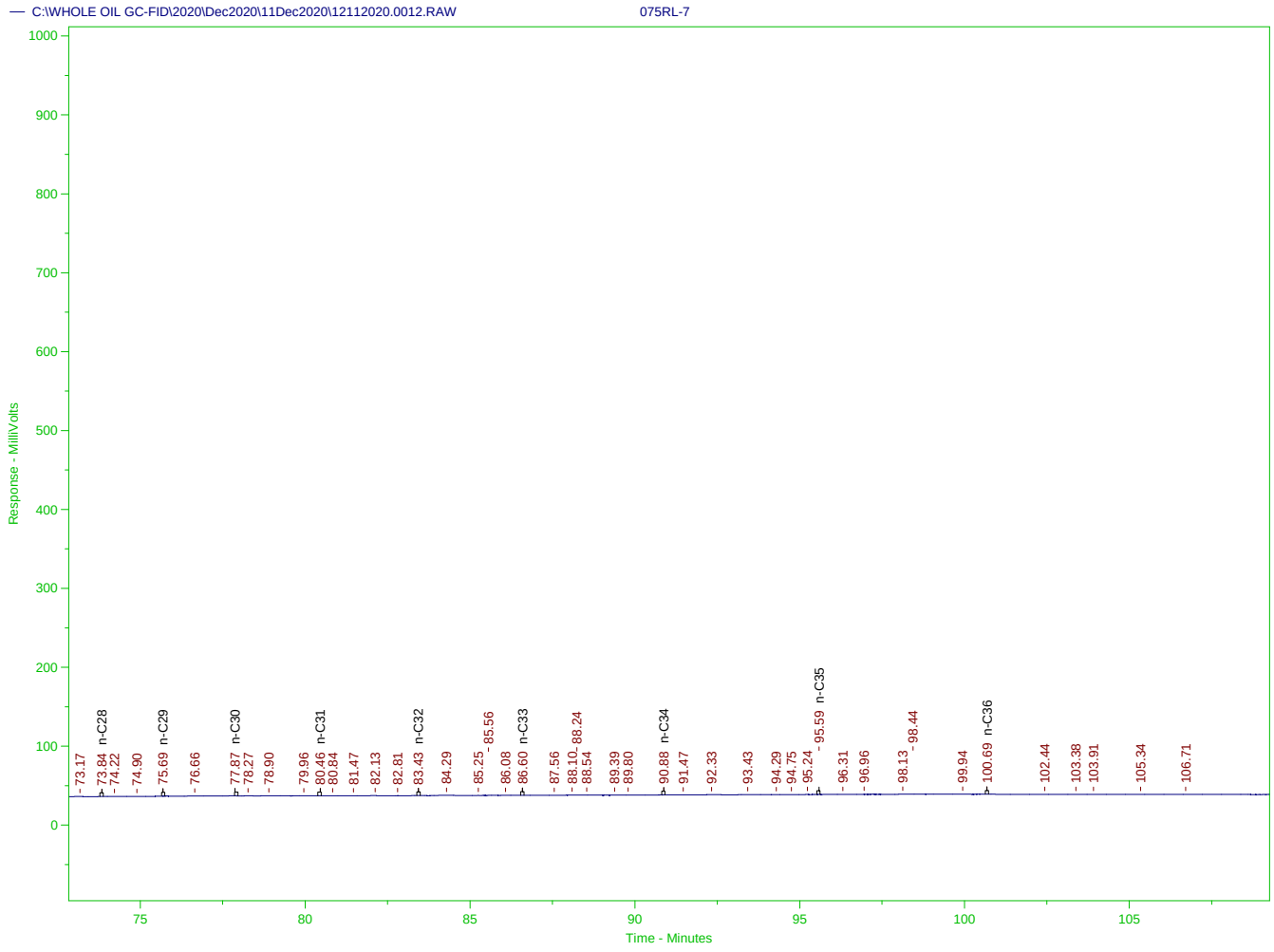

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Chrom Perfect Chromatogram Report

Sample Name = **075RL-7**

Instrument = Instrument 1 Acquisition Port = DP#
Heading 1 =
Heading 2 =

Raw File Name = **C:\WHOLE OIL GC-FID\2020\Dec2020\11Dec2020\12112020.001.RAW** Date Acquired (end) = 12/12/2020 5:44:53 PM
Method File Name = C:\1 - A Backup\C3442020.met Method Version = 23
Calibration File Name = C:\1 - A Backup\CALIBRATIONS\2020\12112020.cal Calibration Version = 1

Peak Name	Ret. Time	Area %	Area
2	5.50	0.0047	3022.29
3	5.74	0.0622	39809.25
7	6.34	0.0047	3035.55
8	6.60	0.9872	631386.40
9	6.85	0.0113	7195.75
10	6.97	0.0270	17294.01
11	7.07	1.0006	639942.20
12	7.22	0.0484	30928.71
13	7.40	0.0272	17413.67
14	7.52	0.0634	40551.68
CS2	7.81	0.2527	161594.00
15	7.95	0.0636	40662.61
16	8.47	0.0025	1615.68
	8.57	0.1167	74651.26
	8.85	0.0728	46581.71
17	8.90	0.5013	320613.10
18	9.05	1.9317	1235424.00
19	9.62	1.2361	790560.30
	9.83	0.2141	136905.70
20	10.41	1.8625	1191150.00
	10.64	0.1978	126518.40
21	10.76	0.1217	77802.21
	10.87	0.0387	24728.08
22	10.93	0.1555	99477.39
	11.03	0.0234	14993.79
23	11.12	0.1175	75147.86
24	11.45	0.1763	112744.50
25	11.69	0.0709	45342.41
26	11.81	1.3654	873253.60
27	12.03	0.6829	436751.70
	12.25	0.0046	2935.75
	12.34	0.0286	18274.98
	12.72	0.0139	8869.40
	12.79	0.0185	11844.31
	12.99	0.0421	26951.76
28	13.13	0.1314	84016.23
	13.26	0.0573	36620.87
29	13.53	0.1362	87094.09
	13.64	0.0271	17318.72
30	13.75	0.5010	320419.20
	13.88	0.0662	42335.59
	14.03	0.0255	16280.72
	14.10	0.1019	65138.90
	14.25	0.1475	94339.14
31	14.35	1.4619	934963.30
32	14.45	1.4402	921068.20
	14.63	0.1849	118256.30
	14.77	0.0225	14412.40
33	14.92	1.6805	1074739.00
	15.14	0.0600	38371.20
	15.32	0.7091	453476.70
34A	15.51	0.6434	411459.60
	15.60	0.2721	174015.30
34B	15.69	1.0154	649381.90
35	15.80	2.5022	1600314.00
	16.09	0.0094	6035.52
	16.20	0.0878	56136.71
IS #1	16.36	1.4055	898874.90

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36	16.57	2.2404	1432867.00
	16.70	0.4077	260729.40
	16.89	0.1395	89199.30
	17.00	0.0836	53478.88
	17.23	0.3627	231985.30
	17.48	0.1829	116967.50
	17.64	0.0044	2792.45
	17.74	0.0551	35255.44
	17.86	0.2284	146089.00
37	17.92	1.7056	1090820.00
	18.14	0.3599	230185.70
	18.38	0.0272	17379.49
	18.53	0.0470	30057.93
	18.73	0.4003	256008.10
38	18.82	0.4487	286943.60
39	18.96	0.8452	540565.50
	19.07	0.0285	18228.50
	19.35	0.4362	278984.20
	19.44	0.0981	62747.16
	19.78	0.1168	74668.16
	19.86	0.6339	405410.50
40	20.05	1.2697	812038.20
41A	20.35	0.8292	530310.00
	20.51	0.0499	31927.22
41B	20.59	0.1230	78679.96
42	20.82	0.9618	615115.00
	21.07	0.1257	80407.08
43	21.25	1.5119	966968.90
44	21.35	0.5029	321658.20
45	21.47	0.2070	132396.00
	21.67	0.1991	127349.80
46B	21.77	1.1628	743700.20
46A	21.88	1.0180	651044.90
	22.02	0.2620	167549.40
	22.22	0.1785	114148.60
	22.41	0.0860	54998.14
47	22.53	0.4992	319250.10
	22.64	0.3005	192192.00
	22.79	0.2206	141085.00
48	22.88	0.3932	251459.20
	23.01	0.1053	67347.27
	23.15	0.1435	91766.36
	23.23	0.4016	256814.00
	23.42	0.2870	183532.20
49	23.61	2.2711	1452495.00
	23.85	0.0624	39919.75
	23.93	0.0433	27660.85
	24.01	0.3571	228393.40
50	24.18	0.1620	103577.70
	24.40	0.0851	54397.29
	24.61	0.0982	62788.00
	24.72	0.1179	75396.52
	24.89	0.1557	99550.81
	24.96	0.1438	91954.63
	25.14	0.0720	46020.61
	25.22	0.1812	115901.20
51	25.30	0.1706	109116.50
	25.46	0.0650	41595.80
52	25.65	0.9741	622961.90
	25.78	0.0749	47873.43
	25.87	0.2151	137565.50
	26.00	0.7900	505256.60
53	26.09	0.6037	386111.70
	26.31	0.1071	68465.80
	26.39	0.1417	90631.68
	26.50	0.1188	75958.70
	26.59	0.1402	89658.84
54	26.85	0.6297	402726.60
	27.00	0.3788	242269.60
	27.15	0.1270	81193.52

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Peak Name	Ret. Time	Area %	Area
	27.26	0.0692	44242.95
	27.37	0.2166	138547.30
55	27.44	1.0196	652089.40
	27.56	0.2948	188526.40
	27.80	0.3520	225134.10
56	28.00	1.3464	861094.20
	28.28	0.0886	56651.66
58	28.34	0.1758	112446.80
59	28.43	0.9282	593627.50
	28.58	0.1098	70227.93
	28.70	0.1186	75821.52
60	28.82	0.2977	190406.40
61	28.95	0.2775	177497.80
	29.19	0.3265	208816.10
	29.28	0.3096	198024.30
	29.37	0.3918	250592.40
	29.59	0.0636	40649.05
	29.67	0.0550	35145.61
	29.78	0.1413	90388.11
	29.88	0.0590	37727.95
	29.99	0.1508	96415.14
62	30.18	1.2870	823097.40
I.S. #2	30.30	1.4663	937765.80
	30.48	0.2638	168685.00
	30.66	0.1328	84945.21
63	30.90	0.2013	128734.90
	31.04	0.1014	64847.84
	31.16	0.2603	166479.90
64	31.26	0.1784	114112.30
	31.37	0.1754	112149.80
	31.49	0.0565	36106.07
	31.56	0.1004	64198.04
	31.73	0.0592	37873.38
	31.80	0.1944	124350.50
	31.90	0.1783	114022.60
	32.05	0.1275	81561.53
	32.13	0.2269	145095.40
65	32.34	0.5112	326929.00
	32.59	0.0706	45125.84
66	32.70	0.6968	445633.80
	32.80	0.2425	155117.90
	32.93	0.0530	33886.91
	33.00	0.0606	38770.12
67	33.15	1.2761	816121.40
68	33.27	0.7991	511085.60
69	33.61	1.4844	949368.10
	33.87	0.2371	151625.20
70	33.97	0.3071	196433.80
	34.06	0.5534	353903.10
71	34.18	0.7753	495862.60
	34.32	0.1293	82692.57
	34.51	0.4936	315655.50
72	34.81	0.1717	109814.80
	34.94	0.0653	41755.02
73	35.08	3.2852	2101033.00
	35.24	0.1441	92169.79
	35.32	0.0926	59223.03
	35.46	0.1082	69227.08
	35.57	0.1614	103200.60
74	35.81	0.1338	85559.19
75	35.95	0.2012	128654.00
76	36.12	0.7714	493328.00
	36.29	0.1126	72036.84
	36.38	0.0471	30098.36
	36.53	0.0697	44602.84
77	36.62	0.7763	496455.60
	36.87	0.1009	64533.43
	36.98	0.1251	79994.84
	37.12	0.0645	41265.23
78	37.26	0.2502	159984.80

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Peak Name	Ret. Time	Area %	Area
	37.49	0.2560	163757.60
	37.60	0.0430	27520.69
	37.69	0.1132	72410.61
	37.77	0.1032	65999.68
	37.86	0.1394	89150.48
	38.07	0.1146	73312.49
	38.18	0.3420	218727.60
79	38.33	0.9045	578481.40
	38.54	0.6539	418178.40
80	38.69	0.7670	490537.60
	38.84	0.1234	78930.46
	39.11	0.1496	95687.85
	39.17	0.2967	189782.10
	39.34	0.1202	76904.13
	39.39	0.1712	109473.50
81	39.50	0.1316	84165.24
	39.59	0.0404	25859.01
	39.72	0.5656	361740.80
82	39.82	0.6561	419606.30
83	40.04	0.1377	88086.40
84	40.14	0.9767	624668.00
	40.34	0.0697	44548.67
85	40.47	0.3079	196932.90
	40.81	0.1070	68433.79
86	40.96	0.1167	74646.55
	41.10	0.1486	95037.21
i-C11	41.21	0.3376	215906.90
	41.43	0.1004	64179.64
n-C11	41.54	0.5389	344658.90
	41.74	0.0534	34156.42
87	41.85	0.4617	295273.70
88	42.03	0.6479	414339.30
	42.17	0.1422	90918.85
	42.35	0.0793	50726.82
	42.48	0.0628	40160.51
	42.54	0.0929	59415.59
	42.73	0.0298	19060.78
	42.90	0.4712	301379.50
	43.03	0.1569	100361.00
	43.13	0.2150	137515.60
	43.28	0.1768	113088.70
	43.42	0.5248	335611.40
89	43.65	0.3893	248962.20
	43.95	0.2923	186954.60
	44.12	0.2278	145699.50
	44.35	0.1383	88468.58
	44.42	0.2215	141673.70
	44.62	0.0933	59691.32
	44.78	0.2606	166664.20
	44.90	0.2380	152220.00
	45.05	0.0376	24019.54
90	45.18	0.2142	136963.20
	45.39	0.2986	190954.40
	45.48	0.1409	90117.34
	45.69	0.2152	137612.10
	45.86	0.1768	113043.40
	45.93	0.1852	118462.50
	46.00	0.1649	105482.60
	46.18	0.0754	48246.02
	46.31	0.0389	24875.09
	46.41	0.1015	64924.86
n-C12	46.50	0.3312	211833.90
	46.65	0.0925	59138.28
	46.82	0.0715	45733.01
	46.94	0.0453	28944.26
	47.00	0.0431	27582.36
i-C13	47.16	0.2834	181255.80
	47.36	0.2119	135524.30
	47.57	0.0657	41989.18
	47.69	0.1627	104055.90

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Peak Name	Ret. Time	Area %	Area
	47.86	0.1326	84783.85
	48.08	0.2723	174122.80
	48.32	0.0551	35208.36
	48.47	0.1025	65525.79
	48.60	0.1442	92201.81
	48.73	0.0927	59279.49
	48.85	0.0734	46969.12
	49.01	0.1891	120962.60
	49.25	0.1574	100691.10
i-C14	49.39	0.1421	90900.22
91	49.54	0.2991	191263.90
	49.68	0.0544	34760.16
	49.77	0.0701	44813.43
	49.90	0.0690	44121.85
92	50.07	0.1463	93571.55
n-C13	50.18	0.1423	90976.98
	50.28	0.0260	16622.07
	50.38	0.0141	9010.18
	50.53	0.0872	55745.12
	50.80	0.0533	34094.32
	50.94	0.0152	9741.85
	51.10	0.0365	23334.10
	51.26	0.0132	8412.07
	51.31	0.0197	12570.01
	51.62	0.0515	32939.28
	51.79	0.0169	10781.42
	51.93	0.0168	10770.19
	52.06	0.0225	14388.31
	52.25	0.0124	7943.18
	52.37	0.0045	2862.63
	52.47	0.0247	15804.69
i-C15	52.54	0.0408	26077.70
	52.84	0.0493	31525.30
n-C14	52.98	0.0402	25733.73
	53.13	0.0053	3408.86
	53.22	0.0407	26001.99
	53.32	0.0268	17153.76
	53.64	0.0050	3192.12
	53.72	0.0189	12083.91
	53.90	0.0023	1469.41
	53.99	0.0032	2054.34
	54.08	0.0091	5789.93
	54.20	0.0064	4079.68
	54.38	0.0036	2322.67
i-C16	54.52	0.0152	9716.69
	54.65	0.0033	2112.71
	54.73	0.0021	1332.80
	54.86	0.0048	3092.77
	55.10	0.0046	2948.68
n-C15	55.26	0.0259	16589.72
	55.45	0.0041	2615.49
	55.61	0.0044	2832.68
	55.71	0.0049	3157.58
	55.83	0.0063	4018.42
	55.94	0.0008	484.77
	56.15	0.0039	2503.69
	56.24	0.0051	3256.12
	56.42	0.0054	3464.15
	56.54	0.0060	3858.97
	56.65	0.0027	1696.36
	56.82	0.0041	2609.08
	56.97	0.0012	759.87
	57.10	0.0047	3006.96
n-C16	57.21	0.0160	10232.62
	57.34	0.0029	1867.35
	57.50	0.0017	1100.50
	57.57	0.0031	1984.72
	57.67	0.0021	1328.05
	58.04	0.0025	1580.28
i-C18	58.14	0.0078	4994.68

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Peak Name	Ret. Time	Area %	Area
	58.33	0.0022	1411.14
	58.53	0.0025	1578.54
	58.62	0.0013	810.11
	58.80	0.0034	2157.67
n-C17	58.93	0.0115	7353.63
Pristane	59.11	0.0152	9737.74
	59.60	0.0017	1068.30
	59.71	0.0006	373.39
	59.84	0.0017	1110.36
	59.95	0.0011	689.25
	60.32	0.0023	1466.73
n-C18	60.49	0.0062	3945.86
Phytane	60.72	0.0043	2752.29
	60.88	0.0020	1287.74
	60.96	0.0016	1000.34
	61.08	0.0010	632.26
	61.36	0.0012	764.84
	61.43	0.0013	847.36
	61.57	0.0006	407.00
	61.67	0.0005	291.72
n-C19	61.94	0.0050	3217.09
	62.09	0.0021	1365.76
	62.17	0.0029	1884.75
	62.33	0.0008	536.77
	62.45	0.0007	465.43
	62.53	0.0018	1125.54
	63.03	0.0019	1207.86
	63.19	0.0011	721.77
n-C20	63.29	0.0033	2092.29
	63.65	0.0013	860.61
	63.78	0.0010	623.93
	63.85	0.0012	785.59
	64.04	0.0011	684.86
IS #3	64.21	0.4144	265053.10
	64.49	0.0013	840.20
n-C21	64.57	0.0018	1122.20
	65.17	0.0061	3890.34
n-C22	65.78	0.0220	14081.83
n-C23	66.94	0.1771	113271.70
n-C24	68.85	0.5615	359137.80
n-C25	69.41	0.1722	110140.30
	69.48	0.0270	17252.15
	70.29	0.2191	140145.40
n-C26	70.51	0.0781	49918.50
	70.95	0.0296	18903.03
	71.10	0.0257	16428.39
	71.39	0.0059	3775.30
	71.87	0.0022	1378.82
n-C27	72.12	0.0159	10185.49
	72.62	0.0038	2436.69
	73.17	0.0300	19156.91
n-C28	73.84	0.0165	10566.84
	74.22	0.0194	12418.95
	74.90	0.0236	15111.17
n-C29	75.69	0.0187	11985.94
	76.66	0.0340	21775.77
n-C30	77.87	0.0299	19145.29
	78.27	0.0215	13725.09
	78.90	0.0319	20432.53
	79.96	0.0123	7890.56
n-C31	80.46	0.0063	4019.75
	80.84	0.0128	8166.77
	81.47	0.0103	6599.06
	82.13	0.0118	7528.48
	82.81	0.0036	2323.95
n-C32	83.43	0.0048	3073.40
	84.29	0.0073	4672.35
	85.25	0.0009	548.51
	85.56	0.0008	526.98
	86.08	0.0003	209.70

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Peak Name	Ret. Time	Area %	Area
n-C33	86.60	0.0027	1702.48
	87.56	0.0026	1675.88
	88.10	0.0014	913.29
	88.24	0.0007	434.19
	88.54	0.0004	268.18
	89.39	0.0010	629.47
	89.80	0.0017	1087.00
n-C34	90.88	0.0031	1962.56
	91.47	0.0012	784.92
	92.33	0.0036	2328.64
	93.43	0.0022	1421.34
	94.29	0.0004	228.88
	94.75	0.0028	1778.78
	95.24	0.0017	1068.36
n-C35	95.59	0.0006	355.36
	96.31	0.0064	4094.72
	96.96	0.0009	589.45
	98.13	0.0019	1187.56
	98.44	0.0036	2292.91
	99.94	0.0007	474.18
n-C36	100.69	0.0016	1015.74
	102.44	0.0007	479.66
	103.38	0.0023	1465.12
	103.91	0.0007	472.54
	105.34	0.0010	650.82
	106.71	0.0007	438.32

Total Area = 6.395534E+07 Total Height = 1.908985E+07 Total Amount = 0

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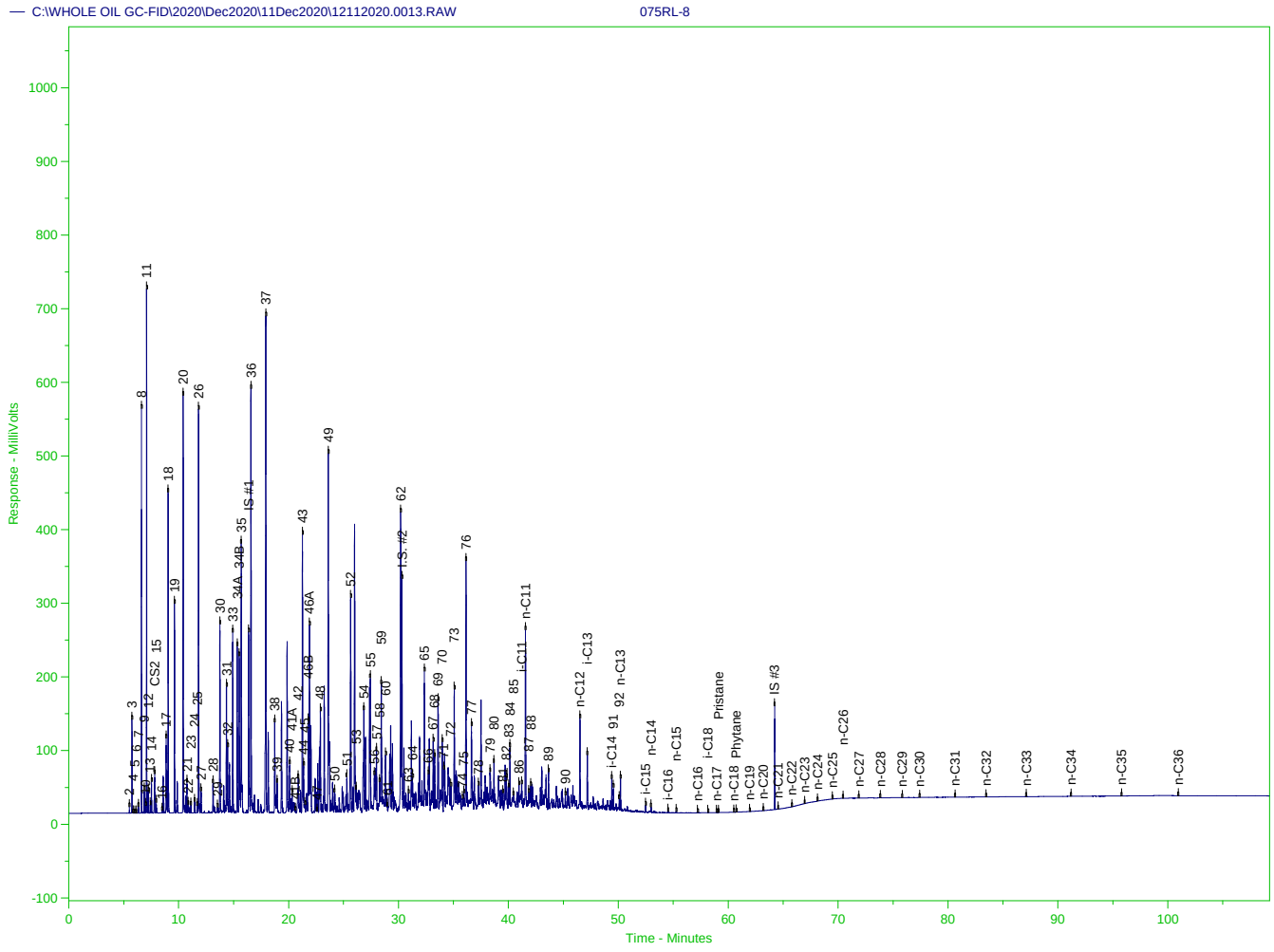

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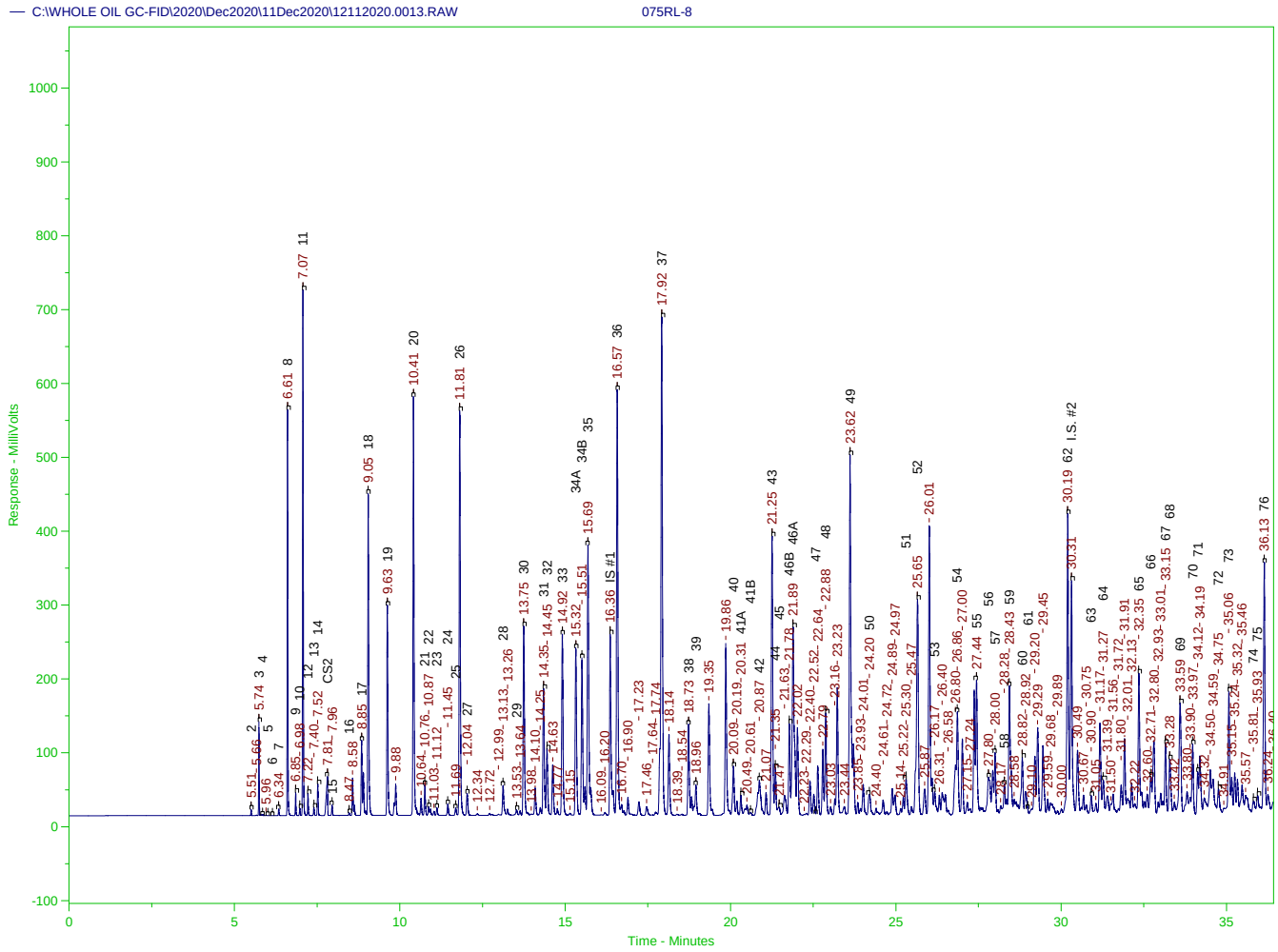

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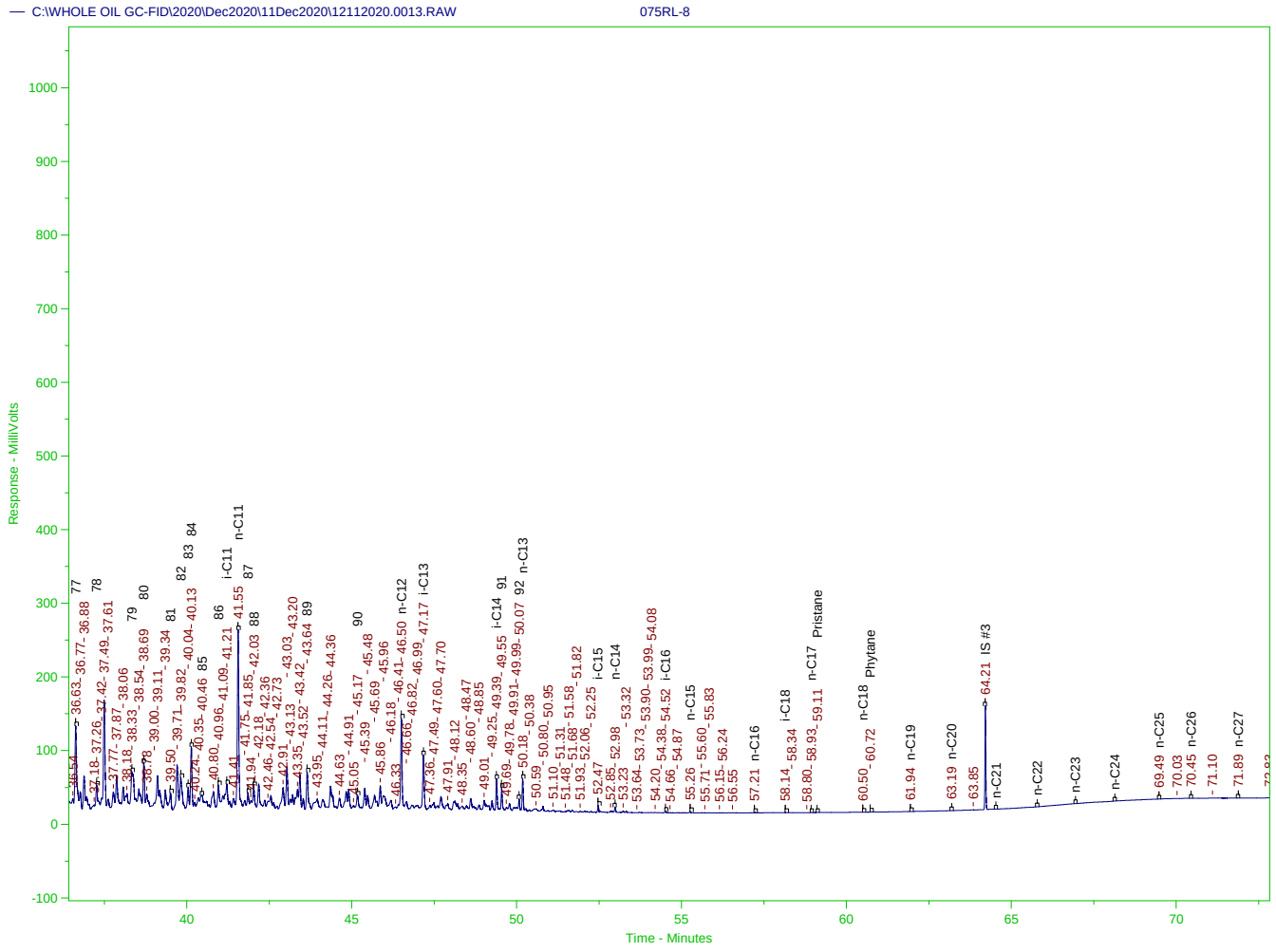

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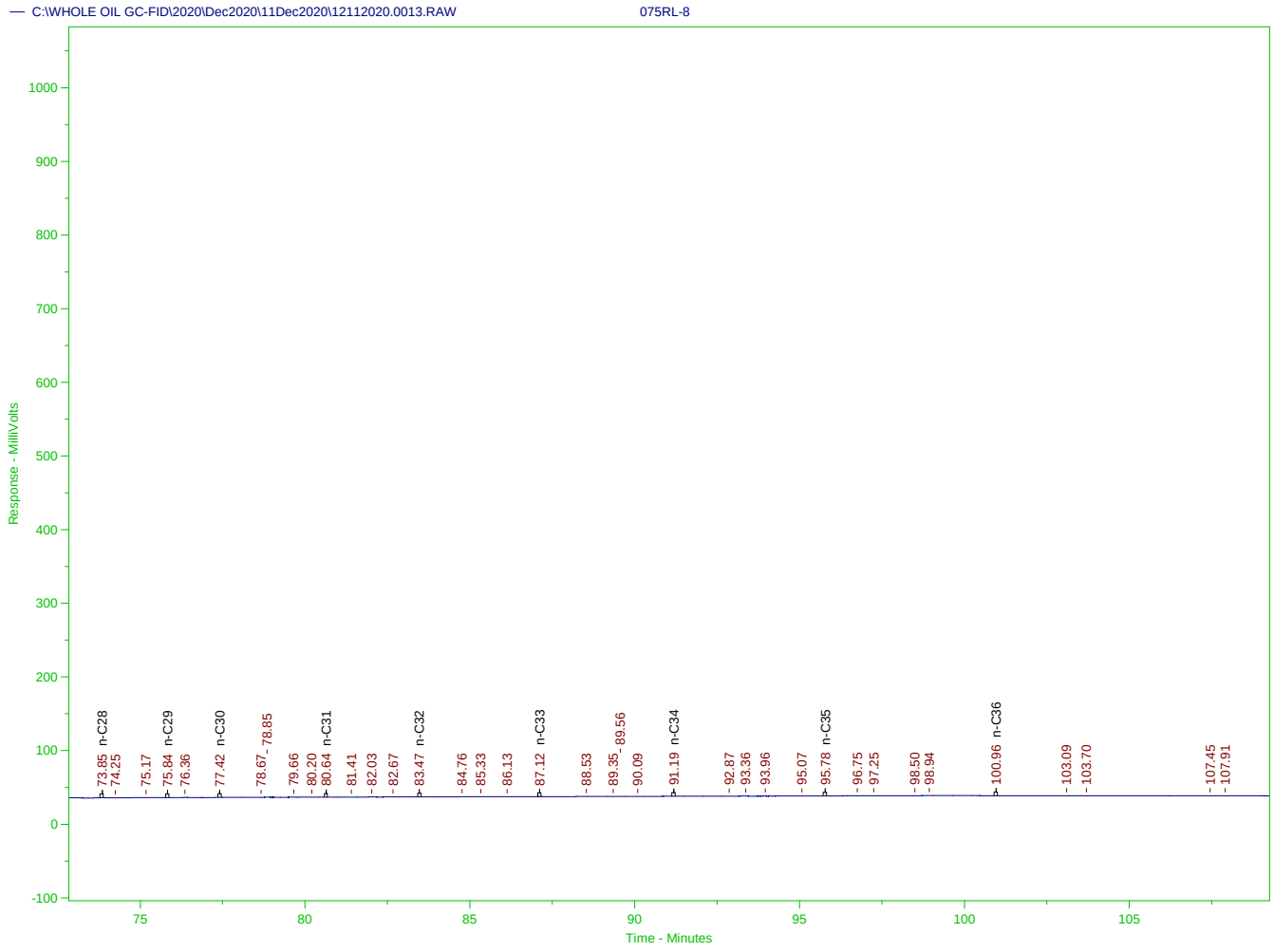

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Sample Name = **075RL-8**

Instrument = Instrument 1 Acquisition Port = DP#
Heading 1 =
Heading 2 =

Raw File Name = **C:\WHOLE OIL GC-FID\2020\Dec2020\11Dec2020\12112020.013.RAW** Date Saved (end) = 12/12/2020 7:47:26 PM
Method File Name = C:\1 - A Backup\C3442020.met Method Version = 23
Calibration File Name = C:\1 - A Backup\CALIBRATIONS\2020\12112020.cal Calibration Version = 1

Peak Name	Ret. Time	Area %	Area
2	5.51	0.0136	9238.14
	5.66	0.0013	869.35
3	5.74	0.2138	144925.20
	5.96	0.0009	641.72
7	6.34	0.0170	11551.72
8	6.61	1.0981	744503.20
9	6.85	0.0643	43593.54
10	6.98	0.0215	14598.08
11	7.07	1.5365	1041767.00
12	7.22	0.0662	44870.56
13	7.40	0.0277	18752.25
14	7.52	0.1066	72277.89
CS2	7.81	0.2414	163647.30
15	7.96	0.0384	26045.48
16	8.47	0.0103	6974.51
	8.58	0.1749	118598.30
17	8.85	0.4782	324210.40
18	9.05	1.3306	902161.30
19	9.63	0.9049	613491.90
	9.88	0.1925	130486.90
20	10.41	1.9298	1308389.00
	10.64	0.0770	52235.83
21	10.76	0.1426	96684.26
22	10.87	0.0712	48293.64
	11.03	0.0204	13837.99
23	11.12	0.0397	26936.84
24	11.45	0.0593	40210.54
25	11.69	0.0386	26198.37
26	11.81	2.0112	1363590.00
27	12.04	0.1264	85689.37
	12.34	0.0141	9587.54
	12.72	0.0247	16750.55
	12.99	0.0116	7852.80
28	13.13	0.1782	120840.50
	13.26	0.0422	28611.66
29	13.53	0.0418	28326.08
	13.64	0.0266	18029.57
30	13.75	1.0496	711615.10
	13.98	0.0164	11133.58
	14.10	0.1562	105886.50
	14.25	0.0464	31473.30
31	14.35	0.6986	473683.90
32	14.45	0.3821	259097.00
	14.63	0.2917	197792.80
	14.77	0.0410	27828.98
33	14.92	1.0175	689897.90
	15.15	0.0181	12276.81
34A	15.32	0.9483	642932.70
34B	15.51	1.0432	707291.20
35	15.69	1.7027	1154452.00
	16.09	0.0088	5938.55
	16.20	0.0255	17257.25
IS #1	16.36	1.1770	798005.40
36	16.57	2.4065	1631633.00
	16.70	0.1001	67892.52
	16.90	0.1209	81973.20
	17.23	0.0983	66681.21
	17.46	0.0766	51953.38

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	17.64	0.0043	2925.84
	17.74	0.0293	19836.33
37	17.92	3.2807	2224346.00
	18.14	0.5006	339436.80
	18.39	0.0102	6930.23
	18.54	0.0111	7493.52
38	18.73	0.6284	426022.60
39	18.96	0.2515	170484.20
	19.35	0.7045	477674.30
	19.86	1.0908	739589.40
40	20.09	0.3296	223491.50
	20.19	0.0862	58417.86
41A	20.31	0.1242	84228.47
	20.49	0.1193	80917.46
41B	20.61	0.0250	16943.28
42	20.87	0.4708	319189.10
	21.07	0.1371	92940.25
43	21.25	1.6449	1115221.00
44	21.35	0.2804	190096.90
45	21.47	0.0806	54633.88
	21.63	0.2122	143892.80
46B	21.78	0.5267	357107.10
46A	21.89	1.6296	1104885.00
	22.02	0.5271	357370.50
	22.23	0.0061	4138.45
	22.29	0.0157	10657.66
	22.40	0.2104	142651.90
	22.52	0.1332	90334.56
	22.64	0.2995	203038.80
	22.79	0.3889	263645.30
48	22.88	0.6206	420737.90
	23.03	0.0626	42454.13
	23.16	0.0909	61610.64
	23.23	0.7986	541449.30
	23.44	0.0929	62990.04
49	23.62	2.8596	1938790.00
	23.85	0.0748	50682.27
	23.93	0.0404	27358.40
	24.01	0.2125	144042.30
50	24.20	0.2116	143457.30
	24.40	0.0657	44551.48
	24.61	0.1223	82922.25
	24.72	0.0244	16524.11
	24.89	0.1926	130572.60
	24.97	0.1474	99957.30
	25.14	0.0465	31516.70
	25.22	0.1135	76959.59
51	25.30	0.2965	201047.50
	25.47	0.0633	42893.21
52	25.65	1.7886	1212699.00
	25.87	0.2128	144256.50
	26.01	2.0079	1361358.00
53	26.17	0.1947	131993.10
	26.31	0.1247	84528.99
	26.40	0.3442	233395.80
	26.58	0.0388	26278.55
	26.80	0.3751	254284.70
54	26.86	0.6978	473085.10
	27.00	0.4698	318517.90
	27.15	0.1017	68950.96
	27.24	0.0605	41001.46
55	27.44	1.6940	1148542.00
56	27.80	0.4749	321982.10
57	28.00	0.7121	482791.40
	28.17	0.0606	41061.08
58	28.28	0.3226	218702.50
59	28.43	1.0697	725241.90
	28.58	0.2547	172676.30
60	28.82	0.4567	309611.20
	28.92	0.2346	159050.70

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Peak Name	Ret. Time	Area %	Area
	29.10	0.0514	34850.07
	29.20	0.4409	298911.60
	29.29	0.5740	389145.80
	29.45	0.5499	372821.30
	29.59	0.1068	72394.68
	29.68	0.1989	134823.90
	29.89	0.0323	21887.37
	30.00	0.0503	34134.65
62	30.19	1.9065	1292619.00
I.S. #2	30.31	1.6559	1122712.00
	30.49	0.4893	331749.50
	30.67	0.1792	121466.50
	30.75	0.0822	55739.16
63	30.90	0.1510	102376.20
	31.05	0.1111	75342.95
	31.17	0.6144	416592.70
64	31.27	0.2614	177253.80
	31.39	0.1926	130569.80
	31.50	0.0767	51987.45
	31.56	0.1930	130825.50
	31.72	0.0495	33569.98
	31.80	0.2213	150016.40
	31.91	0.4930	334267.50
	32.01	0.2063	139896.20
	32.13	0.2198	148996.30
	32.22	0.1120	75946.87
65	32.35	1.1450	776281.10
	32.60	0.1545	104752.50
66	32.71	0.3140	212881.00
	32.80	0.5814	394213.30
	32.93	0.0862	58445.21
	33.01	0.2344	158925.30
67	33.15	0.4534	307389.00
68	33.28	0.4649	315213.80
	33.42	0.1091	73947.40
69	33.59	0.9855	668184.60
	33.80	0.2573	174470.00
	33.90	0.1394	94492.80
70	33.97	0.4586	310943.50
71	34.12	0.2546	172603.00
	34.19	0.4632	314067.60
	34.32	0.2295	155608.40
	34.50	0.3985	270167.20
	34.59	0.3697	250638.60
72	34.75	0.2419	164035.50
	34.91	0.0546	37003.79
73	35.06	0.8350	566100.40
	35.15	0.2368	160580.40
	35.24	0.2796	189555.50
	35.32	0.2573	174446.30
	35.46	0.3250	220327.80
	35.57	0.2934	198919.70
74	35.81	0.1580	107126.70
75	35.93	0.2367	160499.90
76	36.13	1.6167	1096150.00
	36.24	0.2160	146441.40
	36.40	0.2017	136748.50
	36.54	0.1055	71552.20
77	36.63	0.7006	475034.80
	36.77	0.1597	108301.10
	36.88	0.4453	301915.00
	37.18	0.0956	64809.13
78	37.26	0.2814	190803.50
	37.42	0.0940	63728.46
	37.49	0.7679	520609.90
	37.61	0.1337	90656.92
	37.77	0.2027	137410.10
	37.87	0.3979	269790.30
	38.06	0.1910	129530.60
	38.18	0.2667	180845.30

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79	38.33	0.6162	417780.10
	38.54	0.3172	215065.00
80	38.69	0.3391	229928.40
	38.78	0.2033	137855.00
	39.00	0.1312	88940.90
	39.11	0.5339	361961.60
	39.34	0.2192	148609.70
81	39.50	0.1915	129823.00
	39.71	0.4317	292689.40
82	39.82	0.4048	274451.30
83	40.04	0.1992	135086.80
84	40.13	0.4315	292528.60
	40.24	0.0835	56601.19
	40.35	0.1466	99378.21
85	40.46	0.4505	305410.60
	40.80	0.2709	183668.10
86	40.96	0.2765	187442.00
	41.09	0.1501	101755.60
i-C11	41.21	0.4236	287212.10
	41.41	0.1489	100947.70
n-C11	41.55	1.3106	888620.30
	41.75	0.1168	79163.43
87	41.85	0.1657	112368.00
	41.94	0.0993	67338.97
88	42.03	0.2389	162003.80
	42.18	0.3033	205618.60
	42.36	0.1110	75278.13
	42.46	0.0981	66497.46
	42.54	0.2493	169014.90
	42.73	0.0629	42616.70
	42.91	0.3099	210130.50
	43.03	0.3472	235382.00
	43.13	0.0979	66383.27
	43.20	0.1307	88601.69
	43.35	0.2697	182854.40
	43.42	0.2628	178176.00
	43.52	0.1083	73448.52
89	43.64	0.3564	241627.10
	43.95	0.2942	199450.30
	44.11	0.1972	133723.40
	44.26	0.0471	31918.44
	44.36	0.3927	266231.10
	44.63	0.1565	106134.20
	44.91	0.4338	294137.80
	45.05	0.0754	51095.33
90	45.17	0.2324	157536.70
	45.39	0.2028	137516.50
	45.48	0.1562	105890.10
	45.69	0.2867	194384.00
	45.86	0.2075	140683.60
	45.96	0.2705	183395.90
	46.18	0.1788	121227.80
	46.33	0.0743	50349.41
	46.41	0.0584	39601.16
n-C12	46.50	0.6203	420547.50
	46.66	0.1309	88732.92
	46.82	0.1142	77452.52
	46.99	0.1323	89700.68
i-C13	47.17	0.4393	297849.50
	47.36	0.0846	57377.77
	47.49	0.1220	82707.95
	47.60	0.0719	48754.39
	47.70	0.1904	129059.10
	47.91	0.1478	100230.60
	48.12	0.2253	152774.50
	48.35	0.1063	72101.50
	48.47	0.0822	55719.27
	48.60	0.1988	134765.00
	48.85	0.0848	57497.45
	49.01	0.2281	154642.30

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	49.25	0.1021	69192.52
i-C14	49.39	0.2158	146336.20
91	49.55	0.1604	108768.50
	49.69	0.0433	29333.18
	49.78	0.0883	59845.96
	49.91	0.0518	35116.58
	49.99	0.0430	29174.83
92	50.07	0.0856	58036.61
n-C13	50.18	0.2164	146709.40
	50.38	0.0239	16188.83
	50.59	0.0979	66385.69
	50.80	0.0684	46349.28
	50.95	0.0365	24714.19
	51.10	0.0319	21632.02
	51.31	0.0457	31000.60
	51.48	0.0121	8185.43
	51.58	0.0304	20603.07
	51.68	0.0225	15257.24
	51.82	0.0182	12318.22
	51.93	0.0197	13369.23
	52.06	0.0271	18367.19
	52.25	0.0202	13703.93
i-C15	52.47	0.0561	38050.47
	52.85	0.0237	16067.86
n-C14	52.98	0.0382	25913.22
	53.23	0.0120	8136.81
	53.32	0.0162	10977.87
	53.64	0.0040	2736.44
	53.73	0.0073	4935.43
	53.90	0.0024	1637.50
	53.99	0.0028	1927.18
	54.08	0.0034	2295.38
	54.20	0.0054	3694.36
	54.38	0.0016	1105.73
i-C16	54.52	0.0090	6095.18
	54.66	0.0027	1845.37
	54.87	0.0039	2647.44
n-C15	55.26	0.0079	5359.19
	55.60	0.0008	516.86
	55.71	0.0006	386.79
	55.83	0.0006	387.10
	56.15	0.0004	289.98
	56.24	0.0006	381.30
	56.55	0.0007	463.75
n-C16	57.21	0.0018	1191.18
i-C18	58.14	0.0010	653.81
	58.34	0.0004	283.66
	58.80	0.0003	171.26
n-C17	58.93	0.0006	432.03
Pristane	59.11	0.0008	564.09
n-C18	60.50	0.0003	175.31
Phytane	60.72	0.0008	538.57
n-C19	61.94	0.0005	327.68
n-C20	63.19	0.0003	183.54
	63.85	0.0005	367.81
IS #3	64.21	0.3948	267665.90
n-C25	69.49	0.9978	676501.40
	70.03	0.1985	134610.00
n-C26	70.45	0.1037	70324.63
	71.10	0.0900	61030.63
n-C27	71.89	0.0156	10566.88
	72.83	0.0044	3014.10
n-C28	73.85	0.0139	9395.59
	74.25	0.0039	2610.94
	75.17	0.0148	10042.26
n-C29	75.84	0.0043	2926.14
	76.36	0.0022	1497.57
n-C30	77.42	0.0073	4941.06
	78.67	0.0104	7061.13
	78.85	0.0088	5935.41

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Peak Name	Ret. Time	Area %	Area
	79.66	0.0043	2919.54
	80.20	0.0108	7354.99
n-C31	80.64	0.0050	3415.38
	81.41	0.0063	4288.29
	82.03	0.0044	3009.76
	82.67	0.0037	2524.86
n-C32	83.47	0.0012	792.95
	84.76	0.0059	3983.46
	85.33	0.0009	585.76
	86.13	0.0011	762.10
n-C33	87.12	0.0039	2666.83
	88.53	0.0070	4746.06
	89.35	0.0006	436.54
	89.56	0.0012	829.83
	90.09	0.0003	221.53
n-C34	91.19	0.0052	3518.32
	92.87	0.0036	2421.32
	93.36	0.0061	4169.01
	93.96	0.0013	892.95
	95.07	0.0004	299.85
n-C35	95.78	0.0007	484.51
	96.75	0.0044	3014.77
	97.25	0.0016	1084.60
	98.50	0.0008	527.30
	98.94	0.0006	380.09
n-C36	100.96	0.0004	283.77
	103.09	0.0006	408.91
	103.70	0.0008	540.26
	107.45	0.0005	346.75
	107.91	0.0003	219.02

Total Area = 6.78001E+07 Total Height = 1.932614E+07 Total Amount = 0

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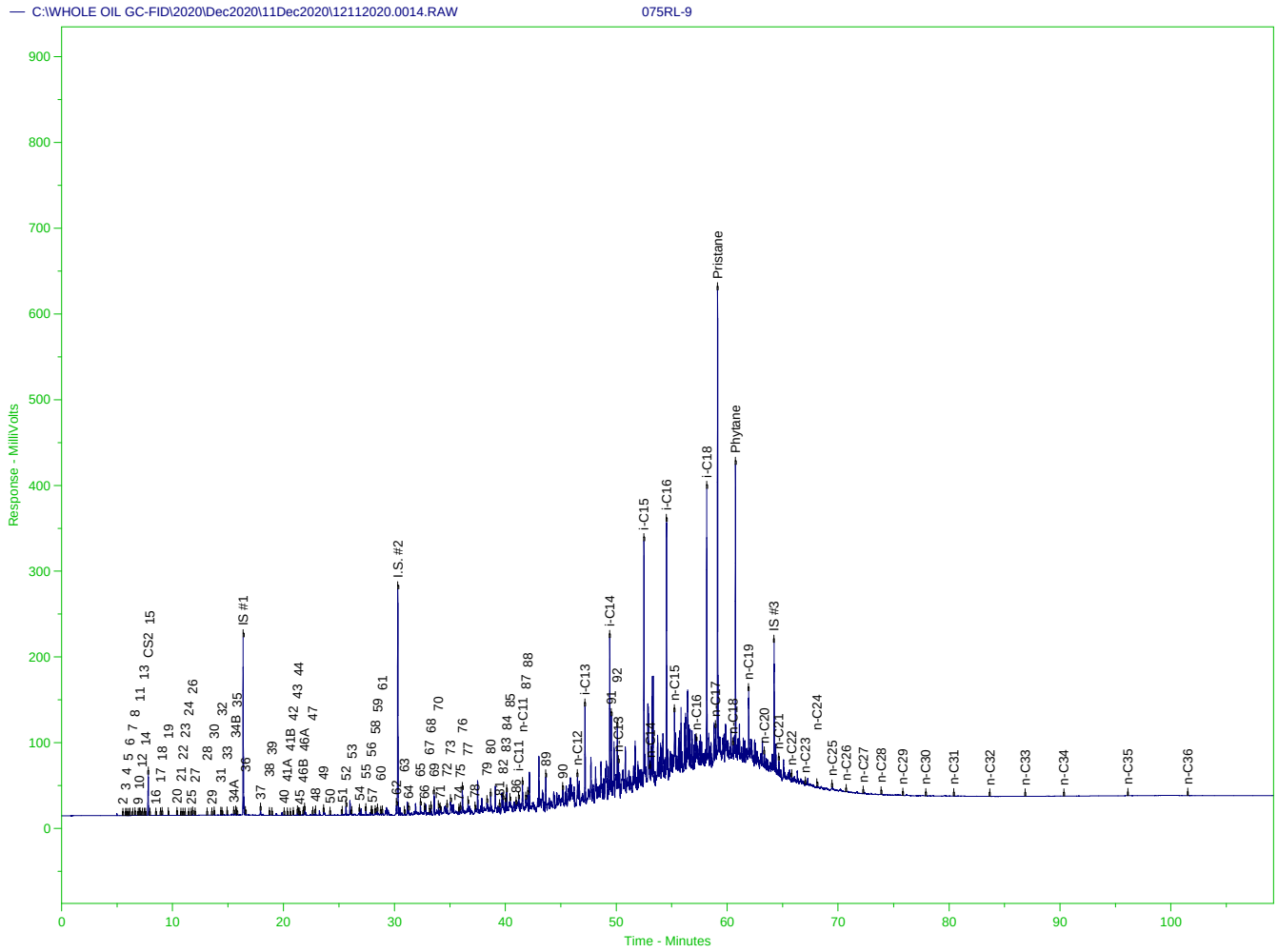

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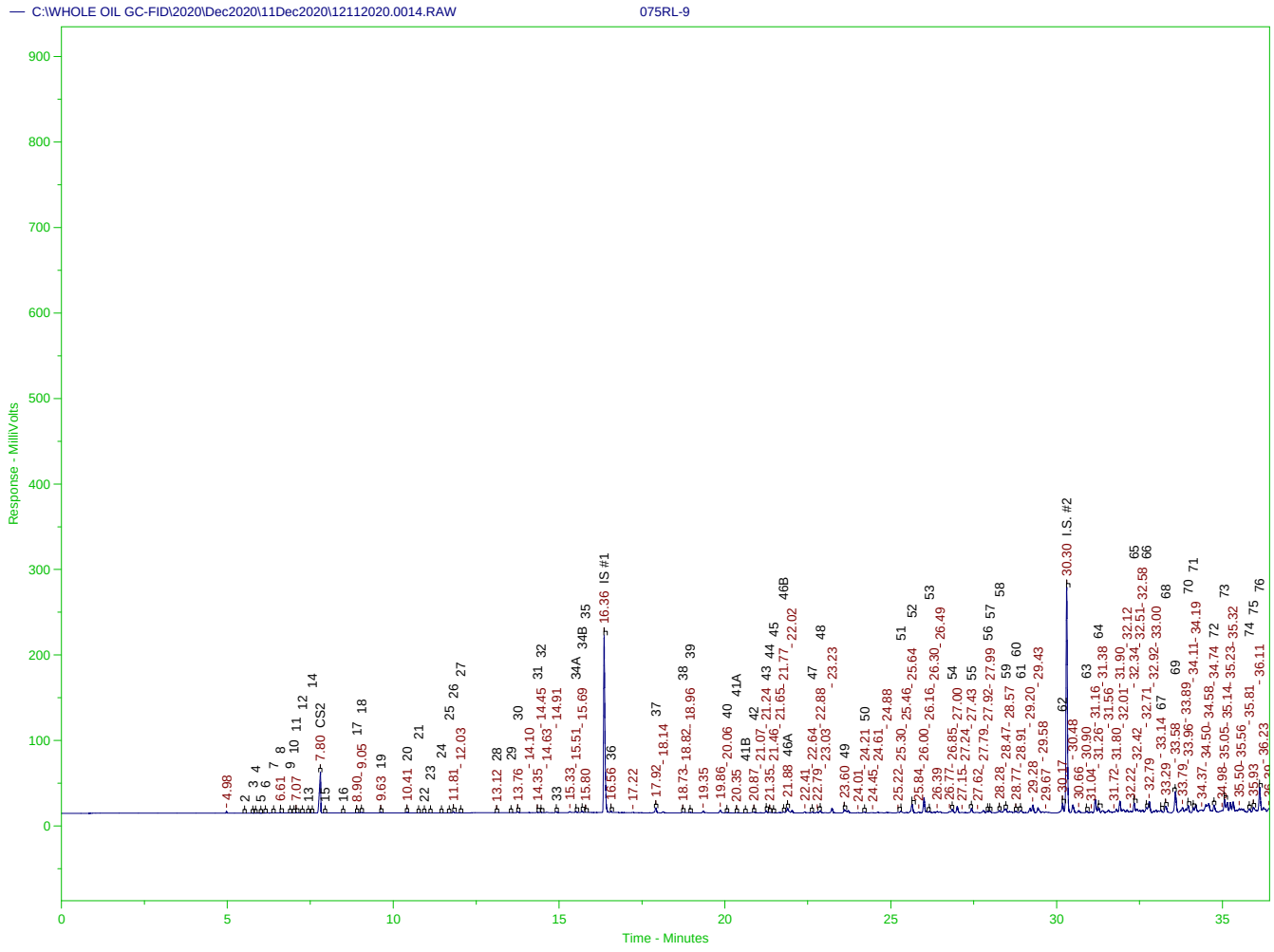

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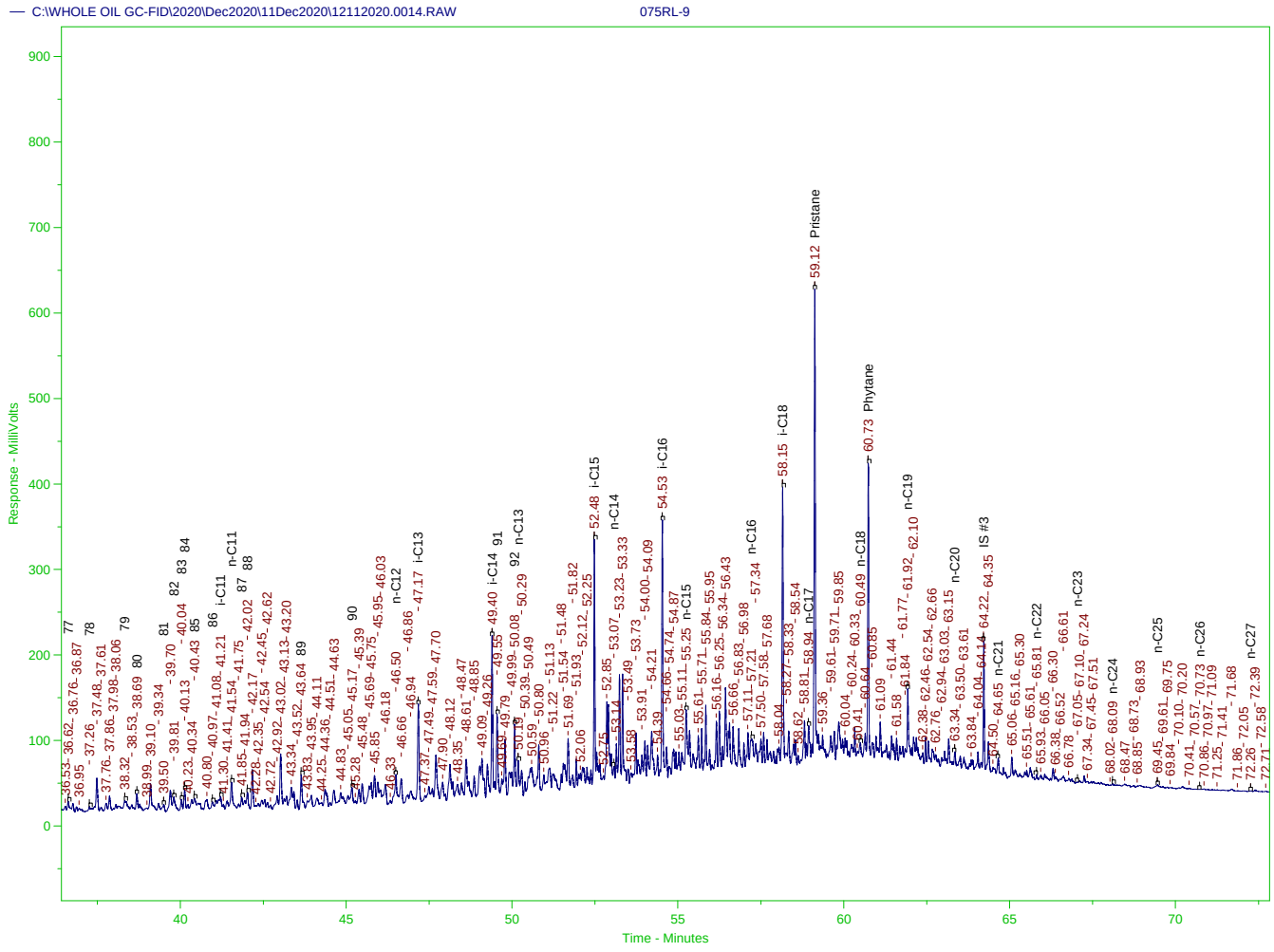

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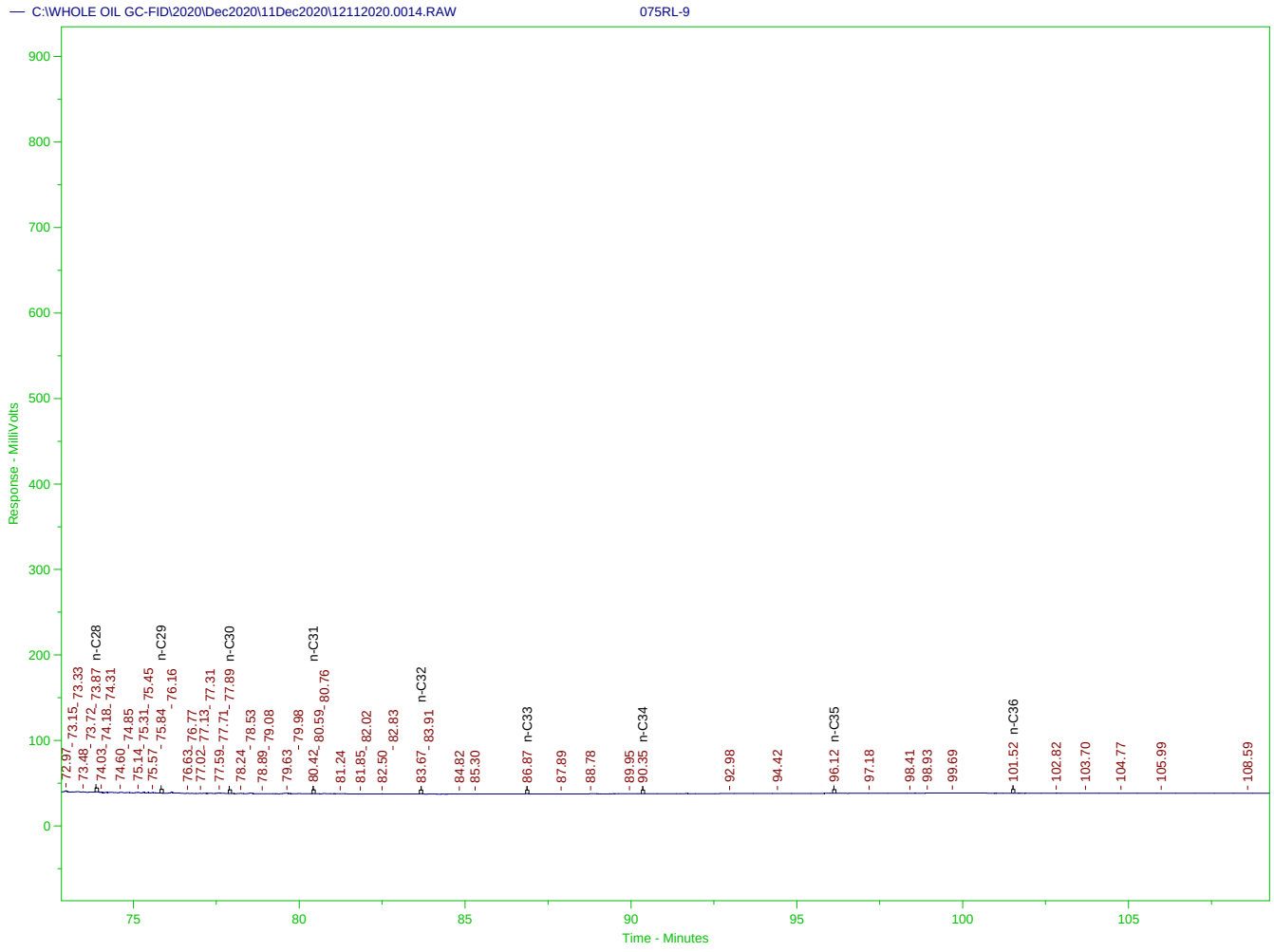

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Sample Name = **075RL-9**

Instrument = Instrument 1 Acquisition Port = DP#
Heading 1 =
Heading 2 =

Raw File Name = **C:\WHOLE OIL GC-FID\2020\Dec2020\11Dec2020\12112020.0014.RAW** Date Acquired (End) = 12/12/2020 9:49:36 PM
Method File Name = C:\1 - A Backup\C3442020.met Method Version = 23
Calibration File Name = C:\1 - A Backup\CALIBRATIONS\2020\12112020.cal Calibration Version = 1

Peak Name	Ret. Time	Area %	Area
	4.98	0.0038	2748.05
8	6.61	0.0011	801.86
11	7.07	0.0016	1121.43
CS2	7.80	0.1884	135500.10
17	8.90	0.0010	728.46
18	9.05	0.0023	1685.57
19	9.63	0.0020	1447.52
20	10.41	0.0025	1816.63
26	11.81	0.0048	3435.87
27	12.03	0.0007	504.04
28	13.12	0.0003	251.33
30	13.76	0.0039	2813.10
	14.10	0.0005	392.52
31	14.35	0.0026	1878.66
32	14.45	0.0024	1709.69
	14.63	0.0019	1380.08
33	14.91	0.0043	3085.69
	15.33	0.0053	3789.21
34A	15.51	0.0061	4392.41
34B	15.69	0.0077	5550.12
35	15.80	0.0027	1918.89
IS #1	16.36	0.8139	585269.50
36	16.56	0.0056	4023.56
	17.22	0.0014	1037.50
37	17.92	0.0255	18351.95
	18.14	0.0059	4236.66
38	18.73	0.0034	2418.96
	18.82	0.0011	789.72
39	18.96	0.0022	1615.00
	19.35	0.0089	6370.75
	19.86	0.0132	9504.69
40	20.06	0.0023	1623.85
41A	20.35	0.0009	663.27
42	20.87	0.0065	4654.77
	21.07	0.0006	425.09
43	21.24	0.0100	7192.31
44	21.35	0.0029	2064.04
45	21.46	0.0015	1054.87
	21.65	0.0024	1731.58
46B	21.77	0.0054	3903.72
46A	21.88	0.0327	23500.70
	22.02	0.0126	9062.06
	22.41	0.0052	3756.66
47	22.64	0.0048	3444.48
	22.79	0.0043	3092.85
48	22.88	0.0111	7998.03
	23.03	0.0014	981.16
	23.23	0.0236	16996.90
49	23.60	0.0361	25974.19
	24.01	0.0009	665.91
50	24.21	0.0056	4036.99
	24.45	0.0013	930.86
	24.61	0.0036	2553.87
	24.88	0.0052	3753.86
	25.22	0.0033	2340.06
51	25.30	0.0111	7964.95
	25.46	0.0023	1625.95
52	25.64	0.0513	36899.92

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	25.84	0.0050	3589.91
	26.00	0.0802	57693.92
53	26.16	0.0095	6818.13
	26.30	0.0049	3501.01
	26.39	0.0087	6284.12
	26.49	0.0060	4322.53
	26.77	0.0087	6262.03
54	26.85	0.0210	15115.18
	27.00	0.0332	23865.66
	27.15	0.0034	2422.81
	27.24	0.0020	1434.53
55	27.43	0.0251	18035.34
	27.62	0.0041	2983.40
	27.79	0.0158	11337.54
56	27.92	0.0112	8050.63
57	27.99	0.0107	7689.71
58	28.28	0.0208	14942.64
59	28.47	0.0365	26276.79
	28.57	0.0142	10231.72
60	28.77	0.0117	8423.27
61	28.91	0.0172	12380.53
	29.20	0.0270	19400.66
	29.28	0.0407	29276.18
	29.43	0.0350	25172.29
	29.58	0.0063	4561.42
	29.67	0.0099	7120.32
62	30.17	0.0573	41175.09
I.S. #2	30.30	1.0392	747290.30
	30.48	0.0505	36322.60
	30.66	0.0156	11220.38
63	30.90	0.0112	8087.23
	31.04	0.0064	4609.91
	31.16	0.0717	51539.51
64	31.26	0.0288	20683.15
	31.38	0.0179	12905.93
	31.56	0.0262	18850.21
	31.72	0.0063	4556.30
	31.80	0.0209	15027.00
	31.90	0.0604	43446.45
	32.01	0.0275	19743.34
	32.12	0.0167	12003.69
	32.22	0.0132	9482.65
65	32.34	0.0517	37204.00
	32.42	0.0244	17559.51
	32.51	0.0130	9349.05
	32.58	0.0174	12531.04
66	32.71	0.0338	24272.64
	32.79	0.0745	53601.75
	32.92	0.0102	7348.78
	33.00	0.0263	18879.11
67	33.14	0.0178	12779.61
68	33.29	0.0511	36774.90
69	33.58	0.1301	93579.35
	33.79	0.0440	31609.05
	33.89	0.0226	16230.39
70	33.96	0.0387	27850.24
71	34.11	0.0247	17791.65
	34.19	0.0495	35627.26
	34.37	0.0340	24450.60
	34.50	0.0551	39594.11
	34.58	0.0768	55217.82
72	34.74	0.0519	37352.74
	34.98	0.0186	13369.89
73	35.05	0.0760	54654.29
	35.14	0.0512	36797.56
	35.23	0.0513	36857.31
	35.32	0.0738	53076.62
	35.50	0.0217	15591.85
	35.56	0.0391	28133.41
74	35.81	0.0252	18128.87

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Peak Name	Ret. Time	Area %	Area
75	35.93	0.0454	32632.72
76	36.11	0.1394	100234.00
	36.23	0.0408	29352.70
	36.39	0.0313	22507.31
	36.53	0.0424	30518.06
77	36.62	0.0834	59947.53
	36.76	0.0450	32329.54
	36.87	0.0260	18690.67
	36.95	0.0424	30506.17
78	37.26	0.0583	41917.42
	37.48	0.2158	155182.10
	37.61	0.0341	24497.04
	37.76	0.0605	43496.62
	37.86	0.0945	67979.65
	37.98	0.0171	12327.63
	38.06	0.1168	84015.16
79	38.32	0.1512	108694.60
	38.53	0.0678	48728.36
80	38.69	0.1562	112295.30
	38.99	0.0375	26977.73
	39.10	0.2216	159318.00
	39.34	0.0563	40505.07
81	39.50	0.0541	38932.06
	39.70	0.1521	109388.50
82	39.81	0.1303	93700.70
83	40.04	0.0685	49228.72
84	40.13	0.1149	82604.98
	40.23	0.0384	27636.22
	40.34	0.0797	57337.34
85	40.43	0.2146	154341.30
	40.80	0.1156	83156.66
86	40.97	0.0756	54377.39
	41.08	0.0694	49928.15
i-C11	41.21	0.1451	104311.80
	41.30	0.0364	26146.59
	41.41	0.0717	51562.01
n-C11	41.54	0.2380	171147.60
	41.75	0.0430	30887.48
87	41.85	0.0804	57783.43
	41.94	0.0630	45318.73
88	42.02	0.1147	82506.21
	42.17	0.2178	156640.70
	42.28	0.0283	20384.99
	42.35	0.0459	33020.52
	42.45	0.0737	53007.32
	42.54	0.0587	42199.39
	42.62	0.0439	31548.21
	42.72	0.0291	20892.35
	42.92	0.1270	91339.98
	43.02	0.3163	227450.10
	43.13	0.0659	47415.34
	43.20	0.0757	54459.80
	43.34	0.2737	196830.80
	43.52	0.0479	34420.51
89	43.64	0.2265	162851.70
	43.83	0.0558	40098.03
	43.95	0.1242	89315.77
	44.11	0.1234	88741.16
	44.25	0.0579	41640.70
	44.36	0.2066	148539.00
	44.51	0.0399	28700.82
	44.63	0.1835	131966.10
	44.83	0.2376	170835.60
	45.05	0.0992	71306.17
90	45.17	0.1830	131590.90
	45.28	0.0527	37875.18
	45.39	0.1398	100515.60
	45.48	0.1663	119547.80
	45.69	0.2015	144868.20
	45.75	0.1416	101795.70

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Peak Name	Ret. Time	Area %	Area
	45.85	0.2186	157185.50
	45.95	0.1853	133246.70
	46.03	0.1663	119584.70
	46.18	0.2037	146472.80
	46.33	0.0629	45264.30
n-C12	46.50	0.3431	246751.30
	46.66	0.2294	164952.50
	46.86	0.1427	102583.90
	46.94	0.2325	167202.30
i-C13	47.17	0.6064	436081.80
	47.37	0.1182	84968.10
	47.49	0.1966	141351.20
	47.59	0.1386	99648.16
	47.70	0.4483	322381.40
	47.90	0.3040	218607.50
	48.12	0.5191	373278.10
	48.35	0.2677	192504.00
	48.47	0.2196	157914.10
	48.61	0.5520	396898.60
	48.85	0.2327	167365.00
	49.09	0.7741	556673.70
	49.26	0.3381	243119.50
i-C14	49.40	0.8863	637329.80
91	49.55	0.5264	378519.20
	49.69	0.1660	119379.60
	49.79	0.4507	324079.60
	49.99	0.4446	319735.10
92	50.08	0.4577	329146.40
n-C13	50.19	0.2988	214885.20
	50.29	0.2541	182704.50
	50.39	0.1362	97921.05
	50.49	0.1878	135023.20
	50.59	0.5857	421196.10
	50.80	0.5065	364248.70
	50.96	0.3858	277442.10
	51.13	0.3795	272900.80
	51.22	0.5811	417835.90
	51.48	0.1732	124513.40
	51.54	0.4614	331775.90
	51.69	0.4190	301275.50
	51.82	0.2905	208921.30
	51.93	0.2837	203994.60
	52.06	0.3042	218727.20
	52.12	0.3870	278289.80
	52.25	0.5441	391219.50
i-C15	52.48	1.7978	1292740.00
	52.75	0.1775	127602.10
	52.85	1.3607	978472.60
n-C14	53.07	0.2297	165192.90
	53.14	0.3094	222452.30
	53.23	0.6776	487225.40
	53.33	0.8326	598672.40
	53.49	0.2434	175057.80
	53.58	0.3726	267933.50
	53.73	0.8098	582327.30
	53.91	0.3248	233555.10
	54.00	0.4330	311393.10
	54.09	0.4113	295787.50
	54.21	0.7184	516561.50
	54.39	0.4350	312825.70
i-C16	54.53	1.4532	1044996.00
	54.66	0.4178	300460.50
	54.74	0.3183	228881.00
	54.87	0.7362	529350.40
	55.03	0.4261	306415.40
	55.11	0.4952	356114.90
n-C15	55.25	1.2238	880025.00
	55.61	1.1366	817332.60
	55.71	0.4242	305003.00
	55.84	0.7055	507315.70

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Peak Name	Ret. Time	Area %	Area
	55.95	0.8814	633783.90
	56.16	0.4634	333187.40
	56.25	0.5772	415017.30
	56.34	0.2930	210680.70
	56.43	1.5390	1106692.00
	56.66	0.7576	544785.40
	56.83	0.7557	543409.70
	56.98	0.3566	256405.40
	57.11	0.6351	456677.80
n-C16	57.21	0.8093	581984.90
	57.34	0.7817	562099.90
	57.50	0.4290	308461.10
	57.58	0.3958	284631.00
	57.68	0.9635	692824.40
	58.04	1.1359	816778.30
i-C18	58.15	1.6394	1178883.00
	58.27	0.3751	269703.20
	58.33	0.4943	355413.60
	58.54	0.9412	676762.40
	58.62	0.4996	359250.50
	58.81	1.0169	731216.20
n-C17	58.94	0.9191	660929.10
Pristane	59.12	3.0984	2227985.00
	59.36	1.0814	777580.30
	59.61	0.7025	505173.30
	59.71	0.7716	554823.70
	59.85	1.2028	864883.30
	60.04	0.9279	667250.00
	60.24	0.5600	402655.60
	60.33	0.4295	308875.30
	60.41	0.3751	269708.20
n-C18	60.49	0.6144	441835.80
	60.64	0.5988	430603.60
Phytane	60.73	1.6310	1172804.00
	60.85	0.5606	403110.70
	61.09	2.3941	1721571.00
	61.44	0.7913	569031.70
	61.58	0.4495	323194.80
	61.77	0.7986	574251.10
	61.84	0.3480	250267.30
n-C19	61.92	1.1097	797981.70
	62.10	1.2002	863048.10
	62.38	0.4425	318172.30
	62.46	0.3723	267742.90
	62.54	0.5888	423390.70
	62.66	0.4766	342697.30
	62.76	0.6554	471306.30
	62.94	0.3692	265492.10
	63.03	0.4582	329472.80
	63.15	0.7720	555147.50
n-C20	63.34	0.4665	335438.20
	63.50	0.4188	301143.70
	63.61	0.7132	512836.70
	63.84	0.6010	432133.20
	64.04	0.5876	422545.20
	64.14	0.2485	178709.70
IS #3	64.22	0.7163	515052.60
	64.35	0.6759	485997.80
	64.50	0.3615	259940.50
n-C21	64.65	1.0045	722339.10
	65.06	0.3921	281982.40
	65.16	0.3276	235562.30
	65.30	0.2686	193116.70
	65.51	0.4260	306313.70
	65.61	0.4609	331400.90
n-C22	65.81	0.2263	162708.50
	65.93	0.2885	207476.80
	66.05	0.4711	338762.40
	66.30	0.2174	156307.10
	66.38	0.2162	155463.90

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Peak Name	Ret. Time	Area %	Area
	66.52	0.1484	106699.10
	66.61	0.3445	247724.60
	66.78	0.4022	289242.80
n-C23	67.05	0.1393	100200.00
	67.10	0.1964	141227.30
	67.24	0.1700	122211.10
	67.34	0.1706	122664.30
	67.45	0.1187	85320.25
	67.51	0.6713	482718.10
	68.02	0.0825	59315.48
n-C24	68.09	0.3760	270372.40
	68.47	0.3218	231407.00
	68.73	0.1454	104571.70
	68.85	0.0816	58672.66
	68.93	0.3692	265492.50
n-C25	69.45	0.3070	220768.40
	69.61	0.1131	81315.00
	69.75	0.0798	57412.74
	69.84	0.1949	140131.90
	70.10	0.0840	60434.60
	70.20	0.1824	131136.80
	70.41	0.1078	77544.02
	70.57	0.0920	66142.95
n-C26	70.73	0.0638	45843.57
	70.86	0.0996	71646.27
	70.97	0.0702	50463.88
	71.09	0.0953	68533.27
	71.25	0.0757	54435.18
	71.41	0.1202	86433.39
	71.68	0.1156	83132.78
	71.86	0.0591	42464.42
	72.05	0.0811	58330.09
n-C27	72.26	0.0642	46143.64
	72.39	0.0805	57883.13
	72.58	0.0347	24977.04
	72.71	0.0625	44914.34
	72.97	0.0767	55142.16
	73.15	0.0250	17956.92
	73.33	0.0572	41161.88
	73.48	0.0431	30968.55
	73.72	0.0305	21914.88
n-C28	73.87	0.0542	38993.56
	74.03	0.0218	15642.10
	74.18	0.0200	14412.17
	74.31	0.0431	31007.99
	74.60	0.0272	19581.36
	74.85	0.0261	18786.47
	75.14	0.0235	16877.71
	75.31	0.0123	8844.45
	75.45	0.0091	6571.00
	75.57	0.0133	9583.34
n-C29	75.84	0.0031	2246.20
	76.16	0.0065	4678.35
	76.63	0.0019	1352.15
	76.77	0.0012	829.28
	77.02	0.0017	1205.89
	77.13	0.0038	2715.49
	77.31	0.0041	2933.89
	77.59	0.0072	5205.92
	77.71	0.0040	2885.04
n-C30	77.89	0.0024	1707.06
	78.24	0.0046	3325.11
	78.53	0.0071	5125.98
	78.89	0.0012	887.35
	79.08	0.0004	286.16
	79.63	0.0131	9397.63
	79.98	0.0064	4585.28
n-C31	80.42	0.0031	2255.67
	80.59	0.0007	537.56
	80.76	0.0073	5273.37

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Peak Name	Ret. Time	Area %	Area
	81.24	0.0037	2667.96
	81.85	0.0015	1098.45
	82.02	0.0016	1143.87
	82.50	0.0030	2135.72
	82.83	0.0041	2918.47
n-C32	83.67	0.0037	2650.46
	83.91	0.0003	231.92
	84.82	0.0014	980.94
	85.30	0.0031	2253.36
n-C33	86.87	0.0053	3833.60
	87.89	0.0006	435.18
	88.78	0.0028	1993.78
	89.95	0.0006	444.54
n-C34	90.35	0.0009	682.71
	92.98	0.0023	1673.22
	94.42	0.0032	2307.19
n-C35	96.12	0.0080	5718.16
	97.18	0.0014	981.91
	98.41	0.0010	698.55
	98.93	0.0007	507.46
	99.69	0.0011	781.39
n-C36	101.52	0.0010	707.75
	102.82	0.0007	476.51
	103.70	0.0003	214.15
	104.77	0.0004	260.82
	105.99	0.0007	508.93
	108.59	0.0006	460.26

Total Area = 7.190778E+07 Total Height = 1.30635E+07 Total Amount = 0

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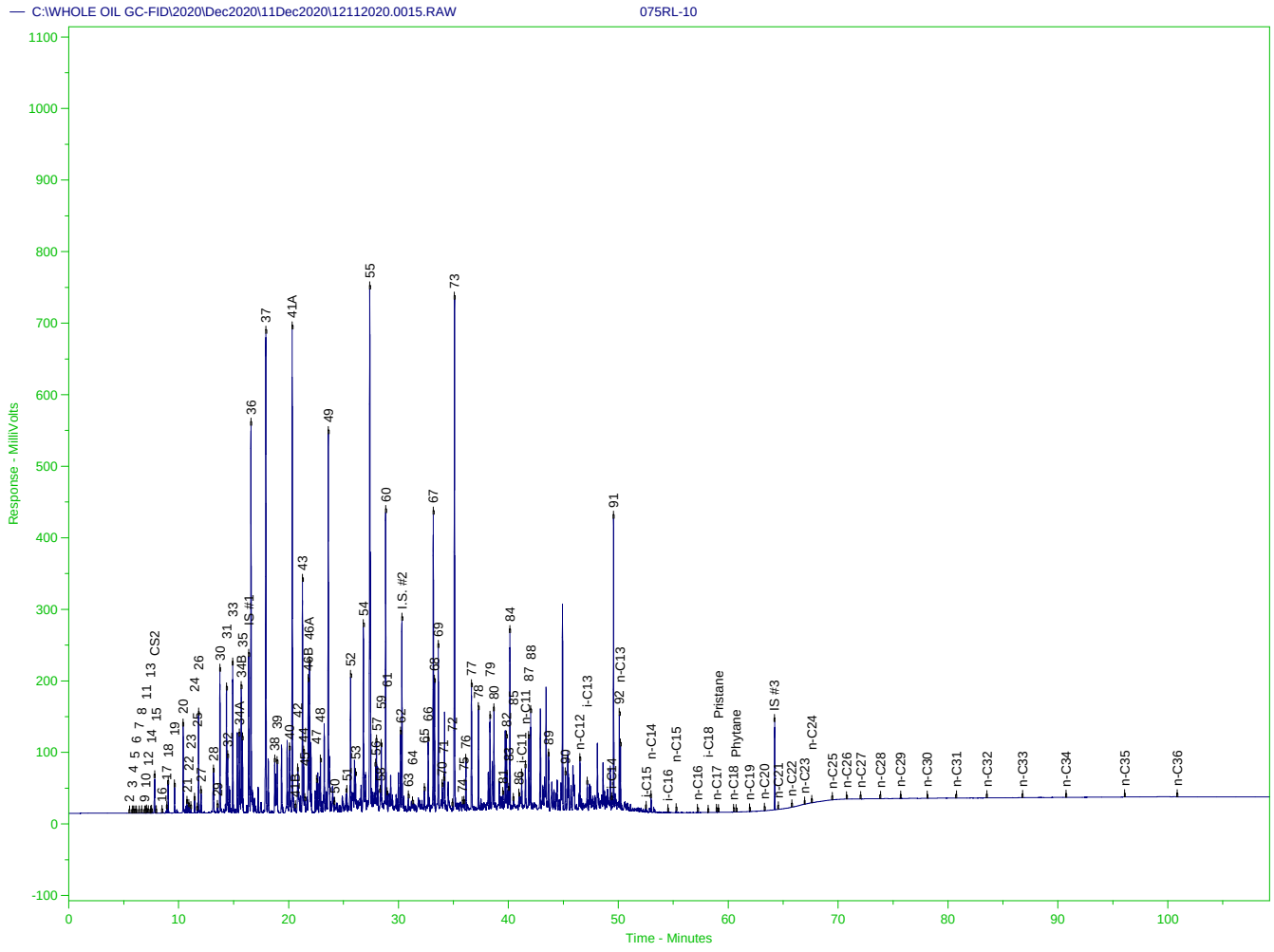

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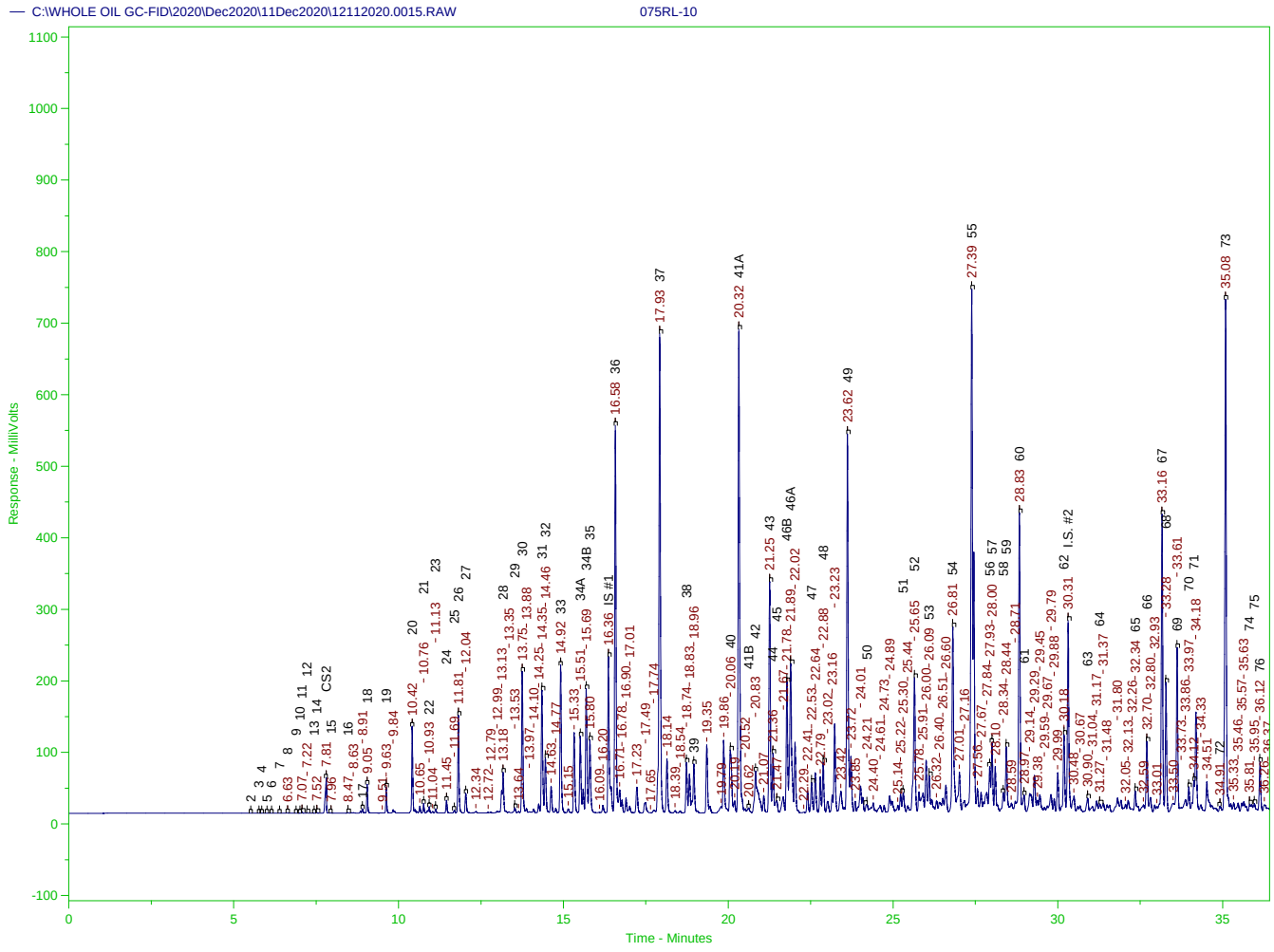

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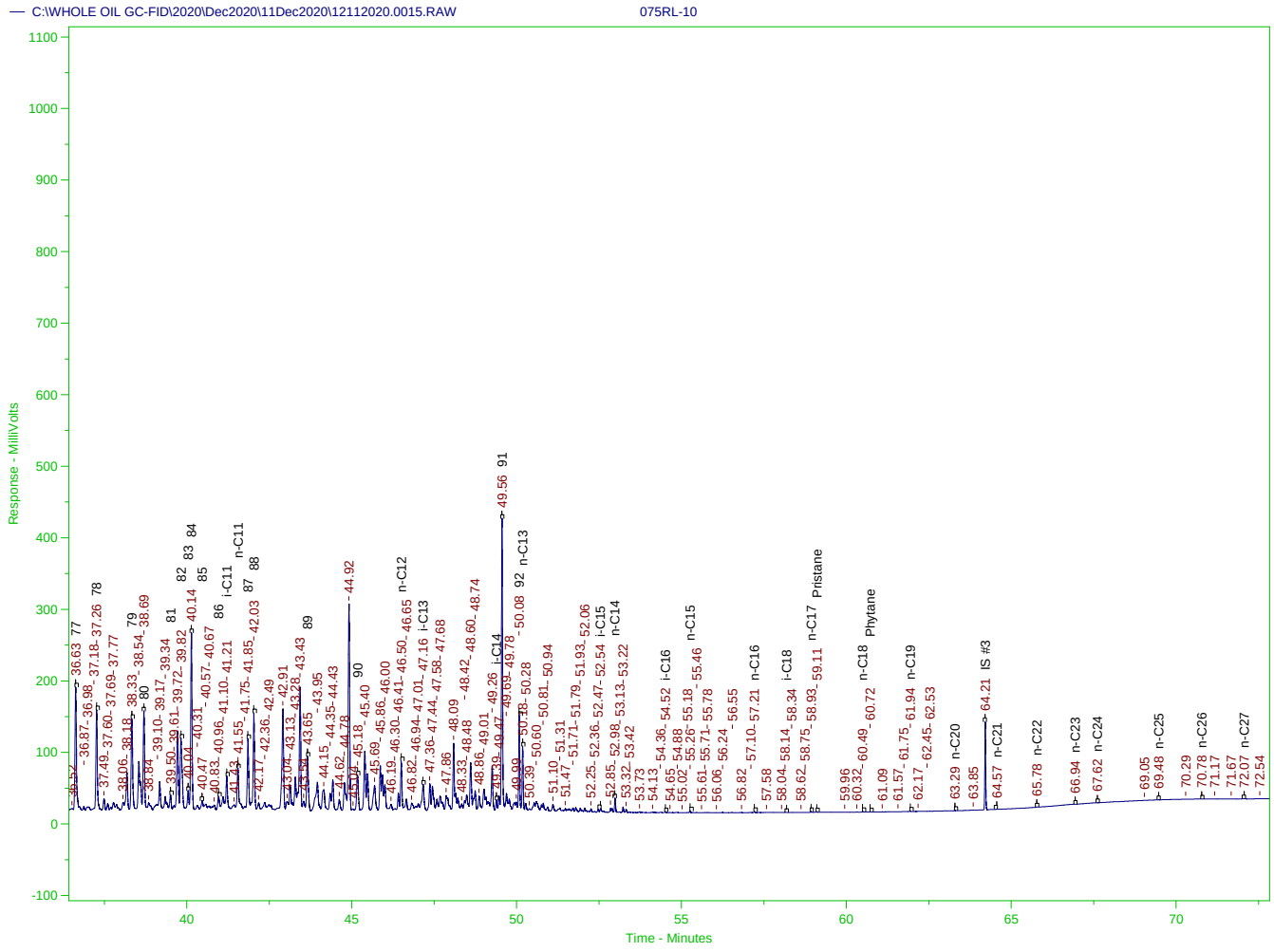

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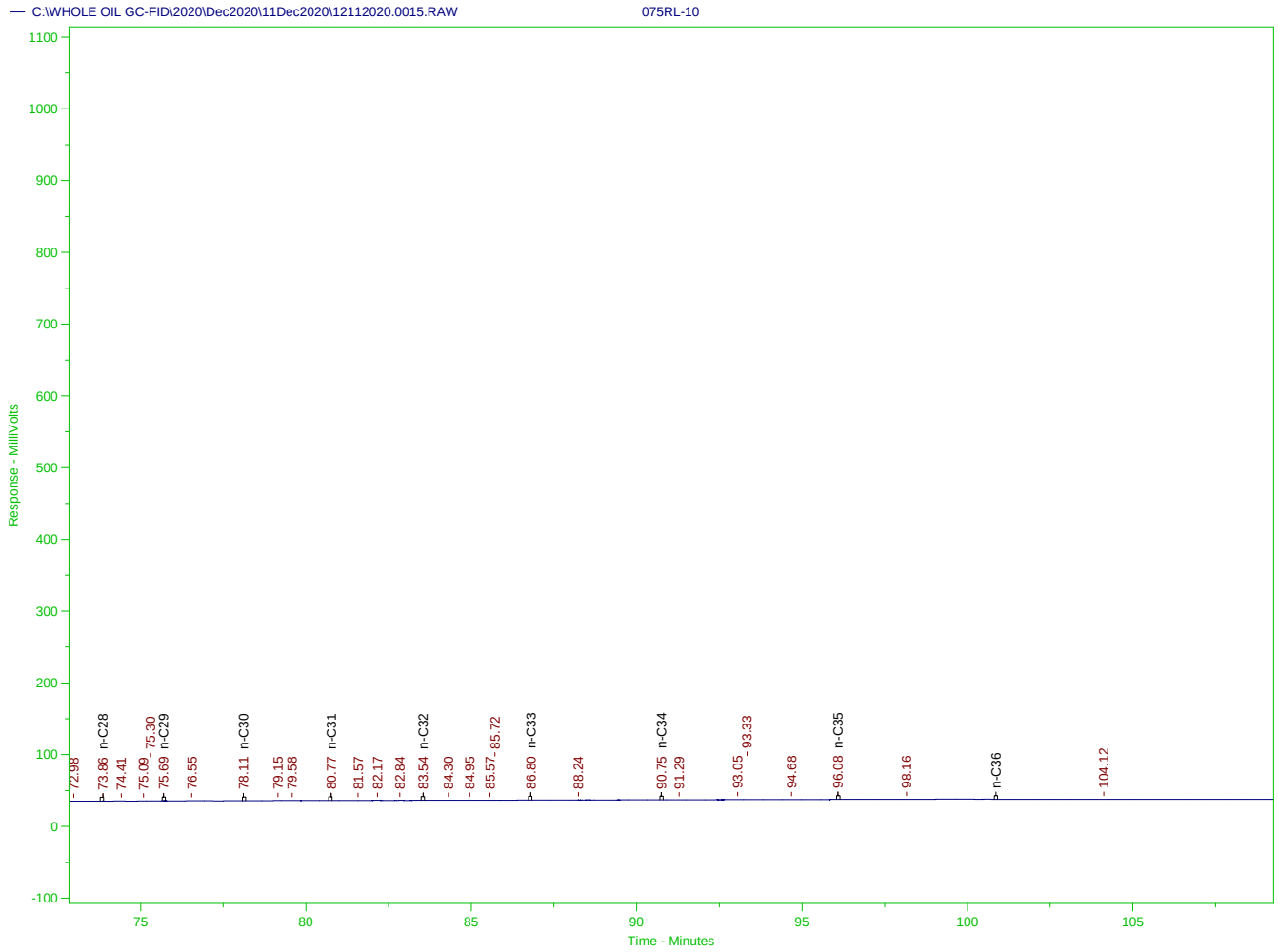

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Sample Name = **075RL-10**

Instrument = Instrument 1 Acquisition Port = DP#
Heading 1 =
Heading 2 =

Raw File Name = **C:\WHOLE OIL GC-FID\2020\Dec2020\11Dec2020\12112020.0015.RAW** Date/Time (End) = 12/12/2020 11:51:56 PM
Method File Name = C:\1 - A Backup\C3442020.met Method Version = 23
Calibration File Name = C:\1 - A Backup\CALIBRATIONS\2020\12112020.cal Calibration Version = 1

Peak Name	Ret. Time	Area %	Area
8	6.63	0.0011	677.94
11	7.07	0.0028	1797.59
12	7.22	0.0007	430.18
14	7.52	0.0026	1662.84
CS2	7.81	0.2242	142700.90
15	7.96	0.0010	613.65
16	8.47	0.0012	753.96
	8.63	0.0026	1648.81
17	8.91	0.0306	19487.04
18	9.05	0.1295	82378.23
	9.51	0.0009	545.84
19	9.63	0.1218	77511.25
	9.84	0.0255	16231.10
20	10.42	0.4580	291432.90
	10.65	0.0348	22154.78
21	10.76	0.0472	30023.18
22	10.93	0.0443	28174.96
	11.04	0.0074	4729.39
23	11.13	0.0218	13877.81
24	11.45	0.0677	43105.40
25	11.69	0.0155	9883.79
26	11.81	0.5352	340589.00
27	12.04	0.1233	78487.02
	12.34	0.0130	8289.49
	12.72	0.0053	3348.65
	12.79	0.0061	3885.50
	12.99	0.0136	8681.97
	13.13	0.1168	74303.43
28	13.18	0.2484	158085.60
	13.35	0.0088	5586.02
29	13.53	0.0419	26675.22
	13.64	0.0101	6435.27
30	13.75	0.8476	539371.40
	13.88	0.0282	17924.68
	13.97	0.0143	9083.31
	14.10	0.0260	16515.58
	14.25	0.0567	36075.34
31	14.35	0.7524	478780.00
32	14.46	0.3505	223078.80
	14.63	0.1704	108451.30
	14.77	0.0317	20158.20
33	14.92	0.9090	578488.40
	15.15	0.0321	20446.59
	15.33	0.5002	318297.40
34A	15.51	0.6184	393554.10
34B	15.69	0.7838	498776.60
35	15.80	0.5361	341184.40
	16.09	0.0079	5046.48
	16.20	0.0539	34326.88
IS #1	16.36	1.1523	733302.00
36	16.58	2.4178	1538615.00
	16.71	0.1768	112534.20
	16.78	0.0811	51614.36
	16.90	0.0931	59227.06
	17.01	0.0596	37938.96
	17.23	0.1920	122174.20
	17.49	0.1193	75906.30
	17.65	0.0021	1313.81

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	17.74	0.0290	18482.32
37	17.93	3.3418	2126591.00
	18.14	0.3729	237291.20
	18.39	0.0179	11398.08
	18.54	0.0140	8930.72
38	18.74	0.3178	202249.80
	18.83	0.3137	199604.80
39	18.96	0.3502	222832.70
	19.35	0.4865	309563.30
	19.79	0.0720	45804.35
	19.86	0.5342	339964.00
40	20.06	0.6181	393366.20
	20.19	0.0870	55359.92
41A	20.32	3.4463	2193097.00
	20.52	0.0308	19575.42
41B	20.62	0.0521	33168.86
42	20.83	0.6582	418889.40
	21.07	0.1134	72181.77
43	21.25	1.5043	957289.40
44	21.36	0.3834	243979.40
45	21.47	0.1321	84069.68
	21.67	0.1802	114678.00
46B	21.78	0.8280	526926.80
46A	21.89	1.3415	853669.90
	22.02	0.4749	302215.80
	22.29	0.0077	4879.34
	22.41	0.1467	93378.37
47	22.53	0.2213	140807.80
	22.64	0.2891	183999.60
	22.79	0.2311	147068.30
48	22.88	0.3415	217322.00
	23.02	0.1026	65299.58
	23.16	0.1145	72852.74
	23.23	0.6060	385638.70
	23.42	0.2758	175535.00
49	23.62	2.5321	1611370.00
	23.72	0.4290	272976.10
	23.85	0.0733	46642.55
	24.01	0.3495	222391.90
50	24.21	0.1474	93790.05
	24.40	0.0972	61869.83
	24.61	0.0914	58184.98
	24.73	0.0566	36025.98
	24.89	0.2630	167337.90
	25.14	0.0511	32497.87
	25.22	0.1300	82745.37
51	25.30	0.1756	111721.50
	25.44	0.0738	46984.65
52	25.65	1.1412	726205.70
	25.78	0.1581	100584.50
	25.91	0.2402	152851.40
	26.00	0.3661	232955.70
53	26.09	0.4075	259292.70
	26.32	0.1006	63992.23
	26.40	0.1183	75277.34
	26.51	0.1210	77032.27
	26.60	0.2306	146773.70
54	26.81	1.4542	925401.10
	27.01	0.4245	270133.00
	27.16	0.1999	127212.20
55	27.39	5.2677	3352179.00
	27.56	0.1910	121529.80
	27.67	0.2273	144639.20
	27.84	0.2400	152734.90
56	27.93	0.3153	200667.30
57	28.00	0.4833	307543.00
	28.10	0.3640	231647.00
58	28.34	0.1848	117586.20
59	28.44	0.5193	330440.30
	28.59	0.1196	76109.41

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Peak Name	Ret. Time	Area %	Area
	28.71	0.0900	57254.92
60	28.83	2.0309	1292370.00
61	28.97	0.1702	108285.50
	29.14	0.2872	182778.80
	29.29	0.2984	189878.00
	29.38	0.0853	54300.91
	29.45	0.1779	113210.00
	29.59	0.0421	26807.86
	29.67	0.0523	33304.59
	29.79	0.2019	128510.20
	29.88	0.0973	61937.03
	29.99	0.2864	182243.60
62	30.18	0.5642	359008.70
I.S. #2	30.31	1.2936	823210.90
	30.48	0.1835	116751.60
	30.67	0.1193	75946.80
63	30.90	0.1454	92552.27
	31.04	0.0803	51116.90
	31.17	0.1100	70003.89
64	31.27	0.0747	47506.06
	31.37	0.1063	67665.87
	31.48	0.1327	84439.96
	31.80	0.3042	193568.60
	32.05	0.0959	61025.27
	32.13	0.1272	80925.84
	32.26	0.0340	21636.59
65	32.34	0.2221	141355.30
	32.59	0.1056	67175.20
66	32.70	0.5078	323162.00
	32.80	0.1349	85854.36
	32.93	0.0601	38276.04
	33.01	0.0453	28810.02
67	33.16	2.0105	1279432.00
68	33.28	0.8225	523386.30
	33.50	0.1332	84764.30
69	33.61	1.1199	712653.50
	33.73	0.0525	33386.68
	33.86	0.1717	109289.50
70	33.97	0.2057	130903.60
71	34.12	0.2513	159892.10
	34.18	0.7091	451261.10
	34.33	0.0984	62639.04
	34.51	0.4671	297265.90
72	34.91	0.0717	45601.04
73	35.08	3.6554	2326168.00
	35.33	0.0805	51224.01
	35.46	0.1069	68007.80
	35.57	0.0697	44384.72
	35.63	0.1409	89677.87
74	35.81	0.1259	80130.34
75	35.95	0.1093	69527.44
76	36.12	0.3727	237173.00
	36.26	0.1025	65211.92
	36.37	0.0483	30743.19
	36.52	0.0655	41683.80
77	36.63	0.9667	615166.10
	36.87	0.0506	32207.67
	36.98	0.1043	66361.41
	37.18	0.0518	32932.54
78	37.26	0.7470	475367.20
	37.49	0.1194	75960.32
	37.60	0.0786	50010.66
	37.69	0.0451	28731.54
	37.77	0.2099	133561.20
	38.06	0.1061	67514.05
	38.18	0.3468	220710.40
79	38.33	0.7211	458861.10
	38.54	0.5734	364919.20
80	38.69	0.7092	451286.90
	38.84	0.1458	92809.98

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Peak Name	Ret. Time	Area %	Area
	39.10	0.1386	88190.77
	39.17	0.2525	160684.40
	39.34	0.2299	146319.10
81	39.50	0.1504	95683.20
	39.61	0.0633	40277.29
	39.72	0.6308	401426.30
82	39.82	0.7016	446483.10
83	40.04	0.1932	122970.10
84	40.14	1.2006	764033.70
	40.31	0.1018	64778.76
85	40.47	0.1295	82412.06
	40.57	0.1107	70418.39
	40.67	0.1212	77128.78
	40.83	0.0841	53530.75
86	40.96	0.1618	102940.80
	41.10	0.1890	120293.60
i-C11	41.21	0.3417	217430.00
	41.43	0.1194	75984.84
n-C11	41.55	0.4543	289111.00
	41.75	0.0591	37590.54
87	41.85	0.5488	349213.00
88	42.03	0.7538	479680.00
	42.17	0.1100	70018.73
	42.36	0.1491	94900.63
	42.49	0.1958	124604.90
	42.91	0.9693	616837.10
	43.04	0.1178	74987.49
	43.13	0.2809	178767.30
	43.28	0.3950	251370.00
	43.43	0.8752	556958.70
	43.54	0.1098	69841.81
89	43.65	0.4954	315269.10
	43.95	0.4665	296839.30
	44.15	0.3182	202505.80
	44.35	0.1595	101505.90
	44.43	0.2692	171341.10
	44.62	0.1472	93662.36
	44.78	0.3167	201564.40
	44.92	1.3872	882768.10
	45.04	0.0393	25024.51
90	45.18	0.3426	218043.90
	45.40	0.7805	496708.00
	45.69	0.3507	223168.30
	45.86	0.5814	370013.20
	46.00	0.2465	156880.60
	46.19	0.0967	61512.95
	46.30	0.0508	32331.28
	46.41	0.1360	86533.27
n-C12	46.50	0.3464	220463.40
	46.65	0.1737	110527.20
	46.82	0.1145	72863.68
	46.94	0.0590	37520.39
	47.01	0.0799	50847.76
i-C13	47.16	0.3280	208728.50
	47.36	0.2115	134600.00
	47.44	0.2516	160116.40
	47.58	0.1172	74572.24
	47.68	0.2401	152798.00
	47.86	0.2642	168100.80
	48.09	0.6822	434102.10
	48.33	0.0805	51211.67
	48.42	0.0868	55209.21
	48.48	0.1694	107809.10
	48.60	0.4418	281120.40
	48.74	0.1583	100748.00
	48.86	0.1715	109151.90
	49.01	0.4277	272170.40
	49.26	0.3522	224152.60
i-C14	49.39	0.0892	56783.53
	49.47	0.1106	70380.83

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91	49.56	1.5958	1015546.00
	49.69	0.1624	103321.50
	49.78	0.1340	85253.77
	49.99	0.1752	111498.10
92	50.08	0.5139	327036.80
n-C13	50.18	0.3669	233492.80
	50.28	0.0741	47185.60
	50.39	0.0430	27388.58
	50.60	0.2411	153415.70
	50.81	0.1336	85039.30
	50.94	0.0536	34093.54
	51.10	0.0917	58328.57
	51.31	0.0894	56869.58
	51.47	0.0890	56633.79
	51.71	0.0378	24031.88
	51.79	0.0487	30979.98
	51.93	0.0451	28679.72
	52.06	0.0509	32390.41
	52.25	0.0294	18687.12
	52.36	0.0106	6738.95
	52.47	0.0242	15411.81
i-C15	52.54	0.0483	30705.31
	52.85	0.0486	30904.54
n-C14	52.98	0.0772	49158.69
	53.13	0.0070	4470.91
	53.22	0.0304	19329.67
	53.32	0.0188	11963.38
	53.42	0.0099	6314.98
	53.73	0.0129	8222.74
	54.13	0.0100	6393.62
	54.36	0.0047	2984.08
i-C16	54.52	0.0072	4582.64
	54.65	0.0015	973.56
	54.88	0.0064	4068.53
	55.02	0.0012	740.83
	55.18	0.0020	1243.62
n-C15	55.26	0.0114	7228.57
	55.46	0.0018	1146.84
	55.61	0.0014	891.44
	55.71	0.0016	1033.92
	55.78	0.0026	1669.07
	56.06	0.0005	342.63
	56.24	0.0023	1487.85
	56.55	0.0030	1922.47
	56.82	0.0020	1299.84
	57.10	0.0019	1180.87
n-C16	57.21	0.0053	3382.87
	57.58	0.0013	852.37
	58.04	0.0009	588.56
	58.14	0.0022	1409.23
	58.34	0.0007	425.38
	58.62	0.0010	617.84
	58.75	0.0009	582.26
n-C17	58.93	0.0038	2389.63
Pristane	59.11	0.0031	1943.00
	59.96	0.0013	816.95
	60.32	0.0007	457.05
n-C18	60.49	0.0026	1676.19
Phytane	60.72	0.0020	1269.31
	61.09	0.0003	182.94
	61.57	0.0012	763.28
	61.75	0.0008	491.34
n-C19	61.94	0.0026	1685.13
	62.17	0.0014	881.20
	62.45	0.0006	409.04
	62.53	0.0006	378.62
n-C20	63.29	0.0035	2250.83
	63.85	0.0009	542.06
IS #3	64.21	0.3713	236278.30
n-C21	64.57	0.0018	1172.41

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Phone: 865.573.8188
Fax: 865.573.8133
Web: www.microbe.com

Chrom Perfect Chromatogram Report

Peak Name	Ret. Time	Area %	Area
n-C22	65.78	0.0350	22293.47
n-C23	66.94	0.2203	140202.70
n-C24	67.62	0.2224	141559.70
	69.05	0.5900	375456.20
n-C25	69.48	0.1887	120086.60
	70.29	0.3447	219351.70
n-C26	70.78	0.2155	137127.10
	71.17	0.1352	86012.70
	71.67	0.0320	20335.70
n-C27	72.07	0.0778	49493.17
	72.54	0.0255	16218.17
	72.98	0.0033	2107.58
n-C28	73.86	0.0032	2024.97
	74.41	0.0053	3382.27
	75.09	0.0019	1213.24
	75.30	0.0012	764.99
n-C29	75.69	0.0105	6695.13
	76.55	0.0045	2851.22
n-C30	78.11	0.0129	8221.81
	79.15	0.0054	3446.22
	79.58	0.0021	1340.16
n-C31	80.77	0.0050	3185.16
	81.57	0.0018	1131.86
	82.17	0.0067	4243.77
	82.84	0.0013	850.50
n-C32	83.54	0.0024	1557.32
	84.30	0.0056	3568.80
	84.95	0.0018	1156.30
	85.57	0.0017	1082.20
	85.72	0.0006	397.10
n-C33	86.80	0.0029	1875.31
	88.24	0.0032	2050.38
n-C34	90.75	0.0026	1637.92
	91.29	0.0013	812.66
	93.05	0.0006	371.07
	93.33	0.0091	5794.78
	94.68	0.0030	1894.76
n-C35	96.08	0.0030	1932.87
	98.16	0.0021	1306.26
	104.12	0.0004	285.68

Total Area = 6.36369E+07 Total Height = 1.755833E+07 Total Amount = 0

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SITE LOGIC Report

EDB and Organic Lead

Contact: Russ Shropshire
Phone: 425-482-3323
Address: Leidos, Inc.
18939 129th Avenue NE, Suite 112
Bothell, WA 98011
Email: russell.s.shropshire@leidos.com

MI Identifier: 075RL **Report Date:** February 10, 2021

Project: Chelan Chevron Site , #334893.TM.1.000.00.00.000

Comments:

Russ Shropshire
Leidos, Inc
18939 120th Avenue, Suite 112
Bothell, WA 98011

Lab ID: 075RL-1
Collected: 12/6/20
Received: 12/11/20
Matrix: Product

Project: Chelan Chevron Site
Client ID: MW-10-201206

Project #: 334893.TM.1.000.00.00.000
Collected by:
Analyzed: 1/29/2021
Q Method: GC/ECD

Constituents	ssRL mg/kg	PQL mg/kg	Result mg/kg	Blank mg/L
Ethylene Dibromide	0.7	2.0	U	<0.1
Tetramethyl Lead	6.7	20.1	U	<1.0
Trimethylethyl Lead	6.7	20.1	U	<1.0
Dimethyldiethyl Lead	6.7	20.1	U	<1.0
Methyltriethyl Lead	6.7	20.1	U	<1.0
Tetraethyl Lead	6.7	20.1	689.5	<1.0
Methylcyclopentadienyl Manganese Tricarbonyl	0.7	2.0	U	<1.0

ssRL - Sample Specific Reporting Limit
U: Not detected
J: value greater than the ssRL but less than the PQL (3xssRL)
Trace detection: If analyte detected below ssRL then < ssRL will be shown

075RL-1.D
EW

Russ Shropshire
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Lab ID: 075RL-2
Collected: 12/7/20
Received: 12/11/20
Matrix: Product

Project: Chelan Chevron Site
Client ID: MW-12-201207

Project #: 334893.TM.1.000.00.00.000
Collected by:
Analyzed: 1/29/2021
Q Method: GC/ECD

Constituents	ssRL mg/kg	PQL mg/kg	Result mg/kg	Blank mg/L
Ethylene Dibromide	0.7	2.0	2.0	<0.1
Tetramethyl Lead	6.5	19.6	7.1 J	<1.0
Trimethylethyl Lead	6.5	19.6	U	<1.0
Dimethyldiethyl Lead	6.5	19.6	U	<1.0
Methyltriethyl Lead	6.5	19.6	U	<1.0
Tetraethyl Lead	6.5	19.6	253.6	<1.0
Methylcyclopentadienyl Manganese Tricarbonyl	0.7	2.0	U	<1.0

ssRL - Sample Specific Reporting Limit
U: Not detected
J: value greater than the ssRL but less than the PQL (3xssRL)
Trace detection: If analyte detected below ssRL then < ssRL will be shown

075RL-2.D
EW

Russ Shropshire
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Lab ID: **075RL-3**
Collected: **12/7/20**
Received: **12/11/20**
Matrix: **Product**

Project: **Chelan Chevron Site**
Client ID: **RW-2-201207**

Project #: **334893.TM.1.000.00.00.000**
Collected by:
Analyzed: **2/1/2021**
Q Method: **GC/ECD**

Constituents	ssRL mg/kg	PQL mg/kg	Result mg/kg	Blank mg/L
Ethylene Dibromide	0.7	2.0	U	<0.1
Tetramethyl Lead	6.8	20.4	U	<1.0
Trimethylethyl Lead	6.8	20.4	U	<1.0
Dimethyldiethyl Lead	6.8	20.4	25.7	<1.0
Methyltriethyl Lead	6.8	20.4	U	<1.0
Tetraethyl Lead	6.8	20.4	311.2	<1.0
Methylcyclopentadienyl Manganese Tricarbonyl	0.7	2.0	U	<1.0

ssRL - Sample Specific Reporting Limit
U: Not detected
J: value greater than the ssRL but less than the PQL (3xssRL)
Trace detection: If analyte detected below ssRL then < ssRL will be shown

075RL-3 dup.D
EW

Russ Shropshire
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Lab ID: 075RL-4
Collected: 12/7/20
Received: 12/11/20
Matrix: Product

Project: Chelan Chevron Site
Client ID: MW-9-201207

Project #: 334893.TM.1.000.00.00.000
Collected by:
Analyzed: 1/29/2021
Q Method: GC/ECD

Constituents	ssRL mg/kg	PQL mg/kg	Result mg/kg	Blank mg/L
Ethylene Dibromide	0.7	2.0	U	<0.1
Tetramethyl Lead	6.7	20.2	U	<1.0
Trimethylethyl Lead	6.7	20.2	U	<1.0
Dimethyldiethyl Lead	6.7	20.2	U	<1.0
Methyltriethyl Lead	6.7	20.2	U	<1.0
Tetraethyl Lead	6.7	20.2	579.4	<1.0
Methylcyclopentadienyl Manganese Tricarbonyl	0.7	2.0	U	<1.0

ssRL - Sample Specific Reporting Limit
U: Not detected
J: value greater than the ssRL but less than the PQL (3xssRL)
Trace detection: If analyte detected below ssRL then < ssRL will be shown

075RL-4.D
EW

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Lab ID: 075RL-5
Collected: 12/7/20
Received: 12/11/20
Matrix: Product

Project: Chelan Chevron Site
Client ID: MW-44-201207

Project #: 334893.TM.1.000.00.00.000
Collected by:
Analyzed: 2/9/2021
Q Method: GC/ECD

Constituents	ssRL mg/kg	PQL mg/kg	Result mg/kg	Blank mg/L
Ethylene Dibromide	0.7	2.0	7.5	<0.1
Tetramethyl Lead	6.5	19.5	U	<1.0
Trimethylethyl Lead	6.5	19.5	U	<1.0
Dimethyldiethyl Lead	6.5	19.5	U	<1.0
Methyltriethyl Lead	6.5	19.5	U	<1.0
Tetraethyl Lead	6.5	19.5	263.7	<1.0
Methylcyclopentadienyl Manganese Tricarbonyl	0.7	2.0	U	<1.0

ssRL - Sample Specific Reporting Limit
U: Not detected
J: value greater than the ssRL but less than the PQL (3xssRL)
Trace detection: If analyte detected below ssRL then < ssRL will be shown

075RL-5.D
EW

Russ Shropshire
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Lab ID: 075RL-6
Collected: 12/7/20
Received: 12/11/20
Matrix: Product

Project: Chelan Chevron Site
Client ID: MW-19-201207

Project #: 334893.TM.1.000.00.00.000
Analyzed: 1/29/2021
Collected by:
Q Method: GC/ECD

Constituents	ssRL mg/kg	PQL mg/kg	Result mg/kg	Blank mg/L
Ethylene Dibromide	0.6	1.8	U	<0.1
Tetramethyl Lead	6.0	18.1	U	<1.0
Trimethylethyl Lead	6.0	18.1	U	<1.0
Dimethyldiethyl Lead	6.0	18.1	U	<1.0
Methyltriethyl Lead	6.0	18.1	U	<1.0
Tetraethyl Lead	6.0	18.1	30.1	<1.0
Methylcyclopentadienyl Manganese Tricarbonyl	0.6	1.8	U	<1.0

ssRL - Sample Specific Reporting Limit
U: Not detected
J: value greater than the ssRL but less than the PQL (3xssRL)
Trace detection: If analyte detected below ssRL then < ssRL will be shown

075RL-6.D
EW

Russ Shropshire
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Lab ID: 075RL-7
Collected: 12/7/20
Received: 12/11/20
Matrix: Product

Project: Chelan Chevron Site
Client ID: MW-16-201207

Project #: 334893.TM.1.000.00.00.000
Analyzed: 1/29/2021
Collected by:
Q Method: GC/ECD

Constituents	ssRL mg/kg	PQL mg/kg	Result mg/kg	Blank mg/L
Ethylene Dibromide	0.7	2.0	U	<0.1
Tetramethyl Lead	6.8	20.3	U	<1.0
Trimethylethyl Lead	6.8	20.3	U	<1.0
Dimethyldiethyl Lead	6.8	20.3	15.7 J	<1.0
Methyltriethyl Lead	6.8	20.3	29.4	<1.0
Tetraethyl Lead	6.8	20.3	739.0	<1.0
Methylcyclopentadienyl Manganese Tricarbonyl	0.7	2.0	U	<1.0

ssRL - Sample Specific Reporting Limit
U: Not detected
J: value greater than the ssRL but less than the PQL (3xssRL)
Trace detection: If analyte detected below ssRL then < ssRL will be shown

075RL-7.D
EW

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Lab ID: 075RL-8
Collected: 12/8/20
Received: 12/11/20
Matrix: Product

Project: Chelan Chevron Site
Client ID: MW-21-201208

Project #: 334893.TM.1.000.00.00.000
Analyzed: 1/29/2021
Collected by:
Q Method: GC/ECD

Constituents	ssRL mg/kg	PQL mg/kg	Result mg/kg	Blank mg/L
Ethylene Dibromide	0.7	2.0	1.8 J	<0.1
Tetramethyl Lead	6.7	20.1	U	<1.0
Trimethylethyl Lead	6.7	20.1	U	<1.0
Dimethyldiethyl Lead	6.7	20.1	U	<1.0
Methyltriethyl Lead	6.7	20.1	< 6.7	<1.0
Tetraethyl Lead	6.7	20.1	158.4	<1.0
Methylcyclopentadienyl Manganese Tricarbonyl	0.7	2.0	U	<1.0

ssRL - Sample Specific Reporting Limit
U: Not detected
J: value greater than the ssRL but less than the PQL (3xssRL)
Trace detection: If analyte detected below ssRL then < ssRL will be shown

075RL-8.D
EW

Russ Shropshire
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Lab ID: 075RL-9
Collected: 12/8/20
Received: 12/11/20
Matrix: Product

Project: Chelan Chevron Site
Client ID: MW-27-201208

Project #: 334893.TM.1.000.00.00.000
Collected by:
Analyzed: 1/29/2021
Q Method: GC/ECD

Constituents	ssRL mg/kg	PQL mg/kg	Result mg/kg	Blank mg/L
Ethylene Dibromide	0.6	1.7	U	<0.1
Tetramethyl Lead	5.8	17.3	U	<1.0
Trimethylethyl Lead	5.8	17.3	U	<1.0
Dimethyldiethyl Lead	5.8	17.3	U	<1.0
Methyltriethyl Lead	5.8	17.3	U	<1.0
Tetraethyl Lead	5.8	17.3	U	<1.0
Methylcyclopentadienyl Manganese Tricarbonyl	0.6	1.7	U	<1.0

ssRL - Sample Specific Reporting Limit
U: Not detected
J: value greater than the ssRL but less than the PQL (3xssRL)
Trace detection: If analyte detected below ssRL then < ssRL will be shown

075RL-9.D
EW

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Lab ID: 075RL-10
Collected: 11/7/20220
Received: 12/11/20
Matrix: Product

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Client ID: 22IE Woodin UST-1
Analyzed: 2/1/2021
Q Method: GC/ECD

Constituents	ssRL mg/kg	PQL mg/kg	Result mg/kg	Blank mg/L
Ethylene Dibromide	0.6	1.9	U	<0.1
Tetramethyl Lead	6.3	19.0	U	<1.0
Trimethylethyl Lead	6.3	19.0	22.1	<1.0
Dimethyldiethyl Lead	6.3	19.0	52.5	<1.0
Methyltriethyl Lead	6.3	19.0	U	<1.0
Tetraethyl Lead	6.3	19.0	12.2 J	<1.0
Methylcyclopentadienyl Manganese Tricarbonyl	0.6	1.9	15.6	<1.0

ssRL - Sample Specific Reporting Limit
U: Not detected
J: value greater than the ssRL but less than the PQL (3xssRL)
Trace detection: If analyte detected below ssRL then < ssRL will be shown

075RL-10.D
EW

QUALITY ASSURANCE REPORT

Russ Shropshire
Leidos, Inc
18939 120th Avenue, Suite 112
Bothell, WA 98011

Project # **334893.TM.1.000.00.00.000**
Analyzed: **2/1/2021**
Method: **GC/ECD**

QA DATA FOR EDB, TEL and MMT

ANALYTES	RRFD	RRF	RPD	ACCEPTANCE LIMIT %
Ethylene Dibromide	0.065	0.063	3.39	±15
Tetraethyl Lead	0.004	0.004	0.00	±15
MMT	0.024	0.027	11.02	±15

RRF = Mean relative response factor from 6 point calibration
RRFD= Daily calibration standard relative response factor
RPD = Relative Percent Difference
QUANTORGPB07232020.M

075RL-10.D
EW

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SITE LOGIC Report

C3-C12 PIANO

Contact: Russ Shropshire
Phone: 425-482-3323
Address: Leidos, Inc.
18939 120th Avenue NE, Suite 112,
Bothell, WA 98011
Email: russell.s.shropshire@leidos.com

MI Identifier: 075RL **Report Date:** December 21, 2020

Project: Chelan Chevron Site, #334893.TM.1.000.00.00.000

Comments:

Russ Shropshire
Leidos, Inc.
18939 120th Avenue NE, Suite 112,
Bothell, WA, 98011

Lab ID: 075RL-1
Collected: 12/6/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-10-201206

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/15/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Isopentane (2-Methylbutane)	I	IP	199.6	1465.9	D
1-Pentene	O	1P	99.8	99.8	U
2-Methyl-1-butene	O	2M1B	99.8	119.0	
Pentane (nC5)	P	C5	199.6	1672.2	D
trans-2-pentene	O	T2P	99.8	99.8	U
cis-2-pentene	O	C2P	99.8	1514.1	
2-Methyl-2-butene (t)	O	2M2B	99.8	1383.7	
t-Butanol (TBA)	ADD	TBA	99.8	99.8	U
2,2-Dimethylbutane (t)	I	22DMB	99.8	568.6	
Cyclopentane	N	CYP	99.8	99.8	U
2,3-Dimethylbutane	I	23DMB	199.6	1927.1	D
2-Methylpentane	I	2MP	199.6	8488.5	D
Methyl-tert-butyl ether (MTBE)	ADD	MTBE	74.9	74.9	U
3-Methylpentane	I	3MP	199.6	10288.3	D
1-Hexene	O	1HX	199.6	992.4	D
Hexane (nC6)	P	C6	199.6	12320.2	D
Di-isopropyl ether (DIPE)	ADD	DIPE	74.9	74.9	U
trans-2-hexene (t)	O	T2HE	99.8	4008.2	
2-Methyl-2-pentene (t)	O	2M2P	199.6	331.1	D
cis-2-hexene (t)	O	C2HE	199.6	666.3	D
cis-3-Methyl-2-pentene (t)	O	C3M2P	199.6	253.7	D
Ethyl-tert-butyl ether (ETBE)	ADD	ETBE	74.9	74.9	U
2,2-Dimethylpentane (t)	I	22DMP	199.6	902.5	D
Methylcyclopentane	N	MCYP	199.6	14194.6	D
2,4-Dimethylpentane	I	24DMP	199.6	14027.5	D
1,2-Dichloroethane (EDC)	ADD	EDC	74.9	74.9	U
Benzene	A	B	99.8	1142.1	
3,3-Dimethylpentane (t)	I	33DMP	199.6	2254.1	D
Thiophene	S	THIO	74.9	74.9	U
Cyclohexane	N	CYH	199.6	4896.2	D
2-Methylhexane	I	2MH	199.6	22139.7	D
2,3-Dimethylpentane	I	23DMP	199.6	20599.4	D

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Lab ID: 075RL-1
Collected: 12/6/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-10-201206

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/15/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Tert-amyl methyl ether (TAME)	ADD	TAME	74.9	74.9	U
3-Methylhexane	I	3MH	199.6	26856.8	D
trans-1,3-Dimethylcyclopentane (t)	N	T13DMCYP	199.6	4938.4	D
cis-1,3-Dimethylcyclopentane (t)	N	C13DMCYP	199.6	1689.0	D
trans-1,2-Dimethylcyclopentane (t)	N	T12DMCYP	199.6	6416.7	D
2,2,4-Trimethylpentane (isooctane)	I	224TMP	598.9	36250.2	D
1-Heptene	O	1HP	199.6	21200.5	D
Heptane (nC7)	P	C7	199.6	51025.0	D
trans-2-heptene (t)	O	T2HP	99.8	7361.0	
Methylcyclohexane	N	MCYH	199.6	16685.1	D
2,5-Dimethylhexane	I	25DMH	598.9	9068.1	D
2,2,3-Trimethylpentane	I	233TMP	99.8	99.8	U
2,4-Dimethylhexane	I	24DMH	199.6	15433.7	D
2,3,4-Trimethylpentane	I	234TMP	199.6	21298.2	D
2,3,3-Trimethylpentane	I	233TMP	199.6	14126.4	D
Toluene	A	T	99.8	99.8	U
2-Methylthiophene	S	2MTHIO	74.9	74.9	U
2,3-Dimethylhexane	I	23DMH	199.6	17131.4	D
3-Methylthiophene	S	3MTHIO	74.9	74.9	U
2-Methylheptane	I	2MHP	199.6	52626.5	D
4-Methylheptane (t)	I	4MHP	199.6	16947.1	D
3-Methylheptane	I	3MHP	399.2	46759.8	D
3-Ethylhexane	I	3EHX	199.6	199.6	U
1,2-Dibromoethane (EDB)	ADD	EDB	99.8	99.8	U
1-Octene	O	1O	99.8	99.8	U
Octane (nC8)	P	C8	199.6	49929.6	D
2,4-Dimethylheptane (t)	I	24DMHP	199.6	23140.5	D
2,5-Dimethylheptane (t)	I	25DMHP	199.6	28151.9	D
Ethylbenzene	A	EB	199.6	2338.5	D
2-Ethylthiophene	S	2ETHIO	74.9	74.9	U
2,3-Dimethylheptane (t)	I	23DMHP	199.6	53978.0	D
m-Xylene	A	MX	99.8	99.8	U

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Lab ID: 075RL-1
Collected: 12/6/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-10-201206

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/15/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
p-Xylene	A	PX	199.6	729.8	D
4-Methyloctane (t)	I	4MO	199.6	21559.9	D
2-Methyloctane (t)	I	2MO	199.6	25221.0	D
3-Methyloctane (t)	I	3MO	199.6	63184.8	D
Styrene	A	STRE	99.8	99.8	U
o-Xylene	A	OX	99.8	99.8	U
1-Nonene	O	1N	299.4	299.4	U
Nonane (nC9)	P	C9	399.2	32591.9	D
Isopropylbenzene (cumene)	A	IPROPB	99.8	99.8	U
n-Propylbenzene	A	NPRPPB	199.6	3526.5	D
1-Methyl-3-ethylbenzene	A	1M3EB	199.6	327.9	D
1-Methyl-4-ethylbenzene	A	1M4EB	199.6	1940.7	D
1,3,5-Trimethylbenzene (mesitylene)	A	135TMB	199.6	4109.3	D
1-Methyl-2-ethylbenzene	A	1M2EB	199.6	3988.7	D
1,2,4-Trimethylbenzene	A	124TMB	199.6	5961.1	D
1-Decene	O	1D	598.9	7658.0	D
Decane (nC10)	P	C10	598.9	15887.7	D
sec-Butylbenzene	A	SBUB	99.8	4827.6	
1-Methyl-3-isopropylbenzene (m-cymene)	A	1M3IPROPB	199.6	1141.5	D
1-Methyl-4-isopropylbenzene (p-cymene)	A	1M4IPROPB	199.6	578.4	D
Indane	A	IA	199.6	682.6	D
Indene	A	IE	99.8	99.8	U
1-Methyl-2-isopropybenzene (o-cymene)	A	1M2IPROPB	99.8	726.8	
1-Methyl-3-propylbenzene	A	1M3PROPB	199.6	6393.1	D
1-Methyl-4-propylbenzene	A	1M4PROPB	199.6	3721.4	D
n-Butylbenzene	A	NBB	199.6	2816.5	D
1,3-Dimethyl-5-ethylbenzene	A	13DM5EB	199.6	6377.8	D
1,2,diethylbenzene	A	12DEB	199.6	625.4	D
1-Methyl-2-propylbenzene	A	1M2PROPB	199.6	2749.0	D
1,4-Dimethyl-2-ethylbenzene	A	14DM2EB	199.6	4090.3	D
1,3-Dimethyl-4-ethylbenzene	A	13DM4EB	199.6	3045.4	D
1,2-Dimethyl-4-ethylbenzene	A	12DM4EB	199.6	7143.7	D

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Lab ID: 075RL-1
Collected: 12/6/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-10-201206

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/15/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
1,3-Dimethyl-2-ethylbenzene	A	13DM2EB	99.8	99.8	U
1,2-Dimethyl-3-ethylbenzene	A	12DM3EB	199.6	815.0	D
Undecane (nC11)	P	C11	598.9	3893.5	D
1,2,4,5-Tetramethylbenzene	A	1245TMB	199.6	4591.0	D
1,2,3,5-Tetramethylbenzene (t)	A	1235TMB	199.6	4347.0	D
n-Pentylbenzene	A	NPYB	199.6	1186.9	D
Naphthalene	A	N	199.6	435.7	D
Benzothiophene	S	BTHIO	74.9	74.9	U
Dodecane (nC12)	P	C12	399.2	1841.6	D
1,2,3,4-Tetramethylbenzene (t)	A	1234TMB	199.6	2085.4	D
MMT	ADD	MMT	74.9	74.9	U
2-Methylnaphthalene	A	2MN	99.8	215.7	
1-Methylnaphthalene	A	1MN	99.8	99.8	U

Benzene d-6 (RS)	115.74	%
Toluene-d8 (RS)	94.96	%
Ethylbenzene d10 (RS)	121.62	%

ssRL - Sample Specific Reporting Limit
Results listed as U would have been reported if present at or above the listed ssRL
J - Values greater than the ssRL but less than the PQL (3 x ssRL).
D - Secondary dilution perfomed
Q - Surrogate recovery limit exceedance
I - Matrix Interference
NC - Not calibrated
Note: Extracted by EPA 5030 (Purge and Trap).

US631

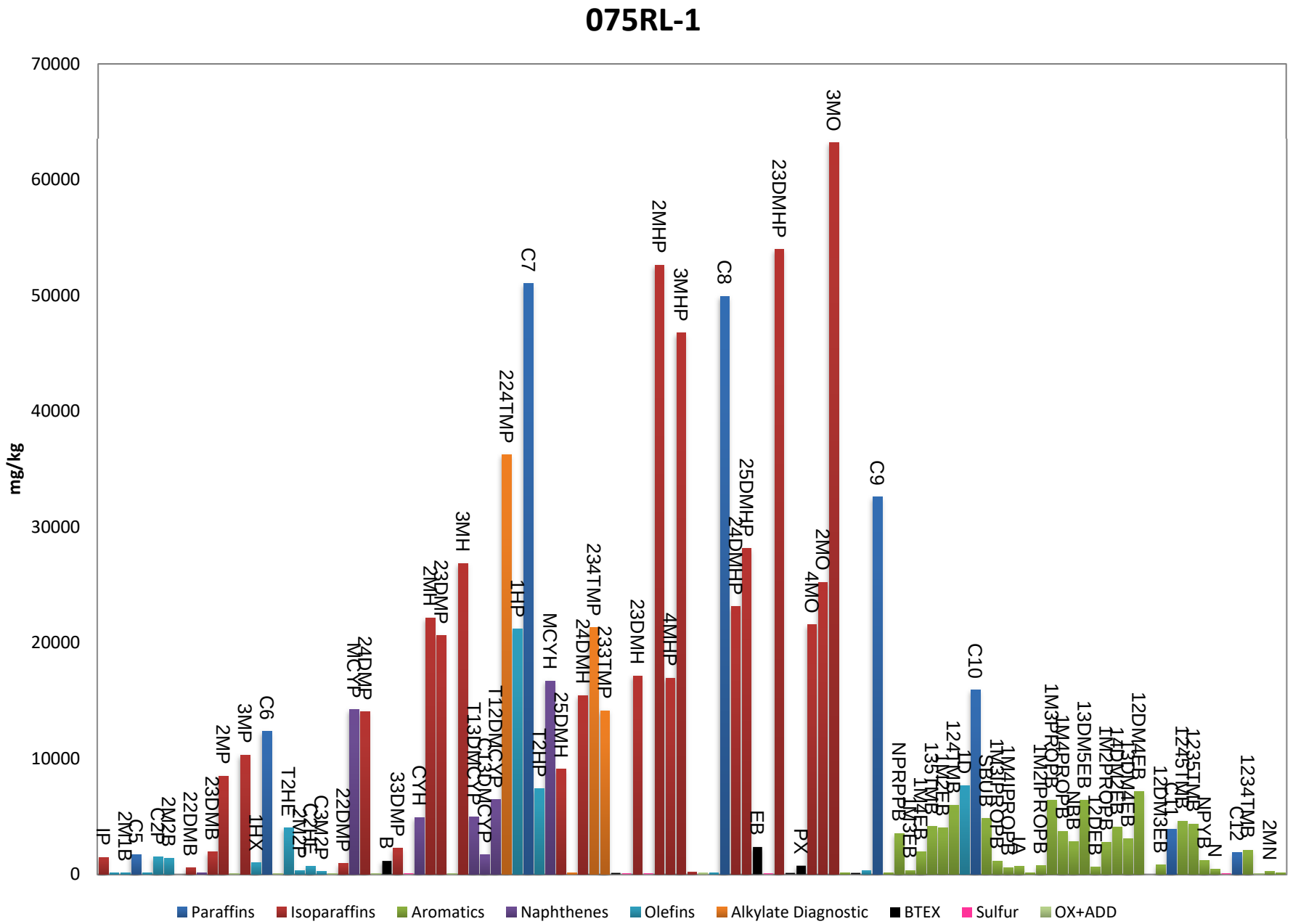
075RL-1 1000X.D & dilution 075RL-1 2000X.D

Submitted by,
Microbial Insights, Inc.

MI ID	075RL-1
Sample ID	**MW-10-201206**
Evaporation	
n-Pentane / (n-Pentane+n-Heptane)	0.03
2-Methylpentane / (2-Methylpentane+2-Methylheptane)	0.14
Waterwashing	
Benzene / (Benzene+Cyclohexane)	0.19
Toluene / (Toluene+Methylcyclohexane)	
Aromatics / Total Paraffins (n+iso+cyc)	0.11
Aromatics / Naphthenes	1.69
wt% < o-xylene	84.42
Biodegradation	
(C4-C8 Para +Isopara) / C4-C8 Olefins	17.69
3-Methylhexane / n-Heptane	0.53
Methylcyclohexane / n-Heptane	0.33
Isoparaffins + Naphthenes / Paraffins	3.57
Diagnostic Ratios (Refining Properties)	
2,2,4-Trimethylpentane / (2,2,4-Trimethylpentane+Methylcyclohexane)	0.7
2,2,4-Trimethylpentane / Total TMPs	0.51
nC9 / Isopropylbenzene	
nC10 / 1-Methyl-2-ethylbenzene	3.98
nC11 / 1,4-Dimethyl-2-ethylbenzene	0.95
iC5 / (iC5+nC5)	0.47
(2-methylhexane + 2,3dimethylpentane) / (3-methylhexane + 2,4 dimethylpentane)	1.05
Naphthalene / (Naphthalene+nC12)	0.19
Methylcyclohexane/(Methylcyclohexane+Toluene)	
Toluene/n-Octane	
Oxygenates & Other (mg/kg)	
Methyl-tert-butyl ether (MTBE)	U
Di-isopropyl ether (DIPE)	U
Ethyl-tert-butyl ether (ETBE)	U
Tert-amyl methyl ether (TAME)	U
MMT	U
Lead Scavengers (mg/kg)	
1,2-Dichloroethane (EDC)	U
1,2-Dibromoethane (EDB)	U
Sulfur containing HCs (mg/kg)	
Thiophene	U
2-Methylthiophene	U
3-Methylthiophene	U
2-Ethylthiophene	U
Benzothiophene	U
Relative Percentages	
% Paraffinic	18.8
% Isoparaffinic	61.6
% Aromatic	9.2
% Naphthenic	5.4
% Olefinic	5.1

Note: If field is blank a ratio was not calculable.

SAMPLE HISTOGRAM



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Lab ID: 075RL-2
Collected: 12/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-12-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/15/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Isopentane (2-Methylbutane)	I	IP	185.9	4233.2	D
1-Pentene	O	1P	93.0	93.0	U
2-Methyl-1-butene	O	2M1B	93.0	817.4	
Pentane (nC5)	P	C5	185.9	4830.7	D
trans-2-pentene	O	T2P	93.0	1259.3	
cis-2-pentene	O	C2P	185.9	546.6	D
2-Methyl-2-butene (t)	O	2M2B	185.9	2025.8	D
t-Butanol (TBA)	ADD	TBA	93.0	93.0	U
2,2-Dimethylbutane (t)	I	22DMB	185.9	218.0	D
Cyclopentane	N	CYP	93.0	3370.9	
2,3-Dimethylbutane	I	23DMB	185.9	2177.5	D
2-Methylpentane	I	2MP	185.9	9708.9	D
Methyl-tert-butyl ether (MTBE)	ADD	MTBE	69.7	69.7	U
3-Methylpentane	I	3MP	185.9	11471.7	D
1-Hexene	O	1HX	185.9	4147.6	D
Hexane (nC6)	P	C6	185.9	14162.5	D
Di-isopropyl ether (DIPE)	ADD	DIPE	69.7	69.7	U
trans-2-hexene (t)	O	T2HE	185.9	3477.2	D
2-Methyl-2-pentene (t)	O	2M2P	185.9	1816.0	D
cis-2-hexene (t)	O	C2HE	185.9	1820.2	D
cis-3-Methyl-2-pentene (t)	O	C3M2P	185.9	1327.2	D
Ethyl-tert-butyl ether (ETBE)	ADD	ETBE	69.7	69.7	U
2,2-Dimethylpentane (t)	I	22DMP	185.9	574.8	D
Methylcyclopentane	N	MCYP	185.9	24164.6	D
2,4-Dimethylpentane	I	24DMP	185.9	8812.0	D
1,2-Dichloroethane (EDC)	ADD	EDC	69.7	69.7	U
Benzene	A	B	185.9	607.8	D
3,3-Dimethylpentane (t)	I	33DMP	185.9	1420.4	D
Thiophene	S	THIO	69.7	69.7	U
Cyclohexane	N	CYH	93.0	1513.1	
2-Methylhexane	I	2MH	93.0	97018.0	
2,3-Dimethylpentane	I	23DMP	185.9	12268.3	D

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Lab ID: 075RL-2
Collected: 12/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-12-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/15/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Tert-amyl methyl ether (TAME)	ADD	TAME	69.7	69.7	U
3-Methylhexane	I	3MH	185.9	18924.9	D
trans-1,3-Dimethylcyclopentane (t)	N	T13DMCYP	185.9	5928.5	D
cis-1,3-Dimethylcyclopentane (t)	N	C13DMCYP	185.9	2058.1	D
trans-1,2-Dimethylcyclopentane (t)	N	T12DMCYP	185.9	7903.1	D
2,2,4-Trimethylpentane (isooctane)	I	224TMP	557.8	19581.8	D
1-Heptene	O	1HP	93.0	24698.9	
Heptane (nC7)	P	C7	185.9	42905.2	D
trans-2-heptene (t)	O	T2HP	185.9	3787.5	D
Methylcyclohexane	N	MCYH	185.9	21073.5	D
2,5-Dimethylhexane	I	25DMH	557.8	788.1	D
2,2,3-Trimethylpentane	I	233TMP	93.0	93.0	U
2,4-Dimethylhexane	I	24DMH	185.9	7491.7	D
2,3,4-Trimethylpentane	I	234TMP	185.9	11308.9	D
2,3,3-Trimethylpentane	I	233TMP	185.9	7975.9	D
Toluene	A	T	185.9	2671.7	D
2-Methylthiophene	S	2MTHIO	69.7	69.7	U
2,3-Dimethylhexane	I	23DMH	185.9	10159.7	D
3-Methylthiophene	S	3MTHIO	69.7	201.6	
2-Methylheptane	I	2MHP	185.9	37545.8	D
4-Methylheptane (t)	I	4MHP	185.9	9009.3	D
3-Methylheptane	I	3MHP	371.9	24213.0	D
3-Ethylhexane	I	3EHX	185.9	185.9	U
1,2-Dibromoethane (EDB)	ADD	EDB	93.0	93.0	U
1-Octene	O	1O	93.0	93.0	U
Octane (nC8)	P	C8	185.9	38854.1	D
2,4-Dimethylheptane (t)	I	24DMHP	185.9	12938.3	D
2,5-Dimethylheptane (t)	I	25DMHP	185.9	12308.0	D
Ethylbenzene	A	EB	185.9	6377.4	D
2-Ethylthiophene	S	2ETHIO	69.7	69.7	U
2,3-Dimethylheptane (t)	I	23DMHP	185.9	41188.9	D
m-Xylene	A	MX	185.9	11376.9	D

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Lab ID: 075RL-2
Collected: 12/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-12-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/15/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
p-Xylene	A	PX	185.9	7275.4	D
4-Methyloctane (t)	I	4MO	185.9	11769.4	D
2-Methyloctane (t)	I	2MO	185.9	11289.2	D
3-Methyloctane (t)	I	3MO	185.9	32010.9	D
Styrene	A	STRE	93.0	185.9	
o-Xylene	A	OX	185.9	5575.6	D
1-Nonene	O	1N	557.8	3463.6	D
Nonane (nC9)	P	C9	371.9	25881.7	D
Isopropylbenzene (cumene)	A	IPROPB	93.0	5742.0	
n-Propylbenzene	A	NPRPPB	185.9	4314.4	D
1-Methyl-3-ethylbenzene	A	1M3EB	185.9	11295.3	D
1-Methyl-4-ethylbenzene	A	1M4EB	185.9	6199.9	D
1,3,5-Trimethylbenzene (mesitylene)	A	135TMB	185.9	8329.8	D
1-Methyl-2-ethylbenzene	A	1M2EB	185.9	5141.9	D
1,2,4-Trimethylbenzene	A	124TMB	185.9	18880.2	D
1-Decene	O	1D	557.8	7437.1	D
Decane (nC10)	P	C10	557.8	13091.9	D
sec-Butylbenzene	A	SBUB	185.9	673.4	D
1-Methyl-3-isopropylbenzene (m-cymene)	A	1M3IPROPB	185.9	2113.4	D
1-Methyl-4-isopropylbenzene (p-cymene)	A	1M4IPROPB	185.9	787.8	D
Indane	A	IA	185.9	1974.6	D
Indene	A	IE	93.0	93.0	U
1-Methyl-2-isopropybenzene (o-cymene)	A	1M2IPROPB	93.0	570.7	
1-Methyl-3-propylbenzene	A	1M3PROPB	185.9	5767.6	D
1-Methyl-4-propylbenzene	A	1M4PROPB	185.9	3041.7	D
n-Butylbenzene	A	NBB	185.9	1972.2	D
1,3-Dimethyl-5-ethylbenzene	A	13DM5EB	185.9	5980.0	D
1,2,diethylbenzene	A	12DEB	185.9	488.5	D
1-Methyl-2-propylbenzene	A	1M2PROPB	185.9	1947.1	D
1,4-Dimethyl-2-ethylbenzene	A	14DM2EB	185.9	4114.6	D
1,3-Dimethyl-4-ethylbenzene	A	13DM4EB	185.9	3584.9	D
1,2-Dimethyl-4-ethylbenzene	A	12DM4EB	185.9	6326.4	D

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Leidos, Inc.
18939 120th Avenue NE, Suite 112,
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Lab ID: 075RL-2
Collected: 12/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-12-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/15/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
1,3-Dimethyl-2-ethylbenzene	A	13DM2EB	93.0	93.0	U
1,2-Dimethyl-3-ethylbenzene	A	12DM3EB	185.9	958.5	D
Undecane (nC11)	P	C11	557.8	3157.2	D
1,2,4,5-Tetramethylbenzene	A	1245TMB	185.9	4058.5	D
1,2,3,5-Tetramethylbenzene (t)	A	1235TMB	185.9	5458.9	D
n-Pentylbenzene	A	NPYB	185.9	1058.1	D
Naphthalene	A	N	185.9	749.3	D
Benzothiophene	S	BTHIO	69.7	69.7	U
Dodecane (nC12)	P	C12	371.9	1554.6	D
1,2,3,4-Tetramethylbenzene (t)	A	1234TMB	185.9	2227.4	D
MMT	ADD	MMT	69.7	69.7	U
2-Methylnaphthalene	A	2MN	93.0	93.0	U
1-Methylnaphthalene	A	1MN	93.0	581.9	

Benzene d-6 (RS)	122.04	%
Toluene-d8 (RS)	98.22	%
Ethylbenzene d10 (RS)	123.37	%

ssRL - Sample Specific Reporting Limit
Results listed as U would have been reported if present at or above the listed ssRL
J - Values greater than the ssRL but less than the PQL (3 x ssRL).
D - Secondary dilution perfomed
Q - Surrogate recovery limit exceedance
I - Matrix Interference
NC - Not calibrated
Note: Extracted by EPA 5030 (Purge and Trap).

US631

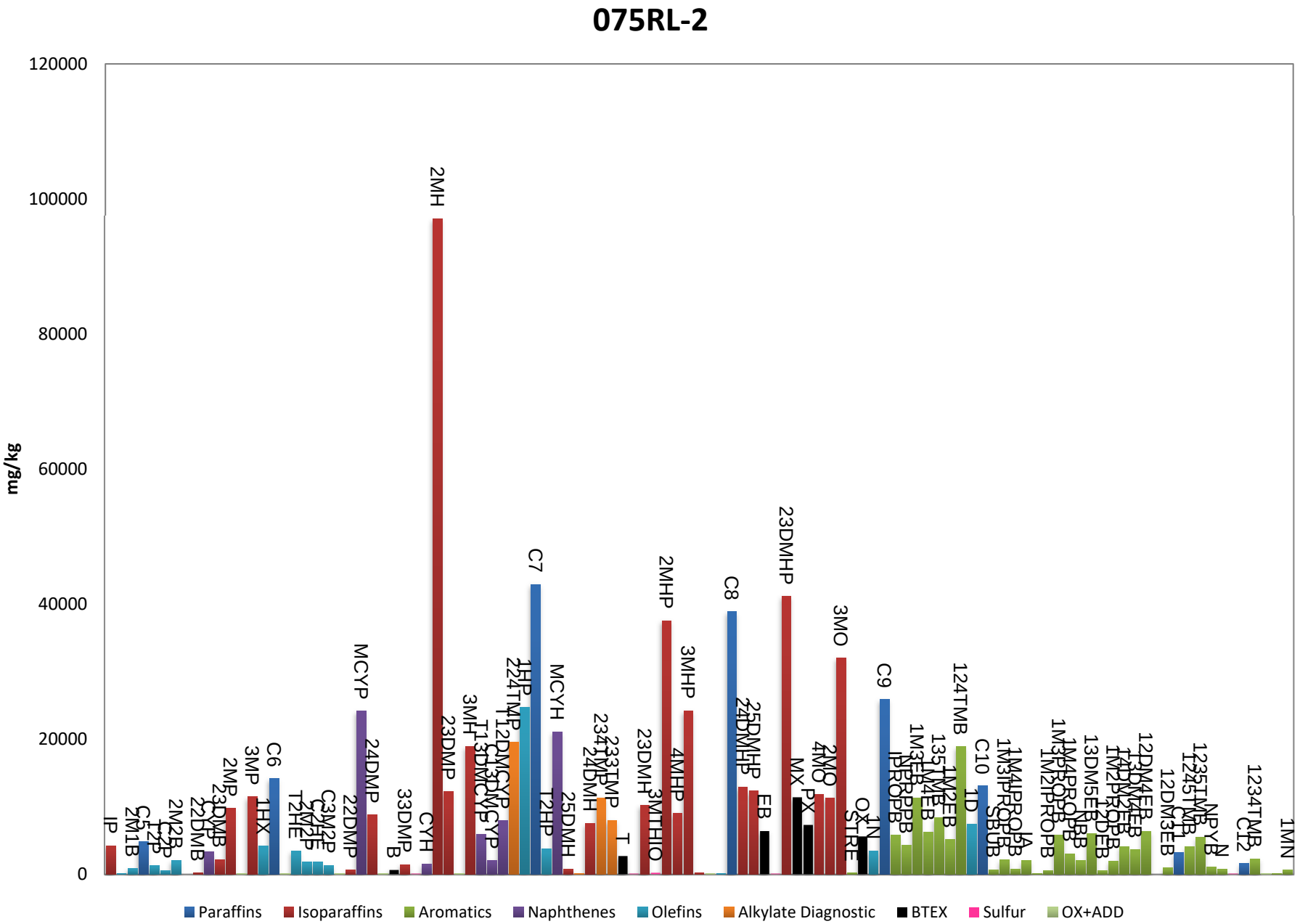
075RL-2 1000X.D & dilution 075RL-2 2000X.D

Submitted by,
Microbial Insights, Inc.

MI ID	075RL-2
Sample ID	**MW-12-201207**
Evaporation	
n-Pentane / (n-Pentane+n-Heptane)	0.10
2-Methylpentane / (2-Methylpentane+2-Methylheptane)	0.21
Waterwashing	
Benzene / (Benzene+Cyclohexane)	0.29
Toluene / (Toluene+Methylcyclohexane)	0.11
Aromatics / Total Paraffins (n+iso+cyc)	0.24
Aromatics / Naphthenes	2.25
wt% < o-xylene	79.03
Biodegradation	
(C4-C8 Para +Isopara) / C4-C8 Olefins	11.31
3-Methylhexane / n-Heptane	0.44
Methylcyclohexane / n-Heptane	0.49
Isoparaffins + Naphthenes / Paraffins	3.34
Diagnostic Ratios (Refining Properties)	
2,2,4-Trimethylpentane / (2,2,4-Trimethylpentane+Methylcyclohexane)	0.5
2,2,4-Trimethylpentane / Total TMPs	0.50
nC9 / Isopropylbenzene	4.51
nC10 / 1-Methyl-2-ethylbenzene	2.55
nC11 / 1,4-Dimethyl-2-ethylbenzene	0.77
iC5 / (iC5+nC5)	0.47
(2-methylhexane + 2,3dimethylpentane) / (3-methylhexane + 2,4 dimethylpentane)	3.94
Naphthalene / (Naphthalene+nC12)	0.33
Methylcyclohexane/(Methylcyclohexane+Toluene)	0.89
Toluene/n-Octane	0.07
Oxygenates & Other (mg/kg)	
Methyl-tert-butyl ether (MTBE)	U
Di-isopropyl ether (DIPE)	U
Ethyl-tert-butyl ether (ETBE)	U
Tert-amyl methyl ether (TAME)	U
MMT	U
Lead Scavengers (mg/kg)	
1,2-Dichloroethane (EDC)	U
1,2-Dibromoethane (EDB)	U
Sulfur containing HCs (mg/kg)	
Thiophene	U
2-Methylthiophene	U
3-Methylthiophene	201.6
2-Ethylthiophene	U
Benzothiophene	U
Relative Percentages	
% Paraffinic	17.4
% Isoparaffinic	50.1
% Aromatic	17.8
% Naphthenic	7.9
% Olefinic	6.8

Note: If field is blank a ratio was not calculable.

SAMPLE HISTOGRAM



Russ Shropshire
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18939 120th Avenue NE, Suite 112,
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Lab ID: 075RL-3
Collected: 12/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: RW-2-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/15/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Isopentane (2-Methylbutane)	I	IP	190.7	4475.0	D
1-Pentene	O	1P	95.4	95.4	U
2-Methyl-1-butene	O	2M1B	95.4	180.9	
Pentane (nC5)	P	C5	190.7	3387.5	D
trans-2-pentene	O	T2P	95.4	539.9	
cis-2-pentene	O	C2P	95.4	2217.8	
2-Methyl-2-butene (t)	O	2M2B	95.4	192.6	
t-Butanol (TBA)	ADD	TBA	95.4	95.4	U
2,2-Dimethylbutane (t)	I	22DMB	190.7	311.6	D
Cyclopentane	N	CYP	95.4	95.4	U
2,3-Dimethylbutane	I	23DMB	190.7	2999.0	D
2-Methylpentane	I	2MP	190.7	11063.8	D
Methyl-tert-butyl ether (MTBE)	ADD	MTBE	71.5	71.5	U
3-Methylpentane	I	3MP	190.7	12882.3	D
1-Hexene	O	1HX	95.4	95.4	U
Hexane (nC6)	P	C6	190.7	12021.2	D
Di-isopropyl ether (DIPE)	ADD	DIPE	71.5	71.5	U
trans-2-hexene (t)	O	T2HE	190.7	2177.8	D
2-Methyl-2-pentene (t)	O	2M2P	95.4	1259.7	
cis-2-hexene (t)	O	C2HE	190.7	1259.9	D
cis-3-Methyl-2-pentene (t)	O	C3M2P	190.7	430.7	D
Ethyl-tert-butyl ether (ETBE)	ADD	ETBE	71.5	71.5	U
2,2-Dimethylpentane (t)	I	22DMP	190.7	835.1	D
Methylcyclopentane	N	MCYP	190.7	19531.8	D
2,4-Dimethylpentane	I	24DMP	190.7	17002.3	D
1,2-Dichloroethane (EDC)	ADD	EDC	71.5	71.5	U
Benzene	A	B	95.4	879.6	
3,3-Dimethylpentane (t)	I	33DMP	190.7	2138.5	D
Thiophene	S	THIO	71.5	71.5	U
Cyclohexane	N	CYH	95.4	896.6	
2-Methylhexane	I	2MH	95.4	74927.3	
2,3-Dimethylpentane	I	23DMP	190.7	24117.8	D

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Lab ID: 075RL-3
Collected: 12/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: RW-2-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/15/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Tert-amyl methyl ether (TAME)	ADD	TAME	71.5	71.5	U
3-Methylhexane	I	3MH	190.7	20378.2	D
trans-1,3-Dimethylcyclopentane (t)	N	T13DMCYP	190.7	3713.8	D
cis-1,3-Dimethylcyclopentane (t)	N	C13DMCYP	190.7	1221.8	D
trans-1,2-Dimethylcyclopentane (t)	N	T12DMCYP	190.7	3820.8	D
2,2,4-Trimethylpentane (isooctane)	I	224TMP	572.2	42687.1	D
1-Heptene	O	1HP	190.7	13107.4	D
Heptane (nC7)	P	C7	190.7	26908.2	D
trans-2-heptene (t)	O	T2HP	190.7	2383.9	D
Methylcyclohexane	N	MCYH	190.7	11841.7	D
2,5-Dimethylhexane	I	25DMH	572.2	6268.8	D
2,2,3-Trimethylpentane	I	233TMP	190.7	1333.9	D
2,4-Dimethylhexane	I	24DMH	190.7	11173.4	D
2,3,4-Trimethylpentane	I	234TMP	190.7	23467.3	D
2,3,3-Trimethylpentane	I	233TMP	190.7	14580.7	D
Toluene	A	T	95.4	252.7	
2-Methylthiophene	S	2MTHIO	71.5	71.5	U
2,3-Dimethylhexane	I	23DMH	190.7	12786.1	D
3-Methylthiophene	S	3MTHIO	71.5	71.5	U
2-Methylheptane	I	2MHP	190.7	22232.2	D
4-Methylheptane (t)	I	4MHP	190.7	7364.2	D
3-Methylheptane	I	3MHP	381.5	22621.1	D
3-Ethylhexane	I	3EHX	190.7	190.7	U
1,2-Dibromoethane (EDB)	ADD	EDB	95.4	95.4	U
1-Octene	O	1O	95.4	95.4	U
Octane (nC8)	P	C8	190.7	25967.0	D
2,4-Dimethylheptane (t)	I	24DMHP	190.7	10455.7	D
2,5-Dimethylheptane (t)	I	25DMHP	190.7	11302.7	D
Ethylbenzene	A	EB	190.7	786.3	D
2-Ethylthiophene	S	2ETHIO	71.5	71.5	U
2,3-Dimethylheptane (t)	I	23DMHP	190.7	20148.0	D
m-Xylene	A	MX	95.4	2354.9	

Russ Shropshire
Leidos, Inc.
18939 120th Avenue NE, Suite 112,
Bothell, WA, 98011

Lab ID: 075RL-3
Collected: 12/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: RW-2-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/15/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
p-Xylene	A	PX	190.7	10771.4	D
4-Methyloctane (t)	I	4MO	190.7	12357.1	D
2-Methyloctane (t)	I	2MO	190.7	11041.7	D
3-Methyloctane (t)	I	3MO	190.7	25583.6	D
Styrene	A	STRE	95.4	95.4	U
o-Xylene	A	OX	190.7	296.4	D
1-Nonene	O	1N	572.2	1686.6	D
Nonane (nC9)	P	C9	381.5	21229.0	D
Isopropylbenzene (cumene)	A	IPROPB	190.7	1869.1	D
n-Propylbenzene	A	NPRPPB	190.7	5898.1	D
1-Methyl-3-ethylbenzene	A	1M3EB	190.7	9740.7	D
1-Methyl-4-ethylbenzene	A	1M4EB	190.7	7139.5	D
1,3,5-Trimethylbenzene (mesitylene)	A	135TMB	190.7	11401.0	D
1-Methyl-2-ethylbenzene	A	1M2EB	190.7	7491.3	D
1,2,4-Trimethylbenzene	A	124TMB	95.4	95.4	U
1-Decene	O	1D	572.2	5619.4	D
Decane (nC10)	P	C10	572.2	11992.9	D
sec-Butylbenzene	A	SBUB	95.4	95.4	U
1-Methyl-3-isopropylbenzene (m-cymene)	A	1M3IPROPB	190.7	3030.2	D
1-Methyl-4-isopropylbenzene (p-cymene)	A	1M4IPROPB	190.7	791.8	D
Indane	A	IA	190.7	332.5	D
Indene	A	IE	95.4	95.4	U
1-Methyl-2-isopropybenzene (o-cymene)	A	1M2IPROPB	95.4	656.9	
1-Methyl-3-propylbenzene	A	1M3PROPB	190.7	9252.7	D
1-Methyl-4-propylbenzene	A	1M4PROPB	190.7	4659.7	D
n-Butylbenzene	A	NBB	190.7	3265.9	D
1,3-Dimethyl-5-ethylbenzene	A	13DM5EB	190.7	8741.6	D
1,2,diethylbenzene	A	12DEB	190.7	668.2	D
1-Methyl-2-propylbenzene	A	1M2PROPB	190.7	3093.3	D
1,4-Dimethyl-2-ethylbenzene	A	14DM2EB	190.7	6158.1	D
1,3-Dimethyl-4-ethylbenzene	A	13DM4EB	190.7	5115.1	D
1,2-Dimethyl-4-ethylbenzene	A	12DM4EB	190.7	8486.0	D

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Leidos, Inc.
18939 120th Avenue NE, Suite 112,
Bothell, WA, 98011

Lab ID: 075RL-3
Collected: 12/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: RW-2-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/15/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
1,3-Dimethyl-2-ethylbenzene	A	13DM2EB	95.4	95.4	U
1,2-Dimethyl-3-ethylbenzene	A	12DM3EB	190.7	1343.0	D
Undecane (nC11)	P	C11	572.2	2793.8	D
1,2,4,5-Tetramethylbenzene	A	1245TMB	190.7	5584.4	D
1,2,3,5-Tetramethylbenzene (t)	A	1235TMB	190.7	7155.1	D
n-Pentylbenzene	A	NPYB	190.7	966.9	D
Naphthalene	A	N	190.7	792.1	D
Benzothiophene	S	BTHIO	71.5	71.5	U
Dodecane (nC12)	P	C12	381.5	1353.4	D
1,2,3,4-Tetramethylbenzene (t)	A	1234TMB	190.7	2504.1	D
MMT	ADD	MMT	71.5	71.5	U
2-Methylnaphthalene	A	2MN	95.4	201.7	
1-Methylnaphthalene	A	1MN	95.4	95.4	U

Benzene d-6 (RS)	122.73	%
Toluene-d8 (RS)	98.12	%
Ethylbenzene d10 (RS)	125.09	%

ssRL - Sample Specific Reporting Limit
Results listed as U would have been reported if present at or above the listed ssRL
J - Values greater than the ssRL but less than the PQL (3 x ssRL).
D - Secondary dilution perfomed
Q - Surrogate recovery limit exceedance
I - Matrix Interference
NC - Not calibrated
Note: Extracted by EPA 5030 (Purge and Trap).

US631

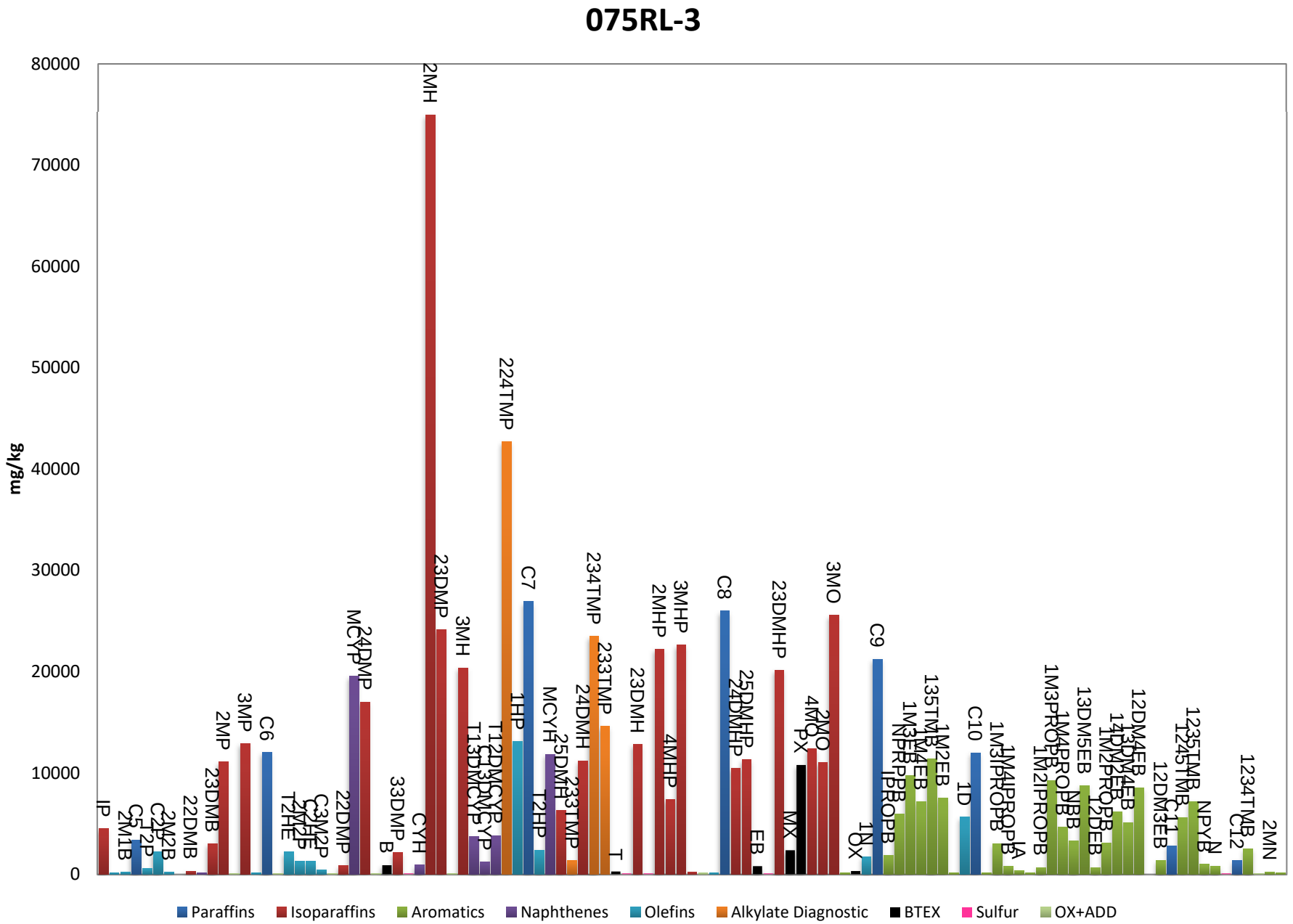
075RL-3 1000X.D & dilution 075RL-3 2000X.D

Submitted by,
Microbial Insights, Inc.

MI ID	075RL-3
Sample ID	**RW-2-201207**
Evaporation	
n-Pentane / (n-Pentane+n-Heptane)	0.11
2-Methylpentane / (2-Methylpentane+2-Methylheptane)	0.33
Waterwashing	
Benzene / (Benzene+Cyclohexane)	0.50
Toluene / (Toluene+Methylcyclohexane)	0.02
Aromatics / Total Paraffins (n+iso+cyc)	0.23
Aromatics / Naphthenes	3.21
wt% < o-xylene	78.08
Biodegradation	
(C4-C8 Para +Isopara) / C4-C8 Olefins	20.83
3-Methylhexane / n-Heptane	0.76
Methylcyclohexane / n-Heptane	0.44
Isoparaffins + Naphthenes / Paraffins	4.43
Diagnostic Ratios (Refining Properties)	
2,2,4-Trimethylpentane / (2,2,4-Trimethylpentane+Methylcyclohexane)	0.8
2,2,4-Trimethylpentane / Total TMPs	0.52
nC9 / Isopropylbenzene	11.36
nC10 / 1-Methyl-2-ethylbenzene	1.60
nC11 / 1,4-Dimethyl-2-ethylbenzene	0.45
iC5 / (iC5+nC5)	0.57
(2-methylhexane + 2,3dimethylpentane) / (3-methylhexane + 2,4 dimethylpentane)	2.65
Naphthalene / (Naphthalene+nC12)	0.37
Methylcyclohexane/(Methylcyclohexane+Toluene)	0.98
Toluene/n-Octane	0.01
Oxygenates & Other (mg/kg)	
Methyl-tert-butyl ether (MTBE)	U
Di-isopropyl ether (DIPE)	U
Ethyl-tert-butyl ether (ETBE)	U
Tert-amyl methyl ether (TAME)	U
MMT	U
Lead Scavengers (mg/kg)	
1,2-Dichloroethane (EDC)	U
1,2-Dibromoethane (EDB)	U
Sulfur containing HCs (mg/kg)	
Thiophene	U
2-Methylthiophene	U
3-Methylthiophene	U
2-Ethylthiophene	U
Benzothiophene	U
Relative Percentages	
% Paraffinic	14.4
% Isoparaffinic	58.0
% Aromatic	17.9
% Naphthenic	5.6
% Olefinic	4.2

Note: If field is blank a ratio was not calculable.

SAMPLE HISTOGRAM



Russ Shropshire
Leidos, Inc.
18939 120th Avenue NE, Suite 112,
Bothell, WA, 98011

Lab ID: 075RL-4
Collected: 12/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-9-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Isopentane (2-Methylbutane)	I	IP	193.6	2438.7	D
1-Pentene	O	1P	96.8	96.8	U
2-Methyl-1-butene	O	2M1B	96.8	394.4	
Pentane (nC5)	P	C5	193.6	2096.4	D
trans-2-pentene	O	T2P	96.8	243.7	
cis-2-pentene	O	C2P	96.8	929.8	
2-Methyl-2-butene (t)	O	2M2B	96.8	880.9	
t-Butanol (TBA)	ADD	TBA	96.8	96.8	U
2,2-Dimethylbutane (t)	I	22DMB	96.8	1090.8	
Cyclopentane	N	CYP	96.8	96.8	U
2,3-Dimethylbutane	I	23DMB	193.6	1644.2	D
2-Methylpentane	I	2MP	193.6	6582.1	D
Methyl-tert-butyl ether (MTBE)	ADD	MTBE	72.6	72.6	U
3-Methylpentane	I	3MP	193.6	7783.1	D
1-Hexene	O	1HX	96.8	96.8	U
Hexane (nC6)	P	C6	193.6	8069.9	D
Di-isopropyl ether (DIPE)	ADD	DIPE	72.6	72.6	U
trans-2-hexene (t)	O	T2HE	193.6	1422.8	D
2-Methyl-2-pentene (t)	O	2M2P	193.6	373.1	D
cis-2-hexene (t)	O	C2HE	193.6	802.4	D
cis-3-Methyl-2-pentene (t)	O	C3M2P	193.6	344.2	D
Ethyl-tert-butyl ether (ETBE)	ADD	ETBE	72.6	72.6	U
2,2-Dimethylpentane (t)	I	22DMP	193.6	372.8	D
Methylcyclopentane	N	MCYP	193.6	12417.2	D
2,4-Dimethylpentane	I	24DMP	193.6	5953.7	D
1,2-Dichloroethane (EDC)	ADD	EDC	72.6	72.6	U
Benzene	A	B	96.8	349.3	
3,3-Dimethylpentane (t)	I	33DMP	193.6	1034.2	D
Thiophene	S	THIO	72.6	72.6	U
Cyclohexane	N	CYH	96.8	1261.1	
2-Methylhexane	I	2MH	193.6	7692.6	D
2,3-Dimethylpentane	I	23DMP	193.6	7817.5	D

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Lab ID: 075RL-4
Collected: 12/7/2020
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Matrix: Product

Client ID: MW-9-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Tert-amyl methyl ether (TAME)	ADD	TAME	72.6	72.6	U
3-Methylhexane	I	3MH	193.6	9332.0	D
trans-1,3-Dimethylcyclopentane (t)	N	T13DMCYP	193.6	2416.8	D
cis-1,3-Dimethylcyclopentane (t)	N	C13DMCYP	193.6	799.3	D
trans-1,2-Dimethylcyclopentane (t)	N	T12DMCYP	193.6	2870.1	D
2,2,4-Trimethylpentane (isooctane)	I	224TMP	580.7	11175.1	D
1-Heptene	O	1HP	193.6	9157.6	D
Heptane (nC7)	P	C7	193.6	17209.6	D
trans-2-heptene (t)	O	T2HP	193.6	2526.8	D
Methylcyclohexane	N	MCYH	193.6	8801.1	D
2,5-Dimethylhexane	I	25DMH	580.7	2028.4	D
2,2,3-Trimethylpentane	I	233TMP	193.6	360.0	D
2,4-Dimethylhexane	I	24DMH	193.6	3706.5	D
2,3,4-Trimethylpentane	I	234TMP	193.6	6609.5	D
2,3,3-Trimethylpentane	I	233TMP	96.8	57822.7	
Toluene	A	T	96.8	202.0	
2-Methylthiophene	S	2MTHIO	72.6	72.6	U
2,3-Dimethylhexane	I	23DMH	193.6	4511.1	D
3-Methylthiophene	S	3MTHIO	72.6	72.6	U
2-Methylheptane	I	2MHP	193.6	11609.4	D
4-Methylheptane (t)	I	4MHP	193.6	3279.9	D
3-Methylheptane	I	3MHP	387.1	10385.9	D
3-Ethylhexane	I	3EHX	193.6	193.6	U
1,2-Dibromoethane (EDB)	ADD	EDB	96.8	96.8	U
1-Octene	O	1O	96.8	96.8	U
Octane (nC8)	P	C8	193.6	17049.3	D
2,4-Dimethylheptane (t)	I	24DMHP	193.6	4416.1	D
2,5-Dimethylheptane (t)	I	25DMHP	193.6	4900.9	D
Ethylbenzene	A	EB	193.6	2657.7	D
2-Ethylthiophene	S	2ETHIO	72.6	72.6	U
2,3-Dimethylheptane (t)	I	23DMHP	193.6	10671.9	D
m-Xylene	A	MX	96.8	271.8	

Russ Shropshire
Leidos, Inc.
18939 120th Avenue NE, Suite 112,
Bothell, WA, 98011

Lab ID: 075RL-4
Collected: 12/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-9-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
p-Xylene	A	PX	193.6	4601.2	D
4-Methyloctane (t)	I	4MO	193.6	5261.2	D
2-Methyloctane (t)	I	2MO	193.6	4643.7	D
3-Methyloctane (t)	I	3MO	193.6	11818.3	D
Styrene	A	STRE	96.8	96.8	U
o-Xylene	A	OX	193.6	220.1	D
1-Nonene	O	1N	580.7	1262.1	D
Nonane (nC9)	P	C9	387.1	16021.0	D
Isopropylbenzene (cumene)	A	IPROPB	96.8	96.8	U
n-Propylbenzene	A	NPRPPB	193.6	5100.1	D
1-Methyl-3-ethylbenzene	A	1M3EB	193.6	6833.0	D
1-Methyl-4-ethylbenzene	A	1M4EB	193.6	5916.4	D
1,3,5-Trimethylbenzene (mesitylene)	A	135TMB	193.6	9169.2	D
1-Methyl-2-ethylbenzene	A	1M2EB	193.6	7674.6	D
1,2,4-Trimethylbenzene	A	124TMB	96.8	96.8	U
1-Decene	O	1D	290.3	290.3	U
Decane (nC10)	P	C10	580.7	9389.0	D
sec-Butylbenzene	A	SBUB	96.8	96.8	U
1-Methyl-3-isopropylbenzene (m-cymene)	A	1M3IPROPB	193.6	2196.2	D
1-Methyl-4-isopropylbenzene (p-cymene)	A	1M4IPROPB	193.6	658.6	D
Indane	A	IA	193.6	969.6	D
Indene	A	IE	96.8	96.8	U
1-Methyl-2-isopropybenzene (o-cymene)	A	1M2IPROPB	96.8	663.7	
1-Methyl-3-propylbenzene	A	1M3PROPB	193.6	6785.7	D
1-Methyl-4-propylbenzene	A	1M4PROPB	193.6	3381.1	D
n-Butylbenzene	A	NBB	193.6	2215.6	D
1,3-Dimethyl-5-ethylbenzene	A	13DM5EB	193.6	6984.6	D
1,2,diethylbenzene	A	12DEB	193.6	562.6	D
1-Methyl-2-propylbenzene	A	1M2PROPB	193.6	2402.2	D
1,4-Dimethyl-2-ethylbenzene	A	14DM2EB	193.6	4641.2	D
1,3-Dimethyl-4-ethylbenzene	A	13DM4EB	193.6	3892.2	D
1,2-Dimethyl-4-ethylbenzene	A	12DM4EB	193.6	6907.8	D

Russ Shropshire
Leidos, Inc.
18939 120th Avenue NE, Suite 112,
Bothell, WA, 98011

Lab ID: 075RL-4
Collected: 12/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-9-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
1,3-Dimethyl-2-ethylbenzene	A	13DM2EB	96.8	96.8	U
1,2-Dimethyl-3-ethylbenzene	A	12DM3EB	193.6	1071.1	D
Undecane (nC11)	P	C11	580.7	2013.4	D
1,2,4,5-Tetramethylbenzene	A	1245TMB	193.6	4704.1	D
1,2,3,5-Tetramethylbenzene (t)	A	1235TMB	193.6	5725.4	D
n-Pentylbenzene	A	NPYB	193.6	722.6	D
Naphthalene	A	N	193.6	576.2	D
Benzothiophene	S	BTHIO	72.6	72.6	U
Dodecane (nC12)	P	C12	387.1	1151.1	D
1,2,3,4-Tetramethylbenzene (t)	A	1234TMB	193.6	2327.7	D
MMT	ADD	MMT	72.6	72.6	U
2-Methylnaphthalene	A	2MN	96.8	151.0	
1-Methylnaphthalene	A	1MN	96.8	96.8	U

Benzene d-6 (RS)	128.96	%
Toluene-d8 (RS)	98.51	%
Ethylbenzene d10 (RS)	128.62	%

ssRL - Sample Specific Reporting Limit
Results listed as U would have been reported if present at or above the listed ssRL
J - Values greater than the ssRL but less than the PQL (3 x ssRL).
D - Secondary dilution perfomed
Q - Surrogate recovery limit exceedance
I - Matrix Interference
NC - Not calibrated
Note: Extracted by EPA 5030 (Purge and Trap).

US631

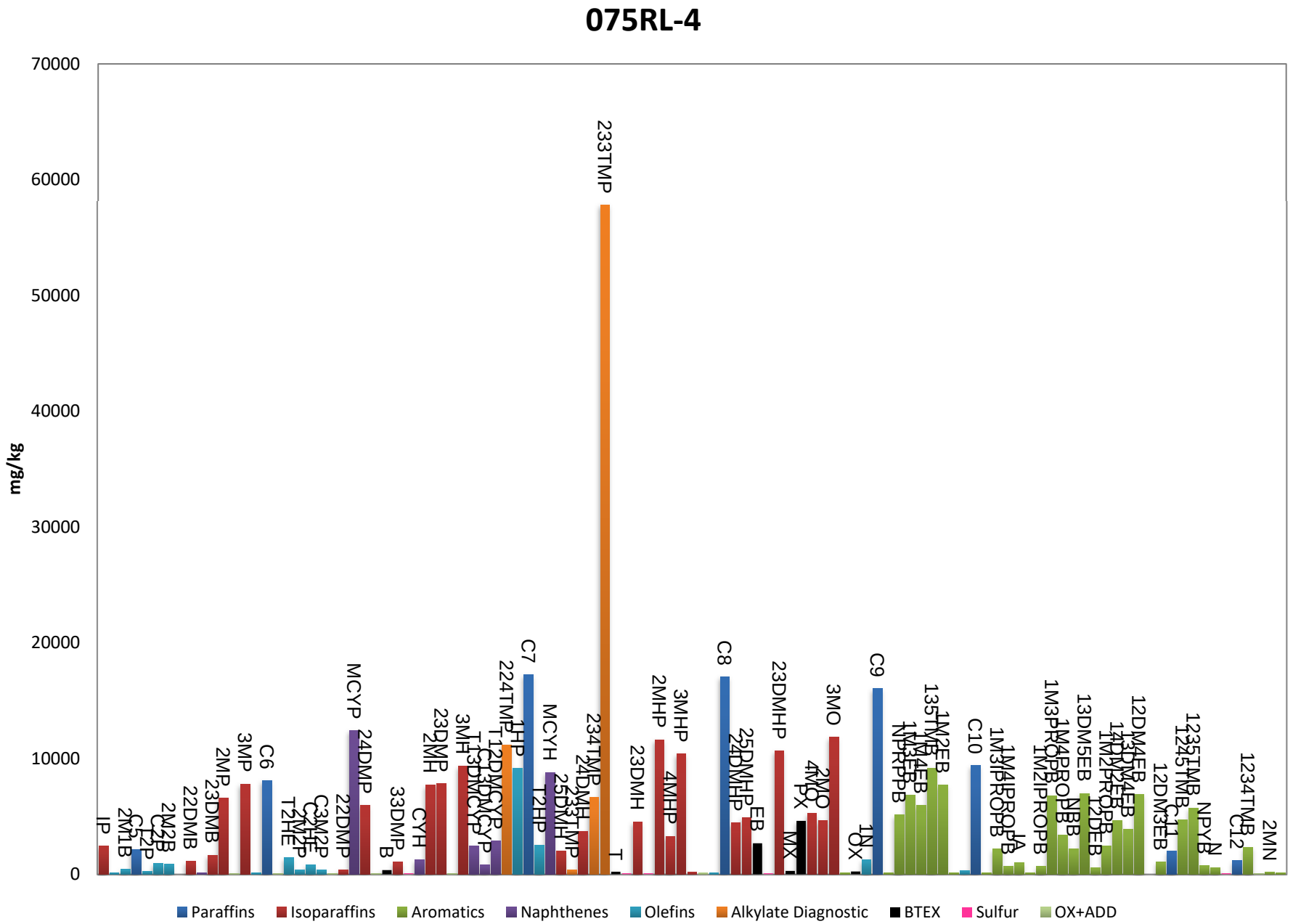
075RL-4 1000X.D & dilution 075RL-4 2000X.D

Submitted by,
Microbial Insights, Inc.

MI ID	075RL-4
Sample ID	**MW-9-201207**
Evaporation	
n-Pentane / (n-Pentane+n-Heptane)	0.11
2-Methylpentane / (2-Methylpentane+2-Methylheptane)	0.36
Waterwashing	
Benzene / (Benzene+Cyclohexane)	0.22
Toluene / (Toluene+Methylcyclohexane)	0.02
Aromatics / Total Paraffins (n+iso+cyc)	0.33
Aromatics / Naphthenes	3.52
wt% < o-xylene	71.25
Biodegradation	
(C4-C8 Para +Isopara) / C4-C8 Olefins	14.60
3-Methylhexane / n-Heptane	0.54
Methylcyclohexane / n-Heptane	0.51
Isoparaffins + Naphthenes / Paraffins	3.20
Diagnostic Ratios (Refining Properties)	
2,2,4-Trimethylpentane / (2,2,4-Trimethylpentane+Methylcyclohexane)	0.6
2,2,4-Trimethylpentane / Total TMPs	0.15
nC9 / Isopropylbenzene	
nC10 / 1-Methyl-2-ethylbenzene	1.22
nC11 / 1,4-Dimethyl-2-ethylbenzene	0.43
iC5 / (iC5+nC5)	0.54
(2-methylhexane + 2,3dimethylpentane) / (3-methylhexane + 2,4 dimethylpentane)	1.01
Naphthalene / (Naphthalene+nC12)	0.33
Methylcyclohexane/(Methylcyclohexane+Toluene)	0.98
Toluene/n-Octane	0.01
Oxygenates & Other (mg/kg)	
Methyl-tert-butyl ether (MTBE)	U
Di-isopropyl ether (DIPE)	U
Ethyl-tert-butyl ether (ETBE)	U
Tert-amyl methyl ether (TAME)	U
MMT	U
Lead Scavengers (mg/kg)	
1,2-Dichloroethane (EDC)	U
1,2-Dibromoethane (EDB)	U
Sulfur containing HCs (mg/kg)	
Thiophene	U
2-Methylthiophene	U
3-Methylthiophene	U
2-Ethylthiophene	U
Benzothiophene	U
Relative Percentages	
% Paraffinic	17.2
% Isoparaffinic	48.2
% Aromatic	23.6
% Naphthenic	6.7
% Olefinic	4.3

Note: If field is blank a ratio was not calculable.

SAMPLE HISTOGRAM



Russ Shropshire
Leidos, Inc.
18939 120th Avenue NE, Suite 112,
Bothell, WA, 98011

Lab ID: 075RL-5
Collected: 12/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-44-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Isopentane (2-Methylbutane)	I	IP	188.2	1755.9	D
1-Pentene	O	1P	94.1	94.1	U
2-Methyl-1-butene	O	2M1B	94.1	673.7	
Pentane (nC5)	P	C5	188.2	2440.2	D
trans-2-pentene	O	T2P	94.1	778.2	
cis-2-pentene	O	C2P	188.2	340.8	D
2-Methyl-2-butene (t)	O	2M2B	188.2	1553.4	D
t-Butanol (TBA)	ADD	TBA	94.1	94.1	U
2,2-Dimethylbutane (t)	I	22DMB	94.1	575.8	
Cyclopentane	N	CYP	188.2	843.3	D
2,3-Dimethylbutane	I	23DMB	188.2	1183.6	D
2-Methylpentane	I	2MP	188.2	5783.9	D
Methyl-tert-butyl ether (MTBE)	ADD	MTBE	70.6	70.6	U
3-Methylpentane	I	3MP	188.2	7160.1	D
1-Hexene	O	1HX	188.2	2727.7	D
Hexane (nC6)	P	C6	188.2	8182.7	D
Di-isopropyl ether (DIPE)	ADD	DIPE	70.6	70.6	U
trans-2-hexene (t)	O	T2HE	188.2	1839.2	D
2-Methyl-2-pentene (t)	O	2M2P	188.2	1444.1	D
cis-2-hexene (t)	O	C2HE	188.2	1128.2	D
cis-3-Methyl-2-pentene (t)	O	C3M2P	188.2	1126.0	D
Ethyl-tert-butyl ether (ETBE)	ADD	ETBE	70.6	70.6	U
2,2-Dimethylpentane (t)	I	22DMP	188.2	276.3	D
Methylcyclopentane	N	MCYP	188.2	20868.3	D
2,4-Dimethylpentane	I	24DMP	94.1	42600.3	
1,2-Dichloroethane (EDC)	ADD	EDC	70.6	70.6	U
Benzene	A	B	188.2	2430.8	D
3,3-Dimethylpentane (t)	I	33DMP	188.2	858.9	D
Thiophene	S	THIO	70.6	70.6	U
Cyclohexane	N	CYH	94.1	1199.1	
2-Methylhexane	I	2MH	188.2	7959.0	D
2,3-Dimethylpentane	I	23DMP	188.2	6297.3	D

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Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Tert-amyl methyl ether (TAME)	ADD	TAME	70.6	70.6	U
3-Methylhexane	I	3MH	188.2	11085.0	D
trans-1,3-Dimethylcyclopentane (t)	N	T13DMCYP	188.2	4225.8	D
cis-1,3-Dimethylcyclopentane (t)	N	C13DMCYP	188.2	1433.6	D
trans-1,2-Dimethylcyclopentane (t)	N	T12DMCYP	188.2	5882.7	D
2,2,4-Trimethylpentane (isooctane)	I	224TMP	282.3	91120.4	
1-Heptene	O	1HP	188.2	19297.5	D
Heptane (nC7)	P	C7	188.2	27059.7	D
trans-2-heptene (t)	O	T2HP	188.2	3302.4	D
Methylcyclohexane	N	MCYH	188.2	17797.3	D
2,5-Dimethylhexane	I	25DMH	564.7	2626.4	D
2,2,3-Trimethylpentane	I	233TMP	94.1	94.1	U
2,4-Dimethylhexane	I	24DMH	188.2	4075.2	D
2,3,4-Trimethylpentane	I	234TMP	188.2	5347.1	D
2,3,3-Trimethylpentane	I	233TMP	94.1	38776.0	
Toluene	A	T	188.2	2759.1	D
2-Methylthiophene	S	2MTHIO	70.6	70.6	U
2,3-Dimethylhexane	I	23DMH	188.2	6046.8	D
3-Methylthiophene	S	3MTHIO	70.6	70.6	U
2-Methylheptane	I	2MHP	188.2	29622.0	D
4-Methylheptane (t)	I	4MHP	188.2	5804.2	D
3-Methylheptane	I	3MHP	376.4	18148.2	D
3-Ethylhexane	I	3EHX	188.2	188.2	U
1,2-Dibromoethane (EDB)	ADD	EDB	94.1	94.1	U
1-Octene	O	1O	94.1	94.1	U
Octane (nC8)	P	C8	188.2	33656.3	D
2,4-Dimethylheptane (t)	I	24DMHP	188.2	12236.9	D
2,5-Dimethylheptane (t)	I	25DMHP	188.2	11560.1	D
Ethylbenzene	A	EB	188.2	3345.8	D
2-Ethylthiophene	S	2ETHIO	70.6	70.6	U
2,3-Dimethylheptane (t)	I	23DMHP	188.2	43099.1	D
m-Xylene	A	MX	188.2	12160.4	D

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Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
p-Xylene	A	PX	188.2	6669.4	D
4-Methyloctane (t)	I	4MO	188.2	12576.5	D
2-Methyloctane (t)	I	2MO	188.2	11908.4	D
3-Methyloctane (t)	I	3MO	188.2	35958.3	D
Styrene	A	STRE	94.1	118.0	
o-Xylene	A	OX	188.2	3232.3	D
1-Nonene	O	1N	564.7	2868.6	D
Nonane (nC9)	P	C9	376.4	29558.7	D
Isopropylbenzene (cumene)	A	IPROPB	94.1	94.1	U
n-Propylbenzene	A	NPRPPB	188.2	2762.8	D
1-Methyl-3-ethylbenzene	A	1M3EB	188.2	14104.2	D
1-Methyl-4-ethylbenzene	A	1M4EB	188.2	7296.0	D
1,3,5-Trimethylbenzene (mesitylene)	A	135TMB	188.2	10219.9	D
1-Methyl-2-ethylbenzene	A	1M2EB	188.2	6591.8	D
1,2,4-Trimethylbenzene	A	124TMB	188.2	21335.1	D
1-Decene	O	1D	282.3	9906.7	
Decane (nC10)	P	C10	564.7	17173.2	D
sec-Butylbenzene	A	SBUB	94.1	94.1	U
1-Methyl-3-isopropylbenzene (m-cymene)	A	1M3IPROPB	188.2	2277.5	D
1-Methyl-4-isopropylbenzene (p-cymene)	A	1M4IPROPB	188.2	851.0	D
Indane	A	IA	188.2	1984.0	D
Indene	A	IE	94.1	94.1	U
1-Methyl-2-isopropybenzene (o-cymene)	A	1M2IPROPB	94.1	611.3	
1-Methyl-3-propylbenzene	A	1M3PROPB	188.2	6009.0	D
1-Methyl-4-propylbenzene	A	1M4PROPB	188.2	3077.3	D
n-Butylbenzene	A	NBB	188.2	1635.6	D
1,3-Dimethyl-5-ethylbenzene	A	13DM5EB	188.2	6425.1	D
1,2,diethylbenzene	A	12DEB	188.2	528.2	D
1-Methyl-2-propylbenzene	A	1M2PROPB	188.2	2051.4	D
1,4-Dimethyl-2-ethylbenzene	A	14DM2EB	188.2	4404.9	D
1,3-Dimethyl-4-ethylbenzene	A	13DM4EB	188.2	4027.1	D
1,2-Dimethyl-4-ethylbenzene	A	12DM4EB	188.2	6912.7	D

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Project: Chelan Chevron Site
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Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
1,3-Dimethyl-2-ethylbenzene	A	13DM2EB	94.1	94.1	U
1,2-Dimethyl-3-ethylbenzene	A	12DM3EB	188.2	1049.5	D
Undecane (nC11)	P	C11	564.7	5176.8	D
1,2,4,5-Tetramethylbenzene	A	1245TMB	188.2	4053.7	D
1,2,3,5-Tetramethylbenzene (t)	A	1235TMB	188.2	5657.6	D
n-Pentylbenzene	A	NPYB	188.2	917.4	D
Naphthalene	A	N	188.2	372.5	D
Benzothiophene	S	BTHIO	70.6	70.6	U
Dodecane (nC12)	P	C12	376.4	2333.8	D
1,2,3,4-Tetramethylbenzene (t)	A	1234TMB	188.2	2325.1	D
MMT	ADD	MMT	70.6	70.6	U
2-Methylnaphthalene	A	2MN	94.1	123.1	
1-Methylnaphthalene	A	1MN	94.1	94.1	U

Benzene d-6 (RS)	127.08	%
Toluene-d8 (RS)	98.19	%
Ethylbenzene d10 (RS)	127.60	%

ssRL - Sample Specific Reporting Limit
Results listed as U would have been reported if present at or above the listed ssRL
J - Values greater than the ssRL but less than the PQL (3 x ssRL).
D - Secondary dilution perfomed
Q - Surrogate recovery limit exceedance
I - Matrix Interference
NC - Not calibrated
Note: Extracted by EPA 5030 (Purge and Trap).

US631

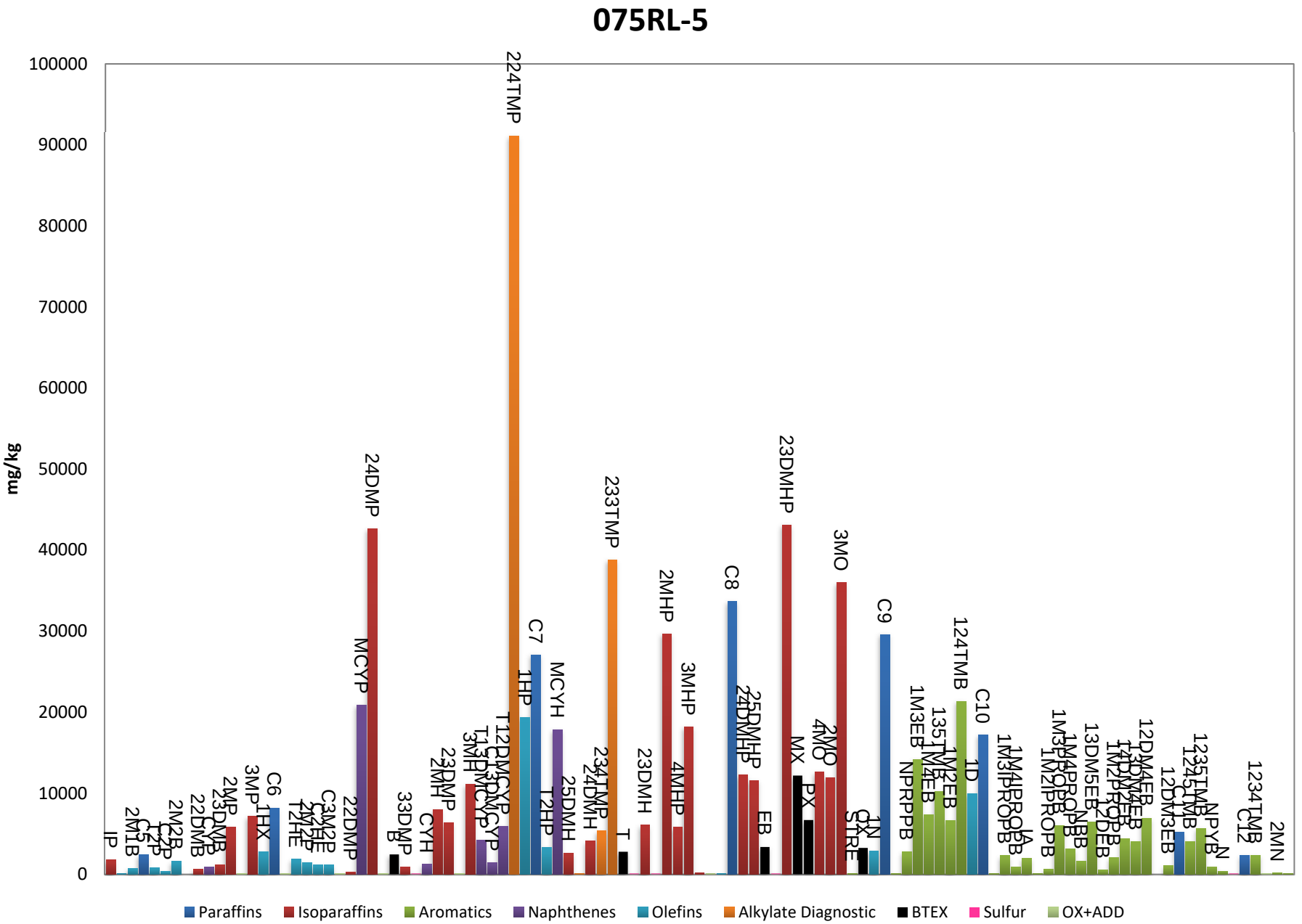
075RL-5 1000X.D & dilution 075RL-5 2000X.D

Submitted by,
Microbial Insights, Inc.

MI ID	075RL-5
Sample ID	**MW-44-201207**
Evaporation	
n-Pentane / (n-Pentane+n-Heptane)	0.08
2-Methylpentane / (2-Methylpentane+2-Methylheptane)	0.16
Waterwashing	
Benzene / (Benzene+Cyclohexane)	0.67
Toluene / (Toluene+Methylcyclohexane)	0.13
Aromatics / Total Paraffins (n+iso+cyc)	0.25
Aromatics / Naphthenes	2.84
wt% < o-xylene	76.15
Biodegradation	
(C4-C8 Para +Isopara) / C4-C8 Olefins	14.20
3-Methylhexane / n-Heptane	0.41
Methylcyclohexane / n-Heptane	0.66
Isoparaffins + Naphthenes / Paraffins	3.72
Diagnostic Ratios (Refining Properties)	
2,2,4-Trimethylpentane / (2,2,4-Trimethylpentane+Methylcyclohexane)	0.8
2,2,4-Trimethylpentane / Total TMPs	0.67
nC9 / Isopropylbenzene	
nC10 / 1-Methyl-2-ethylbenzene	2.61
nC11 / 1,4-Dimethyl-2-ethylbenzene	1.18
iC5 / (iC5+nC5)	0.42
(2-methylhexane + 2,3dimethylpentane) / (3-methylhexane + 2,4 dimethylpentane)	0.27
Naphthalene / (Naphthalene+nC12)	0.14
Methylcyclohexane/(Methylcyclohexane+Toluene)	0.87
Toluene/n-Octane	0.08
Oxygenates & Other (mg/kg)	
Methyl-tert-butyl ether (MTBE)	U
Di-isopropyl ether (DIPE)	U
Ethyl-tert-butyl ether (ETBE)	U
Tert-amyl methyl ether (TAME)	U
MMT	U
Lead Scavengers (mg/kg)	
1,2-Dichloroethane (EDC)	U
1,2-Dibromoethane (EDB)	U
Sulfur containing HCs (mg/kg)	
Thiophene	U
2-Methylthiophene	U
3-Methylthiophene	U
2-Ethylthiophene	U
Benzothiophene	U
Relative Percentages	
% Paraffinic	15.9
% Isoparaffinic	52.6
% Aromatic	18.8
% Naphthenic	6.6
% Olefinic	6.0

Note: If field is blank a ratio was not calculable.

SAMPLE HISTOGRAM



Russ Shropshire
Leidos, Inc.
18939 120th Avenue NE, Suite 112,
Bothell, WA, 98011

Lab ID: 075RL-6
Collected: 12/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-19-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Isopentane (2-Methylbutane)	I	IP	97.4	1010.2	
1-Pentene	O	1P	97.4	97.4	U
2-Methyl-1-butene	O	2M1B	97.4	97.4	U
Pentane (nC5)	P	C5	97.4	779.7	
trans-2-pentene	O	T2P	97.4	97.4	U
cis-2-pentene	O	C2P	97.4	301.3	
2-Methyl-2-butene (t)	O	2M2B	97.4	231.7	
t-Butanol (TBA)	ADD	TBA	97.4	97.4	U
2,2-Dimethylbutane (t)	I	22DMB	97.4	232.1	
Cyclopentane	N	CYP	194.8	213.9	D
2,3-Dimethylbutane	I	23DMB	194.8	303.3	D
2-Methylpentane	I	2MP	194.8	2351.1	D
Methyl-tert-butyl ether (MTBE)	ADD	MTBE	73.0	73.0	U
3-Methylpentane	I	3MP	194.8	3304.4	D
1-Hexene	O	1HX	97.4	560.6	
Hexane (nC6)	P	C6	194.8	1924.5	D
Di-isopropyl ether (DIPE)	ADD	DIPE	73.0	73.0	U
trans-2-hexene (t)	O	T2HE	97.4	97.4	U
2-Methyl-2-pentene (t)	O	2M2P	97.4	274.0	
cis-2-hexene (t)	O	C2HE	97.4	97.4	U
cis-3-Methyl-2-pentene (t)	O	C3M2P	97.4	155.4	
Ethyl-tert-butyl ether (ETBE)	ADD	ETBE	73.0	73.0	U
2,2-Dimethylpentane (t)	I	22DMP	97.4	1502.0	
Methylcyclopentane	N	MCYP	194.8	9065.2	D
2,4-Dimethylpentane	I	24DMP	97.4	7750.6	
1,2-Dichloroethane (EDC)	ADD	EDC	73.0	73.0	U
Benzene	A	B	97.4	1247.5	
3,3-Dimethylpentane (t)	I	33DMP	97.4	2649.7	
Thiophene	S	THIO	73.0	73.0	U
Cyclohexane	N	CYH	194.8	5492.7	D
2-Methylhexane	I	2MH	194.8	2986.8	D
2,3-Dimethylpentane	I	23DMP	194.8	2068.0	D

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Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Tert-amyl methyl ether (TAME)	ADD	TAME	73.0	73.0	U
3-Methylhexane	I	3MH	194.8	5410.2	D
trans-1,3-Dimethylcyclopentane (t)	N	T13DMCYP	194.8	2740.6	D
cis-1,3-Dimethylcyclopentane (t)	N	C13DMCYP	194.8	891.3	D
trans-1,2-Dimethylcyclopentane (t)	N	T12DMCYP	194.8	3994.6	D
2,2,4-Trimethylpentane (isooctane)	I	224TMP	584.3	1450.0	D
1-Heptene	O	1HP	194.8	12193.9	D
Heptane (nC7)	P	C7	194.8	7367.4	D
trans-2-heptene (t)	O	T2HP	97.4	99.9	
Methylcyclohexane	N	MCYH	194.8	11397.3	D
2,5-Dimethylhexane	I	25DMH	584.3	889.8	D
2,2,3-Trimethylpentane	I	233TMP	97.4	97.4	U
2,4-Dimethylhexane	I	24DMH	194.8	1406.9	D
2,3,4-Trimethylpentane	I	234TMP	194.8	709.8	D
2,3,3-Trimethylpentane	I	233TMP	97.4	97.4	U
Toluene	A	T	97.4	97.4	U
2-Methylthiophene	S	2MTHIO	73.0	73.0	U
2,3-Dimethylhexane	I	23DMH	97.4	97.4	U
3-Methylthiophene	S	3MTHIO	73.0	73.0	U
2-Methylheptane	I	2MHP	194.8	16315.5	D
4-Methylheptane (t)	I	4MHP	194.8	3144.0	D
3-Methylheptane	I	3MHP	389.6	8309.5	D
3-Ethylhexane	I	3EHX	194.8	37773.4	
1,2-Dibromoethane (EDB)	ADD	EDB	97.4	97.4	U
1-Octene	O	1O	97.4	97.4	U
Octane (nC8)	P	C8	194.8	17510.9	D
2,4-Dimethylheptane (t)	I	24DMHP	97.4	97.4	U
2,5-Dimethylheptane (t)	I	25DMHP	194.8	7080.1	D
Ethylbenzene	A	EB	97.4	235.2	
2-Ethylthiophene	S	2ETHIO	73.0	73.0	U
2,3-Dimethylheptane (t)	I	23DMHP	194.8	31731.2	D
m-Xylene	A	MX	97.4	97.8	

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CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
p-Xylene	A	PX	97.4	128.5	
4-Methyloctane (t)	I	4MO	194.8	6360.3	D
2-Methyloctane (t)	I	2MO	194.8	5909.4	D
3-Methyloctane (t)	I	3MO	194.8	28921.5	D
Styrene	A	STRE	97.4	97.4	U
o-Xylene	A	OX	97.4	97.4	U
1-Nonene	O	1N	292.2	292.2	U
Nonane (nC9)	P	C9	389.6	22171.4	D
Isopropylbenzene (cumene)	A	IPROPB	97.4	2885.9	
n-Propylbenzene	A	NPRPPB	194.8	322.6	D
1-Methyl-3-ethylbenzene	A	1M3EB	194.8	336.7	D
1-Methyl-4-ethylbenzene	A	1M4EB	194.8	357.3	D
1,3,5-Trimethylbenzene (mesitylene)	A	135TMB	194.8	352.6	D
1-Methyl-2-ethylbenzene	A	1M2EB	194.8	704.3	D
1,2,4-Trimethylbenzene	A	124TMB	194.8	891.8	D
1-Decene	O	1D	292.2	292.2	U
Decane (nC10)	P	C10	584.3	14530.2	D
sec-Butylbenzene	A	SBUB	97.4	97.4	U
1-Methyl-3-isopropylbenzene (m-cymene)	A	1M3IPROPB	194.8	313.8	D
1-Methyl-4-isopropylbenzene (p-cymene)	A	1M4IPROPB	194.8	468.5	D
Indane	A	IA	97.4	302.0	
Indene	A	IE	97.4	97.4	U
1-Methyl-2-isopropybenzene (o-cymene)	A	1M2IPROPB	97.4	646.7	
1-Methyl-3-propylbenzene	A	1M3PROPB	194.8	797.2	D
1-Methyl-4-propylbenzene	A	1M4PROPB	194.8	537.2	D
n-Butylbenzene	A	NBB	194.8	423.3	D
1,3-Dimethyl-5-ethylbenzene	A	13DM5EB	194.8	526.4	D
1,2,diethylbenzene	A	12DEB	97.4	651.4	
1-Methyl-2-propylbenzene	A	1M2PROPB	194.8	471.5	D
1,4-Dimethyl-2-ethylbenzene	A	14DM2EB	194.8	568.7	D
1,3-Dimethyl-4-ethylbenzene	A	13DM4EB	194.8	450.9	D
1,2-Dimethyl-4-ethylbenzene	A	12DM4EB	194.8	1353.4	D

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CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
1,3-Dimethyl-2-ethylbenzene	A	13DM2EB	97.4	97.4	U
1,2-Dimethyl-3-ethylbenzene	A	12DM3EB	194.8	231.1	D
Undecane (nC11)	P	C11	584.3	3249.6	D
1,2,4,5-Tetramethylbenzene	A	1245TMB	194.8	845.1	D
1,2,3,5-Tetramethylbenzene (t)	A	1235TMB	194.8	463.8	D
n-Pentylbenzene	A	NPYB	97.4	118.4	
Naphthalene	A	N	97.4	97.4	U
Benzothiophene	S	BTHIO	73.0	73.0	U
Dodecane (nC12)	P	C12	194.8	1420.7	
1,2,3,4-Tetramethylbenzene (t)	A	1234TMB	194.8	1281.2	D
MMT	ADD	MMT	73.0	73.0	U
2-Methylnaphthalene	A	2MN	97.4	97.4	U
1-Methylnaphthalene	A	1MN	97.4	97.4	U

Benzene d-6 (RS)	127.20	%
Toluene-d8 (RS)	97.07	%
Ethylbenzene d10 (RS)	128.86	%

ssRL - Sample Specific Reporting Limit
Results listed as U would have been reported if present at or above the listed ssRL
J - Values greater than the ssRL but less than the PQL (3 x ssRL).
D - Secondary dilution perfomed
Q - Surrogate recovery limit exceedance
I - Matrix Interference
NC - Not calibrated
Note: Extracted by EPA 5030 (Purge and Trap).

US631

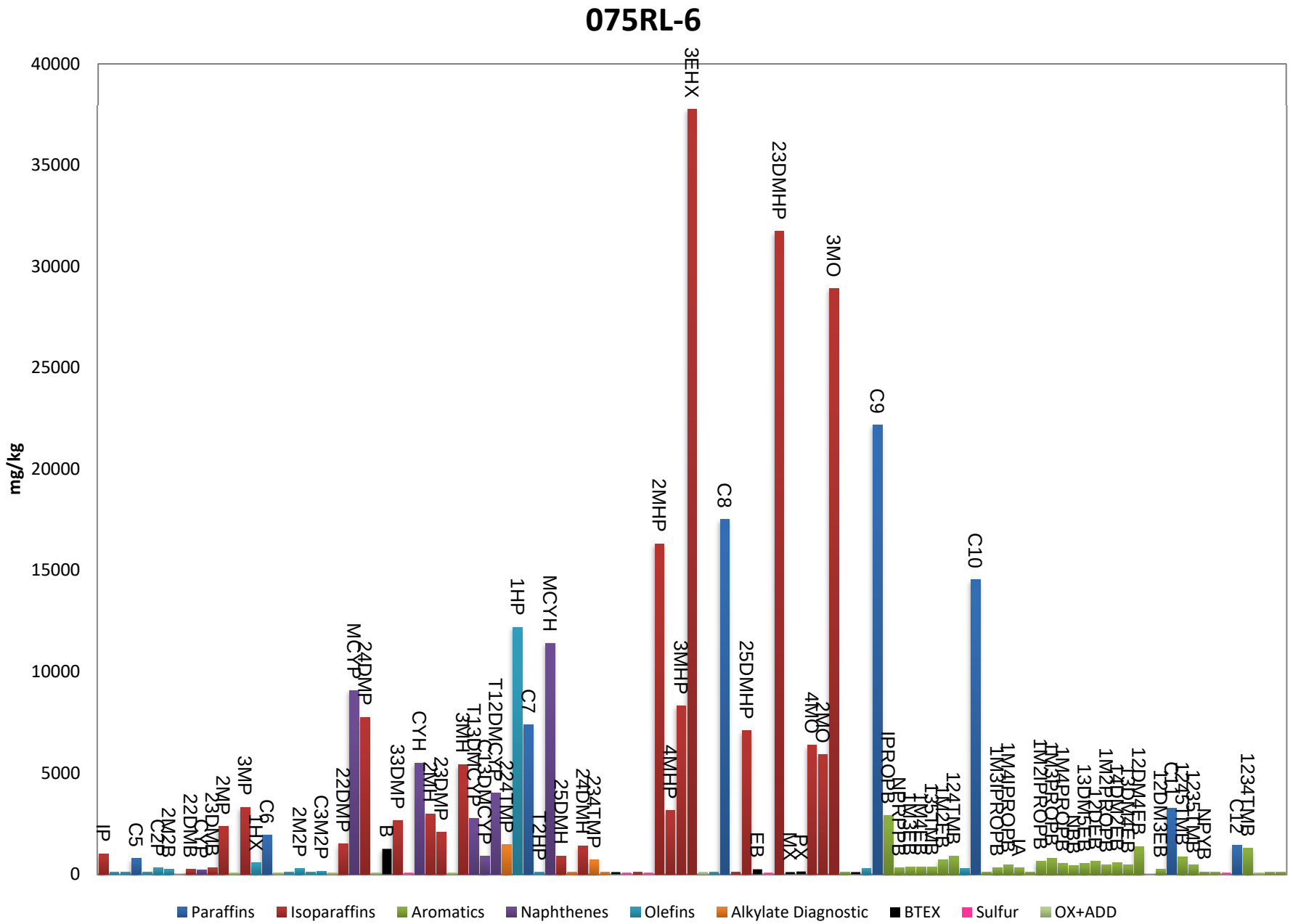
075RL-6 1000X.D & dilution 075RL-6 2000X.D

Submitted by,
Microbial Insights, Inc.

MI ID	075RL-6
Sample ID	**MW-19-201207**
Evaporation	
n-Pentane / (n-Pentane+n-Heptane)	0.10
2-Methylpentane / (2-Methylpentane+2-Methylheptane)	0.13
Waterwashing	
Benzene / (Benzene+Cyclohexane)	0.19
Toluene / (Toluene+Methylcyclohexane)	
Aromatics / Total Paraffins (n+iso+cyc)	0.06
Aromatics / Naphthenes	0.53
wt% < o-xylene	81.64
Biodegradation	
(C4-C8 Para +Isopara) / C4-C8 Olefins	14.99
3-Methylhexane / n-Heptane	0.73
Methylcyclohexane / n-Heptane	1.55
Isoparaffins + Naphthenes / Paraffins	3.09
Diagnostic Ratios (Refining Properties)	
2,2,4-Trimethylpentane / (2,2,4-Trimethylpentane+Methylcyclohexane)	0.1
2,2,4-Trimethylpentane / Total TMPs	0.67
nC9 / Isopropylbenzene	7.68
nC10 / 1-Methyl-2-ethylbenzene	20.63
nC11 / 1,4-Dimethyl-2-ethylbenzene	5.71
iC5 / (iC5+nC5)	0.56
(2-methylhexane + 2,3dimethylpentane) / (3-methylhexane + 2,4 dimethylpentane)	0.38
Naphthalene / (Naphthalene+nC12)	
Methylcyclohexane/(Methylcyclohexane+Toluene)	
Toluene/n-Octane	
Oxygenates & Other (mg/kg)	
Methyl-tert-butyl ether (MTBE)	U
Di-isopropyl ether (DIPE)	U
Ethyl-tert-butyl ether (ETBE)	U
Tert-amyl methyl ether (TAME)	U
MMT	U
Lead Scavengers (mg/kg)	
1,2-Dichloroethane (EDC)	U
1,2-Dibromoethane (EDB)	U
Sulfur containing HCs (mg/kg)	
Thiophene	U
2-Methylthiophene	U
3-Methylthiophene	U
2-Ethylthiophene	U
Benzothiophene	U
Relative Percentages	
% Paraffinic	21.9
% Isoparaffinic	57.2
% Aromatic	5.7
% Naphthenic	10.8
% Olefinic	4.4

Note: If field is blank a ratio was not calculable.

SAMPLE HISTOGRAM



Russ Shropshire
Leidos, Inc.
18939 120th Avenue NE, Suite 112,
Bothell, WA, 98011

Lab ID: 075RL-7
Collected: 12/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-16-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Isopentane (2-Methylbutane)	I	IP	188.2	3005.0	D
1-Pentene	O	1P	94.1	94.1	U
2-Methyl-1-butene	O	2M1B	94.1	94.1	U
Pentane (nC5)	P	C5	188.2	2895.9	D
trans-2-pentene	O	T2P	94.1	370.9	
cis-2-pentene	O	C2P	94.1	1996.2	
2-Methyl-2-butene (t)	O	2M2B	94.1	94.1	U
t-Butanol (TBA)	ADD	TBA	94.1	94.1	U
2,2-Dimethylbutane (t)	I	22DMB	94.1	1101.2	
Cyclopentane	N	CYP	94.1	94.1	U
2,3-Dimethylbutane	I	23DMB	188.2	1583.7	D
2-Methylpentane	I	2MP	188.2	6712.0	D
Methyl-tert-butyl ether (MTBE)	ADD	MTBE	70.6	70.6	U
3-Methylpentane	I	3MP	188.2	8038.1	D
1-Hexene	O	1HX	94.1	94.1	U
Hexane (nC6)	P	C6	188.2	8326.8	D
Di-isopropyl ether (DIPE)	ADD	DIPE	70.6	70.6	U
trans-2-hexene (t)	O	T2HE	188.2	1866.2	D
2-Methyl-2-pentene (t)	O	2M2P	188.2	556.1	D
cis-2-hexene (t)	O	C2HE	188.2	1109.5	D
cis-3-Methyl-2-pentene (t)	O	C3M2P	188.2	649.3	D
Ethyl-tert-butyl ether (ETBE)	ADD	ETBE	70.6	70.6	U
2,2-Dimethylpentane (t)	I	22DMP	188.2	404.3	D
Methylcyclopentane	N	MCYP	188.2	14299.7	D
2,4-Dimethylpentane	I	24DMP	188.2	6198.3	D
1,2-Dichloroethane (EDC)	ADD	EDC	70.6	70.6	U
Benzene	A	B	94.1	94.1	U
3,3-Dimethylpentane (t)	I	33DMP	188.2	1071.3	D
Thiophene	S	THIO	70.6	70.6	U
Cyclohexane	N	CYH	94.1	94.1	U
2-Methylhexane	I	2MH	188.2	8798.3	D
2,3-Dimethylpentane	I	23DMP	188.2	8770.7	D

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Lab ID: 075RL-7
Collected: 12/7/2020
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Matrix: Product

Client ID: MW-16-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Tert-amyl methyl ether (TAME)	ADD	TAME	70.6	70.6	U
3-Methylhexane	I	3MH	188.2	10384.2	D
trans-1,3-Dimethylcyclopentane (t)	N	T13DMCYP	188.2	2569.5	D
cis-1,3-Dimethylcyclopentane (t)	N	C13DMCYP	188.2	879.6	D
trans-1,2-Dimethylcyclopentane (t)	N	T12DMCYP	188.2	3337.7	D
2,2,4-Trimethylpentane (isooctane)	I	224TMP	564.6	13314.3	D
1-Heptene	O	1HP	94.1	94.1	U
Heptane (nC7)	P	C7	188.2	17557.5	D
trans-2-heptene (t)	O	T2HP	188.2	2558.7	D
Methylcyclohexane	N	MCYH	188.2	10018.3	D
2,5-Dimethylhexane	I	25DMH	564.6	2349.1	D
2,2,3-Trimethylpentane	I	233TMP	94.1	94.1	U
2,4-Dimethylhexane	I	24DMH	188.2	4152.0	D
2,3,4-Trimethylpentane	I	234TMP	188.2	7539.8	D
2,3,3-Trimethylpentane	I	233TMP	188.2	5187.1	D
Toluene	A	T	94.1	1011.9	
2-Methylthiophene	S	2MTHIO	70.6	70.6	U
2,3-Dimethylhexane	I	23DMH	188.2	4956.6	D
3-Methylthiophene	S	3MTHIO	70.6	70.6	U
2-Methylheptane	I	2MHP	188.2	11819.0	D
4-Methylheptane (t)	I	4MHP	188.2	3602.5	D
3-Methylheptane	I	3MHP	376.4	11599.0	D
3-Ethylhexane	I	3EHX	188.2	188.2	U
1,2-Dibromoethane (EDB)	ADD	EDB	94.1	94.1	U
1-Octene	O	1O	94.1	94.1	U
Octane (nC8)	P	C8	188.2	17068.0	D
2,4-Dimethylheptane (t)	I	24DMHP	188.2	4874.3	D
2,5-Dimethylheptane (t)	I	25DMHP	188.2	5101.7	D
Ethylbenzene	A	EB	188.2	1384.9	D
2-Ethylthiophene	S	2ETHIO	70.6	70.6	U
2,3-Dimethylheptane (t)	I	23DMHP	188.2	10183.2	D
m-Xylene	A	MX	94.1	94.1	U

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Lab ID: 075RL-7
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Matrix: Product

Client ID: MW-16-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
p-Xylene	A	PX	188.2	5968.5	D
4-Methyloctane (t)	I	4MO	188.2	5268.4	D
2-Methyloctane (t)	I	2MO	188.2	4631.4	D
3-Methyloctane (t)	I	3MO	188.2	11821.4	D
Styrene	A	STRE	94.1	94.1	U
o-Xylene	A	OX	188.2	1605.4	D
1-Nonene	O	1N	564.6	1248.4	D
Nonane (nC9)	P	C9	376.4	15276.8	D
Isopropylbenzene (cumene)	A	IPROPB	94.1	94.1	U
n-Propylbenzene	A	NPRPPB	188.2	5944.5	D
1-Methyl-3-ethylbenzene	A	1M3EB	188.2	11858.6	D
1-Methyl-4-ethylbenzene	A	1M4EB	188.2	6960.5	D
1,3,5-Trimethylbenzene (mesitylene)	A	135TMB	188.2	10516.8	D
1-Methyl-2-ethylbenzene	A	1M2EB	188.2	6666.7	D
1,2,4-Trimethylbenzene	A	124TMB	94.1	94.1	U
1-Decene	O	1D	564.6	4463.2	D
Decane (nC10)	P	C10	564.6	8770.9	D
sec-Butylbenzene	A	SBUB	94.1	94.1	U
1-Methyl-3-isopropylbenzene (m-cymene)	A	1M3IPROPB	188.2	2035.5	D
1-Methyl-4-isopropylbenzene (p-cymene)	A	1M4IPROPB	188.2	634.0	D
Indane	A	IA	188.2	734.7	D
Indene	A	IE	94.1	94.1	U
1-Methyl-2-isopropybenzene (o-cymene)	A	1M2IPROPB	94.1	558.8	
1-Methyl-3-propylbenzene	A	1M3PROPB	188.2	6684.8	D
1-Methyl-4-propylbenzene	A	1M4PROPB	188.2	3443.6	D
n-Butylbenzene	A	NBB	188.2	2388.6	D
1,3-Dimethyl-5-ethylbenzene	A	13DM5EB	94.1	94.1	U
1,2,diethylbenzene	A	12DEB	188.2	520.0	D
1-Methyl-2-propylbenzene	A	1M2PROPB	188.2	2272.0	D
1,4-Dimethyl-2-ethylbenzene	A	14DM2EB	188.2	4664.5	D
1,3-Dimethyl-4-ethylbenzene	A	13DM4EB	188.2	4010.9	D
1,2-Dimethyl-4-ethylbenzene	A	12DM4EB	188.2	6834.6	D

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Leidos, Inc.
18939 120th Avenue NE, Suite 112,
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Lab ID: 075RL-7
Collected: 12/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-16-201207

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
1,3-Dimethyl-2-ethylbenzene	A	13DM2EB	94.1	94.1	U
1,2-Dimethyl-3-ethylbenzene	A	12DM3EB	188.2	996.5	D
Undecane (nC11)	P	C11	564.6	1528.0	D
1,2,4,5-Tetramethylbenzene	A	1245TMB	188.2	4251.6	D
1,2,3,5-Tetramethylbenzene (t)	A	1235TMB	188.2	5761.2	D
n-Pentylbenzene	A	NPYB	188.2	713.4	D
Naphthalene	A	N	188.2	417.1	D
Benzothiophene	S	BTHIO	70.6	70.6	U
Dodecane (nC12)	P	C12	376.4	707.9	D
1,2,3,4-Tetramethylbenzene (t)	A	1234TMB	188.2	2043.1	D
MMT	ADD	MMT	70.6	70.6	U
2-Methylnaphthalene	A	2MN	94.1	548.6	
1-Methylnaphthalene	A	1MN	94.1	94.1	U

Benzene d-6 (RS)	114.04	%
Toluene-d8 (RS)	96.17	%
Ethylbenzene d10 (RS)	125.89	%

ssRL - Sample Specific Reporting Limit
Results listed as U would have been reported if present at or above the listed ssRL
J - Values greater than the ssRL but less than the PQL (3 x ssRL).
D - Secondary dilution perfomed
Q - Surrogate recovery limit exceedance
I - Matrix Interference
NC - Not calibrated
Note: Extracted by EPA 5030 (Purge and Trap).

US631

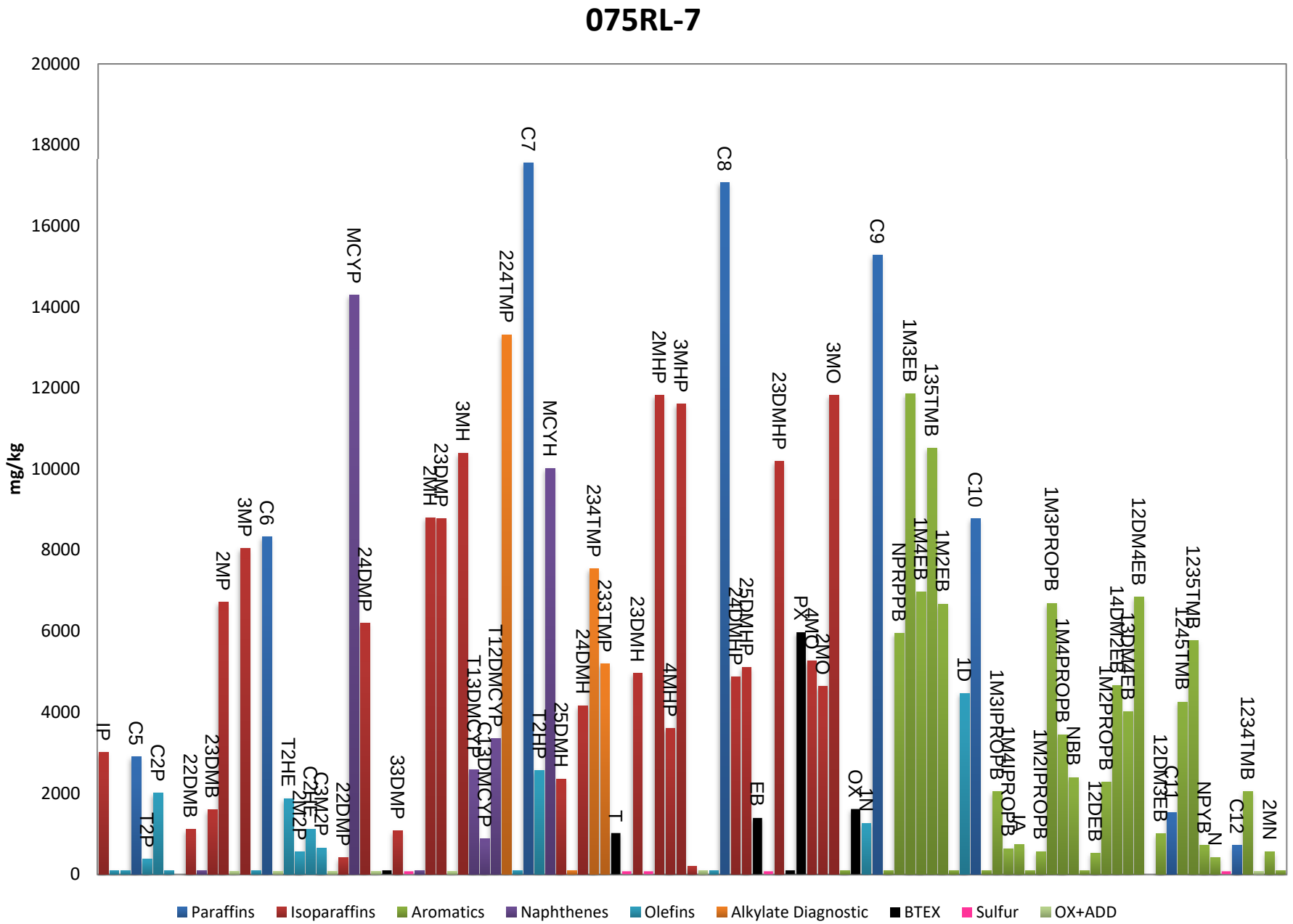
075RL-7 1000X.D & dilution 075RL-7 2000X.D

Submitted by,
Microbial Insights, Inc.

MI ID	075RL-7
Sample ID	**MW-16-201207**
Evaporation	
n-Pentane / (n-Pentane+n-Heptane)	0.14
2-Methylpentane / (2-Methylpentane+2-Methylheptane)	0.36
Waterwashing	
Benzene / (Benzene+Cyclohexane)	
Toluene / (Toluene+Methylcyclohexane)	0.09
Aromatics / Total Paraffins (n+iso+cyc)	0.38
Aromatics / Naphthenes	3.26
wt% < o-xylene	67.26
Biodegradation	
(C4-C8 Para +Isopara) / C4-C8 Olefins	22.87
3-Methylhexane / n-Heptane	0.59
Methylcyclohexane / n-Heptane	0.57
Isoparaffins + Naphthenes / Paraffins	2.68
Diagnostic Ratios (Refining Properties)	
2,2,4-Trimethylpentane / (2,2,4-Trimethylpentane+Methylcyclohexane)	0.6
2,2,4-Trimethylpentane / Total TMPs	0.51
nC9 / Isopropylbenzene	
nC10 / 1-Methyl-2-ethylbenzene	1.32
nC11 / 1,4-Dimethyl-2-ethylbenzene	0.33
iC5 / (iC5+nC5)	0.51
(2-methylhexane + 2,3dimethylpentane) / (3-methylhexane + 2,4 dimethylpentane)	1.06
Naphthalene / (Naphthalene+nC12)	0.37
Methylcyclohexane/(Methylcyclohexane+Toluene)	0.91
Toluene/n-Octane	0.06
Oxygenates & Other (mg/kg)	
Methyl-tert-butyl ether (MTBE)	U
Di-isopropyl ether (DIPE)	U
Ethyl-tert-butyl ether (ETBE)	U
Tert-amyl methyl ether (TAME)	U
MMT	U
Lead Scavengers (mg/kg)	
1,2-Dichloroethane (EDC)	U
1,2-Dibromoethane (EDB)	U
Sulfur containing HCs (mg/kg)	
Thiophene	U
2-Methylthiophene	U
3-Methylthiophene	U
2-Ethylthiophene	U
Benzothiophene	U
Relative Percentages	
% Paraffinic	18.9
% Isoparaffinic	42.5
% Aromatic	26.6
% Naphthenic	8.1
% Olefinic	3.9

Note: If field is blank a ratio was not calculable.

SAMPLE HISTOGRAM



Russ Shropshire
Leidos, Inc.
18939 120th Avenue NE, Suite 112,
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Lab ID: 075RL-8
Collected: 12/8/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-21-201208

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Isopentane (2-Methylbutane)	I	IP	196.8	4027.1	D
1-Pentene	O	1P	98.4	98.4	U
2-Methyl-1-butene	O	2M1B	98.4	103.5	
Pentane (nC5)	P	C5	196.8	5106.6	D
trans-2-pentene	O	T2P	98.4	431.0	
cis-2-pentene	O	C2P	98.4	3142.6	
2-Methyl-2-butene (t)	O	2M2B	196.8	626.5	D
t-Butanol (TBA)	ADD	TBA	98.4	98.4	U
2,2-Dimethylbutane (t)	I	22DMB	98.4	892.1	
Cyclopentane	N	CYP	98.4	2893.0	
2,3-Dimethylbutane	I	23DMB	196.8	815.6	D
2-Methylpentane	I	2MP	196.8	5946.5	D
Methyl-tert-butyl ether (MTBE)	ADD	MTBE	73.8	73.8	U
3-Methylpentane	I	3MP	196.8	7282.8	D
1-Hexene	O	1HX	196.8	1522.6	D
Hexane (nC6)	P	C6	196.8	10970.0	D
Di-isopropyl ether (DIPE)	ADD	DIPE	73.8	73.8	U
trans-2-hexene (t)	O	T2HE	196.8	887.0	D
2-Methyl-2-pentene (t)	O	2M2P	196.8	776.3	D
cis-2-hexene (t)	O	C2HE	196.8	419.3	D
cis-3-Methyl-2-pentene (t)	O	C3M2P	98.4	1426.3	
Ethyl-tert-butyl ether (ETBE)	ADD	ETBE	73.8	73.8	U
2,2-Dimethylpentane (t)	I	22DMP	98.4	2191.2	
Methylcyclopentane	N	MCYP	196.8	23434.6	D
2,4-Dimethylpentane	I	24DMP	196.8	1454.4	D
1,2-Dichloroethane (EDC)	ADD	EDC	73.8	73.8	U
Benzene	A	B	98.4	1500.6	
3,3-Dimethylpentane (t)	I	33DMP	196.8	482.3	D
Thiophene	S	THIO	73.8	73.8	U
Cyclohexane	N	CYH	196.8	13560.3	D
2-Methylhexane	I	2MH	196.8	5294.4	D
2,3-Dimethylpentane	I	23DMP	196.8	3184.8	D

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Lab ID: 075RL-8
Collected: 12/8/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-21-201208

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Tert-amyl methyl ether (TAME)	ADD	TAME	73.8	73.8	U
3-Methylhexane	I	3MH	196.8	8015.1	D
trans-1,3-Dimethylcyclopentane (t)	N	T13DMCYP	196.8	4401.2	D
cis-1,3-Dimethylcyclopentane (t)	N	C13DMCYP	196.8	1477.7	D
trans-1,2-Dimethylcyclopentane (t)	N	T12DMCYP	196.8	6131.9	D
2,2,4-Trimethylpentane (isooctane)	I	224TMP	590.5	2561.5	D
1-Heptene	O	1HP	196.8	19892.8	D
Heptane (nC7)	P	C7	196.8	24267.3	D
trans-2-heptene (t)	O	T2HP	196.8	1896.6	D
Methylcyclohexane	N	MCYH	196.8	20319.5	D
2,5-Dimethylhexane	I	25DMH	590.5	752.9	D
2,2,3-Trimethylpentane	I	233TMP	98.4	98.4	U
2,4-Dimethylhexane	I	24DMH	98.4	98.4	U
2,3,4-Trimethylpentane	I	234TMP	196.8	787.8	D
2,3,3-Trimethylpentane	I	233TMP	98.4	98.4	U
Toluene	A	T	196.8	1253.6	D
2-Methylthiophene	S	2MTHIO	73.8	73.8	U
2,3-Dimethylhexane	I	23DMH	98.4	98.4	U
3-Methylthiophene	S	3MTHIO	73.8	73.8	U
2-Methylheptane	I	2MHP	196.8	16375.3	D
4-Methylheptane (t)	I	4MHP	196.8	2352.2	D
3-Methylheptane	I	3MHP	393.7	8265.2	D
3-Ethylhexane	I	3EHX	196.8	196.8	U
1,2-Dibromoethane (EDB)	ADD	EDB	98.4	98.4	U
1-Octene	O	1O	98.4	98.4	U
Octane (nC8)	P	C8	196.8	22555.9	D
2,4-Dimethylheptane (t)	I	24DMHP	98.4	98.4	U
2,5-Dimethylheptane (t)	I	25DMHP	196.8	3146.1	D
Ethylbenzene	A	EB	196.8	2647.6	D
2-Ethylthiophene	S	2ETHIO	73.8	73.8	U
2,3-Dimethylheptane (t)	I	23DMHP	196.8	16327.4	D
m-Xylene	A	MX	196.8	7763.0	D

Russ Shropshire
Leidos, Inc.
18939 120th Avenue NE, Suite 112,
Bothell, WA, 98011

Lab ID: 075RL-8
Collected: 12/8/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-21-201208

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
p-Xylene	A	PX	196.8	1714.8	D
4-Methyloctane (t)	I	4MO	196.8	3458.7	D
2-Methyloctane (t)	I	2MO	196.8	3598.4	D
3-Methyloctane (t)	I	3MO	196.8	14578.8	D
Styrene	A	STRE	98.4	98.4	U
o-Xylene	A	OX	196.8	3408.1	D
1-Nonene	O	1N	590.5	3153.1	D
Nonane (nC9)	P	C9	393.7	19791.9	D
Isopropylbenzene (cumene)	A	IPROPB	98.4	98.4	U
n-Propylbenzene	A	NPRPPB	196.8	1615.3	D
1-Methyl-3-ethylbenzene	A	1M3EB	196.8	4472.6	D
1-Methyl-4-ethylbenzene	A	1M4EB	196.8	2248.0	D
1,3,5-Trimethylbenzene (mesitylene)	A	135TMB	196.8	3174.5	D
1-Methyl-2-ethylbenzene	A	1M2EB	196.8	2308.2	D
1,2,4-Trimethylbenzene	A	124TMB	196.8	7378.8	D
1-Decene	O	1D	295.3	16148.4	
Decane (nC10)	P	C10	590.5	12264.2	D
sec-Butylbenzene	A	SBUB	98.4	98.4	U
1-Methyl-3-isopropylbenzene (m-cymene)	A	1M3IPROPB	196.8	1687.5	D
1-Methyl-4-isopropylbenzene (p-cymene)	A	1M4IPROPB	196.8	1191.3	D
Indane	A	IA	196.8	912.8	D
Indene	A	IE	98.4	130.5	
1-Methyl-2-isopropybenzene (o-cymene)	A	1M2IPROPB	98.4	723.7	
1-Methyl-3-propylbenzene	A	1M3PROPB	196.8	2323.7	D
1-Methyl-4-propylbenzene	A	1M4PROPB	196.8	1034.0	D
n-Butylbenzene	A	NBB	196.8	757.8	D
1,3-Dimethyl-5-ethylbenzene	A	13DM5EB	196.8	1857.3	D
1,2,diethylbenzene	A	12DEB	196.8	291.7	D
1-Methyl-2-propylbenzene	A	1M2PROPB	196.8	952.5	D
1,4-Dimethyl-2-ethylbenzene	A	14DM2EB	196.8	1225.3	D
1,3-Dimethyl-4-ethylbenzene	A	13DM4EB	196.8	1728.7	D
1,2-Dimethyl-4-ethylbenzene	A	12DM4EB	98.4	98.4	U

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Lab ID: 075RL-8
Collected: 12/8/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-21-201208

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
1,3-Dimethyl-2-ethylbenzene	A	13DM2EB	196.8	1989.3	D
1,2-Dimethyl-3-ethylbenzene	A	12DM3EB	196.8	595.3	D
Undecane (nC11)	P	C11	590.5	3126.8	D
1,2,4,5-Tetramethylbenzene	A	1245TMB	196.8	1077.7	D
1,2,3,5-Tetramethylbenzene (t)	A	1235TMB	196.8	1635.9	D
n-Pentylbenzene	A	NPYB	196.8	409.5	D
Naphthalene	A	N	196.8	324.3	D
Benzothiophene	S	BTHIO	73.8	73.8	U
Dodecane (nC12)	P	C12	393.7	1138.4	D
1,2,3,4-Tetramethylbenzene (t)	A	1234TMB	196.8	2112.4	D
MMT	ADD	MMT	73.8	73.8	U
2-Methylnaphthalene	A	2MN	98.4	359.7	
1-Methylnaphthalene	A	1MN	98.4	98.4	U

Benzene d-6 (RS)	111.19	%
Toluene-d8 (RS)	96.43	%
Ethylbenzene d10 (RS)	125.28	%

ssRL - Sample Specific Reporting Limit
Results listed as U would have been reported if present at or above the listed ssRL
J - Values greater than the ssRL but less than the PQL (3 x ssRL).
D - Secondary dilution perfomed
Q - Surrogate recovery limit exceedance
I - Matrix Interference
NC - Not calibrated
Note: Extracted by EPA 5030 (Purge and Trap).

US631

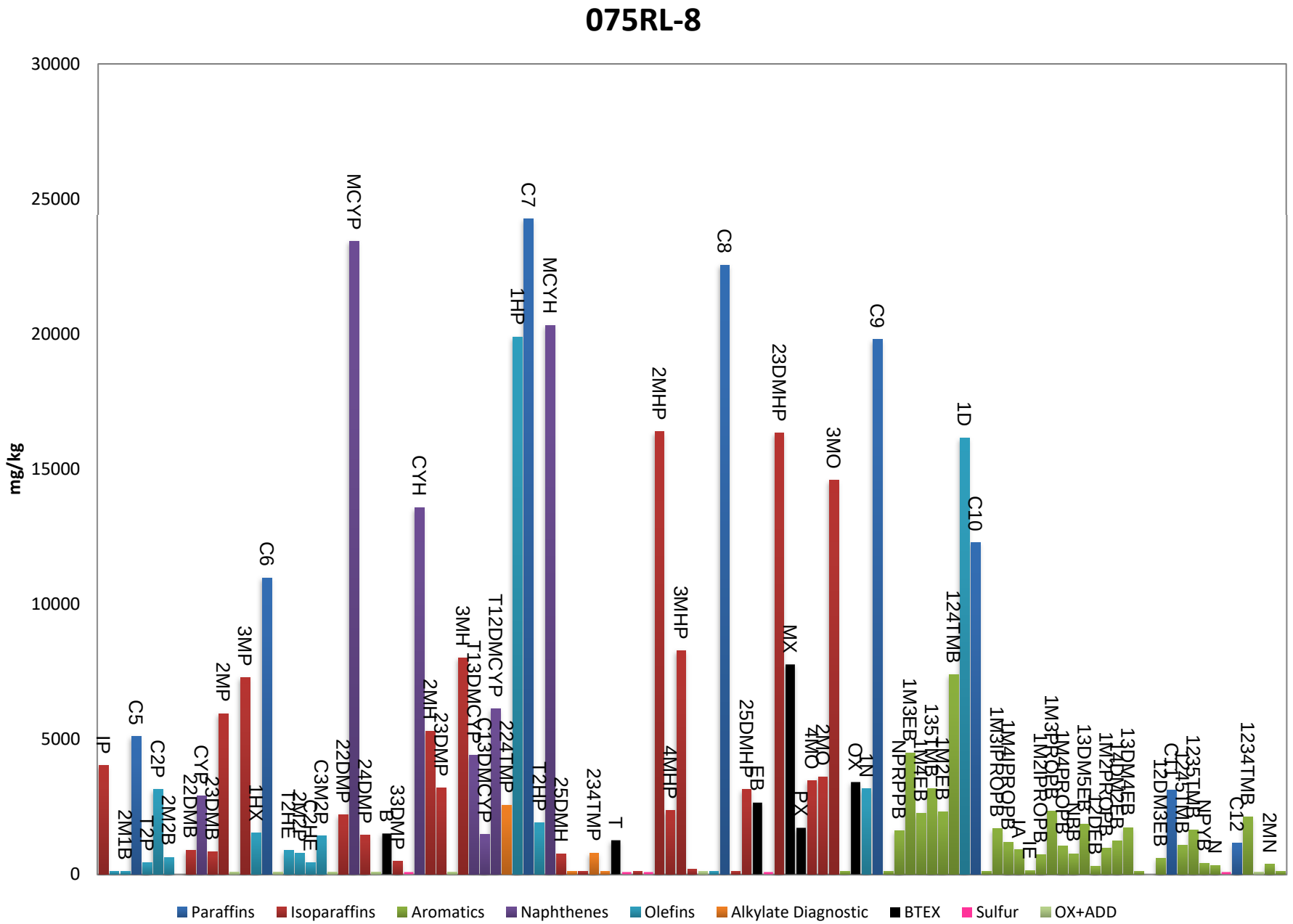
075RL-8 1000X.D & dilution 075RL-8 2000X.D

Submitted by,
Microbial Insights, Inc.

MI ID	075RL-8
Sample ID	**MW-21-201208**
Evaporation	
n-Pentane / (n-Pentane+n-Heptane)	0.17
2-Methylpentane / (2-Methylpentane+2-Methylheptane)	0.27
Waterwashing	
Benzene / (Benzene+Cyclohexane)	0.10
Toluene / (Toluene+Methylcyclohexane)	0.06
Aromatics / Total Paraffins (n+iso+cyc)	0.21
Aromatics / Naphthenes	0.84
wt% < o-xylene	74.25
Biodegradation	
(C4-C8 Para +Isopara) / C4-C8 Olefins	5.61
3-Methylhexane / n-Heptane	0.33
Methylcyclohexane / n-Heptane	0.84
Isoparaffins + Naphthenes / Paraffins	1.85
Diagnostic Ratios (Refining Properties)	
2,2,4-Trimethylpentane / (2,2,4-Trimethylpentane+Methylcyclohexane)	0.1
2,2,4-Trimethylpentane / Total TMPs	0.76
nC9 / Isopropylbenzene	
nC10 / 1-Methyl-2-ethylbenzene	5.31
nC11 / 1,4-Dimethyl-2-ethylbenzene	2.55
iC5 / (iC5+nC5)	0.44
(2-methylhexane + 2,3dimethylpentane) / (3-methylhexane + 2,4 dimethylpentane)	0.90
Naphthalene / (Naphthalene+nC12)	0.22
Methylcyclohexane/(Methylcyclohexane+Toluene)	0.94
Toluene/n-Octane	0.06
Oxygenates & Other (mg/kg)	
Methyl-tert-butyl ether (MTBE)	U
Di-isopropyl ether (DIPE)	U
Ethyl-tert-butyl ether (ETBE)	U
Tert-amyl methyl ether (TAME)	U
MMT	U
Lead Scavengers (mg/kg)	
1,2-Dichloroethane (EDC)	U
1,2-Dibromoethane (EDB)	U
Sulfur containing HCs (mg/kg)	
Thiophene	U
2-Methylthiophene	U
3-Methylthiophene	U
2-Ethylthiophene	U
Benzothiophene	U
Relative Percentages	
% Paraffinic	25.2
% Isoparaffinic	28.3
% Aromatic	15.4
% Naphthenic	18.3
% Olefinic	12.8

Note: If field is blank a ratio was not calculable.

SAMPLE HISTOGRAM



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Lab ID: 075RL-9
Collected: 12/8/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-27-201208

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Isopentane (2-Methylbutane)	I	IP	97.9	237.7	
1-Pentene	O	1P	97.9	97.9	U
2-Methyl-1-butene	O	2M1B	97.9	97.9	U
Pentane (nC5)	P	C5	97.9	334.4	
trans-2-pentene	O	T2P	97.9	97.9	U
cis-2-pentene	O	C2P	97.9	97.9	U
2-Methyl-2-butene (t)	O	2M2B	97.9	97.9	U
t-Butanol (TBA)	ADD	TBA	97.9	97.9	U
2,2-Dimethylbutane (t)	I	22DMB	97.9	97.9	U
Cyclopentane	N	CYP	97.9	97.9	U
2,3-Dimethylbutane	I	23DMB	97.9	97.9	U
2-Methylpentane	I	2MP	97.9	653.9	
Methyl-tert-butyl ether (MTBE)	ADD	MTBE	73.4	73.4	U
3-Methylpentane	I	3MP	97.9	828.0	
1-Hexene	O	1HX	97.9	109.3	
Hexane (nC6)	P	C6	97.9	1186.3	
Di-isopropyl ether (DIPE)	ADD	DIPE	73.4	73.4	U
trans-2-hexene (t)	O	T2HE	97.9	97.9	U
2-Methyl-2-pentene (t)	O	2M2P	97.9	97.9	U
cis-2-hexene (t)	O	C2HE	97.9	97.9	U
cis-3-Methyl-2-pentene (t)	O	C3M2P	97.9	97.9	U
Ethyl-tert-butyl ether (ETBE)	ADD	ETBE	73.4	73.4	U
2,2-Dimethylpentane (t)	I	22DMP	97.9	97.9	U
Methylcyclopentane	N	MCYP	195.8	219.9	D
2,4-Dimethylpentane	I	24DMP	97.9	97.9	U
1,2-Dichloroethane (EDC)	ADD	EDC	73.4	73.4	U
Benzene	A	B	97.9	97.9	U
3,3-Dimethylpentane (t)	I	33DMP	97.9	97.9	U
Thiophene	S	THIO	73.4	73.4	U
Cyclohexane	N	CYH	97.9	1237.7	
2-Methylhexane	I	2MH	97.9	964.4	
2,3-Dimethylpentane	I	23DMP	97.9	571.8	

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Lab ID: 075RL-9
Collected: 12/8/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-27-201208

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Tert-amyl methyl ether (TAME)	ADD	TAME	73.4	73.4	U
3-Methylhexane	I	3MH	97.9	1463.5	
trans-1,3-Dimethylcyclopentane (t)	N	T13DMCYP	97.9	617.2	
cis-1,3-Dimethylcyclopentane (t)	N	C13DMCYP	97.9	200.7	
trans-1,2-Dimethylcyclopentane (t)	N	T12DMCYP	97.9	958.2	
2,2,4-Trimethylpentane (isooctane)	I	224TMP	293.7	557.0	
1-Heptene	O	1HP	97.9	3427.9	
Heptane (nC7)	P	C7	195.8	787.7	D
trans-2-heptene (t)	O	T2HP	97.9	170.6	
Methylcyclohexane	N	MCYH	195.8	483.7	D
2,5-Dimethylhexane	I	25DMH	293.7	293.7	U
2,2,3-Trimethylpentane	I	233TMP	97.9	97.9	U
2,4-Dimethylhexane	I	24DMH	97.9	520.5	
2,3,4-Trimethylpentane	I	234TMP	97.9	383.7	
2,3,3-Trimethylpentane	I	233TMP	97.9	97.9	U
Toluene	A	T	97.9	97.9	U
2-Methylthiophene	S	2MTHIO	73.4	73.4	U
2,3-Dimethylhexane	I	23DMH	97.9	97.9	U
3-Methylthiophene	S	3MTHIO	73.4	73.4	U
2-Methylheptane	I	2MHP	195.8	1203.7	D
4-Methylheptane (t)	I	4MHP	97.9	1008.7	
3-Methylheptane	I	3MHP	391.7	654.6	D
3-Ethylhexane	I	3EHX	195.8	195.8	U
1,2-Dibromoethane (EDB)	ADD	EDB	97.9	97.9	U
1-Octene	O	1O	97.9	97.9	U
Octane (nC8)	P	C8	195.8	3068.6	D
2,4-Dimethylheptane (t)	I	24DMHP	97.9	2894.4	
2,5-Dimethylheptane (t)	I	25DMHP	195.8	930.0	D
Ethylbenzene	A	EB	97.9	311.3	
2-Ethylthiophene	S	2ETHIO	73.4	73.4	U
2,3-Dimethylheptane (t)	I	23DMHP	195.8	4563.7	D
m-Xylene	A	MX	97.9	405.4	

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Lab ID: 075RL-9
Collected: 12/8/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-27-201208

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
p-Xylene	A	PX	97.9	224.0	
4-Methyloctane (t)	I	4MO	97.9	1711.0	
2-Methyloctane (t)	I	2MO	97.9	1578.3	
3-Methyloctane (t)	I	3MO	195.8	3413.4	D
Styrene	A	STRE	97.9	97.9	U
o-Xylene	A	OX	97.9	238.8	
1-Nonene	O	1N	293.7	293.7	U
Nonane (nC9)	P	C9	391.7	11180.6	D
Isopropylbenzene (cumene)	A	IPROPB	97.9	97.9	U
n-Propylbenzene	A	NPRPPB	97.9	751.8	
1-Methyl-3-ethylbenzene	A	1M3EB	97.9	749.8	
1-Methyl-4-ethylbenzene	A	1M4EB	97.9	738.9	
1,3,5-Trimethylbenzene (mesitylene)	A	135TMB	195.8	197.2	D
1-Methyl-2-ethylbenzene	A	1M2EB	195.8	198.1	D
1,2,4-Trimethylbenzene	A	124TMB	195.8	740.2	D
1-Decene	O	1D	293.7	293.7	U
Decane (nC10)	P	C10	587.5	9216.3	D
sec-Butylbenzene	A	SBUB	97.9	97.9	U
1-Methyl-3-isopropylbenzene (m-cymene)	A	1M3IPROPB	195.8	272.6	D
1-Methyl-4-isopropylbenzene (p-cymene)	A	1M4IPROPB	195.8	218.4	D
Indane	A	IA	97.9	491.8	
Indene	A	IE	97.9	97.9	U
1-Methyl-2-isopropybenzene (o-cymene)	A	1M2IPROPB	97.9	195.9	
1-Methyl-3-propylbenzene	A	1M3PROPB	195.8	550.7	D
1-Methyl-4-propylbenzene	A	1M4PROPB	195.8	276.7	D
n-Butylbenzene	A	NBB	195.8	238.4	D
1,3-Dimethyl-5-ethylbenzene	A	13DM5EB	195.8	327.4	D
1,2,diethylbenzene	A	12DEB	97.9	97.9	U
1-Methyl-2-propylbenzene	A	1M2PROPB	195.8	304.4	D
1,4-Dimethyl-2-ethylbenzene	A	14DM2EB	195.8	343.4	D
1,3-Dimethyl-4-ethylbenzene	A	13DM4EB	195.8	569.2	D
1,2-Dimethyl-4-ethylbenzene	A	12DM4EB	97.9	97.9	U

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Lab ID: 075RL-9
Collected: 12/8/2020
Received: 12/11/2020
Matrix: Product

Client ID: MW-27-201208

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/16/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
1,3-Dimethyl-2-ethylbenzene	A	13DM2EB	195.8	631.4	D
1,2-Dimethyl-3-ethylbenzene	A	12DM3EB	195.8	267.0	D
Undecane (nC11)	P	C11	293.7	1283.4	
1,2,4,5-Tetramethylbenzene	A	1245TMB	195.8	569.9	D
1,2,3,5-Tetramethylbenzene (t)	A	1235TMB	195.8	770.4	D
n-Pentylbenzene	A	NPYB	97.9	165.6	
Naphthalene	A	N	97.9	574.9	
Benzothiophene	S	BTHIO	73.4	73.4	U
Dodecane (nC12)	P	C12	195.8	875.6	
1,2,3,4-Tetramethylbenzene (t)	A	1234TMB	195.8	1143.2	D
MMT	ADD	MMT	73.4	73.4	U
2-Methylnaphthalene	A	2MN	195.8	422.4	D
1-Methylnaphthalene	A	1MN	97.9	97.9	U

Benzene d-6 (RS)	112.71	%
Toluene-d8 (RS)	94.71	%
Ethylbenzene d10 (RS)	128.45	%

ssRL - Sample Specific Reporting Limit
Results listed as U would have been reported if present at or above the listed ssRL
J - Values greater than the ssRL but less than the PQL (3 x ssRL).
D - Secondary dilution perfomed
Q - Surrogate recovery limit exceedance
I - Matrix Interference
NC - Not calibrated
Note: Extracted by EPA 5030 (Purge and Trap).

US631

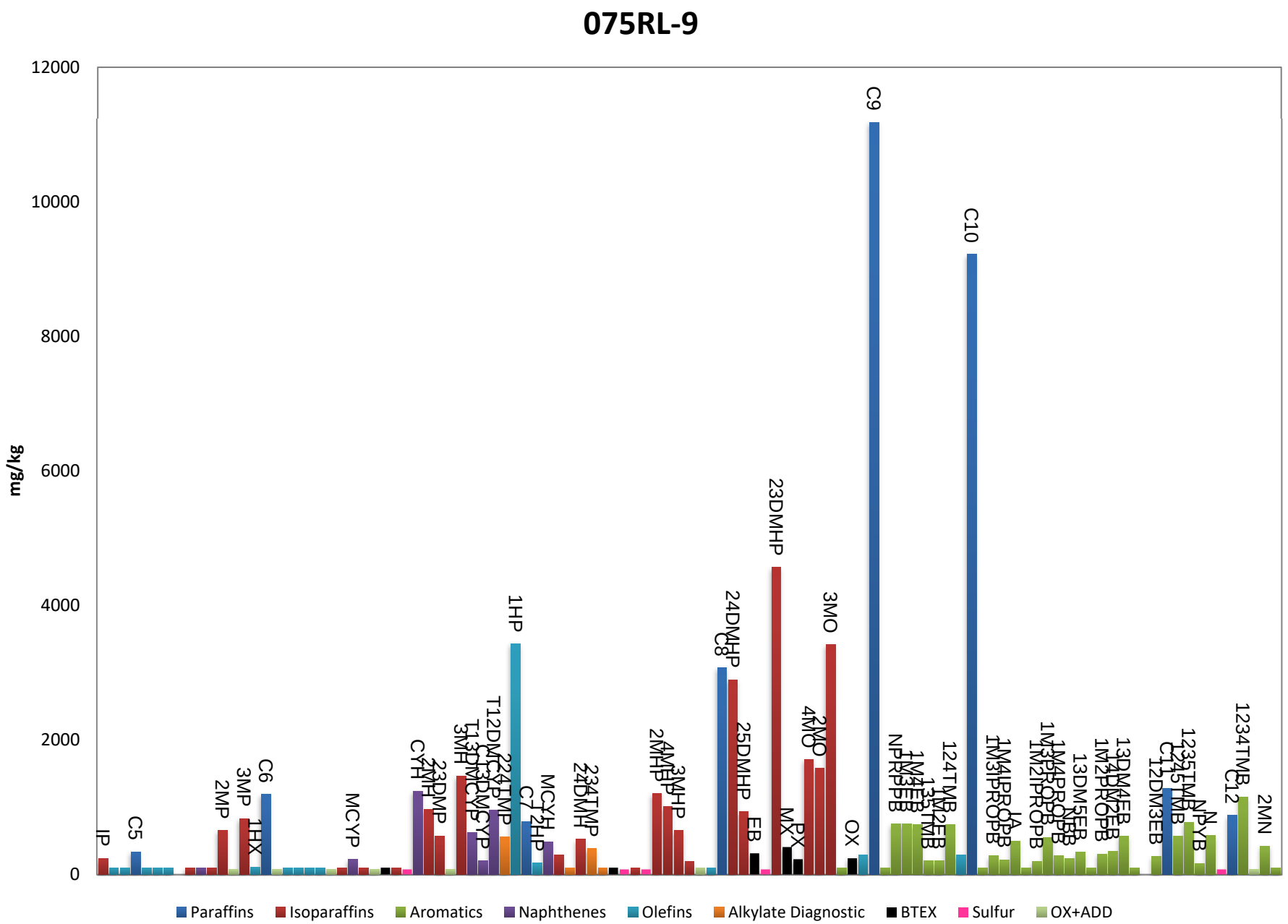
075RL-9 1000X.D & dilution 075RL-9 2000X.D

Submitted by,
Microbial Insights, Inc.

MI ID	075RL-9
Sample ID	**MW-27-201208**
Evaporation	
n-Pentane / (n-Pentane+n-Heptane)	0.30
2-Methylpentane / (2-Methylpentane+2-Methylheptane)	0.35
Waterwashing	
Benzene / (Benzene+Cyclohexane)	
Toluene / (Toluene+Methylcyclohexane)	
Aromatics / Total Paraffins (n+iso+cyc)	0.22
Aromatics / Naphthenes	3.30
wt% < o-xylene	52.79
Biodegradation	
(C4-C8 Para +Isopara) / C4-C8 Olefins	7.96
3-Methylhexane / n-Heptane	1.86
Methylcyclohexane / n-Heptane	0.61
Isoparaffins + Naphthenes / Paraffins	1.00
Diagnostic Ratios (Refining Properties)	
2,2,4-Trimethylpentane / (2,2,4-Trimethylpentane+Methylcyclohexane)	0.5
2,2,4-Trimethylpentane / Total TMPs	0.59
nC9 / Isopropylbenzene	
nC10 / 1-Methyl-2-ethylbenzene	46.53
nC11 / 1,4-Dimethyl-2-ethylbenzene	3.74
iC5 / (iC5+nC5)	0.42
(2-methylhexane + 2,3dimethylpentane) / (3-methylhexane + 2,4 dimethylpentane)	
Naphthalene / (Naphthalene+nC12)	0.40
Methylcyclohexane/(Methylcyclohexane+Toluene)	
Toluene/n-Octane	
Oxygenates & Other (mg/kg)	
Methyl-tert-butyl ether (MTBE)	U
Di-isopropyl ether (DIPE)	U
Ethyl-tert-butyl ether (ETBE)	U
Tert-amyl methyl ether (TAME)	U
MMT	U
Lead Scavengers (mg/kg)	
1,2-Dichloroethane (EDC)	U
1,2-Dibromoethane (EDB)	U
Sulfur containing HCs (mg/kg)	
Thiophene	U
2-Methylthiophene	U
3-Methylthiophene	U
2-Ethylthiophene	U
Benzothiophene	U
Relative Percentages	
% Paraffinic	38.9
% Isoparaffinic	33.6
% Aromatic	17.1
% Naphthenic	5.2
% Olefinic	5.2

Note: If field is blank a ratio was not calculable.

SAMPLE HISTOGRAM



Russ Shropshire
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Lab ID: 075RL-10
Collected: 11/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: 22IE Woodin UST-1

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/17/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Isopentane (2-Methylbutane)	I	IP	95.9	95.9	U
1-Pentene	O	1P	95.9	95.9	U
2-Methyl-1-butene	O	2M1B	95.9	95.9	U
Pentane (nC5)	P	C5	95.9	95.9	U
trans-2-pentene	O	T2P	95.9	95.9	U
cis-2-pentene	O	C2P	95.9	95.9	U
2-Methyl-2-butene (t)	O	2M2B	95.9	95.9	U
t-Butanol (TBA)	ADD	TBA	95.9	95.9	U
2,2-Dimethylbutane (t)	I	22DMB	95.9	95.9	U
Cyclopentane	N	CYP	95.9	95.9	U
2,3-Dimethylbutane	I	23DMB	95.9	646.4	
2-Methylpentane	I	2MP	191.8	593.0	D
Methyl-tert-butyl ether (MTBE)	ADD	MTBE	71.9	71.9	U
3-Methylpentane	I	3MP	191.8	1016.5	D
1-Hexene	O	1HX	95.9	1649.9	
Hexane (nC6)	P	C6	191.8	2491.7	D
Di-isopropyl ether (DIPE)	ADD	DIPE	71.9	71.9	U
trans-2-hexene (t)	O	T2HE	191.8	348.5	D
2-Methyl-2-pentene (t)	O	2M2P	95.9	1648.9	
cis-2-hexene (t)	O	C2HE	191.8	233.0	D
cis-3-Methyl-2-pentene (t)	O	C3M2P	191.8	269.4	D
Ethyl-tert-butyl ether (ETBE)	ADD	ETBE	71.9	71.9	U
2,2-Dimethylpentane (t)	I	22DMP	95.9	1176.3	
Methylcyclopentane	N	MCYP	191.8	6537.6	D
2,4-Dimethylpentane	I	24DMP	95.9	13656.4	
1,2-Dichloroethane (EDC)	ADD	EDC	71.9	499.4	
Benzene	A	B	191.8	3851.5	D
3,3-Dimethylpentane (t)	I	33DMP	191.8	330.2	D
Thiophene	S	THIO	71.9	71.9	U
Cyclohexane	N	CYH	191.8	11055.6	D
2-Methylhexane	I	2MH	191.8	6084.7	D
2,3-Dimethylpentane	I	23DMP	191.8	2914.5	D

Russ Shropshire
Leidos, Inc.
18939 120th Avenue NE, Suite 112,
Bothell, WA, 98011

Lab ID: 075RL-10
Collected: 11/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: 22IE Woodin UST-1

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/17/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
Tert-amyl methyl ether (TAME)	ADD	TAME	71.9	71.9	U
3-Methylhexane	I	3MH	191.8	7760.8	D
trans-1,3-Dimethylcyclopentane (t)	N	T13DMCYP	191.8	2206.1	D
cis-1,3-Dimethylcyclopentane (t)	N	C13DMCYP	191.8	769.9	D
trans-1,2-Dimethylcyclopentane (t)	N	T12DMCYP	191.8	3101.8	D
2,2,4-Trimethylpentane (isooctane)	I	224TMP	575.3	4851.4	D
1-Heptene	O	1HP	95.9	90969.1	
Heptane (nC7)	P	C7	191.8	28236.1	D
trans-2-heptene (t)	O	T2HP	191.8	1929.9	D
Methylcyclohexane	N	MCYH	191.8	21184.1	D
2,5-Dimethylhexane	I	25DMH	575.3	2566.8	D
2,2,3-Trimethylpentane	I	233TMP	95.9	95.9	U
2,4-Dimethylhexane	I	24DMH	191.8	3634.5	D
2,3,4-Trimethylpentane	I	234TMP	191.8	4870.2	D
2,3,3-Trimethylpentane	I	233TMP	95.9	46029.9	
Toluene	A	T	191.8	23042.6	D
2-Methylthiophene	S	2MTHIO	71.9	303.5	
2,3-Dimethylhexane	I	23DMH	191.8	5634.8	D
3-Methylthiophene	S	3MTHIO	71.9	71.9	U
2-Methylheptane	I	2MHP	191.8	24899.3	D
4-Methylheptane (t)	I	4MHP	191.8	5693.2	D
3-Methylheptane	I	3MHP	383.5	16884.1	D
3-Ethylhexane	I	3EHX	191.8	191.8	U
1,2-Dibromoethane (EDB)	ADD	EDB	95.9	95.9	U
1-Octene	O	1O	95.9	95.9	U
Octane (nC8)	P	C8	191.8	37165.0	D
2,4-Dimethylheptane (t)	I	24DMHP	191.8	9476.5	D
2,5-Dimethylheptane (t)	I	25DMHP	191.8	10191.6	D
Ethylbenzene	A	EB	191.8	10938.3	D
2-Ethylthiophene	S	2ETHIO	71.9	71.9	U
2,3-Dimethylheptane (t)	I	23DMHP	191.8	14459.8	D
m-Xylene	A	MX	95.9	95.9	U

Russ Shropshire
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Bothell, WA, 98011

Lab ID: 075RL-10
Collected: 11/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: 22IE Woodin UST-1

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/17/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
p-Xylene	A	PX	191.8	9000.6	D
4-Methyloctane (t)	I	4MO	191.8	10018.7	D
2-Methyloctane (t)	I	2MO	191.8	10850.2	D
3-Methyloctane (t)	I	3MO	191.8	18859.8	D
Styrene	A	STRE	95.9	394.9	
o-Xylene	A	OX	191.8	16808.8	D
1-Nonene	O	1N	287.6	287.6	U
Nonane (nC9)	P	C9	383.5	18021.1	D
Isopropylbenzene (cumene)	A	IPROPB	95.9	95.9	U
n-Propylbenzene	A	NPRPPB	191.8	4865.6	D
1-Methyl-3-ethylbenzene	A	1M3EB	191.8	18190.8	D
1-Methyl-4-ethylbenzene	A	1M4EB	191.8	7981.3	D
1,3,5-Trimethylbenzene (mesitylene)	A	135TMB	191.8	10596.9	D
1-Methyl-2-ethylbenzene	A	1M2EB	191.8	6514.1	D
1,2,4-Trimethylbenzene	A	124TMB	95.9	95.9	U
1-Decene	O	1D	287.6	8533.4	
Decane (nC10)	P	C10	575.3	10419.3	D
sec-Butylbenzene	A	SBUB	95.9	95.9	U
1-Methyl-3-isopropylbenzene (m-cymene)	A	1M3IPROPB	191.8	1861.8	D
1-Methyl-4-isopropylbenzene (p-cymene)	A	1M4IPROPB	191.8	277.0	D
Indane	A	IA	191.8	5168.0	D
Indene	A	IE	191.8	265.7	D
1-Methyl-2-isopropybenzene (o-cymene)	A	1M2IPROPB	95.9	315.3	
1-Methyl-3-propylbenzene	A	1M3PROPB	191.8	6762.2	D
1-Methyl-4-propylbenzene	A	1M4PROPB	191.8	3232.9	D
n-Butylbenzene	A	NBB	191.8	2127.3	D
1,3-Dimethyl-5-ethylbenzene	A	13DM5EB	191.8	7298.3	D
1,2,diethylbenzene	A	12DEB	191.8	520.8	D
1-Methyl-2-propylbenzene	A	1M2PROPB	191.8	1966.1	D
1,4-Dimethyl-2-ethylbenzene	A	14DM2EB	191.8	5617.5	D
1,3-Dimethyl-4-ethylbenzene	A	13DM4EB	191.8	4586.2	D
1,2-Dimethyl-4-ethylbenzene	A	12DM4EB	191.8	8099.2	D

Russ Shropshire
Leidos, Inc.
18939 120th Avenue NE, Suite 112,
Bothell, WA, 98011

Lab ID: 075RL-10
Collected: 11/7/2020
Received: 12/11/2020
Matrix: Product

Client ID: 22IE Woodin UST-1

Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.00.000
Collected by:

Analyzed: 12/17/2020
Q Method: 121818ICAL.M

CONSTITUENTS	CLASS	ABBR.	ssRL mg/kg	RESULT mg/kg	QUALIFIER
1,3-Dimethyl-2-ethylbenzene	A	13DM2EB	95.9	95.9	U
1,2-Dimethyl-3-ethylbenzene	A	12DM3EB	191.8	1114.2	D
Undecane (nC11)	P	C11	575.3	2529.2	D
1,2,4,5-Tetramethylbenzene	A	1245TMB	191.8	4652.9	D
1,2,3,5-Tetramethylbenzene (t)	A	1235TMB	191.8	6434.3	D
n-Pentylbenzene	A	NPYB	191.8	1460.4	D
Naphthalene	A	N	191.8	2610.2	D
Benzothiophene	S	BTHIO	71.9	623.4	
Dodecane (nC12)	P	C12	191.8	2694.0	
1,2,3,4-Tetramethylbenzene (t)	A	1234TMB	191.8	2209.3	D
MMT	ADD	MMT	71.9	71.9	U
2-Methylnaphthalene	A	2MN	95.9	433.0	
1-Methylnaphthalene	A	1MN	95.9	95.9	U

Benzene d-6 (RS)	108.75	%
Toluene-d8 (RS)	95.80	%
Ethylbenzene d10 (RS)	125.15	%

ssRL - Sample Specific Reporting Limit
Results listed as U would have been reported if present at or above the listed ssRL
J - Values greater than the ssRL but less than the PQL (3 x ssRL).
D - Secondary dilution perfomed
Q - Surrogate recovery limit exceedance
I - Matrix Interference
NC - Not calibrated
Note: Extracted by EPA 5030 (Purge and Trap).

US631

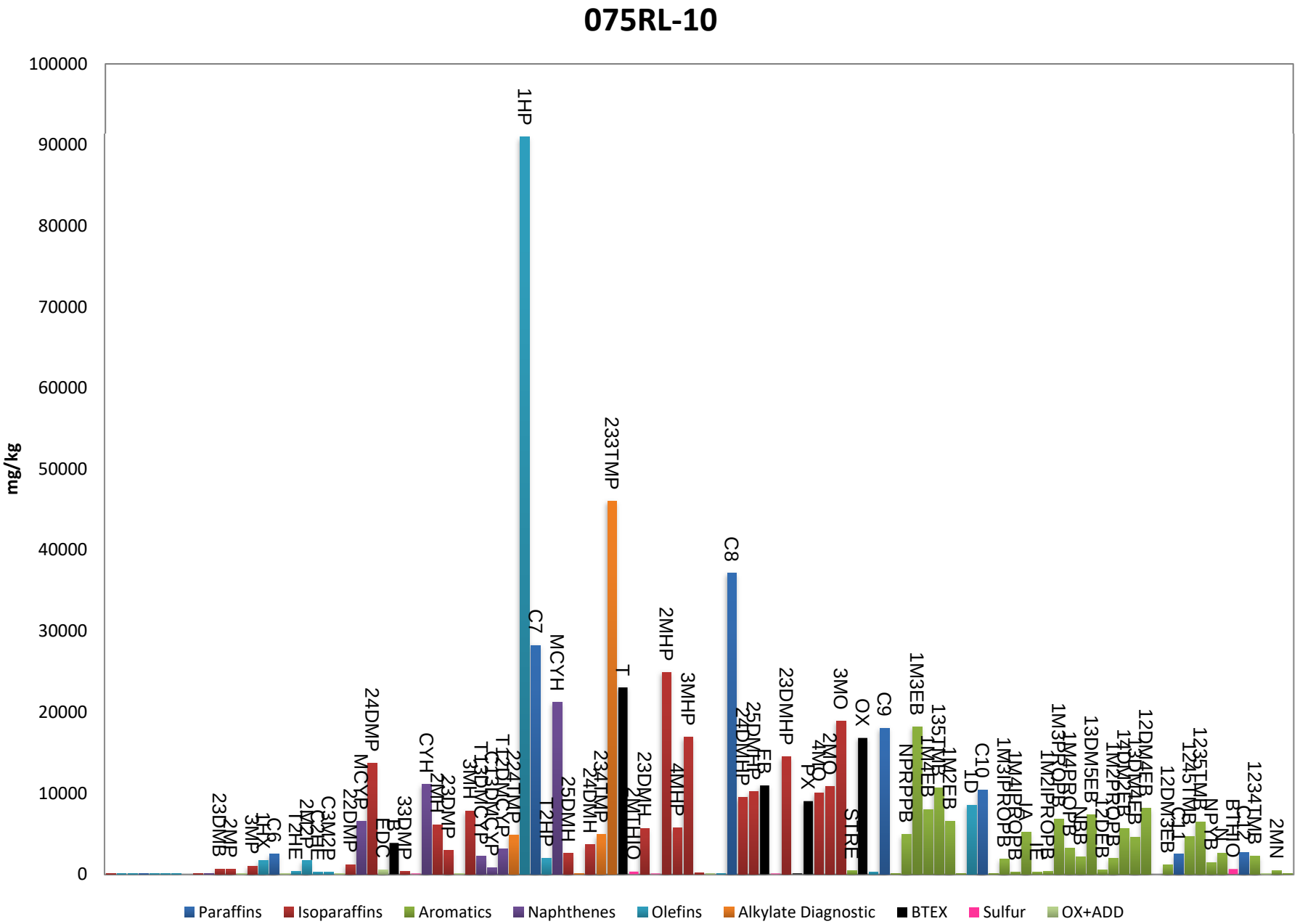
075RL-10 1000X.D & dilution 075RL-10 2000X.D

Submitted by,
Microbial Insights, Inc.

MI ID	075RL-10
Sample ID	22IE Woodin UST-1
Evaporation	
n-Pentane / (n-Pentane+n-Heptane)	
2-Methylpentane / (2-Methylpentane+2-Methylheptane)	0.02
Waterwashing	
Benzene / (Benzene+Cyclohexane)	0.26
Toluene / (Toluene+Methylcyclohexane)	0.52
Aromatics / Total Paraffins (n+iso+cyc)	0.48
Aromatics / Naphthenes	4.00
wt% < o-xylene	73.34
Biodegradation	
(C4-C8 Para +Isopara) / C4-C8 Olefins	3.00
3-Methylhexane / n-Heptane	0.27
Methylcyclohexane / n-Heptane	0.75
Isoparaffins + Naphthenes / Paraffins	2.64
Diagnostic Ratios (Refining Properties)	
2,2,4-Trimethylpentane / (2,2,4-Trimethylpentane+Methylcyclohexane)	0.2
2,2,4-Trimethylpentane / Total TMPs	0.09
nC9 / Isopropylbenzene	
nC10 / 1-Methyl-2-ethylbenzene	1.60
nC11 / 1,4-Dimethyl-2-ethylbenzene	0.45
iC5 / (iC5+nC5)	
(2-methylhexane + 2,3dimethylpentane) / (3-methylhexane + 2,4 dimethylpentane)	0.42
Naphthalene / (Naphthalene+nC12)	0.49
Methylcyclohexane/(Methylcyclohexane+Toluene)	0.48
Toluene/n-Octane	0.62
Oxygenates & Other (mg/kg)	
Methyl-tert-butyl ether (MTBE)	U
Di-isopropyl ether (DIPE)	U
Ethyl-tert-butyl ether (ETBE)	U
Tert-amyl methyl ether (TAME)	U
MMT	U
Lead Scavengers (mg/kg)	
1,2-Dichloroethane (EDC)	499.39
1,2-Dibromoethane (EDB)	U
Sulfur containing HCs (mg/kg)	
Thiophene	U
2-Methylthiophene	303.45
3-Methylthiophene	U
2-Ethylthiophene	U
Benzothiophene	623.44
Relative Percentages	
% Paraffinic	15.5
% Isoparaffinic	34.1
% Aromatic	27.4
% Naphthenic	6.9
% Olefinic	16.1

Note: If field is blank a ratio was not calculable.

SAMPLE HISTOGRAM



10515 Research Dr.
Knoxville, TN 37932
Phone: 865.573.8188
Fax: 865.573.8133
Web: www.microbe.com

SITE LOGIC Report

C8-C40 Full Scan Semi-Quantitative Characterization by GC/MS

Contact: Russ Shropshire
Phone: 425-482-3323
Address: Ledios Inc.
18939 120th Avenue NE Suite 112
Bothell, WA 98011
Email: russell.s.shropshire@leidos.com

MI Identifier: 075RL **Report Date:** December 22, 2020

Project: Chelan Chevron Site, #334893.TM.1.000.00.00.000

Comments:

Ion (m/z)	Compound Class
TIC	All Compounds
85	n-Alkanes
113	Iso-Alkanes and Isoprenoids
83	Alkylcyclohexanes
134	C4-Benzenes
123	Bicyclanes
191	Terpanes
217	Steranes
253	Monoaromatic Steranes
231	Triaromatic Steranes
Bar Diagram	Aromatic Hydrocarbons

Note: Chromatograms and data follow this cover page.

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Phone: 865.573.8188
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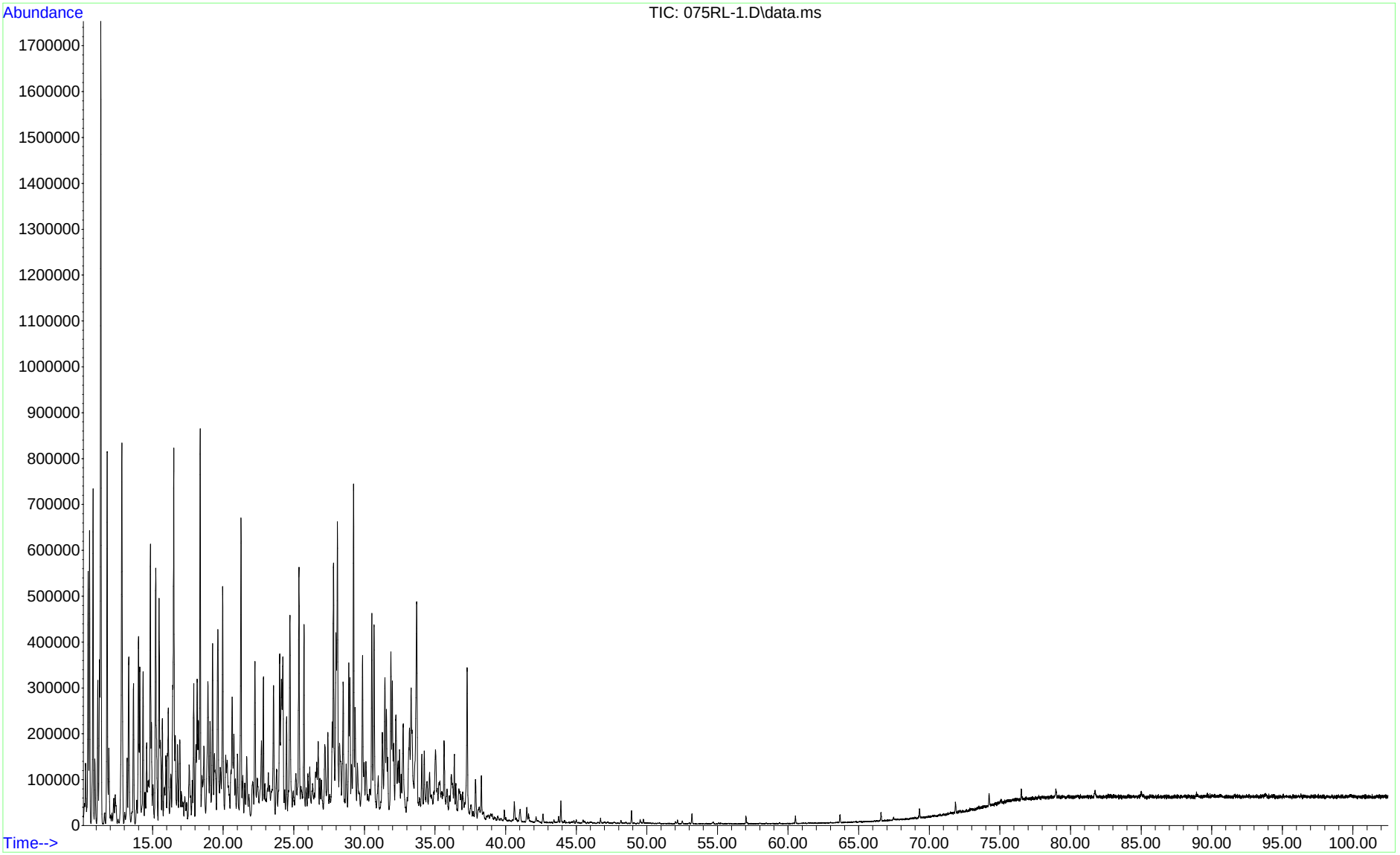
Acquired : 15 Dec 2020 16:47 using AcqMethod FOREN4LA_MI_BACK.M
Sample Name: 075RL-1



Chromatogram Key & Numerical Results: 85 m/z n-Paraffins

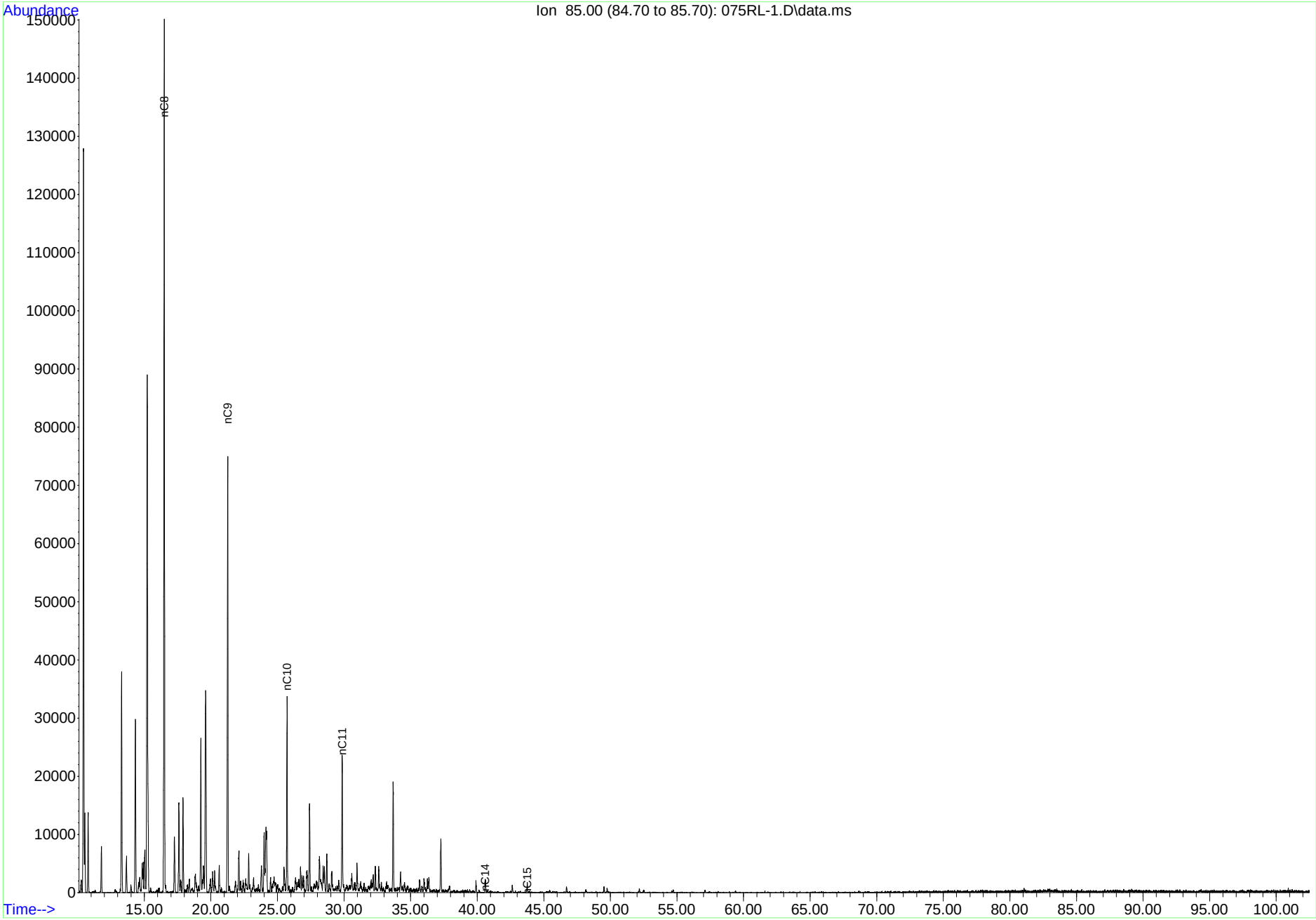
Project Manager:	Russ Shropshire	Lab ID:	075RL-1
Client:	Leidos, Inc.	Collected:	12/6/2020
Address:	18939 120th Avenue NE,	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-10-201206
Project #:	334893.TM.1.000.00.0	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (85 m/z)
n-Octane	nC8	85	16.5	150066.0	52.5%
n-Nonane	nC9	85	21.3	74944.0	26.2%
n-Decane	nC10	85	25.7	33477.0	11.7%
n-Undecane	nC11	85	29.9	23369.0	8.2%
n-Dodecane	nC12	85	ND	ND	ND
n-Tridecane	nC13	85	ND	ND	ND
n-Tetradecane	nC14	85	40.6	2322.0	0.8%
n-Pentadecane	nC15	85	43.8	1773.0	0.6%
n-Hexadecane	nC16	85	ND	ND	ND
n-Heptadecane	nC17	85	ND	ND	ND
n-Octadecane	nC18	85	ND	ND	ND
n-Nonadecane	nC19	85	ND	ND	ND
n-Eicosane	nC20	85	ND	ND	ND
n-Henicosane	nC21	85	ND	ND	ND
n-Docosane	nC22	85	ND	ND	ND
n-Tricosane	nC23	85	ND	ND	ND
n-Tetracosane	nC24	85	ND	ND	ND
n-Pentacosane	nC25	85	ND	ND	ND
n-Hexacosane	nC26	85	ND	ND	ND
n-Heptacosane	nC27	85	ND	ND	ND
n-Octacosane	nC28	85	ND	ND	ND
n-Nonacosane	nC29	85	ND	ND	ND
n-Triacontane	nC30	85	ND	ND	ND
n-Hentriacontane	nC31	85	ND	ND	ND
n-Dotriacontane	nC32	85	ND	ND	ND
n-Tritriacontane	nC33	85	ND	ND	ND
n-Tetratriacontane	nC34	85	ND	ND	ND
n-Pentatriacontane	nC35	85	ND	ND	ND
n-Hexatriacontane	nC36	85	ND	ND	ND
n -Heptatriacontane	nC37	85	ND	ND	ND
n -Octatriacontane	nC38	85	ND	ND	ND
n -Nonatriacontane	nC39	85	ND	ND	ND
n-Tetracontane	nC40	85	ND	ND	ND

0.40507 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-1
0.40507 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 113 m/z Isoparaffins

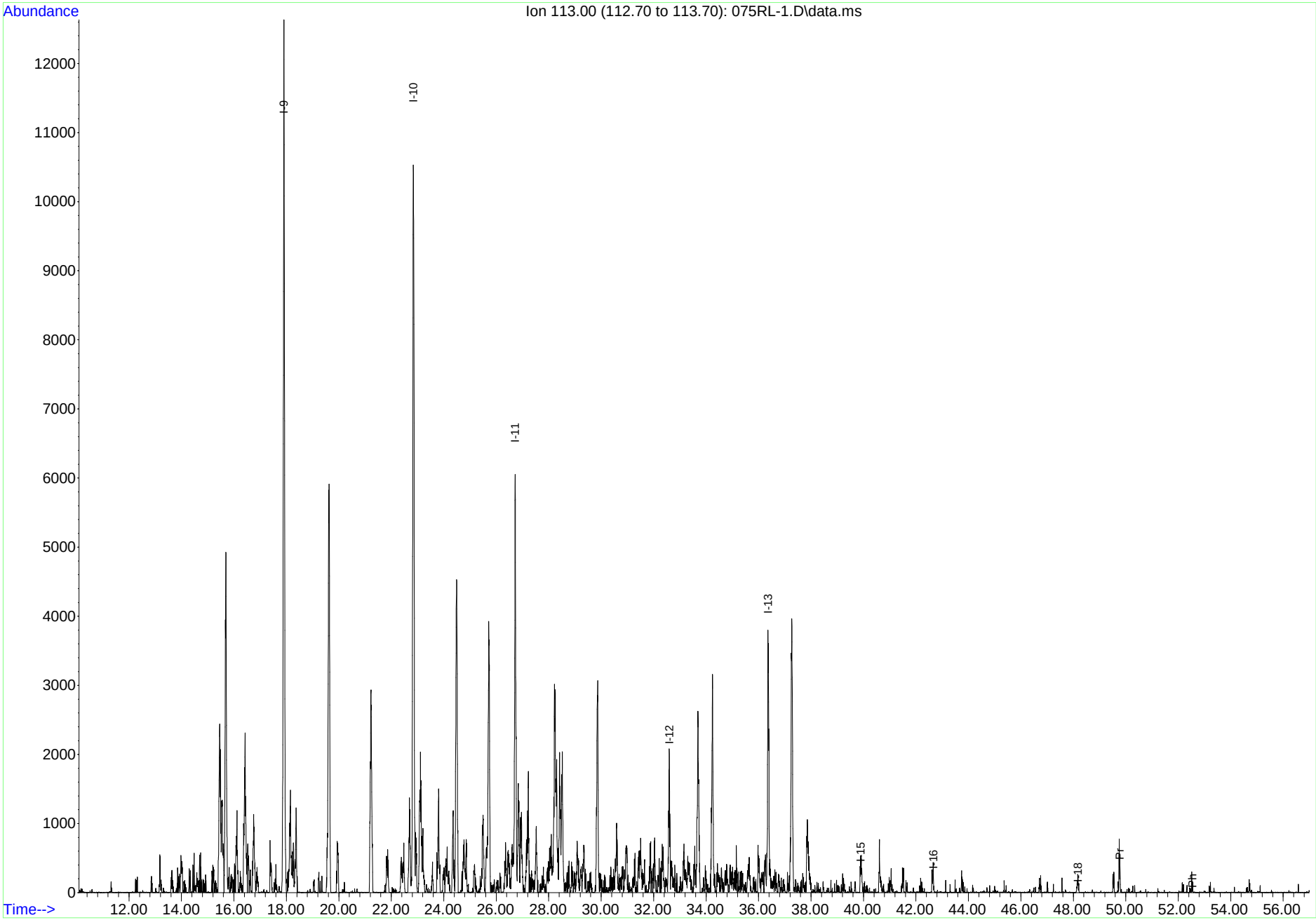
Project Manager:	Russ Shropshire	Lab ID:	075RL-1
Client:	Leidos, Inc.	Collected:	12/6/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-10-201206
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (113 m/z)
Iso-alkane w/ 9 Carbon Atoms	I-9	113	17.9	12631.0	34.6%
Iso-alkane w/ 10 Carbon Atoms	I-10	113	22.8	10361.0	28.4%
Iso-alkane w/ 11 Carbon Atoms	I-11	113	26.7	5865.0	16.1%
Iso-alkane w/ 12 Carbon Atoms	I-12	113	32.6	2030.0	5.6%
Iso-alkane w/ 13 Carbon Atoms	I-13	113	36.4	3748.0	10.3%
Iso-alkane w/ 14 Carbon Atoms	I-14	113	ND	ND	ND
Farnesane (Isoprenoid - C15)	I-15	113	39.9	534.0	1.5%
Iso-alkane w/ 16 Carbon Atoms	I-16	113	42.7	437.0	1.2%
Iso-alkane w/ 18 Carbon Atoms	I-18	113	48.2	268.0	0.7%
Pristane (Isoprenoid - C19)	Pr	113	49.8	509.0	1.4%
Phytane (Isoprenoid - C20)	Ph	113	52.5	155.0	0.4%

0.40507 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-1
0.40507 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 83 m/z Alkylcyclohexanes

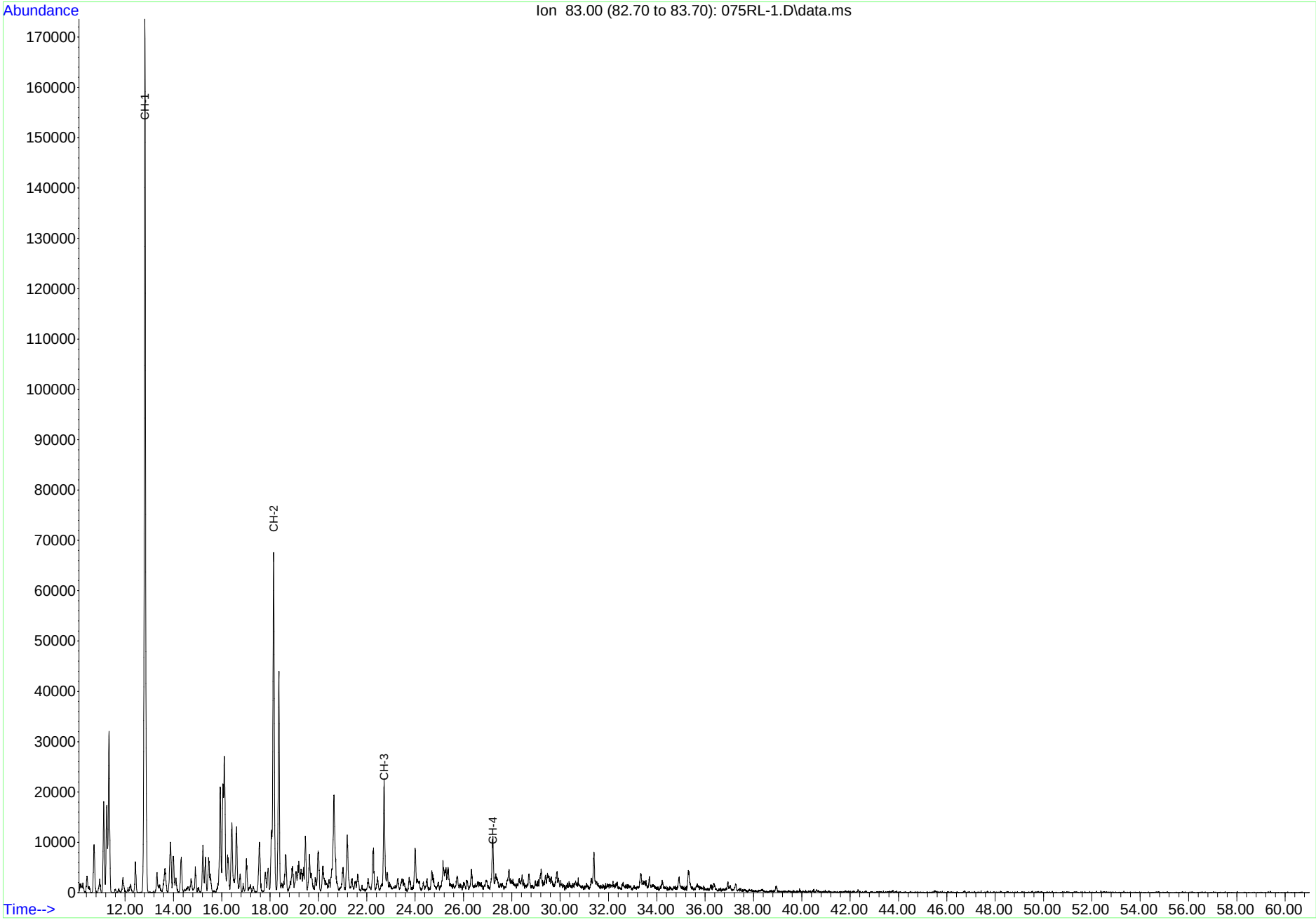
Project Manager:	Russ Shropshire	Lab ID:	075RL-1
Client:	Leidos, Inc.	Collected:	12/6/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-10-201206
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (83 m/z)
Methylcyclohexane	CH-1	83	12.8	173558.0	63.9%
Ethylcyclohexane	CH-2	83	18.1	67043.0	24.7%
Propylcyclohexane	CH-3	83	22.7	21353.0	7.9%
Butylcyclohexane	CH-4	83	27.2	9787.0	3.6%
Pentylcyclohexane	CH-5	83	ND	ND	ND
Hexylcyclohexane	CH-6	83	ND	ND	ND
Heptylcyclohexane	CH-7	83	ND	ND	ND
Octylcyclohexane	CH-8	83	ND	ND	ND
Nonylcyclohexane	CH-9	83	ND	ND	ND
Decylcyclohexane	CH-10	83	ND	ND	ND
Undecylcyclohexane	CH-11	83	ND	ND	ND
Dodecylcyclohexane	CH-12	83	ND	ND	ND
Tridecylcyclohexane	CH-13	83	ND	ND	ND
Tetradecylcyclohexane	CH-14	83	ND	ND	ND

0.40507 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-1
0.40507 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 134 m/z C3-C4 Monoaromatics

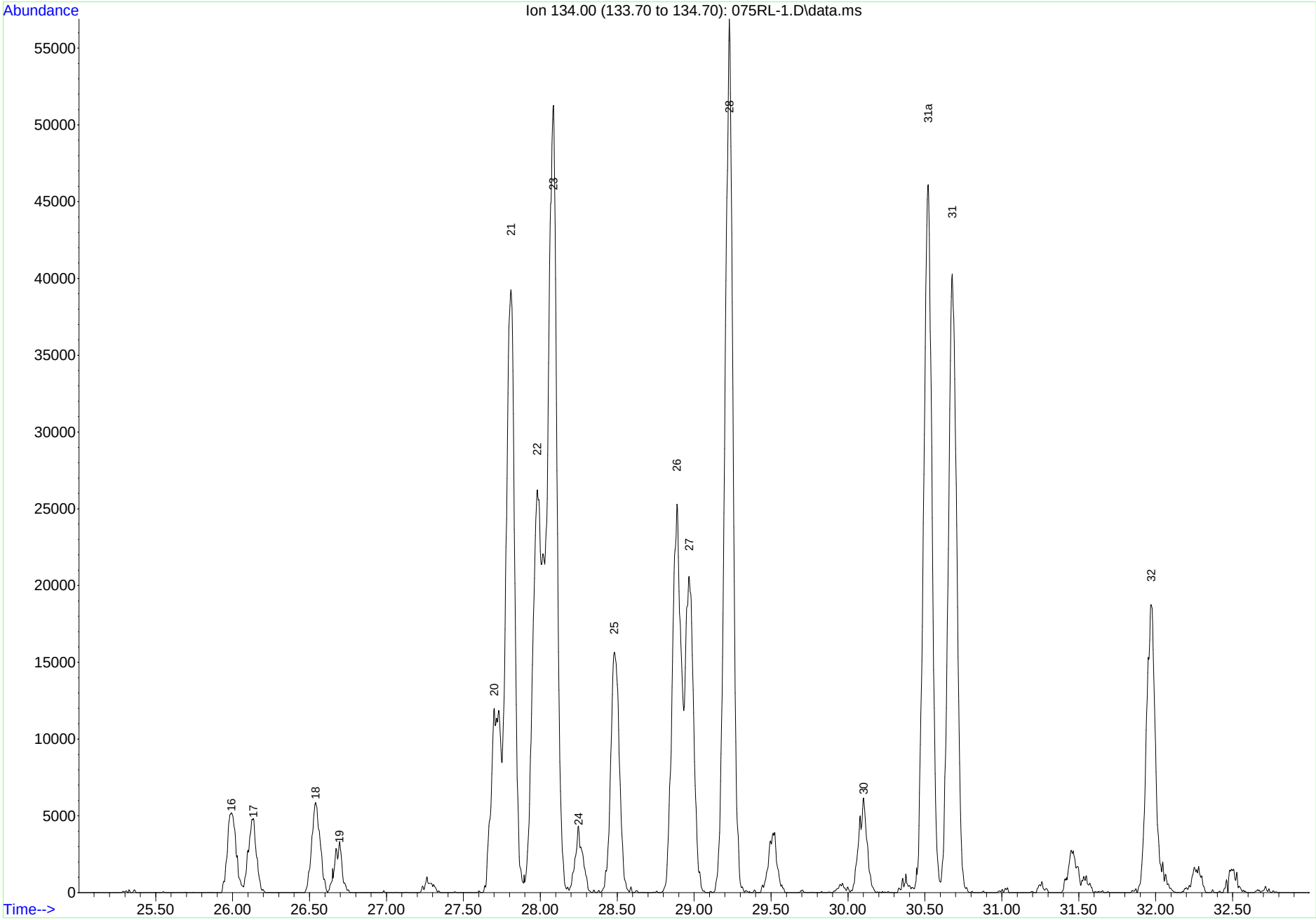
Project Manager:	Russ Shropshire	Lab ID:	075RL-1
Client:	Leidos, Inc.	Collected:	12/6/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-10-201206
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (134 m/z)
Sec-Butylbenzene	16	134	26.0	5203.0	1.4%
1-Methyl-3-Isopropylbenzene	17	134	26.1	4683.0	1.2%
1-Methyl-4-Isopropylbenzene	18	134	26.5	5886.0	1.5%
1-Methyl-2-Isopropylbenzene	19	134	26.7	3241.0	0.9%
1,3-Diethylbenzene	20	134	27.7	12006.0	3.2%
1-Methyl-3-Propylbenzene	21	134	27.8	38611.0	10.2%
Butylbenzene	22	134	28.0	25482.0	6.7%
1,3-Diethyl-5-Ethylbenzene	23	134	28.1	51047.0	13.4%
1,2-Diethylbenzene	24	134	28.2	4332.0	1.1%
1-Methyl-2-Propylbenzene	25	134	28.5	15651.0	4.1%
1,4-Dimethyl-2-Ethylbenzene	26	134	28.9	25300.0	6.7%
1,3-Dimethyl-4-Ethylbenzene	27	134	29.0	20600.0	5.4%
1,2-Dimethyl-4-Ethylbenzene	28	134	29.2	56885.0	15.0%
1,3-Dimethyl-2-Ethylbenzene	29	134	ND	ND	ND
1,2-Dimethyl-3-Ethylbenzene	30	134	30.1	6167.0	1.6%
1,2,4,5-Tetramethylbenzene	31a	134	30.5	45862.0	12.1%
1,2,3,5-Tetramethylbenzene	31	134	30.7	40025.0	10.5%
1,2,3,4-Tetramethylbenzene	32	134	32.0	18768.0	4.9%

0.40507 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-1
0.40507 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 123 m/z Bicyclanes

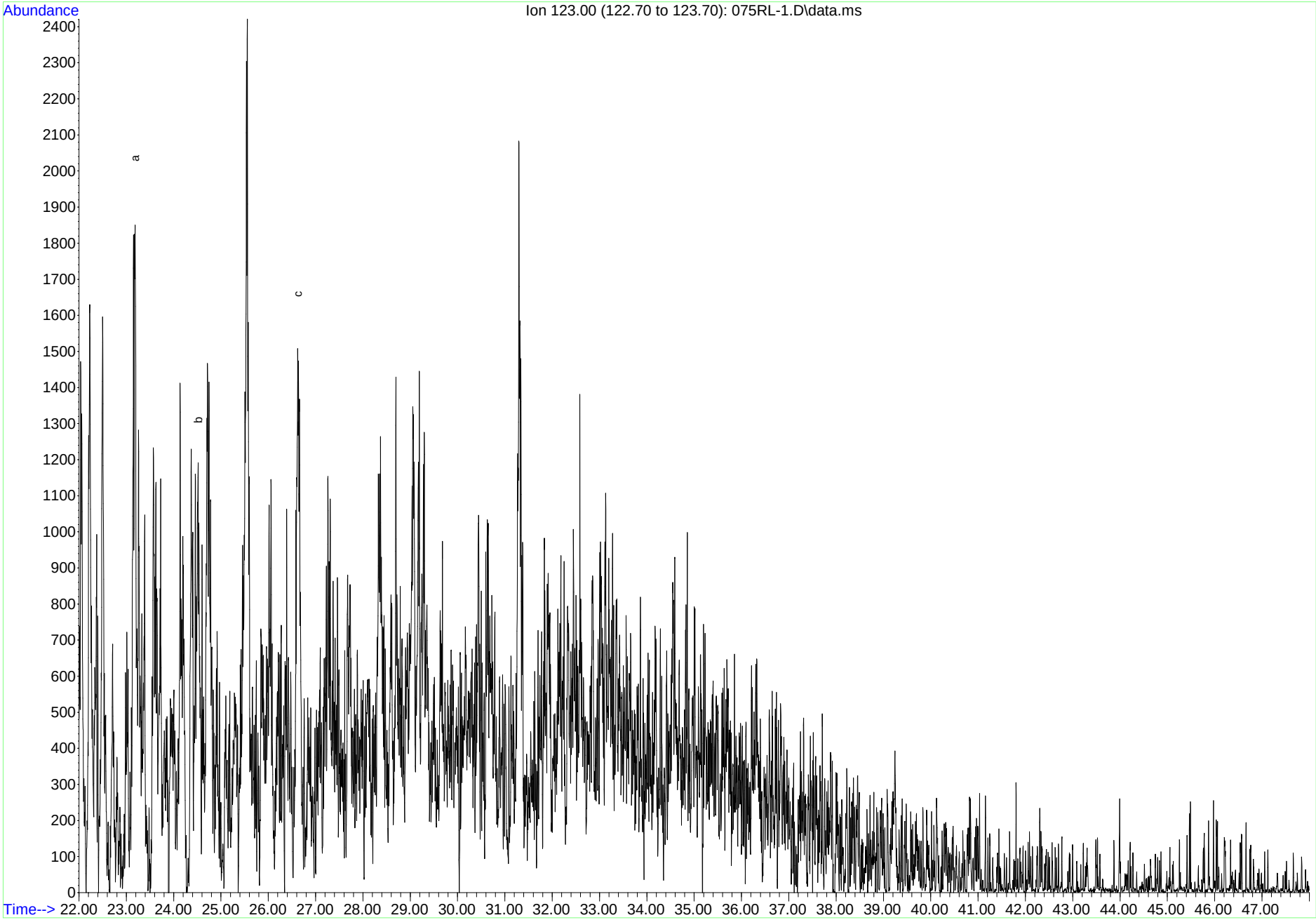
Project Manager:	Russ Shropshire	Lab ID:	075RL-1
Client:	Leidos, Inc.	Collected:	12/6/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-10-201206
Project #:	334893.TM.1.000.00.0	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (123 m/z)
2,2,3-Trimethylbicycloheptane	a	123	23.2	1850.0	40.7%
C_{10} bicycloalkane	b	123	24.5	1191.0	26.2%
3,3,7-Trimethylbicycloheptane	c	123	26.6	1508.0	33.2%
C_{11} Decalin	d	123	ND	ND	ND
Nordrimane	f	123	ND	ND	ND
Nordrimane	g	123	ND	ND	ND
Rearranged drimane	h	123	ND	ND	ND
Rearranged drimane	j	123	ND	ND	ND
Isomer of Eudesmane	k	123	ND	ND	ND
4β (H) Eudesmane	l	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	m	123	ND	ND	ND
8β (H) Drimane	n	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	o	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	p	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	q	123	ND	ND	ND
8β (H) Homodrimane	r	123	ND	ND	ND

0.40507 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-1
0.40507 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 191 m/z Terpanes

Project Manager:	Russ Shropshire	Lab ID:	075RL-1
Client:	Leidos, Inc.	Collected:	12/6/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-10-201206
Project #:	334893.TM.1.000.00.	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
C_{21}-Tricyclic Terpane	1	191	ND	ND	ND
C_{22}-Tricyclic Terpane	2	191	ND	ND	ND
C_{23}-Tricyclic Terpane	3	191	ND	ND	ND
C_{24}-Tricyclic Terpane	4	191	ND	ND	ND
C_{25}-Tricyclic Terpane	5(S+R)	191	ND	ND	ND
C_{24}-Tetracyclic Terpane	Z4	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6a*	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6b	191	ND	ND	ND
C_{28}-Tricyclic Terpane #1	A	191	ND	ND	ND
C_{28}-Tricyclic Terpane #2	B	191	ND	ND	ND
C_{29}-Tricyclic Terpane #1	C	191	ND	ND	ND
C_{29}-Tricyclic Terpane #2	D	191	ND	ND	ND
18 α-22,29,30-Trisnorneohopane (Ts)	E	191	ND	ND	ND
17 α-22,29,30-Trisnorhopane (Tm)	F	191	ND	ND	ND
C_{30}-Tricyclic Terpane #1	10a*	191	ND	ND	ND
C_{30}-Tricyclic Terpane #2	10b	191	ND	ND	ND
17 α-28,30 Bisnorhopane	I	191	ND	ND	ND
C_{31}-Tricyclic Terpane #1	11a*	191	ND	ND	ND
17α-25-Norhopane	J	191	ND	ND	ND
C_{31}-Tricyclic Terpane #2	11b	191	ND	ND	ND
17 α,21β-30-Norhopane	K	191	ND	ND	ND
18α-30-Norneohopane	C29Ts	191	ND	ND	ND
17α-Diahopane	C30*	191	ND	ND	ND
17β-21α-30-Normoretane	L	191	ND	ND	ND
18α+18β-Oleanane	Ma+Mb	191	ND	ND	ND
17α-21β-Hopane	N	191	ND	ND	ND
17β-21α-Moretane	O	191	ND	ND	ND
22S-17α,21β-30-Homohopane	P	191	ND	ND	ND
22R-17α,21β-30-Homohopane	Q	191	ND	ND	ND
Gammacerane	R	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	T	191	ND	ND	ND
22R-17α,21β-30-Bishomohopane	U	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	WS	191	ND	ND	ND
22R-17α,21β-Trishomohopane	WR	191	ND	ND	ND
22S-17α,21β-Tetrahomohopane	XS	191	ND	ND	ND

SAMPLE RESULTS

Chromatogram Key & Numerical Results: 191 m/z Terpanes

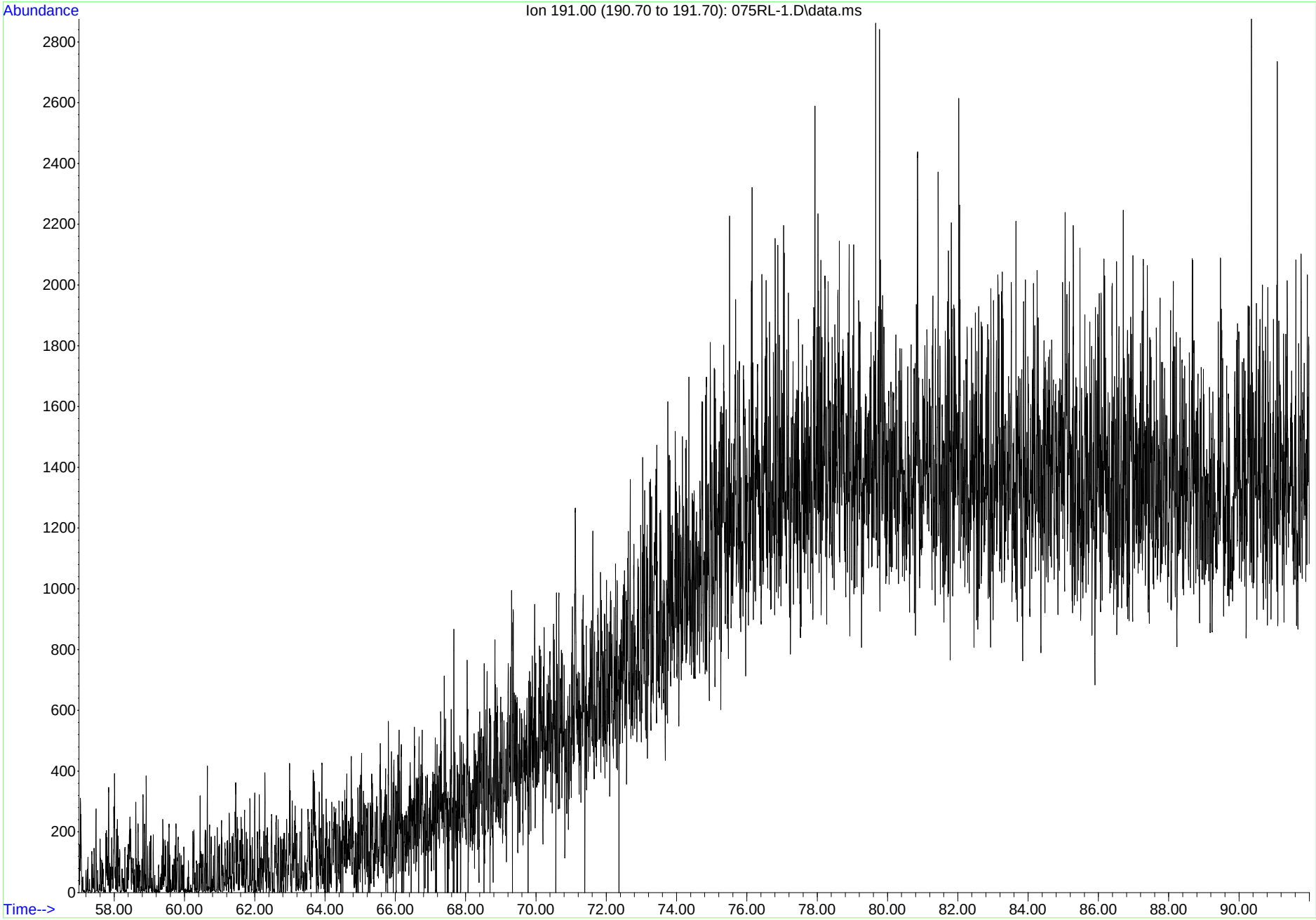
Project Manager:	Russ Shropshire	Lab ID:	075RL-1
Client:	Leidos, Inc.	Collected:	12/6/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-10-201206
Project #:	334893.TM.1.000.00.	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
22R-17α,21β-Tetrahomohopane	XR	191	ND	ND	ND
22S-17α,21β-Pentahomohopane	YS	191	ND	ND	ND
22R-17α,21β-Pentahomohopane	YR	191	ND	ND	ND

0.40507 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-1
0.40507 g



Chromatogram Key & Numerical Results: 217 m/z Steranes

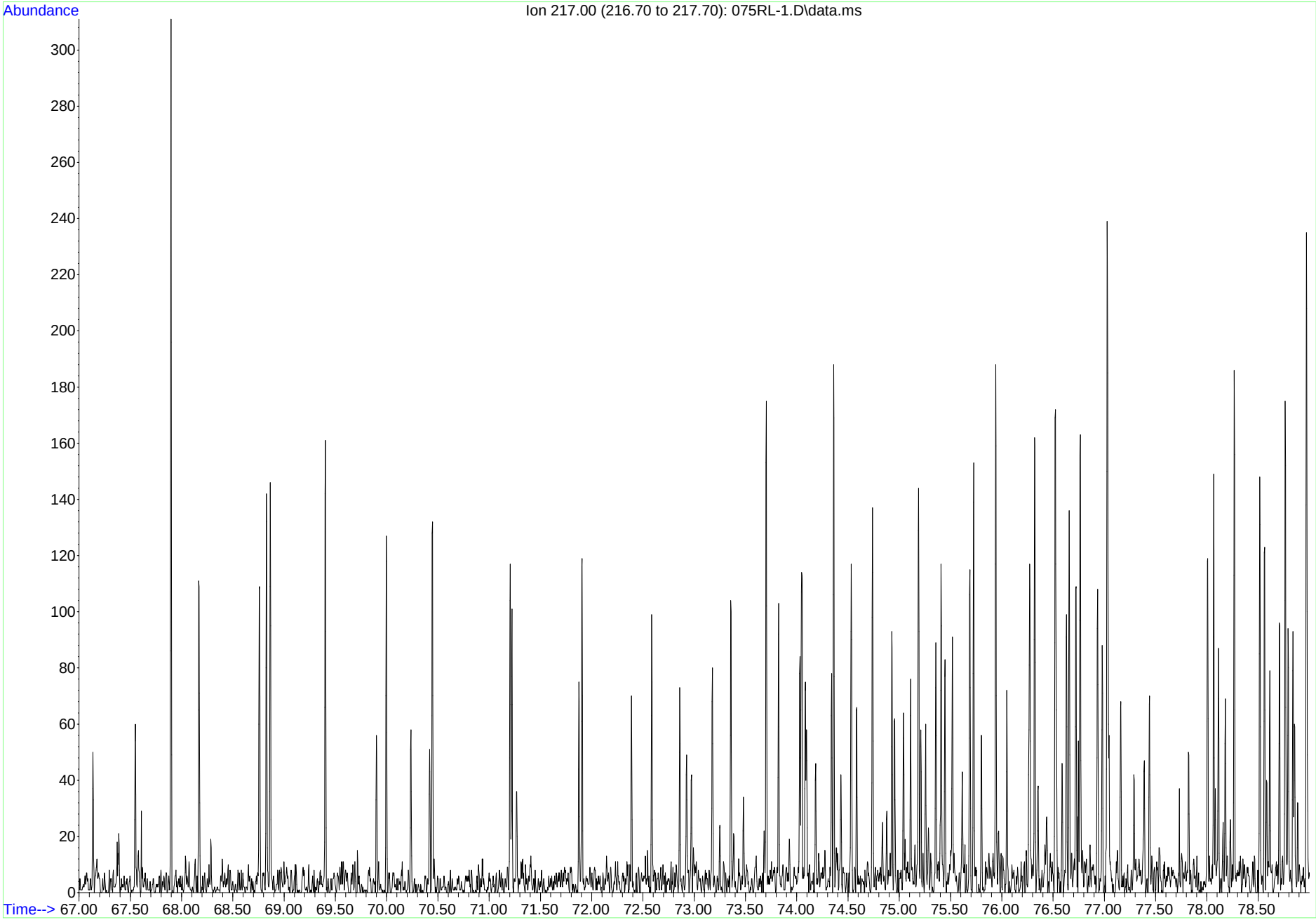
Project Manager:	Russ Shropshire	Lab ID:	075RL-1
Client:	Leidos, Inc.	Collected:	12/6/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-10-201206
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (217 m/z)
13β, 17α-Diacholestane (20S)	1	217	ND	ND	ND
13β, 17α-Diacholestane (20R)	2	217	ND	ND	ND
13α, 17β-Diacholestane (20S)	3	217	ND	ND	ND
13α, 17β-Diacholestane (20R)	4	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	5	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	6	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20S)	7D	217	ND	ND	ND
14α,17α-Cholestane (20S)	7	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20S)+ 14β,17β-Cholestane (20R)	8+8D	217	ND	ND	ND
14β,17β-Cholestane (20S)	9	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20R)	9D	217	ND	ND	ND
14α,17α-Cholestane (20R)	10	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20R)	11	217	ND	ND	ND
24-ethyl-13α, 17β-Diacholestane (20S)	12	217	ND	ND	ND
24-ethyl-13α, 17α-Diacholestane (20S)	13	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20R)	14	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20S)	15	217	ND	ND	ND
24-methyl-14α, 17α-Cholestane (20R)	16	217	ND	ND	ND
24-ethyl-14α-Cholestane (20S)	17	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20R)	18	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20S)	19	217	ND	ND	ND
24-ethyl-14α, 17α-Cholestane (20R)	20	217	ND	ND	ND

0.40507 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-1
0.40507 g



Chromatogram Key & Numerical Results: 253 m/z Monoaromatic Steranes

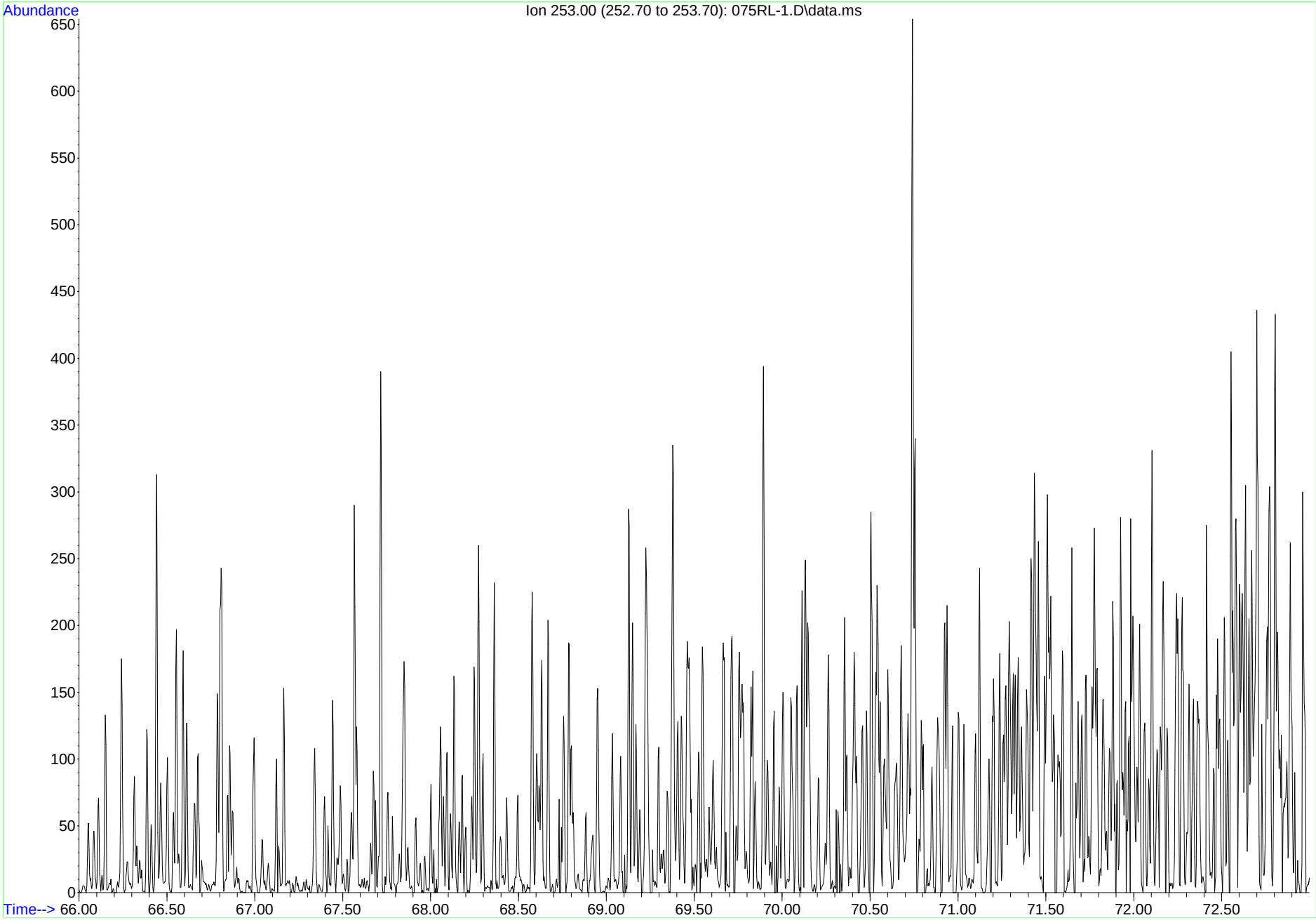
Project Manager:	Russ Shropshire	Lab ID:	075RL-1
Client:	Leidos, Inc.	Collected:	12/6/2020
Address:	18939 120th Avenue NE,	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-10-201206
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (253 m/z)
20S, 5β C27-MAS	a	253	ND	ND	ND
20S, dia C27-MAS	b	253	ND	ND	ND
20R, 5β C27-MAS + 20R C27 dia MAS	c	253	ND	ND	ND
20S, 5α C27-MAS	d	253	ND	ND	ND
20R, 5β C28-MAS + 20S C28 dia MAS	e	253	ND	ND	ND
20R, 5α C27-MAS	f	253	ND	ND	ND
20S, 5α C28-MAS	g	253	ND	ND	ND
20R, 5β C28-MAS + 20R C28 dia MAS	h	253	ND	ND	ND
20S, 5β C29-MAS + 20S C29 dia MAS	i	253	ND	ND	ND
20S, 5α C29-MAS	J lower case	253	ND	ND	ND
20R, 5α C28-MAS	k	253	ND	ND	ND
20R, 5β C29-MAS + 20R C29 dia MAS	L lower case	253	ND	ND	ND
20R, 5α C29-MAS	m	253	ND	ND	ND

0.40507 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-1
0.40507 g



Chromatogram Key & Numerical Results: 231 m/z Triaromatic Steranes

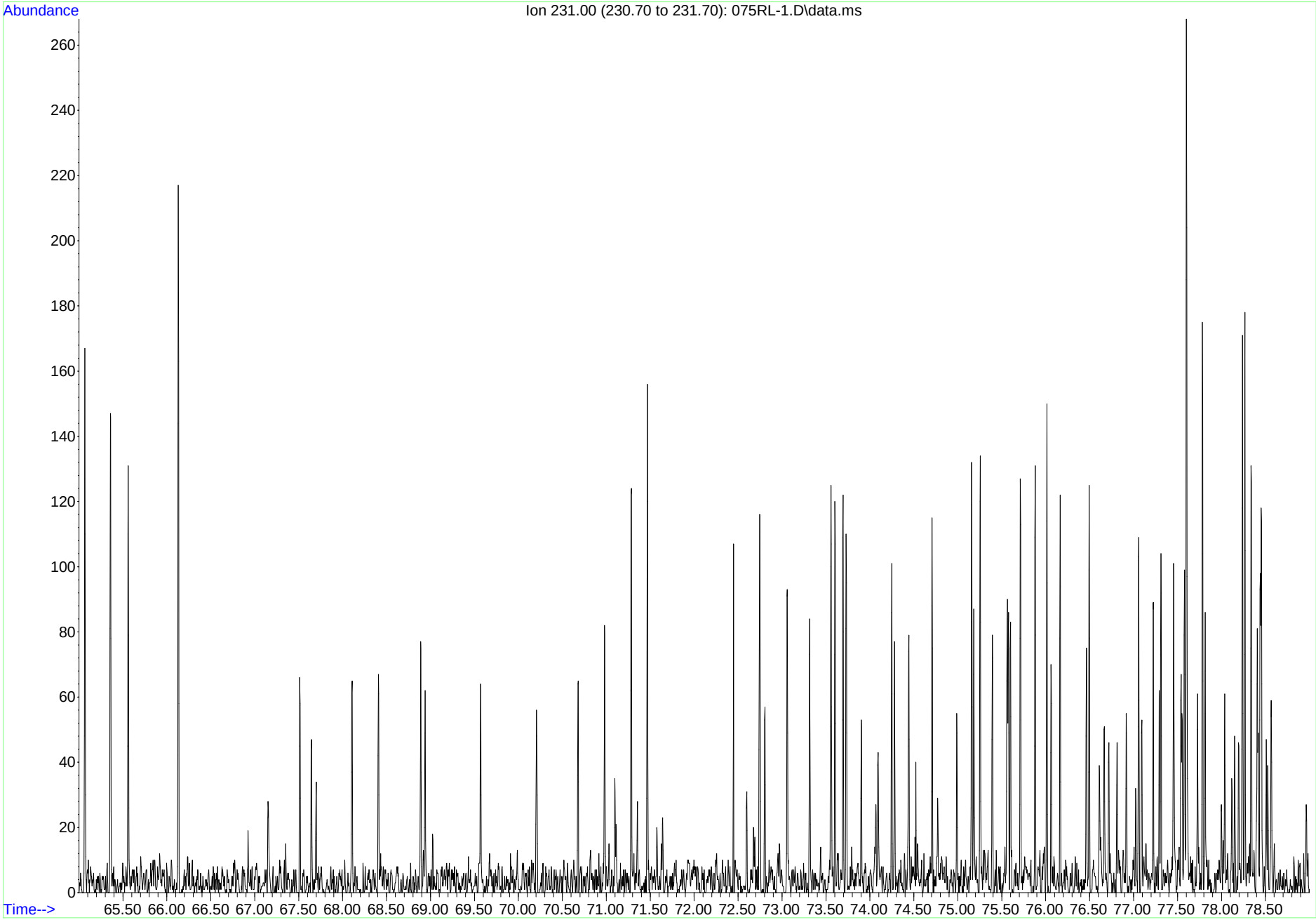
Project Manager:	Russ Shropshire	Lab ID:	075RL-1
Client:	Leidos, Inc.	Collected:	12/6/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-10-201206
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (231 m/z)
C_{20} Triaromatic Sterane	T1	231	ND	ND	ND
C_{21} Triaromatic Sterane	T2	231	ND	ND	ND
20S C_{26} Triaromatic Sterane	T3	231	ND	ND	ND
20R C_{26} + 20S C_{27} Triaromatic Steranes	T4	231	ND	ND	ND
20S C_{28} Triaromatic Sterane	T5	231	ND	ND	ND
20R C_{27} Triaromatic Sterane	T6	231	ND	ND	ND
20R C_{28} Triaromatic Sterane	T7	231	ND	ND	ND

0.40507 g in 10mL DCM
FOREN4LA_MI_BACK

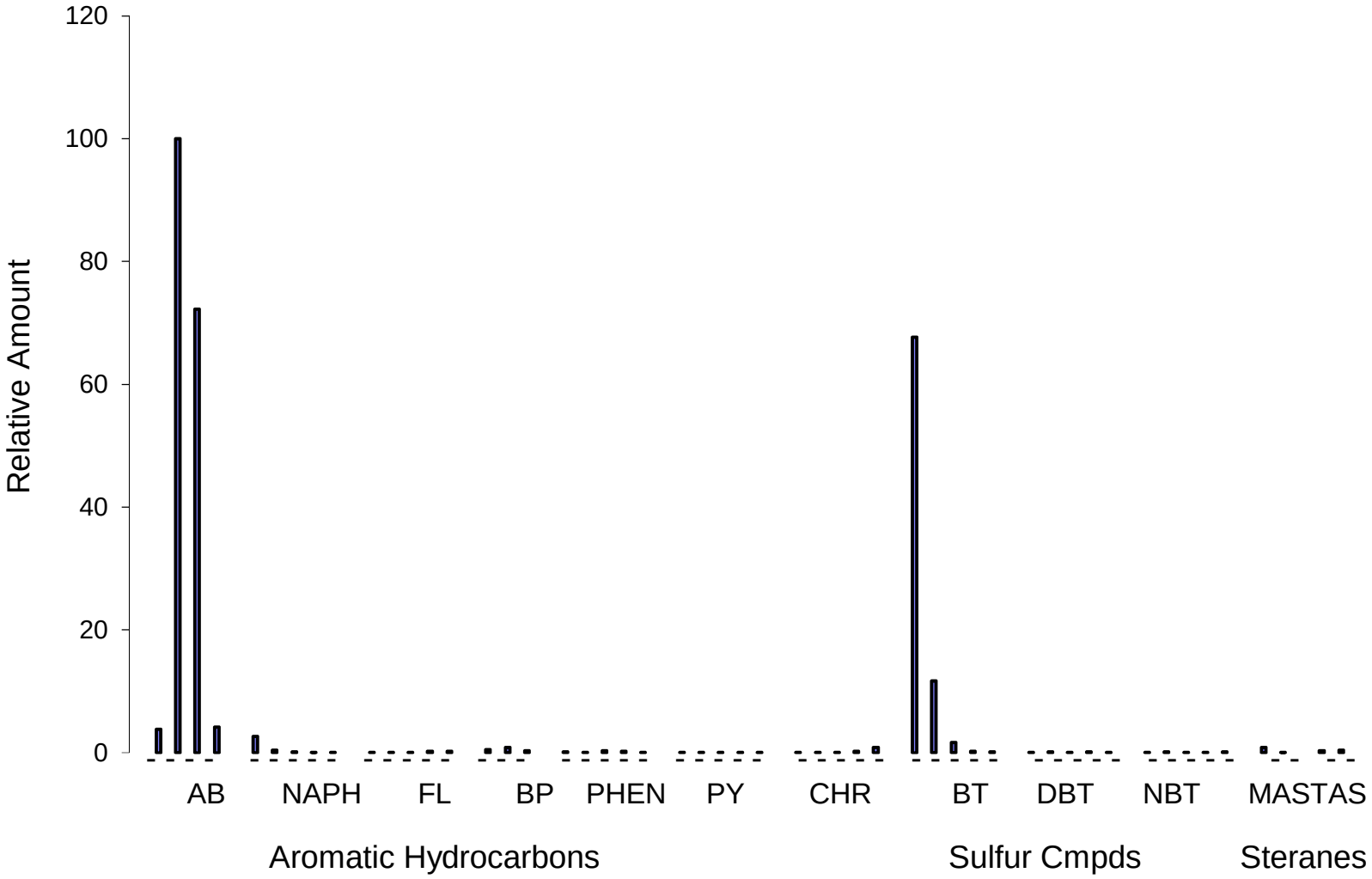
Submitted by,
Microbial Insights, Inc.

075RL-1
0.40507 g



Aromatic Hydrocarbon Distribution

075RL-1



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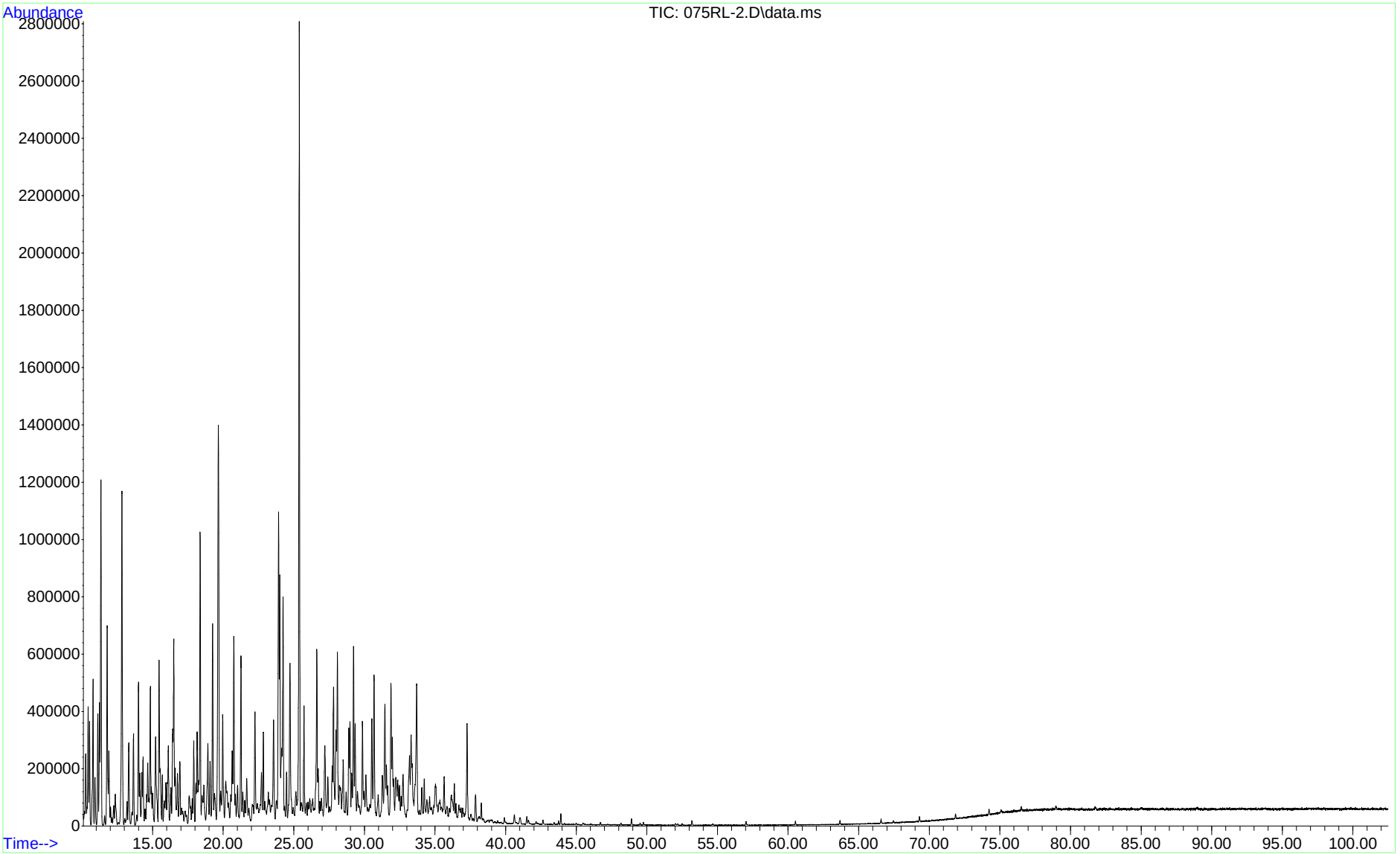
Sample Name: 075RL-2



Chromatogram Key & Numerical Results: 85 m/z n-Paraffins

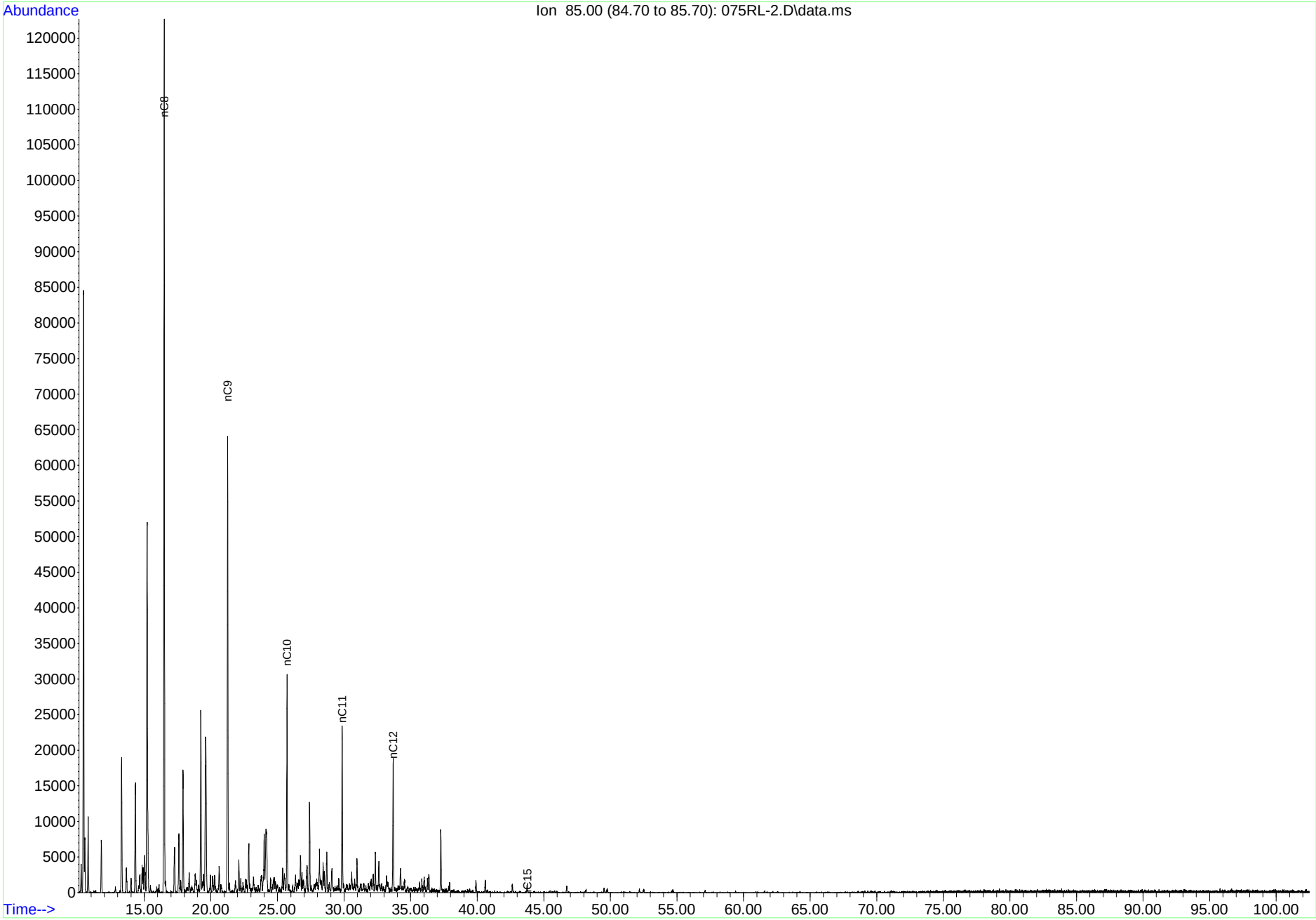
Project Manager:	Russ Shropshire	Lab ID:	075RL-2
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE,	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-12-201207
Project #:	334893.TM.1.000.00.0	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (85 m/z)
n-Octane	nC8	85	16.5	122652.0	47.1%
n-Nonane	nC9	85	21.3	64037.0	24.6%
n-Decane	nC10	85	25.7	30384.0	11.7%
n-Undecane	nC11	85	29.9	23165.0	8.9%
n-Dodecane	nC12	85	33.7	18726.0	7.2%
n-Tridecane	nC13	85	ND	ND	ND
n-Tetradecane	nC14	85	ND	ND	ND
n-Pentadecane	nC15	85	43.8	1311.0	0.5%
n-Hexadecane	nC16	85	ND	ND	ND
n-Heptadecane	nC17	85	ND	ND	ND
n-Octadecane	nC18	85	ND	ND	ND
n-Nonadecane	nC19	85	ND	ND	ND
n-Eicosane	nC20	85	ND	ND	ND
n-Henicosane	nC21	85	ND	ND	ND
n-Docosane	nC22	85	ND	ND	ND
n-Tricosane	nC23	85	ND	ND	ND
n-Tetracosane	nC24	85	ND	ND	ND
n-Pentacosane	nC25	85	ND	ND	ND
n-Hexacosane	nC26	85	ND	ND	ND
n-Heptacosane	nC27	85	ND	ND	ND
n-Octacosane	nC28	85	ND	ND	ND
n-Nonacosane	nC29	85	ND	ND	ND
n-Triacontane	nC30	85	ND	ND	ND
n-Hentriacontane	nC31	85	ND	ND	ND
n-Dotriacontane	nC32	85	ND	ND	ND
n-Tritriacontane	nC33	85	ND	ND	ND
n-Tetratriacontane	nC34	85	ND	ND	ND
n-Pentatriacontane	nC35	85	ND	ND	ND
n-Hexatriacontane	nC36	85	ND	ND	ND
n -Heptatriacontane	nC37	85	ND	ND	ND
n -Octatriacontane	nC38	85	ND	ND	ND
n -Nonatriacontane	nC39	85	ND	ND	ND
n-Tetracontane	nC40	85	ND	ND	ND

0.40264 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-2
0.40264 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 113 m/z Isoparaffins

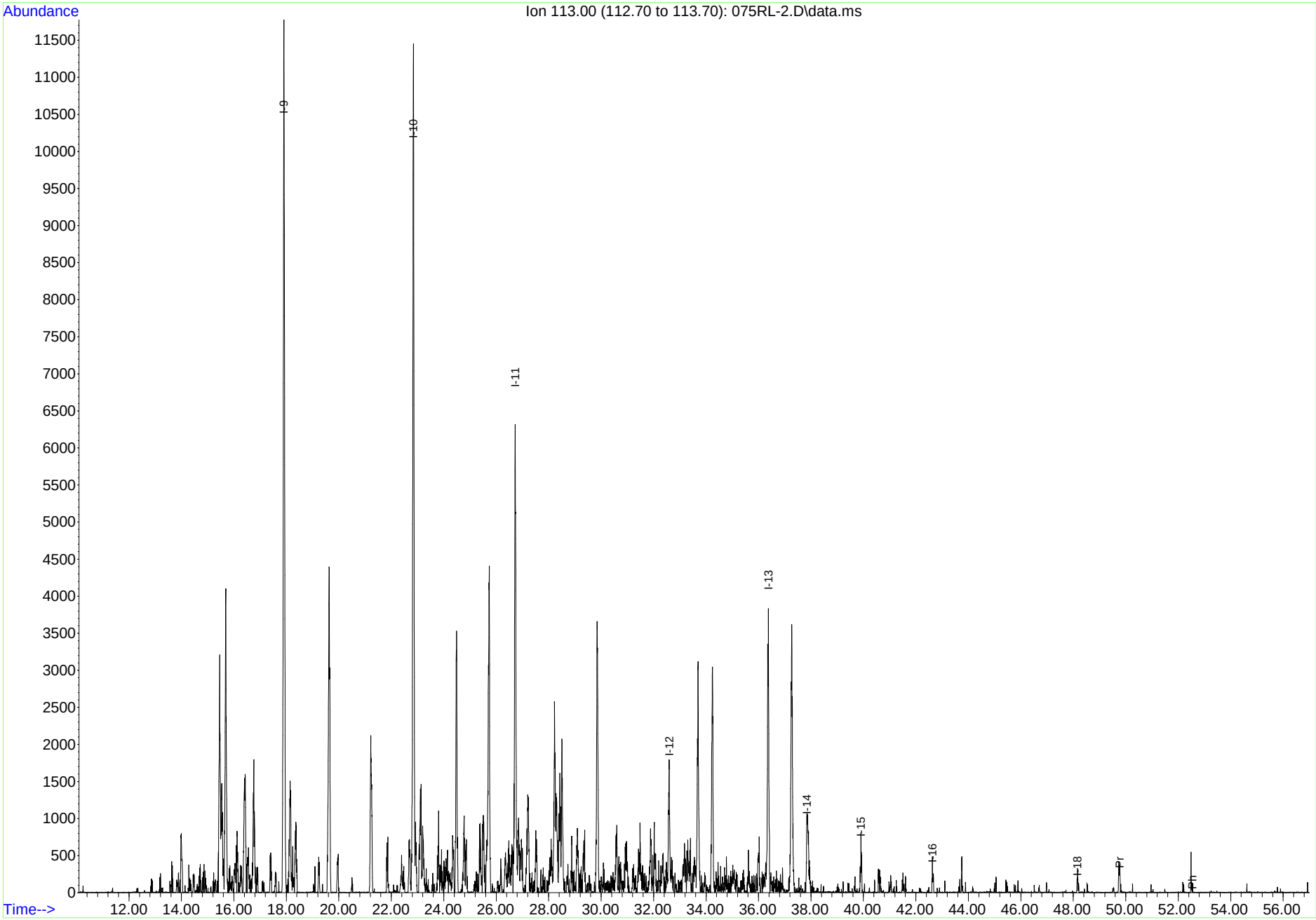
Project Manager:	Russ Shropshire	Lab ID:	075RL-2
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-12-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (113 m/z)
Iso-alkane w/ 9 Carbon Atoms	I-9	113	17.9	11769.0	31.0%
Iso-alkane w/ 10 Carbon Atoms	I-10	113	22.8	11424.0	30.1%
Iso-alkane w/ 11 Carbon Atoms	I-11	113	26.7	6051.0	16.0%
Iso-alkane w/ 12 Carbon Atoms	I-12	113	32.6	1654.0	4.4%
Iso-alkane w/ 13 Carbon Atoms	I-13	113	36.4	3834.0	10.1%
Iso-alkane w/ 14 Carbon Atoms	I-14	113	37.8	1071.0	2.8%
Farnesane (Isoprenoid - C15)	I-15	113	39.9	797.0	2.1%
Iso-alkane w/ 16 Carbon Atoms	I-16	113	42.6	486.0	1.3%
Iso-alkane w/ 18 Carbon Atoms	I-18	113	48.2	326.0	0.9%
Pristane (Isoprenoid - C19)	Pr	113	49.8	372.0	1.0%
Phytane (Isoprenoid - C20)	Ph	113	52.5	127.0	0.3%

0.40264 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-2
0.40264 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 83 m/z Alkylcyclohexanes

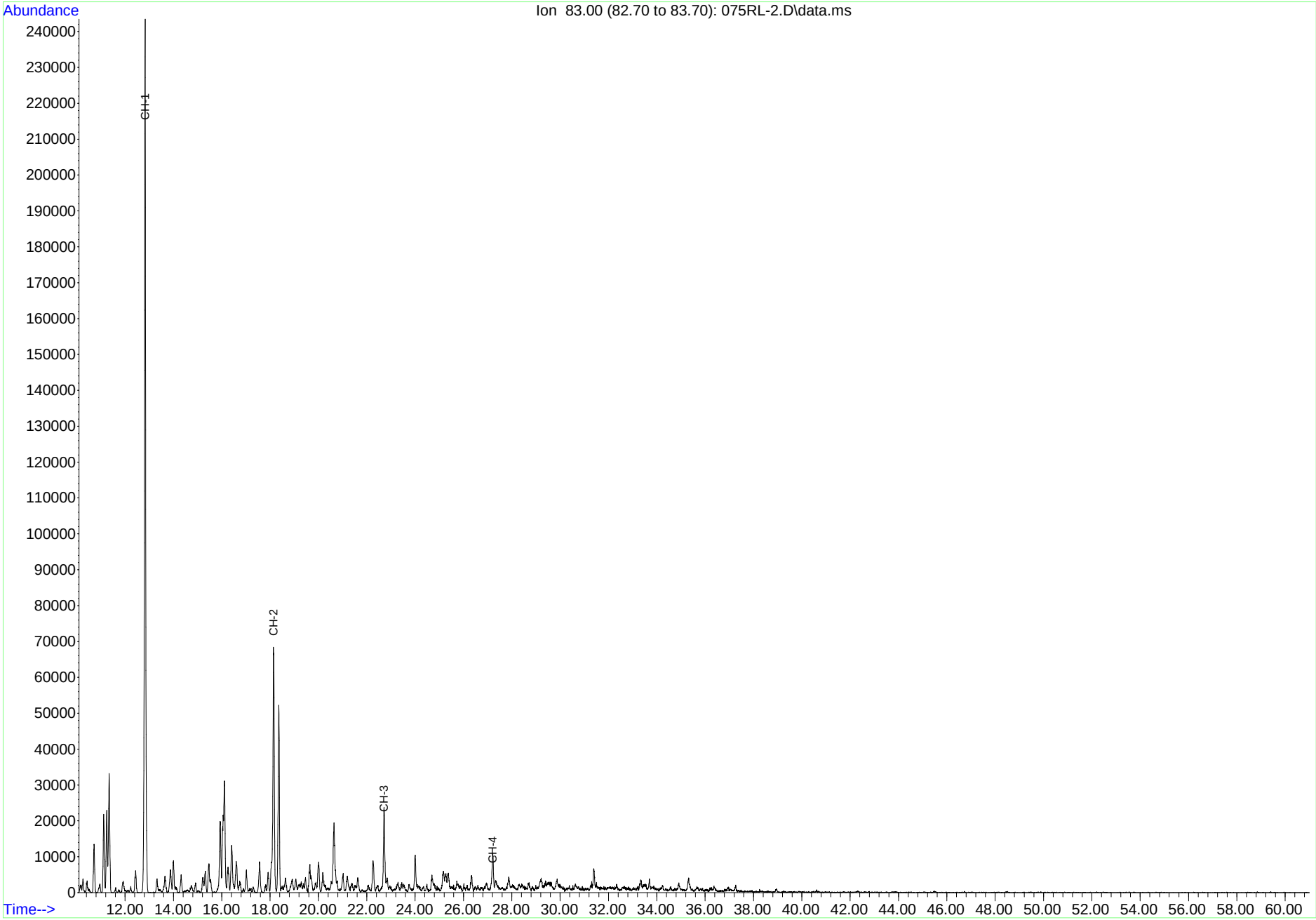
Project Manager:	Russ Shropshire	Lab ID:	075RL-2
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-12-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (83 m/z)
Methylcyclohexane	CH-1	83	12.8	243452.0	70.8%
Ethylcyclohexane	CH-2	83	18.1	68118.0	19.8%
Propylcyclohexane	CH-3	83	22.7	22718.0	6.6%
Butylcyclohexane	CH-4	83	27.2	9767.0	2.8%
Pentylcyclohexane	CH-5	83	ND	ND	ND
Hexylcyclohexane	CH-6	83	ND	ND	ND
Heptylcyclohexane	CH-7	83	ND	ND	ND
Octylcyclohexane	CH-8	83	ND	ND	ND
Nonylcyclohexane	CH-9	83	ND	ND	ND
Decylcyclohexane	CH-10	83	ND	ND	ND
Undecylcyclohexane	CH-11	83	ND	ND	ND
Dodecylcyclohexane	CH-12	83	ND	ND	ND
Tridecylcyclohexane	CH-13	83	ND	ND	ND
Tetradecylcyclohexane	CH-14	83	ND	ND	ND

0.40264 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-2
0.40264 g



Chromatogram Key & Numerical Results: 134 m/z C3-C4 Monoaromatics

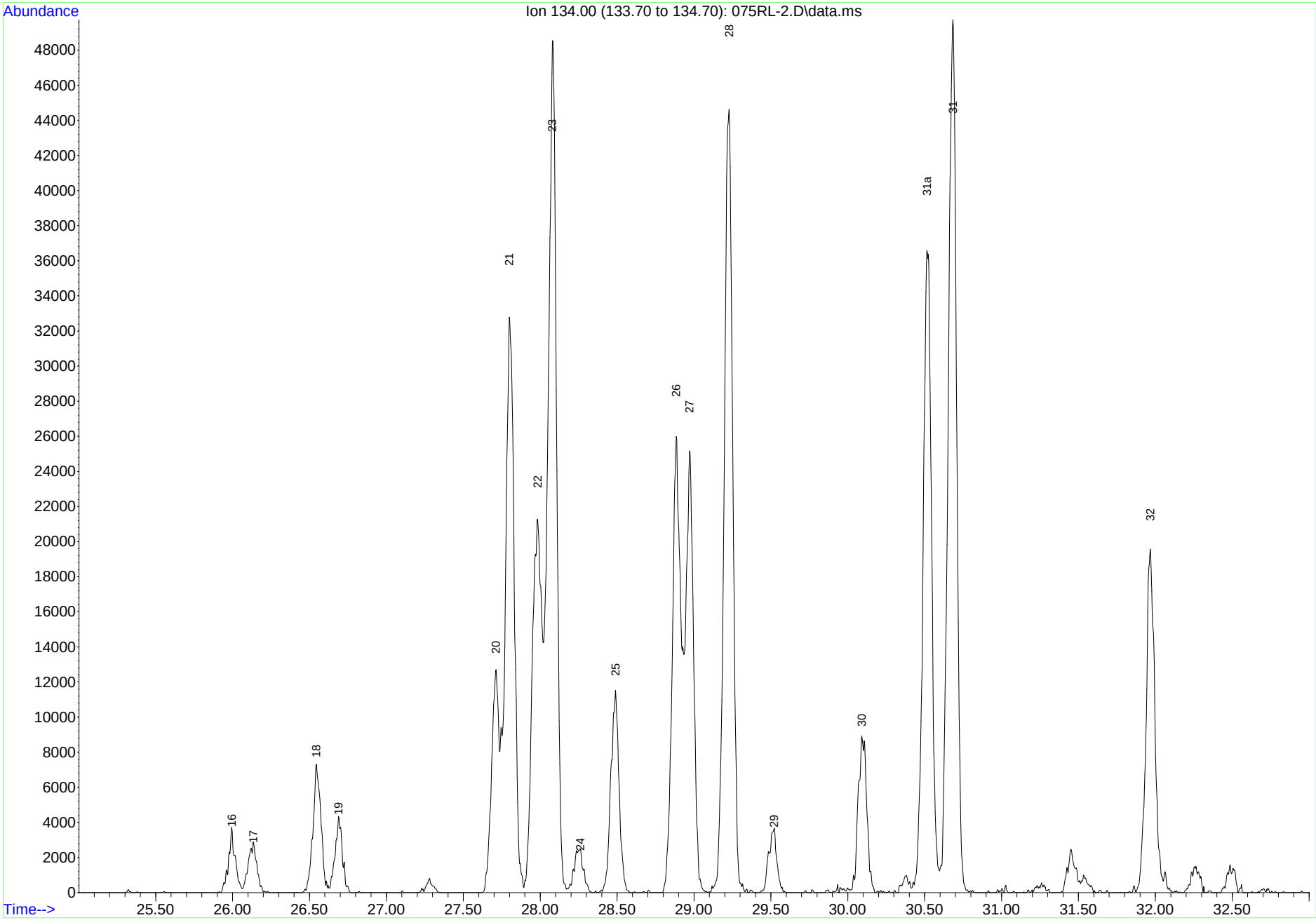
Project Manager:	Russ Shropshire	Lab ID:	075RL-2
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-12-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (134 m/z)
Sec-Butylbenzene	16	134	26.0	3659.0	1.0%
1-Methyl-3-Isopropylbenzene	17	134	26.1	2894.0	0.8%
1-Methyl-4-Isopropylbenzene	18	134	26.5	7180.0	2.0%
1-Methyl-2-Isopropylbenzene	19	134	26.7	4111.0	1.1%
1,3-Diethylbenzene	20	134	27.7	12705.0	3.5%
1-Methyl-3-Propylbenzene	21	134	27.8	32492.0	9.0%
Butylbenzene	22	134	28.0	20980.0	5.8%
1,3-Diethyl-5-Ethylbenzene	23	134	28.1	48348.0	13.4%
1,2-Diethylbenzene	24	134	28.3	2501.0	0.7%
1-Methyl-2-Propylbenzene	25	134	28.5	11536.0	3.2%
1,4-Dimethyl-2-Ethylbenzene	26	134	28.9	25982.0	7.2%
1,3-Dimethyl-4-Ethylbenzene	27	134	29.0	25136.0	7.0%
1,2-Dimethyl-4-Ethylbenzene	28	134	29.2	44406.0	12.3%
1,3-Dimethyl-2-Ethylbenzene	29	134	29.5	3667.0	1.0%
1,2-Dimethyl-3-Ethylbenzene	30	134	30.1	8925.0	2.5%
1,2,4,5-Tetramethylbenzene	31a	134	30.5	36167.0	10.1%
1,2,3,5-Tetramethylbenzene	31	134	30.7	49594.0	13.8%
1,2,3,4-Tetramethylbenzene	32	134	32.0	19552.0	5.4%

0.40264 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-2
0.40264 g



Chromatogram Key & Numerical Results: 123 m/z Bicyclanes

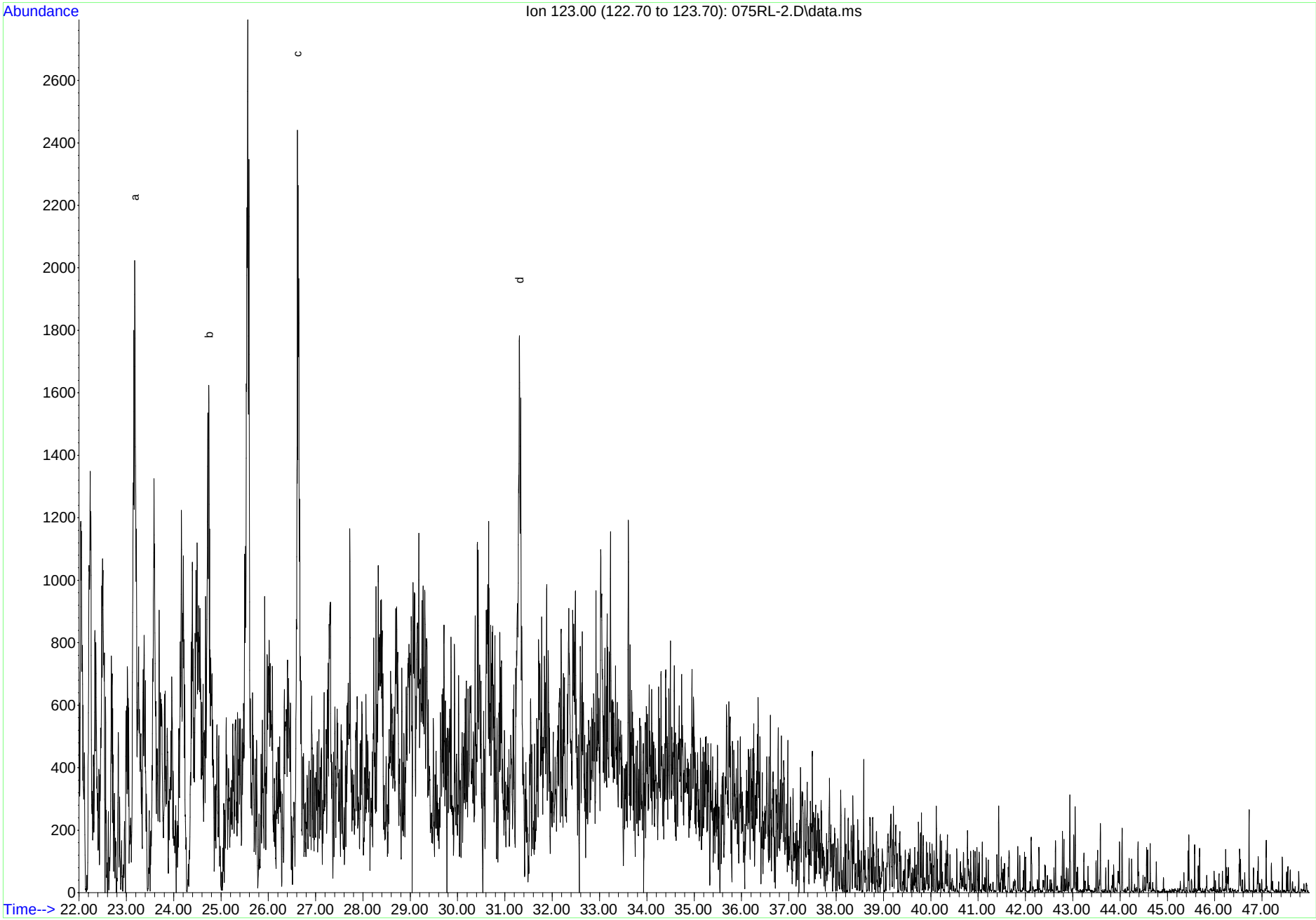
Project Manager:	Russ Shropshire	Lab ID:	075RL-2
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-12-201207
Project #:	334893.TM.1.000.00.0	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (123 m/z)
2,2,3-Trimethylbicycloheptane	a	123	23.2	1917.0	27.2%
C_{10} bicycloalkane	b	123	24.7	1254.0	17.8%
3,3,7-Trimethylbicycloheptane	c	123	26.6	2286.0	32.4%
C_{11} Decalin	d	123	31.3	1597.0	22.6%
Nordrimane	f	123	ND	ND	ND
Nordrimane	g	123	ND	ND	ND
Rearranged drimane	h	123	ND	ND	ND
Rearranged drimane	j	123	ND	ND	ND
Isomer of Eudesmane	k	123	ND	ND	ND
4β (H) Eudesmane	l	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	m	123	ND	ND	ND
8β (H) Drimane	n	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	o	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	p	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	q	123	ND	ND	ND
8β (H) Homodrimane	r	123	ND	ND	ND

0.40264 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-2
0.40264 g



Chromatogram Key & Numerical Results: 191 m/z Terpanes

Project Manager:	Russ Shropshire	Lab ID:	075RL-2
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-12-201207
Project #:	334893.TM.1.000.00.	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
C_{21}-Tricyclic Terpane	1	191	ND	ND	ND
C_{22}-Tricyclic Terpane	2	191	ND	ND	ND
C_{23}-Tricyclic Terpane	3	191	ND	ND	ND
C_{24}-Tricyclic Terpane	4	191	ND	ND	ND
C_{25}-Tricyclic Terpane	5(S+R)	191	ND	ND	ND
C_{24}-Tetracyclic Terpane	Z4	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6a*	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6b	191	ND	ND	ND
C_{28}-Tricyclic Terpane #1	A	191	ND	ND	ND
C_{28}-Tricyclic Terpane #2	B	191	ND	ND	ND
C_{29}-Tricyclic Terpane #1	C	191	ND	ND	ND
C_{29}-Tricyclic Terpane #2	D	191	ND	ND	ND
18 α-22,29,30-Trisnorneohopane (Ts)	E	191	ND	ND	ND
17 α-22,29,30-Trisnorhopane (Tm)	F	191	ND	ND	ND
C_{30}-Tricyclic Terpane #1	10a*	191	ND	ND	ND
C_{30}-Tricyclic Terpane #2	10b	191	ND	ND	ND
17 α-28,30 Bisnorhopane	I	191	ND	ND	ND
C_{31}-Tricyclic Terpane #1	11a*	191	ND	ND	ND
17α-25-Norhopane	J	191	ND	ND	ND
C_{31}-Tricyclic Terpane #2	11b	191	ND	ND	ND
17 α,21β-30-Norhopane	K	191	ND	ND	ND
18α-30-Norneohopane	C29Ts	191	ND	ND	ND
17α-Diahopane	C30*	191	ND	ND	ND
17β-21α-30-Normoretane	L	191	ND	ND	ND
18α+18β-Oleanane	Ma+Mb	191	ND	ND	ND
17α-21β-Hopane	N	191	ND	ND	ND
17β-21α-Moretane	O	191	ND	ND	ND
22S-17α,21β-30-Homohopane	P	191	ND	ND	ND
22R-17α,21β-30-Homohopane	Q	191	ND	ND	ND
Gammacerane	R	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	T	191	ND	ND	ND
22R-17α,21β-30-Bishomohopane	U	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	WS	191	ND	ND	ND
22R-17α,21β-Trishomohopane	WR	191	ND	ND	ND
22S-17α,21β-Tetrahomohopane	XS	191	ND	ND	ND

SAMPLE RESULTS

Chromatogram Key & Numerical Results: 191 m/z Terpanes

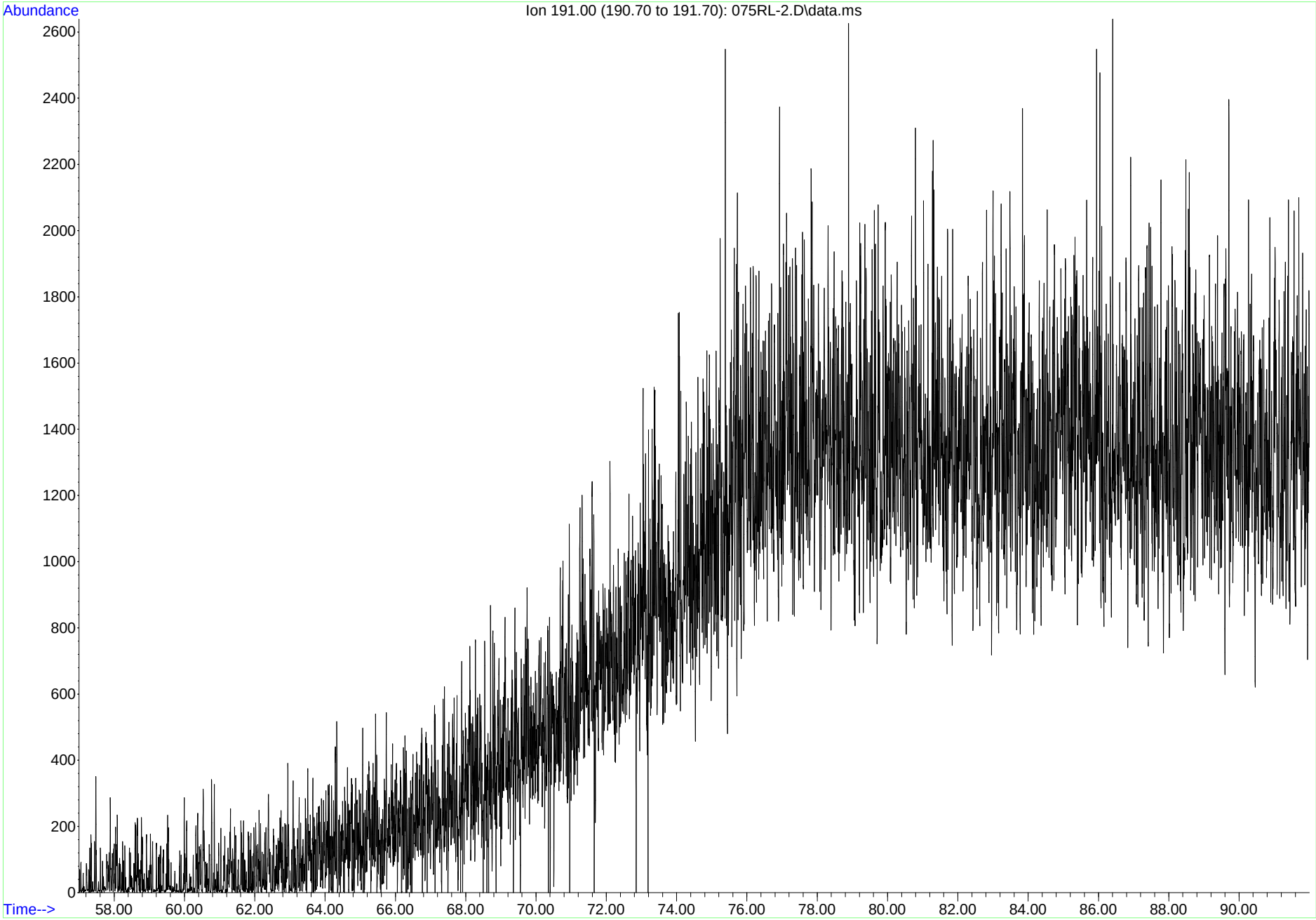
Project Manager:	Russ Shropshire	Lab ID:	075RL-2
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-12-201207
Project #:	334893.TM.1.000.00.	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
22R-17α,21β-Tetrahomohopane	XR	191	ND	ND	ND
22S-17α,21β-Pentahomohopane	YS	191	ND	ND	ND
22R-17α,21β-Pentahomohopane	YR	191	ND	ND	ND

0.40264 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-2
0.40264 g



Chromatogram Key & Numerical Results: 217 m/z Steranes

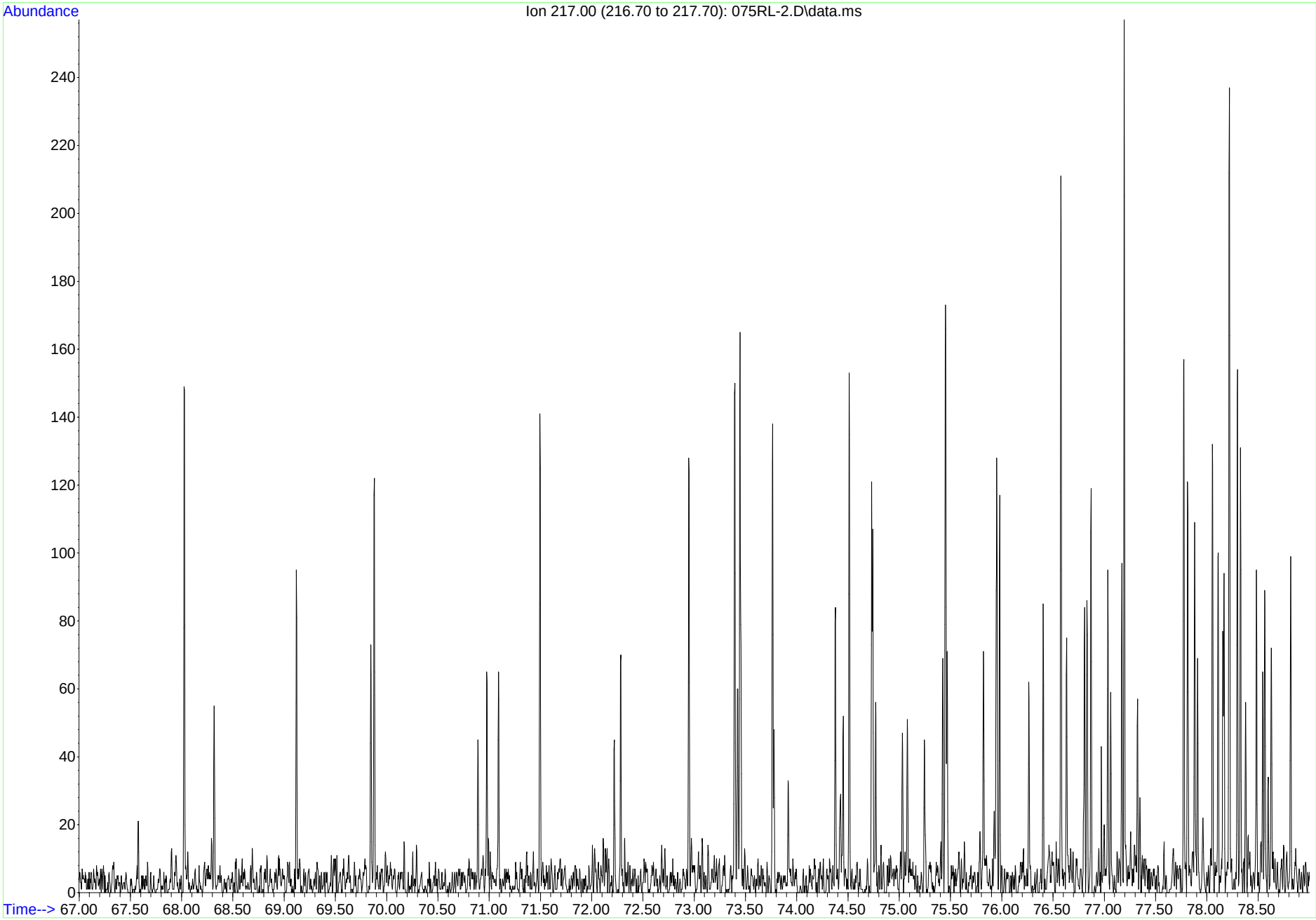
Project Manager:	Russ Shropshire	Lab ID:	075RL-2
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-12-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (217 m/z)
13β, 17α-Diacholestane (20S)	1	217	ND	ND	ND
13β, 17α-Diacholestane (20R)	2	217	ND	ND	ND
13α, 17β-Diacholestane (20S)	3	217	ND	ND	ND
13α, 17β-Diacholestane (20R)	4	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	5	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	6	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20S)	7D	217	ND	ND	ND
14α,17α-Cholestane (20S)	7	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20S)+ 14β,17β-Cholestane (20R)	8+8D	217	ND	ND	ND
14β,17β-Cholestane (20S)	9	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20R)	9D	217	ND	ND	ND
14α,17α-Cholestane (20R)	10	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20R)	11	217	ND	ND	ND
24-ethyl-13α, 17β-Diacholestane (20S)	12	217	ND	ND	ND
24-ethyl-13α, 17α-Diacholestane (20S)	13	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20R)	14	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20S)	15	217	ND	ND	ND
24-methyl-14α, 17α-Cholestane (20R)	16	217	ND	ND	ND
24-ethyl-14α-Cholestane (20S)	17	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20R)	18	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20S)	19	217	ND	ND	ND
24-ethyl-14α, 17α-Cholestane (20R)	20	217	ND	ND	ND

0.40264 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-2
0.40264 g



Chromatogram Key & Numerical Results: 253 m/z Monoaromatic Steranes

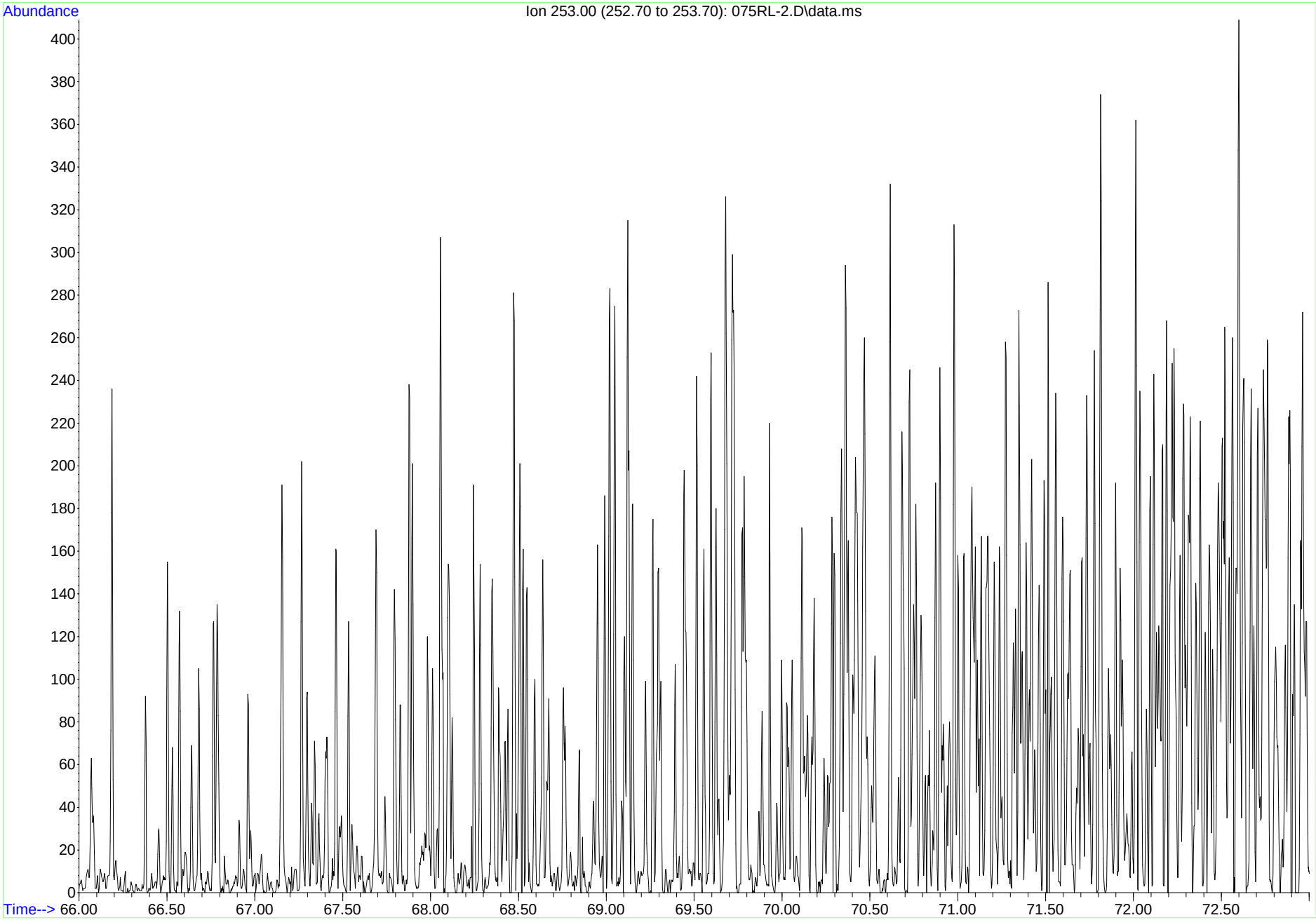
Project Manager:	Russ Shropshire	Lab ID:	075RL-2
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE,	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-12-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (253 m/z)
20S, 5β C27-MAS	a	253	ND	ND	ND
20S, dia C27-MAS	b	253	ND	ND	ND
20R, 5β C27-MAS + 20R C27 dia MAS	c	253	ND	ND	ND
20S, 5α C27-MAS	d	253	ND	ND	ND
20R, 5β C28-MAS + 20S C28 dia MAS	e	253	ND	ND	ND
20R, 5α C27-MAS	f	253	ND	ND	ND
20S, 5α C28-MAS	g	253	ND	ND	ND
20R, 5β C28-MAS + 20R C28 dia MAS	h	253	ND	ND	ND
20S, 5β C29-MAS + 20S C29 dia MAS	i	253	ND	ND	ND
20S, 5α C29-MAS	J lower case	253	ND	ND	ND
20R, 5α C28-MAS	k	253	ND	ND	ND
20R, 5β C29-MAS + 20R C29 dia MAS	L lower case	253	ND	ND	ND
20R, 5α C29-MAS	m	253	ND	ND	ND

0.40264 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-2
0.40264 g



Chromatogram Key & Numerical Results: 231 m/z Triaromatic Steranes

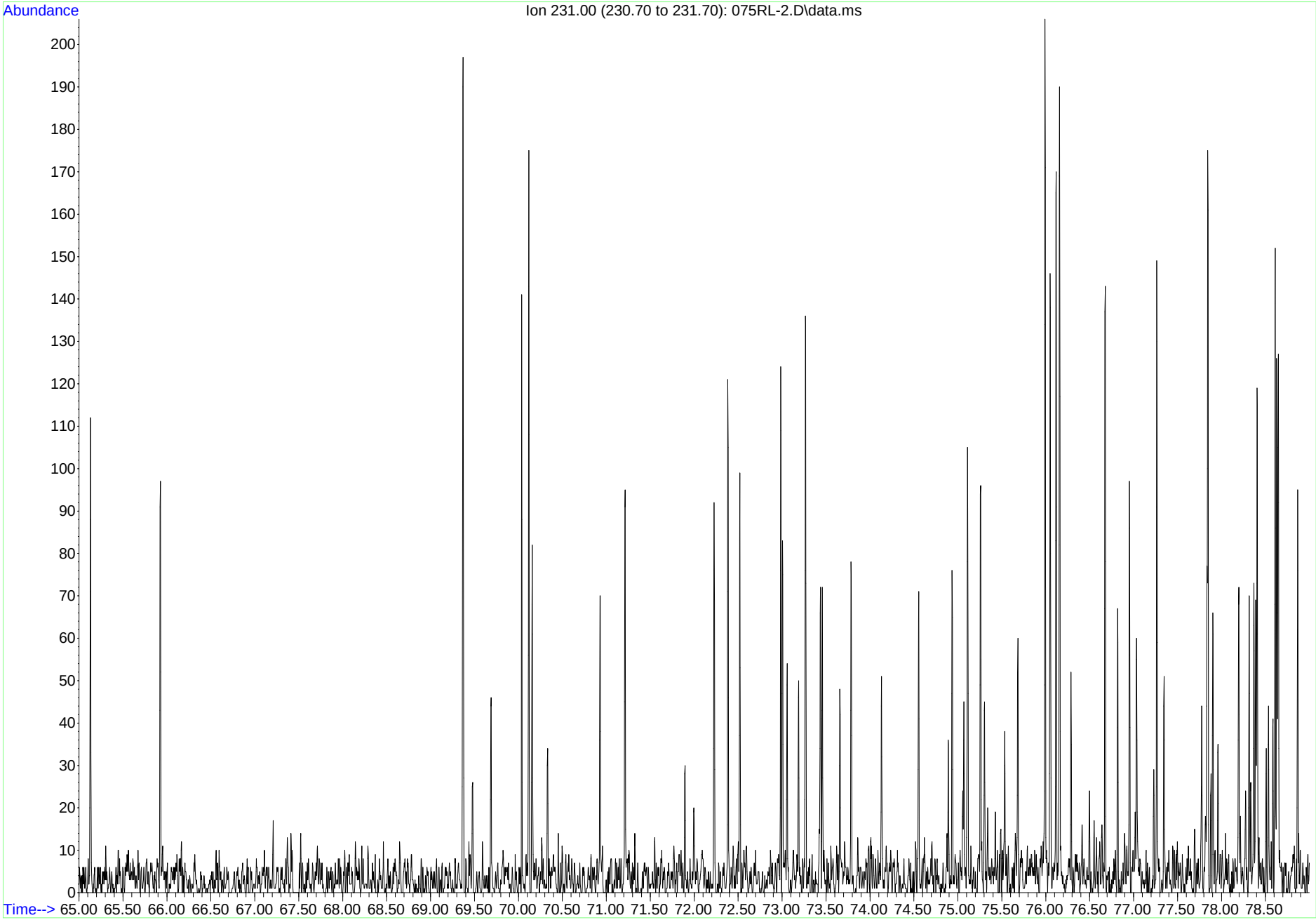
Project Manager:	Russ Shropshire	Lab ID:	075RL-2
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-12-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (231 m/z)
C_{20} Triaromatic Sterane	T1	231	ND	ND	ND
C_{21} Triaromatic Sterane	T2	231	ND	ND	ND
20S C_{26} Triaromatic Sterane	T3	231	ND	ND	ND
20R C_{26} + 20S C_{27} Triaromatic Steranes	T4	231	ND	ND	ND
20S C_{28} Triaromatic Sterane	T5	231	ND	ND	ND
20R C_{27} Triaromatic Sterane	T6	231	ND	ND	ND
20R C_{28} Triaromatic Sterane	T7	231	ND	ND	ND

0.40264 g in 10mL DCM
FOREN4LA_MI_BACK

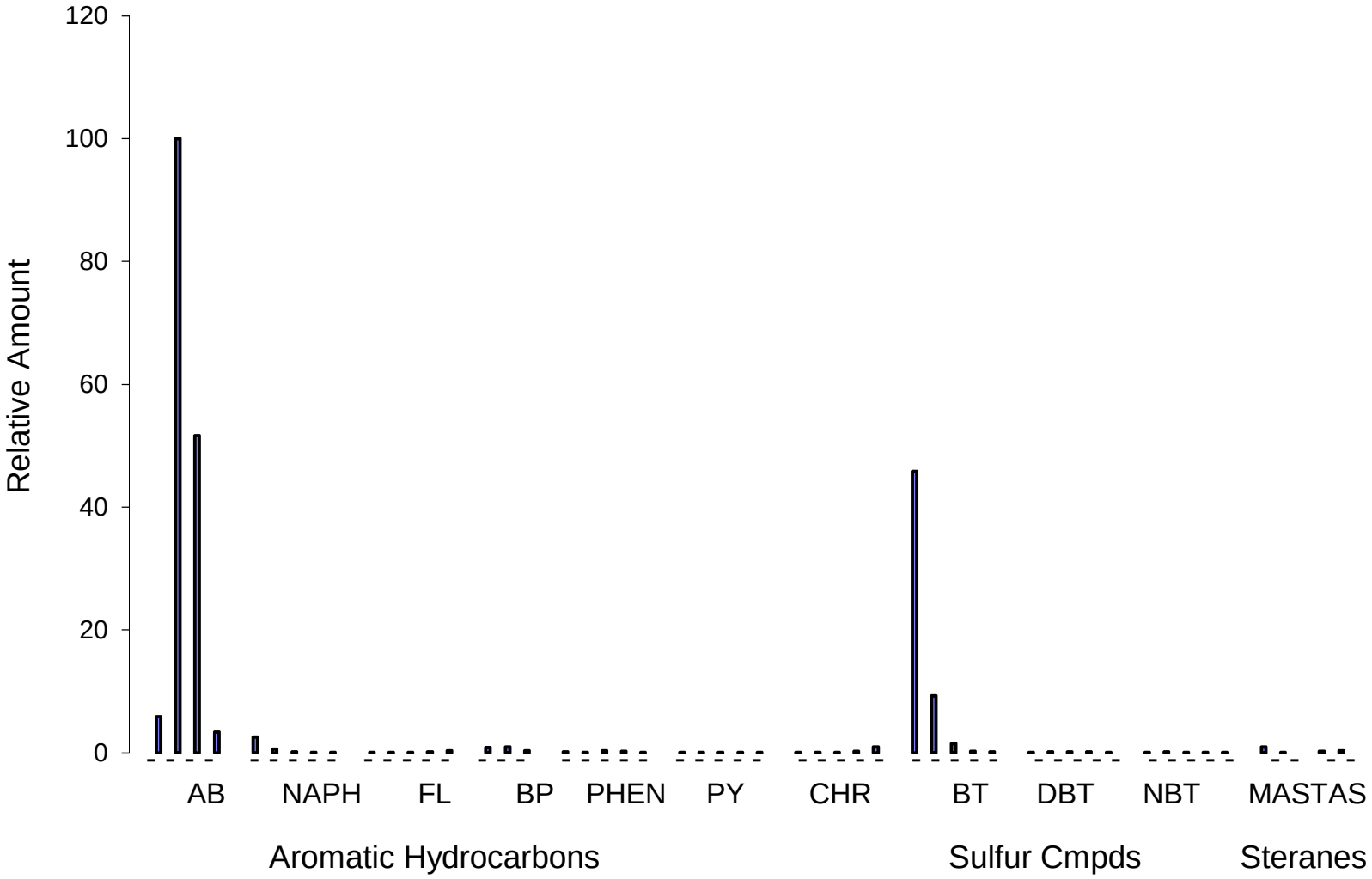
Submitted by,
Microbial Insights, Inc.

075RL-2
0.40264 g



Aromatic Hydrocarbon Distribution

075RL-2



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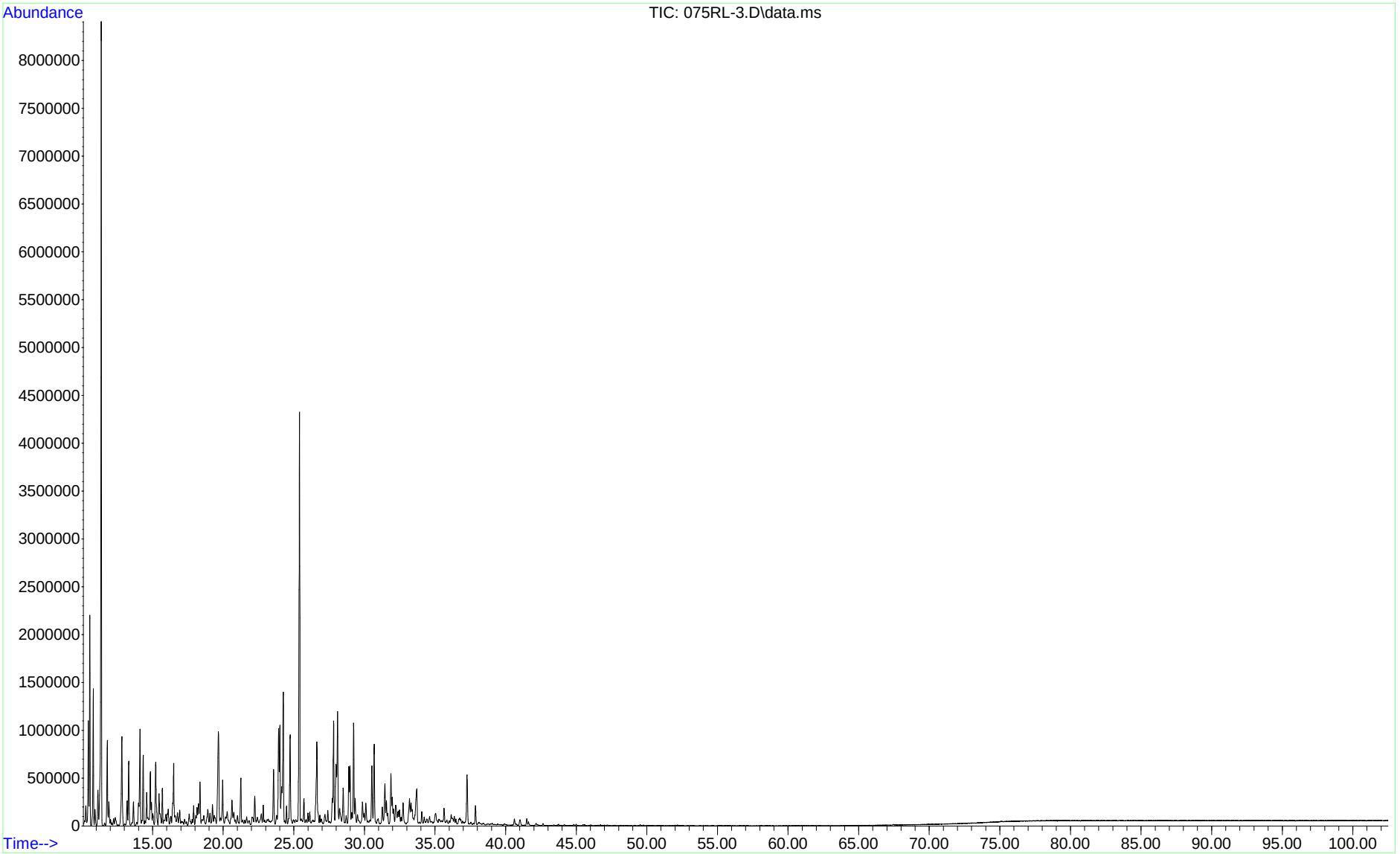


SAMPLE RESULTS

Chromatogram Key & Numerical Results: 85 m/z n-Paraffins

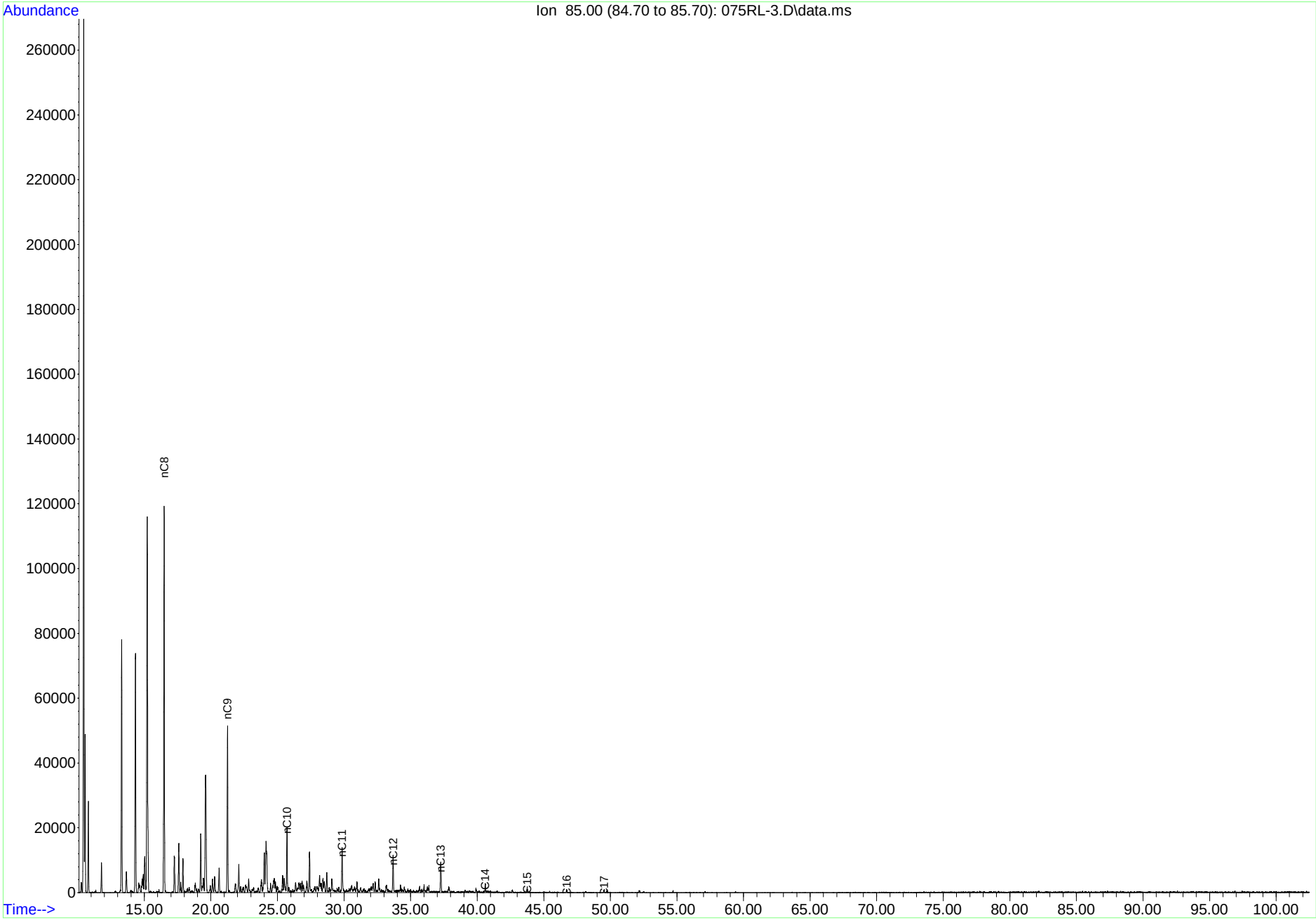
Project Manager:	Russ Shropshire	Lab ID:	075RL-3
Client:	Leidos, Inc.	Collected:	12/07/2020
Address:	18939 120th Avenue NE,	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	RW-2-201207
Project #:	334893.TM.1.000.00.0	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (85 m/z)
n-Octane	nC8	85	16.5	119157.0	51.5%
n-Nonane	nC9	85	21.2	51471.0	22.3%
n-Decane	nC10	85	25.7	19969.0	8.6%
n-Undecane	nC11	85	29.9	13283.0	5.7%
n-Dodecane	nC12	85	33.7	11429.0	4.9%
n-Tridecane	nC13	85	37.3	9276.0	4.0%
n-Tetradecane	nC14	85	40.6	2762.0	1.2%
n-Pentadecane	nC15	85	43.8	1884.0	0.8%
n-Hexadecane	nC16	85	46.7	1019.0	0.4%
n-Heptadecane	nC17	85	49.5	991.0	0.4%
n-Octadecane	nC18	85	ND	ND	ND
n-Nonadecane	nC19	85	ND	ND	ND
n-Eicosane	nC20	85	ND	ND	ND
n-Henicosane	nC21	85	ND	ND	ND
n-Docosane	nC22	85	ND	ND	ND
n-Tricosane	nC23	85	ND	ND	ND
n-Tetracosane	nC24	85	ND	ND	ND
n-Pentacosane	nC25	85	ND	ND	ND
n-Hexacosane	nC26	85	ND	ND	ND
n-Heptacosane	nC27	85	ND	ND	ND
n-Octacosane	nC28	85	ND	ND	ND
n-Nonacosane	nC29	85	ND	ND	ND
n-Triacontane	nC30	85	ND	ND	ND
n-Hentriacontane	nC31	85	ND	ND	ND
n-Dotriacontane	nC32	85	ND	ND	ND
n-Tritriacontane	nC33	85	ND	ND	ND
n-Tetratriacontane	nC34	85	ND	ND	ND
n-Pentatriacontane	nC35	85	ND	ND	ND
n-Hexatriacontane	nC36	85	ND	ND	ND
n -Heptatriacontane	nC37	85	ND	ND	ND
n -Octatriacontane	nC38	85	ND	ND	ND
n -Nonatriacontane	nC39	85	ND	ND	ND
n-Tetracontane	nC40	85	ND	ND	ND

0.40650 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-3
0.40650 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 113 m/z Isoparaffins

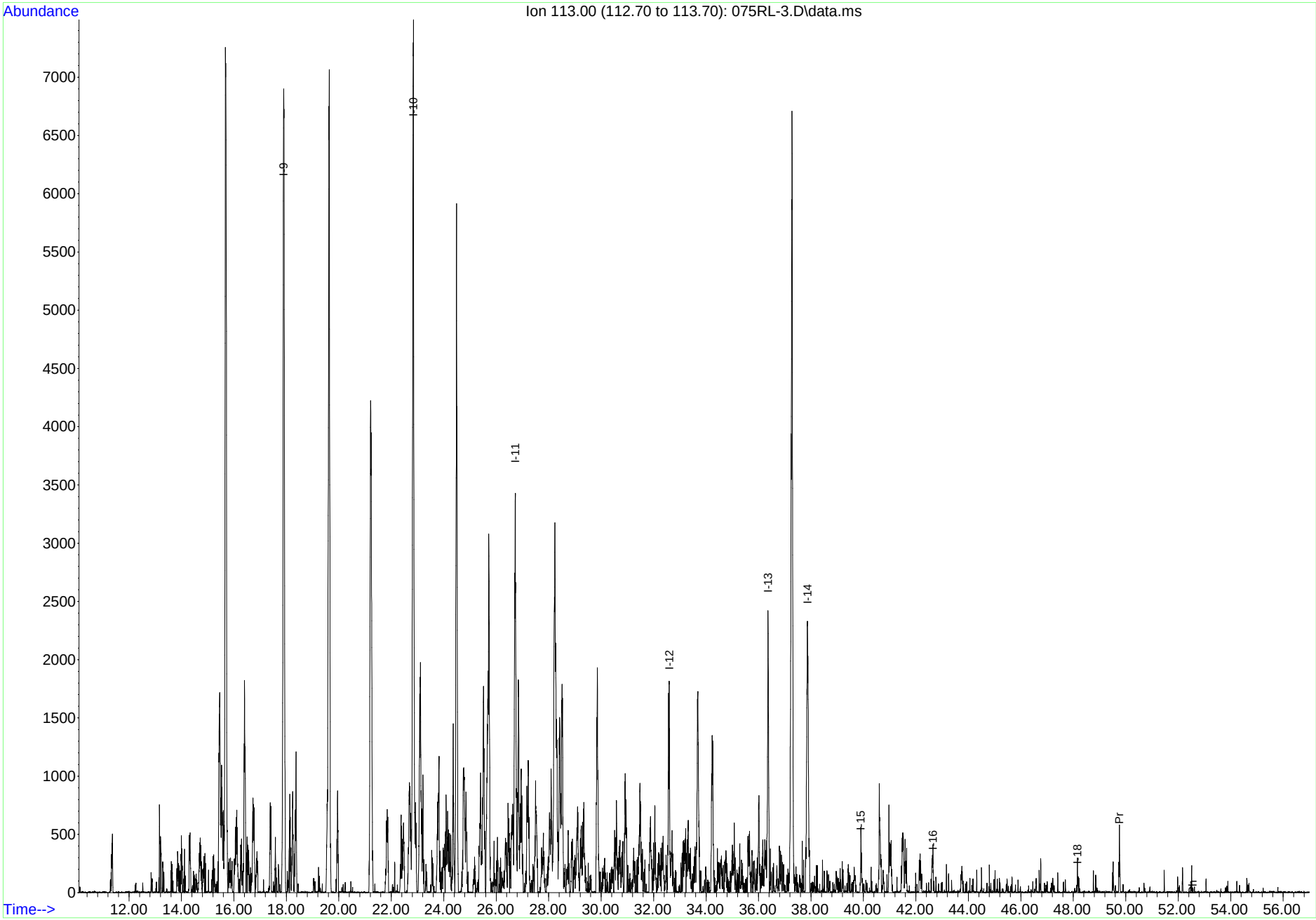
Project Manager:	Russ Shropshire	Lab ID:	075RL-3
Client:	Leidos, Inc.	Collected:	12/07/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	RW-2-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (113 m/z)
Iso-alkane w/ 9 Carbon Atoms	I-9	113	17.9	6899.0	26.7%
Iso-alkane w/ 10 Carbon Atoms	I-10	113	22.8	7369.0	28.5%
Iso-alkane w/ 11 Carbon Atoms	I-11	113	26.7	3241.0	12.5%
Iso-alkane w/ 12 Carbon Atoms	I-12	113	32.6	1752.0	6.8%
Iso-alkane w/ 13 Carbon Atoms	I-13	113	36.4	2408.0	9.3%
Iso-alkane w/ 14 Carbon Atoms	I-14	113	37.9	2330.0	9.0%
Farnesane (Isoprenoid - C15)	I-15	113	39.9	558.0	2.2%
Iso-alkane w/ 16 Carbon Atoms	I-16	113	42.6	412.0	1.6%
Iso-alkane w/ 18 Carbon Atoms	I-18	113	48.2	297.0	1.1%
Pristane (Isoprenoid - C19)	Pr	113	49.8	579.0	2.2%
Phytane (Isoprenoid - C20)	Ph	113	52.6	42.0	0.2%

0.40650 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-3
0.40650 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 83 m/z Alkylcyclohexanes

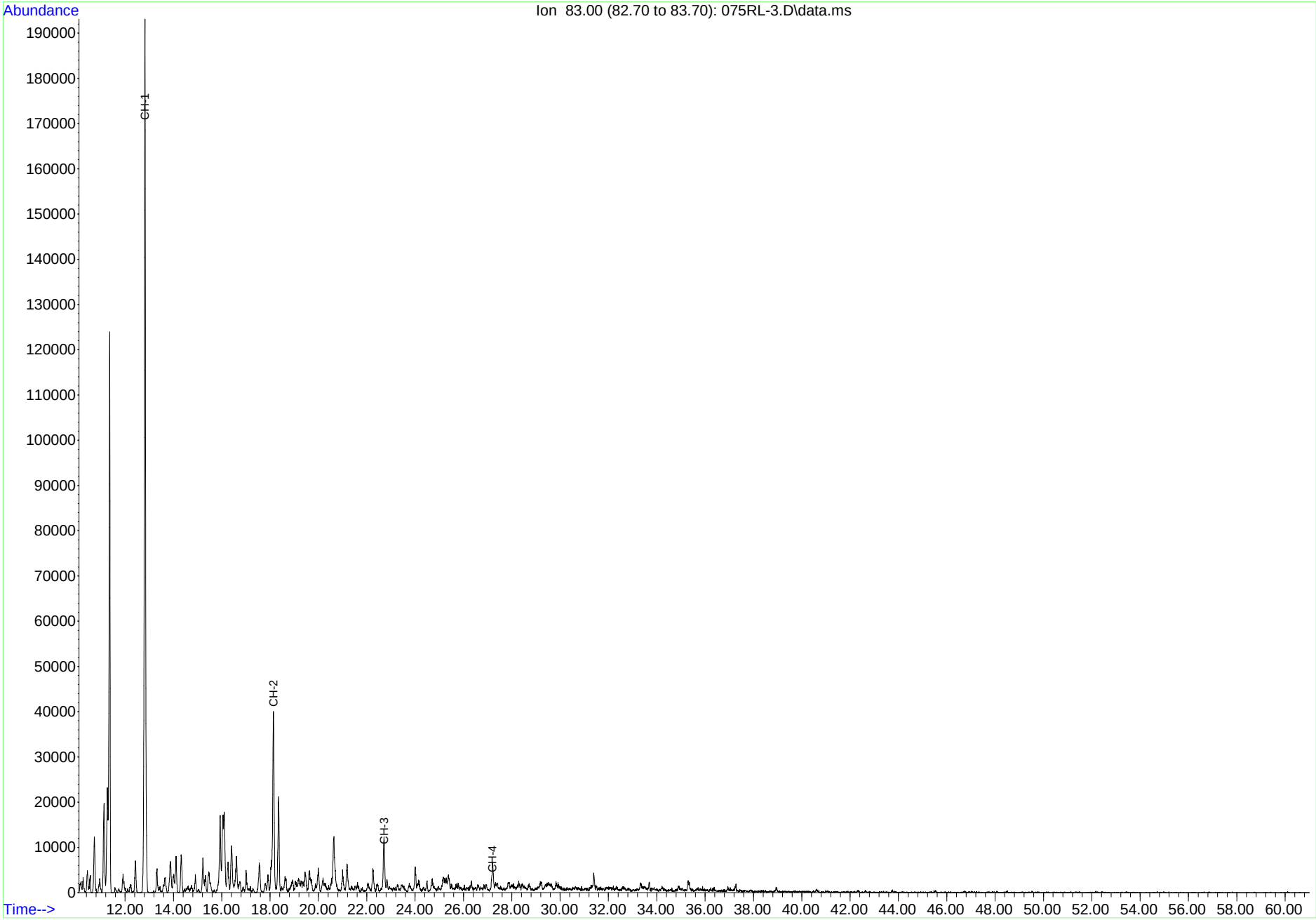
Project Manager:	Russ Shropshire	Lab ID:	075RL-3
Client:	Leidos, Inc.	Collected:	12/07/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	RW-2-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (83 m/z)
Methylcyclohexane	CH-1	83	12.8	193019.0	77.5%
Ethylcyclohexane	CH-2	83	18.1	38569.0	15.5%
Propylcyclohexane	CH-3	83	22.7	11513.0	4.6%
Butylcyclohexane	CH-4	83	27.2	6040.0	2.4%
Pentylcyclohexane	CH-5	83	ND	ND	ND
Hexylcyclohexane	CH-6	83	ND	ND	ND
Heptylcyclohexane	CH-7	83	ND	ND	ND
Octylcyclohexane	CH-8	83	ND	ND	ND
Nonylcyclohexane	CH-9	83	ND	ND	ND
Decylcyclohexane	CH-10	83	ND	ND	ND
Undecylcyclohexane	CH-11	83	ND	ND	ND
Dodecylcyclohexane	CH-12	83	ND	ND	ND
Tridecylcyclohexane	CH-13	83	ND	ND	ND
Tetradecylcyclohexane	CH-14	83	ND	ND	ND

0.40650 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-3
0.40650 g



Chromatogram Key & Numerical Results: 134 m/z C3-C4 Monoaromatics

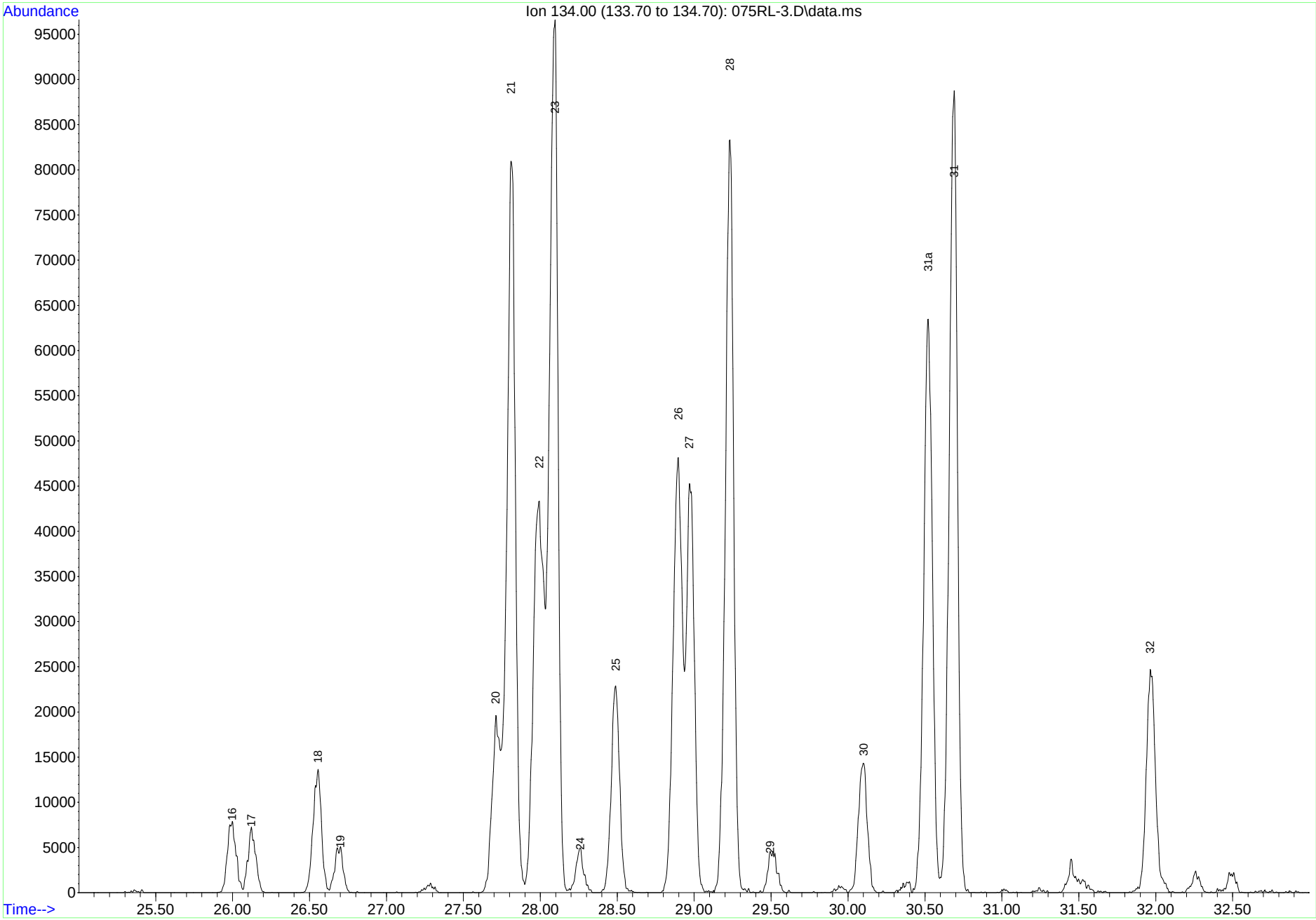
Project Manager:	Russ Shropshire	Lab ID:	075RL-3
Client:	Leidos, Inc.	Collected:	12/07/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	RW-2-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (134 m/z)
Sec-Butylbenzene	16	134	26.0	7906.0	1.2%
1-Methyl-3-Isopropylbenzene	17	134	26.1	7269.0	1.1%
1-Methyl-4-Isopropylbenzene	18	134	26.6	13652.0	2.0%
1-Methyl-2-Isopropylbenzene	19	134	26.7	5110.0	0.8%
1,3-Diethylbenzene	20	134	27.7	19632.0	2.9%
1-Methyl-3-Propylbenzene	21	134	27.8	80887.0	12.0%
Butylbenzene	22	134	28.0	43189.0	6.4%
1,3-Diethyl-5-Ethylbenzene	23	134	28.1	96382.0	14.3%
1,2-Diethylbenzene	24	134	28.3	4666.0	0.7%
1-Methyl-2-Propylbenzene	25	134	28.5	22893.0	3.4%
1,4-Dimethyl-2-Ethylbenzene	26	134	28.9	48166.0	7.2%
1,3-Dimethyl-4-Ethylbenzene	27	134	29.0	45226.0	6.7%
1,2-Dimethyl-4-Ethylbenzene	28	134	29.2	83328.0	12.4%
1,3-Dimethyl-2-Ethylbenzene	29	134	29.5	4575.0	0.7%
1,2-Dimethyl-3-Ethylbenzene	30	134	30.1	14337.0	2.1%
1,2,4,5-Tetramethylbenzene	31a	134	30.5	63144.0	9.4%
1,2,3,5-Tetramethylbenzene	31	134	30.7	88549.0	13.1%
1,2,3,4-Tetramethylbenzene	32	134	32.0	24672.0	3.7%

0.40650 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-3
0.40650 g



Chromatogram Key & Numerical Results: 123 m/z Bicyclanes

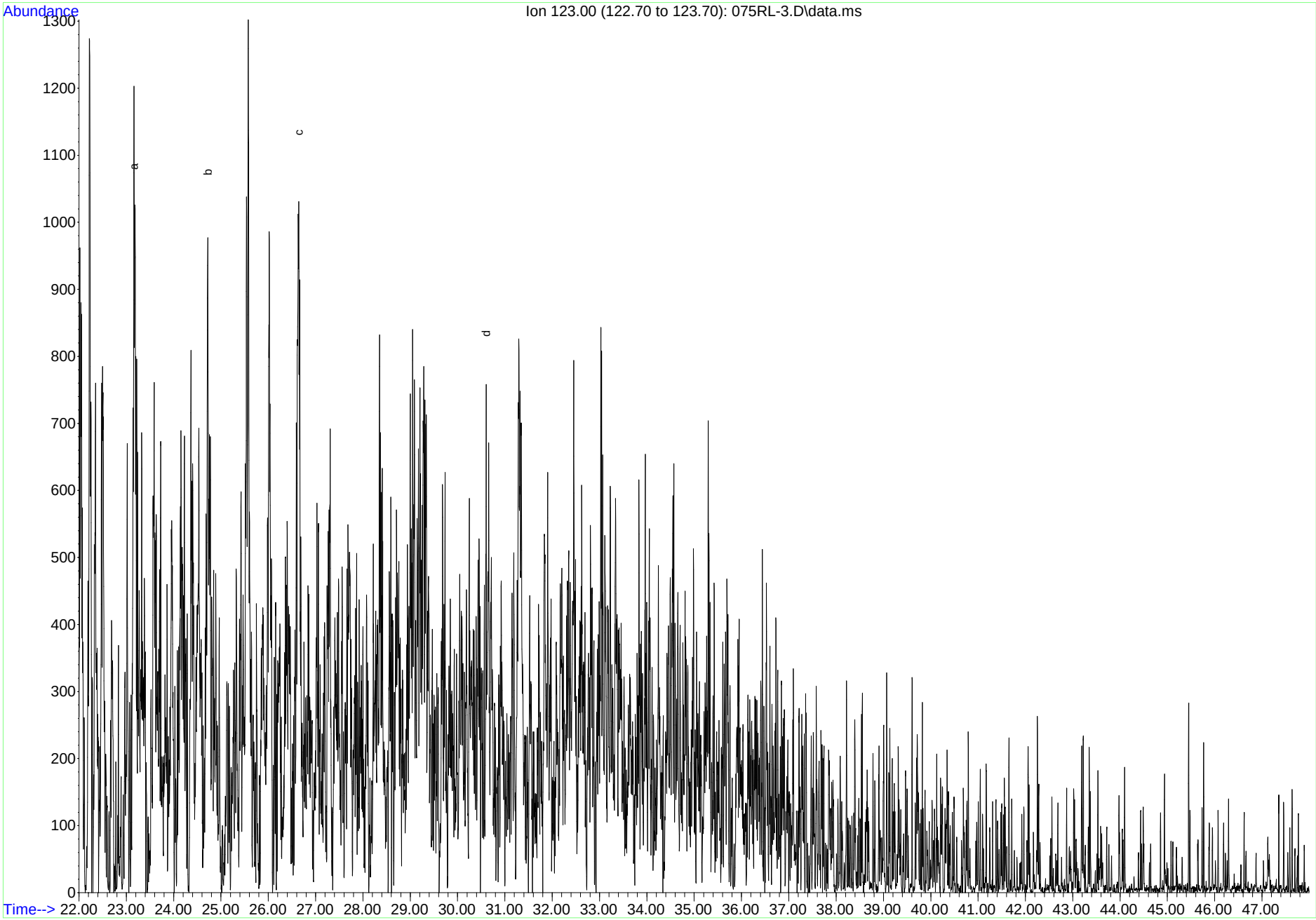
Project Manager:	Russ Shropshire	Lab ID:	075RL-3
Client:	Leidos, Inc.	Collected:	
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	RW-2-201207
Project #:	334893.TM.1.000.00.0	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (123 m/z)
2,2,3-Trimethylbicycloheptane	a	123	23.2	1111.0	31.9%
C_{10} bicycloalkane	b	123	24.7	870.0	25.0%
3,3,7-Trimethylbicycloheptane	c	123	26.6	839.0	24.1%
C_{11} Decalin	d	123	30.6	663.0	19.0%
Nordrimane	f	123	ND	ND	ND
Nordrimane	g	123	ND	ND	ND
Rearranged drimane	h	123	ND	ND	ND
Rearranged drimane	j	123	ND	ND	ND
Isomer of Eudesmane	k	123	ND	ND	ND
4β (H) Eudesmane	l	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	m	123	ND	ND	ND
8β (H) Drimane	n	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	o	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	p	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	q	123	ND	ND	ND
8β (H) Homodrimane	r	123	ND	ND	ND

0.40650 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-3
0.40650 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 191 m/z Terpanes

Project Manager:	Russ Shropshire	Lab ID:	075RL-3
Client:	Leidos, Inc.	Collected:	12/07/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	RW-2-201207
Project #:	334893.TM.1.000.00.	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
C_{21}-Tricyclic Terpane	1	191	ND	ND	ND
C_{22}-Tricyclic Terpane	2	191	ND	ND	ND
C_{23}-Tricyclic Terpane	3	191	ND	ND	ND
C_{24}-Tricyclic Terpane	4	191	ND	ND	ND
C_{25}-Tricyclic Terpane	5(S+R)	191	ND	ND	ND
C_{24}-Tetracyclic Terpane	Z4	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6a*	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6b	191	ND	ND	ND
C_{28}-Tricyclic Terpane #1	A	191	ND	ND	ND
C_{28}-Tricyclic Terpane #2	B	191	ND	ND	ND
C_{29}-Tricyclic Terpane #1	C	191	ND	ND	ND
C_{29}-Tricyclic Terpane #2	D	191	ND	ND	ND
18 α-22,29,30-Trisnorneohopane (Ts)	E	191	ND	ND	ND
17 α-22,29,30-Trisnorhopane (Tm)	F	191	ND	ND	ND
C_{30}-Tricyclic Terpane #1	10a*	191	ND	ND	ND
C_{30}-Tricyclic Terpane #2	10b	191	ND	ND	ND
17 α-28,30 Bisnorhopane	I	191	ND	ND	ND
C_{31}-Tricyclic Terpane #1	11a*	191	ND	ND	ND
17α-25-Norhopane	J	191	ND	ND	ND
C_{31}-Tricyclic Terpane #2	11b	191	ND	ND	ND
17 α,21β-30-Norhopane	K	191	ND	ND	ND
18α-30-Norneohopane	C29Ts	191	ND	ND	ND
17α-Diahopane	C30*	191	ND	ND	ND
17β-21α-30-Normoretane	L	191	ND	ND	ND
18α+18β-Oleanane	Ma+Mb	191	ND	ND	ND
17α-21β-Hopane	N	191	ND	ND	ND
17β-21α-Moretane	O	191	ND	ND	ND
22S-17α,21β-30-Homohopane	P	191	ND	ND	ND
22R-17α,21β-30-Homohopane	Q	191	ND	ND	ND
Gammacerane	R	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	T	191	ND	ND	ND
22R-17α,21β-30-Bishomohopane	U	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	WS	191	ND	ND	ND
22R-17α,21β-Trishomohopane	WR	191	ND	ND	ND
22S-17α,21β-Tetrahomohopane	XS	191	ND	ND	ND

SAMPLE RESULTS

Chromatogram Key & Numerical Results: 191 m/z Terpanes

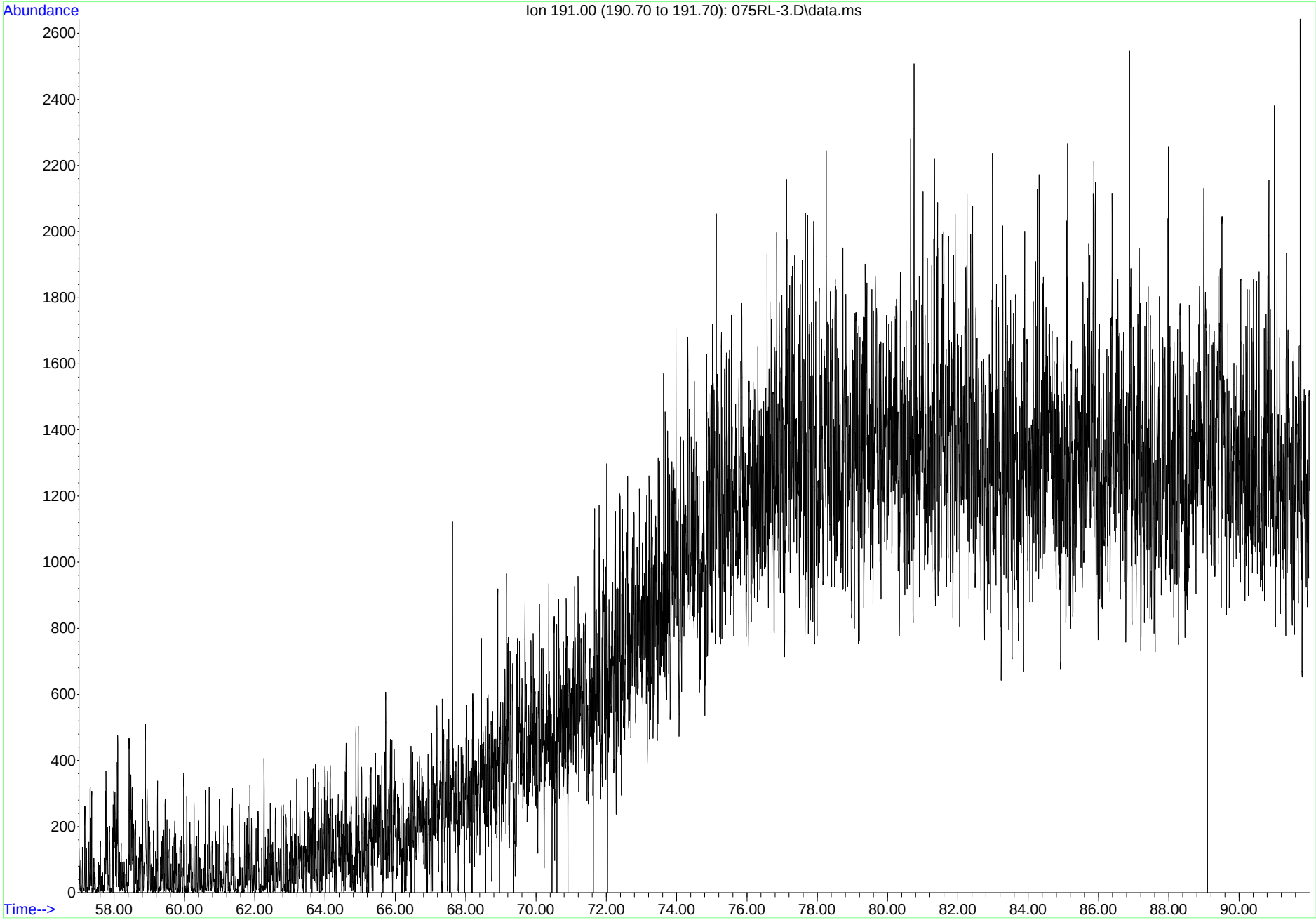
Project Manager:	Russ Shropshire	Lab ID:	075RL-3
Client:	Leidos, Inc.	Collected:	12/07/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	RW-2-201207
Project #:	334893.TM.1.000.00.	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
22R-17α,21β-Tetrahomohopane	XR	191	ND	ND	ND
22S-17α,21β-Pentahomohopane	YS	191	ND	ND	ND
22R-17α,21β-Pentahomohopane	YR	191	ND	ND	ND

0.40650 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-3
0.40650 g



Chromatogram Key & Numerical Results: 217 m/z Steranes

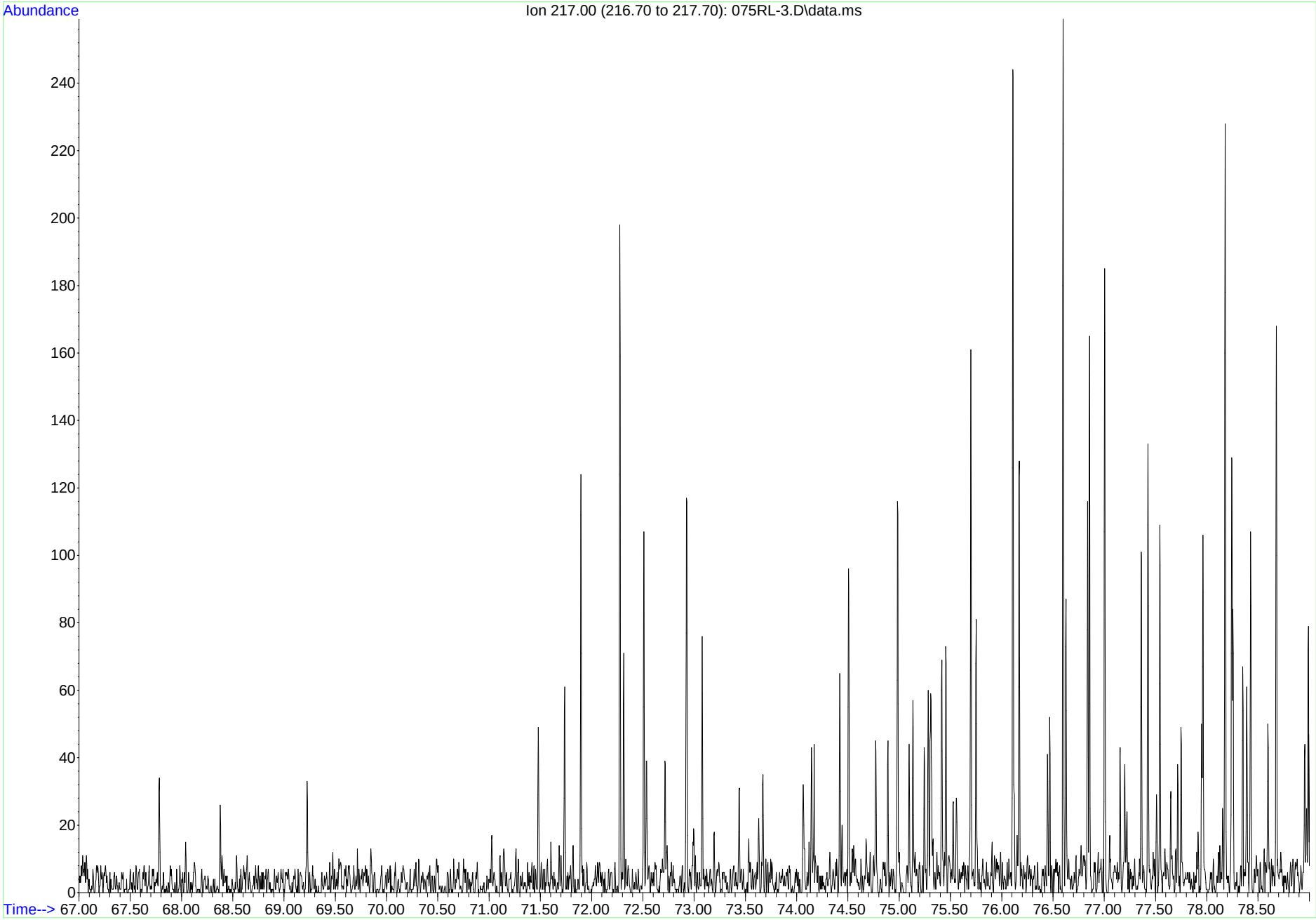
Project Manager:	Russ Shropshire	Lab ID:	075RL-3
Client:	Leidos, Inc.	Collected:	12/07/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	RW-2-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (217 m/z)
13β, 17α-Diacholestane (20S)	1	217	ND	ND	ND
13β, 17α-Diacholestane (20R)	2	217	ND	ND	ND
13α, 17β-Diacholestane (20S)	3	217	ND	ND	ND
13α, 17β-Diacholestane (20R)	4	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	5	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	6	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20S)	7D	217	ND	ND	ND
14α,17α-Cholestane (20S)	7	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20S)+ 14β,17β-Cholestane (20R)	8+8D	217	ND	ND	ND
14β,17β-Cholestane (20S)	9	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20R)	9D	217	ND	ND	ND
14α,17α-Cholestane (20R)	10	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20R)	11	217	ND	ND	ND
24-ethyl-13α, 17β-Diacholestane (20S)	12	217	ND	ND	ND
24-ethyl-13α, 17α-Diacholestane (20S)	13	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20R)	14	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20S)	15	217	ND	ND	ND
24-methyl-14α, 17α-Cholestane (20R)	16	217	ND	ND	ND
24-ethyl-14α-Cholestane (20S)	17	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20R)	18	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20S)	19	217	ND	ND	ND
24-ethyl-14α, 17α-Cholestane (20R)	20	217	ND	ND	ND

0.40650 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-3
0.40650 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 253 m/z Monoaromatic Steranes

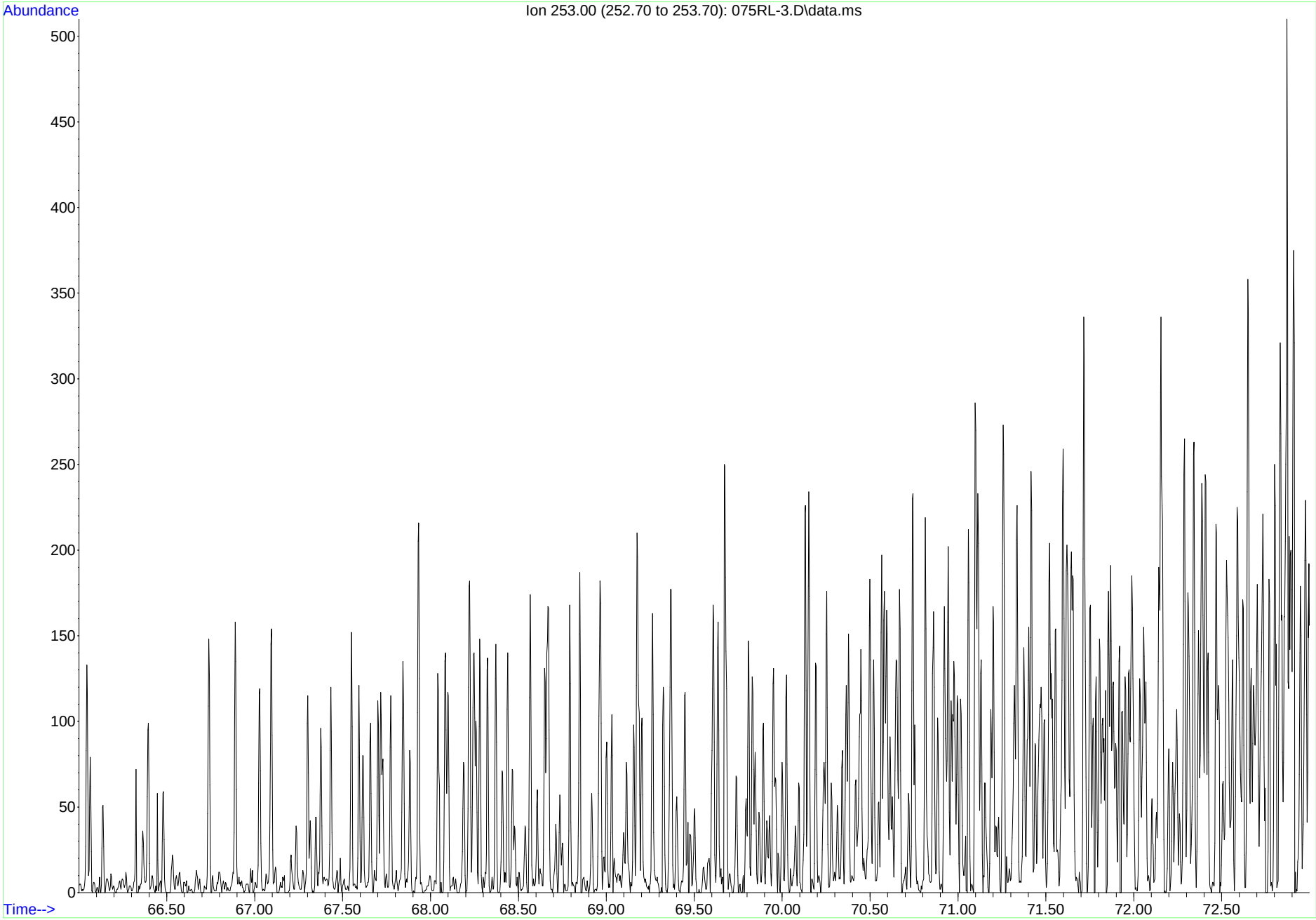
Project Manager:	Russ Shropshire	Lab ID:	075RL-3
Client:	Leidos, Inc.	Collected:	12/07/2020
Address:	18939 120th Avenue NE,	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	RW-2-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (253 m/z)
20S, 5β C27-MAS	a	253	ND	ND	ND
20S, dia C27-MAS	b	253	ND	ND	ND
20R, 5β C27-MAS + 20R C27 dia MAS	c	253	ND	ND	ND
20S, 5α C27-MAS	d	253	ND	ND	ND
20R, 5β C28-MAS + 20S C28 dia MAS	e	253	ND	ND	ND
20R, 5α C27-MAS	f	253	ND	ND	ND
20S, 5α C28-MAS	g	253	ND	ND	ND
20R, 5β C28-MAS + 20R C28 dia MAS	h	253	ND	ND	ND
20S, 5β C29-MAS + 20S C29 dia MAS	i	253	ND	ND	ND
20S, 5α C29-MAS	J lower case	253	ND	ND	ND
20R, 5α C28-MAS	k	253	ND	ND	ND
20R, 5β C29-MAS + 20R C29 dia MAS	L lower case	253	ND	ND	ND
20R, 5α C29-MAS	m	253	ND	ND	ND

0.40650 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-3
0.40650 g



Chromatogram Key & Numerical Results: 231 m/z Triaromatic Steranes

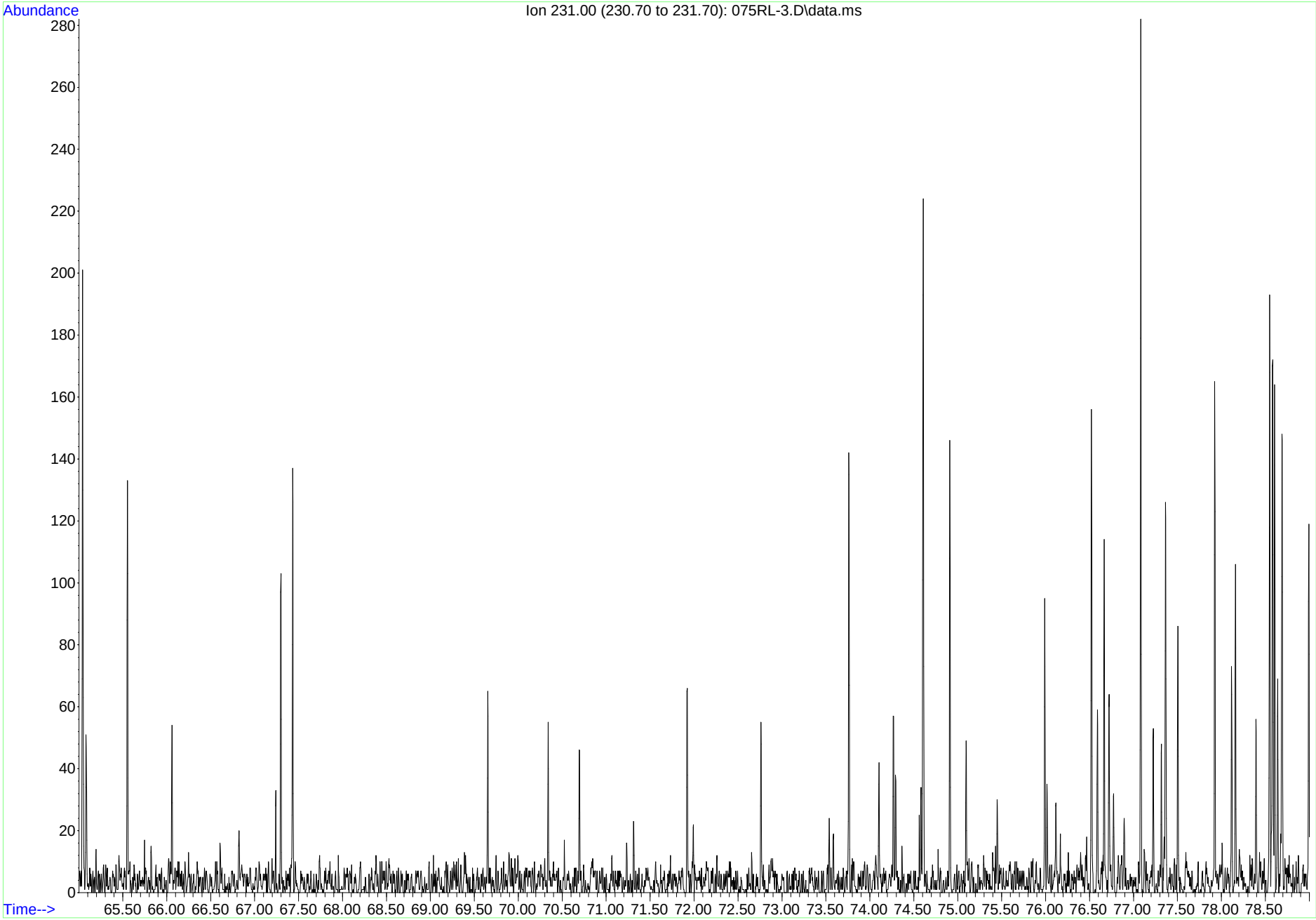
Project Manager:	Russ Shropshire	Lab ID:	075RL-3
Client:	Leidos, Inc.	Collected:	12/07/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	RW-2-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (231 m/z)
C_{20} Triaromatic Sterane	T1	231	ND	ND	ND
C_{21} Triaromatic Sterane	T2	231	ND	ND	ND
20S C_{26} Triaromatic Sterane	T3	231	ND	ND	ND
20R C_{26} + 20S C_{27} Triaromatic Steranes	T4	231	ND	ND	ND
20S C_{28} Triaromatic Sterane	T5	231	ND	ND	ND
20R C_{27} Triaromatic Sterane	T6	231	ND	ND	ND
20R C_{28} Triaromatic Sterane	T7	231	ND	ND	ND

0.40650 g in 10mL DCM
FOREN4LA_MI_BACK

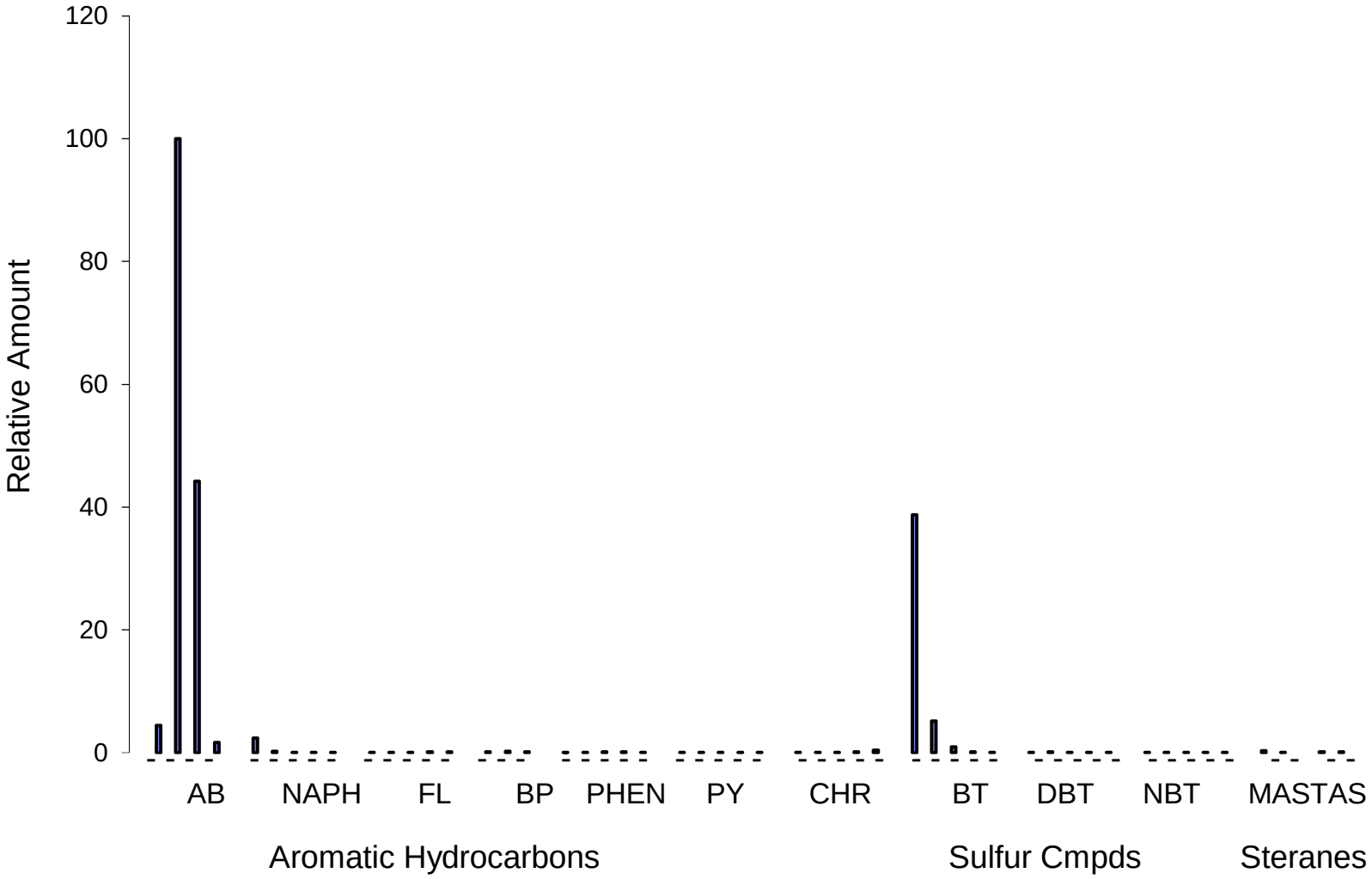
Submitted by,
Microbial Insights, Inc.

075RL-3
0.40650 g



Aromatic Hydrocarbon Distribution

075RL-3



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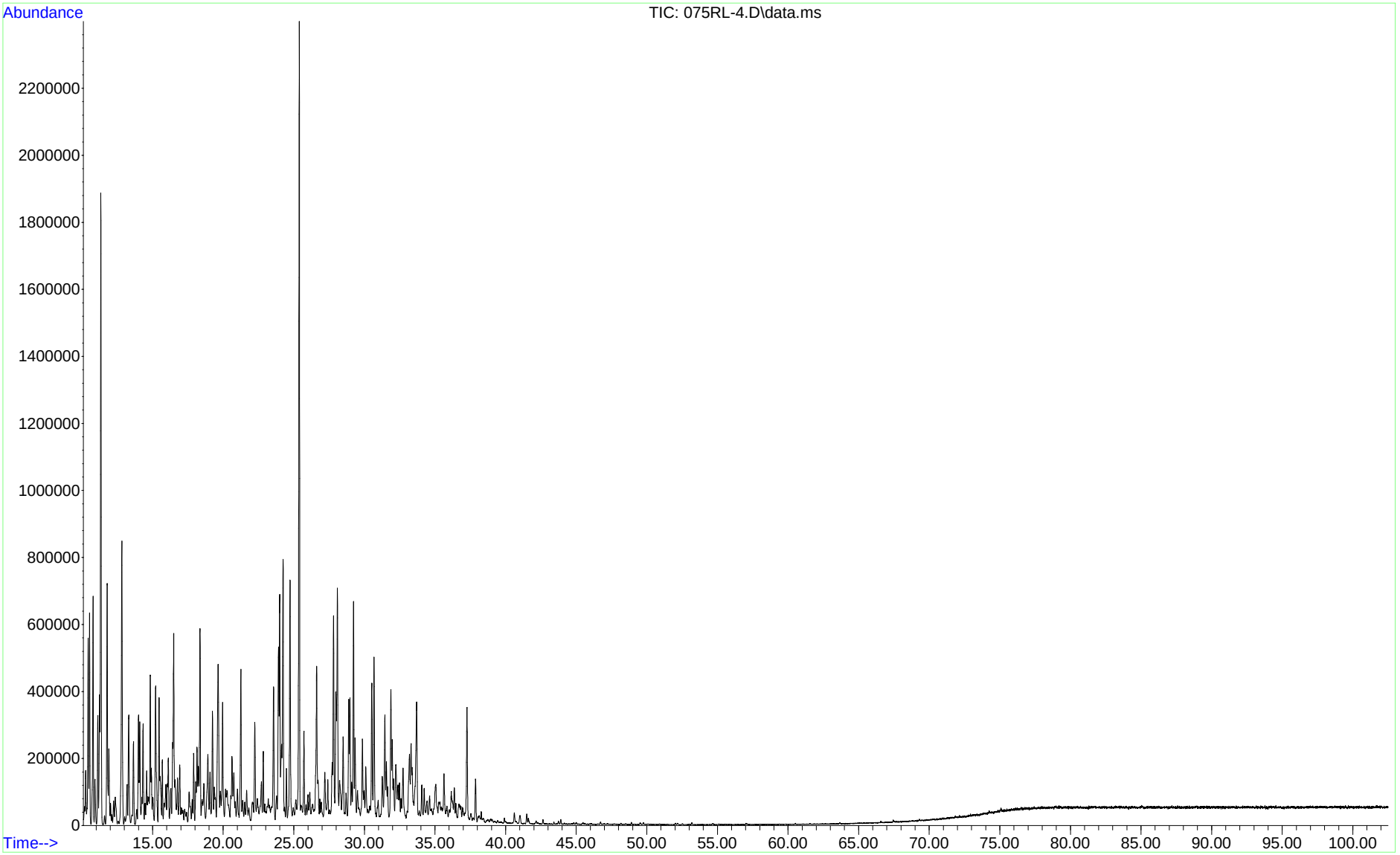
Sample Name: 075RL-4



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 85 m/z n-Paraffins

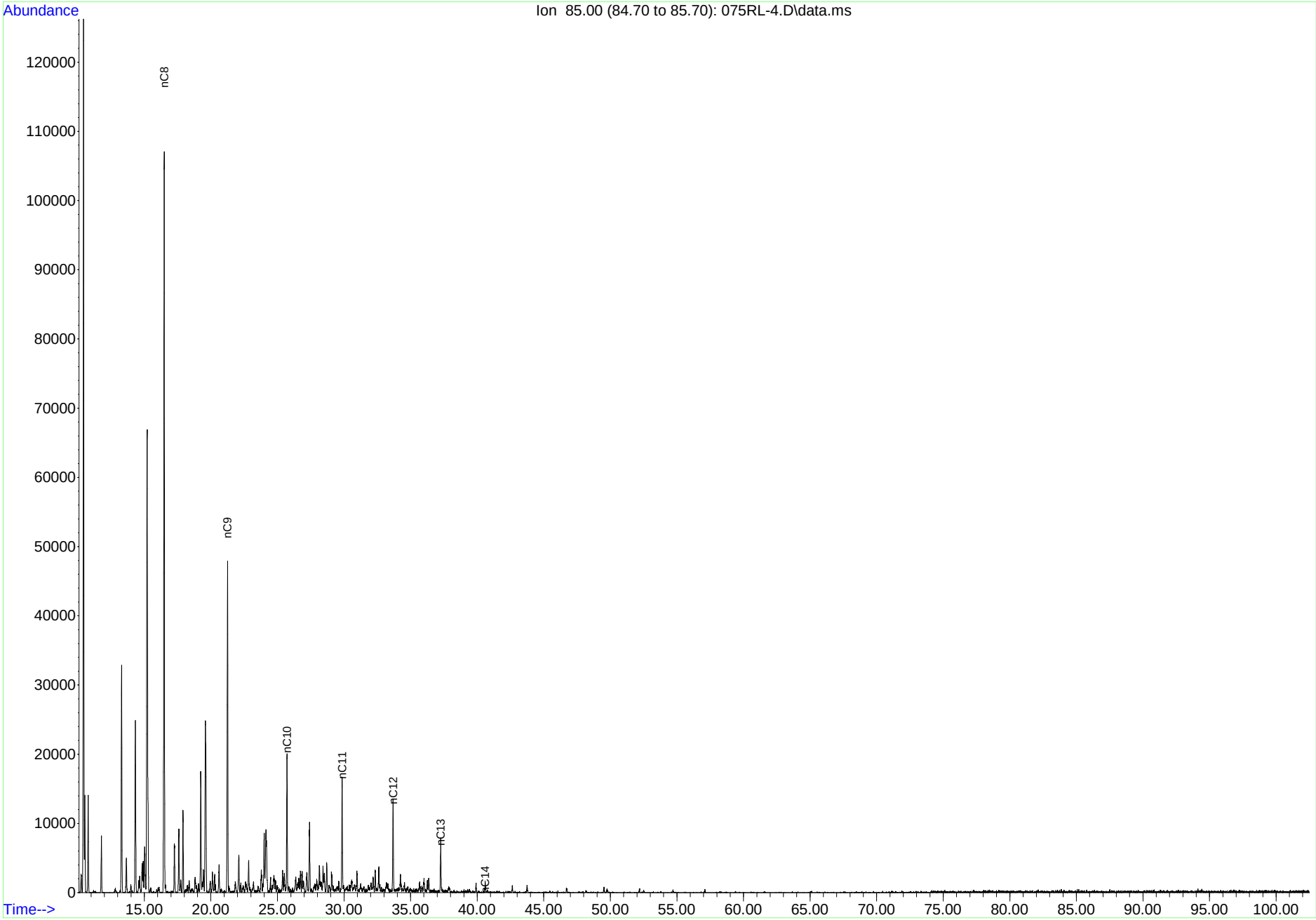
Project Manager:	Russ Shropshire	Lab ID:	075RL-4
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-9-201207
Project #:	334893.TM.1.000.00.0	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (85 m/z)
n-Octane	nC8	85	16.5	107064.0	50.1%
n-Nonane	nC9	85	21.3	47818.0	22.4%
n-Decane	nC10	85	25.7	19900.0	9.3%
n-Undecane	nC11	85	29.9	16292.0	7.6%
n-Dodecane	nC12	85	33.7	13250.0	6.2%
n-Tridecane	nC13	85	37.3	7822.0	3.7%
n-Tetradecane	nC14	85	40.6	1694.0	0.8%
n-Pentadecane	nC15	85	ND	ND	ND
n-Hexadecane	nC16	85	ND	ND	ND
n-Heptadecane	nC17	85	ND	ND	ND
n-Octadecane	nC18	85	ND	ND	ND
n-Nonadecane	nC19	85	ND	ND	ND
n-Eicosane	nC20	85	ND	ND	ND
n-Henicosane	nC21	85	ND	ND	ND
n-Docosane	nC22	85	ND	ND	ND
n-Tricosane	nC23	85	ND	ND	ND
n-Tetracosane	nC24	85	ND	ND	ND
n-Pentacosane	nC25	85	ND	ND	ND
n-Hexacosane	nC26	85	ND	ND	ND
n-Heptacosane	nC27	85	ND	ND	ND
n-Octacosane	nC28	85	ND	ND	ND
n-Nonacosane	nC29	85	ND	ND	ND
n-Triacontane	nC30	85	ND	ND	ND
n-Hentriacontane	nC31	85	ND	ND	ND
n-Dotriacontane	nC32	85	ND	ND	ND
n-Tritriacontane	nC33	85	ND	ND	ND
n-Tetratriacontane	nC34	85	ND	ND	ND
n-Pentatriacontane	nC35	85	ND	ND	ND
n-Hexatriacontane	nC36	85	ND	ND	ND
n -Heptatriacontane	nC37	85	ND	ND	ND
n -Octatriacontane	nC38	85	ND	ND	ND
n -Nonatriacontane	nC39	85	ND	ND	ND
n-Tetracontane	nC40	85	ND	ND	ND

0.40000 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-4
0.40000 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 113 m/z Isoparaffins

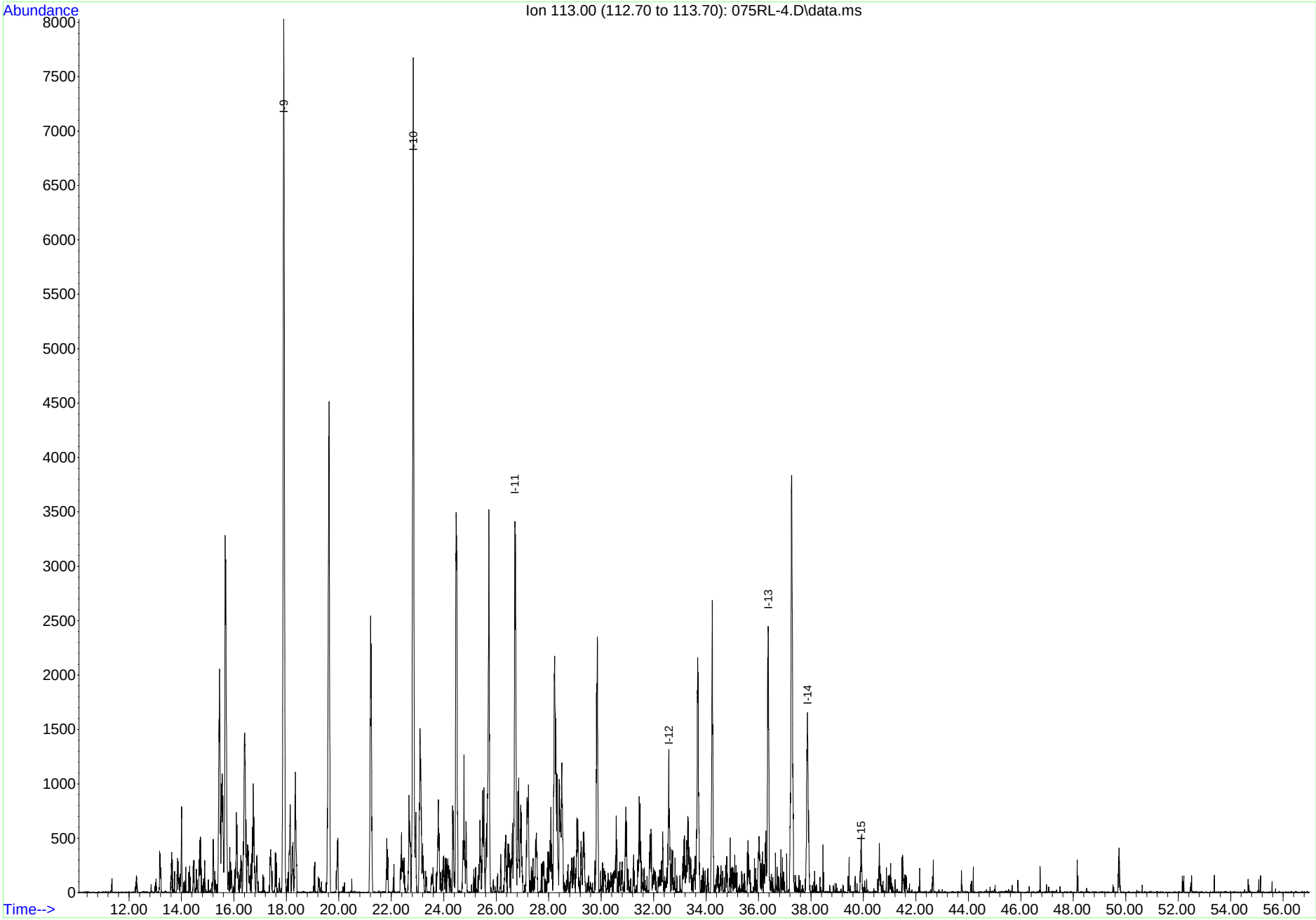
Project Manager:	Russ Shropshire	Lab ID:	075RL-4
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-9-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (113 m/z)
Iso-alkane w/ 9 Carbon Atoms	I-9	113	17.9	8024.0	32.2%
Iso-alkane w/ 10 Carbon Atoms	I-10	113	22.8	7668.0	30.8%
Iso-alkane w/ 11 Carbon Atoms	I-11	113	26.7	3327.0	13.4%
Iso-alkane w/ 12 Carbon Atoms	I-12	113	32.6	1288.0	5.2%
Iso-alkane w/ 13 Carbon Atoms	I-13	113	36.4	2423.0	9.7%
Iso-alkane w/ 14 Carbon Atoms	I-14	113	37.9	1647.0	6.6%
Farnesane (Isoprenoid - C15)	I-15	113	39.9	517.0	2.1%
Iso-alkane w/ 16 Carbon Atoms	I-16	113	ND	ND	ND
Iso-alkane w/ 18 Carbon Atoms	I-18	113	ND	ND	ND
Pristane (Isoprenoid - C19)	Pr	113	ND	ND	ND
Phytane (Isoprenoid - C20)	Ph	113	ND	ND	ND

0.40000 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-4
0.40000 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 83 m/z Alkylcyclohexanes

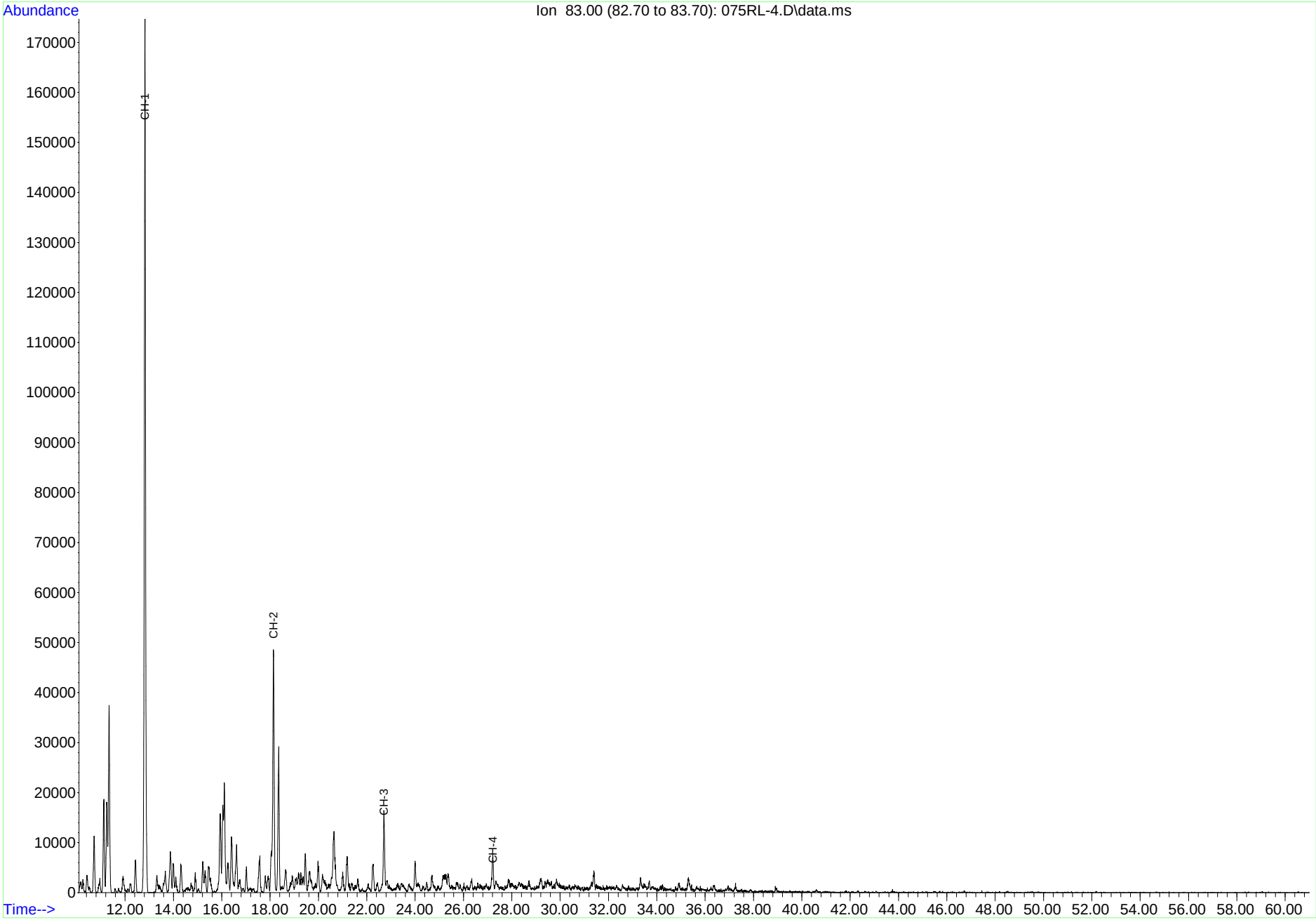
Project Manager:	Russ Shropshire	Lab ID:	075RL-4
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-9-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (83 m/z)
Methylcyclohexane	CH-1	83	12.8	174656.0	71.3%
Ethylcyclohexane	CH-2	83	18.1	48163.0	19.7%
Propylcyclohexane	CH-3	83	22.7	15061.0	6.2%
Butylcyclohexane	CH-4	83	27.2	6926.0	2.8%
Pentylcyclohexane	CH-5	83	ND	ND	ND
Hexylcyclohexane	CH-6	83	ND	ND	ND
Heptylcyclohexane	CH-7	83	ND	ND	ND
Octylcyclohexane	CH-8	83	ND	ND	ND
Nonylcyclohexane	CH-9	83	ND	ND	ND
Decylcyclohexane	CH-10	83	ND	ND	ND
Undecylcyclohexane	CH-11	83	ND	ND	ND
Dodecylcyclohexane	CH-12	83	ND	ND	ND
Tridecylcyclohexane	CH-13	83	ND	ND	ND
Tetradecylcyclohexane	CH-14	83	ND	ND	ND

0.40000 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-4
0.40000 g



Chromatogram Key & Numerical Results: 134 m/z C3-C4 Monoaromatics

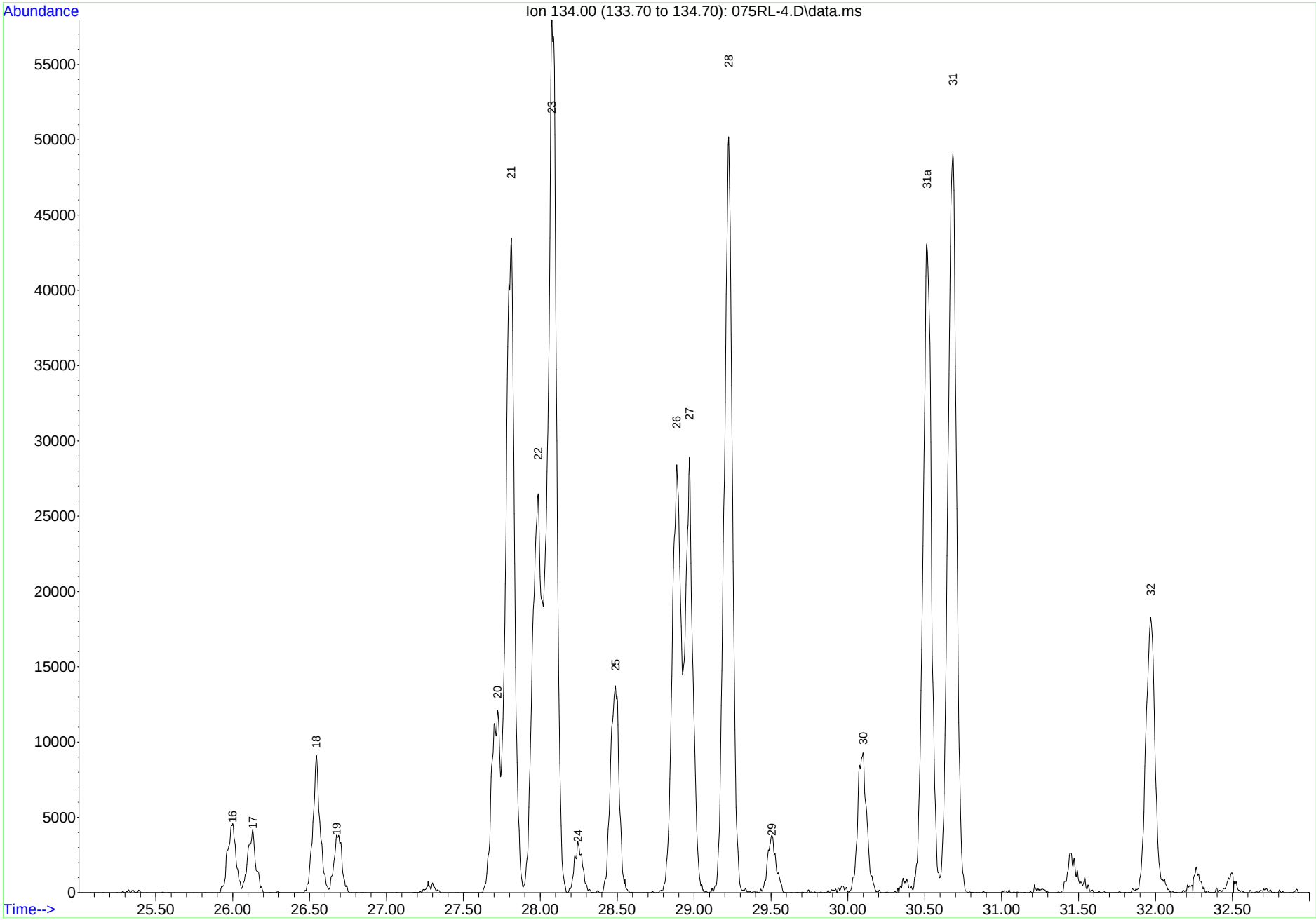
Project Manager:	Russ Shropshire	Lab ID:	075RL-4
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-9-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (134 m/z)
Sec-Butylbenzene	16	134	26.0	4586.0	1.1%
1-Methyl-3-Isopropylbenzene	17	134	26.1	4223.0	1.0%
1-Methyl-4-Isopropylbenzene	18	134	26.5	9107.0	2.2%
1-Methyl-2-Isopropylbenzene	19	134	26.7	3809.0	0.9%
1,3-Diethylbenzene	20	134	27.7	12112.0	3.0%
1-Methyl-3-Propylbenzene	21	134	27.8	43124.0	10.6%
Butylbenzene	22	134	28.0	26156.0	6.4%
1,3-Diethyl-5-Ethylbenzene	23	134	28.1	57955.0	14.2%
1,2-Diethylbenzene	24	134	28.2	3417.0	0.8%
1-Methyl-2-Propylbenzene	25	134	28.5	13735.0	3.4%
1,4-Dimethyl-2-Ethylbenzene	26	134	28.9	28293.0	6.9%
1,3-Dimethyl-4-Ethylbenzene	27	134	29.0	28874.0	7.1%
1,2-Dimethyl-4-Ethylbenzene	28	134	29.2	50111.0	12.3%
1,3-Dimethyl-2-Ethylbenzene	29	134	29.5	3796.0	0.9%
1,2-Dimethyl-3-Ethylbenzene	30	134	30.1	9253.0	2.3%
1,2,4,5-Tetramethylbenzene	31a	134	30.5	42922.0	10.5%
1,2,3,5-Tetramethylbenzene	31	134	30.7	49085.0	12.0%
1,2,3,4-Tetramethylbenzene	32	134	32.0	18065.0	4.4%

0.40000 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-4
0.40000 g



Chromatogram Key & Numerical Results: 123 m/z Bicyclanes

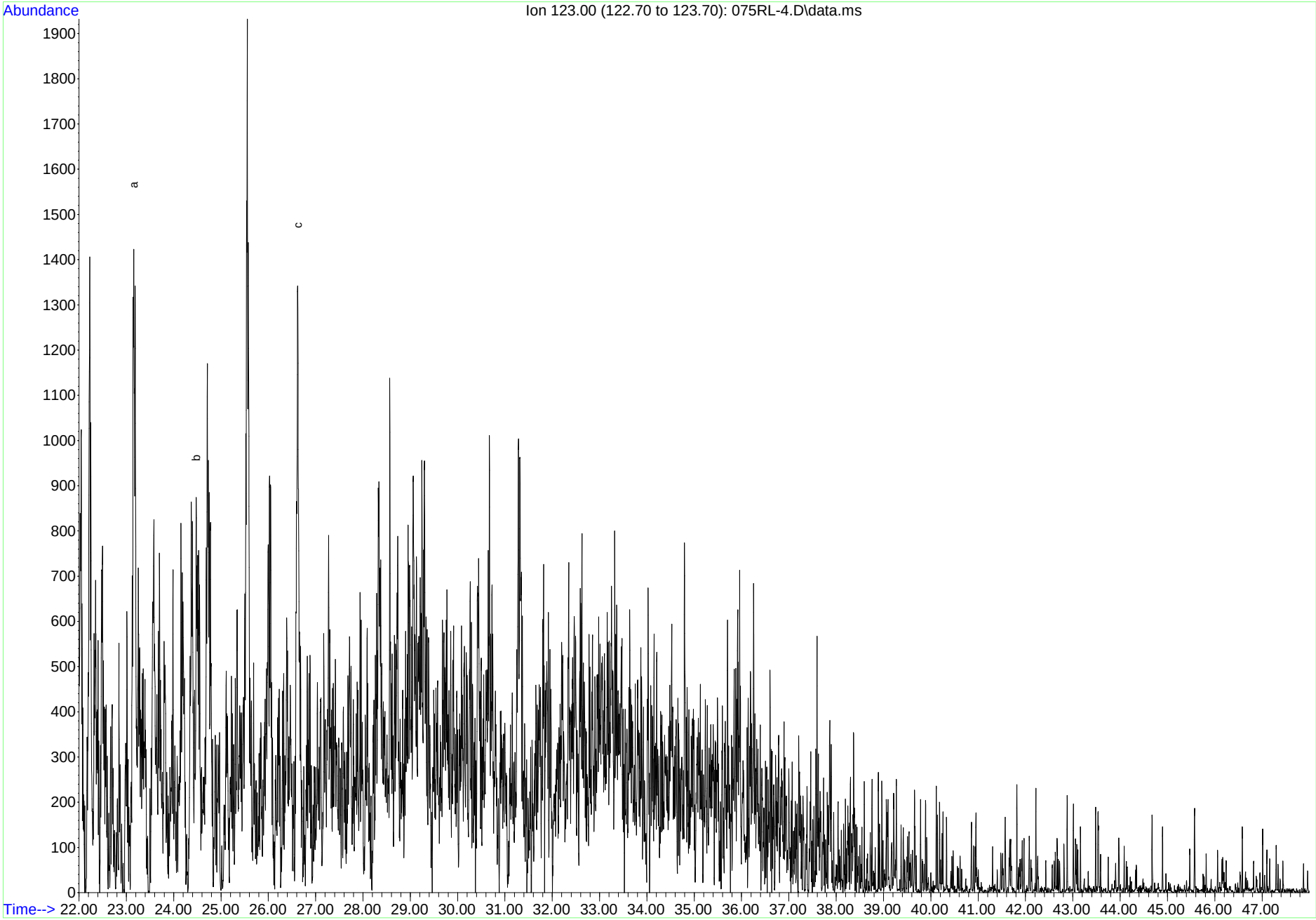
Project Manager:	Russ Shropshire	Lab ID:	075RL-4
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-9-201207
Project #:	334893.TM.1.000.00.0	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (123 m/z)
2,2,3-Trimethylbicycloheptane	a	123	23.2	1303.0	37.3%
C_{10} bicycloalkane	b	123	24.5	851.0	24.4%
3,3,7-Trimethylbicycloheptane	c	123	26.6	1336.0	38.3%
C_{11} Decalin	d	123	ND	ND	ND
Nordrimane	f	123	ND	ND	ND
Nordrimane	g	123	ND	ND	ND
Rearranged drimane	h	123	ND	ND	ND
Rearranged drimane	j	123	ND	ND	ND
Isomer of Eudesmane	k	123	ND	ND	ND
4β (H) Eudesmane	l	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	m	123	ND	ND	ND
8β (H) Drimane	n	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	o	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	p	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	q	123	ND	ND	ND
8β (H) Homodrimane	r	123	ND	ND	ND

0.40000 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-4
0.40000 g



Chromatogram Key & Numerical Results: 191 m/z Terpanes

Project Manager:	Russ Shropshire	Lab ID:	075RL-4
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-9-201207
Project #:	334893.TM.1.000.00.	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
C_{21}-Tricyclic Terpane	1	191	ND	ND	ND
C_{22}-Tricyclic Terpane	2	191	ND	ND	ND
C_{23}-Tricyclic Terpane	3	191	ND	ND	ND
C_{24}-Tricyclic Terpane	4	191	ND	ND	ND
C_{25}-Tricyclic Terpane	5(S+R)	191	ND	ND	ND
C_{24}-Tetracyclic Terpane	Z4	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6a*	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6b	191	ND	ND	ND
C_{28}-Tricyclic Terpane #1	A	191	ND	ND	ND
C_{28}-Tricyclic Terpane #2	B	191	ND	ND	ND
C_{29}-Tricyclic Terpane #1	C	191	ND	ND	ND
C_{29}-Tricyclic Terpane #2	D	191	ND	ND	ND
18 α-22,29,30-Trisnorneohopane (Ts)	E	191	ND	ND	ND
17 α-22,29,30-Trisnorhopane (Tm)	F	191	ND	ND	ND
C_{30}-Tricyclic Terpane #1	10a*	191	ND	ND	ND
C_{30}-Tricyclic Terpane #2	10b	191	ND	ND	ND
17 α-28,30 Bisnorhopane	I	191	ND	ND	ND
C_{31}-Tricyclic Terpane #1	11a*	191	ND	ND	ND
17α-25-Norhopane	J	191	ND	ND	ND
C_{31}-Tricyclic Terpane #2	11b	191	ND	ND	ND
17 α,21β-30-Norhopane	K	191	ND	ND	ND
18α-30-Norneohopane	C29Ts	191	ND	ND	ND
17α-Diahopane	C30*	191	ND	ND	ND
17β-21α-30-Normoretane	L	191	ND	ND	ND
18α+18β-Oleanane	Ma+Mb	191	ND	ND	ND
17α-21β-Hopane	N	191	ND	ND	ND
17β-21α-Moretane	O	191	ND	ND	ND
22S-17α,21β-30-Homohopane	P	191	ND	ND	ND
22R-17α,21β-30-Homohopane	Q	191	ND	ND	ND
Gammacerane	R	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	T	191	ND	ND	ND
22R-17α,21β-30-Bishomohopane	U	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	WS	191	ND	ND	ND
22R-17α,21β-Trishomohopane	WR	191	ND	ND	ND
22S-17α,21β-Tetrahomohopane	XS	191	ND	ND	ND

SAMPLE RESULTS

Chromatogram Key & Numerical Results: 191 m/z Terpanes

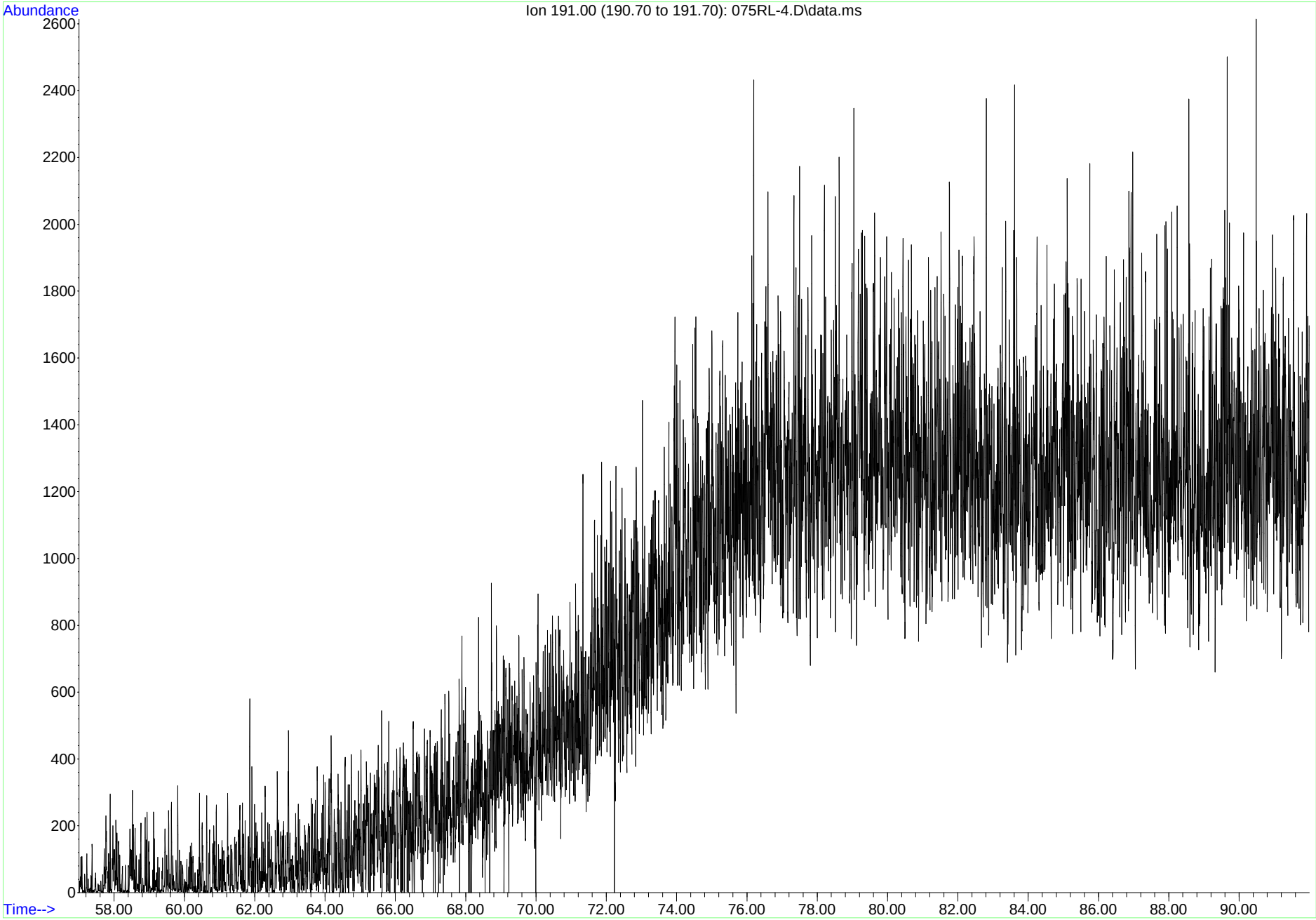
Project Manager:	Russ Shropshire	Lab ID:	075RL-4
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-9-201207
Project #:	334893.TM.1.000.00.	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
22R-17α,21β-Tetrahomohopane	XR	191	ND	ND	ND
22S-17α,21β-Pentahomohopane	YS	191	ND	ND	ND
22R-17α,21β-Pentahomohopane	YR	191	ND	ND	ND

0.40000 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-4
0.40000 g



Chromatogram Key & Numerical Results: 217 m/z Steranes

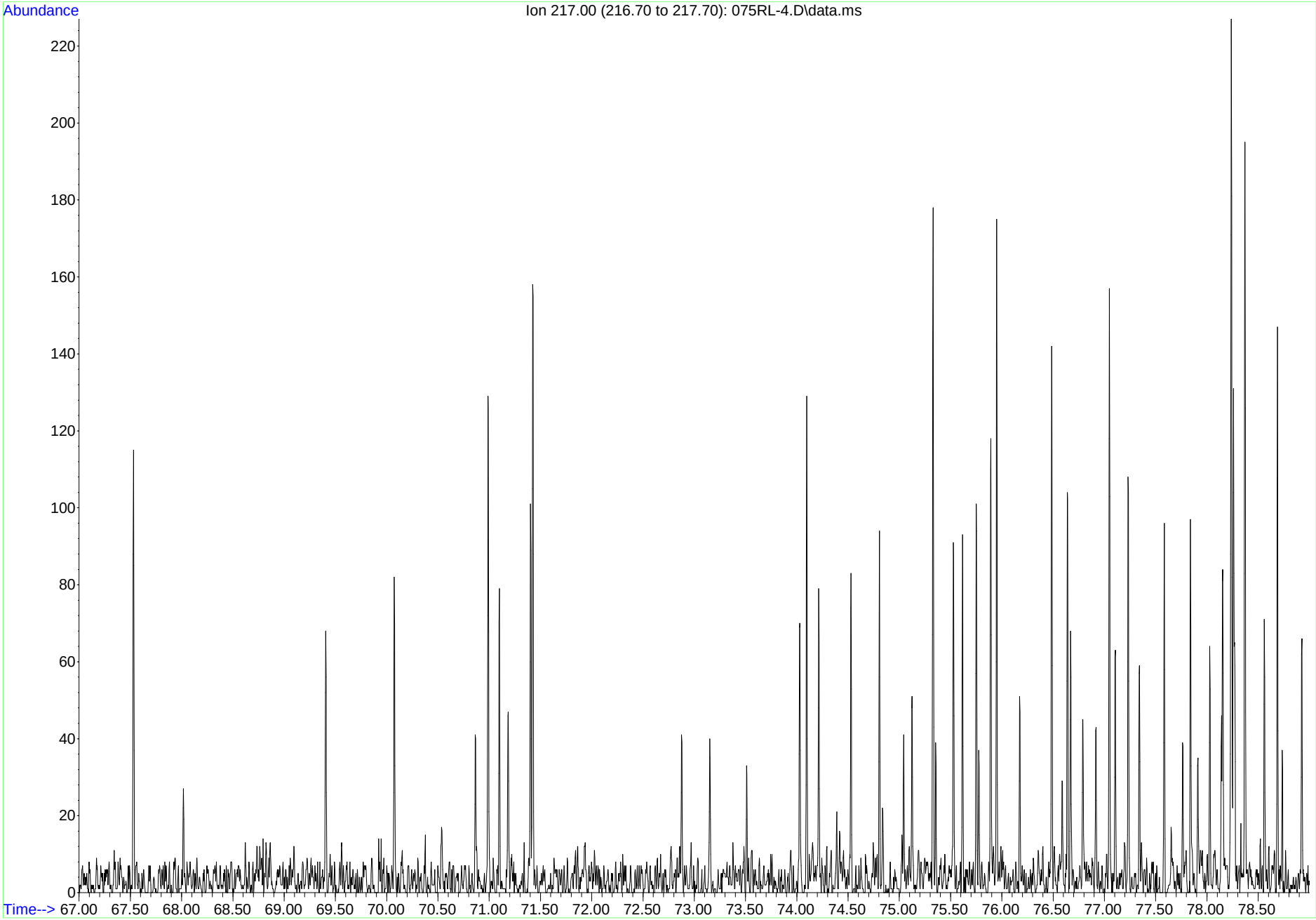
Project Manager:	Russ Shropshire	Lab ID:	075RL-4
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-9-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (217 m/z)
13β, 17α-Diacholestane (20S)	1	217	ND	ND	ND
13β, 17α-Diacholestane (20R)	2	217	ND	ND	ND
13α, 17β-Diacholestane (20S)	3	217	ND	ND	ND
13α, 17β-Diacholestane (20R)	4	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	5	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	6	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20S)	7D	217	ND	ND	ND
14α,17α-Cholestane (20S)	7	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20S)+ 14β,17β-Cholestane (20R)	8+8D	217	ND	ND	ND
14β,17β-Cholestane (20S)	9	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20R)	9D	217	ND	ND	ND
14α,17α-Cholestane (20R)	10	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20R)	11	217	ND	ND	ND
24-ethyl-13α, 17β-Diacholestane (20S)	12	217	ND	ND	ND
24-ethyl-13α, 17α-Diacholestane (20S)	13	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20R)	14	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20S)	15	217	ND	ND	ND
24-methyl-14α, 17α-Cholestane (20R)	16	217	ND	ND	ND
24-ethyl-14α-Cholestane (20S)	17	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20R)	18	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20S)	19	217	ND	ND	ND
24-ethyl-14α, 17α-Cholestane (20R)	20	217	ND	ND	ND

0.40000 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-4
0.40000 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 253 m/z Monoaromatic Steranes

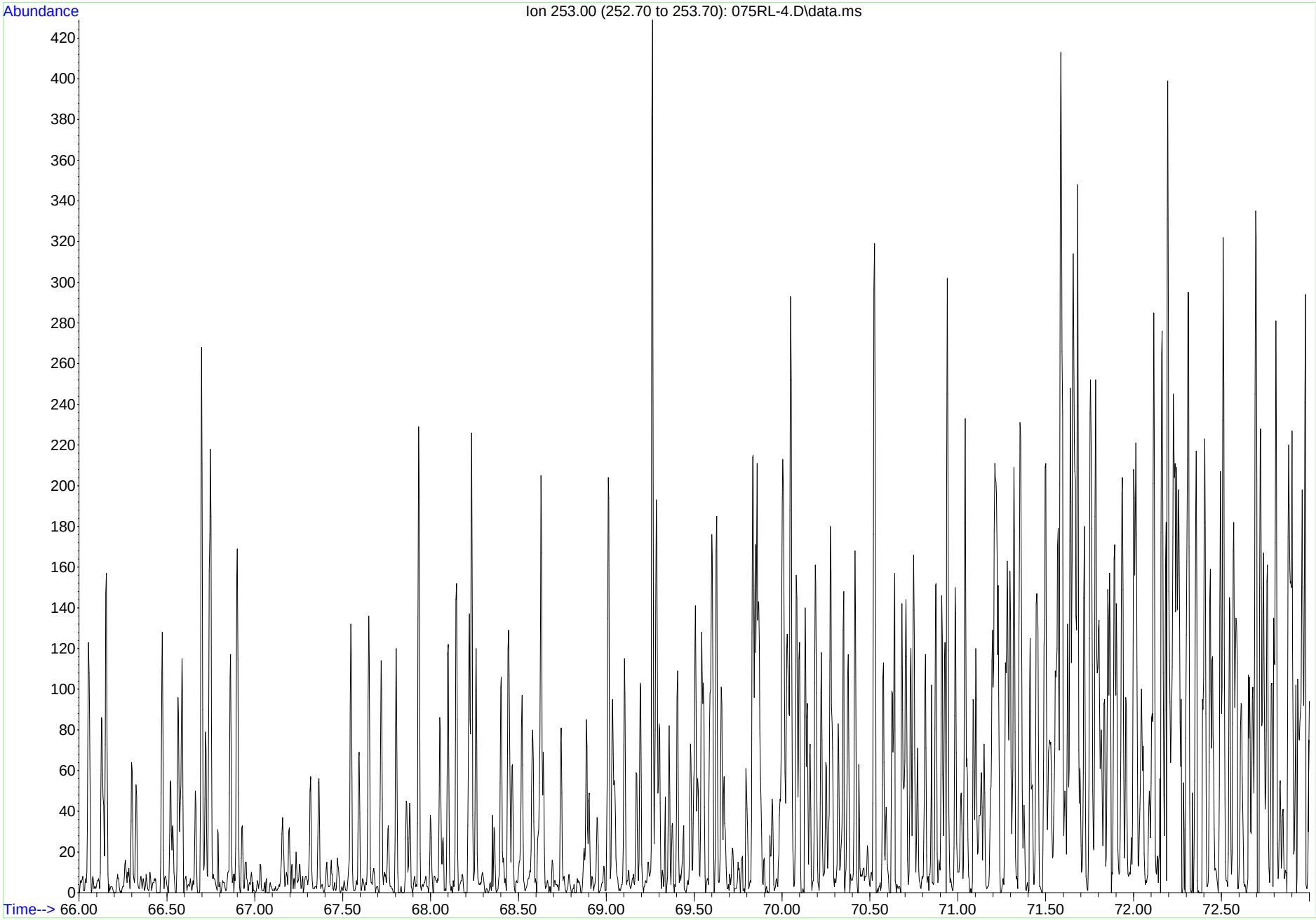
Project Manager:	Russ Shropshire	Lab ID:	075RL-4
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE,	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-9-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (253 m/z)
20S, 5β C27-MAS	a	253	ND	ND	ND
20S, dia C27-MAS	b	253	ND	ND	ND
20R, 5β C27-MAS + 20R C27 dia MAS	c	253	ND	ND	ND
20S, 5α C27-MAS	d	253	ND	ND	ND
20R, 5β C28-MAS + 20S C28 dia MAS	e	253	ND	ND	ND
20R, 5α C27-MAS	f	253	ND	ND	ND
20S, 5α C28-MAS	g	253	ND	ND	ND
20R, 5β C28-MAS + 20R C28 dia MAS	h	253	ND	ND	ND
20S, 5β C29-MAS + 20S C29 dia MAS	i	253	ND	ND	ND
20S, 5α C29-MAS	J lower case	253	ND	ND	ND
20R, 5α C28-MAS	k	253	ND	ND	ND
20R, 5β C29-MAS + 20R C29 dia MAS	L lower case	253	ND	ND	ND
20R, 5α C29-MAS	m	253	ND	ND	ND

0.40000 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-4
0.40000 g



Chromatogram Key & Numerical Results: 231 m/z Triaromatic Steranes

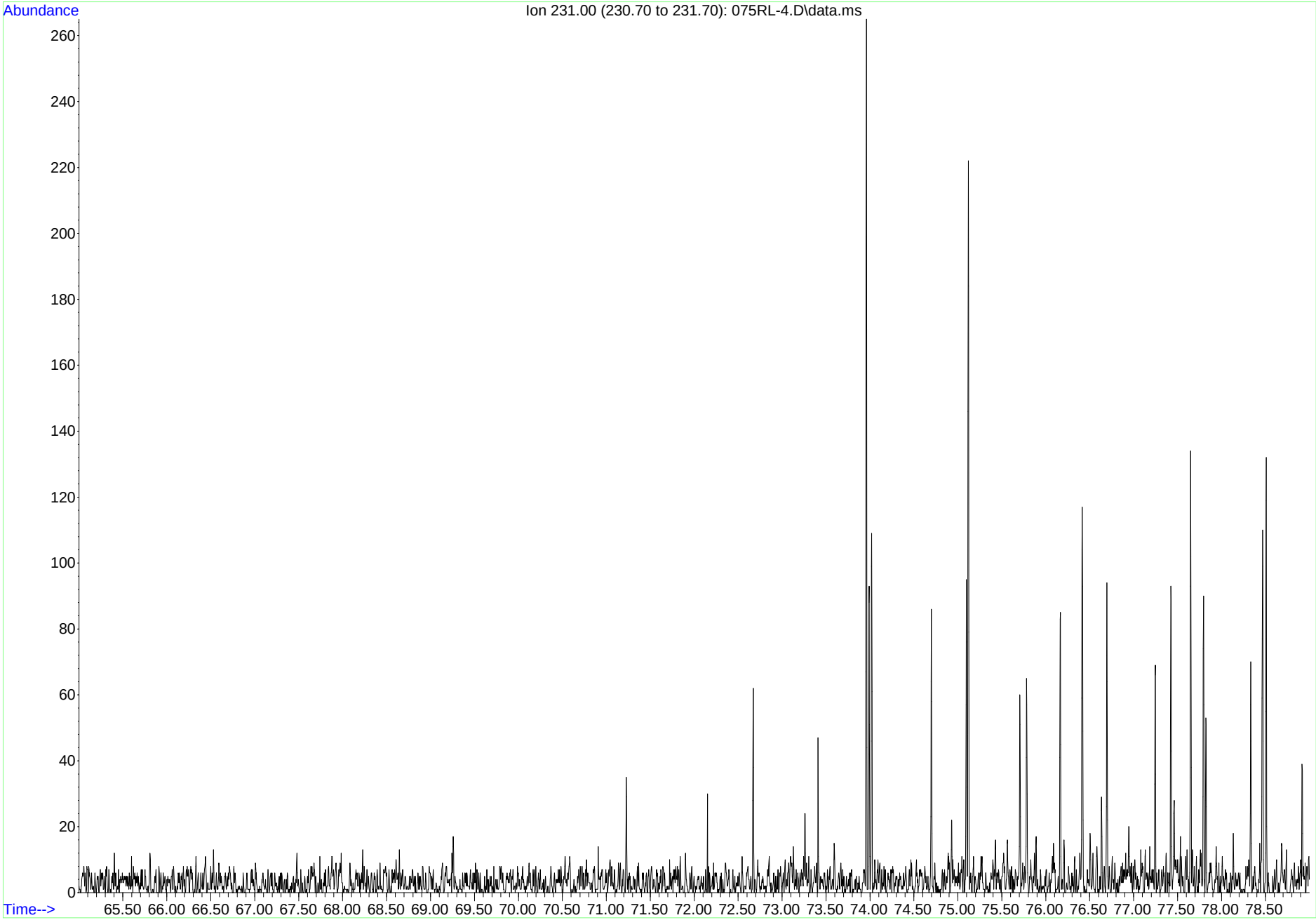
Project Manager:	Russ Shropshire	Lab ID:	075RL-4
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-9-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/15/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (231 m/z)
C_{20} Triaromatic Sterane	T1	231	ND	ND	ND
C_{21} Triaromatic Sterane	T2	231	ND	ND	ND
20S C_{26} Triaromatic Sterane	T3	231	ND	ND	ND
20R C_{26} + 20S C_{27} Triaromatic Steranes	T4	231	ND	ND	ND
20S C_{28} Triaromatic Sterane	T5	231	ND	ND	ND
20R C_{27} Triaromatic Sterane	T6	231	ND	ND	ND
20R C_{28} Triaromatic Sterane	T7	231	ND	ND	ND

0.40000 g in 10mL DCM
FOREN4LA_MI_BACK

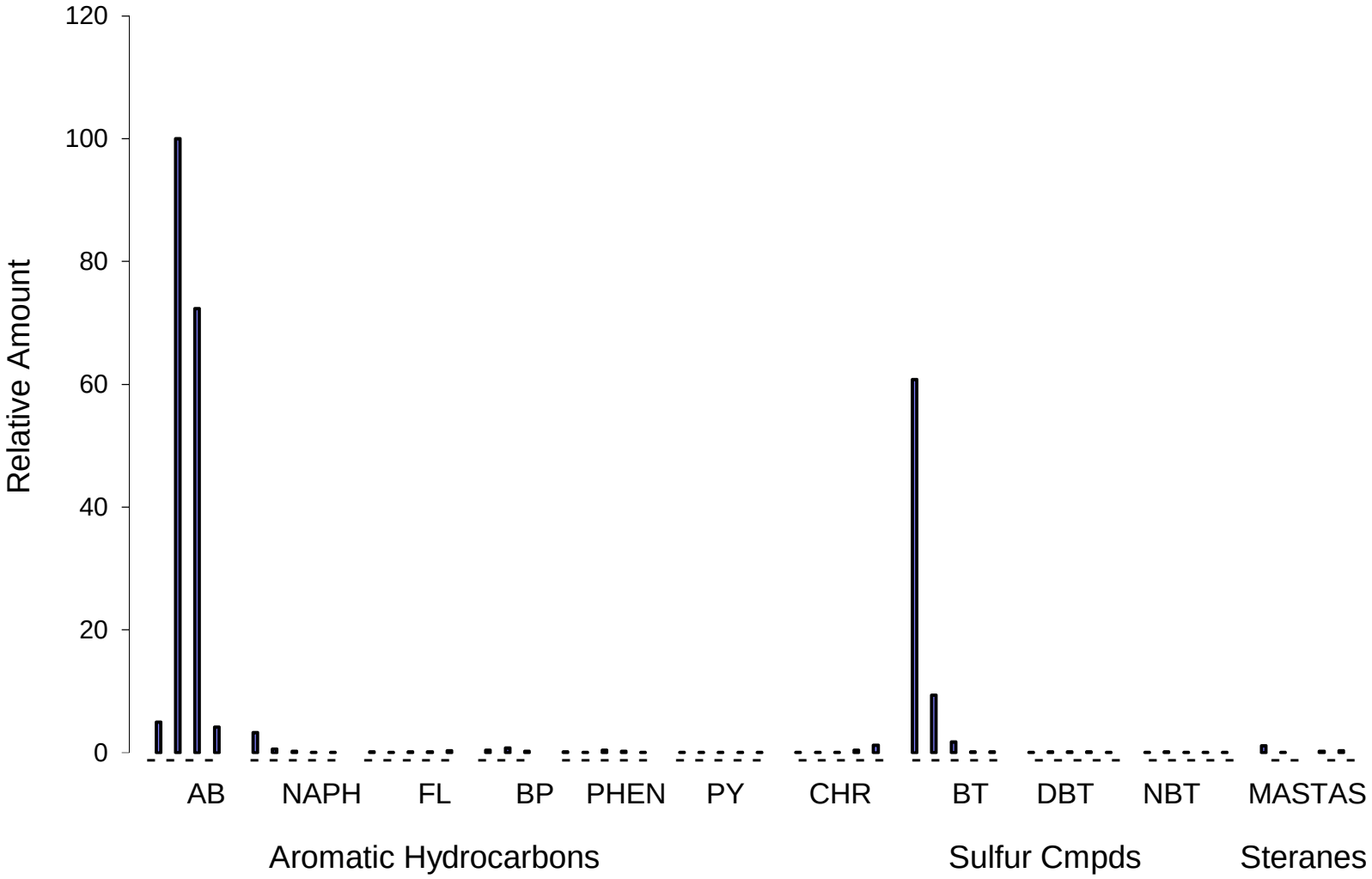
Submitted by,
Microbial Insights, Inc.

075RL-4
0.40000 g

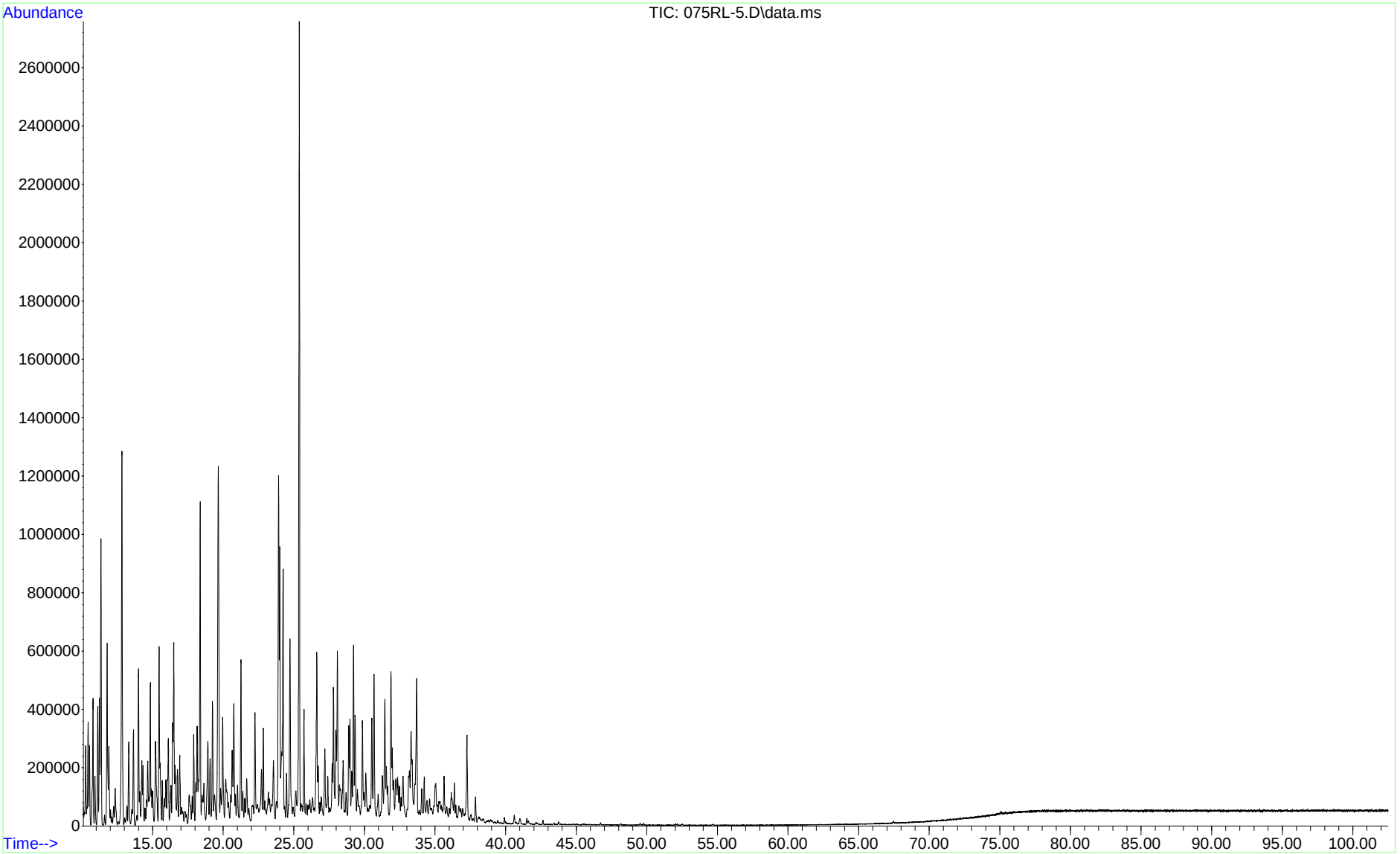


Aromatic Hydrocarbon Distribution

075RL-4



Acquired : 16 Dec 2020 00:14 using AcqMethod FOREN4LA_MI_BACK.M
Sample Name: 075RL-5



Chromatogram Key & Numerical Results: 85 m/z n-Paraffins

Project Manager: Russ Shropshire
Client: Leidos, Inc.
Address: 18939 120th Avenue NE, Bothell, WA 98011
Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.0
Collected by:

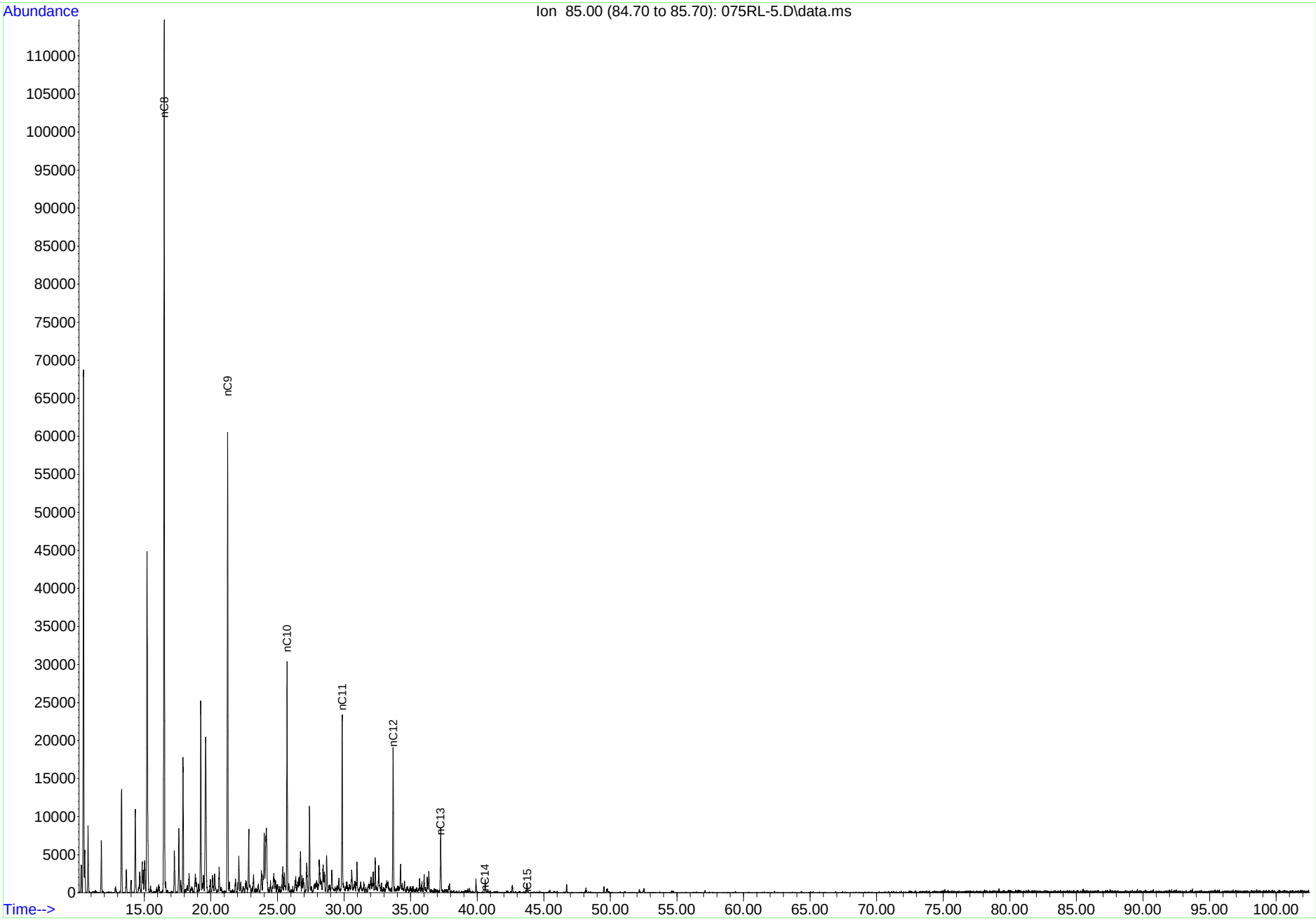
Lab ID: 075RL-5
Collected: 12/7/2020
Received: 12/11/2020
Matrix: Product
Client ID: MW-44-201207
Analyzed: 12/16/2020
Q Method: FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (85 m/z)
n-Octane	nC8	85	16.5	114644.0	44.3%
n-Nonane	nC9	85	21.3	60526.0	23.4%
n-Decane	nC10	85	25.7	30200.0	11.7%
n-Undecane	nC11	85	29.9	23072.0	8.9%
n-Dodecane	nC12	85	33.7	18907.0	7.3%
n-Tridecane	nC13	85	37.3	8385.0	3.2%
n-Tetradecane	nC14	85	40.6	1787.0	0.7%
n-Pentadecane	nC15	85	43.8	1242.0	0.5%
n-Hexadecane	nC16	85	ND	ND	ND
n-Heptadecane	nC17	85	ND	ND	ND
n-Octadecane	nC18	85	ND	ND	ND
n-Nonadecane	nC19	85	ND	ND	ND
n-Eicosane	nC20	85	ND	ND	ND
n-Henicosane	nC21	85	ND	ND	ND
n-Docosane	nC22	85	ND	ND	ND
n-Tricosane	nC23	85	ND	ND	ND
n-Tetracosane	nC24	85	ND	ND	ND
n-Pentacosane	nC25	85	ND	ND	ND
n-Hexacosane	nC26	85	ND	ND	ND
n-Heptacosane	nC27	85	ND	ND	ND
n-Octacosane	nC28	85	ND	ND	ND
n-Nonacosane	nC29	85	ND	ND	ND
n-Triacontane	nC30	85	ND	ND	ND
n-Hentriacontane	nC31	85	ND	ND	ND
n-Dotriacontane	nC32	85	ND	ND	ND
n-Tritriacontane	nC33	85	ND	ND	ND
n-Tetratriacontane	nC34	85	ND	ND	ND
n-Pentatriacontane	nC35	85	ND	ND	ND
n-Hexatriacontane	nC36	85	ND	ND	ND
n -Heptatriacontane	nC37	85	ND	ND	ND
n -Octatriacontane	nC38	85	ND	ND	ND
n -Nonatriacontane	nC39	85	ND	ND	ND
n-Tetracontane	nC40	85	ND	ND	ND

0.40623 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-5
0.40623 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 113 m/z Isoparaffins

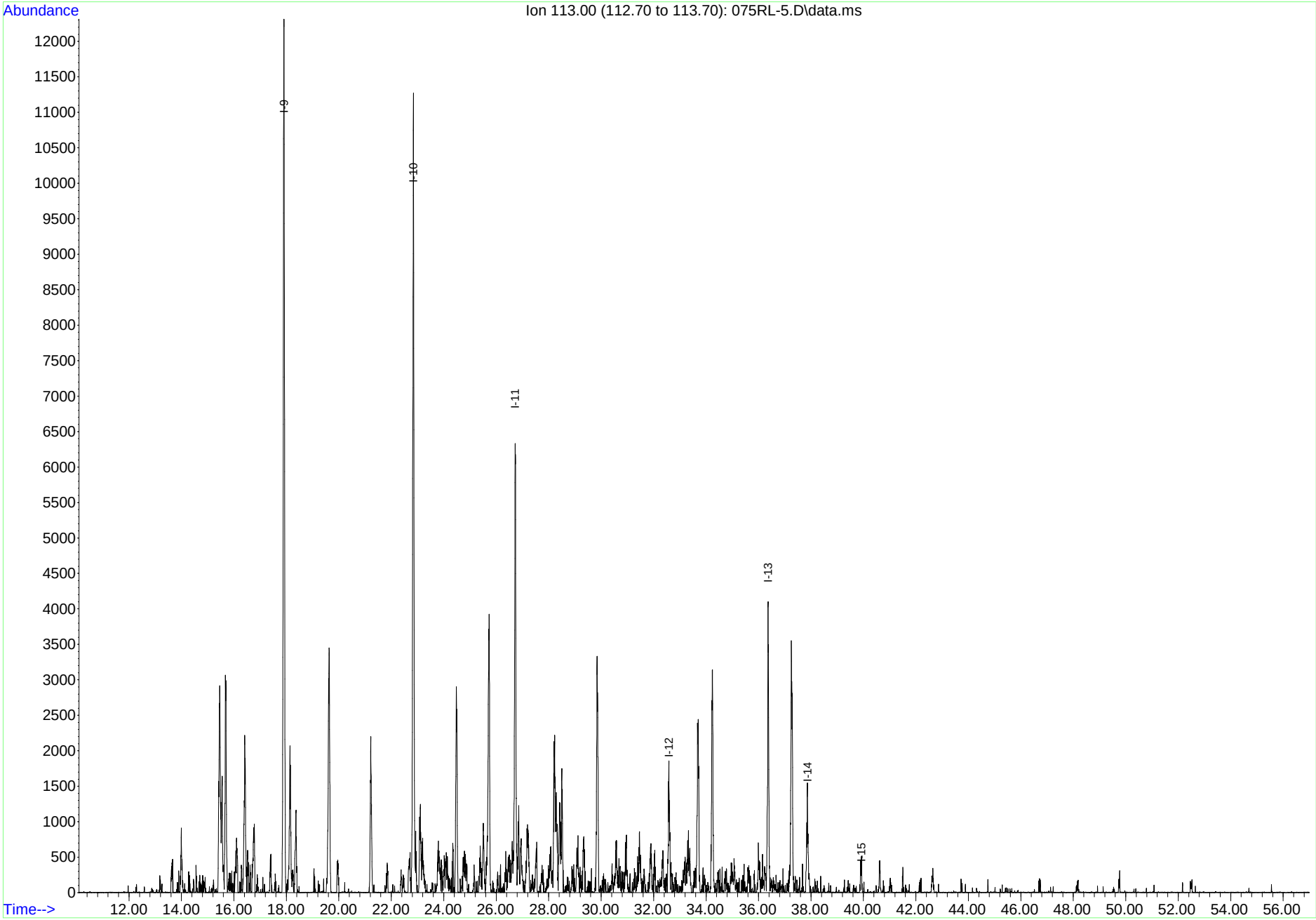
Project Manager:	Russ Shropshire	Lab ID:	075RL-5
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-44-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (113 m/z)
Iso-alkane w/ 9 Carbon Atoms	I-9	113	17.9	12314.0	32.8%
Iso-alkane w/ 10 Carbon Atoms	I-10	113	22.8	11267.0	30.0%
Iso-alkane w/ 11 Carbon Atoms	I-11	113	26.7	5947.0	15.9%
Iso-alkane w/ 12 Carbon Atoms	I-12	113	32.6	1855.0	4.9%
Iso-alkane w/ 13 Carbon Atoms	I-13	113	36.4	4082.0	10.9%
Iso-alkane w/ 14 Carbon Atoms	I-14	113	37.9	1538.0	4.1%
Farnesane (Isoprenoid - C15)	I-15	113	39.9	513.0	1.4%
Iso-alkane w/ 16 Carbon Atoms	I-16	113	ND	ND	ND
Iso-alkane w/ 18 Carbon Atoms	I-18	113	ND	ND	ND
Pristane (Isoprenoid - C19)	Pr	113	ND	ND	ND
Phytane (Isoprenoid - C20)	Ph	113	ND	ND	ND

0.40623 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-5
0.40623 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 83 m/z Alkylcyclohexanes

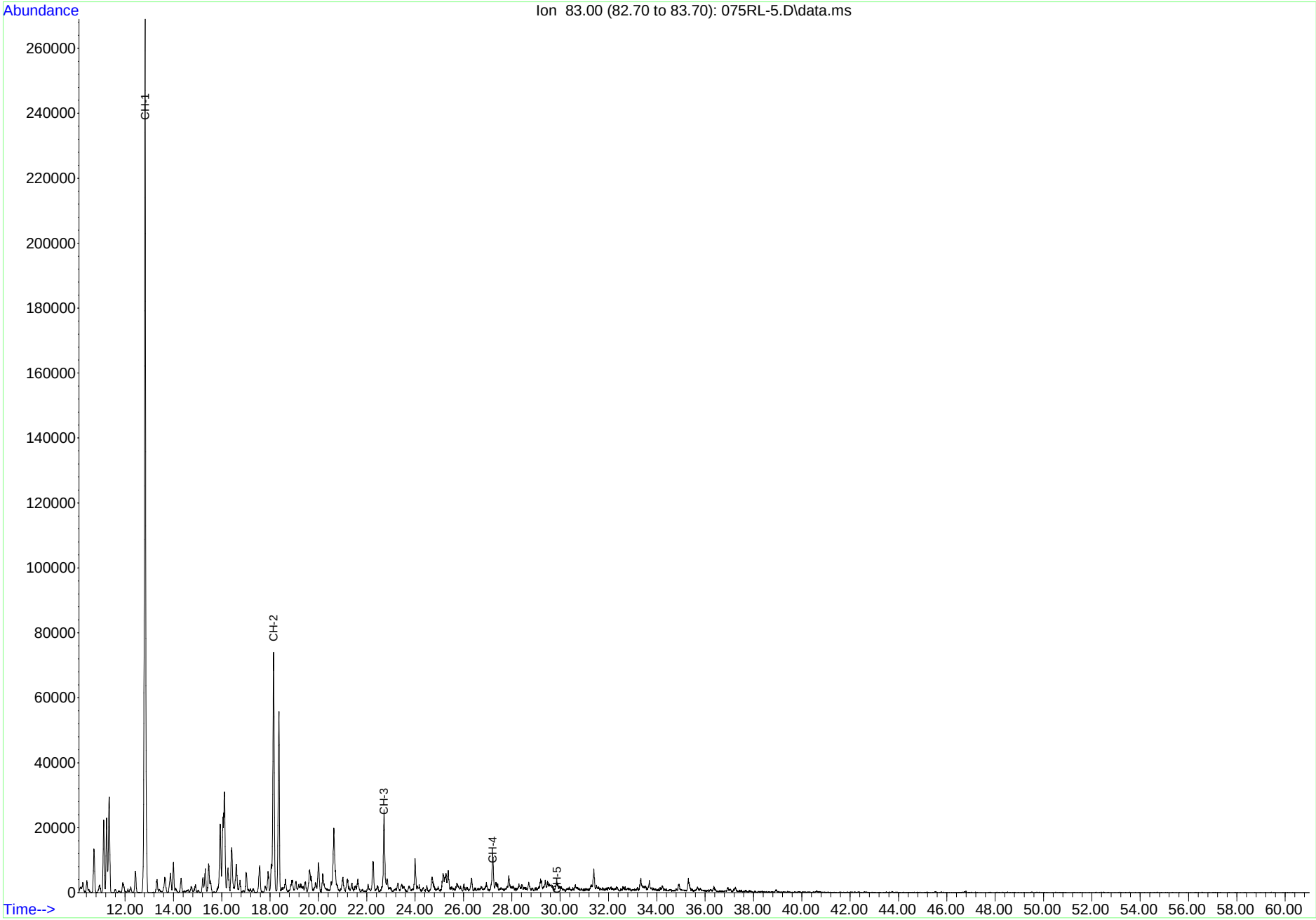
Project Manager:	Russ Shropshire	Lab ID:	075RL-5
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-44-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (83 m/z)
Methylcyclohexane	CH-1	83	12.8	268991.0	70.8%
Ethylcyclohexane	CH-2	83	18.1	73552.0	19.4%
Propylcyclohexane	CH-3	83	22.7	23783.0	6.3%
Butylcyclohexane	CH-4	83	27.2	10970.0	2.9%
Pentylcyclohexane	CH-5	83	29.9	2434.0	0.6%
Hexylcyclohexane	CH-6	83	ND	ND	ND
Heptylcyclohexane	CH-7	83	ND	ND	ND
Octylcyclohexane	CH-8	83	ND	ND	ND
Nonylcyclohexane	CH-9	83	ND	ND	ND
Decylcyclohexane	CH-10	83	ND	ND	ND
Undecylcyclohexane	CH-11	83	ND	ND	ND
Dodecylcyclohexane	CH-12	83	ND	ND	ND
Tridecylcyclohexane	CH-13	83	ND	ND	ND
Tetradecylcyclohexane	CH-14	83	ND	ND	ND

0.40623 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-5
0.40623 g



Chromatogram Key & Numerical Results: 134 m/z C3-C4 Monoaromatics

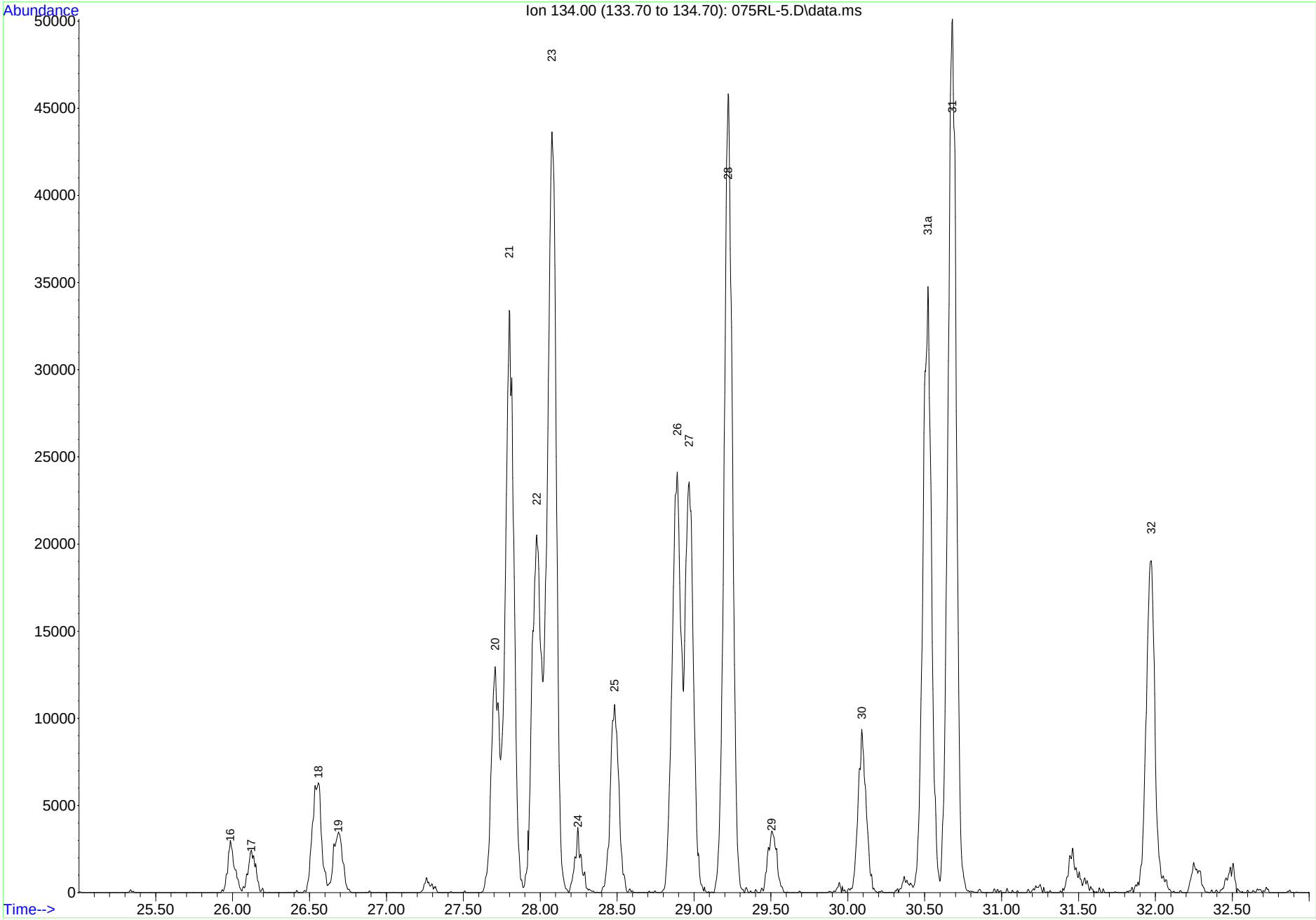
Project Manager:	Russ Shropshire	Lab ID:	075RL-5
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-44-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (134 m/z)
Sec-Butylbenzene	16	134	26.0	2928.0	0.8%
1-Methyl-3-Isopropylbenzene	17	134	26.1	2453.0	0.7%
1-Methyl-4-Isopropylbenzene	18	134	26.6	6297.0	1.8%
1-Methyl-2-Isopropylbenzene	19	134	26.7	3488.0	1.0%
1,3-Diethylbenzene	20	134	27.7	12955.0	3.7%
1-Methyl-3-Propylbenzene	21	134	27.8	33109.0	9.5%
Butylbenzene	22	134	28.0	20229.0	5.8%
1,3-Diethyl-5-Ethylbenzene	23	134	28.1	43648.0	12.5%
1,2-Diethylbenzene	24	134	28.2	3746.0	1.1%
1-Methyl-2-Propylbenzene	25	134	28.5	10798.0	3.1%
1,4-Dimethyl-2-Ethylbenzene	26	134	28.9	24125.0	6.9%
1,3-Dimethyl-4-Ethylbenzene	27	134	29.0	23474.0	6.7%
1,2-Dimethyl-4-Ethylbenzene	28	134	29.2	45824.0	13.1%
1,3-Dimethyl-2-Ethylbenzene	29	134	29.5	3541.0	1.0%
1,2-Dimethyl-3-Ethylbenzene	30	134	30.1	9375.0	2.7%
1,2,4,5-Tetramethylbenzene	31a	134	30.5	34482.0	9.9%
1,2,3,5-Tetramethylbenzene	31	134	30.7	50017.0	14.3%
1,2,3,4-Tetramethylbenzene	32	134	32.0	18616.0	5.3%

0.40623 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-5
0.40623 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 123 m/z Bicyclanes

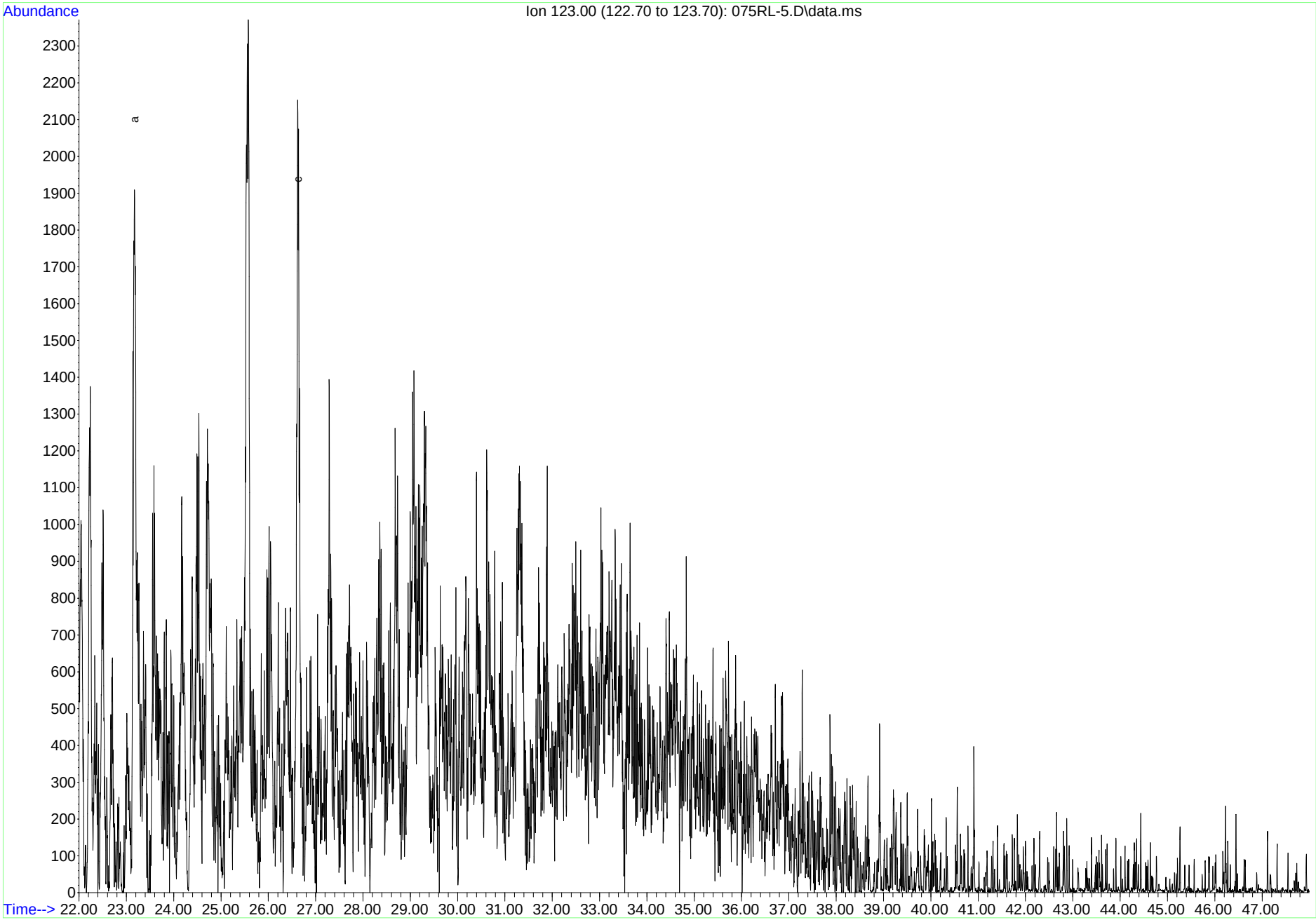
Project Manager:	Russ Shropshire	Lab ID:	075RL-5
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-44-201207
Project #:	334893.TM.1.000.00.0	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (123 m/z)
2,2,3-Trimethylbicycloheptane	a	123	23.2	1841.0	46.1%
C_{10} bicycloalkane	b	123	ND	ND	ND
3,3,7-Trimethylbicycloheptane	c	123	26.6	2153.0	53.9%
C_{11} Decalin	d	123	ND	ND	ND
Nordrimane	f	123	ND	ND	ND
Nordrimane	g	123	ND	ND	ND
Rearranged drimane	h	123	ND	ND	ND
Rearranged drimane	j	123	ND	ND	ND
Isomer of Eudesmane	k	123	ND	ND	ND
4β (H) Eudesmane	l	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	m	123	ND	ND	ND
8β (H) Drimane	n	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	o	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	p	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	q	123	ND	ND	ND
8β (H) Homodrimane	r	123	ND	ND	ND

0.40623 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-5
0.40623 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 191 m/z Terpanes

Project Manager:	Russ Shropshire	Lab ID:	075RL-5
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-44-201207
Project #:	334893.TM.1.000.00.	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
C_{21}-Tricyclic Terpane	1	191	ND	ND	ND
C_{22}-Tricyclic Terpane	2	191	ND	ND	ND
C_{23}-Tricyclic Terpane	3	191	ND	ND	ND
C_{24}-Tricyclic Terpane	4	191	ND	ND	ND
C_{25}-Tricyclic Terpane	5(S+R)	191	ND	ND	ND
C_{24}-Tetracyclic Terpane	Z4	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6a*	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6b	191	ND	ND	ND
C_{28}-Tricyclic Terpane #1	A	191	ND	ND	ND
C_{28}-Tricyclic Terpane #2	B	191	ND	ND	ND
C_{29}-Tricyclic Terpane #1	C	191	ND	ND	ND
C_{29}-Tricyclic Terpane #2	D	191	ND	ND	ND
18 α-22,29,30-Trisnorneohopane (Ts)	E	191	ND	ND	ND
17 α-22,29,30-Trisnorhopane (Tm)	F	191	ND	ND	ND
C_{30}-Tricyclic Terpane #1	10a*	191	ND	ND	ND
C_{30}-Tricyclic Terpane #2	10b	191	ND	ND	ND
17 α-28,30 Bisnorhopane	I	191	ND	ND	ND
C_{31}-Tricyclic Terpane #1	11a*	191	ND	ND	ND
17α-25-Norhopane	J	191	ND	ND	ND
C_{31}-Tricyclic Terpane #2	11b	191	ND	ND	ND
17 α,21β-30-Norhopane	K	191	ND	ND	ND
18α-30-Norneohopane	C29Ts	191	ND	ND	ND
17α-Diahopane	C30*	191	ND	ND	ND
17β-21α-30-Normoretane	L	191	ND	ND	ND
18α+18β-Oleanane	Ma+Mb	191	ND	ND	ND
17α-21β-Hopane	N	191	ND	ND	ND
17β-21α-Moretane	O	191	ND	ND	ND
22S-17α,21β-30-Homohopane	P	191	ND	ND	ND
22R-17α,21β-30-Homohopane	Q	191	ND	ND	ND
Gammacerane	R	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	T	191	ND	ND	ND
22R-17α,21β-30-Bishomohopane	U	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	WS	191	ND	ND	ND
22R-17α,21β-Trishomohopane	WR	191	ND	ND	ND
22S-17α,21β-Tetrahomohopane	XS	191	ND	ND	ND

SAMPLE RESULTS

Chromatogram Key & Numerical Results: 191 m/z Terpanes

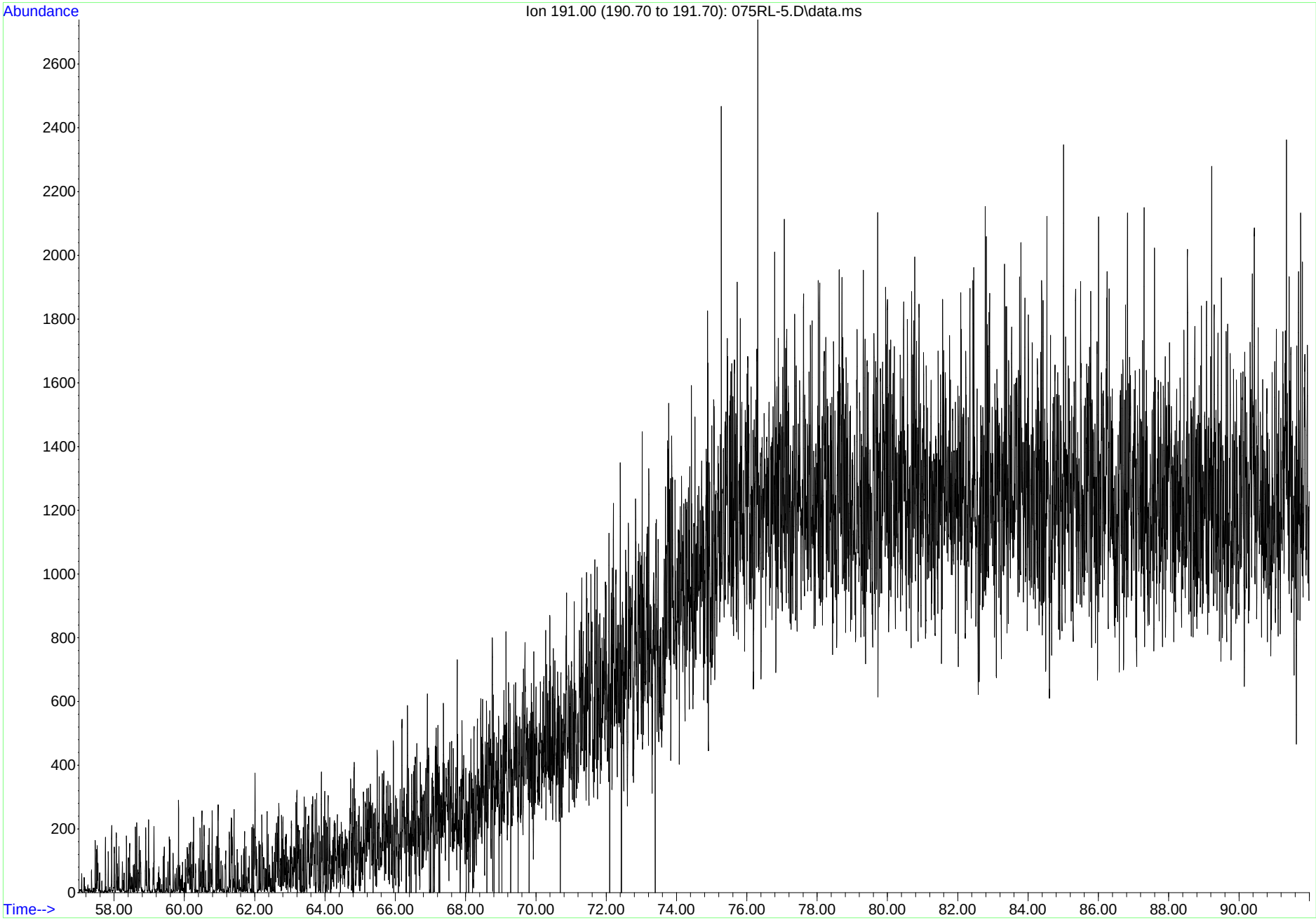
Project Manager:	Russ Shropshire	Lab ID:	075RL-5
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-44-201207
Project #:	334893.TM.1.000.00.	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
22R-17α,21β-Tetrahomohopane	XR	191	ND	ND	ND
22S-17α,21β-Pentahomohopane	YS	191	ND	ND	ND
22R-17α,21β-Pentahomohopane	YR	191	ND	ND	ND

0.40623 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-5
0.40623 g



Chromatogram Key & Numerical Results: 217 m/z Steranes

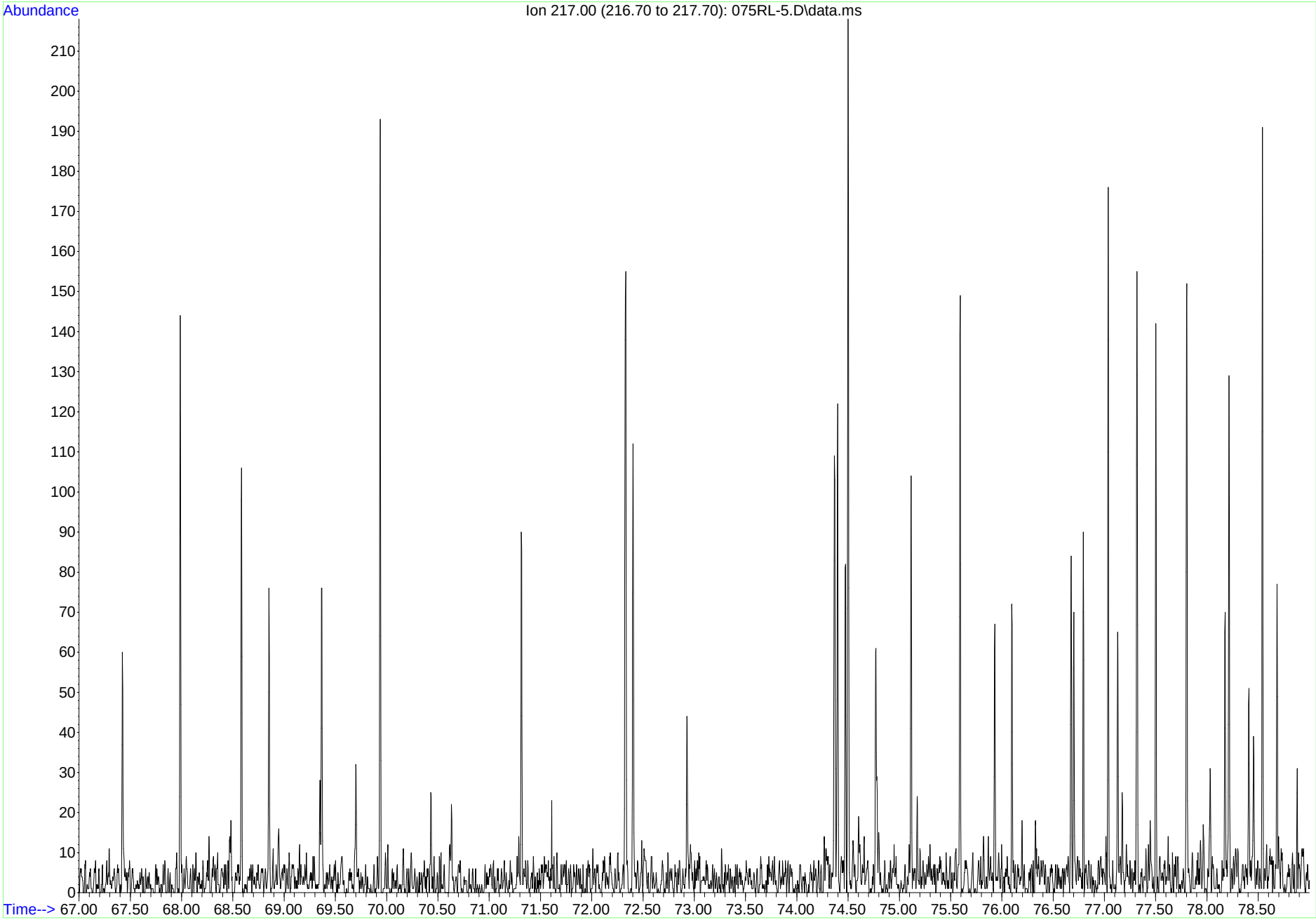
Project Manager:	Russ Shropshire	Lab ID:	075RL-5
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-44-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (217 m/z)
13β, 17α-Diacholestane (20S)	1	217	ND	ND	ND
13β, 17α-Diacholestane (20R)	2	217	ND	ND	ND
13α, 17β-Diacholestane (20S)	3	217	ND	ND	ND
13α, 17β-Diacholestane (20R)	4	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	5	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	6	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20S)	7D	217	ND	ND	ND
14α,17α-Cholestane (20S)	7	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20S)+ 14β,17β-Cholestane (20R)	8+8D	217	ND	ND	ND
14β,17β-Cholestane (20S)	9	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20R)	9D	217	ND	ND	ND
14α,17α-Cholestane (20R)	10	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20R)	11	217	ND	ND	ND
24-ethyl-13α, 17β-Diacholestane (20S)	12	217	ND	ND	ND
24-ethyl-13α, 17α-Diacholestane (20S)	13	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20R)	14	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20S)	15	217	ND	ND	ND
24-methyl-14α, 17α-Cholestane (20R)	16	217	ND	ND	ND
24-ethyl-14α-Cholestane (20S)	17	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20R)	18	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20S)	19	217	ND	ND	ND
24-ethyl-14α, 17α-Cholestane (20R)	20	217	ND	ND	ND

0.40623 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-5
0.40623 g



Chromatogram Key & Numerical Results: 253 m/z Monoaromatic Steranes

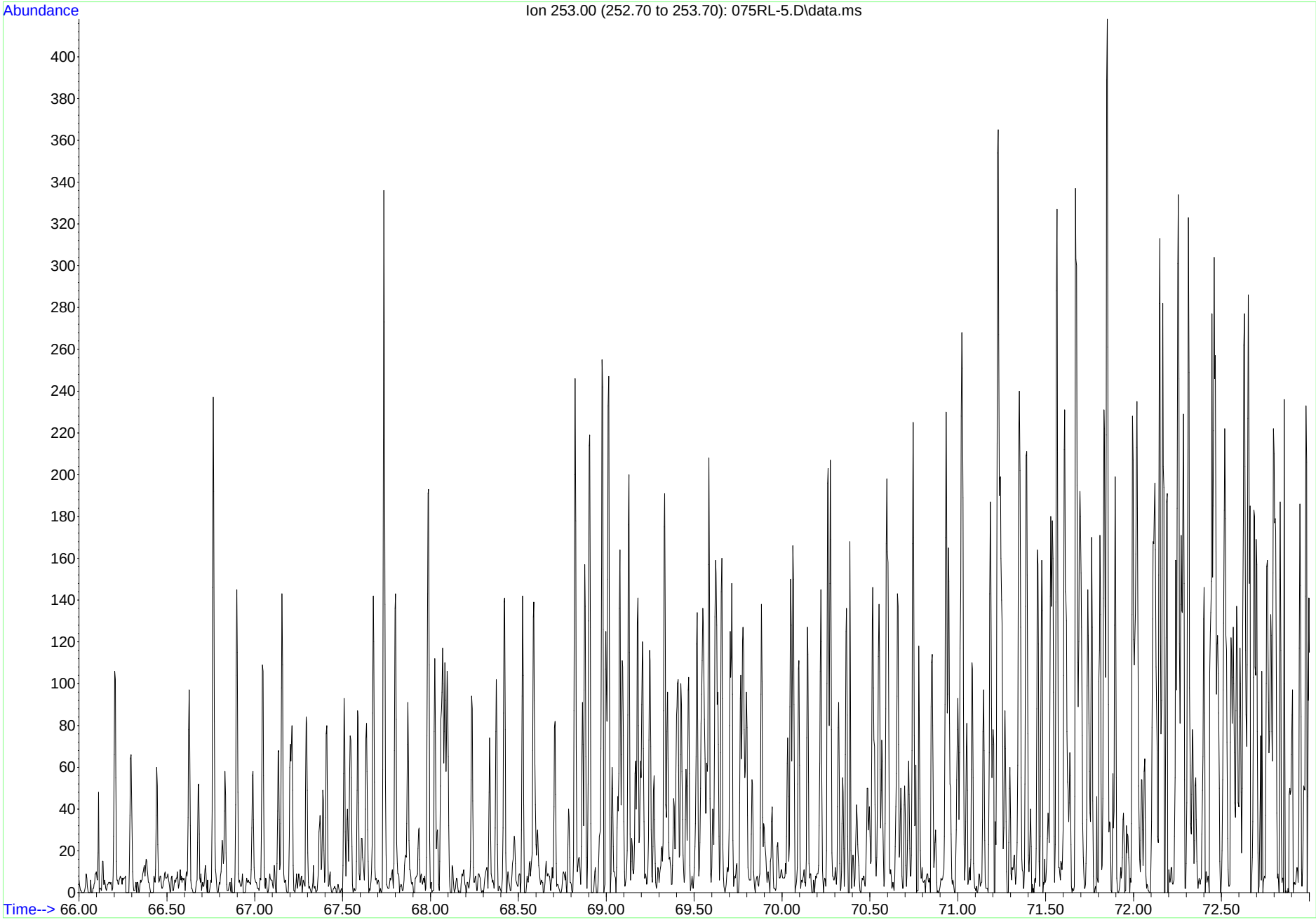
Project Manager:	Russ Shropshire	Lab ID:	075RL-5
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE,	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-44-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (253 m/z)
20S, 5β C27-MAS	a	253	ND	ND	ND
20S, dia C27-MAS	b	253	ND	ND	ND
20R, 5β C27-MAS + 20R C27 dia MAS	c	253	ND	ND	ND
20S, 5α C27-MAS	d	253	ND	ND	ND
20R, 5β C28-MAS + 20S C28 dia MAS	e	253	ND	ND	ND
20R, 5α C27-MAS	f	253	ND	ND	ND
20S, 5α C28-MAS	g	253	ND	ND	ND
20R, 5β C28-MAS + 20R C28 dia MAS	h	253	ND	ND	ND
20S, 5β C29-MAS + 20S C29 dia MAS	i	253	ND	ND	ND
20S, 5α C29-MAS	J lower case	253	ND	ND	ND
20R, 5α C28-MAS	k	253	ND	ND	ND
20R, 5β C29-MAS + 20R C29 dia MAS	L lower case	253	ND	ND	ND
20R, 5α C29-MAS	m	253	ND	ND	ND

0.40623 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-5
0.40623 g



Chromatogram Key & Numerical Results: 231 m/z Triaromatic Steranes

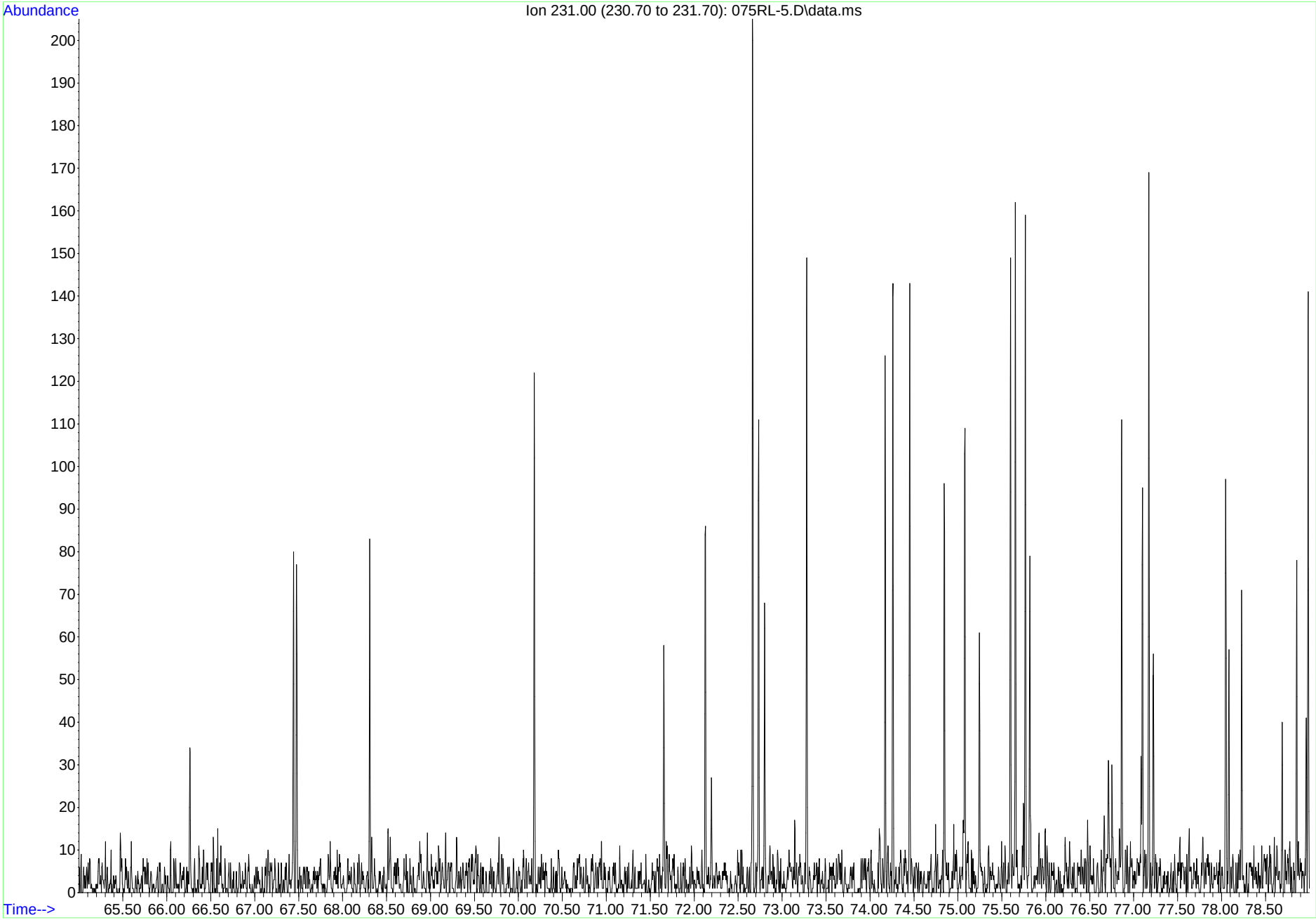
Project Manager:	Russ Shropshire	Lab ID:	075RL-5
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-44-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (231 m/z)
C_{20} Triaromatic Sterane	T1	231	ND	ND	ND
C_{21} Triaromatic Sterane	T2	231	ND	ND	ND
20S C_{26} Triaromatic Sterane	T3	231	ND	ND	ND
20R C_{26} + 20S C_{27} Triaromatic Steranes	T4	231	ND	ND	ND
20S C_{28} Triaromatic Sterane	T5	231	ND	ND	ND
20R C_{27} Triaromatic Sterane	T6	231	ND	ND	ND
20R C_{28} Triaromatic Sterane	T7	231	ND	ND	ND

0.40623 g in 10mL DCM
FOREN4LA_MI_BACK

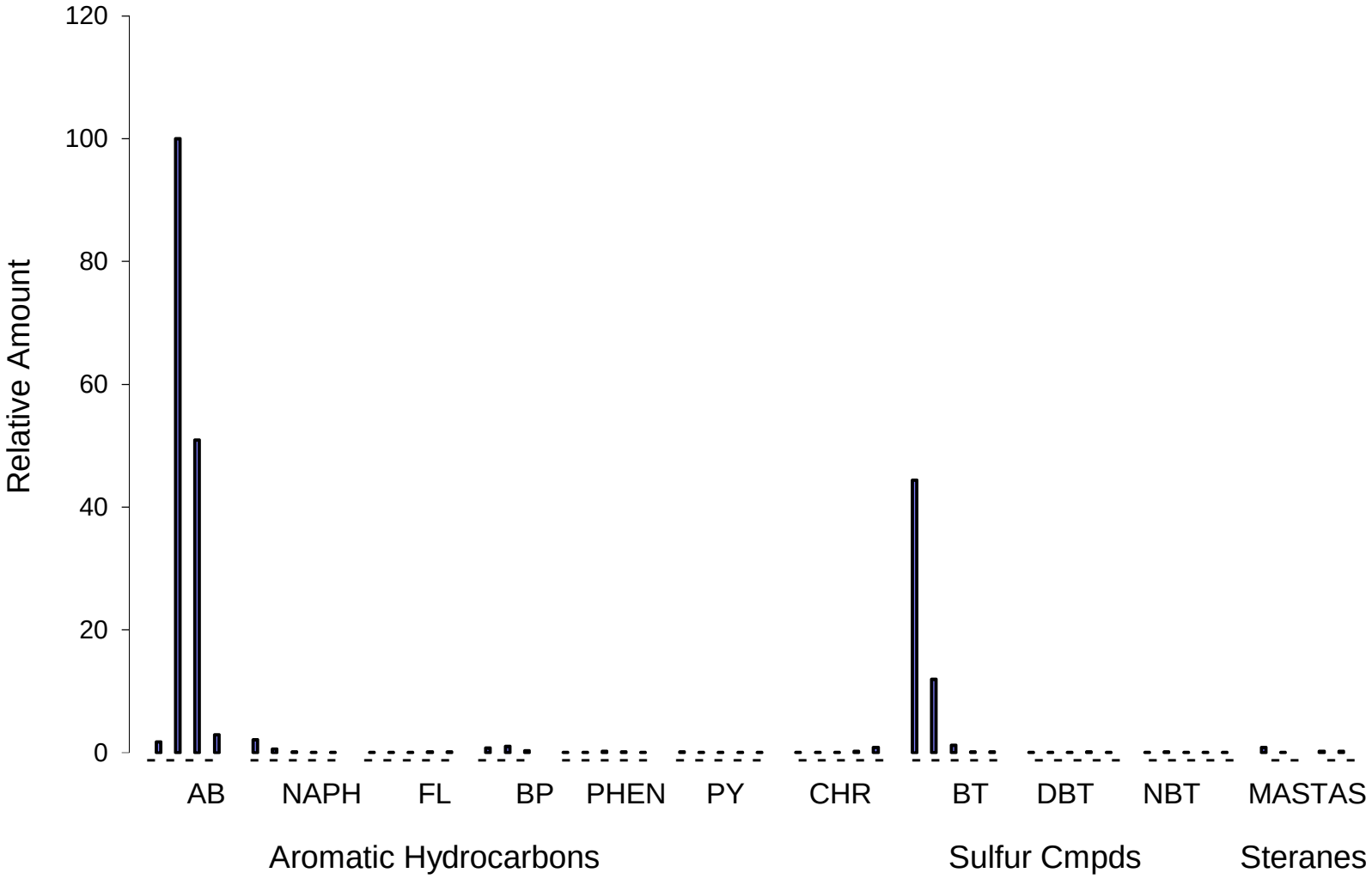
Submitted by,
Microbial Insights, Inc.

075RL-5
0.40623 g

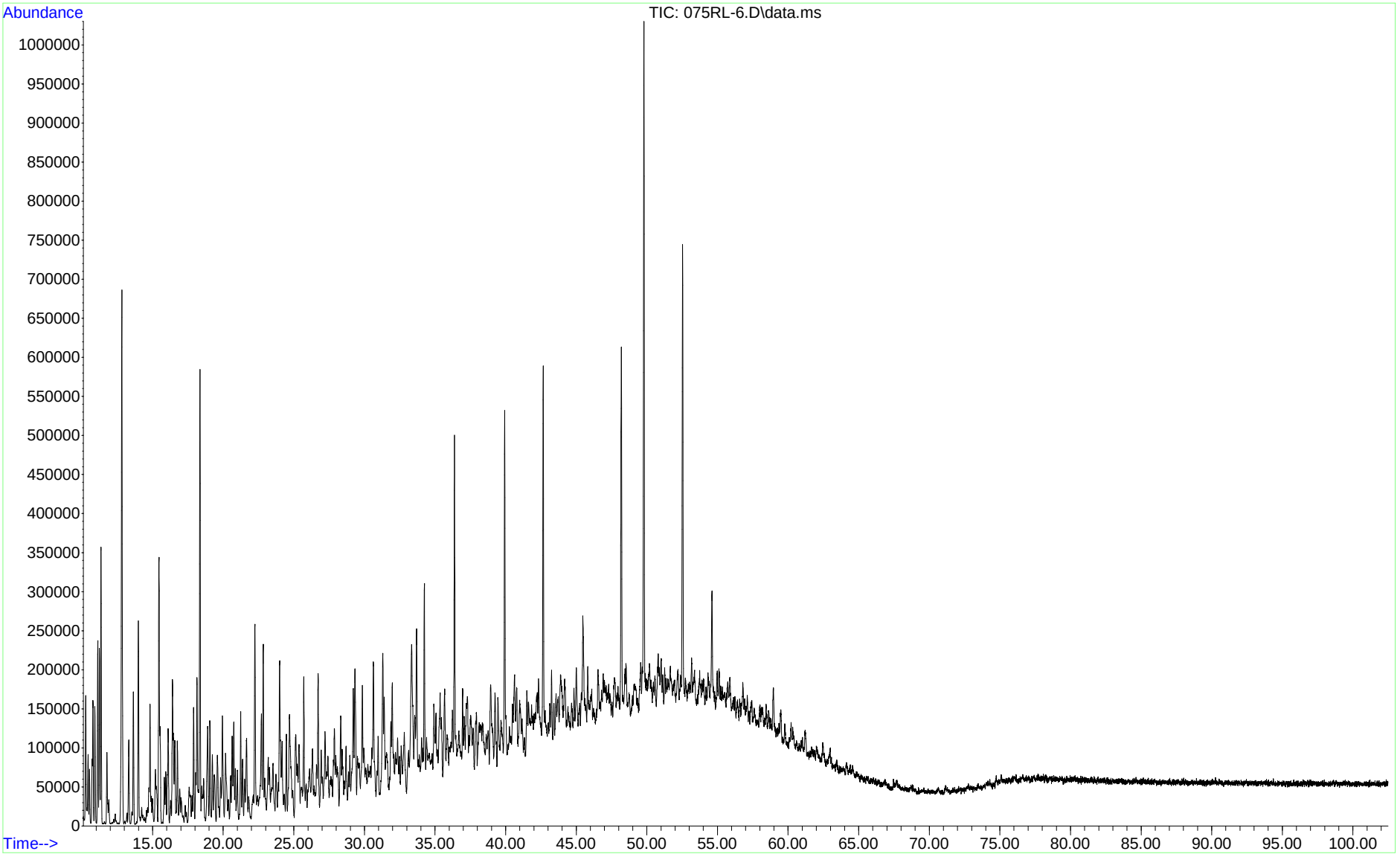


Aromatic Hydrocarbon Distribution

075RL-5



Acquired : 16 Dec 2020 2:05 using AcqMethod FOREN4LA_MI_BACK.M
Sample Name: 075RL-6



Chromatogram Key & Numerical Results: 85 m/z n-Paraffins

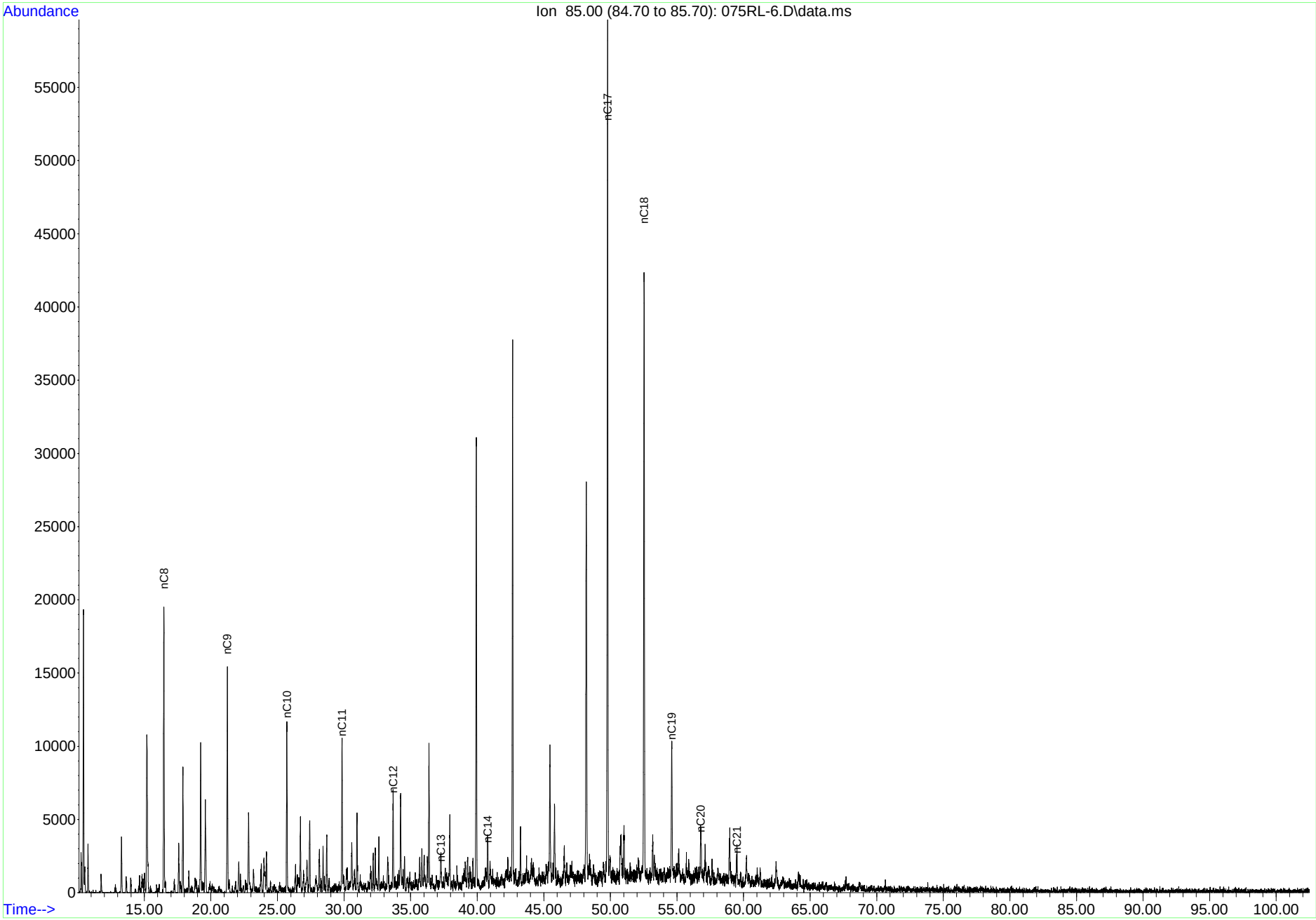
Project Manager:	Russ Shropshire	Lab ID:	075RL-6
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE,	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-19-201207
Project #:	334893.TM.1.000.00.0	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (85 m/z)
n-Octane	nC8	85	16.5	19512.0	10.6%
n-Nonane	nC9	85	21.2	15427.0	8.4%
n-Decane	nC10	85	25.7	11570.0	6.3%
n-Undecane	nC11	85	29.8	10362.0	5.6%
n-Dodecane	nC12	85	33.7	6781.0	3.7%
n-Tridecane	nC13	85	37.3	2265.0	1.2%
n-Tetradecane	nC14	85	40.8	3486.0	1.9%
n-Pentadecane	nC15	85	ND	ND	ND
n-Hexadecane	nC16	85	ND	ND	ND
n-Heptadecane	nC17	85	49.8	58180.0	31.6%
n-Octadecane	nC18	85	52.5	41206.0	22.4%
n-Nonadecane	nC19	85	54.6	9277.0	5.0%
n-Eicosane	nC20	85	56.8	3334.0	1.8%
n-Henicosane	nC21	85	59.5	2887.0	1.6%
n-Docosane	nC22	85	ND	ND	ND
n-Tricosane	nC23	85	ND	ND	ND
n-Tetracosane	nC24	85	ND	ND	ND
n-Pentacosane	nC25	85	ND	ND	ND
n-Hexacosane	nC26	85	ND	ND	ND
n-Heptacosane	nC27	85	ND	ND	ND
n-Octacosane	nC28	85	ND	ND	ND
n-Nonacosane	nC29	85	ND	ND	ND
n-Triacontane	nC30	85	ND	ND	ND
n-Hentriacontane	nC31	85	ND	ND	ND
n-Dotriacontane	nC32	85	ND	ND	ND
n-Tritriacontane	nC33	85	ND	ND	ND
n-Tetratriacontane	nC34	85	ND	ND	ND
n-Pentatriacontane	nC35	85	ND	ND	ND
n-Hexatriacontane	nC36	85	ND	ND	ND
n -Heptatriacontane	nC37	85	ND	ND	ND
n -Octatriacontane	nC38	85	ND	ND	ND
n -Nonatriacontane	nC39	85	ND	ND	ND
n-Tetracontane	nC40	85	ND	ND	ND

0.40039 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-6
0.40039 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 113 m/z Isoparaffins

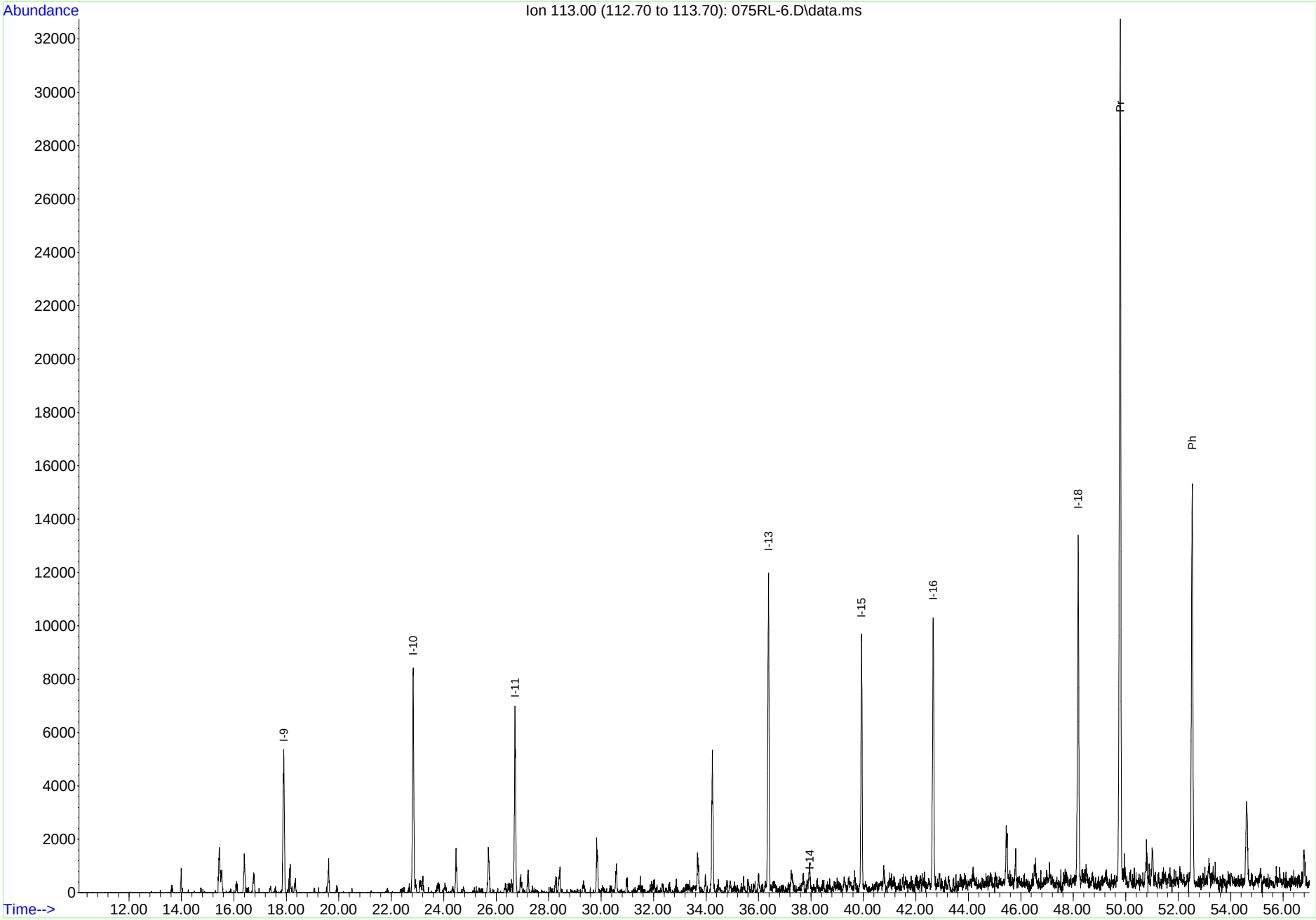
Project Manager:	Russ Shropshire	Lab ID:	075RL-6
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-19-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (113 m/z)
Iso-alkane w/ 9 Carbon Atoms	I-9	113	17.9	5367.0	4.7%
Iso-alkane w/ 10 Carbon Atoms	I-10	113	22.8	8424.0	7.4%
Iso-alkane w/ 11 Carbon Atoms	I-11	113	26.7	6993.0	6.1%
Iso-alkane w/ 12 Carbon Atoms	I-12	113	ND	ND	ND
Iso-alkane w/ 13 Carbon Atoms	I-13	113	36.4	11931.0	10.5%
Iso-alkane w/ 14 Carbon Atoms	I-14	113	37.9	1105.0	1.0%
Farnesane (Isoprenoid - C15)	I-15	113	39.9	9542.0	8.4%
Iso-alkane w/ 16 Carbon Atoms	I-16	113	42.7	10108.0	8.9%
Iso-alkane w/ 18 Carbon Atoms	I-18	113	48.2	13006.0	11.4%
Pristane (Isoprenoid - C19)	Pr	113	49.8	32309.0	28.4%
Phytane (Isoprenoid - C20)	Ph	113	52.5	15010.0	13.2%

0.40039 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-6
0.40039 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 83 m/z Alkylcyclohexanes

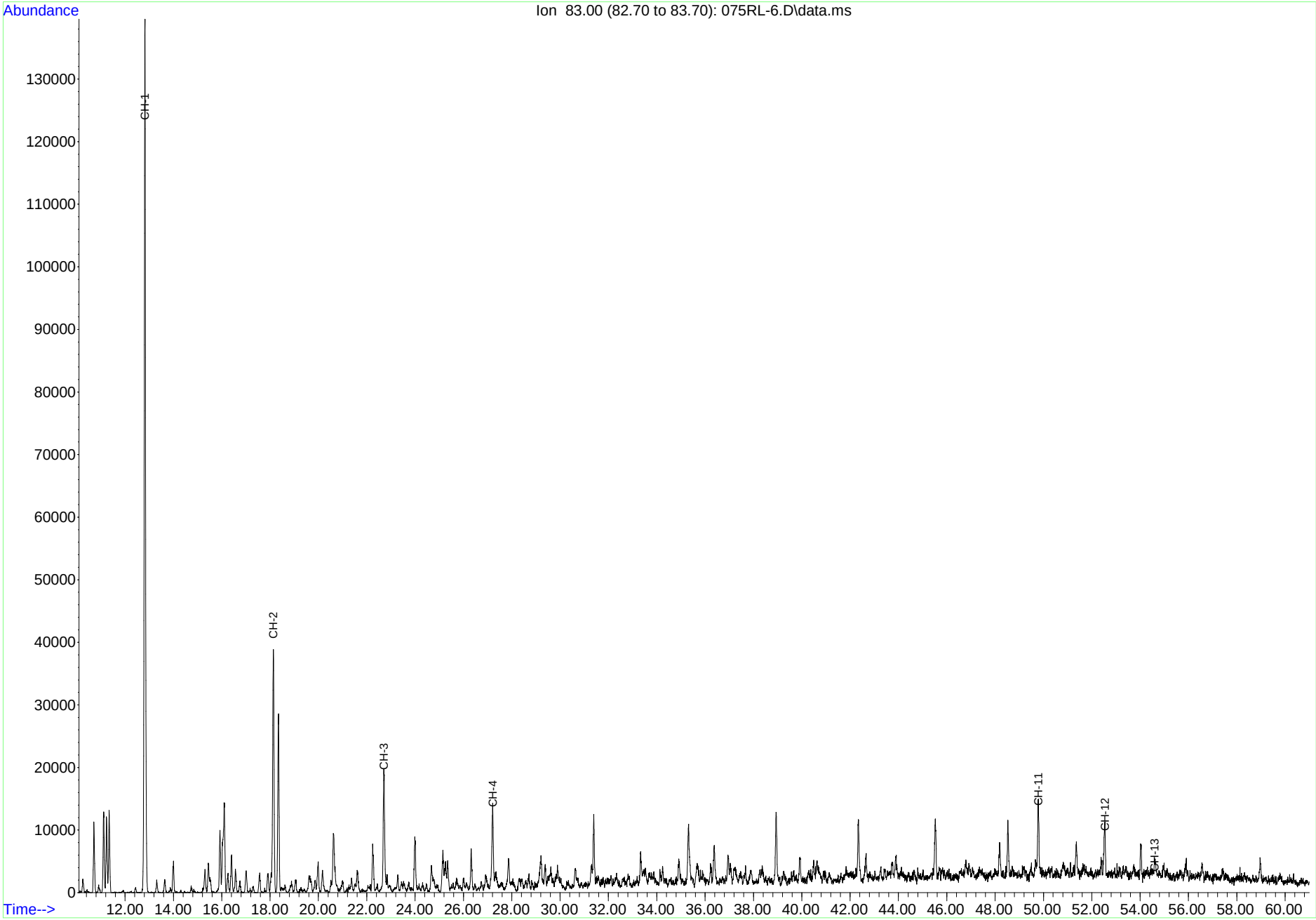
Project Manager:	Russ Shropshire	Lab ID:	075RL-6
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-19-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (83 m/z)
Methylcyclohexane	CH-1	83	12.8	139443.0	59.8%
Ethylcyclohexane	CH-2	83	18.1	38826.0	16.6%
Propylcyclohexane	CH-3	83	22.7	18832.0	8.1%
Butylcyclohexane	CH-4	83	27.2	12775.0	5.5%
Pentylcyclohexane	CH-5	83	ND	ND	ND
Hexylcyclohexane	CH-6	83	ND	ND	ND
Heptylcyclohexane	CH-7	83	ND	ND	ND
Octylcyclohexane	CH-8	83	ND	ND	ND
Nonylcyclohexane	CH-9	83	ND	ND	ND
Decylcyclohexane	CH-10	83	ND	ND	ND
Undecylcyclohexane	CH-11	83	49.8	11599.0	5.0%
Dodecylcyclohexane	CH-12	83	52.5	8862.0	3.8%
Tridecylcyclohexane	CH-13	83	54.6	2966.0	1.3%
Tetradecylcyclohexane	CH-14	83	ND	ND	ND

0.40039 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-6
0.40039 g



Chromatogram Key & Numerical Results: 134 m/z C3-C4 Monoaromatics

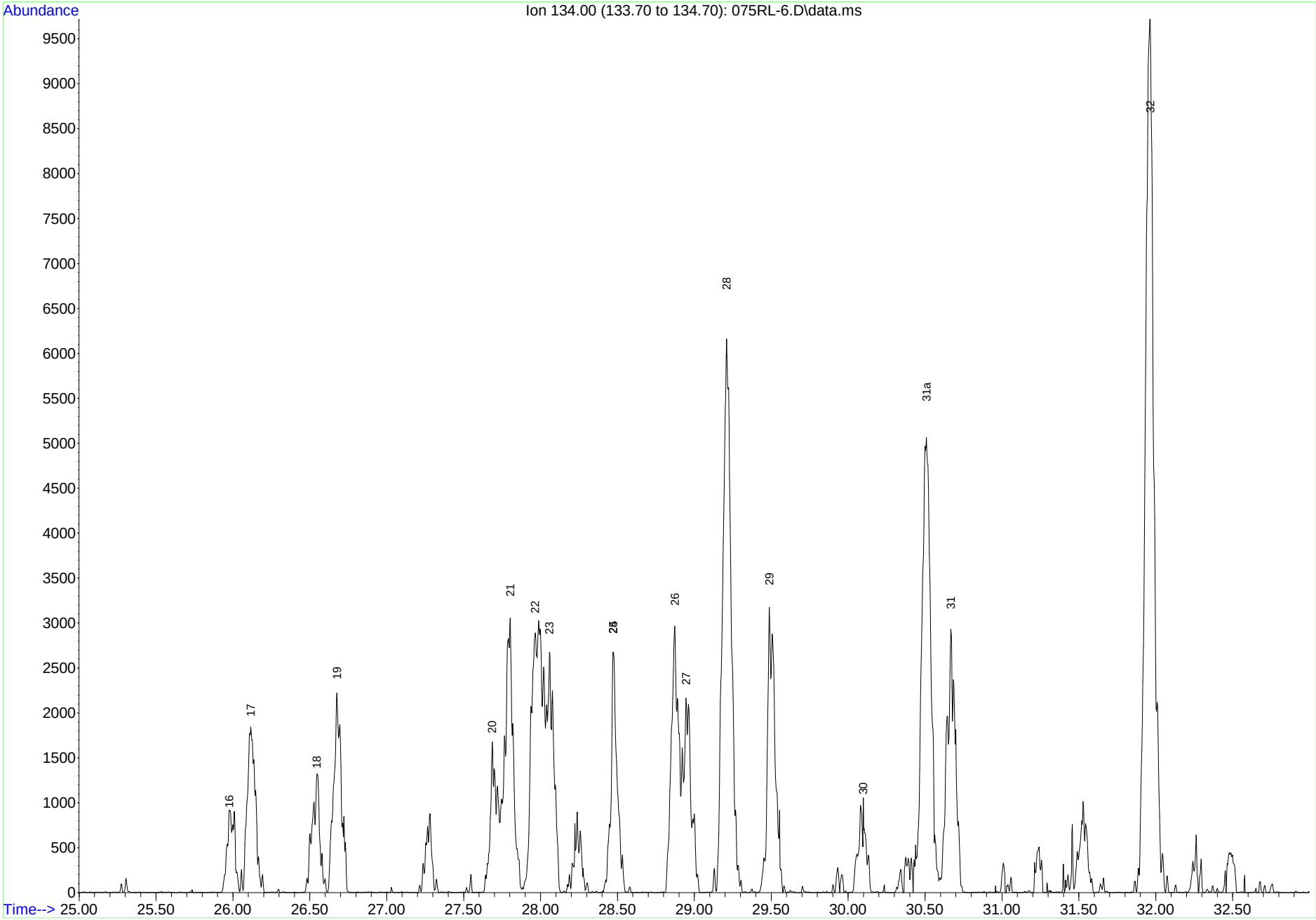
Project Manager:	Russ Shropshire	Lab ID:	075RL-6
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-19-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (134 m/z)
Sec-Butylbenzene	16	134	26.0	920.0	1.7%
1-Methyl-3-Isopropylbenzene	17	134	26.1	1838.0	3.4%
1-Methyl-4-Isopropylbenzene	18	134	26.5	1322.0	2.4%
1-Methyl-2-Isopropylbenzene	19	134	26.7	2223.0	4.1%
1,3-Diethylbenzene	20	134	27.7	1676.0	3.1%
1-Methyl-3-Propylbenzene	21	134	27.8	3055.0	5.6%
Butylbenzene	22	134	28.0	2853.0	5.2%
1,3-Diethyl-5-Ethylbenzene	23	134	28.1	2676.0	4.9%
1,2-Diethylbenzene	24	134	28.5	2678.0	4.9%
1-Methyl-2-Propylbenzene	25	134	28.5	2678.0	4.9%
1,4-Dimethyl-2-Ethylbenzene	26	134	28.9	2967.0	5.4%
1,3-Dimethyl-4-Ethylbenzene	27	134	28.9	2165.0	3.9%
1,2-Dimethyl-4-Ethylbenzene	28	134	29.2	6145.0	11.2%
1,3-Dimethyl-2-Ethylbenzene	29	134	29.5	3175.0	5.8%
1,2-Dimethyl-3-Ethylbenzene	30	134	30.1	1054.0	1.9%
1,2,4,5-Tetramethylbenzene	31a	134	30.5	4915.0	9.0%
1,2,3,5-Tetramethylbenzene	31	134	30.7	2930.0	5.3%
1,2,3,4-Tetramethylbenzene	32	134	32.0	9592.0	17.5%

0.40039 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-6
0.40039 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 123 m/z Bicyclanes

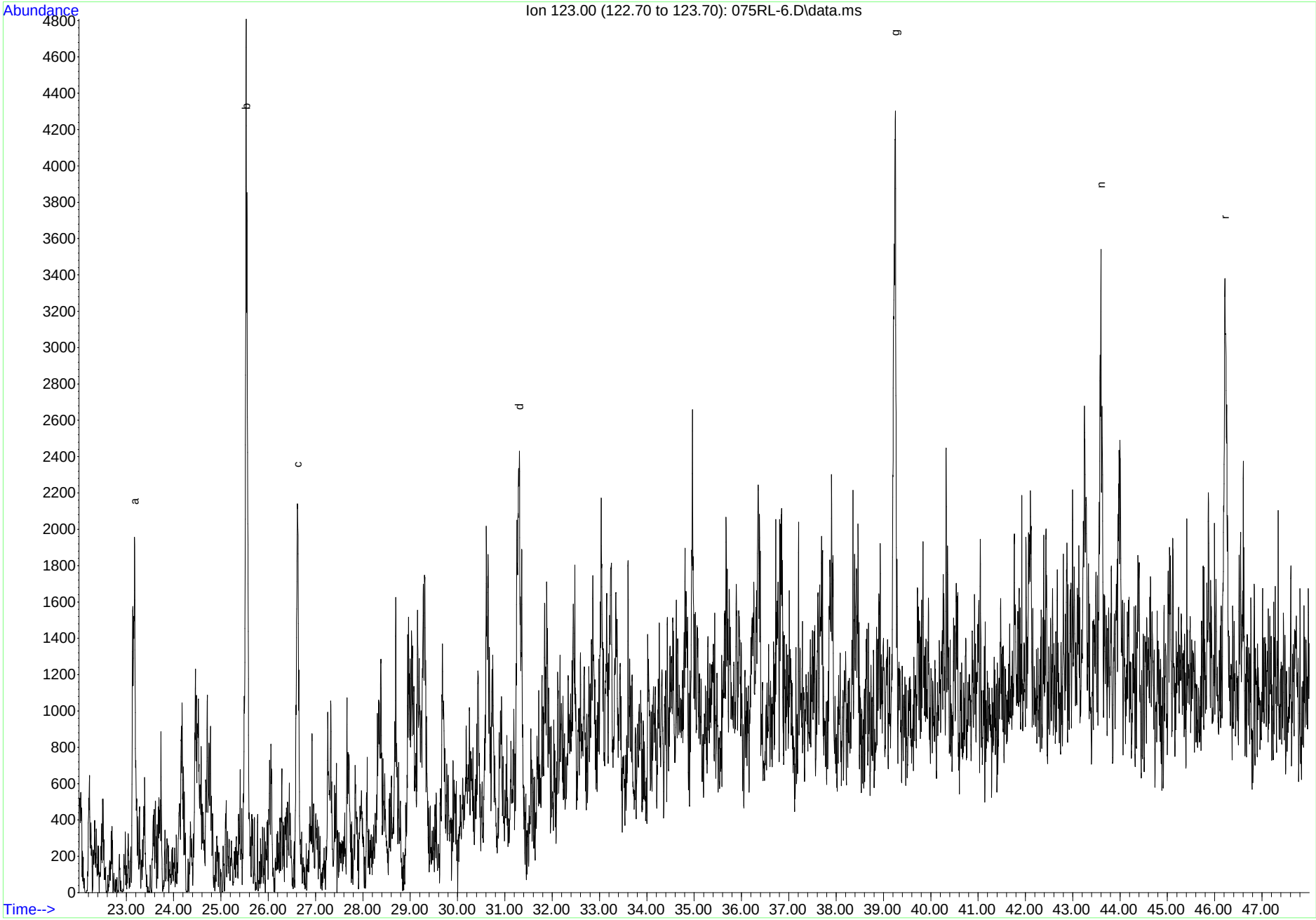
Project Manager:	Russ Shropshire	Lab ID:	075RL-6
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-19-201207
Project #:	334893.TM.1.000.00.0	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (123 m/z)
2,2,3-Trimethylbicycloheptane	a	123	23.2	1933.0	9.7%
C_{10} bicycloalkane	b	123	25.5	4790.0	24.1%
3,3,7-Trimethylbicycloheptane	c	123	26.6	2129.0	10.7%
C_{11} Decalin	d	123	31.3	2328.0	11.7%
Nordrimane	f	123	ND	ND	ND
Nordrimane	g	123	39.3	3573.0	18.0%
Rearranged drimane	h	123	ND	ND	ND
Rearranged drimane	j	123	ND	ND	ND
Isomer of Eudesmane	k	123	ND	ND	ND
4β (H) Eudesmane	l	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	m	123	ND	ND	ND
8β (H) Drimane	n	123	43.6	2682.0	13.5%
C_{15} Bicyclic Sesquiterpane	o	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	p	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	q	123	ND	ND	ND
8β (H) Homodrimane	r	123	46.2	2421.0	12.2%

0.40039 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-6
0.40039 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 191 m/z Terpanes

Project Manager:	Russ Shropshire	Lab ID:	075RL-6
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-19-201207
Project #:	334893.TM.1.000.00.	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
C_{21}-Tricyclic Terpane	1	191	57.8	1633.0	8.2%
C_{22}-Tricyclic Terpane	2	191	58.0	1453.0	7.3%
C_{23}-Tricyclic Terpane	3	191	58.4	16801.0	84.5%
C_{24}-Tricyclic Terpane	4	191	ND	ND	ND
C_{25}-Tricyclic Terpane	5(S+R)	191	ND	ND	ND
C_{24}-Tetracyclic Terpane	Z4	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6a*	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6b	191	ND	ND	ND
C_{28}-Tricyclic Terpane #1	A	191	ND	ND	ND
C_{28}-Tricyclic Terpane #2	B	191	ND	ND	ND
C_{29}-Tricyclic Terpane #1	C	191	ND	ND	ND
C_{29}-Tricyclic Terpane #2	D	191	ND	ND	ND
18 α-22,29,30-Trisnorneohopane (Ts)	E	191	ND	ND	ND
17 α-22,29,30-Trisnorhopane (Tm)	F	191	ND	ND	ND
C_{30}-Tricyclic Terpane #1	10a*	191	ND	ND	ND
C_{30}-Tricyclic Terpane #2	10b	191	ND	ND	ND
17 α-28,30 Bisnorhopane	I	191	ND	ND	ND
C_{31}-Tricyclic Terpane #1	11a*	191	ND	ND	ND
17α-25-Norhopane	J	191	ND	ND	ND
C_{31}-Tricyclic Terpane #2	11b	191	ND	ND	ND
17 α,21β-30-Norhopane	K	191	ND	ND	ND
18α-30-Norneohopane	C29Ts	191	ND	ND	ND
17α-Diahopane	C30*	191	ND	ND	ND
17β-21α-30-Normoretane	L	191	ND	ND	ND
18α+18β-Oleanane	Ma+Mb	191	ND	ND	ND
17α-21β-Hopane	N	191	ND	ND	ND
17β-21α-Moretane	O	191	ND	ND	ND
22S-17α,21β-30-Homohopane	P	191	ND	ND	ND
22R-17α,21β-30-Homohopane	Q	191	ND	ND	ND
Gammacerane	R	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	T	191	ND	ND	ND
22R-17α,21β-30-Bishomohopane	U	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	WS	191	ND	ND	ND
22R-17α,21β-Trishomohopane	WR	191	ND	ND	ND
22S-17α,21β-Tetrahomohopane	XS	191	ND	ND	ND

SAMPLE RESULTS

Chromatogram Key & Numerical Results: 191 m/z Terpanes

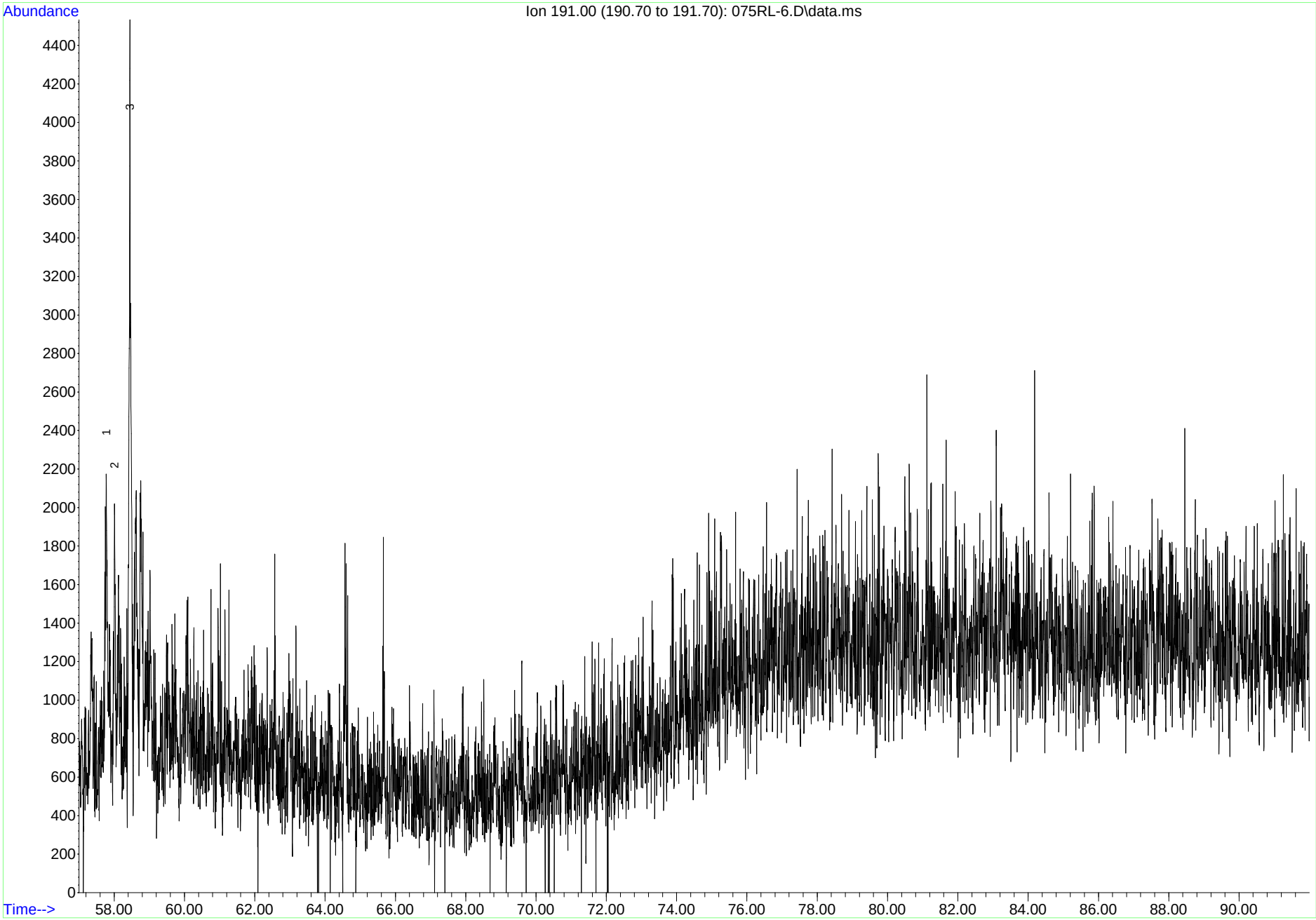
Project Manager:	Russ Shropshire	Lab ID:	075RL-6
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-19-201207
Project #:	334893.TM.1.000.00.	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
22R-17α,21β-Tetrahomohopane	XR	191	ND	ND	ND
22S-17α,21β-Pentahomohopane	YS	191	ND	ND	ND
22R-17α,21β-Pentahomohopane	YR	191	ND	ND	ND

0.40039 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-6
0.40039 g



Chromatogram Key & Numerical Results: 217 m/z Steranes

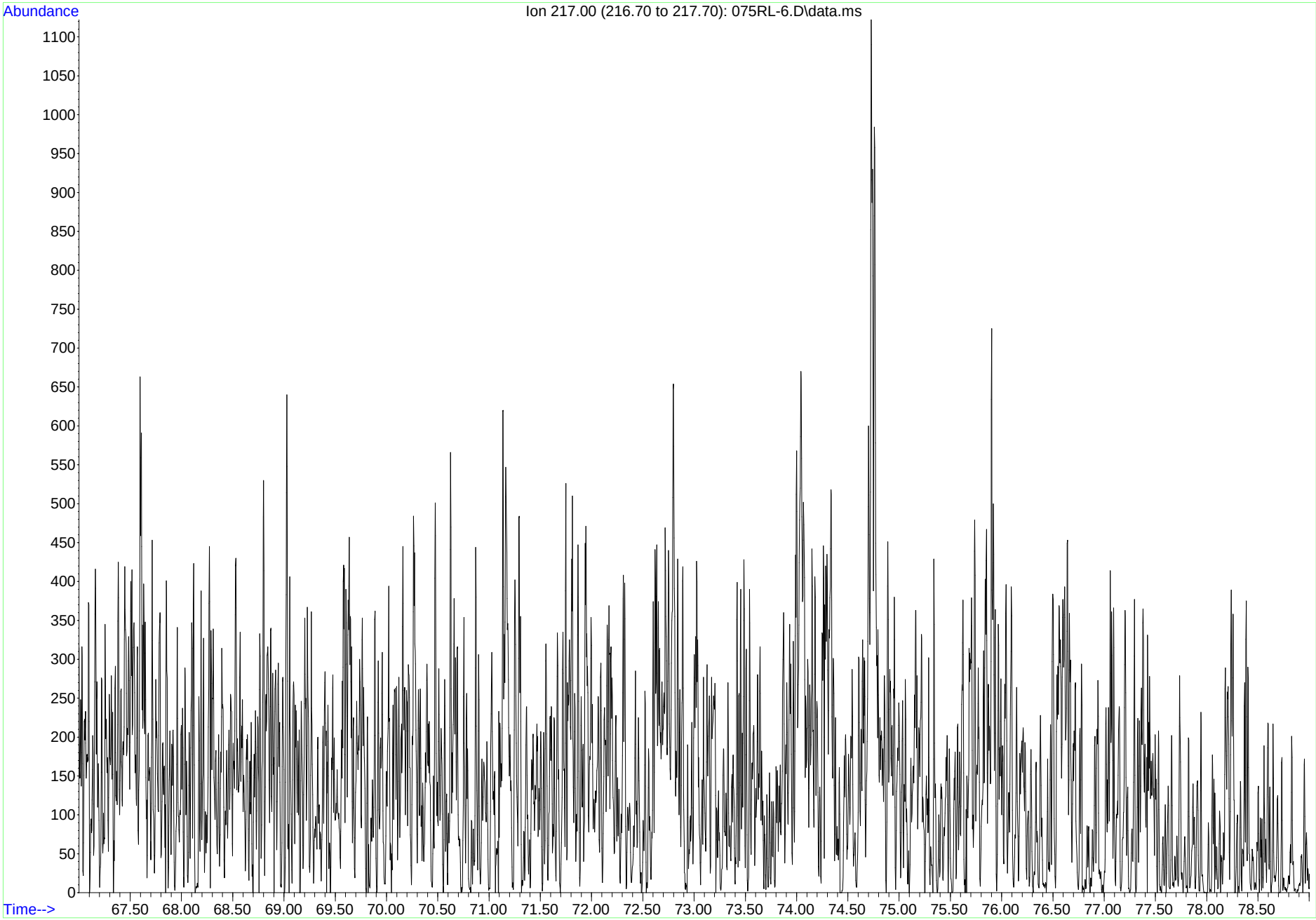
Project Manager:	Russ Shropshire	Lab ID:	075RL-6
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-19-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (217 m/z)
13β, 17α-Diacholestane (20S)	1	217	ND	ND	ND
13β, 17α-Diacholestane (20R)	2	217	ND	ND	ND
13α, 17β-Diacholestane (20S)	3	217	ND	ND	ND
13α, 17β-Diacholestane (20R)	4	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	5	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	6	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20S)	7D	217	ND	ND	ND
14α,17α-Cholestane (20S)	7	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20S)+ 14β,17β-Cholestane (20R)	8+8D	217	ND	ND	ND
14β,17β-Cholestane (20S)	9	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20R)	9D	217	ND	ND	ND
14α,17α-Cholestane (20R)	10	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20R)	11	217	ND	ND	ND
24-ethyl-13α, 17β-Diacholestane (20S)	12	217	ND	ND	ND
24-ethyl-13α, 17α-Diacholestane (20S)	13	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20R)	14	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20S)	15	217	ND	ND	ND
24-methyl-14α, 17α-Cholestane (20R)	16	217	ND	ND	ND
24-ethyl-14α-Cholestane (20S)	17	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20R)	18	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20S)	19	217	ND	ND	ND
24-ethyl-14α, 17α-Cholestane (20R)	20	217	ND	ND	ND

0.40039 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-6
0.40039 g



Chromatogram Key & Numerical Results: 253 m/z Monoaromatic Steranes

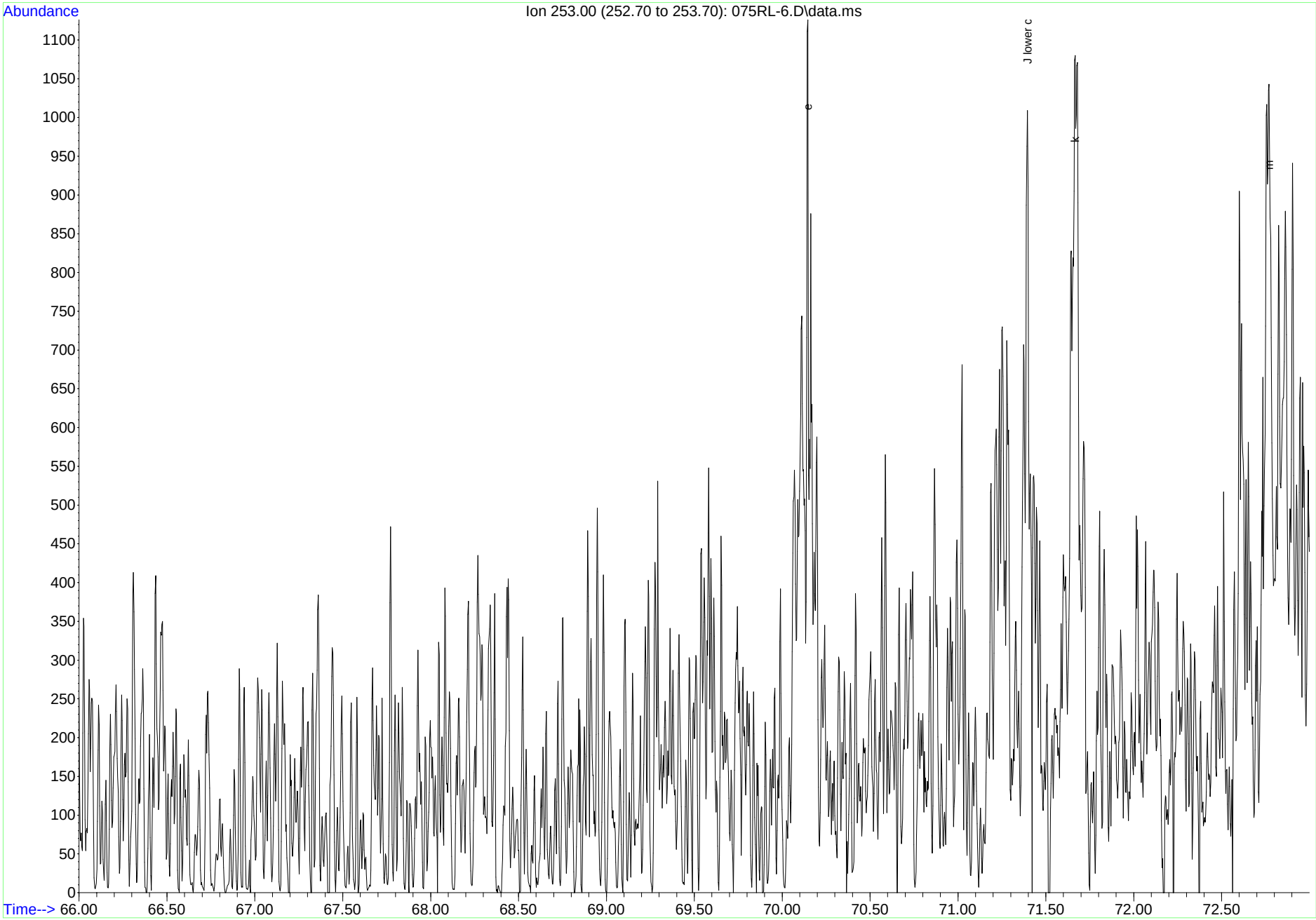
Project Manager:	Russ Shropshire	Lab ID:	075RL-6
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE,	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-19-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (253 m/z)
20S, 5β C27-MAS	a	253	ND	ND	ND
20S, dia C27-MAS	b	253	ND	ND	ND
20R, 5β C27-MAS + 20R C27 dia MAS	c	253	ND	ND	ND
20S, 5α C27-MAS	d	253	ND	ND	ND
20R, 5β C28-MAS + 20S C28 dia MAS	e	253	70.1	1067.0	26.5%
20R, 5α C27-MAS	f	253	ND	ND	ND
20S, 5α C28-MAS	g	253	ND	ND	ND
20R, 5β C28-MAS + 20R C28 dia MAS	h	253	ND	ND	ND
20S, 5β C29-MAS + 20S C29 dia MAS	i	253	ND	ND	ND
20S, 5α C29-MAS	J lower case	253	71.4	944.0	23.4%
20R, 5α C28-MAS	k	253	71.7	1056.0	26.2%
20R, 5β C29-MAS + 20R C29 dia MAS	L lower case	253	ND	ND	ND
20R, 5α C29-MAS	m	253	72.8	960.0	23.8%

0.40039 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-6
0.40039 g



Chromatogram Key & Numerical Results: 231 m/z Triaromatic Steranes

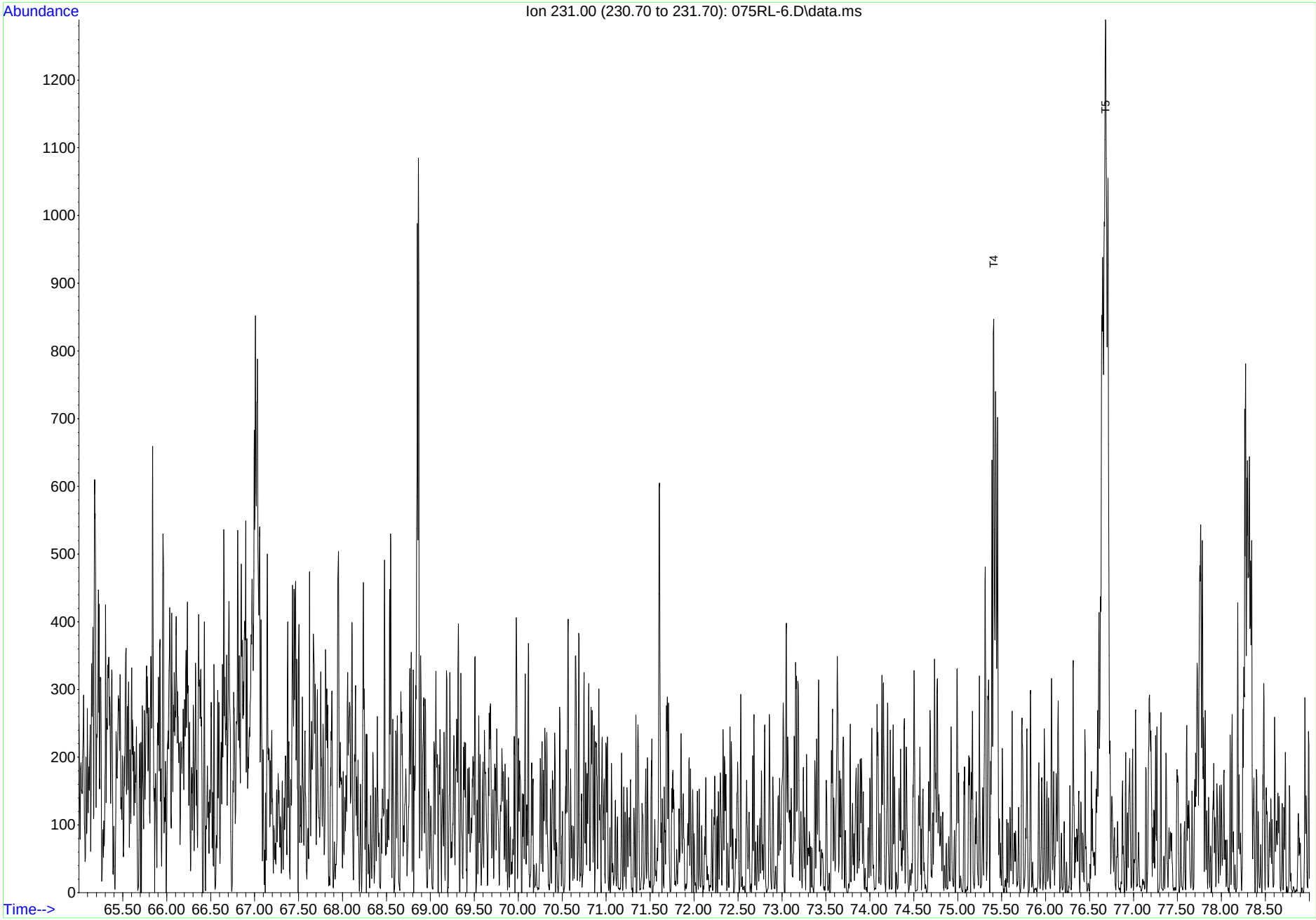
Project Manager:	Russ Shropshire	Lab ID:	075RL-6
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-19-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (231 m/z)
C_{20} Triaromatic Sterane	T1	231	ND	ND	ND
C_{21} Triaromatic Sterane	T2	231	ND	ND	ND
20S C_{26} Triaromatic Sterane	T3	231	ND	ND	ND
20R C_{26} + 20S C_{27} Triaromatic Steranes	T4	231	75.4	827.0	28.7%
20S C_{28} Triaromatic Sterane	T5	231	76.7	1271.0	44.1%
20R C_{27} Triaromatic Sterane	T6	231	ND	ND	ND
20R C_{28} Triaromatic Sterane	T7	231	78.3	781.0	27.1%

0.40039 g in 10mL DCM
FOREN4LA_MI_BACK

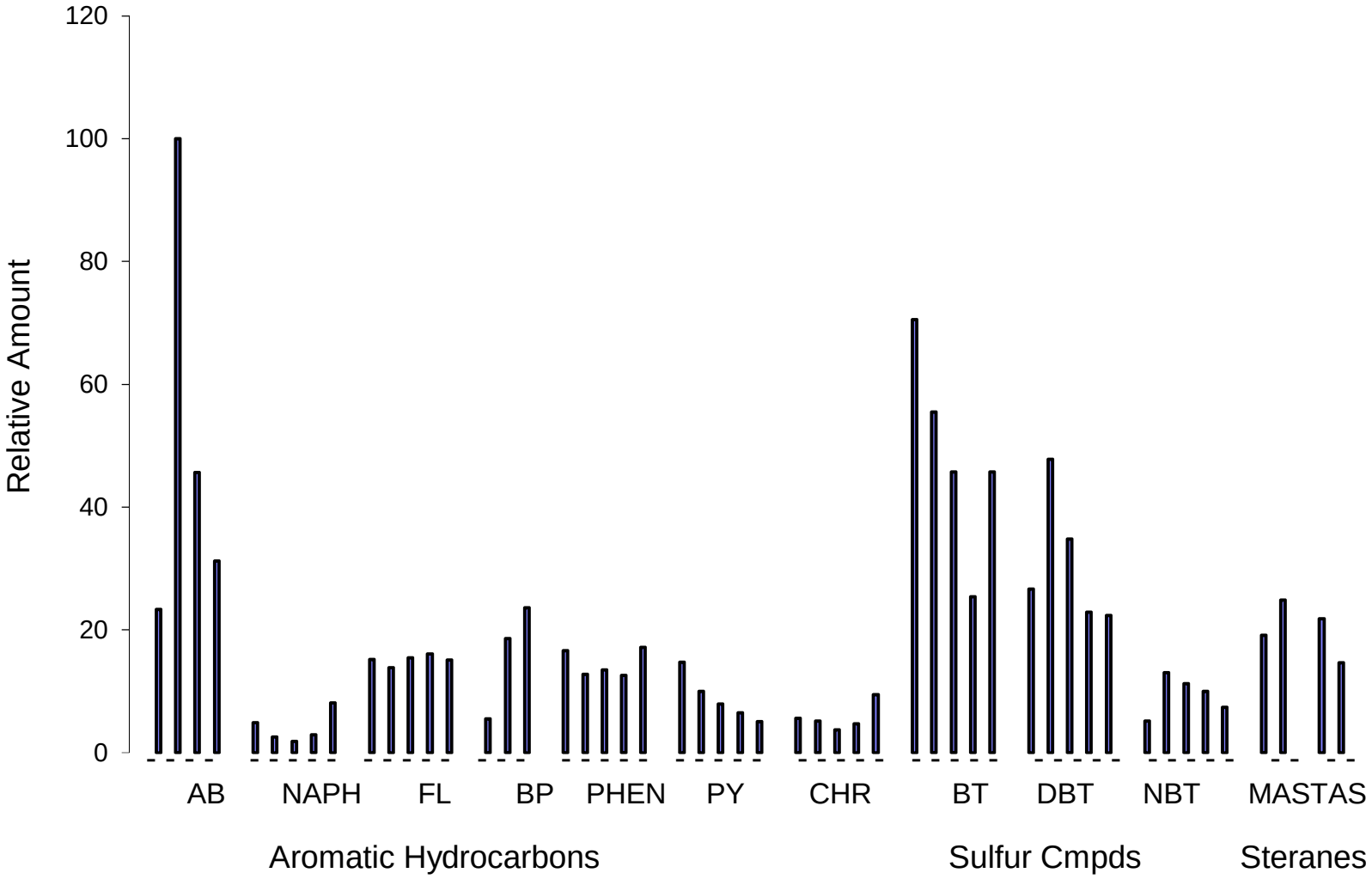
Submitted by,
Microbial Insights, Inc.

075RL-6
0.40039 g



Aromatic Hydrocarbon Distribution

075RL-6



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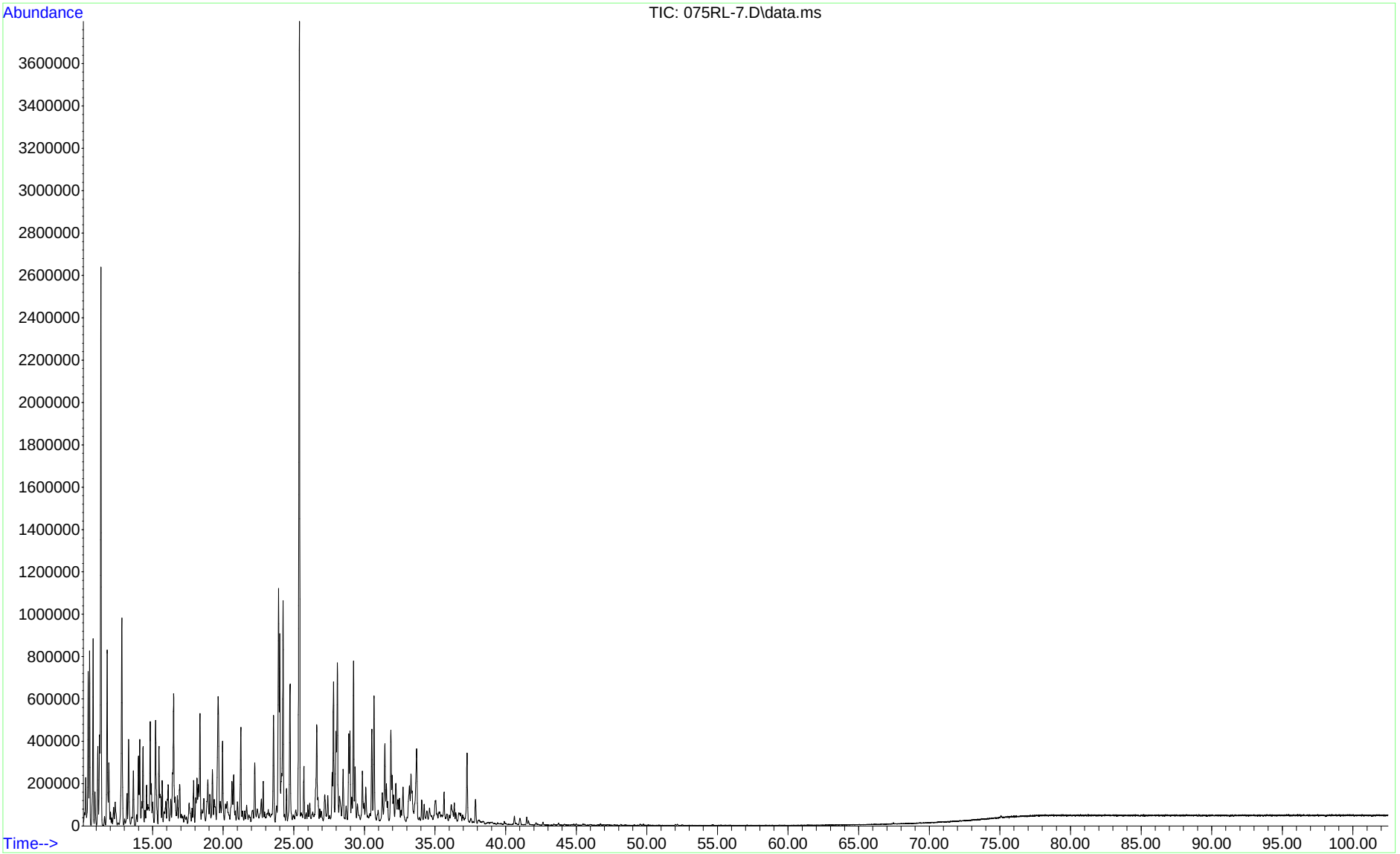
Sample Name: 075RL-7



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 85 m/z n-Paraffins

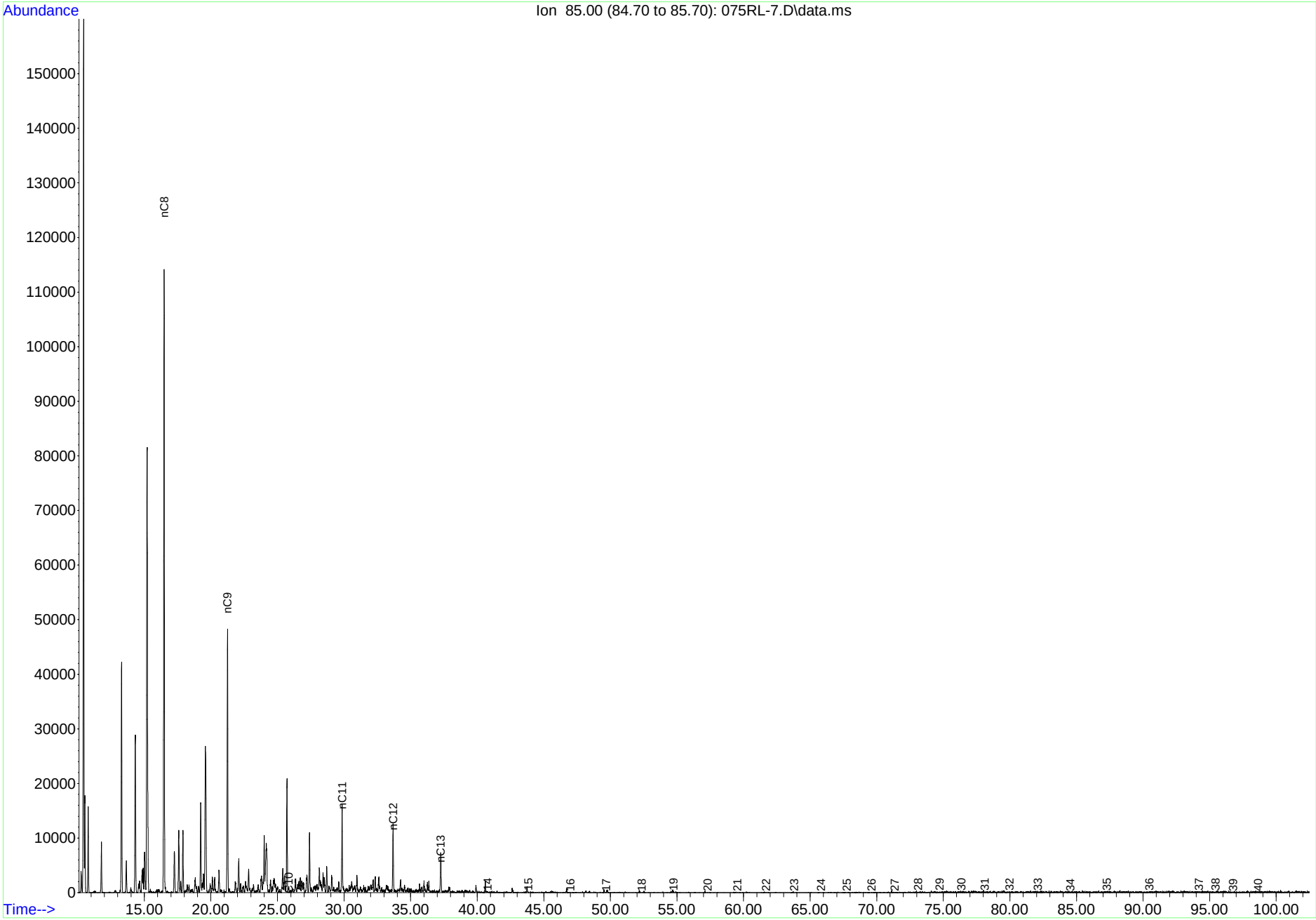
Project Manager:	Russ Shropshire	Lab ID:	075RL-7
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-16-201207
Project #:	334893.TM.1.000.00.0	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (85 m/z)
n-Octane	nC8	85	16.5	113935.0	51.2%
n-Nonane	nC9	85	21.2	48155.0	21.6%
n-Decane	nC10	85	25.7	20751.0	9.3%
n-Undecane	nC11	85	29.9	15986.0	7.2%
n-Dodecane	nC12	85	33.7	12465.0	5.6%
n-Tridecane	nC13	85	37.3	7250.0	3.3%
n-Tetradecane	nC14	85	40.6	2122.0	1.0%
n-Pentadecane	nC15	85	43.8	1110.0	0.5%
n-Hexadecane	nC16	85	46.7	691.0	0.3%
n-Heptadecane	nC17	85	ND	ND	ND
n-Octadecane	nC18	85	ND	ND	ND
n-Nonadecane	nC19	85	ND	ND	ND
n-Eicosane	nC20	85	ND	ND	ND
n-Henicosane	nC21	85	ND	ND	ND
n-Docosane	nC22	85	ND	ND	ND
n-Tricosane	nC23	85	ND	ND	ND
n-Tetracosane	nC24	85	ND	ND	ND
n-Pentacosane	nC25	85	ND	ND	ND
n-Hexacosane	nC26	85	ND	ND	ND
n-Heptacosane	nC27	85	ND	ND	ND
n-Octacosane	nC28	85	ND	ND	ND
n-Nonacosane	nC29	85	ND	ND	ND
n-Triacontane	nC30	85	ND	ND	ND
n-Hentriacontane	nC31	85	ND	ND	ND
n-Dotriacontane	nC32	85	ND	ND	ND
n-Tritriacontane	nC33	85	ND	ND	ND
n-Tetratriacontane	nC34	85	ND	ND	ND
n-Pentatriacontane	nC35	85	ND	ND	ND
n-Hexatriacontane	nC36	85	ND	ND	ND
n -Heptatriacontane	nC37	85	ND	ND	ND
n -Octatriacontane	nC38	85	ND	ND	ND
n -Nonatriacontane	nC39	85	ND	ND	ND
n-Tetracontane	nC40	85	ND	ND	ND

0.40683 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-7
0.40683 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 113 m/z Isoparaffins

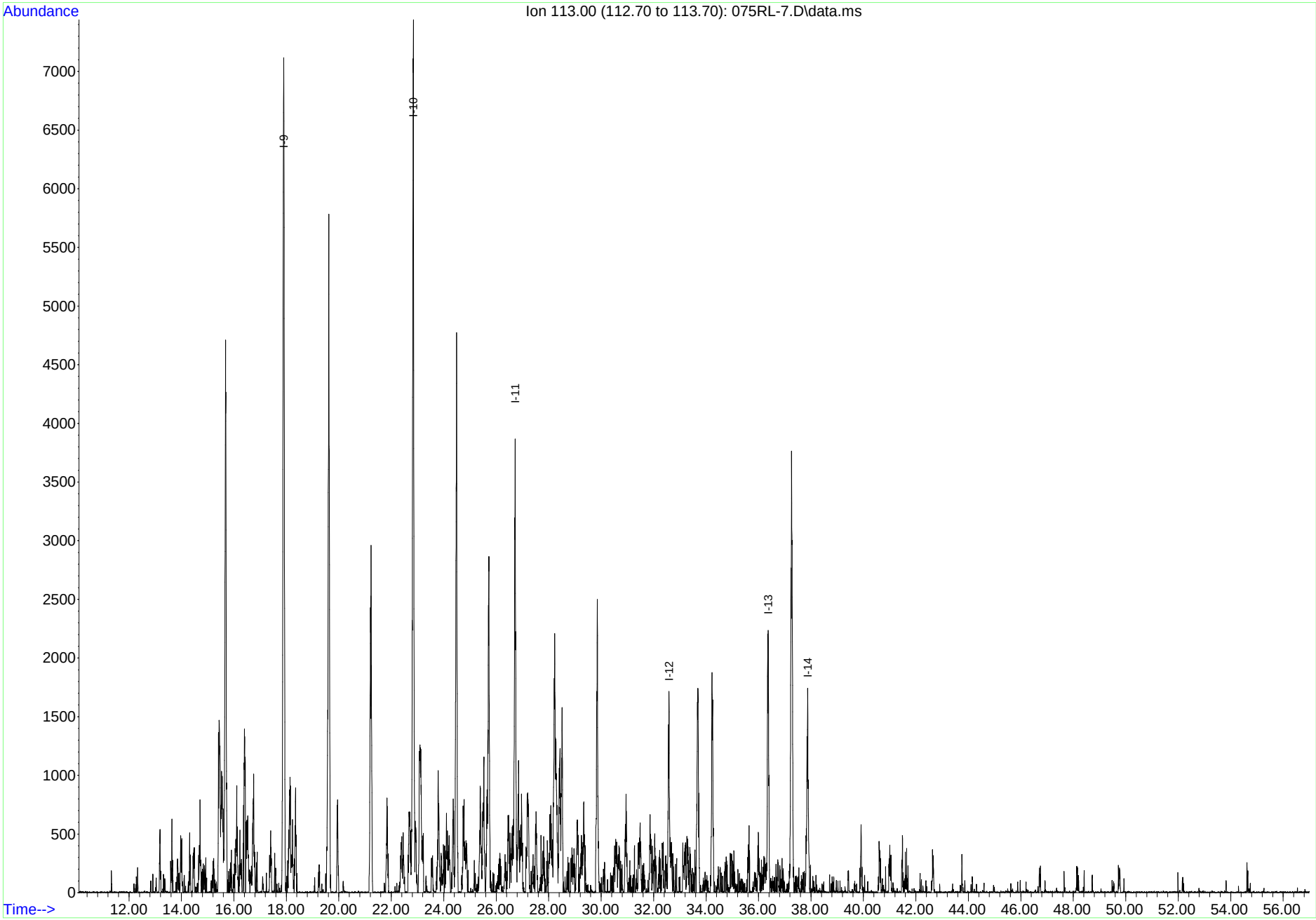
Project Manager:	Russ Shropshire	Lab ID:	075RL-7
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-16-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (113 m/z)
Iso-alkane w/ 9 Carbon Atoms	I-9	113	17.9	7110.0	29.9%
Iso-alkane w/ 10 Carbon Atoms	I-10	113	22.8	7264.0	30.6%
Iso-alkane w/ 11 Carbon Atoms	I-11	113	26.7	3723.0	15.7%
Iso-alkane w/ 12 Carbon Atoms	I-12	113	32.6	1691.0	7.1%
Iso-alkane w/ 13 Carbon Atoms	I-13	113	36.4	2235.0	9.4%
Iso-alkane w/ 14 Carbon Atoms	I-14	113	37.9	1720.0	7.2%
Farnesane (Isoprenoid - C15)	I-15	113	ND	ND	ND
Iso-alkane w/ 16 Carbon Atoms	I-16	113	ND	ND	ND
Iso-alkane w/ 18 Carbon Atoms	I-18	113	ND	ND	ND
Pristane (Isoprenoid - C19)	Pr	113	ND	ND	ND
Phytane (Isoprenoid - C20)	Ph	113	ND	ND	ND

0.40683 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-7
0.40683 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 83 m/z Alkylcyclohexanes

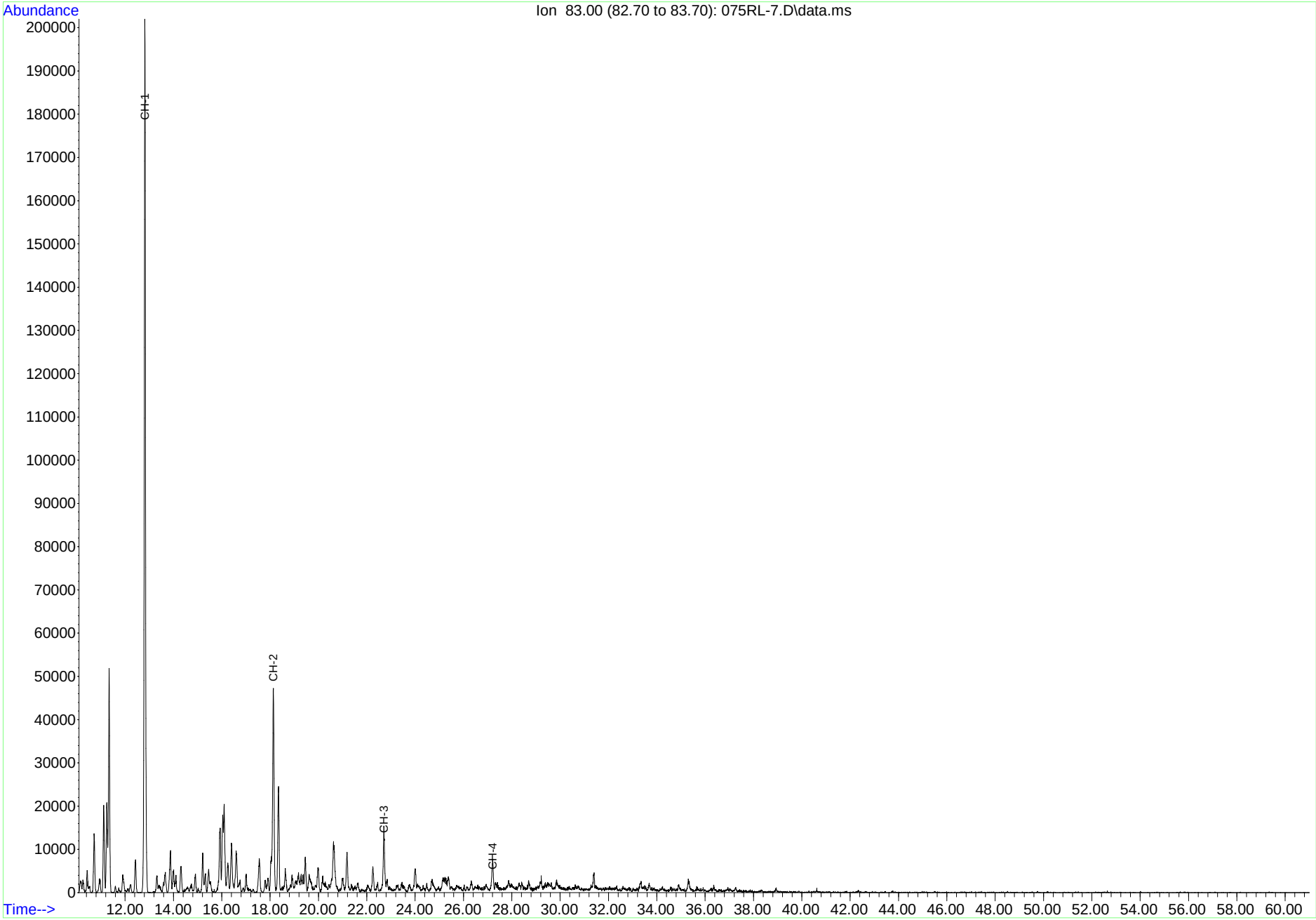
Project Manager:	Russ Shropshire	Lab ID:	075RL-7
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-16-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (83 m/z)
Methylcyclohexane	CH-1	83	12.8	201984.0	74.6%
Ethylcyclohexane	CH-2	83	18.1	46821.0	17.3%
Propylcyclohexane	CH-3	83	22.7	14816.0	5.5%
Butylcyclohexane	CH-4	83	27.2	7169.0	2.6%
Pentylcyclohexane	CH-5	83	ND	ND	ND
Hexylcyclohexane	CH-6	83	ND	ND	ND
Heptylcyclohexane	CH-7	83	ND	ND	ND
Octylcyclohexane	CH-8	83	ND	ND	ND
Nonylcyclohexane	CH-9	83	ND	ND	ND
Decylcyclohexane	CH-10	83	ND	ND	ND
Undecylcyclohexane	CH-11	83	ND	ND	ND
Dodecylcyclohexane	CH-12	83	ND	ND	ND
Tridecylcyclohexane	CH-13	83	ND	ND	ND
Tetradecylcyclohexane	CH-14	83	ND	ND	ND

0.40683 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-7
0.40683 g



Chromatogram Key & Numerical Results: 134 m/z C3-C4 Monoaromatics

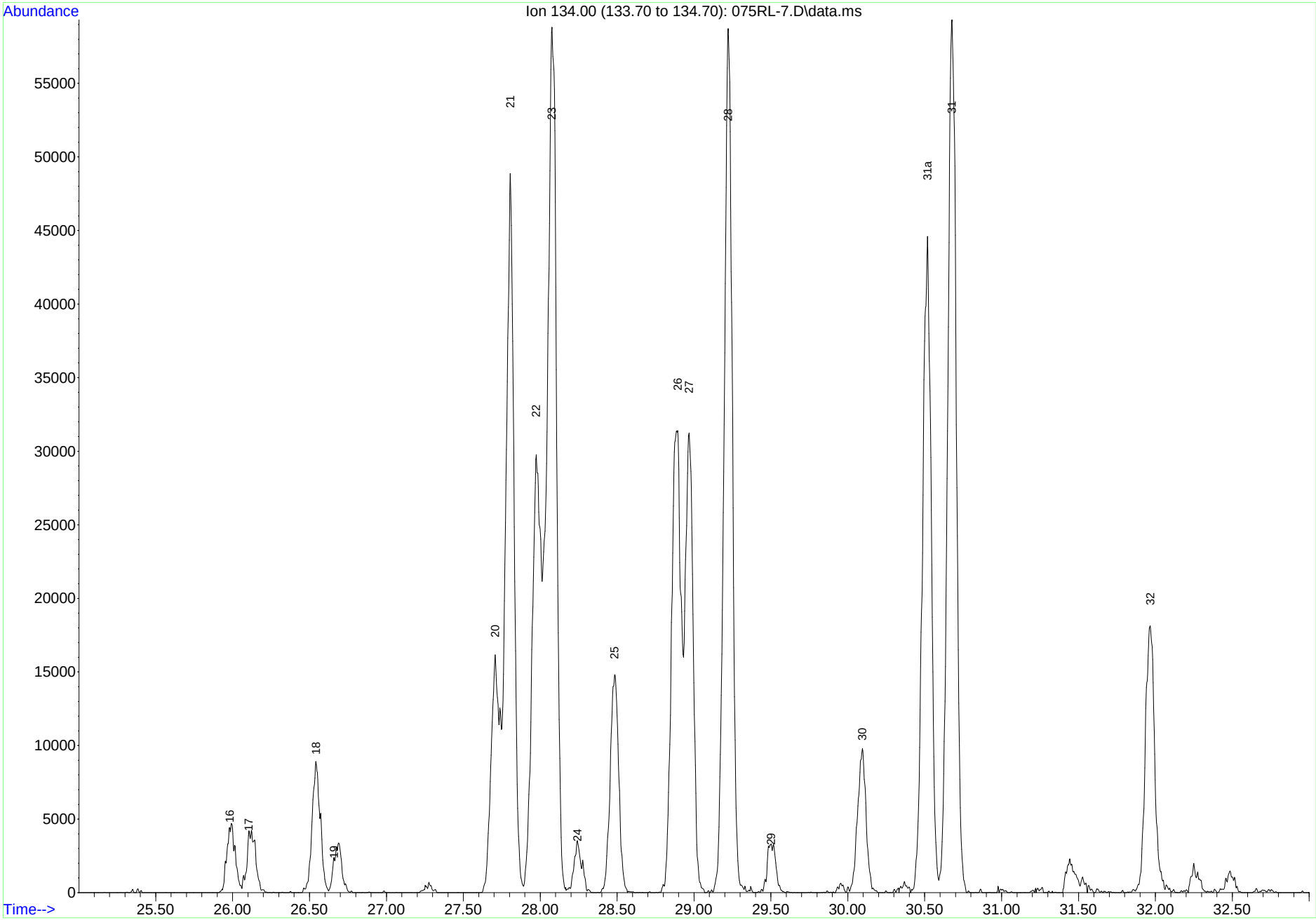
Project Manager:	Russ Shropshire	Lab ID:	075RL-7
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-16-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (134 m/z)
Sec-Butylbenzene	16	134	26.0	4705.0	1.1%
1-Methyl-3-Isopropylbenzene	17	134	26.1	4224.0	0.9%
1-Methyl-4-Isopropylbenzene	18	134	26.5	8801.0	2.0%
1-Methyl-2-Isopropylbenzene	19	134	26.7	3379.0	0.8%
1,3-Diethylbenzene	20	134	27.7	16161.0	3.6%
1-Methyl-3-Propylbenzene	21	134	27.8	48451.0	10.8%
Butylbenzene	22	134	28.0	29339.0	6.5%
1,3-Diethyl-5-Ethylbenzene	23	134	28.1	58622.0	13.1%
1,2-Diethylbenzene	24	134	28.2	3497.0	0.8%
1-Methyl-2-Propylbenzene	25	134	28.5	14806.0	3.3%
1,4-Dimethyl-2-Ethylbenzene	26	134	28.9	31026.0	6.9%
1,3-Dimethyl-4-Ethylbenzene	27	134	29.0	31240.0	7.0%
1,2-Dimethyl-4-Ethylbenzene	28	134	29.2	58681.0	13.1%
1,3-Dimethyl-2-Ethylbenzene	29	134	29.5	3302.0	0.7%
1,2-Dimethyl-3-Ethylbenzene	30	134	30.1	9794.0	2.2%
1,2,4,5-Tetramethylbenzene	31a	134	30.5	44608.0	10.0%
1,2,3,5-Tetramethylbenzene	31	134	30.7	59313.0	13.2%
1,2,3,4-Tetramethylbenzene	32	134	32.0	18042.0	4.0%

0.40683 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-7
0.40683 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 123 m/z Bicyclanes

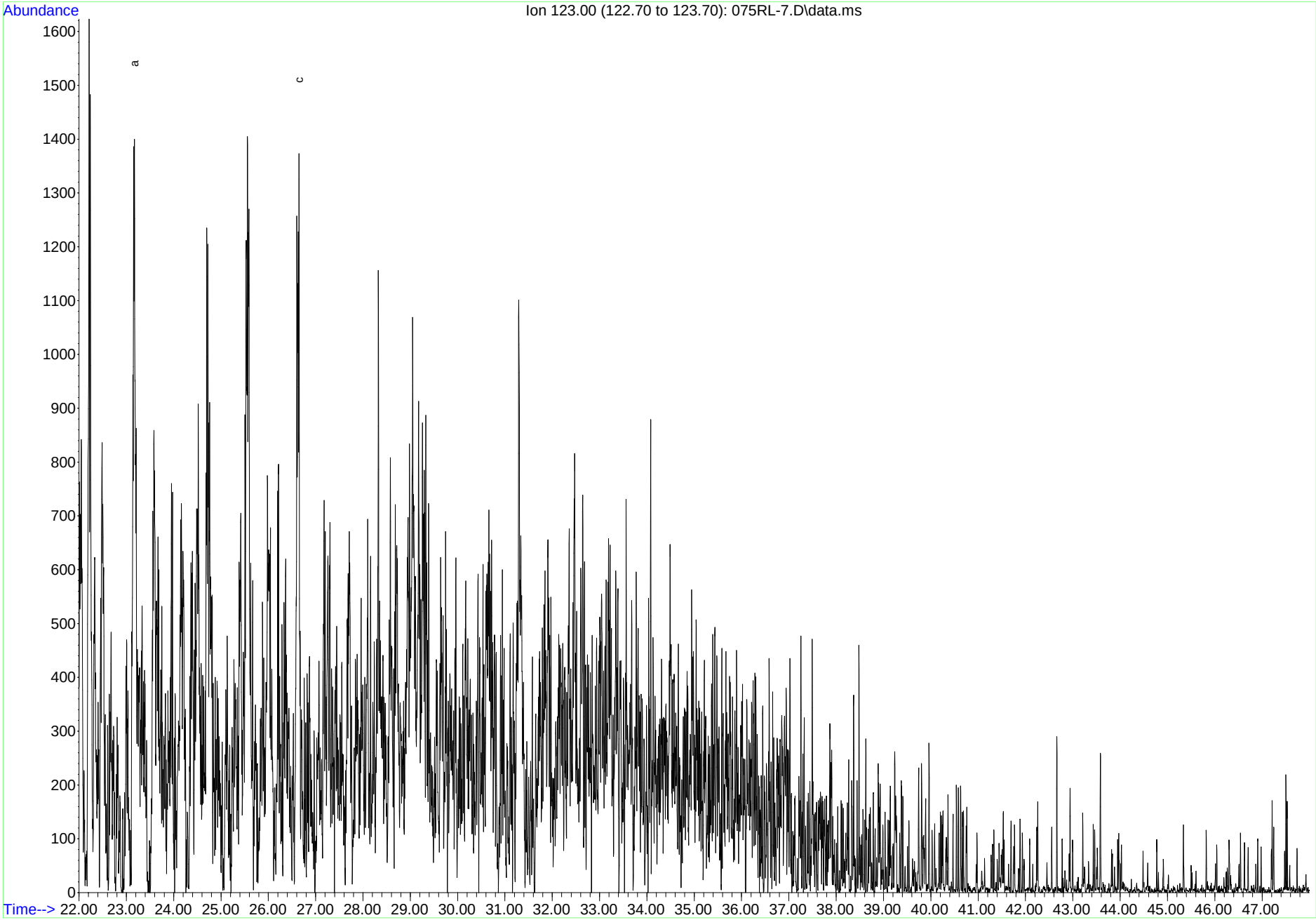
Project Manager:	Russ Shropshire	Lab ID:	075RL-7
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-16-201207
Project #:	334893.TM.1.000.00.0	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (123 m/z)
2,2,3-Trimethylbicycloheptane	a	123	23.2	1397.0	52.3%
C_{10} bicycloalkane	b	123	ND	ND	ND
3,3,7-Trimethylbicycloheptane	c	123	26.6	1276.0	47.7%
C_{11} Decalin	d	123	ND	ND	ND
Nordrimane	f	123	ND	ND	ND
Nordrimane	g	123	ND	ND	ND
Rearranged drimane	h	123	ND	ND	ND
Rearranged drimane	j	123	ND	ND	ND
Isomer of Eudesmane	k	123	ND	ND	ND
4β (H) Eudesmane	l	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	m	123	ND	ND	ND
8β (H) Drimane	n	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	o	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	p	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	q	123	ND	ND	ND
8β (H) Homodrimane	r	123	ND	ND	ND

0.40683 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-7
0.40683 g



Chromatogram Key & Numerical Results: 191 m/z Terpanes

Project Manager:	Russ Shropshire	Lab ID:	075RL-7
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-16-201207
Project #:	334893.TM.1.000.00.	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
C_{21}-Tricyclic Terpane	1	191	ND	ND	ND
C_{22}-Tricyclic Terpane	2	191	ND	ND	ND
C_{23}-Tricyclic Terpane	3	191	ND	ND	ND
C_{24}-Tricyclic Terpane	4	191	ND	ND	ND
C_{25}-Tricyclic Terpane	5(S+R)	191	ND	ND	ND
C_{24}-Tetracyclic Terpane	Z4	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6a*	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6b	191	ND	ND	ND
C_{28}-Tricyclic Terpane #1	A	191	ND	ND	ND
C_{28}-Tricyclic Terpane #2	B	191	ND	ND	ND
C_{29}-Tricyclic Terpane #1	C	191	ND	ND	ND
C_{29}-Tricyclic Terpane #2	D	191	ND	ND	ND
18 α-22,29,30-Trisnorneohopane (Ts)	E	191	ND	ND	ND
17 α-22,29,30-Trisnorhopane (Tm)	F	191	ND	ND	ND
C_{30}-Tricyclic Terpane #1	10a*	191	ND	ND	ND
C_{30}-Tricyclic Terpane #2	10b	191	ND	ND	ND
17 α-28,30 Bisnorhopane	I	191	ND	ND	ND
C_{31}-Tricyclic Terpane #1	11a*	191	ND	ND	ND
17α-25-Norhopane	J	191	ND	ND	ND
C_{31}-Tricyclic Terpane #2	11b	191	ND	ND	ND
17 α,21β-30-Norhopane	K	191	ND	ND	ND
18α-30-Norneohopane	C29Ts	191	ND	ND	ND
17α-Diahopane	C30*	191	ND	ND	ND
17β-21α-30-Normoretane	L	191	ND	ND	ND
18α+18β-Oleanane	Ma+Mb	191	ND	ND	ND
17α-21β-Hopane	N	191	ND	ND	ND
17β-21α-Moretane	O	191	ND	ND	ND
22S-17α,21β-30-Homohopane	P	191	ND	ND	ND
22R-17α,21β-30-Homohopane	Q	191	ND	ND	ND
Gammacerane	R	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	T	191	ND	ND	ND
22R-17α,21β-30-Bishomohopane	U	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	WS	191	ND	ND	ND
22R-17α,21β-Trishomohopane	WR	191	ND	ND	ND
22S-17α,21β-Tetrahomohopane	XS	191	ND	ND	ND

SAMPLE RESULTS

Chromatogram Key & Numerical Results: 191 m/z Terpanes

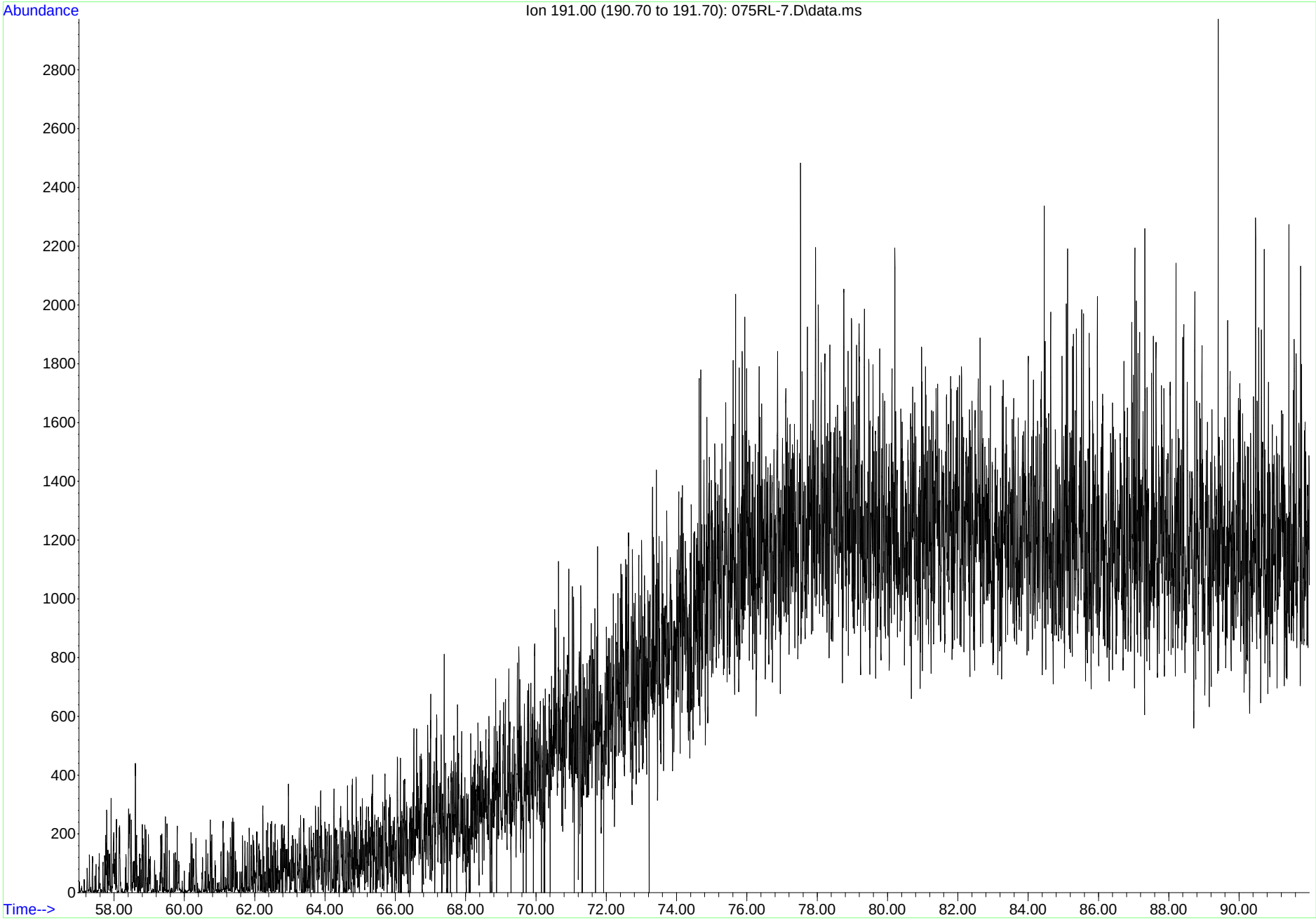
Project Manager:	Russ Shropshire	Lab ID:	075RL-7
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-16-201207
Project #:	334893.TM.1.000.00.	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
22R-17α,21β-Tetrahomohopane	XR	191	ND	ND	ND
22S-17α,21β-Pentahomohopane	YS	191	ND	ND	ND
22R-17α,21β-Pentahomohopane	YR	191	ND	ND	ND

0.40683 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-7
0.40683 g



Chromatogram Key & Numerical Results: 217 m/z Steranes

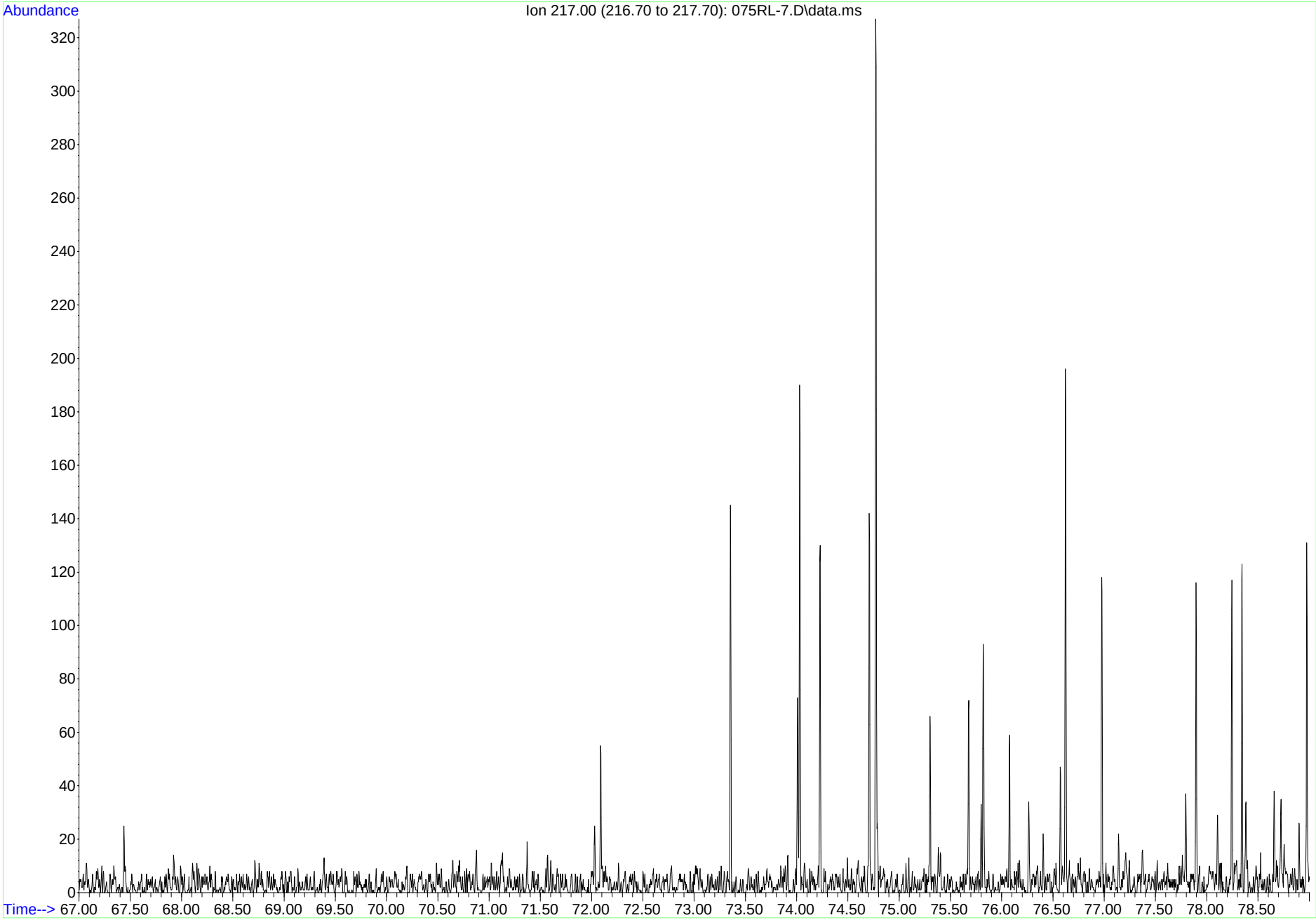
Project Manager:	Russ Shropshire	Lab ID:	075RL-7
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-16-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (217 m/z)
13β, 17α-Diacholestane (20S)	1	217	ND	ND	ND
13β, 17α-Diacholestane (20R)	2	217	ND	ND	ND
13α, 17β-Diacholestane (20S)	3	217	ND	ND	ND
13α, 17β-Diacholestane (20R)	4	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	5	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	6	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20S)	7D	217	ND	ND	ND
14α,17α-Cholestane (20S)	7	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20S)+ 14β,17β-Cholestane (20R)	8+8D	217	ND	ND	ND
14β,17β-Cholestane (20S)	9	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20R)	9D	217	ND	ND	ND
14α,17α-Cholestane (20R)	10	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20R)	11	217	ND	ND	ND
24-ethyl-13α, 17β-Diacholestane (20S)	12	217	ND	ND	ND
24-ethyl-13α, 17α-Diacholestane (20S)	13	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20R)	14	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20S)	15	217	ND	ND	ND
24-methyl-14α, 17α-Cholestane (20R)	16	217	ND	ND	ND
24-ethyl-14α-Cholestane (20S)	17	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20R)	18	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20S)	19	217	ND	ND	ND
24-ethyl-14α, 17α-Cholestane (20R)	20	217	ND	ND	ND

0.40683 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-7
0.40683 g



Chromatogram Key & Numerical Results: 253 m/z Monoaromatic Steranes

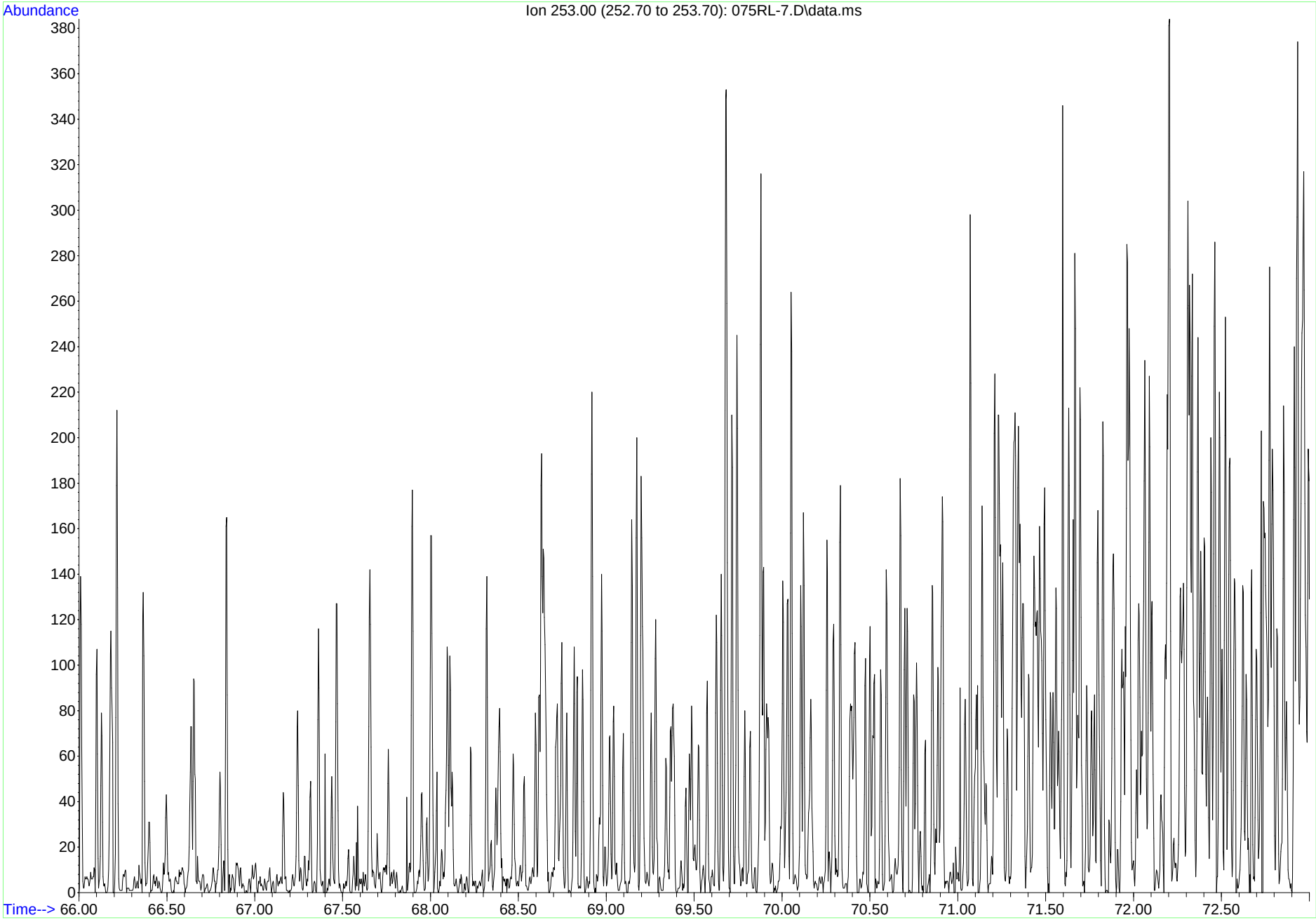
Project Manager:	Russ Shropshire	Lab ID:	075RL-7
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE,	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-16-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (253 m/z)
20S, 5β C27-MAS	a	253	ND	ND	ND
20S, dia C27-MAS	b	253	ND	ND	ND
20R, 5β C27-MAS + 20R C27 dia MAS	c	253	ND	ND	ND
20S, 5α C27-MAS	d	253	ND	ND	ND
20R, 5β C28-MAS + 20S C28 dia MAS	e	253	ND	ND	ND
20R, 5α C27-MAS	f	253	ND	ND	ND
20S, 5α C28-MAS	g	253	ND	ND	ND
20R, 5β C28-MAS + 20R C28 dia MAS	h	253	ND	ND	ND
20S, 5β C29-MAS + 20S C29 dia MAS	i	253	ND	ND	ND
20S, 5α C29-MAS	J lower case	253	ND	ND	ND
20R, 5α C28-MAS	k	253	ND	ND	ND
20R, 5β C29-MAS + 20R C29 dia MAS	L lower case	253	ND	ND	ND
20R, 5α C29-MAS	m	253	ND	ND	ND

0.40683 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-7
0.40683 g



Chromatogram Key & Numerical Results: 231 m/z Triaromatic Steranes

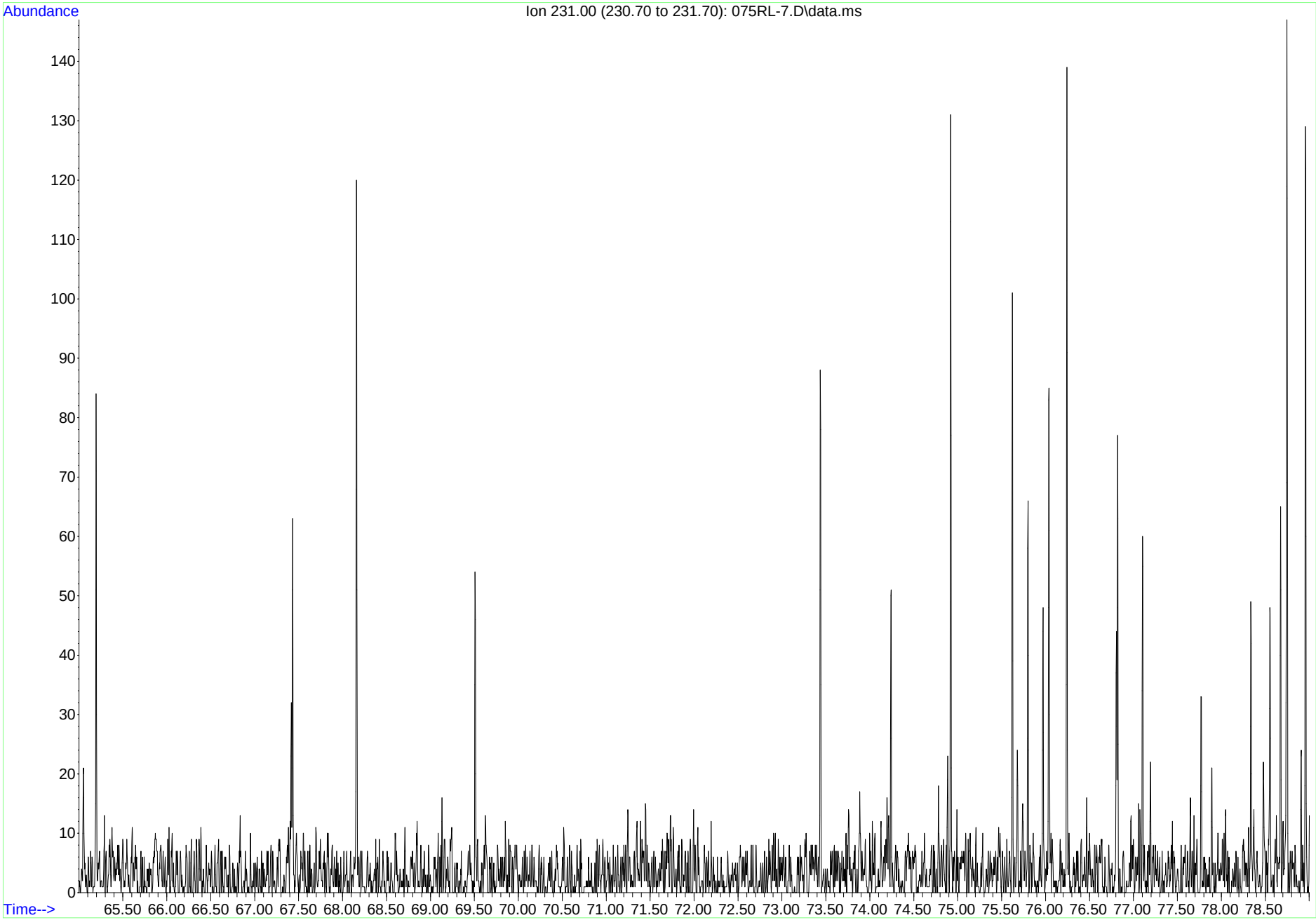
Project Manager:	Russ Shropshire	Lab ID:	075RL-7
Client:	Leidos, Inc.	Collected:	12/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-16-201207
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (231 m/z)
C_{20} Triaromatic Sterane	T1	231	ND	ND	ND
C_{21} Triaromatic Sterane	T2	231	ND	ND	ND
20S C_{26} Triaromatic Sterane	T3	231	ND	ND	ND
20R C_{26} + 20S C_{27} Triaromatic Steranes	T4	231	ND	ND	ND
20S C_{28} Triaromatic Sterane	T5	231	ND	ND	ND
20R C_{27} Triaromatic Sterane	T6	231	ND	ND	ND
20R C_{28} Triaromatic Sterane	T7	231	ND	ND	ND

0.40683 g in 10mL DCM
FOREN4LA_MI_BACK

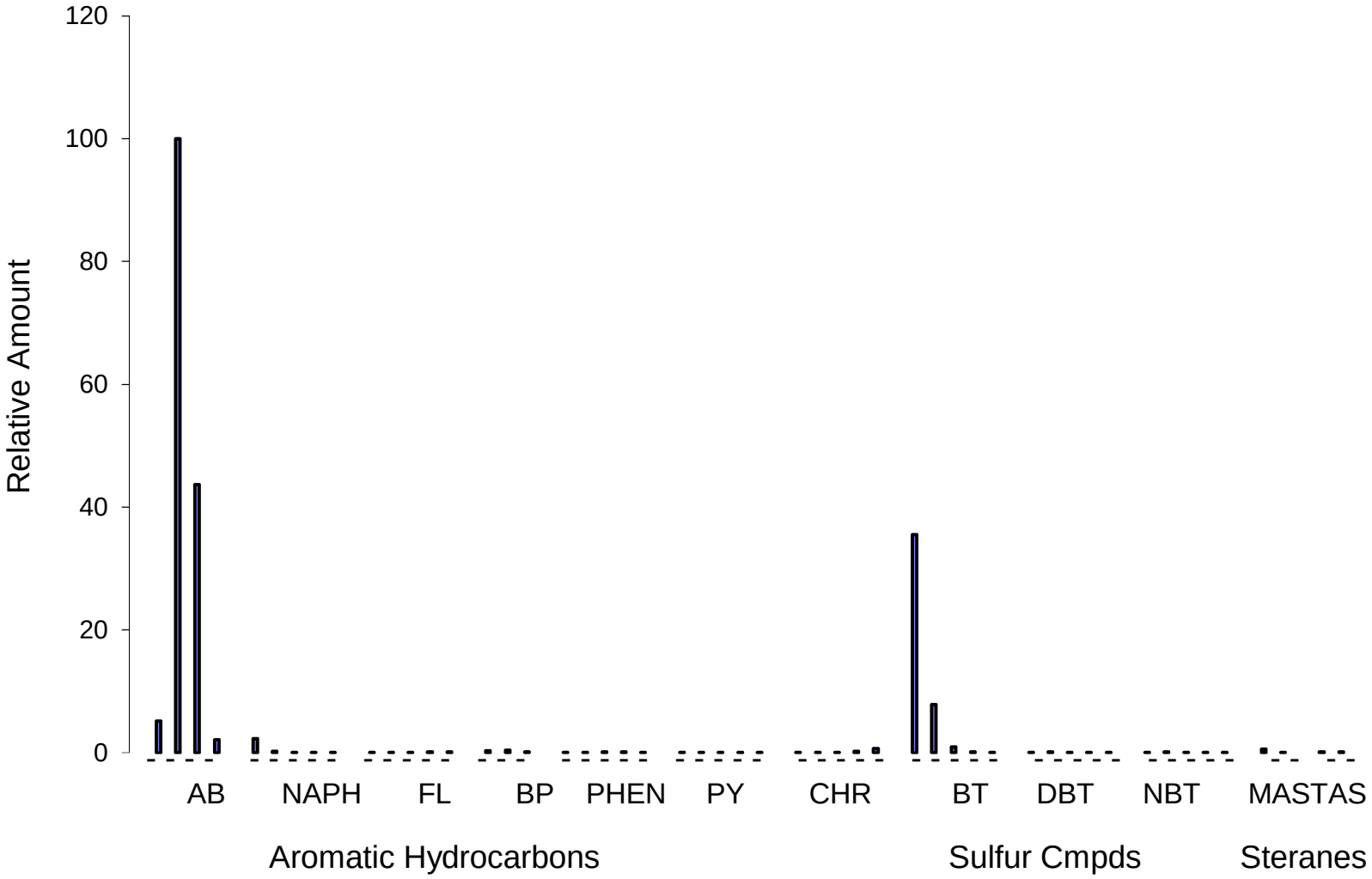
Submitted by,
Microbial Insights, Inc.

075RL-7
0.40683 g



Aromatic Hydrocarbon Distribution

075RL-7



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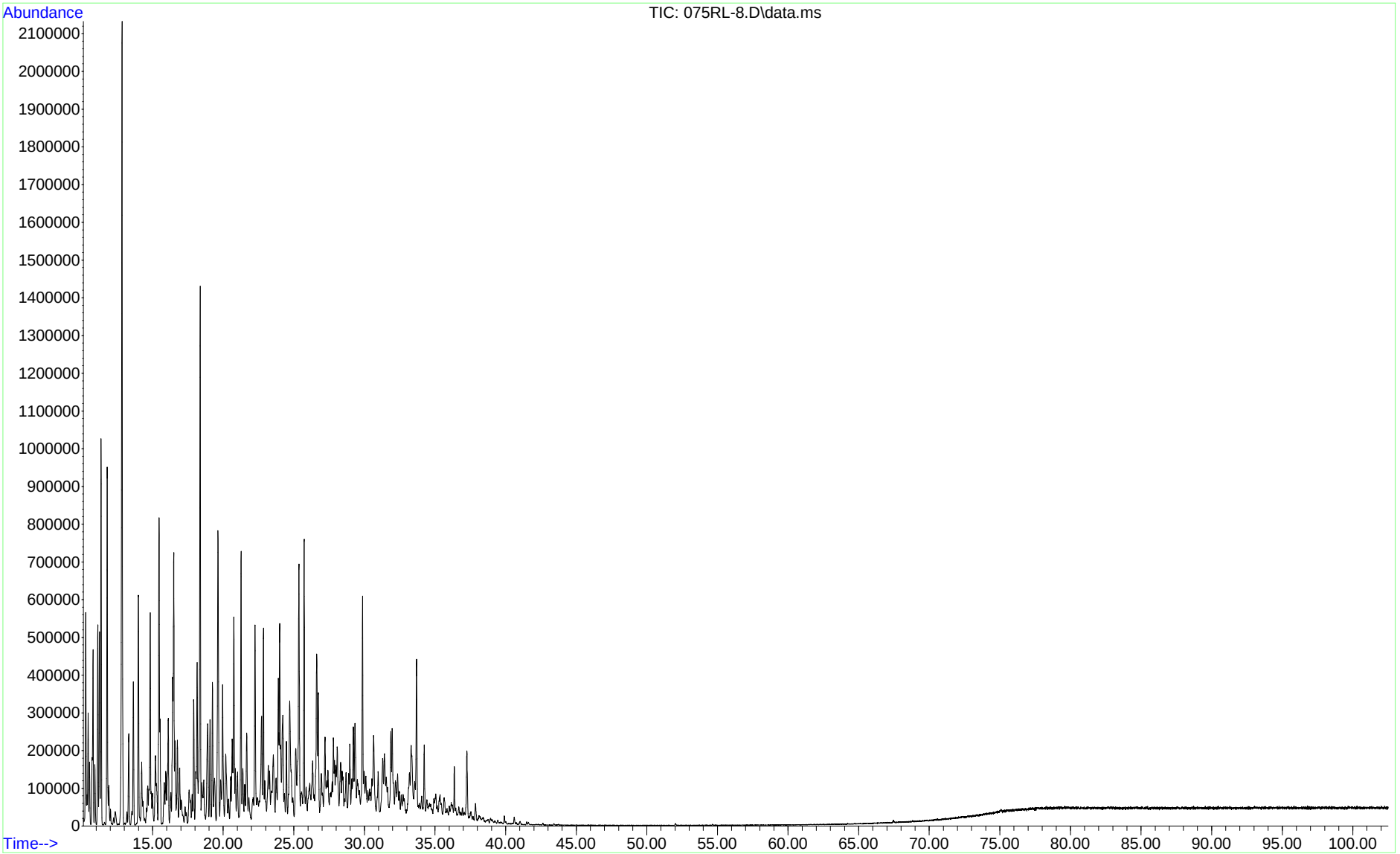
Sample Name: 075RL-8



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 85 m/z n-Paraffins

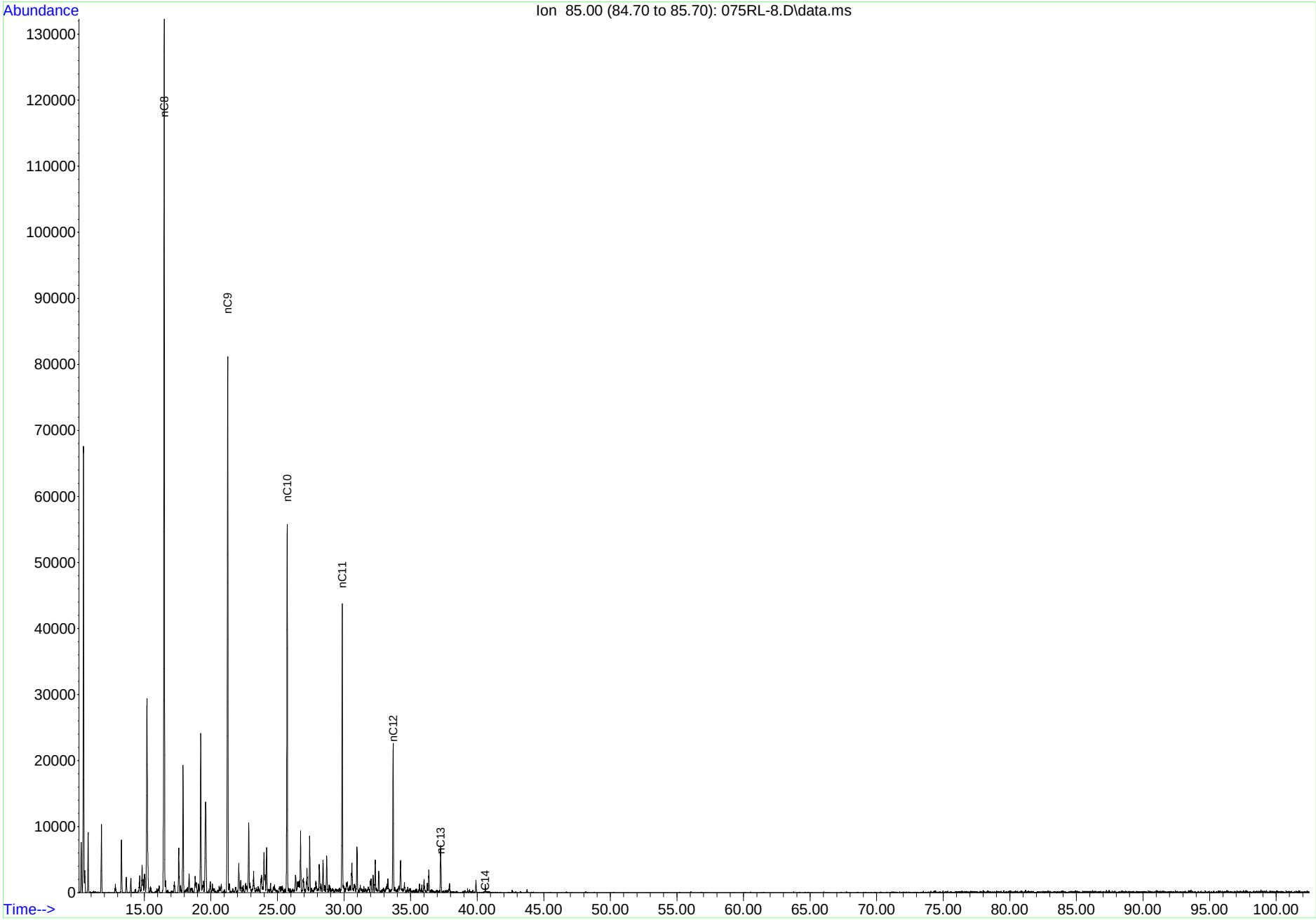
Project Manager:	Russ Shropshire	Lab ID:	075RL-8
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site 334893.TM.1.000.00.0	Client ID:	MW-21-201208
Project #:	0.000	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (85 m/z)
n-Octane	nC8	85	16.5	132064.0	38.5%
n-Nonane	nC9	85	21.3	81114.0	23.7%
n-Decane	nC10	85	25.7	55599.0	16.2%
n-Undecane	nC11	85	29.9	43457.0	12.7%
n-Dodecane	nC12	85	33.7	22308.0	6.5%
n-Tridecane	nC13	85	37.3	7124.0	2.1%
n-Tetradecane	nC14	85	40.6	1250.0	0.4%
n-Pentadecane	nC15	85	ND	ND	ND
n-Hexadecane	nC16	85	ND	ND	ND
n-Heptadecane	nC17	85	ND	ND	ND
n-Octadecane	nC18	85	ND	ND	ND
n-Nonadecane	nC19	85	ND	ND	ND
n-Eicosane	nC20	85	ND	ND	ND
n-Henicosane	nC21	85	ND	ND	ND
n-Docosane	nC22	85	ND	ND	ND
n-Tricosane	nC23	85	ND	ND	ND
n-Tetracosane	nC24	85	ND	ND	ND
n-Pentacosane	nC25	85	ND	ND	ND
n-Hexacosane	nC26	85	ND	ND	ND
n-Heptacosane	nC27	85	ND	ND	ND
n-Octacosane	nC28	85	ND	ND	ND
n-Nonacosane	nC29	85	ND	ND	ND
n-Triacontane	nC30	85	ND	ND	ND
n-Hentriacontane	nC31	85	ND	ND	ND
n-Dotriacontane	nC32	85	ND	ND	ND
n-Tritriacontane	nC33	85	ND	ND	ND
n-Tetratriacontane	nC34	85	ND	ND	ND
n-Pentatriacontane	nC35	85	ND	ND	ND
n-Hexatriacontane	nC36	85	ND	ND	ND
n -Heptatriacontane	nC37	85	ND	ND	ND
n -Octatriacontane	nC38	85	ND	ND	ND
n -Nonatriacontane	nC39	85	ND	ND	ND
n-Tetracontane	nC40	85	ND	ND	ND

0.40712 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-8
0.40712 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 113 m/z Isoparaffins

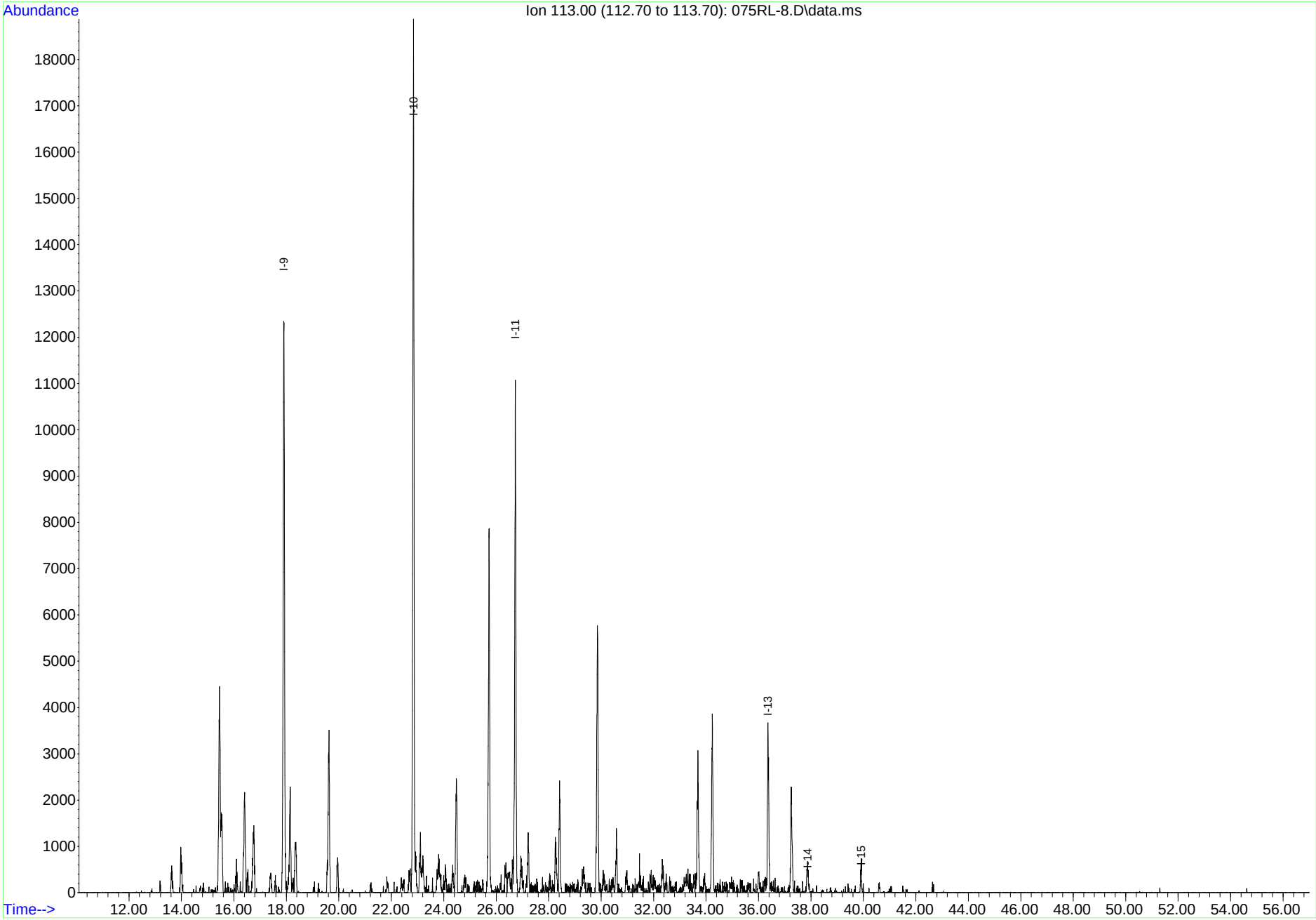
Project Manager:	Russ Shropshire	Lab ID:	075RL-8
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue NE, Suite 112 Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site 334893.TM.1.000.00.00	Client ID:	MW-21-201208
Project #:	.000	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (113 m/z)
Iso-alkane w/ 9 Carbon Atoms	I-9	113	17.9	12341.0	26.2%
Iso-alkane w/ 10 Carbon Atoms	I-10	113	22.8	18857.0	40.0%
Iso-alkane w/ 11 Carbon Atoms	I-11	113	26.7	10870.0	23.1%
Iso-alkane w/ 12 Carbon Atoms	I-12	113	ND	ND	ND
Iso-alkane w/ 13 Carbon Atoms	I-13	113	36.4	3649.0	7.7%
Iso-alkane w/ 14 Carbon Atoms	I-14	113	37.9	673.0	1.4%
Farnesane (Isoprenoid - C15)	I-15	113	39.9	731.0	1.6%
Iso-alkane w/ 16 Carbon Atoms	I-16	113	ND	ND	ND
Iso-alkane w/ 18 Carbon Atoms	I-18	113	ND	ND	ND
Pristane (Isoprenoid - C19)	Pr	113	ND	ND	ND
Phytane (Isoprenoid - C20)	Ph	113	ND	ND	ND

0.40712 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-8
0.40712 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 83 m/z Alkylcyclohexanes

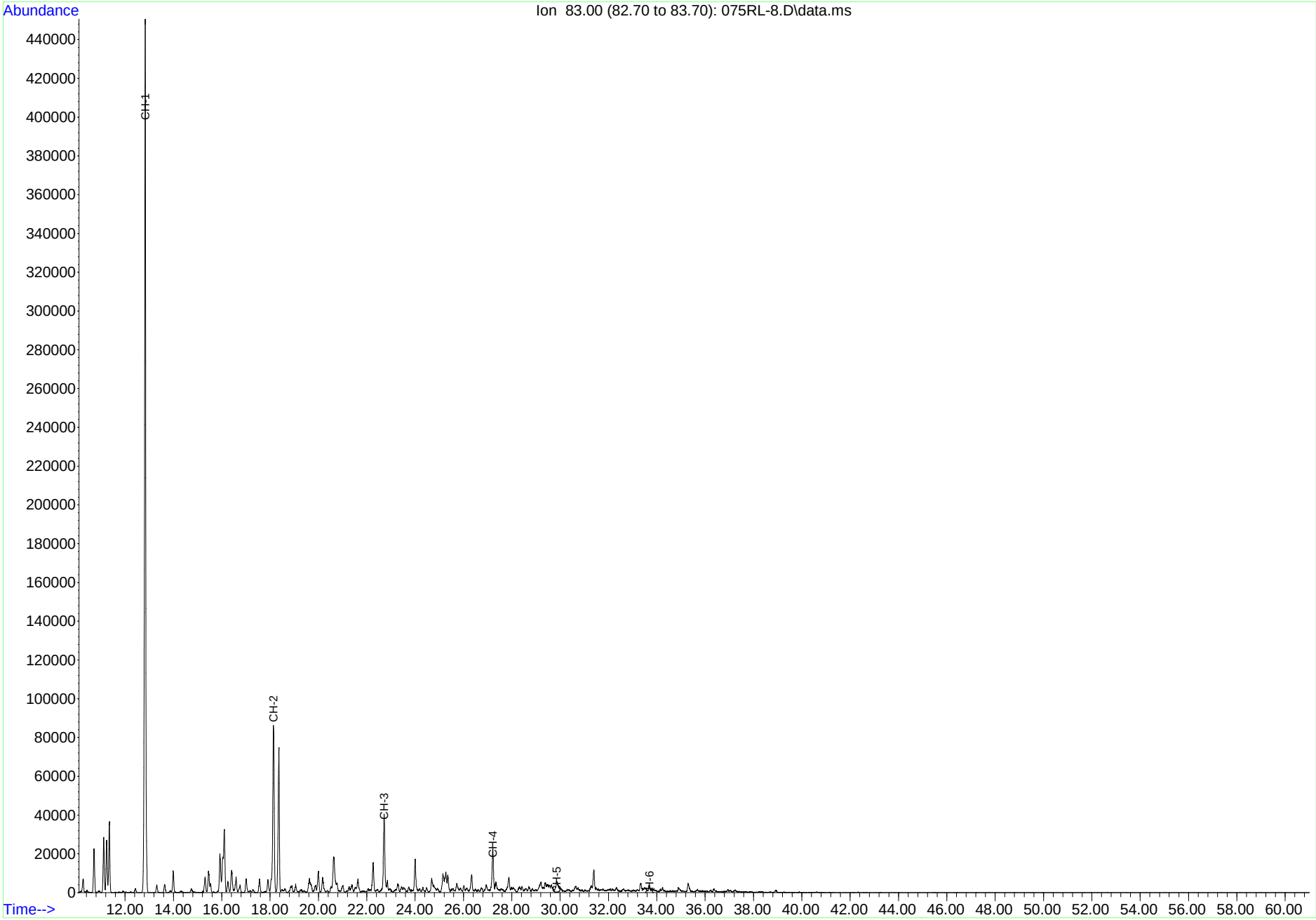
Project Manager:	Russ Shropshire	Lab ID:	075RL-8
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue NE, Suite 112 Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site 334893.TM.1.000.00.00	Client ID:	MW-21-201208
Project #:	.000	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (83 m/z)
Methylcyclohexane	CH-1	83	12.8	450556.0	74.4%
Ethylcyclohexane	CH-2	83	18.1	85947.0	14.2%
Propylcyclohexane	CH-3	83	22.7	38847.0	6.4%
Butylcyclohexane	CH-4	83	27.2	22045.0	3.6%
Pentylcyclohexane	CH-5	83	29.9	4812.0	0.8%
Hexylcyclohexane	CH-6	83	33.7	3078.0	0.5%
Heptylcyclohexane	CH-7	83	ND	ND	ND
Octylcyclohexane	CH-8	83	ND	ND	ND
Nonylcyclohexane	CH-9	83	ND	ND	ND
Decylcyclohexane	CH-10	83	ND	ND	ND
Undecylcyclohexane	CH-11	83	ND	ND	ND
Dodecylcyclohexane	CH-12	83	ND	ND	ND
Tridecylcyclohexane	CH-13	83	ND	ND	ND
Tetradecylcyclohexane	CH-14	83	ND	ND	ND

0.40712 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-8
0.40712 g



Chromatogram Key & Numerical Results: 134 m/z C3-C4 Monoaromatics

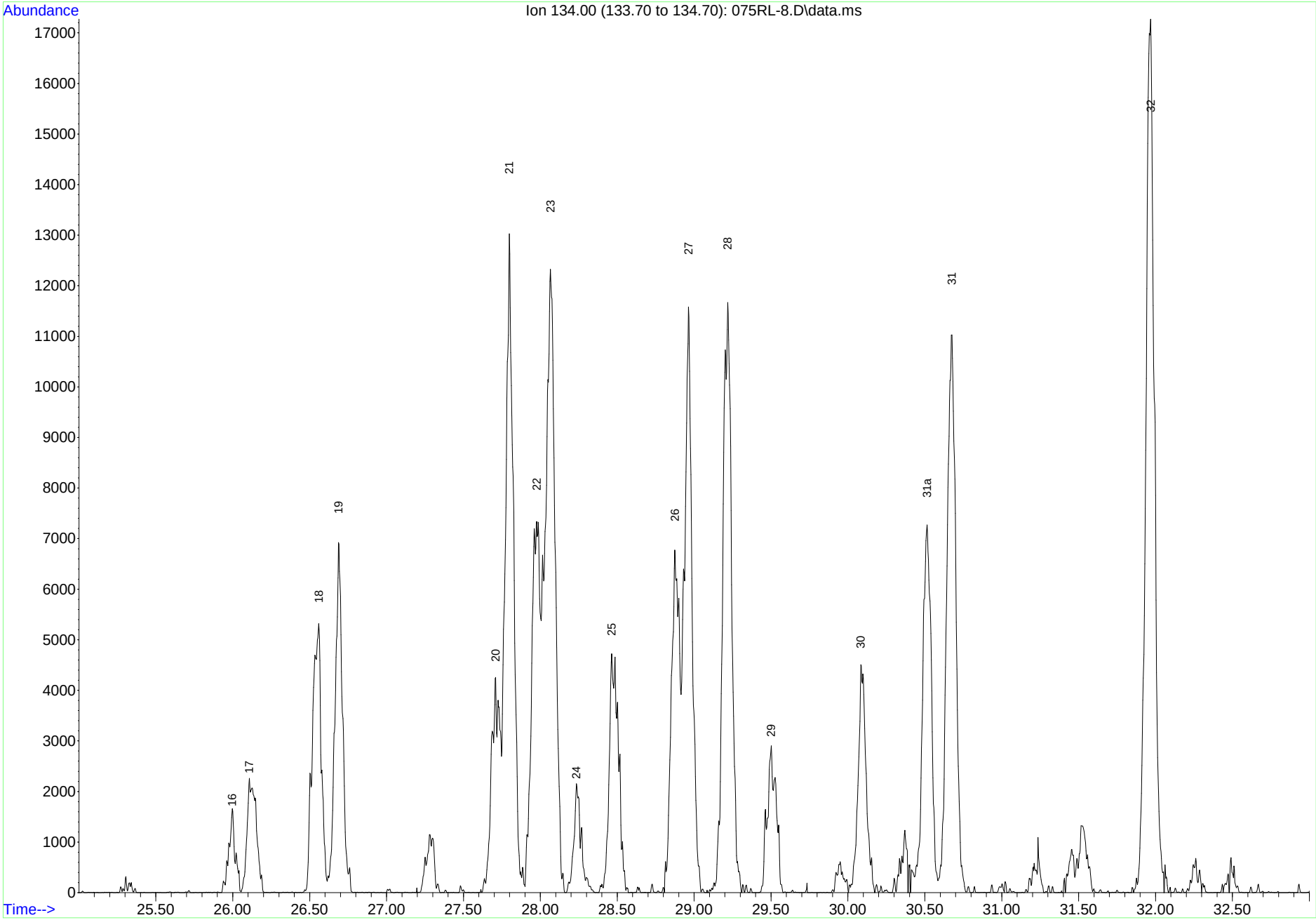
Project Manager:	Russ Shropshire	Lab ID:	075RL-8
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue NE, Suite 112 Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site 334893.TM.1.000.00.00	Client ID:	MW-21-201208
Project #:	.000	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (134 m/z)
Sec-Butylbenzene	16	134	26.0	1659.0	1.3%
1-Methyl-3-Isopropylbenzene	17	134	26.1	2258.0	1.7%
1-Methyl-4-Isopropylbenzene	18	134	26.6	5318.0	4.0%
1-Methyl-2-Isopropylbenzene	19	134	26.7	6699.0	5.1%
1,3-Diethylbenzene	20	134	27.7	4259.0	3.2%
1-Methyl-3-Propylbenzene	21	134	27.8	12734.0	9.6%
Butylbenzene	22	134	28.0	7339.0	5.6%
1,3-Diethyl-5-Ethylbenzene	23	134	28.1	12054.0	9.1%
1,2-Diethylbenzene	24	134	28.2	2152.0	1.6%
1-Methyl-2-Propylbenzene	25	134	28.5	4725.0	3.6%
1,4-Dimethyl-2-Ethylbenzene	26	134	28.9	6777.0	5.1%
1,3-Dimethyl-4-Ethylbenzene	27	134	29.0	11565.0	8.8%
1,2-Dimethyl-4-Ethylbenzene	28	134	29.2	11670.0	8.8%
1,3-Dimethyl-2-Ethylbenzene	29	134	29.5	2906.0	2.2%
1,2-Dimethyl-3-Ethylbenzene	30	134	30.1	4508.0	3.4%
1,2,4,5-Tetramethylbenzene	31a	134	30.5	7257.0	5.5%
1,2,3,5-Tetramethylbenzene	31	134	30.7	11019.0	8.3%
1,2,3,4-Tetramethylbenzene	32	134	32.0	17272.0	13.1%

0.40712 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-8
0.40712 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 123 m/z Bicyclanes

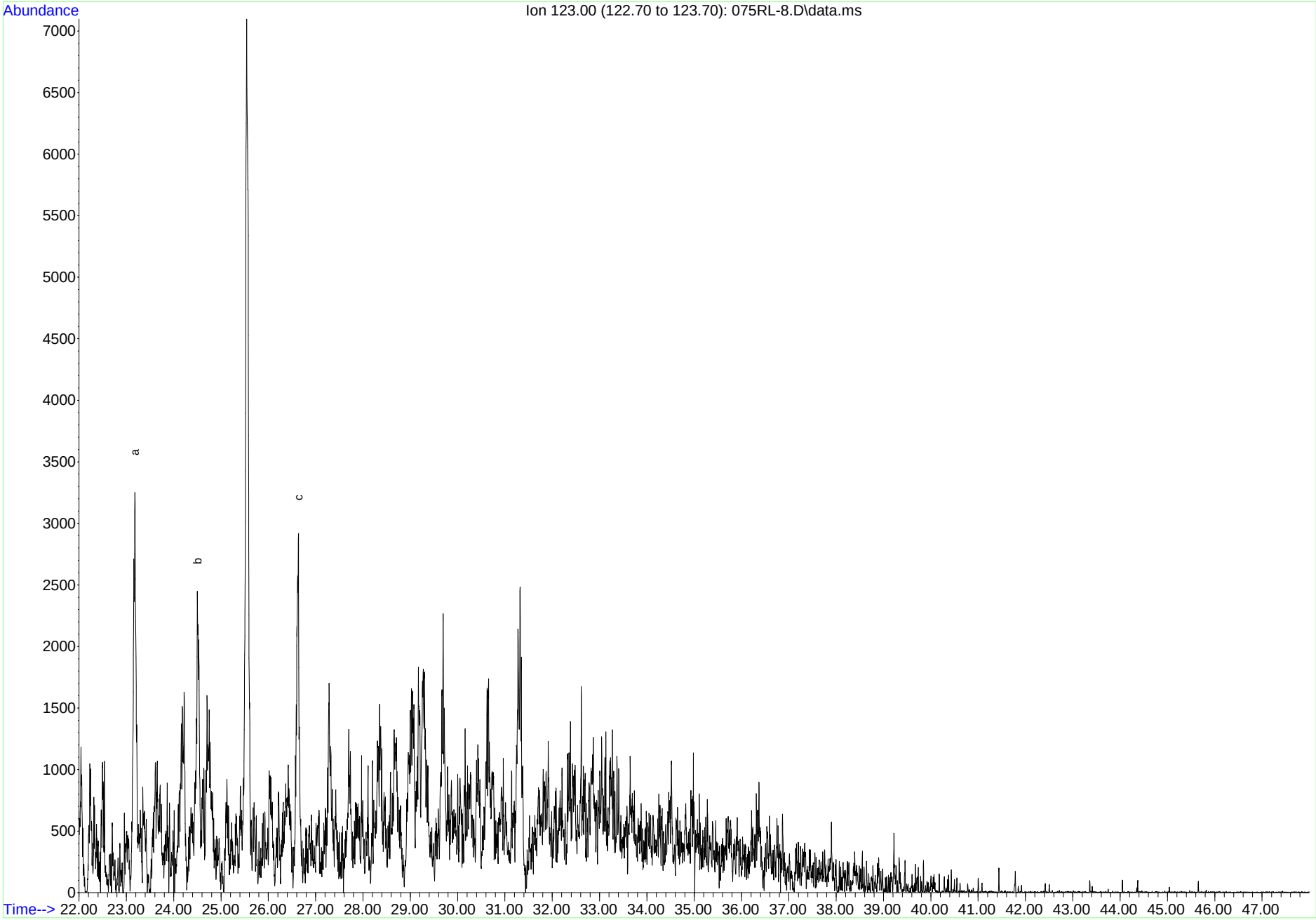
Project Manager:	Russ Shropshire	Lab ID:	075RL-8
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue NE, Suite 112 Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site 334893.TM.1.000.00.0	Client ID:	MW-21-201208
Project #:	0.000	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (123 m/z)
2,2,3-Trimethylbicycloheptane	a	123	23.2	3208.0	38.9%
C_{10} bicycloalkane	b	123	24.5	2242.0	27.2%
3,3,7-Trimethylbicycloheptane	c	123	26.6	2795.0	33.9%
C_{11} Decalin	d	123	ND	ND	ND
Nordrimane	f	123	ND	ND	ND
Nordrimane	g	123	ND	ND	ND
Rearranged drimane	h	123	ND	ND	ND
Rearranged drimane	j	123	ND	ND	ND
Isomer of Eudesmane	k	123	ND	ND	ND
4β (H) Eudesmane	l	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	m	123	ND	ND	ND
8β (H) Drimane	n	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	o	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	p	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	q	123	ND	ND	ND
8β (H) Homodrimane	r	123	ND	ND	ND

0.40712 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-8
0.40712 g



Chromatogram Key & Numerical Results: 191 m/z Terpanes

microbialinsights

Project Manager: Russ Shropshire
Client: Leidos, Inc.
Address: 18939 120th Avenue
Bothell, WA 98011
Project: Chelan Chevron Site
334893.TM.1.000.00.
Project #: 00.000
Collected by:

Lab ID: 075RL-8
Collected: 12/8/2020
Received: 12/11/2020
Matrix: Product
Client ID: MW-21-201208
Analyzed: 12/16/2020
Q Method: FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
C_{21}-Tricyclic Terpane	1	191	ND	ND	ND
C_{22}-Tricyclic Terpane	2	191	ND	ND	ND
C_{23}-Tricyclic Terpane	3	191	ND	ND	ND
C_{24}-Tricyclic Terpane	4	191	ND	ND	ND
C_{25}-Tricyclic Terpane	5(S+R)	191	ND	ND	ND
C_{24}-Tetracyclic Terpane	Z4	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6a*	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6b	191	ND	ND	ND
C_{28}-Tricyclic Terpane #1	A	191	ND	ND	ND
C_{28}-Tricyclic Terpane #2	B	191	ND	ND	ND
C_{29}-Tricyclic Terpane #1	C	191	ND	ND	ND
C_{29}-Tricyclic Terpane #2	D	191	ND	ND	ND
18 α-22,29,30-Trisnorneohopane (Ts)	E	191	ND	ND	ND
17 α-22,29,30-Trisnorhopane (Tm)	F	191	ND	ND	ND
C_{30}-Tricyclic Terpane #1	10a*	191	ND	ND	ND
C_{30}-Tricyclic Terpane #2	10b	191	ND	ND	ND
17 α-28,30 Bisnorhopane	I	191	ND	ND	ND
C_{31}-Tricyclic Terpane #1	11a*	191	ND	ND	ND
17α-25-Norhopane	J	191	ND	ND	ND
C_{31}-Tricyclic Terpane #2	11b	191	ND	ND	ND
17 α,21β-30-Norhopane	K	191	ND	ND	ND
18α-30-Norneohopane	C29Ts	191	ND	ND	ND
17α-Diahopane	C30*	191	ND	ND	ND
17β-21α-30-Normoretane	L	191	ND	ND	ND
18α+18β-Oleanane	Ma+Mb	191	ND	ND	ND
17α-21β-Hopane	N	191	ND	ND	ND
17β-21α-Moretane	O	191	ND	ND	ND
22S-17α,21β-30-Homohopane	P	191	ND	ND	ND
22R-17α,21β-30-Homohopane	Q	191	ND	ND	ND
Gammacerane	R	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	T	191	ND	ND	ND
22R-17α,21β-30-Bishomohopane	U	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	WS	191	ND	ND	ND
22R-17α,21β-Trishomohopane	WR	191	ND	ND	ND

SAMPLE RESULTS

Chromatogram Key & Numerical Results: 191 m/z Terpanes

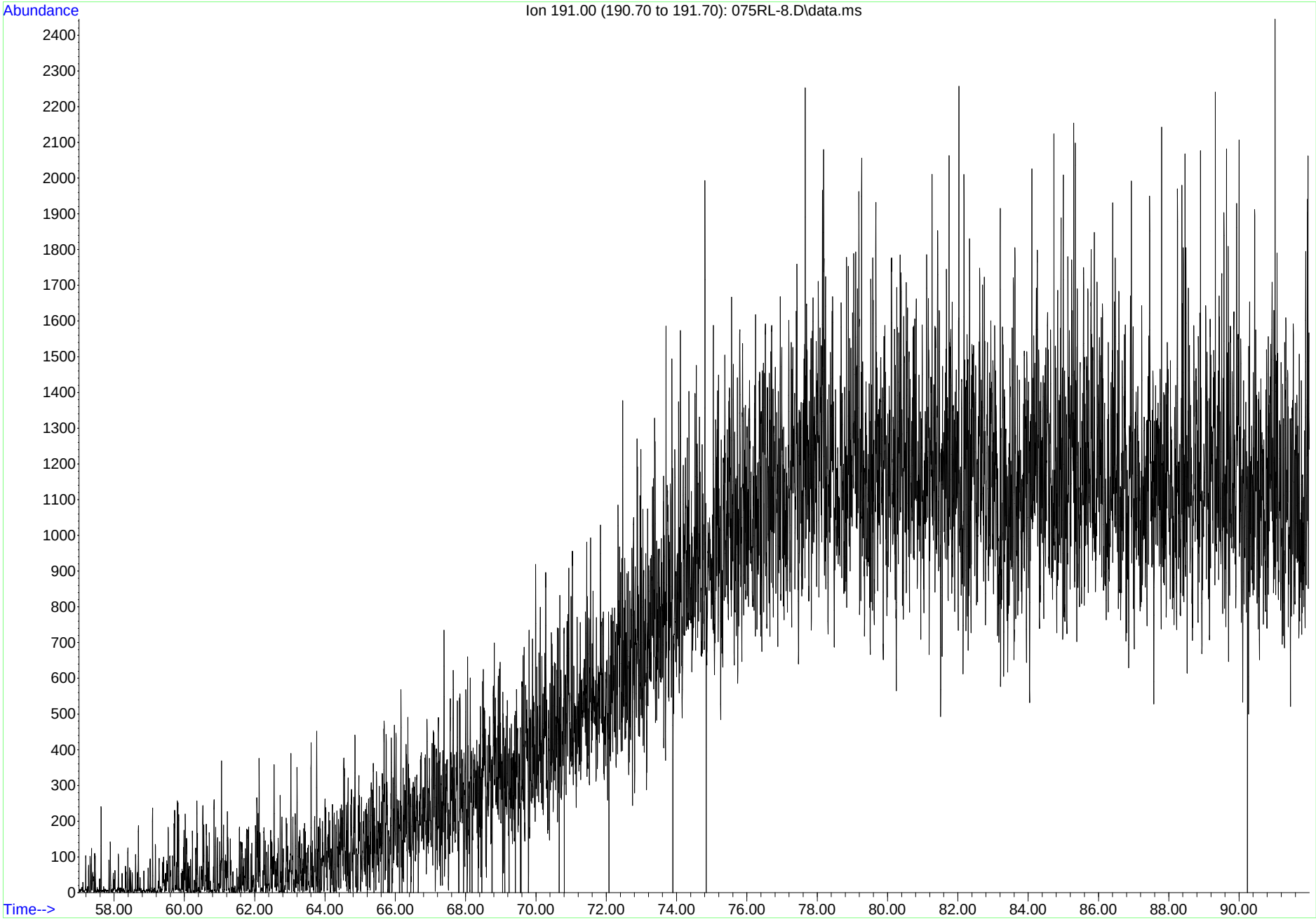
Project Manager:	Russ Shropshire	Lab ID:	075RL-8
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-21-201208
Project #:	334893.TM.1.000.00.00.000	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
22S-17α,21β-Tetrahomohopane	XS	191	ND	ND	ND
22R-17α,21β-Tetrahomohopane	XR	191	ND	ND	ND
22S-17α,21β-Pentahomohopane	YS	191	ND	ND	ND
22R-17α,21β-Pentahomohopane	YR	191	ND	ND	ND

0.40712 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-8
0.40712 g



Chromatogram Key & Numerical Results: 217 m/z Steranes

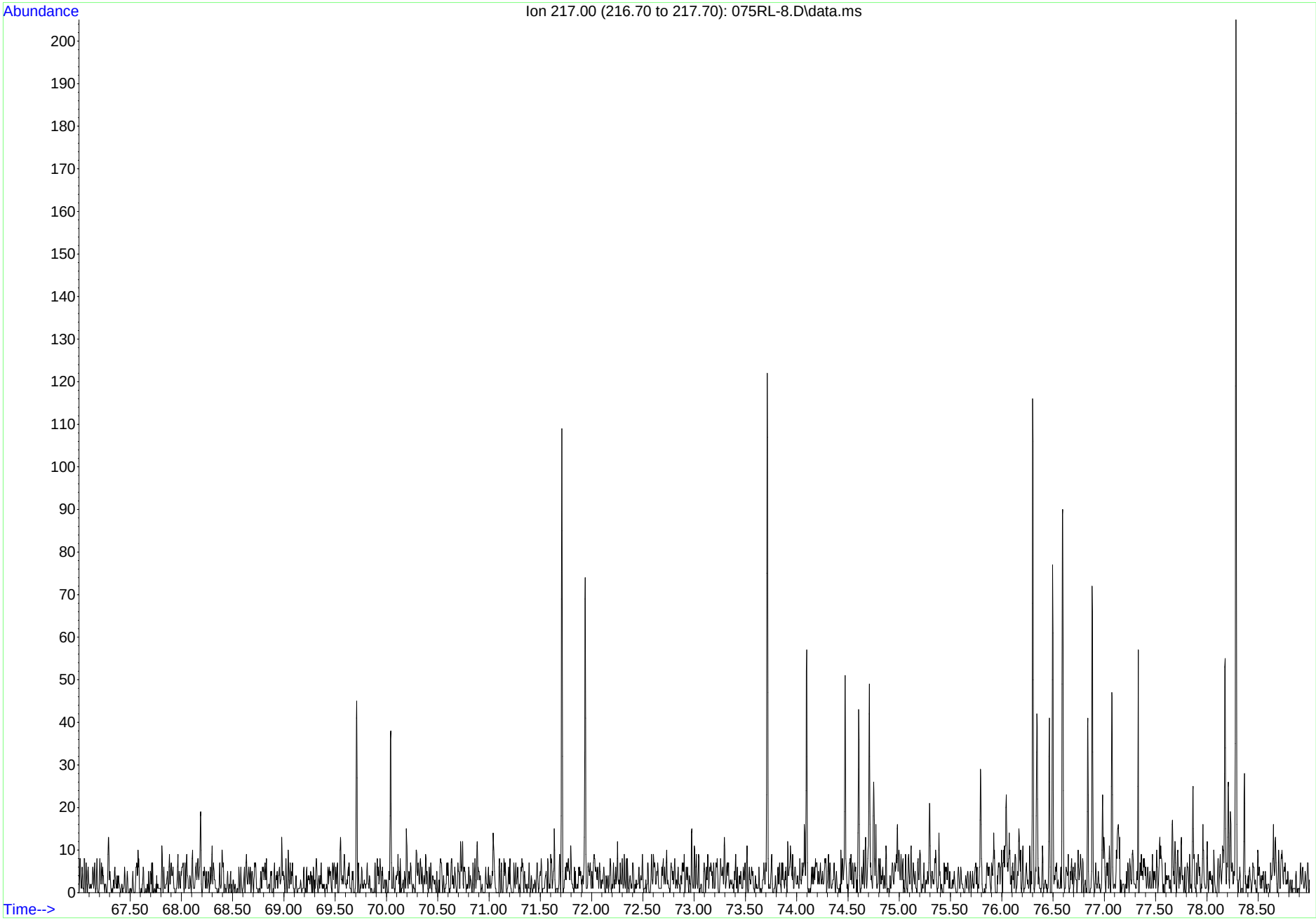
Project Manager:	Russ Shropshire	Lab ID:	075RL-8
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-21-201208
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (217 m/z)
13β, 17α-Diacholestane (20S)	1	217	ND	ND	ND
13β, 17α-Diacholestane (20R)	2	217	ND	ND	ND
13α, 17β-Diacholestane (20S)	3	217	ND	ND	ND
13α, 17β-Diacholestane (20R)	4	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	5	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	6	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20S)	7D	217	ND	ND	ND
14α,17α-Cholestane (20S)	7	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20S)+ 14β,17β-Cholestane (20R)	8+8D	217	ND	ND	ND
14β,17β-Cholestane (20S)	9	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20R)	9D	217	ND	ND	ND
14α,17α-Cholestane (20R)	10	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20R)	11	217	ND	ND	ND
24-ethyl-13α, 17β-Diacholestane (20S)	12	217	ND	ND	ND
24-ethyl-13α, 17α-Diacholestane (20S)	13	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20R)	14	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20S)	15	217	ND	ND	ND
24-methyl-14α, 17α-Cholestane (20R)	16	217	ND	ND	ND
24-ethyl-14α-Cholestane (20S)	17	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20R)	18	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20S)	19	217	ND	ND	ND
24-ethyl-14α, 17α-Cholestane (20R)	20	217	ND	ND	ND

0.40712 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-8
0.40712 g



Chromatogram Key & Numerical Results: 253 m/z Monoaromatic Steranes

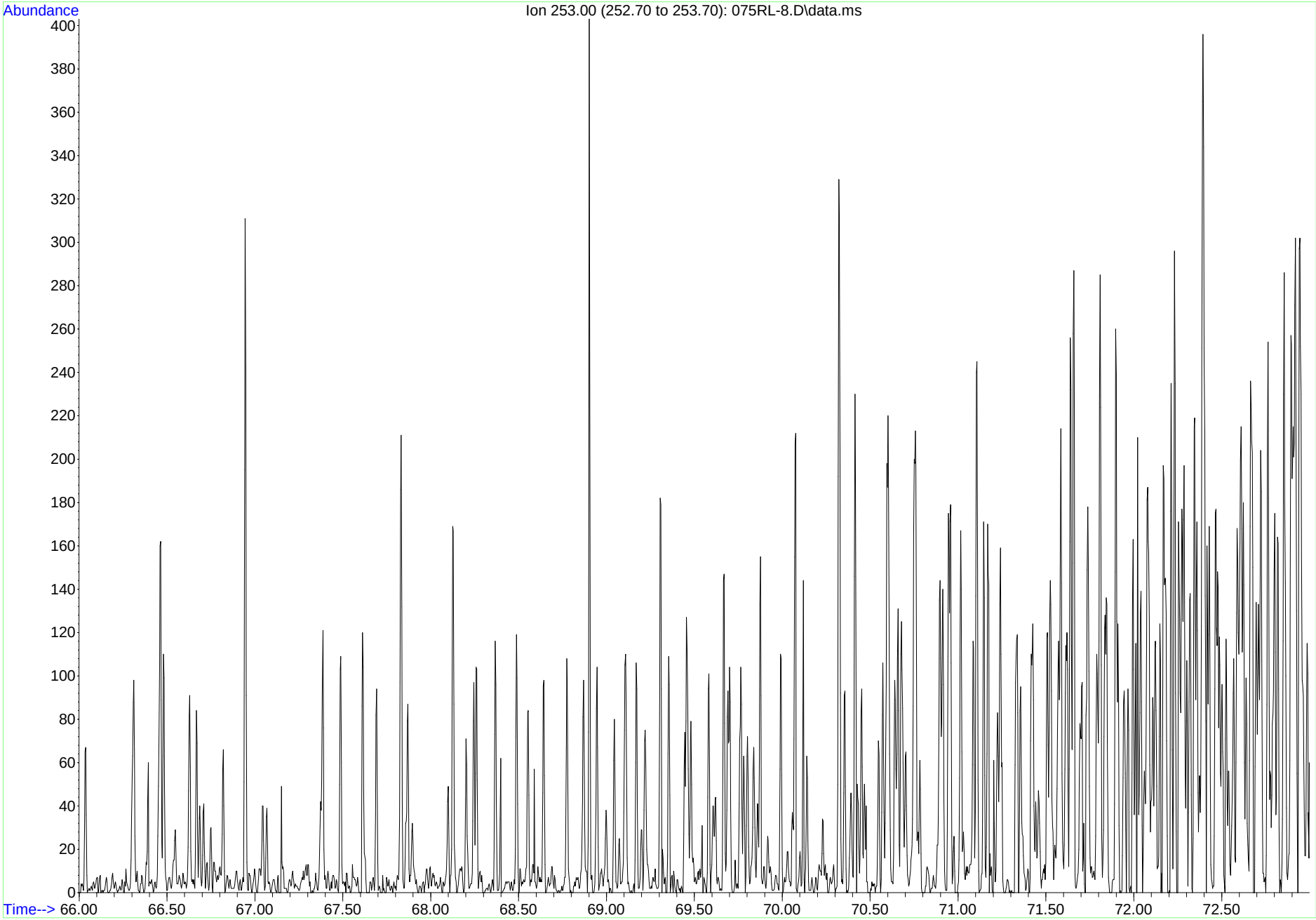
Project Manager:	Russ Shropshire	Lab ID:	075RL-8
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue NE, Suite 112 Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site 334893.TM.1.000.00.00	Client ID:	MW-21-201208
Project #:	.000	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (253 m/z)
20S, 5β C27-MAS	a	253	ND	ND	ND
20S, dia C27-MAS	b	253	ND	ND	ND
20R, 5β C27-MAS + 20R C27 dia MAS	c	253	ND	ND	ND
20S, 5α C27-MAS	d	253	ND	ND	ND
20R, 5β C28-MAS + 20S C28 dia MAS	e	253	ND	ND	ND
20R, 5α C27-MAS	f	253	ND	ND	ND
20S, 5α C28-MAS	g	253	ND	ND	ND
20R, 5β C28-MAS + 20R C28 dia MAS	h	253	ND	ND	ND
20S, 5β C29-MAS + 20S C29 dia MAS	i	253	ND	ND	ND
20S, 5α C29-MAS	J lower case	253	ND	ND	ND
20R, 5α C28-MAS	k	253	ND	ND	ND
20R, 5β C29-MAS + 20R C29 dia MAS	L lower case	253	ND	ND	ND
20R, 5α C29-MAS	m	253	ND	ND	ND

0.40712 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-8
0.40712 g



Chromatogram Key & Numerical Results: 231 m/z Triaromatic Steranes

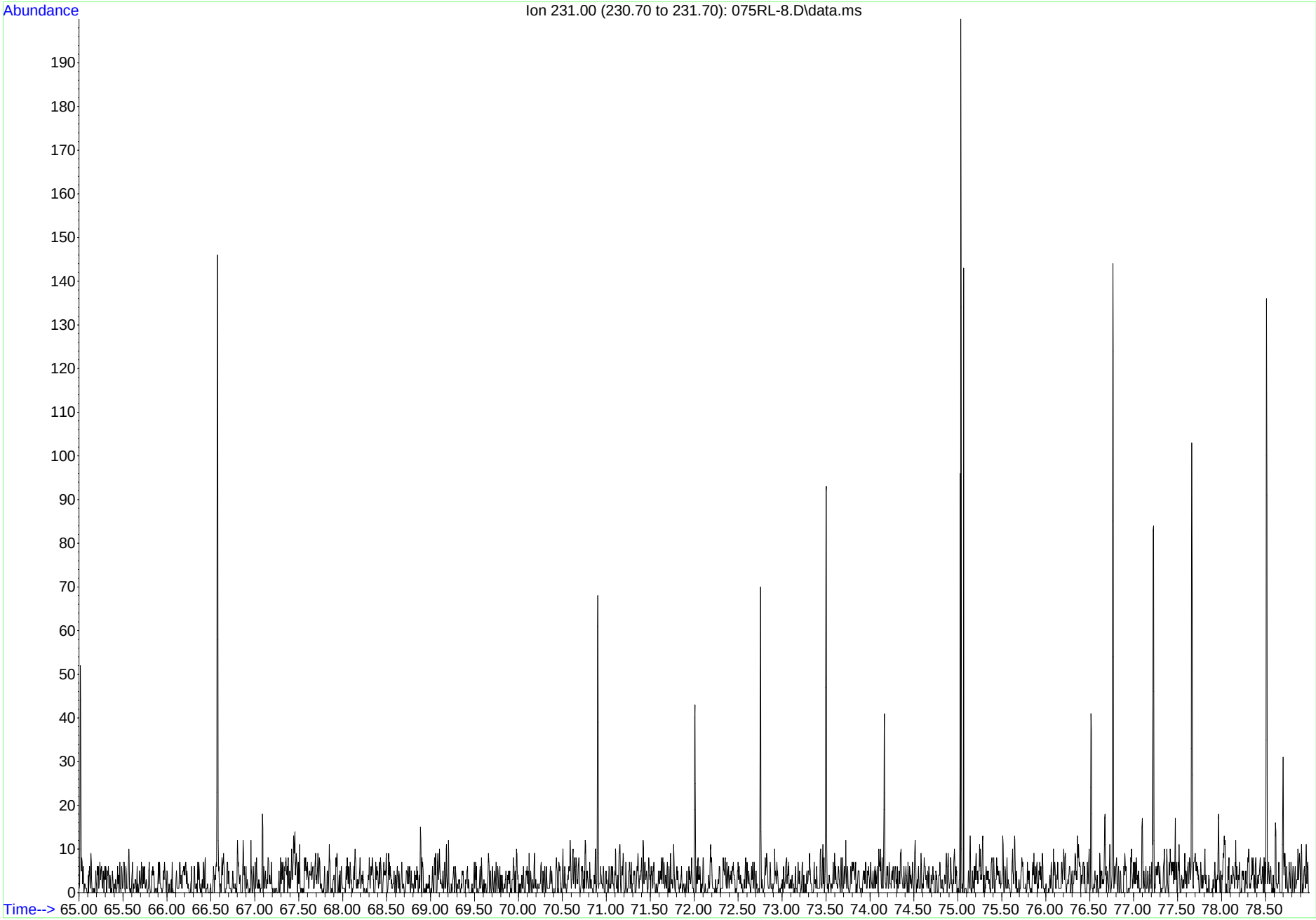
Project Manager:	Russ Shropshire	Lab ID:	075RL-8
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue NE, Suite 112 Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site 334893.TM.1.000.00.00	Client ID:	MW-21-201208
Project #:	.000	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (231 m/z)
C_{20} Triaromatic Sterane	T1	231	ND	ND	ND
C_{21} Triaromatic Sterane	T2	231	ND	ND	ND
20S C_{26} Triaromatic Sterane	T3	231	ND	ND	ND
20R C_{26} + 20S C_{27} Triaromatic Steranes	T4	231	ND	ND	ND
20S C_{28} Triaromatic Sterane	T5	231	ND	ND	ND
20R C_{27} Triaromatic Sterane	T6	231	ND	ND	ND
20R C_{28} Triaromatic Sterane	T7	231	ND	ND	ND

0.40712 g in 10mL DCM
FOREN4LA_MI_BACK

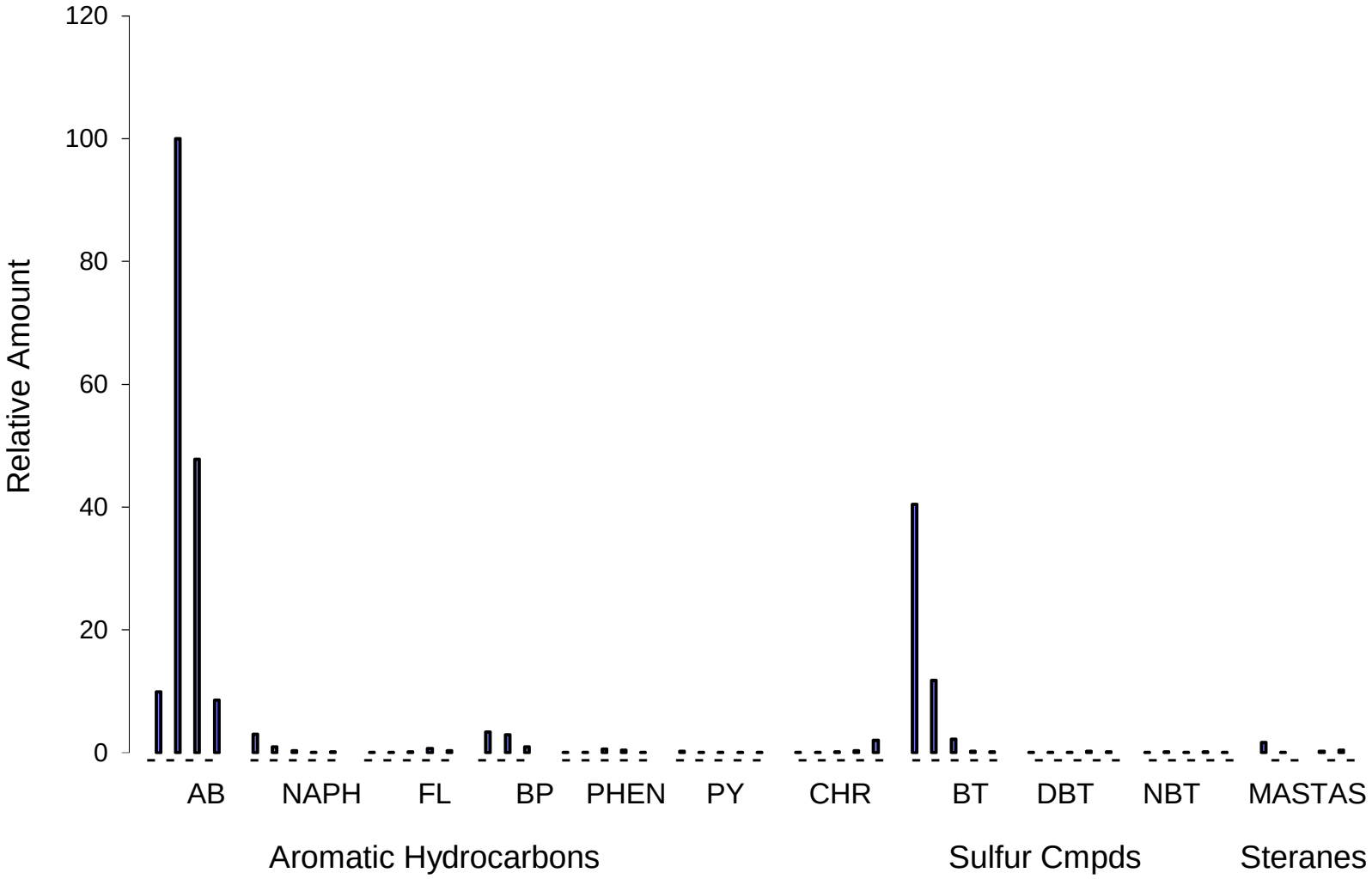
Submitted by,
Microbial Insights, Inc.

075RL-8
0.40712 g



Aromatic Hydrocarbon Distribution

075RL-8



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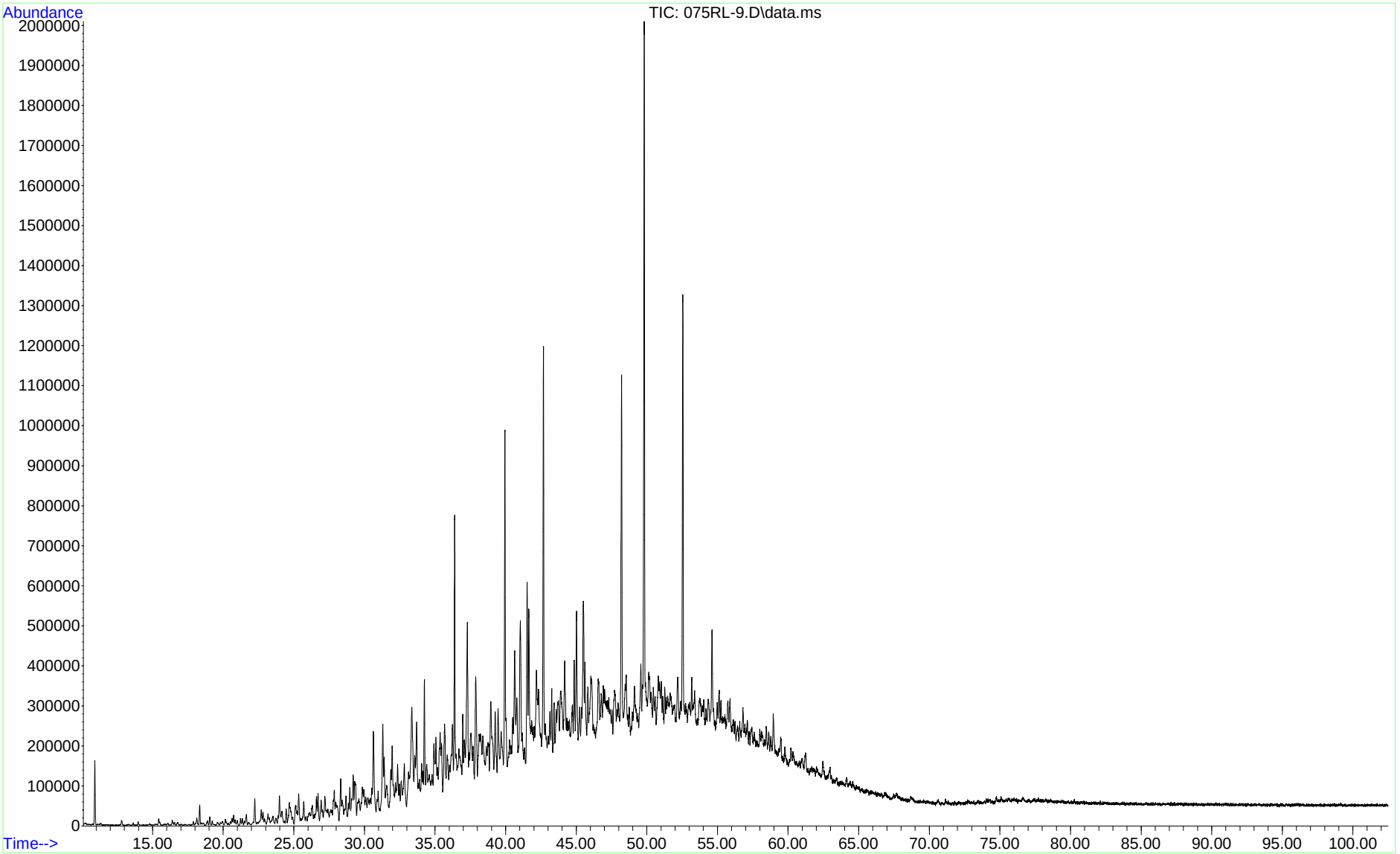
Sample Name: 075RL-9



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 85 m/z n-Paraffins

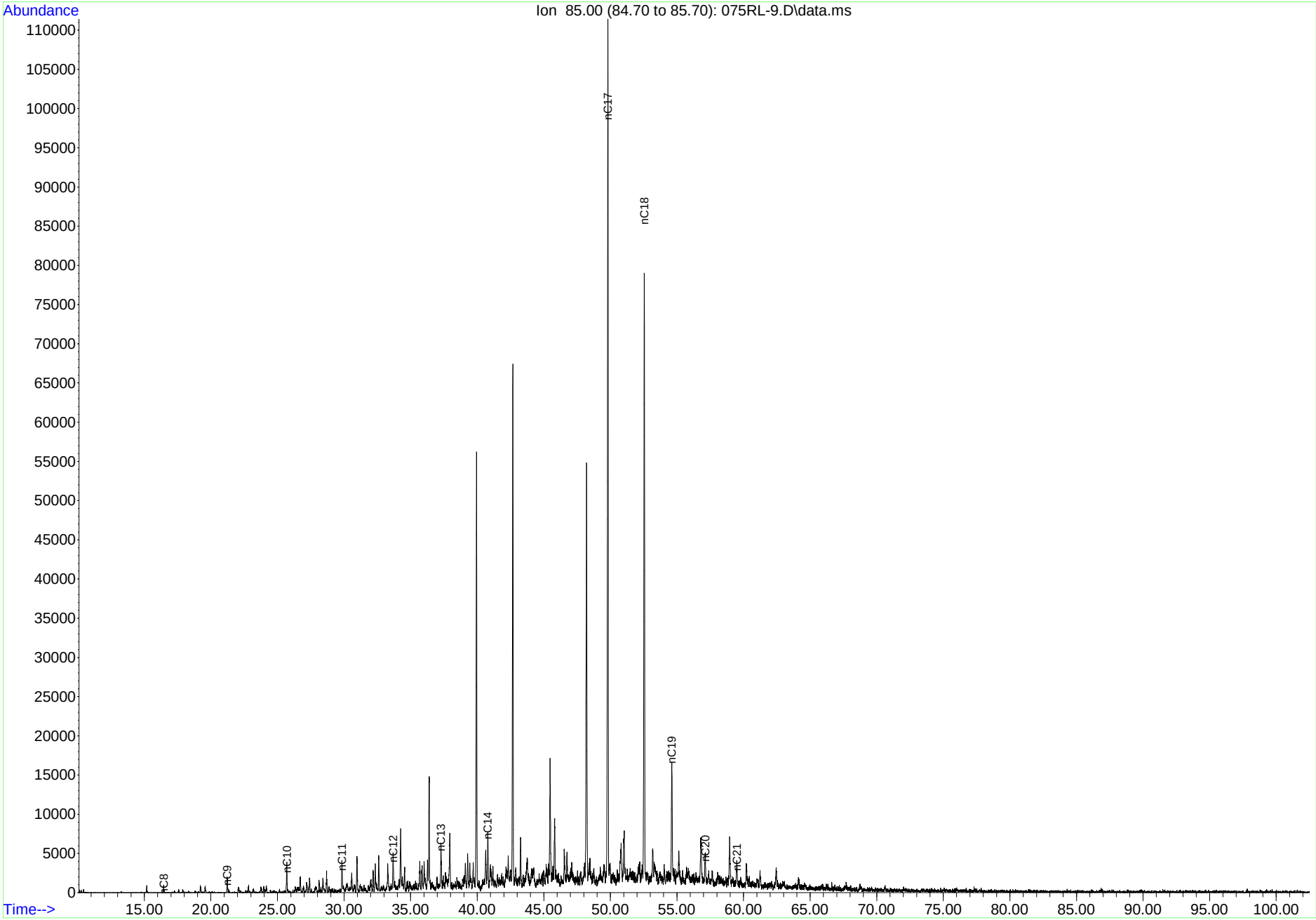
Project Manager:	Russ Shropshire	Lab ID:	075RL-9
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-27-201208
Project #:	334893.TM.1.000.00.0	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (85 m/z)
n-Octane	nC8	85	16.5	964.0	0.4%
n-Nonane	nC9	85	21.2	1995.0	0.8%
n-Decane	nC10	85	25.7	3894.0	1.6%
n-Undecane	nC11	85	29.8	3877.0	1.6%
n-Dodecane	nC12	85	33.7	4491.0	1.9%
n-Tridecane	nC13	85	37.3	5999.0	2.5%
n-Tetradecane	nC14	85	40.8	7431.0	3.1%
n-Pentadecane	nC15	85	ND	ND	ND
n-Hexadecane	nC16	85	ND	ND	ND
n-Heptadecane	nC17	85	49.8	109400.0	46.1%
n-Octadecane	nC18	85	52.5	77183.0	32.5%
n-Nonadecane	nC19	85	54.6	14900.0	6.3%
n-Eicosane	nC20	85	57.1	3914.0	1.7%
n-Henicosane	nC21	85	59.5	3108.0	1.3%
n-Docosane	nC22	85	ND	ND	ND
n-Tricosane	nC23	85	ND	ND	ND
n-Tetracosane	nC24	85	ND	ND	ND
n-Pentacosane	nC25	85	ND	ND	ND
n-Hexacosane	nC26	85	ND	ND	ND
n-Heptacosane	nC27	85	ND	ND	ND
n-Octacosane	nC28	85	ND	ND	ND
n-Nonacosane	nC29	85	ND	ND	ND
n-Triacontane	nC30	85	ND	ND	ND
n-Hentriacontane	nC31	85	ND	ND	ND
n-Dotriacontane	nC32	85	ND	ND	ND
n-Tritriacontane	nC33	85	ND	ND	ND
n-Tetratriacontane	nC34	85	ND	ND	ND
n-Pentatriacontane	nC35	85	ND	ND	ND
n-Hexatriacontane	nC36	85	ND	ND	ND
n -Heptatriacontane	nC37	85	ND	ND	ND
n -Octatriacontane	nC38	85	ND	ND	ND
n -Nonatriacontane	nC39	85	ND	ND	ND
n-Tetracontane	nC40	85	ND	ND	ND

0.40679 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-9
0.40679 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 113 m/z Isoparaffins

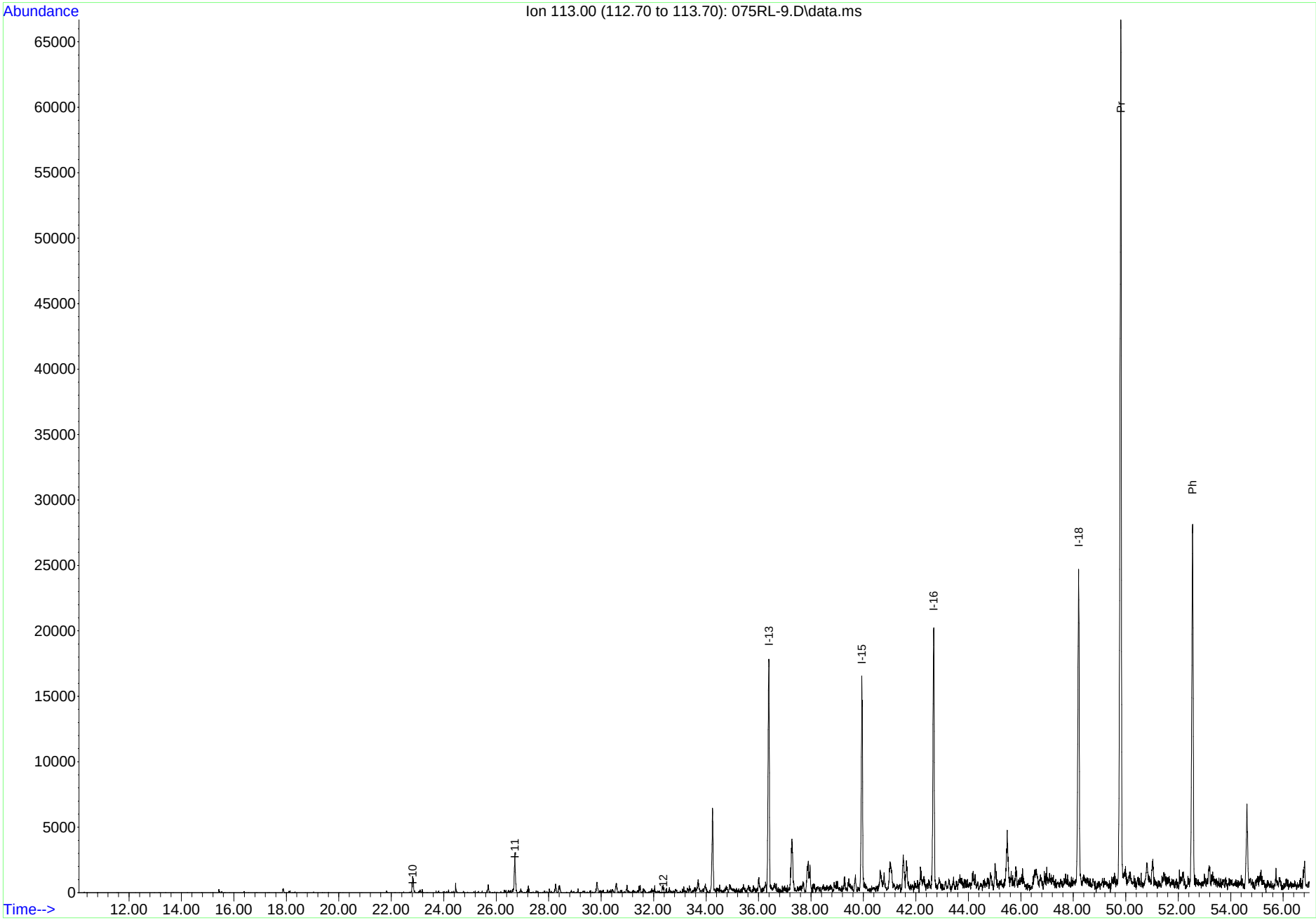
Project Manager:	Russ Shropshire	Lab ID:	075RL-9
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-27-201208
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (113 m/z)
Iso-alkane w/ 9 Carbon Atoms	I-9	113	ND	ND	ND
Iso-alkane w/ 10 Carbon Atoms	I-10	113	22.8	1251.0	0.7%
Iso-alkane w/ 11 Carbon Atoms	I-11	113	26.7	3046.0	1.7%
Iso-alkane w/ 12 Carbon Atoms	I-12	113	32.4	591.0	0.3%
Iso-alkane w/ 13 Carbon Atoms	I-13	113	36.4	17840.0	10.1%
Iso-alkane w/ 14 Carbon Atoms	I-14	113	ND	ND	ND
Farnesane (Isoprenoid - C15)	I-15	113	39.9	16441.0	9.3%
Iso-alkane w/ 16 Carbon Atoms	I-16	113	42.7	19538.0	11.1%
Iso-alkane w/ 18 Carbon Atoms	I-18	113	48.2	23912.0	13.6%
Pristane (Isoprenoid - C19)	Pr	113	49.8	66022.0	37.5%
Phytane (Isoprenoid - C20)	Ph	113	52.5	27527.0	15.6%

0.40679 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-9
0.40679 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 83 m/z Alkylcyclohexanes

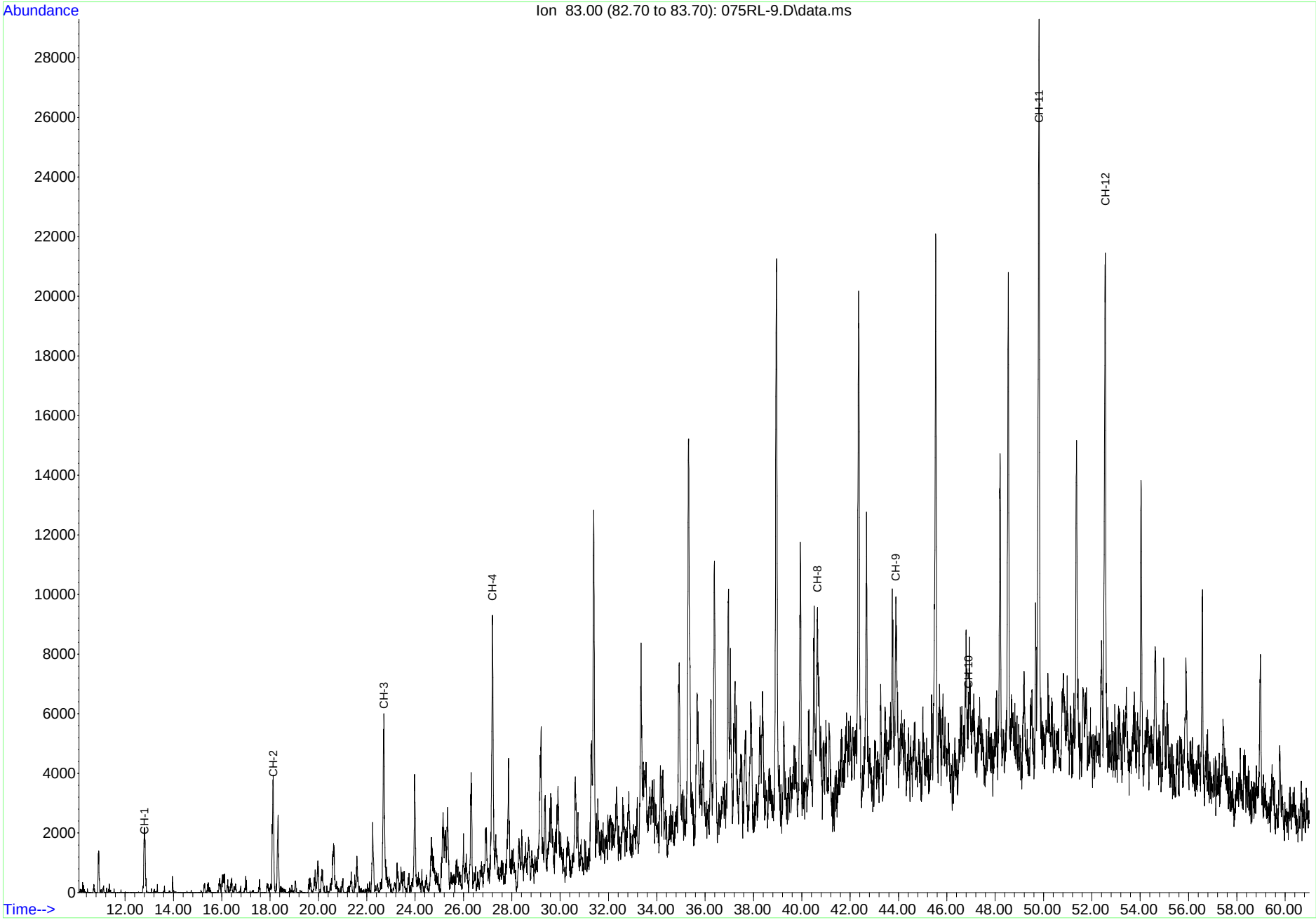
Project Manager:	Russ Shropshire	Lab ID:	075RL-9
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-27-201208
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (83 m/z)
Methylcyclohexane	CH-1	83	12.8	2172.0	2.8%
Ethylcyclohexane	CH-2	83	18.1	3936.0	5.0%
Propylcyclohexane	CH-3	83	22.7	5810.0	7.4%
Butylcyclohexane	CH-4	83	27.2	8704.0	11.1%
Pentylcyclohexane	CH-5	83	ND	ND	ND
Hexylcyclohexane	CH-6	83	ND	ND	ND
Heptylcyclohexane	CH-7	83	ND	ND	ND
Octylcyclohexane	CH-8	83	40.6	7100.0	9.1%
Nonylcyclohexane	CH-9	83	43.9	6427.0	8.2%
Decylcyclohexane	CH-10	83	46.9	1586.0	2.0%
Undecylcyclohexane	CH-11	83	49.8	24472.0	31.2%
Dodecylcyclohexane	CH-12	83	52.6	18157.0	23.2%
Tridecylcyclohexane	CH-13	83	ND	ND	ND
Tetradecylcyclohexane	CH-14	83	ND	ND	ND

0.40679 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-9
0.40679 g



Chromatogram Key & Numerical Results: 134 m/z C3-C4 Monoaromatics

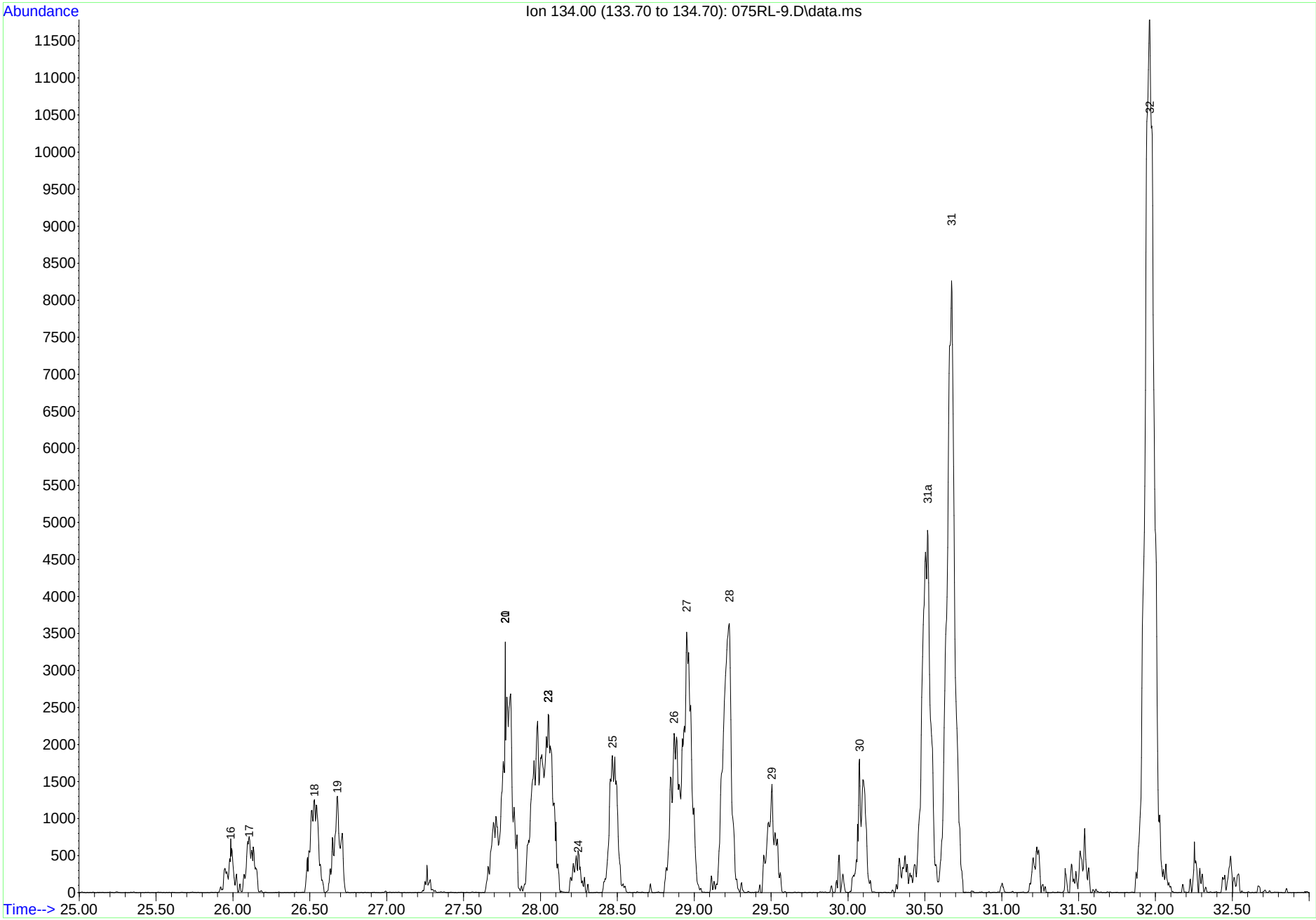
Project Manager:	Russ Shropshire	Lab ID:	075RL-9
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-27-201208
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (134 m/z)
Sec-Butylbenzene	16	134	26.0	726.0	1.4%
1-Methyl-3-Isopropylbenzene	17	134	26.1	757.0	1.4%
1-Methyl-4-Isopropylbenzene	18	134	26.5	1258.0	2.3%
1-Methyl-2-Isopropylbenzene	19	134	26.7	1302.0	2.4%
1,3-Diethylbenzene	20	134	27.8	3383.0	6.3%
1-Methyl-3-Propylbenzene	21	134	27.8	1761.0	3.3%
Butylbenzene	22	134	28.1	2409.0	4.5%
1,3-Diethyl-5-Ethylbenzene	23	134	28.1	2409.0	4.5%
1,2-Diethylbenzene	24	134	28.2	568.0	1.1%
1-Methyl-2-Propylbenzene	25	134	28.5	1852.0	3.4%
1,4-Dimethyl-2-Ethylbenzene	26	134	28.9	2150.0	4.0%
1,3-Dimethyl-4-Ethylbenzene	27	134	29.0	3483.0	6.5%
1,2-Dimethyl-4-Ethylbenzene	28	134	29.2	3632.0	6.8%
1,3-Dimethyl-2-Ethylbenzene	29	134	29.5	1462.0	2.7%
1,2-Dimethyl-3-Ethylbenzene	30	134	30.1	1804.0	3.4%
1,2,4,5-Tetramethylbenzene	31a	134	30.5	4873.0	9.1%
1,2,3,5-Tetramethylbenzene	31	134	30.7	8262.0	15.4%
1,2,3,4-Tetramethylbenzene	32	134	32.0	11591.0	21.6%

0.40679 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-9
0.40679 g



Chromatogram Key & Numerical Results: 123 m/z Bicyclanes

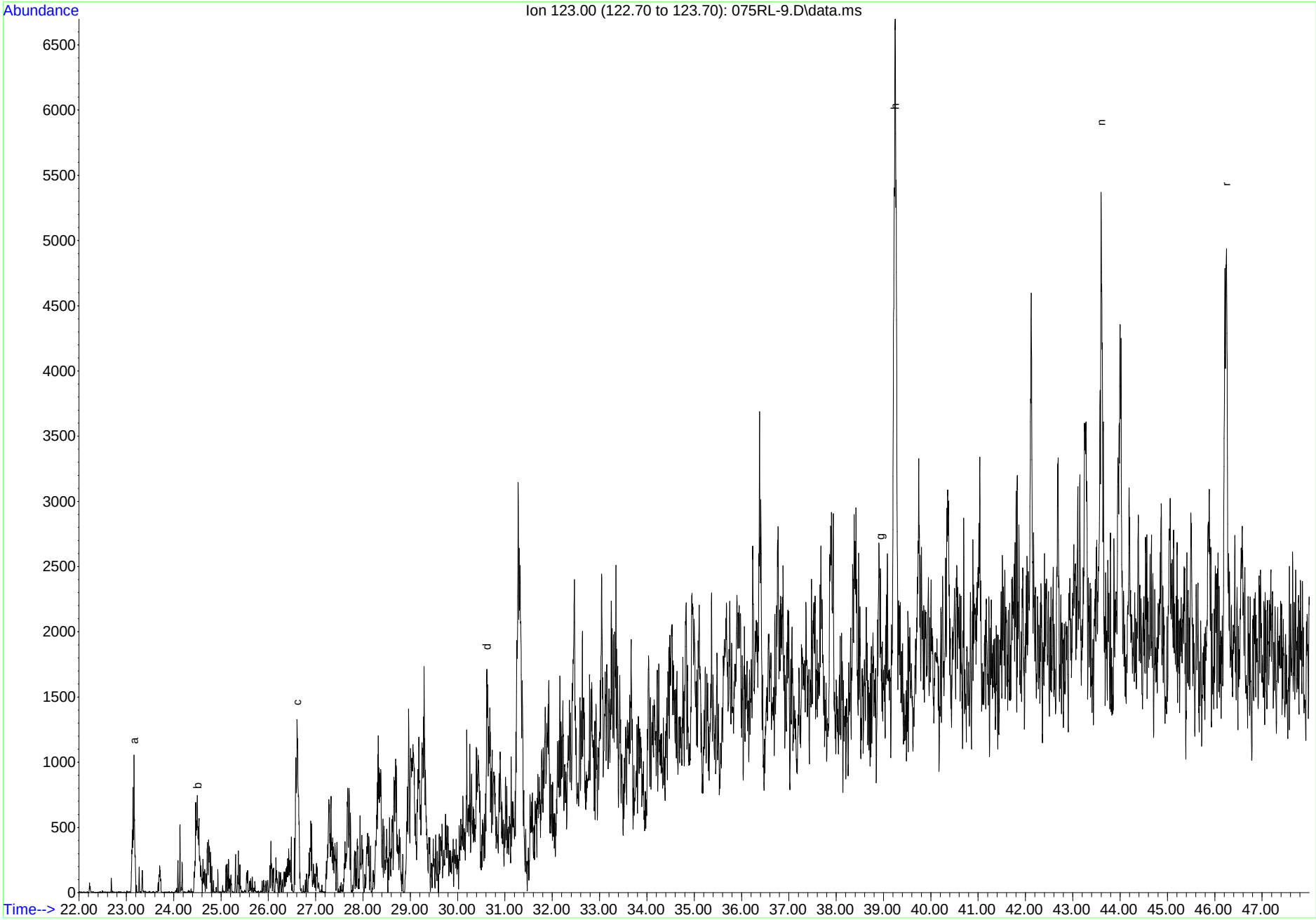
Project Manager:	Russ Shropshire	Lab ID:	075RL-9
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-27-201208
Project #:	334893.TM.1.000.00.0	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (123 m/z)
2,2,3-Trimethylbicycloheptane	a	123	23.2	1056.0	5.7%
C_{10} bicycloalkane	b	123	24.5	746.0	4.1%
3,3,7-Trimethylbicycloheptane	c	123	26.6	1323.0	7.2%
C_{11} Decalin	d	123	30.6	1351.0	7.3%
Nordrimane	f	123	ND	ND	ND
Nordrimane	g	123	38.9	1303.0	7.1%
Rearranged drimane	h	123	39.2	5227.0	28.4%
Rearranged drimane	j	123	ND	ND	ND
Isomer of Eudesmane	k	123	ND	ND	ND
4β (H) Eudesmane	l	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	m	123	ND	ND	ND
8β (H) Drimane	n	123	43.6	3942.0	21.4%
C_{15} Bicyclic Sesquiterpane	o	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	p	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	q	123	ND	ND	ND
8β (H) Homodrimane	r	123	46.2	3434.0	18.7%

0.40679 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-9
0.40679 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 191 m/z Terpanes

Project Manager:	Russ Shropshire	Lab ID:	075RL-9
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-27-201208
Project #:	334893.TM.1.000.00.	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
C_{21}-Tricyclic Terpane	1	191	57.8	3186.0	8.3%
C_{22}-Tricyclic Terpane	2	191	58.0	2653.0	6.9%
C_{23}-Tricyclic Terpane	3	191	58.5	31295.0	81.1%
C_{24}-Tricyclic Terpane	4	191	59.5	1458.0	3.8%
C_{25}-Tricyclic Terpane	5(S+R)	191	ND	ND	ND
C_{24}-Tetracyclic Terpane	Z4	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6a*	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6b	191	ND	ND	ND
C_{28}-Tricyclic Terpane #1	A	191	ND	ND	ND
C_{28}-Tricyclic Terpane #2	B	191	ND	ND	ND
C_{29}-Tricyclic Terpane #1	C	191	ND	ND	ND
C_{29}-Tricyclic Terpane #2	D	191	ND	ND	ND
18 α-22,29,30-Trisnorneohopane (Ts)	E	191	ND	ND	ND
17 α-22,29,30-Trisnorhopane (Tm)	F	191	ND	ND	ND
C_{30}-Tricyclic Terpane #1	10a*	191	ND	ND	ND
C_{30}-Tricyclic Terpane #2	10b	191	ND	ND	ND
17 α-28,30 Bisnorhopane	I	191	ND	ND	ND
C_{31}-Tricyclic Terpane #1	11a*	191	ND	ND	ND
17α-25-Norhopane	J	191	ND	ND	ND
C_{31}-Tricyclic Terpane #2	11b	191	ND	ND	ND
17 α,21β-30-Norhopane	K	191	ND	ND	ND
18α-30-Norneohopane	C29Ts	191	ND	ND	ND
17α-Diahopane	C30*	191	ND	ND	ND
17β-21α-30-Normoretane	L	191	ND	ND	ND
18α+18β-Oleanane	Ma+Mb	191	ND	ND	ND
17α-21β-Hopane	N	191	ND	ND	ND
17β-21α-Moretane	O	191	ND	ND	ND
22S-17α,21β-30-Homohopane	P	191	ND	ND	ND
22R-17α,21β-30-Homohopane	Q	191	ND	ND	ND
Gammacerane	R	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	T	191	ND	ND	ND
22R-17α,21β-30-Bishomohopane	U	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	WS	191	ND	ND	ND
22R-17α,21β-Trishomohopane	WR	191	ND	ND	ND
22S-17α,21β-Tetrahomohopane	XS	191	ND	ND	ND

SAMPLE RESULTS

Chromatogram Key & Numerical Results: 191 m/z Terpanes

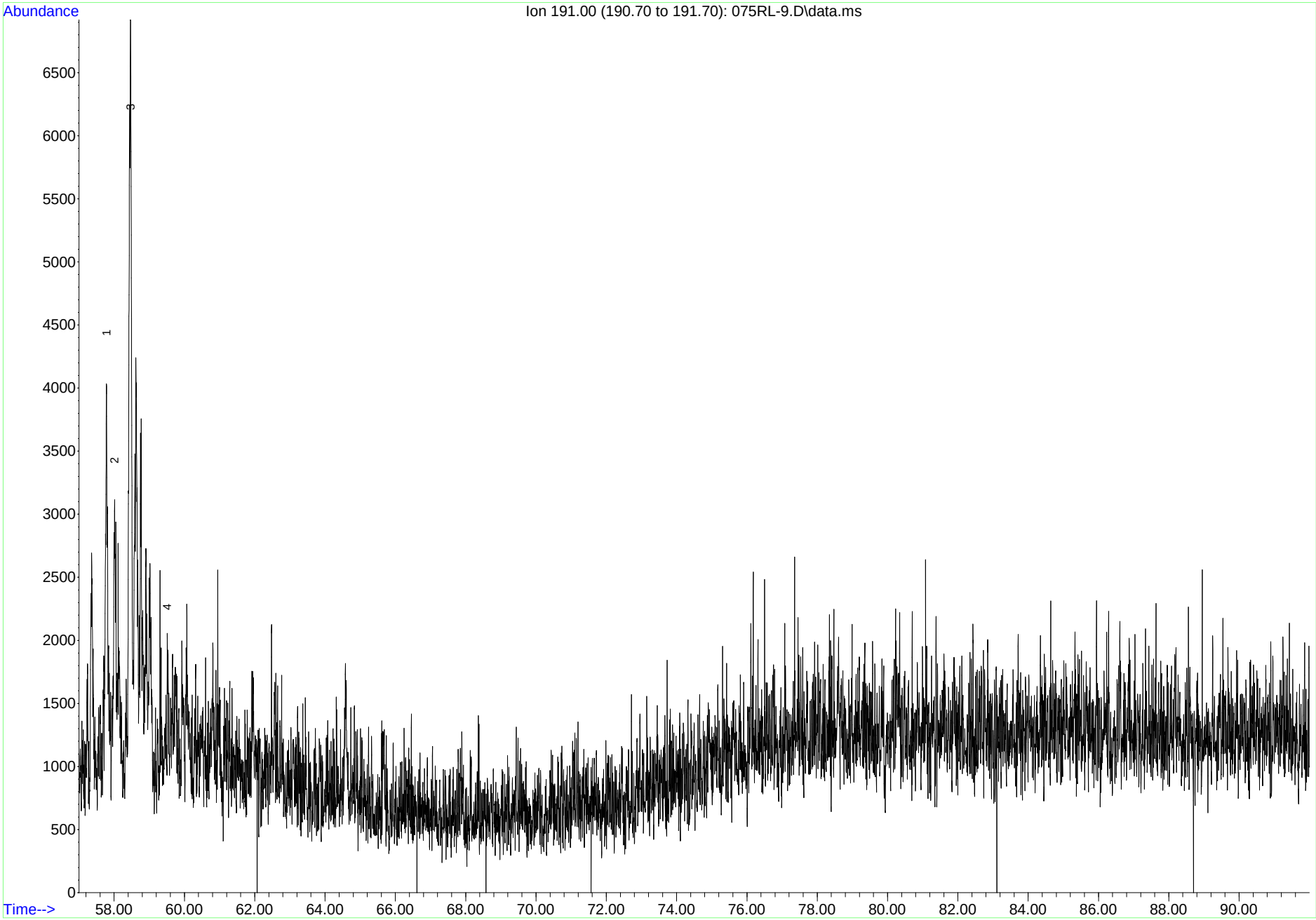
Project Manager:	Russ Shropshire	Lab ID:	075RL-9
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-27-201208
Project #:	334893.TM.1.000.00.	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
22R-17α,21β-Tetrahomohopane	XR	191	ND	ND	ND
22S-17α,21β-Pentahomohopane	YS	191	ND	ND	ND
22R-17α,21β-Pentahomohopane	YR	191	ND	ND	ND

0.40679 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-9
0.40679 g



Chromatogram Key & Numerical Results: 217 m/z Steranes

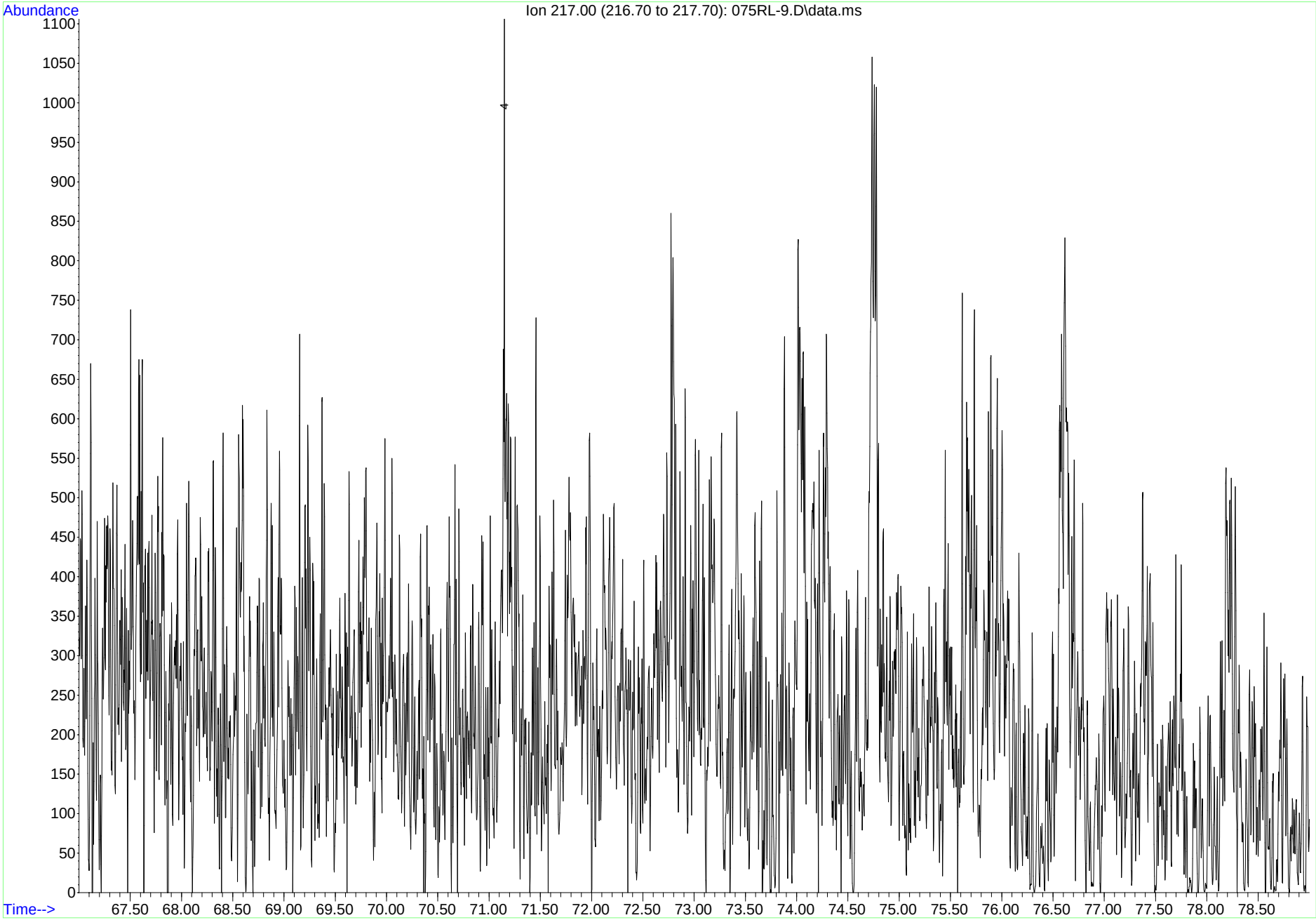
Project Manager:	Russ Shropshire	Lab ID:	075RL-9
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-27-201208
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (217 m/z)
13β, 17α-Diacholestane (20S)	1	217	ND	ND	ND
13β, 17α-Diacholestane (20R)	2	217	ND	ND	ND
13α, 17β-Diacholestane (20S)	3	217	ND	ND	ND
13α, 17β-Diacholestane (20R)	4	217	71.1	1039.0	100.0%
24-methyl-13β,17α-Diacholestane (20S)	5	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	6	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20S)	7D	217	ND	ND	ND
14α,17α-Cholestane (20S)	7	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20S)+ 14β,17β-Cholestane (20R)	8+8D	217	ND	ND	ND
14β,17β-Cholestane (20S)	9	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20R)	9D	217	ND	ND	ND
14α,17α-Cholestane (20R)	10	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20R)	11	217	ND	ND	ND
24-ethyl-13α, 17β-Diacholestane (20S)	12	217	ND	ND	ND
24-ethyl-13α, 17α-Diacholestane (20S)	13	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20R)	14	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20S)	15	217	ND	ND	ND
24-methyl-14α, 17α-Cholestane (20R)	16	217	ND	ND	ND
24-ethyl-14α-Cholestane (20S)	17	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20R)	18	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20S)	19	217	ND	ND	ND
24-ethyl-14α, 17α-Cholestane (20R)	20	217	ND	ND	ND

0.40679 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-9
0.40679 g



Chromatogram Key & Numerical Results: 253 m/z Monoaromatic Steranes

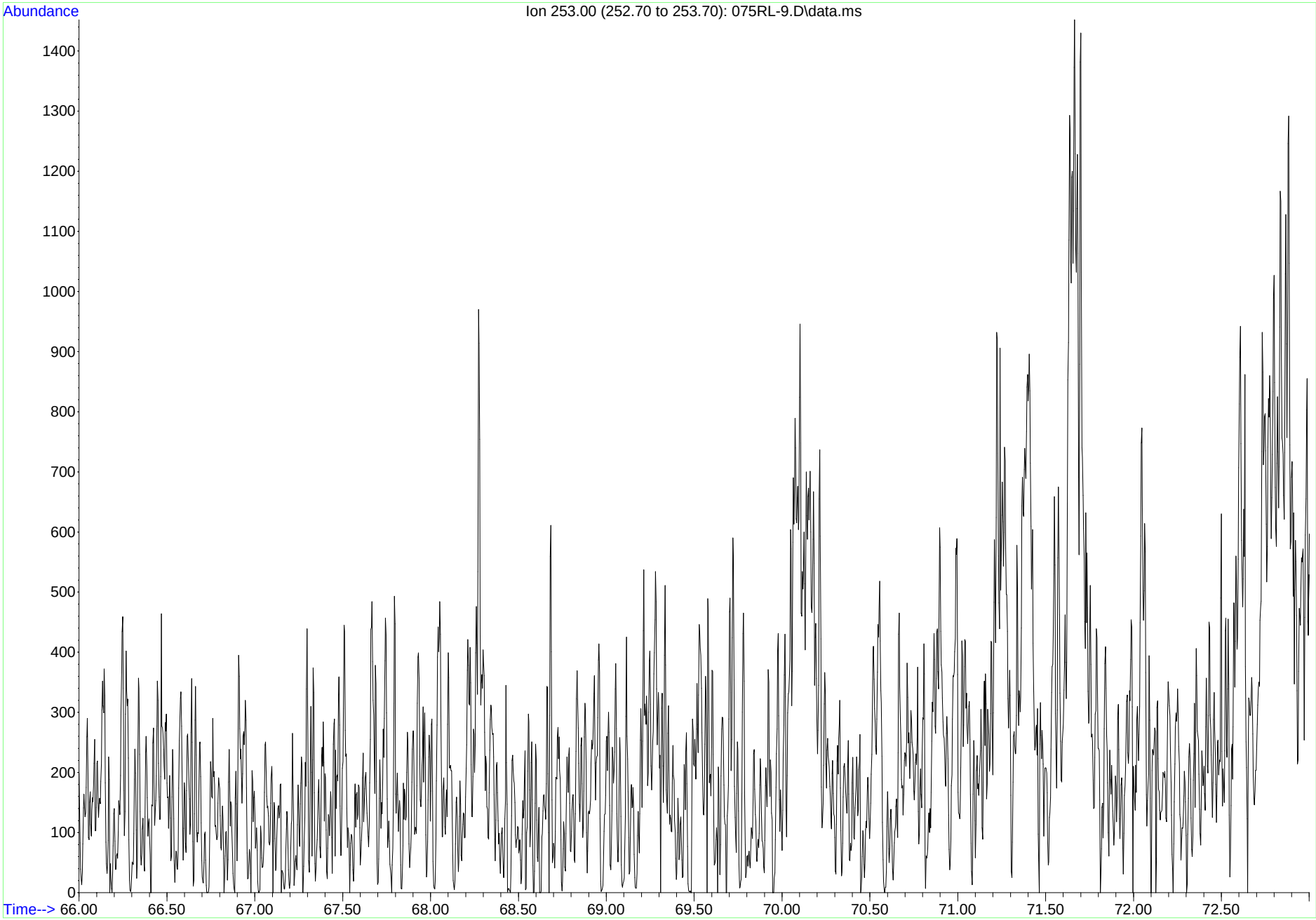
Project Manager:	Russ Shropshire	Lab ID:	075RL-9
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue NE,	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-27-201208
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (253 m/z)
20S, 5β C27-MAS	a	253	ND	ND	ND
20S, dia C27-MAS	b	253	ND	ND	ND
20R, 5β C27-MAS + 20R C27 dia MAS	c	253	ND	ND	ND
20S, 5α C27-MAS	d	253	ND	ND	ND
20R, 5β C28-MAS + 20S C28 dia MAS	e	253	ND	ND	ND
20R, 5α C27-MAS	f	253	ND	ND	ND
20S, 5α C28-MAS	g	253	ND	ND	ND
20R, 5β C28-MAS + 20R C28 dia MAS	h	253	ND	ND	ND
20S, 5β C29-MAS + 20S C29 dia MAS	i	253	ND	ND	ND
20S, 5α C29-MAS	J lower case	253	ND	ND	ND
20R, 5α C28-MAS	k	253	ND	ND	ND
20R, 5β C29-MAS + 20R C29 dia MAS	L lower case	253	ND	ND	ND
20R, 5α C29-MAS	m	253	ND	ND	ND

0.40679 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-9
0.40679 g



Chromatogram Key & Numerical Results: 231 m/z Triaromatic Steranes

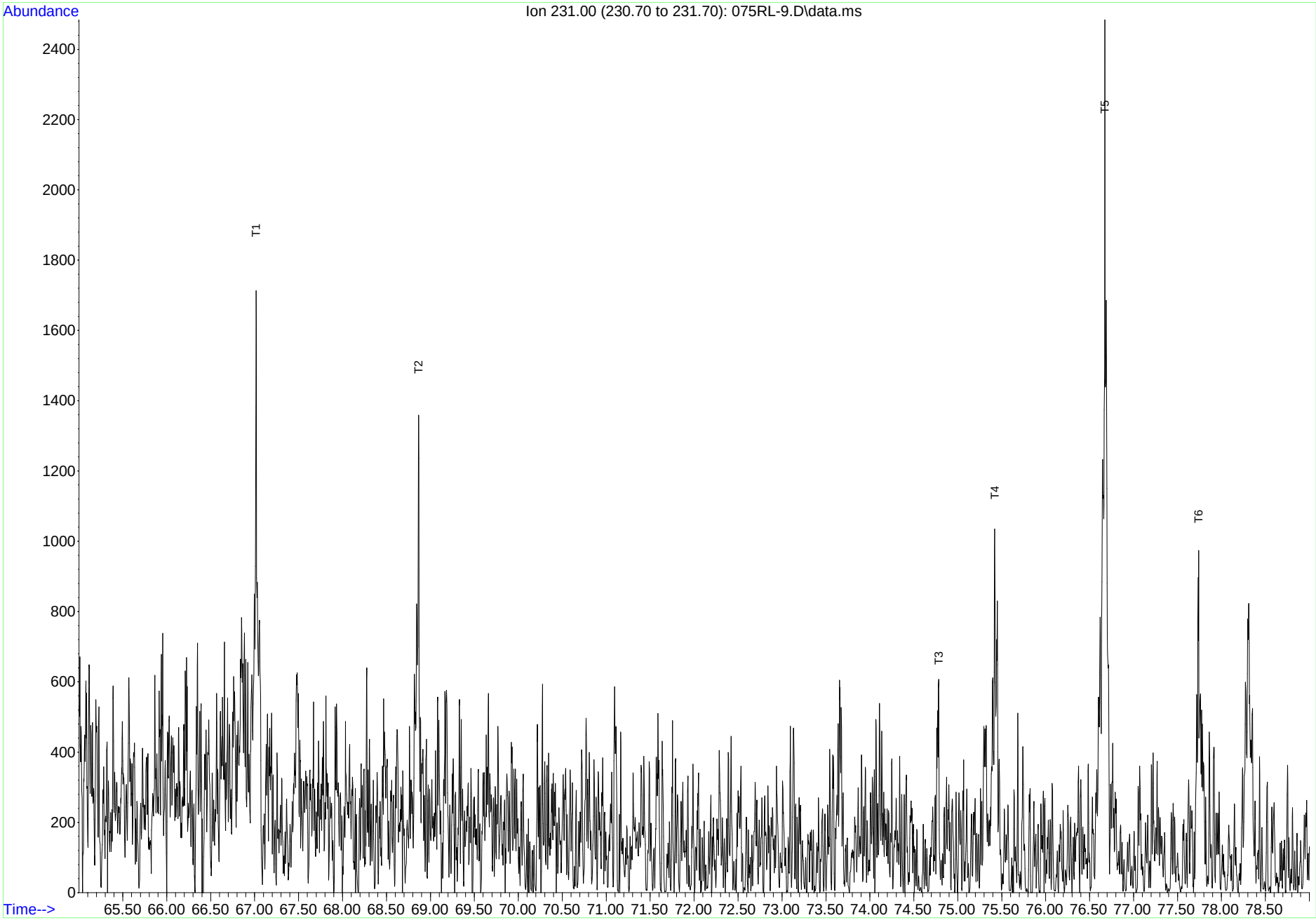
Project Manager:	Russ Shropshire	Lab ID:	075RL-9
Client:	Leidos, Inc.	Collected:	12/8/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	MW-27-201208
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (231 m/z)
C_{20} Triaromatic Sterane	T1	231	67.0	1665.0	18.8%
C_{21} Triaromatic Sterane	T2	231	68.9	1311.0	14.8%
20S C_{26} Triaromatic Sterane	T3	231	74.8	604.0	6.8%
20R C_{26} + 20S C_{27} Triaromatic Steranes	T4	231	75.4	1032.0	11.6%
20S C_{28} Triaromatic Sterane	T5	231	76.7	2467.0	27.8%
20R C_{27} Triaromatic Sterane	T6	231	77.7	974.0	11.0%
20R C_{28} Triaromatic Sterane	T7	231	78.3	823.0	9.3%

0.40679 g in 10mL DCM
FOREN4LA_MI_BACK

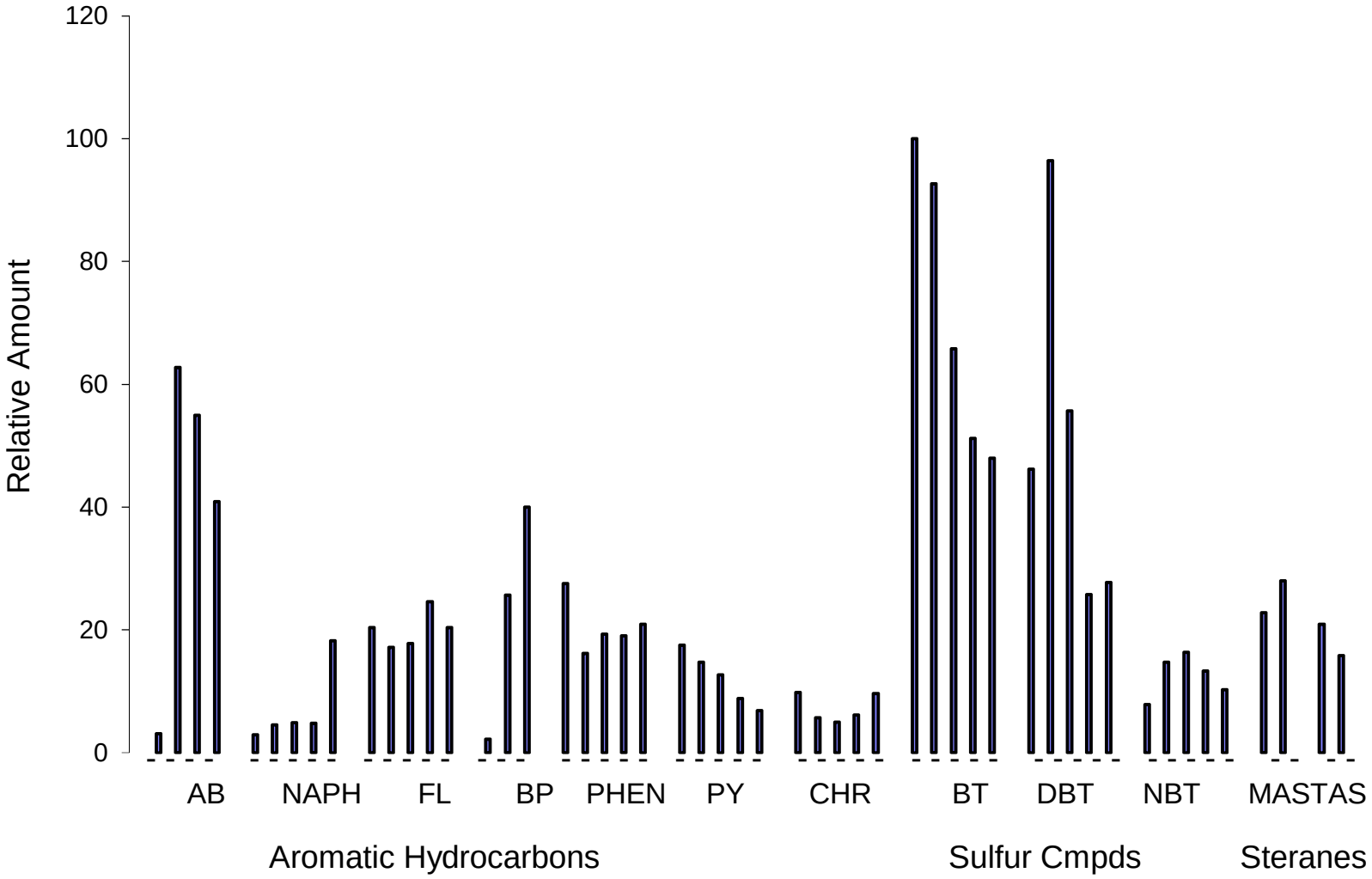
Submitted by,
Microbial Insights, Inc.

075RL-9
0.40679 g



Aromatic Hydrocarbon Distribution

075RL-9



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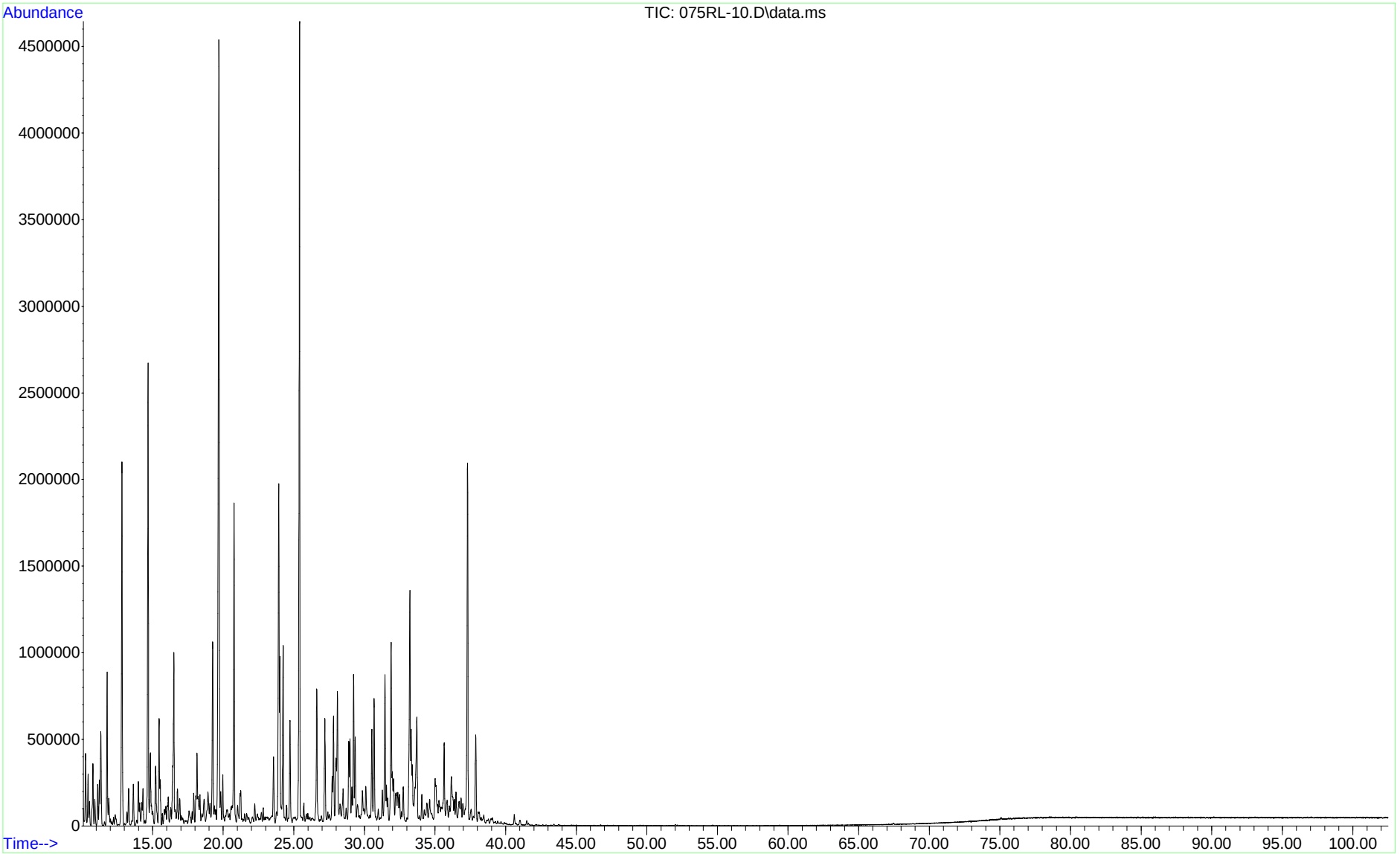
Sample Name: 075RL-10



Chromatogram Key & Numerical Results: 85 m/z n-Paraffins

Project Manager: Russ Shropshire
Client: Leidos, Inc.
Address: 18939 120th Avenue NE, Bothell, WA 98011
Project: Chelan Chevron Site
Project #: 334893.TM.1.000.00.0
Collected by:

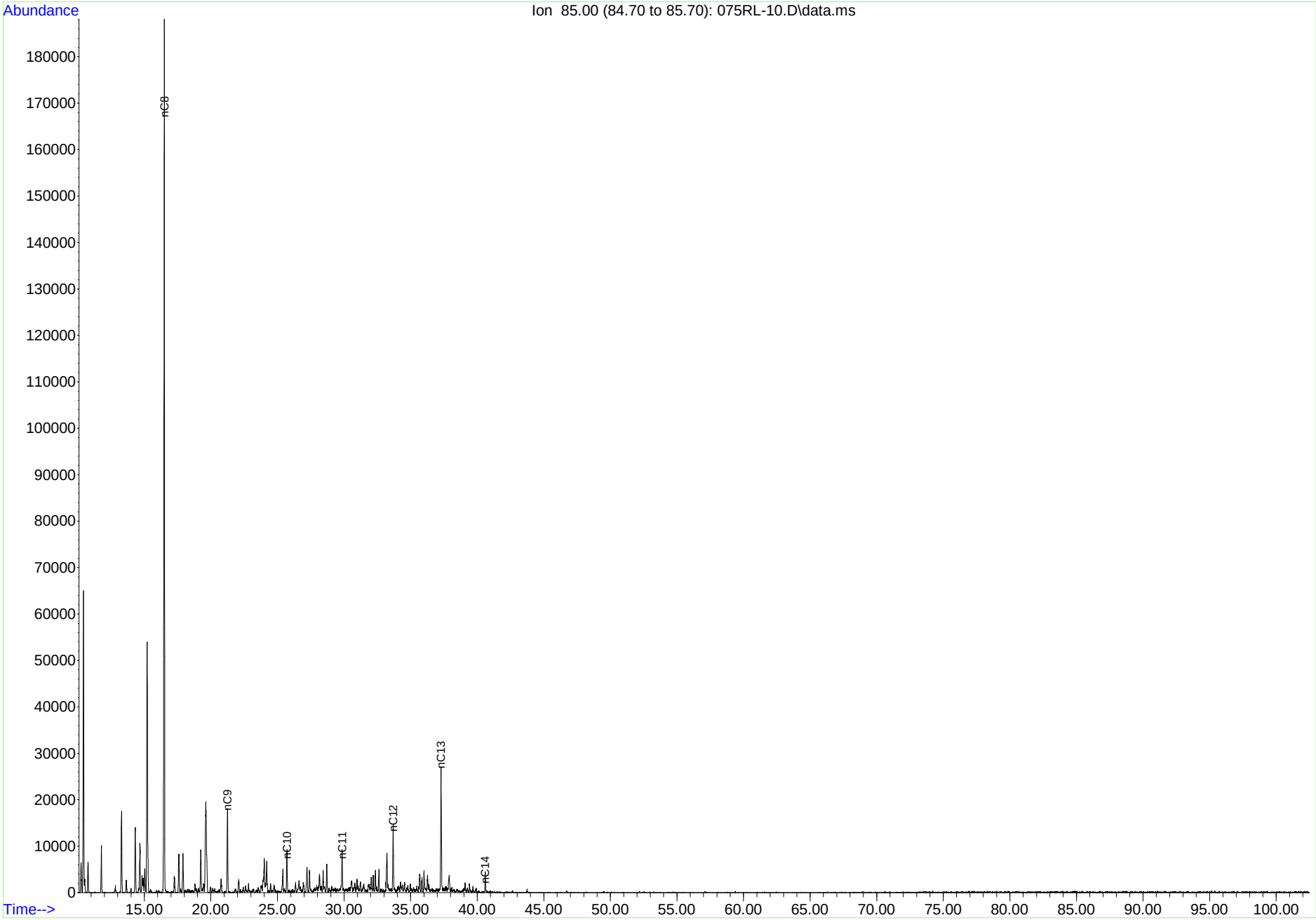
Lab ID: 075RL-10
Collected: 11/7/2020
Received: 12/11/2020
Matrix: Product
Client ID: 22IE Woodin UST-1
Analyzed: 12/16/2020
Q Method: FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (85 m/z)
n-Octane	nC8	85	16.5	187599.0	69.8%
n-Nonane	nC9	85	21.2	18035.0	6.7%
n-Decane	nC10	85	25.7	9283.0	3.5%
n-Undecane	nC11	85	29.9	8617.0	3.2%
n-Dodecane	nC12	85	33.7	14137.0	5.3%
n-Tridecane	nC13	85	37.3	26522.0	9.9%
n-Tetradecane	nC14	85	40.6	4499.0	1.7%
n-Pentadecane	nC15	85	ND	ND	ND
n-Hexadecane	nC16	85	ND	ND	ND
n-Heptadecane	nC17	85	ND	ND	ND
n-Octadecane	nC18	85	ND	ND	ND
n-Nonadecane	nC19	85	ND	ND	ND
n-Eicosane	nC20	85	ND	ND	ND
n-Henicosane	nC21	85	ND	ND	ND
n-Docosane	nC22	85	ND	ND	ND
n-Tricosane	nC23	85	ND	ND	ND
n-Tetracosane	nC24	85	ND	ND	ND
n-Pentacosane	nC25	85	ND	ND	ND
n-Hexacosane	nC26	85	ND	ND	ND
n-Heptacosane	nC27	85	ND	ND	ND
n-Octacosane	nC28	85	ND	ND	ND
n-Nonacosane	nC29	85	ND	ND	ND
n-Triacontane	nC30	85	ND	ND	ND
n-Hentriacontane	nC31	85	ND	ND	ND
n-Dotriacontane	nC32	85	ND	ND	ND
n-Tritriacontane	nC33	85	ND	ND	ND
n-Tetratriacontane	nC34	85	ND	ND	ND
n-Pentatriacontane	nC35	85	ND	ND	ND
n-Hexatriacontane	nC36	85	ND	ND	ND
n -Heptatriacontane	nC37	85	ND	ND	ND
n -Octatriacontane	nC38	85	ND	ND	ND
n -Nonatriacontane	nC39	85	ND	ND	ND
n-Tetracontane	nC40	85	ND	ND	ND

0.40016 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-10
0.40016 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 113 m/z Isoparaffins

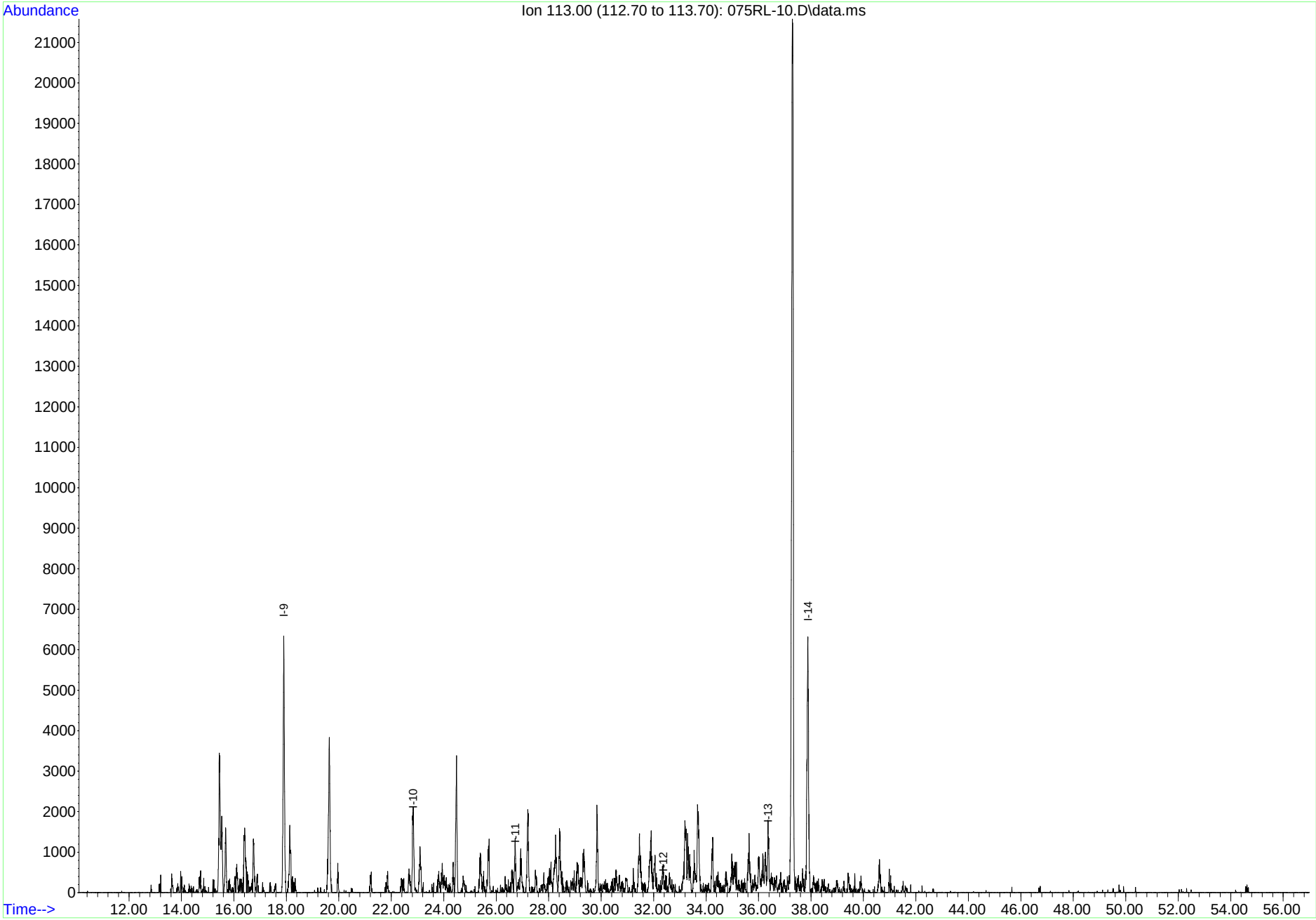
Project Manager:	Russ Shropshire	Lab ID:	075RL-10
Client:	Leidos, Inc.	Collected:	11/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	22IE Woodin UST-1
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (113 m/z)
Iso-alkane w/ 9 Carbon Atoms	I-9	113	17.9	6340.0	34.2%
Iso-alkane w/ 10 Carbon Atoms	I-10	113	22.8	2111.0	11.4%
Iso-alkane w/ 11 Carbon Atoms	I-11	113	26.7	1342.0	7.2%
Iso-alkane w/ 12 Carbon Atoms	I-12	113	32.4	689.0	3.7%
Iso-alkane w/ 13 Carbon Atoms	I-13	113	36.4	1720.0	9.3%
Iso-alkane w/ 14 Carbon Atoms	I-14	113	37.9	6315.0	34.1%
Farnesane (Isoprenoid - C15)	I-15	113	ND	ND	ND
Iso-alkane w/ 16 Carbon Atoms	I-16	113	ND	ND	ND
Iso-alkane w/ 18 Carbon Atoms	I-18	113	ND	ND	ND
Pristane (Isoprenoid - C19)	Pr	113	ND	ND	ND
Phytane (Isoprenoid - C20)	Ph	113	ND	ND	ND

0.40016 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-10
0.40016 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 83 m/z Alkylcyclohexanes

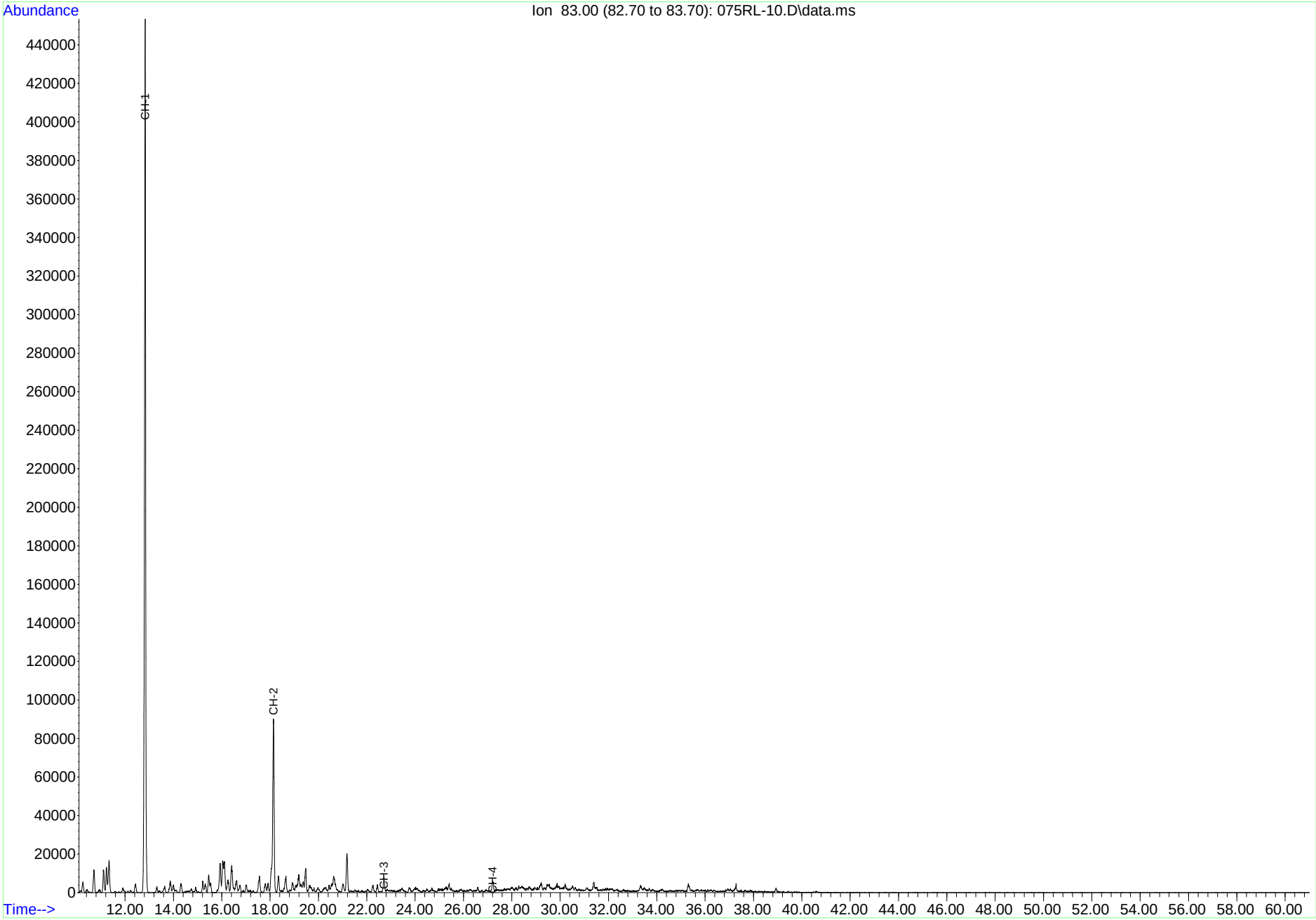
Project Manager:	Russ Shropshire	Lab ID:	075RL-10
Client:	Leidos, Inc.	Collected:	11/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	22IE Woodin UST-1
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (83 m/z)
Methylcyclohexane	CH-1	83	12.8	453375.0	81.5%
Ethylcyclohexane	CH-2	83	18.1	90066.0	16.2%
Propylcyclohexane	CH-3	83	22.7	7748.0	1.4%
Butylcyclohexane	CH-4	83	27.2	5201.0	0.9%
Pentylcyclohexane	CH-5	83	ND	ND	ND
Hexylcyclohexane	CH-6	83	ND	ND	ND
Heptylcyclohexane	CH-7	83	ND	ND	ND
Octylcyclohexane	CH-8	83	ND	ND	ND
Nonylcyclohexane	CH-9	83	ND	ND	ND
Decylcyclohexane	CH-10	83	ND	ND	ND
Undecylcyclohexane	CH-11	83	ND	ND	ND
Dodecylcyclohexane	CH-12	83	ND	ND	ND
Tridecylcyclohexane	CH-13	83	ND	ND	ND
Tetradecylcyclohexane	CH-14	83	ND	ND	ND

0.40016 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-10
0.40016 g



Chromatogram Key & Numerical Results: 134 m/z C3-C4 Monoaromatics

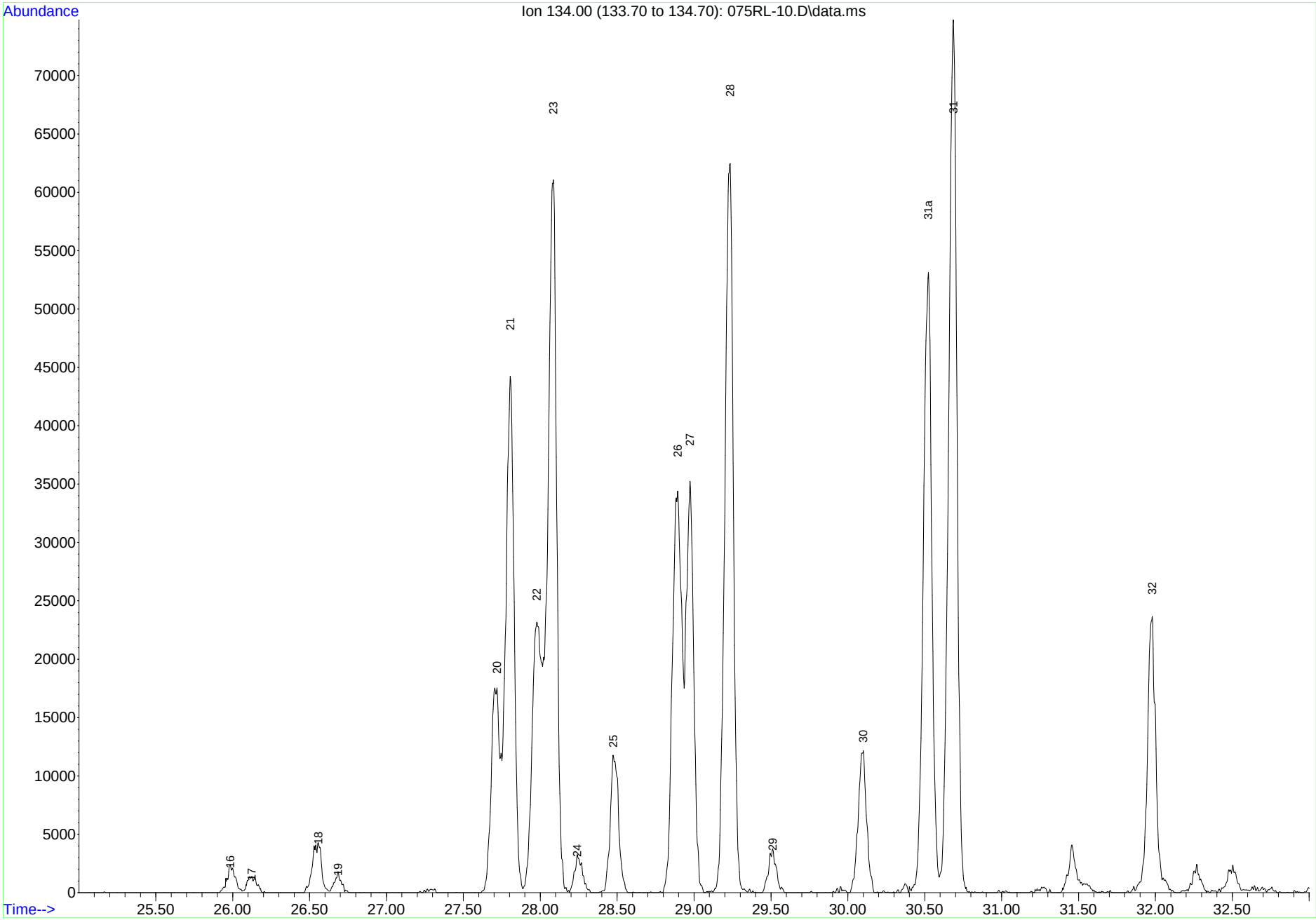
Project Manager:	Russ Shropshire	Lab ID:	075RL-10
Client:	Leidos, Inc.	Collected:	11/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	22IE Woodin UST-1
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (134 m/z)
Sec-Butylbenzene	16	134	26.0	2400.0	0.5%
1-Methyl-3-Isopropylbenzene	17	134	26.1	1411.0	0.3%
1-Methyl-4-Isopropylbenzene	18	134	26.6	4283.0	0.9%
1-Methyl-2-Isopropylbenzene	19	134	26.7	1806.0	0.4%
1,3-Diethylbenzene	20	134	27.7	17459.0	3.7%
1-Methyl-3-Propylbenzene	21	134	27.8	43917.0	9.4%
Butylbenzene	22	134	28.0	22837.0	4.9%
1,3-Diethyl-5-Ethylbenzene	23	134	28.1	60720.0	12.9%
1,2-Diethylbenzene	24	134	28.2	3277.0	0.7%
1-Methyl-2-Propylbenzene	25	134	28.5	11788.0	2.5%
1,4-Dimethyl-2-Ethylbenzene	26	134	28.9	34403.0	7.3%
1,3-Dimethyl-4-Ethylbenzene	27	134	29.0	35257.0	7.5%
1,2-Dimethyl-4-Ethylbenzene	28	134	29.2	62430.0	13.3%
1,3-Dimethyl-2-Ethylbenzene	29	134	29.5	3758.0	0.8%
1,2-Dimethyl-3-Ethylbenzene	30	134	30.1	12173.0	2.6%
1,2,4,5-Tetramethylbenzene	31a	134	30.5	52998.0	11.3%
1,2,3,5-Tetramethylbenzene	31	134	30.7	74737.0	15.9%
1,2,3,4-Tetramethylbenzene	32	134	32.0	23494.0	5.0%

0.40016 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-10
0.40016 g



Chromatogram Key & Numerical Results: 123 m/z Bicyclanes

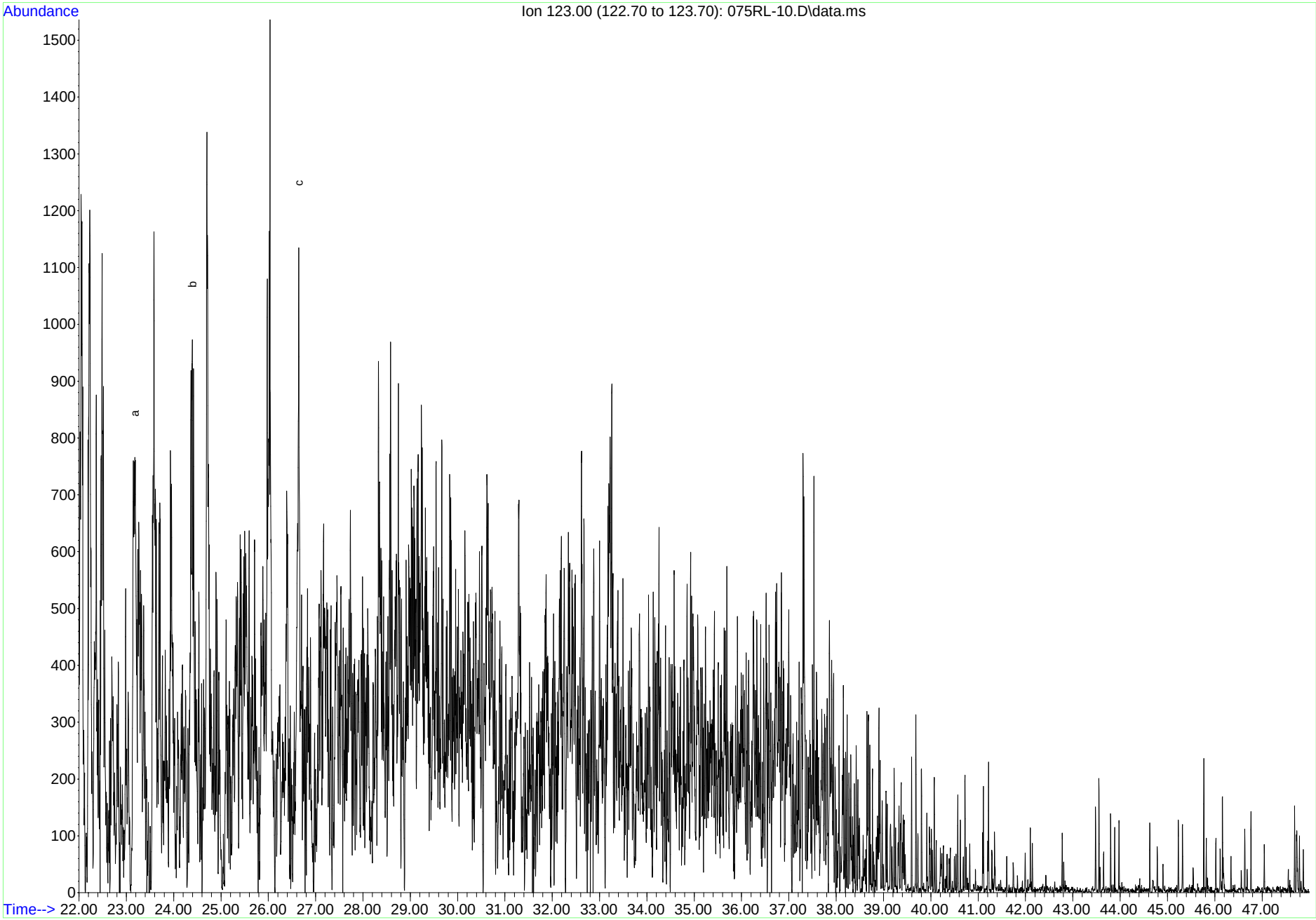
Project Manager:	Russ Shropshire	Lab ID:	075RL-10
Client:	Leidos, Inc.	Collected:	11/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	22IE Woodin UST-1
Project #:	334893.TM.1.000.00.0	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (123 m/z)
2,2,3-Trimethylbicycloheptane	a	123	23.2	732.0	27.5%
C_{10} bicycloalkane	b	123	24.4	918.0	34.4%
3,3,7-Trimethylbicycloheptane	c	123	26.6	1016.0	38.1%
C_{11} Decalin	d	123	ND	ND	ND
Nordrimane	f	123	ND	ND	ND
Nordrimane	g	123	ND	ND	ND
Rearranged drimane	h	123	ND	ND	ND
Rearranged drimane	j	123	ND	ND	ND
Isomer of Eudesmane	k	123	ND	ND	ND
4β (H) Eudesmane	l	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	m	123	ND	ND	ND
8β (H) Drimane	n	123	ND	ND	ND
C_{15} Bicyclic Sesquiterpane	o	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	p	123	ND	ND	ND
C_{16} Bicyclic Sesquiterpane	q	123	ND	ND	ND
8β (H) Homodrimane	r	123	ND	ND	ND

0.40016 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-10
0.40016 g



SAMPLE RESULTS

Chromatogram Key & Numerical Results: 191 m/z Terpanes

Project Manager:	Russ Shropshire	Lab ID:	075RL-10
Client:	Leidos, Inc.	Collected:	11/7/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	22IE Woodin UST-1
Project #:	334893.TM.1.000.00.	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
C_{21}-Tricyclic Terpane	1	191	ND	ND	ND
C_{22}-Tricyclic Terpane	2	191	ND	ND	ND
C_{23}-Tricyclic Terpane	3	191	ND	ND	ND
C_{24}-Tricyclic Terpane	4	191	ND	ND	ND
C_{25}-Tricyclic Terpane	5(S+R)	191	ND	ND	ND
C_{24}-Tetracyclic Terpane	Z4	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6a*	191	ND	ND	ND
C_{26}-Tricyclic Terpane	6b	191	ND	ND	ND
C_{28}-Tricyclic Terpane #1	A	191	ND	ND	ND
C_{28}-Tricyclic Terpane #2	B	191	ND	ND	ND
C_{29}-Tricyclic Terpane #1	C	191	ND	ND	ND
C_{29}-Tricyclic Terpane #2	D	191	ND	ND	ND
18 α-22,29,30-Trisnorneohopane (Ts)	E	191	ND	ND	ND
17 α-22,29,30-Trisnorhopane (Tm)	F	191	ND	ND	ND
C_{30}-Tricyclic Terpane #1	10a*	191	ND	ND	ND
C_{30}-Tricyclic Terpane #2	10b	191	ND	ND	ND
17 α-28,30 Bisnorhopane	I	191	ND	ND	ND
C_{31}-Tricyclic Terpane #1	11a*	191	ND	ND	ND
17α-25-Norhopane	J	191	ND	ND	ND
C_{31}-Tricyclic Terpane #2	11b	191	ND	ND	ND
17 α,21β-30-Norhopane	K	191	ND	ND	ND
18α-30-Norneohopane	C29Ts	191	ND	ND	ND
17α-Diahopane	C30*	191	ND	ND	ND
17β-21α-30-Normoretane	L	191	ND	ND	ND
18α+18β-Oleanane	Ma+Mb	191	ND	ND	ND
17α-21β-Hopane	N	191	ND	ND	ND
17β-21α-Moretane	O	191	ND	ND	ND
22S-17α,21β-30-Homohopane	P	191	ND	ND	ND
22R-17α,21β-30-Homohopane	Q	191	ND	ND	ND
Gammacerane	R	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	T	191	ND	ND	ND
22R-17α,21β-30-Bishomohopane	U	191	ND	ND	ND
22S-17α,21β-30-Bishomohopane	WS	191	ND	ND	ND
22R-17α,21β-Trishomohopane	WR	191	ND	ND	ND
22S-17α,21β-Tetrahomohopane	XS	191	ND	ND	ND

SAMPLE RESULTS

Chromatogram Key & Numerical Results: 191 m/z Terpanes

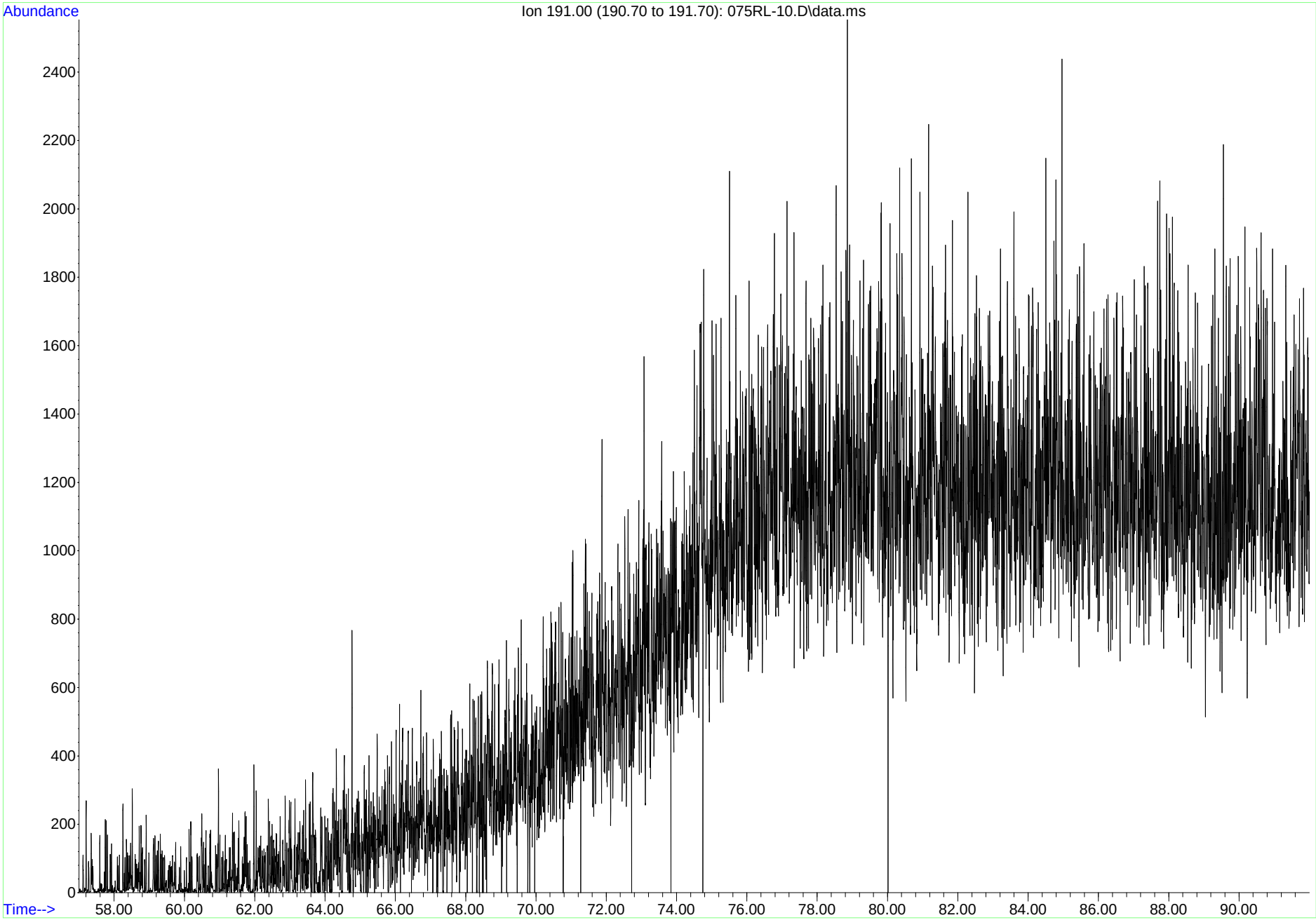
Project Manager:	Russ Shropshire	Lab ID:	075RL-10
Client:	Leidos, Inc.	Collected:	11/7/2020
Address:	18939 120th Avenue	Received:	12/11/2020
	Bothell, WA 98011	Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	22IE Woodin UST-1
Project #:	334893.TM.1.000.00.	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (191 m/z)
22R-17α,21β-Tetrahomohopane	XR	191	ND	ND	ND
22S-17α,21β-Pentahomohopane	YS	191	ND	ND	ND
22R-17α,21β-Pentahomohopane	YR	191	ND	ND	ND

0.40016 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-10
0.40016 g



Chromatogram Key & Numerical Results: 217 m/z Steranes

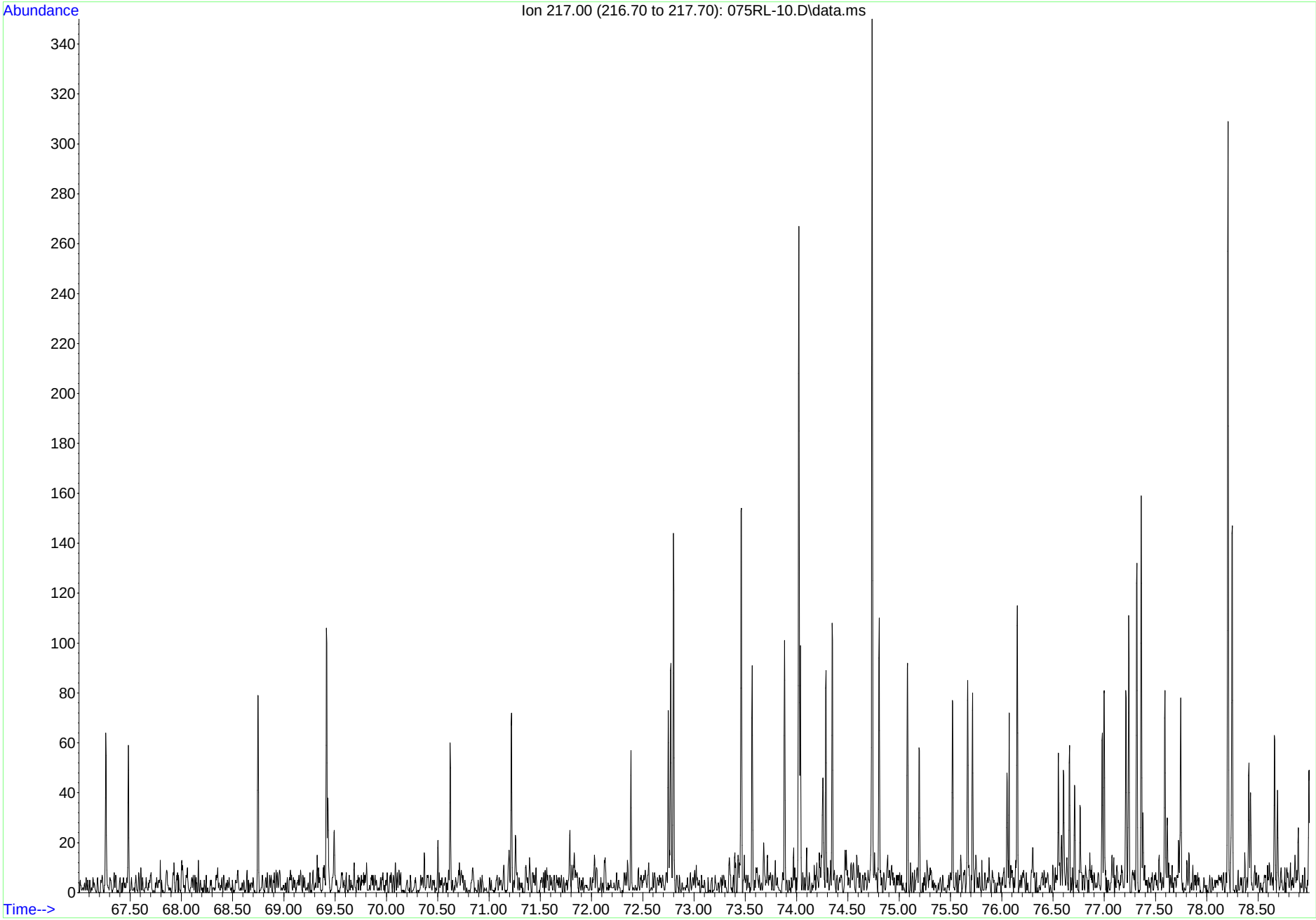
Project Manager:	Russ Shropshire	Lab ID:	075RL-10
Client:	Leidos, Inc.	Collected:	11/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	22IE Woodin UST-1
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (217 m/z)
13β, 17α-Diacholestane (20S)	1	217	ND	ND	ND
13β, 17α-Diacholestane (20R)	2	217	ND	ND	ND
13α, 17β-Diacholestane (20S)	3	217	ND	ND	ND
13α, 17β-Diacholestane (20R)	4	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	5	217	ND	ND	ND
24-methyl-13β,17α-Diacholestane (20S)	6	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20S)	7D	217	ND	ND	ND
14α,17α-Cholestane (20S)	7	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20S)+ 14β,17β-Cholestane (20R)	8+8D	217	ND	ND	ND
14β,17β-Cholestane (20S)	9	217	ND	ND	ND
24-methyl-13α,17β-Diacholestane (20R)	9D	217	ND	ND	ND
14α,17α-Cholestane (20R)	10	217	ND	ND	ND
24-ethyl-13β, 17α-Diacholestane (20R)	11	217	ND	ND	ND
24-ethyl-13α, 17β-Diacholestane (20S)	12	217	ND	ND	ND
24-ethyl-13α, 17α-Diacholestane (20S)	13	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20R)	14	217	ND	ND	ND
24-methyl-14β, 17β-Cholestane (20S)	15	217	ND	ND	ND
24-methyl-14α, 17α-Cholestane (20R)	16	217	ND	ND	ND
24-ethyl-14α-Cholestane (20S)	17	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20R)	18	217	ND	ND	ND
24-ethyl-14β, 17β-Cholestane (20S)	19	217	ND	ND	ND
24-ethyl-14α, 17α-Cholestane (20R)	20	217	ND	ND	ND

0.40016 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-10
0.40016 g



Chromatogram Key & Numerical Results: 253 m/z Monoaromatic Steranes

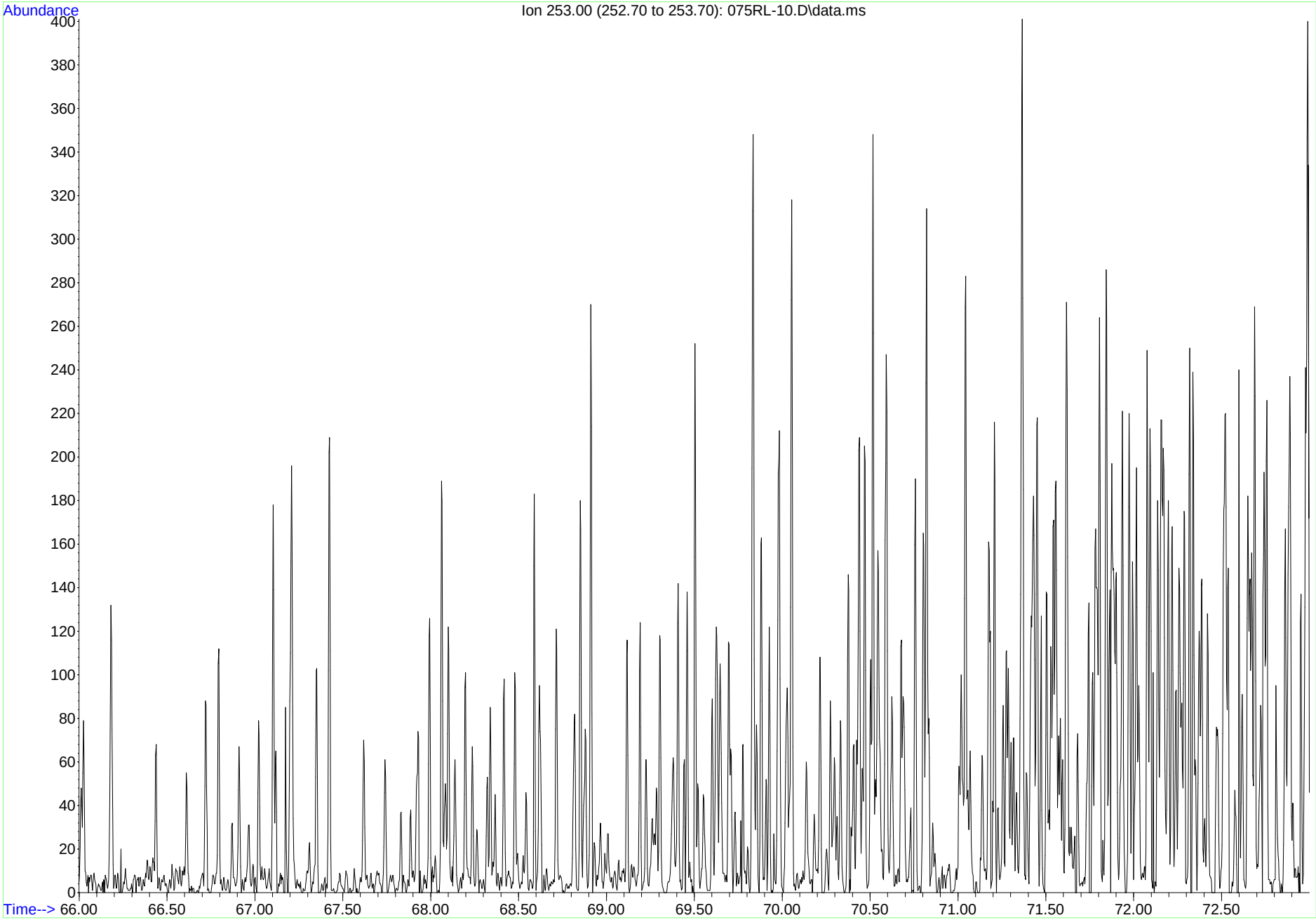
Project Manager:	Russ Shropshire	Lab ID:	075RL-10
Client:	Leidos, Inc.	Collected:	11/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	22IE Woodin UST-1
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (253 m/z)
20S, 5β C27-MAS	a	253	ND	ND	ND
20S, dia C27-MAS	b	253	ND	ND	ND
20R, 5β C27-MAS + 20R C27 dia MAS	c	253	ND	ND	ND
20S, 5α C27-MAS	d	253	ND	ND	ND
20R, 5β C28-MAS + 20S C28 dia MAS	e	253	ND	ND	ND
20R, 5α C27-MAS	f	253	ND	ND	ND
20S, 5α C28-MAS	g	253	ND	ND	ND
20R, 5β C28-MAS + 20R C28 dia MAS	h	253	ND	ND	ND
20S, 5β C29-MAS + 20S C29 dia MAS	i	253	ND	ND	ND
20S, 5α C29-MAS	J lower case	253	ND	ND	ND
20R, 5α C28-MAS	k	253	ND	ND	ND
20R, 5β C29-MAS + 20R C29 dia MAS	L lower case	253	ND	ND	ND
20R, 5α C29-MAS	m	253	ND	ND	ND

0.40016 g in 10mL DCM
FOREN4LA_MI_BACK

Submitted by,
Microbial Insights, Inc.

075RL-10
0.40016 g



Chromatogram Key & Numerical Results: 231 m/z Triaromatic Steranes

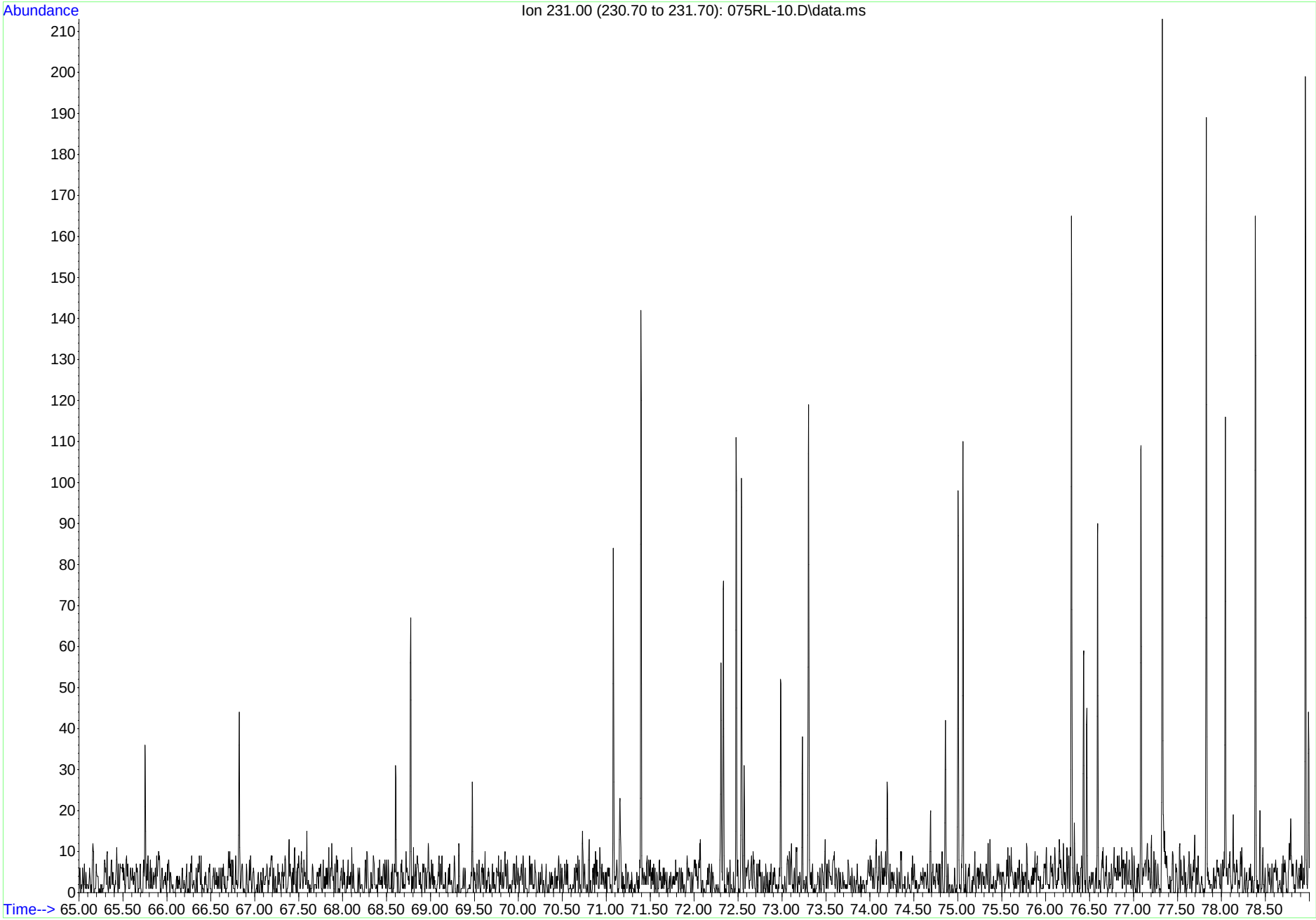
Project Manager:	Russ Shropshire	Lab ID:	075RL-10
Client:	Leidos, Inc.	Collected:	11/7/2020
Address:	18939 120th Avenue NE, Bothell, WA 98011	Received:	12/11/2020
		Matrix:	Product
Project:	Chelan Chevron Site	Client ID:	22IE Woodin UST-1
Project #:	334893.TM.1.000.00.00	Analyzed:	12/16/2020
Collected by:		Q Method:	FSRTL120320.M

Identity	Symbol	Ion (m/z)	Retention Time	Peak Height	Rel. Height % (231 m/z)
C_{20} Triaromatic Sterane	T1	231	ND	ND	ND
C_{21} Triaromatic Sterane	T2	231	ND	ND	ND
20S C_{26} Triaromatic Sterane	T3	231	ND	ND	ND
20R C_{26} + 20S C_{27} Triaromatic Steranes	T4	231	ND	ND	ND
20S C_{28} Triaromatic Sterane	T5	231	ND	ND	ND
20R C_{27} Triaromatic Sterane	T6	231	ND	ND	ND
20R C_{28} Triaromatic Sterane	T7	231	ND	ND	ND

0.40016 g in 10mL DCM
FOREN4LA_MI_BACK

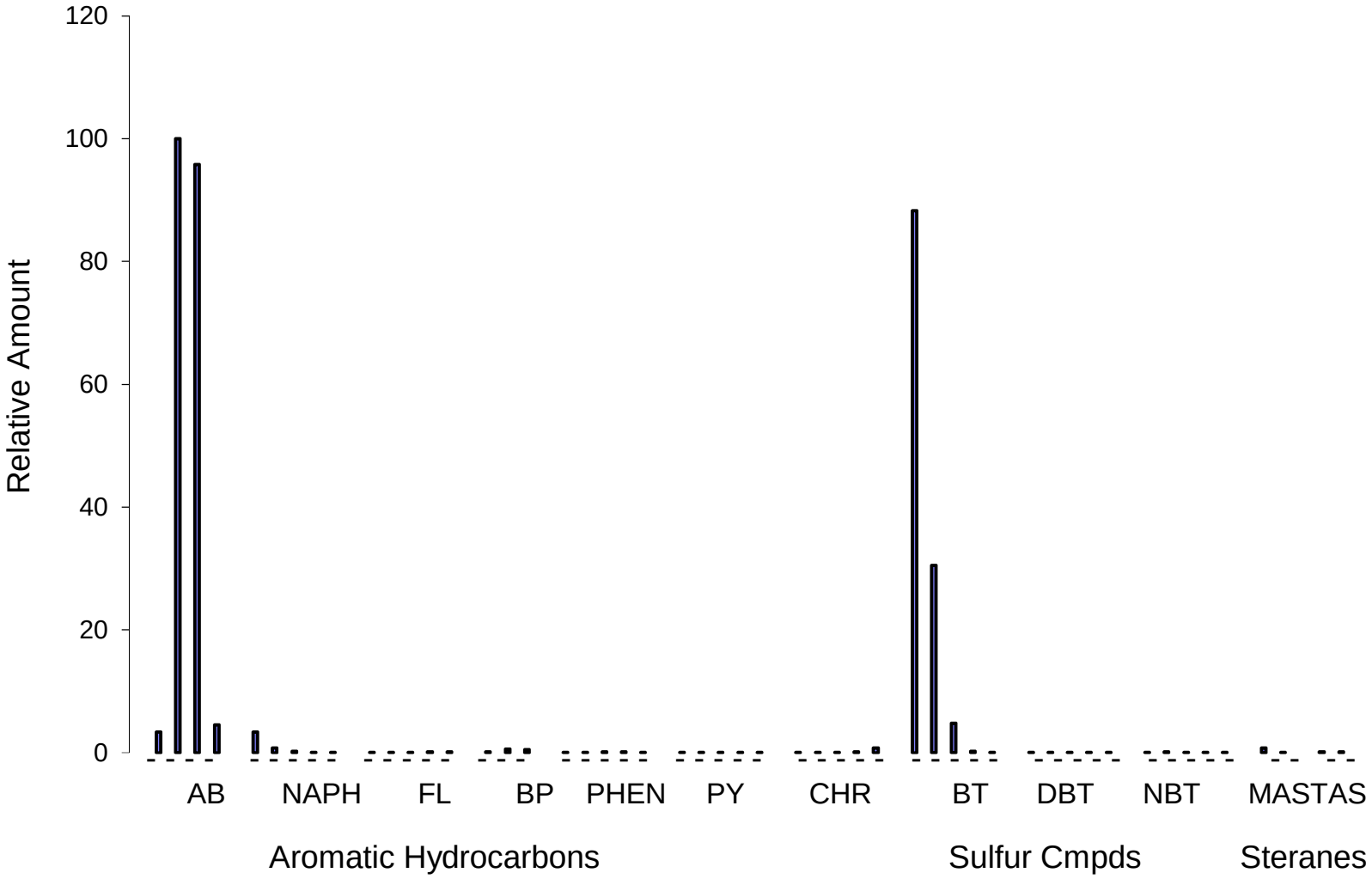
Submitted by,
Microbial Insights, Inc.

075RL-10
0.40016 g



Aromatic Hydrocarbon Distribution

075RL-10



Key for Identifying Aromatic Hydrocarbons

No	m/z	Abbreviation	Compound
1	120	AB	C_3-alkylbenzenes
2	134		C_4-alkylbenzenes
3	148		C_5-alkylbenzenes
4	162		C_6-alkylbenzenes
5	128	NAPH	C_0-naphthalene
6	142		C_1-naphthalenes
7	156		C_2-naphthalenes
8	170		C_3-naphthalenes
9	184		C_4-naphthalenes
10	166	FL	C_0-fluorene
11	180		C_1-fluorenes
12	194		C_2-fluorenes
13	208		C_3-fluorenes
14	222		C_4-fluorenes
15	154	BP	C_0-biphenyl
16	168		C_1-biphenyls + dibenzofuran
17	182		C_2-biphenyls + C1 Dibenzofuran
18	178	PHEN	C_0-phenanthrene
19	192		C_1-phenanthrenes
20	206		C_2-phenanthrenes
21	220		C_3-phenanthrenes
22	234		C_4-phenanthrenes
23	202	PY	C_0-pyrene/fluoranthene
24	216		C_1-pyrenes/fluoranthenes
25	230		C_2-pyrenes/fluoranthenes
26	244		C_3-pyrenes/fluoranthenes
27	258		C_4-pyrenes/fluoranthenes
28	228	CHR	C_0-chrysene
29	242		C_1-chrysenes
30	256		C_2-chrysenes
31	270		C_3-chrysenes
32	284		C_4-chrysenes
33	148	BT	C_1-benzothiophenes
34	162		C_2-benzothiophenes
35	176		C_3-benzothiophenes
36	190		C_4-benzothiophenes
37	204		C_5-benzothiophenes

Key for Identifying Aromatic Hydrocarbons – Cont.

No	m/z	Abbreviation	Compound
38	184	DBT	C_0-dibenzothiophene
39	198		C_1-dibenzothiophenes
40	212		C_2-dibenzothiophenes
41	226		C_3-dibenzothiophenes
42	240		C_4-dibenzothiophenes
43	234	NBT	C_0-naphthobenzthiophene
44	248		C_1-naphthobenzthiophenes
45	262		C_2-naphthobenzthiophenes
46	276		C_3-naphthobenzthiophenes
47	290		C_4-naphthobenzthiophenes
48	253	MAS	Monoaromatic steranes
49	267		Monoaromatic steranes
50	239		Monoaromatic steranes
51	231	TAS	Triaromatic steranes
52	245		Triaromatic steranes

REPORT TO:

Reports will be provided to the contact(s) listed below. Parties other than the contact(s) listed below will require prior approval.

Name: Russ Shropshire
Company: Leidos
Address: 18939 120th Ave NE
Suite 112
Bothell, WA 98011
email: shropshirer@leidos.com
Phone: (206) 321-2387
Fax:

Project Manager: Russ Shropshire
Project Name: Chelan Chevron
Project No.: WA-02

Report Type: ☐ Standard (default) ☒ Comprehensive

INVOICE TO:

For Invoices **paid by a third party** it is imperative that contact information & corresponding reference No. be provided.

Name: Russ Shropshire
Company: Leidos
Address: 18939 120th Ave NE
Suite 112
Bothell, WA 98011
email: shropshirer@leidos.com
Phone:
Fax:

Purchase Order No. PO10246480
Subcontract No.
Quote No. Q20201014.0010

☐ Historical

Samples listed here are split between two coolers.

microbialinsights
10515 Research Dr
Knoxville, TN 37932
phone (865) 573-8188
fax: (865) 573-8133
email: customerservice@microbe.com
www.microbe.com

Please Check One:
☐ More samples to follow
☐ No Additional Samples

Saturday Delivery
Please see sampling protocol for instructions

Please contact us prior to submitting samples regarding questions about the analyses you are requesting at (865) 573-8188 (9:00 am to 5:00 pm M-F). After hours email: customerservice@microbe.com

Sample Information					Analysis															
MI ID (Laboratory Use Only)	Sample Name (RSS 12-10-20)	Date Sampled	# of vials	Matrix	Parent and Alykylates PAHs	C3-C36 Whole Oil ASTM D3328	C8-C40 Full Scan ASTM D5739	Simulated Distillation	Oxygenated Blending Agents	EDB and Organic Lead	C3-C12 PIANO EPA 8260M	Other:								
075R2 1	MW-10-201206		3	L		X	X				X									
2	MW-12-201207		3	L		X	X				X									
3	RW-2-201207		3	L		X	X				X									
4	MW-9-~~201209~~ 201207		3	L		X	X				X									
5	MW-44-201207		3	L		X	X				X									
6	MW-19-201207		3	L		X	X				X									
7	MW-16-201207		3	L		X	X				X									
8	MW-21-201208		3	L		X	X				X									
9	MW-29-201208		3	L		X	X				X									
10	221E Woodin UST-1		3	L		X	X				X									

Relinquished by: Date 12-10-2020
Received by: AJ Hessler Date 12/11/20

It is vital that chain of custody is filled out correctly & that all relative information is provided.
Failure to provide sufficient and/or correct information regarding reporting, invoicing & analyses requested information may result in delays for which MI will not be liable.

**Saturday delivery: See sampling protocol for alternate shipping address.

Appendix E:
Laboratory Analysis Reports – Integrated Geosciences

INTEGRATED GEOSCIENCES LABORATORIES, LLC
*Environmental * Geotechnical * Core Analysis*

6016 Centralcrest Street • Houston, Texas 77092
Telephone (713) 316-1800 • Fax (877) 255-9953

December 23, 2020

Russ Shropshire,
Project Manager,
Leidos.
18939 120th Ave NE, Suite 112,
Bothell, WA 98011.

Re: IGL File No: **2012-8**
Project Name: **Chelan**.
Project Number: **WA-02**
Site Location: **Chelan, WA.**

Subject: Final Report: Fluid Properties Package-(Density/Specific Gravity, Viscosity & Interfacial Tension – (ASTM D1481, ASTM D445, ASTM D971).

Dear Russ Shropshire,

Please find enclosed report for Fluid properties Package analyses conducted on fluid samples received from your "**Chelan"** project. All analyses were performed by applicable ASTM, EPA, or API methodologies. The samples are currently in storage and will be retained for thirty days past the completion of testing at no charge. Please note that the samples will be disposed of at that time. You may contact me regarding storage, disposal, or return of the samples.

Integrated Geosciences Laboratories appreciate the opportunity to be of service. If you have any questions or require additional information, please contact me or Emeka Anazodo at (713) 316-1800.

Sincerely,
Integrated Geosciences Laboratories, LLC.

Wumi Andrew.

Laboratory Technician.

Encl.

Integrated Geosciences Laboratories, LLC.

Project Name: Chelan
Project Number: WA-02
Site Location: Chelan, WA

IGL File No: 2012-8
Client: Leidos
Date Received: 12/15/2020

TEST PROGRAM - 20201215

Serial Number	Sample ID	Date Sampled	Time Sampled	Depth (feet)	Matix Type	Fluid Properties Package LNAPL / DNAPL (ASTM D445, D1481, D971)	Comments
Date Received: 20201215							
1	MW-10-201206	12/6/2020	2010	N/A	LNAPL & Groundwater	X	2- [8oz glass jars]
2	MW-12-201207	12/7/2020	0720	N/A	LNAPL & Groundwater	X	2- [8oz glass jars]
3	RW-2-201207	12/7/2020	0930	N/A	LNAPL & Groundwater	X	2- [8oz glass jars]
4	MW-9-201207	12/7/2020	1010	N/A	LNAPL & Groundwater	X	2- [8oz glass jars]
5	MW-44-201207	12/7/2020	1928	N/A	LNAPL & Groundwater	X	2- [8oz glass jars]
6	MW-19-201207	12/7/2020	2045	N/A	LNAPL & Groundwater	X	2- [8oz glass jars]
7	MW-16-201207	12/7/2020	2230	N/A	LNAPL & Groundwater	X	2- [8oz glass jars]
8	MW-21-201208	12/8/2020	0600	N/A	LNAPL & Groundwater	X	2- [8oz glass jars]
9	MW-27-201208	12/8/2020	0720	N/A	LNAPL & Groundwater	X	2- [8oz glass jars]
	TOTAL					**9**	**18**

Laboratory Test Program Notes

1. Standard TAT for basic analysis is 10-15 business days.

Integrated Geosciences Laboratories, LLC

IGL File No: 2012-8
Client: Leidos
Report Date: 12/23/2020

VISCOSITY, DENSITY, and SPECIFIC GRAVITY DATA
(METHODOLOGY: ASTM D445, ASTM D1481, API RP40)

Project Name: Chelan
Project No: WA-02
Site Location: Chelan, WA

SAMPLE ID	IGL ID	MATRIX	TEMPERATURE, °F	SPECIFIC GRAVITY	DENSITY, g/cc	VISCOSITY	
						centistokes	centipoise
MW-10-201206	1	Ground Water	70	0.9987	0.9985	0.992	0.991
			100	1.0006	0.9936	0.709	0.705
			130	1.0008	0.9867	0.535	0.527
MW-10-201206	1	LNAPL	70	0.7549	0.7547	0.88	0.67
			100	0.7466	0.7414	0.73	0.54
			130	0.7382	0.7279	0.62	0.45
MW-12-201207	2	Ground Water	70	0.9982	0.9980	0.997	0.995
			100	1.0003	0.9934	0.701	0.697
			130	0.9990	0.9850	0.529	0.521
MW-12-201207	2	LNAPL	70	0.7628	0.7627	0.83	0.63
			100	0.7542	0.7490	0.70	0.52
			130	0.7458	0.7354	0.59	0.44
RW-2-201207	3	Ground Water	70	0.9986	0.9984	0.998	0.997
			100	1.0007	0.9938	0.706	0.702
			130	1.0000	0.9859	0.532	0.525
RW-2-201207	3	LNAPL	70	0.7459	0.7458	0.76	0.57
			100	0.7367	0.7316	0.64	0.47
			130	0.7284	0.7181	0.55	0.40

QUALITY CONTROL DATA

Date:	12/18/20
FLUID TYPE:	Cannon® CVS S3
TEMPERATURE, °F:	70
DENSITY, MEASURED:	0.8615
DENSITY, PUBLISHED:	0.8615
RPD:	0.00
VISCOSITY, MEASURED:	4.50
VISCOSITY, PUBLISHED:	4.47
RPD:	0.77

CVS Lot #: 17301

CVS = Certified Viscosity Standard

Integrated Geosciences Laboratories, LLC

IGL File No: 2012-8
Client: Leidos
Report Date: 12/23/2020

VISCOSITY, DENSITY, and SPECIFIC GRAVITY DATA
(METHODOLOGY: ASTM D445, ASTM D1481, API RP40)

Project Name: Chelan
Project No: WA-02
Site Location: Chelan, WA

SAMPLE ID	IGL ID	MATRIX	TEMPERATURE, °F	SPECIFIC GRAVITY	DENSITY, g/cc	VISCOSITY	
						centistokes	centipoise
MW-9-201207	4	Ground Water	70	0.9984	0.9982	1.001	0.999
			100	0.9998	0.9928	0.703	0.698
			130	0.9958	0.9819	0.531	0.521
MW-9-201207	4	LNAPL	70	0.7424	0.7423	0.81	0.60
			100	0.7331	0.7281	0.67	0.49
			130	0.7254	0.7152	0.58	0.42
MW-44-201207	5	Ground Water	70	0.9984	0.9982	0.997	0.995
			100	0.9998	0.9928	0.700	0.695
			130	0.9972	0.9832	0.530	0.521
MW-44-201207	5	LNAPL	70	0.7677	0.7676	0.85	0.65
			100	0.7589	0.7537	0.71	0.54
			130	0.7510	0.7404	0.61	0.45
MW-19-201207	6	Ground Water	70	0.9984	0.9982	1.003	1.001
			100	0.9998	0.9928	0.703	0.698
			130	0.9976	0.9836	0.531	0.522
MW-19-201207	6	LNAPL	70	0.8296	0.8295	2.55	2.11
			100	0.8227	0.8170	1.86	1.52
			130	0.8166	0.8051	1.46	1.17

QUALITY CONTROL DATA

Date:	12/18/20
FLUID TYPE:	Cannon® CVS S3
TEMPERATURE, °F:	70
DENSITY, MEASURED:	0.8615
DENSITY, PUBLISHED:	0.8615
RPD:	0.00
VISCOSITY, MEASURED:	4.50
VISCOSITY, PUBLISHED:	4.47
RPD:	0.77
CVS Lot #: 17301	

CVS = Certified Viscosity Standard

Integrated Geosciences Laboratories, LLC

IGL File No: 2012-8
Client: Leidos
Report Date: 12/23/2020

VISCOSITY, DENSITY, and SPECIFIC GRAVITY DATA
(METHODOLOGY: ASTM D445, ASTM D1481, API RP40)

Project Name: Chelan
Project No: WA-02
Site Location: Chelan, WA

SAMPLE ID	IGL ID	MATRIX	TEMPERATURE, °F	SPECIFIC GRAVITY	DENSITY, g/cc	VISCOSITY	
						centistokes	centipoise
MW-16-201207	7	Ground Water	70	0.9983	0.9981	1.000	0.998
			100	0.9996	0.9927	0.705	0.700
			130	0.9985	0.9845	0.532	0.524
MW-16-201207	7	LNAPL	70	0.7525	0.7524	0.78	0.59
			100	0.7436	0.7384	0.66	0.49
			130	0.7350	0.7247	0.56	0.41
MW-21-201208	8	Ground Water	70	0.9981	0.9979	1.004	1.002
			100	0.9998	0.9928	0.708	0.703
			130	0.9985	0.9845	0.531	0.522
MW-21-201208	8	LNAPL	70	0.7566	0.7565	0.85	0.64
			100	0.7479	0.7427	0.71	0.53
			130	0.7394	0.7290	0.61	0.44
MW-27-201208	9	Ground Water	70	0.9983	0.9981	0.997	0.995
			100	1.0001	0.9931	0.704	0.699
			130	1.0001	0.9861	0.530	0.523
MW-27-201208	9	LNAPL	70	0.8694	0.8693	5.68	4.94
			100	0.8642	0.8582	3.69	3.17
			130	0.8584	0.8464	2.62	2.22

QUALITY CONTROL DATA

Date:	12/18/20
FLUID TYPE:	Cannon® CVS S3
TEMPERATURE, °F:	70
DENSITY, MEASURED:	0.8615
DENSITY, PUBLISHED:	0.8615
RPD:	0.00
VISCOSITY, MEASURED:	4.50
VISCOSITY, PUBLISHED:	4.47
RPD:	0.77

CVS Lot #: 17301

CVS = Certified Viscosity Standard

Integrated Geosciences Laboratories, LLC

IGL File No: 2012-8
Client: Leidos
Report Date: 12/23/2020

INTERFACIAL / SURFACE TENSION DATA
(METHODOLOGY: DuNuoy Method - ASTM D971)

Project Name: Chelan
Project No: WA-02
Site Location: Chelan, WA

PHASE PAIR		TEMPERATURE,	INTERFACIAL TENSION,
SAMPLE ID / PHASE	SAMPLE ID / PHASE	°F	Dynes/centimeter
MW-10-201206 Ground Water	Air	69.5	70.23
MW-10-201206 NAPL	Air	69.7	22.41
MW-10-201206 Ground Water	MW-10-201206 NAPL	69.2	17.88
MW-12-201207 Ground Water	Air	69.9	70.03
MW-12-201207 NAPL	Air	69.9	22.58
MW-12-201207 Ground Water	MW-12-201207 NAPL	69.0	18.85
RW-2-201207 Ground Water	Air	70.0	62.27
RW-2-201207 NAPL	Air	70.0	21.86
RW-2-201207 Ground Water	RW-2-201207 NAPL	68.4	20.53
MW-9-201207 Ground Water	Air	70.9	69.68
MW-9-201207 NAPL	Air	71.8	22.24
MW-9-201207 Ground Water	MW-9-201207 NAPL	70.1	22.40
MW-44-201207 Ground Water	Air	71.2	68.07
MW-44-201207 NAPL	Air	72.5	22.90
MW-44-201207 Ground Water	MW-44-201207 NAPL	71.0	15.13

QUALITY CONTROL DATA

Date: **12/23/20**
PHASE PAIR: DIWATER / AIR
TEMPERATURE, °F: 71.3
IFT, MEASURED: 71.9
IFT, PUBLISHED: 72.4
RPD: -0.76

Integrated Geosciences Laboratories, LLC

IGL File No: 2012-8
Client: Leidos
Report Date: 12/23/2020

INTERFACIAL / SURFACE TENSION DATA
(METHODOLOGY: DuNuoy Method - ASTM D971)

Project Name: Chelan
Project No: WA-02
Site Location: Chelan, WA

PHASE PAIR		TEMPERATURE,	INTERFACIAL TENSION,
SAMPLE ID / PHASE	SAMPLE ID / PHASE	°F	Dynes/centimeter
MW-19-201207 Ground Water	Air	72.2	68.88
MW-19-201207 NAPL	Air	73.6	25.05
MW-19-201207 Ground Water	MW-19-201207 NAPL	72.2	18.46
MW-16-201207 Ground Water	Air	72.7	67.97
MW-16-201207 NAPL	Air	75.2	20.74
MW-16-201207 Ground Water	MW-16-201207 NAPL	71.3	17.11
MW-21-201208 Ground Water	Air	72.4	68.93
MW-21-201208 NAPL	Air	73.6	21.52
MW-21-201208 Ground Water	MW-21-201208 NAPL	70.0	29.35
MW-27-201208 Ground Water	Air	72.4	59.69
MW-27-201208 NAPL	Air	75.1	27.66
MW-27-201208 Ground Water	MW-27-201208 NAPL	71.1	19.59

QUALITY CONTROL DATA

Date: **12/23/20**
PHASE PAIR: DIWATER / AIR
TEMPERATURE, °F: 71.3
IFT, MEASURED: 71.9
IFT, PUBLISHED: 72.4
RPD: -0.76

INTEGRATED GEOSCIENCES LABORATORIES, LLC — CHAIN OF CUSTODY — PAGE 1 OF 1

(formerly PTS Laboratories, Inc.)

COMPANY: Leidos

ADDRESS: 18939 120th Ave NE, Suite 112 CITY: Bothell, WA ZIP CODE: 98011

PROJECT MANAGER NAME: Russ Shropshire EMAIL: shropshirer@leidos.com PHONE #: (206) 321-2387

PROJECT NAME: Chelan

PROJECT NUMBER: WA-02

SITE LOCATION: Chelan, WA

SAMPLER SIGNATURE:

PO #: P010246683

BILLING ADDRESS:

BILLING EMAIL:

BILLING CONTACT: Anne Marie Cray

BILLING PHONE #:

TURNAROUND TIME

24 HOURS		5 DAYS	
72 HOURS		NORMAL	X

OTHERS:

SAMPLE INTEGRITY (CHECK): INTACT: TEMP (F)

IGL QUOTE NO/DATE: 10-14-20

IGL FILE NO: 2012-8

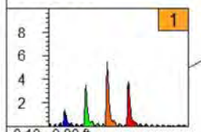
ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	DEPTH, FEET	NUMBER OF SAMPLES	SOIL PROPERTIES PACKAGE	HYDRAULIC CONDUCTIVITY PACKAGE	PORE FLUID SATURATION PACKAGE	TCEQ/TNRCC PROPERTIES PACKAGE	CAPILLARITY PACKAGE	FLUID PROPERTIES PACKAGE	CORE PHOTOGRAPHY	VAPOR TRANSPORT PACKAGE	POROSITY: TOTAL, AIR-FILLED, WATER-FILLED	PROSITY: EFFECTIVE, ASTM D425M	SPECIFIC GRAVITY, ASTM D854	BULK DENSITY (DRY), API RP40 or ASTM D2937	AIR PERMEABILITY, API RP40	HYDRAULIC CONDUCTIVITY, EPA 9100/API RP40 OR ASTM D5084	GRAIN SIZE DISTRIBUTION, ASTM D422 or D4464M	TOC: WALKLEY-BLACK	ATTERBERG LIMITS, ASTM D4318	VAPOR INTRUSION PACKAGE	FREE PRODUCT MOBILITY PACKAGE	COMMENTS
mw-10-201206	12-6-20	2010	NA	2						X														Samples will arrive in 4 coolers.
mw-12-201207	12-7-20	0720		2						X														
RW-2-201207	12-7-20	0930		2						X														
mw-9-201207	12-7-20	1010		2						X														
mw-44-201207	12-7-20	1928		2						X														
mw-19-201207	12-7-20	2045		2						X														
mw-16-201207	12-7-20	2230		2						X														
mw-21-201208	12-8-20	0600		2						X														
mw-27-201208	12-8-20	0720		2						X														

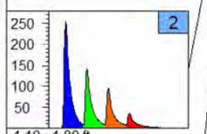
1. RELINQUISHED BY	2: RECEIVED BY:	1. RELINQUISHED BY	2: RECEIVED BY:
COMPANY: Leidos	COMPANY: IGL	COMPANY:	COMPANY:
DATE: 12-14-2020 TIME: 1530	DATE: 12/15/20 TIME: 1000	DATE: TIME:	DATE: TIME:

Appendix F:
LNAPL Sample Analysis – Dakota Technologies

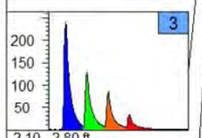
Callouts



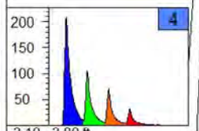
0.10 - 0.80 ft
1.2 %RE (s 0.0)
Fisher Scientific SeaSand



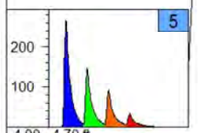
1.10 - 1.80 ft
89.6 %RE (s 5.8)
MW-9-201207 (on sand)



2.10 - 2.80 ft
78.9 %RE (s 6.0)
MW-10-201206

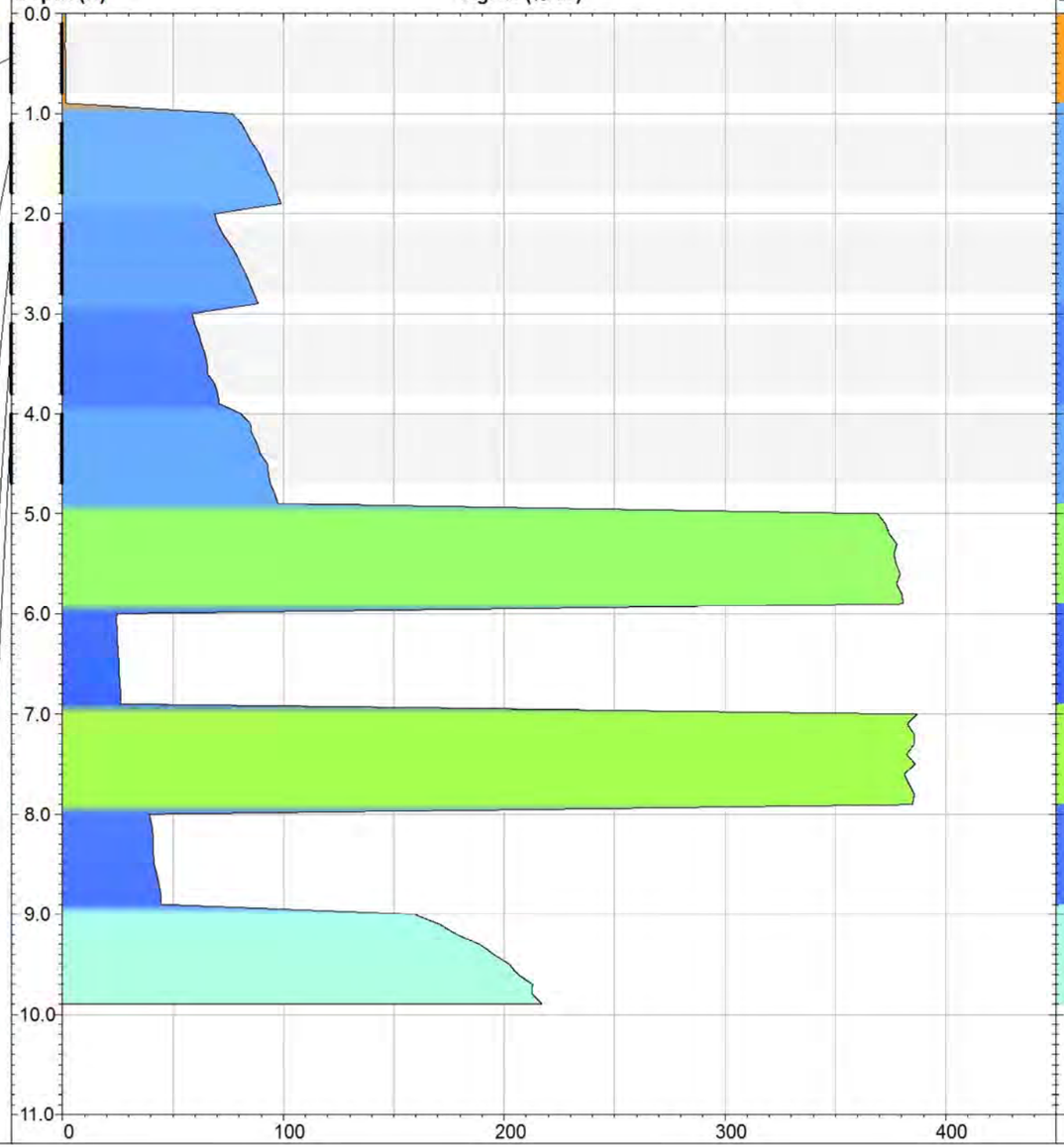


3.10 - 3.80 ft
64.9 %RE (s 3.5)
MW-12-201207

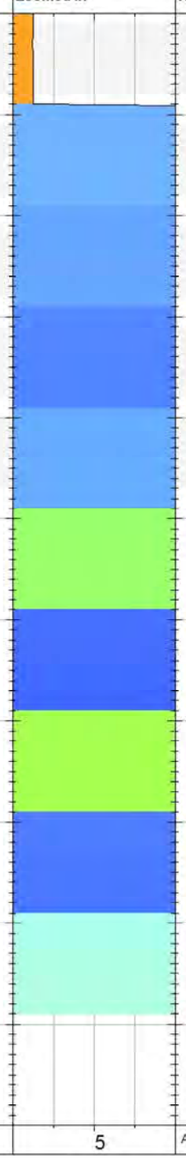


4.00 - 4.70 ft
88.7 %RE (s 4.6)
MW-16-201207

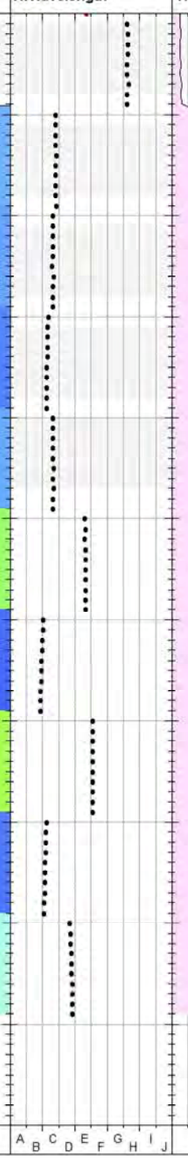
Depth (ft) / **Signal (%RE)**



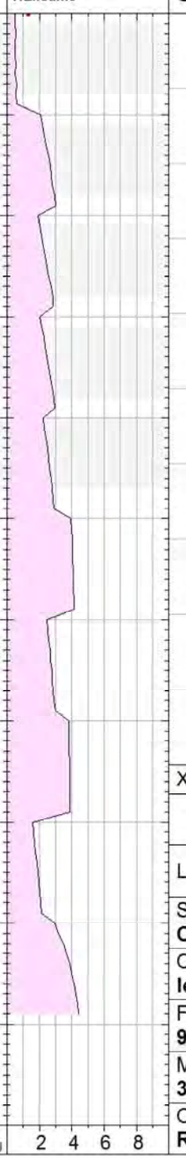
Zoomed In



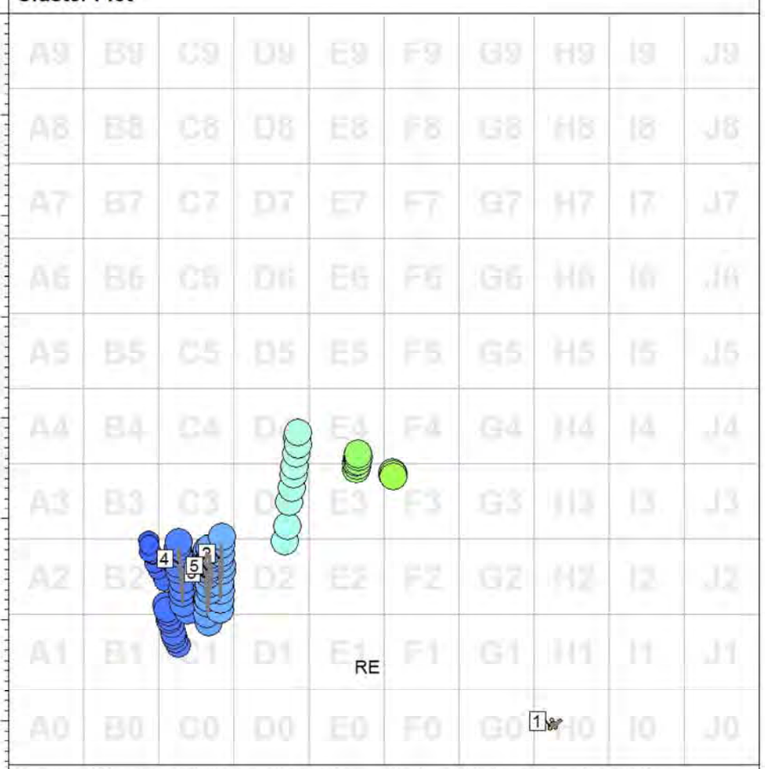
X:Wavelength



Y:Lifetime



Cluster Plot

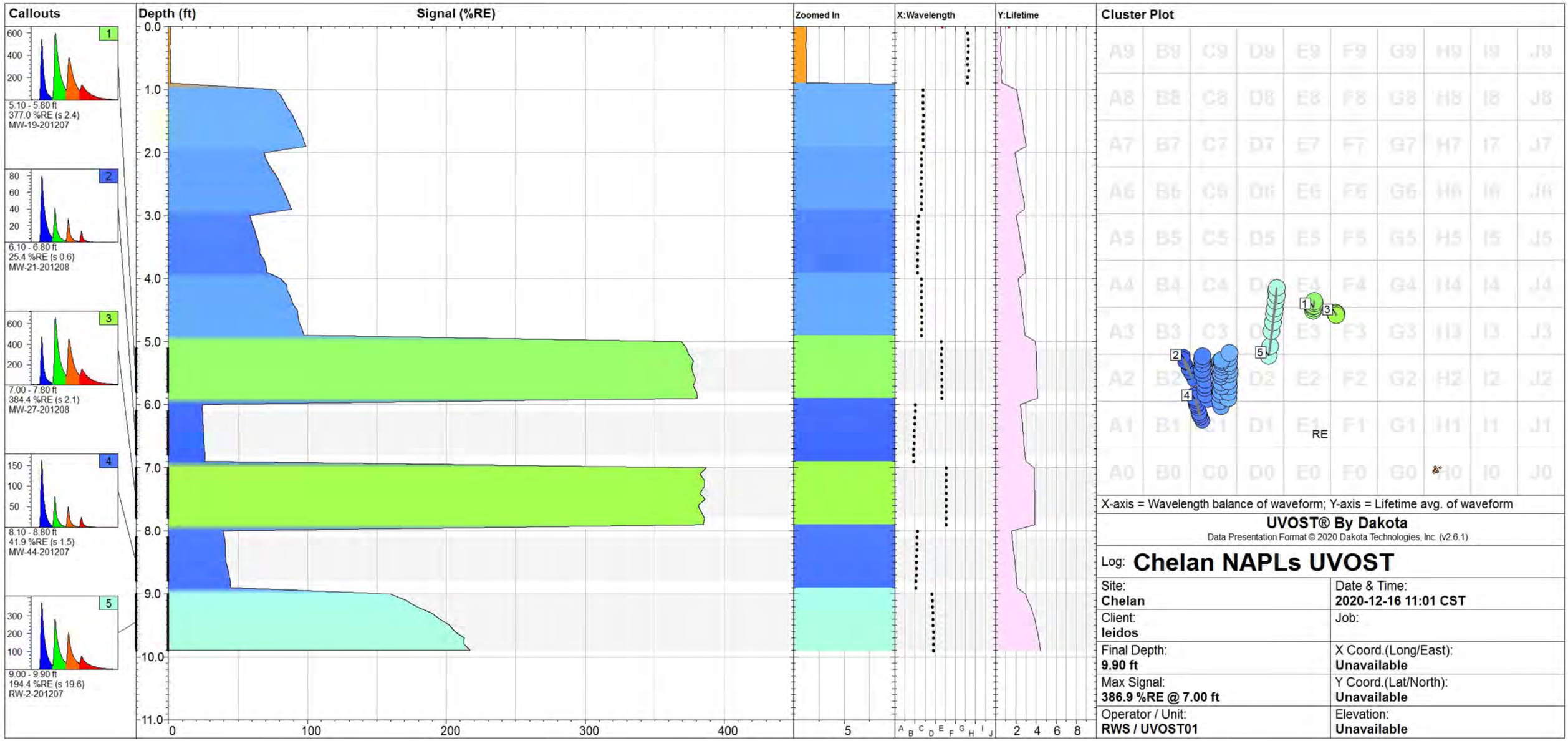


X-axis = Wavelength balance of waveform; Y-axis = Lifetime avg. of waveform

UVOST® By Dakota

Log: **Chelan NAPLs UVOST**

Site: **Chelan**	Date & Time: **2020-12-16 11:01 CST**
Client: **leidos**	Job:
Final Depth: **9.90 ft**	X Coord.(Long/East): **Unavailable**
Max Signal: **386.9 %RE @ 7.00 ft**	Y Coord.(Lat/North): **Unavailable**
Operator / Unit: **RWS / UVOST01**	Elevation: **Unavailable**



X-axis = Wavelength balance of waveform; Y-axis = Lifetime avg. of waveform

UVOST® By Dakota

Log: **Chelan NAPLs UVOST**

Site: **Chelan**	Date & Time: **2020-12-16 11:01 CST**
Client: **leidos**	Job:
Final Depth: **9.90 ft**	X Coord.(Long/East): **Unavailable**
Max Signal: **386.9 %RE @ 7.00 ft**	Y Coord.(Lat/North): **Unavailable**
Operator / Unit: **RWS / UVOST01**	Elevation: **Unavailable**

Appendix G:
UVOST-HP Summary Report – Dakota Technologies

High Resolution Site Characterization Report – UVOST®-HP Investigation

Client: Leidos

Project Name: Chelan Chevron Station

Location: Chelan, Washington

Prepared by:

Dakota Technologies Company, LLC

1625 SE Decker Street

Lee's Summit, Missouri 64081

Office phone 816.525.7483

12/25/2020

Project Number: 0380.20

TABLE OF CONTENTS

APPENDICES

1.0 ULTRA-VIOLET OPTICAL SCREENING TOOL (UVOST®) DESCRIPTION & ANALYSIS

Fluorescence is a property of some compounds where absorbed ultra-violet (UV) light stimulates the emission of photons (light) of a longer wavelength relative to the source emission. The release of the photons can be used to detect small amounts of substance (i.e., polycyclic aromatic hydrocarbons (PAHs)) in a larger matrix (soil). This method of detection has been used in laboratories for decades. With the commercial availability of lasers and optical fibers, this technology can also be applied in-situ in the field to identify the presence of light non-aqueous phase liquids (LNAPL).

The UVOST® system sends laser light (308 nanometer wavelength) through a fiber optic cable strung within probe rods on a direct push drill rig. The light, reflected by a parabolic mirror, then exits through a sapphire window in the side of the probe. As the probe is advanced, the immediately adjacent soil is exposed to the UV laser light. If PAHs (compounds in petroleum oils and lubricants that fluoresce) are present, longer wavelength light is emitted by the PAH compounds. This "signal" light is transmitted through a return fiber, back to the surface to be analyzed. Responses are indicated in real-time on a graph of signal vs. depth. The UVOST® log displays "color mixed" signal logs consisting of contributions from four wavelength channels, and waveforms ("fingerprint" of multi-wavelength) to aid in identification and relative quantity of the compound present.

Prior to every log, the UVOST® system is checked for optical quality by observing the background signal for sources of signal in the fiber, filter, mirror and sapphire window. Also, the reference emitter (a standard, proprietary LNAPL mixture called the "RE") is placed on the window to determine the qualitative and semi-quantitative properties of the laser system. This is to assure that the RE response has the correct shape and intensity and that the UVOST® system is calibrated to log. Typically, the RE will fall between 10,000 and 12,000 picovolt-seconds (pVs), which is a measure of waveform area. The background can vary from 0.1% to 1%, which is typically an area of approximately 0 to 100 pVs. The relationship between the instrument responses from NAPL in the subsurface and the RE depends on the properties of the NAPL. The calibration of the system is not to a concentration, but to a known fluorescence signature.

2.0 Hydraulic Profiling (HP) Description

The Hydraulic Profiling add-on is a logging tool that measures the pressure required to inject a flow of water into the soil as the probe is advanced into the subsurface. The injection pressure log is an excellent indicator of formation permeability. In addition to injection pressure, hydrostatic pressure can be measured under a zero flow condition, called a dissipation test. This allows a calculation of potentiometric surface (water table) upon successful completion of the dissipation test.

Prior to starting a log, there is a quality assurance (QA) check on the down-hole transducer to ensure proper function. The probe is submerged in a reference tube and filled with water. A reading is taken at the hydraulic port when it is submerged to a depth of 1 foot and a second reading at 0 feet, or baseline, under zero flow conditions. The reading at 0 feet, or the baseline pressure, is equal to the measurement of atmospheric pressure. Subtracting reading 2 from reading 1 should produce a result of 0.433 psi (+/- 10%), which is the hydrostatic weight of a 1 foot column of water.

The UVOST®-HP probe is advanced into the ground at a rate of approximately 2 cm/sec. The pump in the HP flow module draws water from the supply tank and pumps water down the trunk line at a constant flow rate (60 mL/min). The downhole transducer monitors the pressure generated by injecting water into the formation matrix. The log provides graphs of the pressure and flow rate versus depth alongside the fluorescence plot. If a dissipation test is performed below the water table and the test successfully stabilizes, the result can be corrected to an absolute hydrostatic value, from which a potentiometric surface (water table) can be calculated. Using the calculated water table to correct for hydrostatic pressure increase, a hydraulic conductivity (K) value for a given depth below the water table can be estimated using the following equation:

$$K = \ln(Q/P') * 20.0 + 7.0$$

where P'= downhole pressure – (0.433 * depth below water table) – atmospheric pressure, and Q is equal to flow. K values above the water table are also reported after a successful dissipation test even though they are suspect due to varying permeability behavior of dry soils. These values still maintain some qualitative value to the eye, and may lend insight into preferential pathways in the vadose zone.

3.0 DISCUSSION AND COMMENTS

Dakota Technologies Company, LLC completed 6 UVOST®-HP borings at the Chelan Chevron Station Site in Chelan, Washington. The UVOST®-HP was pushed approximately to 60 feet below surface at every location except borings UHP-01 and UHP-02 where shallow refusal was encountered. NAPL fluorescence response was observed in logs UHP-02 and UHP-06 between approximately 13 and 41 feet as shown in Appendix A. Dissipation tests were successfully conducted at UHP-02 and UHP-05. However, due to the nature of the lithology at the Site, calculated water levels at those locations maybe inaccurate due to separation of the hydraulic formations encountered. All QA/QC passed specifications for all UVOST®-HP logs.

4.0 LIMITATIONS

The analysis and opinions expressed in this report are based upon data obtained from the specific test locations and from other information discussed in this report. Exceptions, if any, are discussed in the accompanying comments section of this report. This report is prepared for the exclusive use of our client for specific application to the project discussed and has been prepared in accordance with generally accepted practices. Reported results shall not be reproduced, except in full, without written approval of Dakota. No warranties, expressed or implied are intended or made.

Appendix A

UVOST®-HP Field Summary Log

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UVOST®-HP Field Summary Log

Chelan Chevron Station

Chelan, Washington

File Log ID	Date / Time	Pre-Probe (ft)	Final Depth (ft)	Max Signal (%RE)	Max Signal Depth (ft)	Initial RE Area (pVs)	Background Area (pVs)	Stable Dissipation (yes or no)	Calculated Water Table (bgs)	Fluorescence Top - Bottom (ft)
UHP-01	12/17/20 3:30 PM	11.5	20.4	25	9.4	11300	28	NA	NA	0-10.5
UHP-02	12/18/20 8:08 AM	12.5	42.7	9	9.9	11772	20	yes	38.4	0-12.0, 15.9, 19.6, 38.5, 41.7
UHP-03	12/17/20 11:09 AM	14.5	58.8	39	9.7	11369	21	yes	58.1	0-12.9
UHP-04	12/17/20 9:36 AM	14.5	60.1	6	10.8	11599	29	NA	NA	0-17.6
UHP-05	12/17/20 5:16 PM	15	60.0	42	9.6	11893	10	NA	NA	0-15.0, 23.6
UHP-06	12/17/20 1:14 PM	13	60.1	5	2.2	11222	10	NA	NA	0-13, 13.7-17.7, 30.3-31.1
	Total Footage (this sheet)		**302.2**							

(1) Signal responses in the indicated pre-probed regions may not be accurate due to soil disturbance

Appendix B

UVOST®-HP Logs at 10% RE

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UHP-01

UVOST® By Dakota
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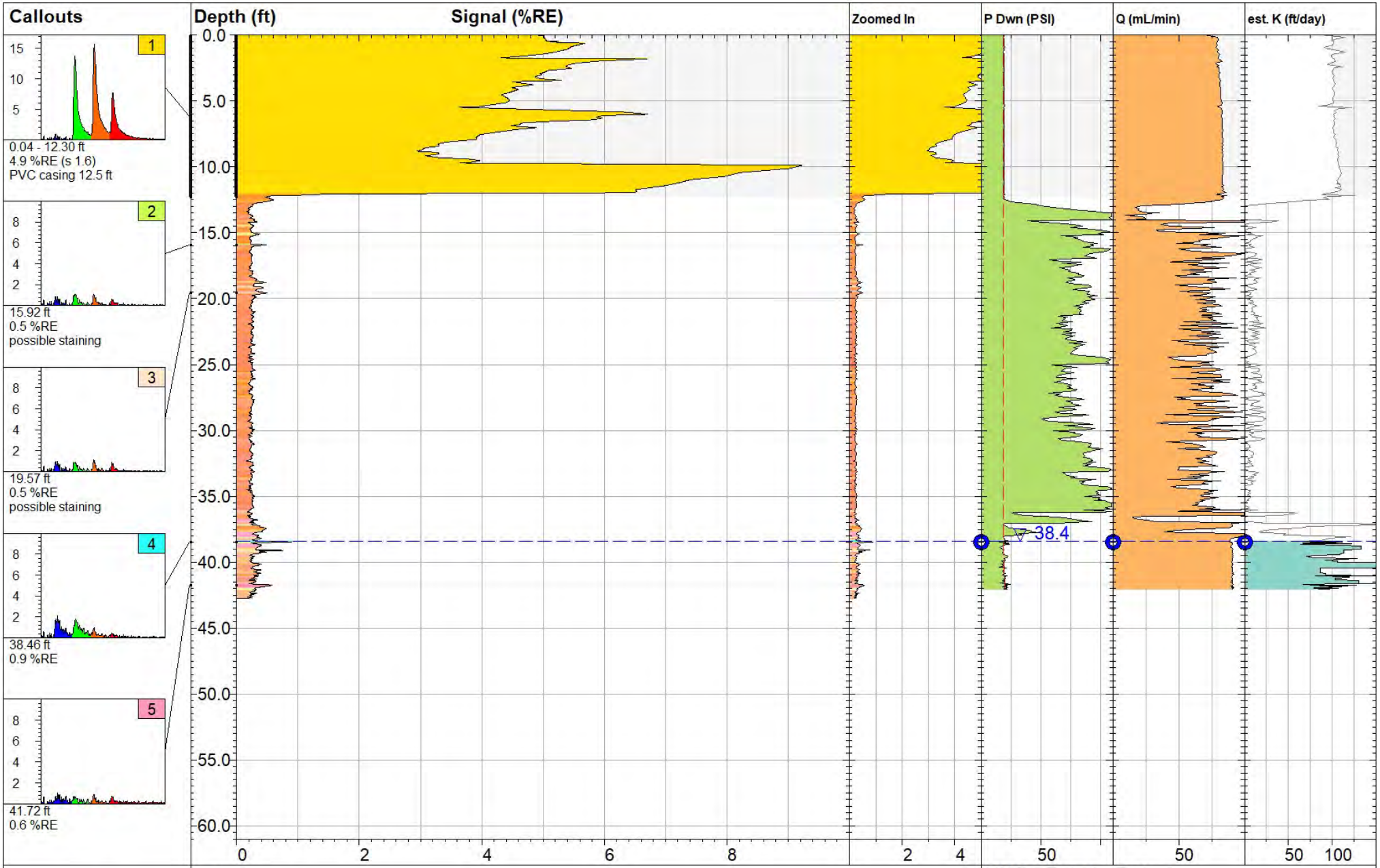
Site: **Chelan Chevron Station**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **20.43 ft**
Client / Job: **Leidos / 0380.20**	X Coord.(Long/East): **Unavailable**	Max Signal: **24.7 %RE @ 9.44 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2020-12-17 15:30 PST**



UHP-02

UVOST® By Dakota
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DAKOTA TECHNOLOGIES
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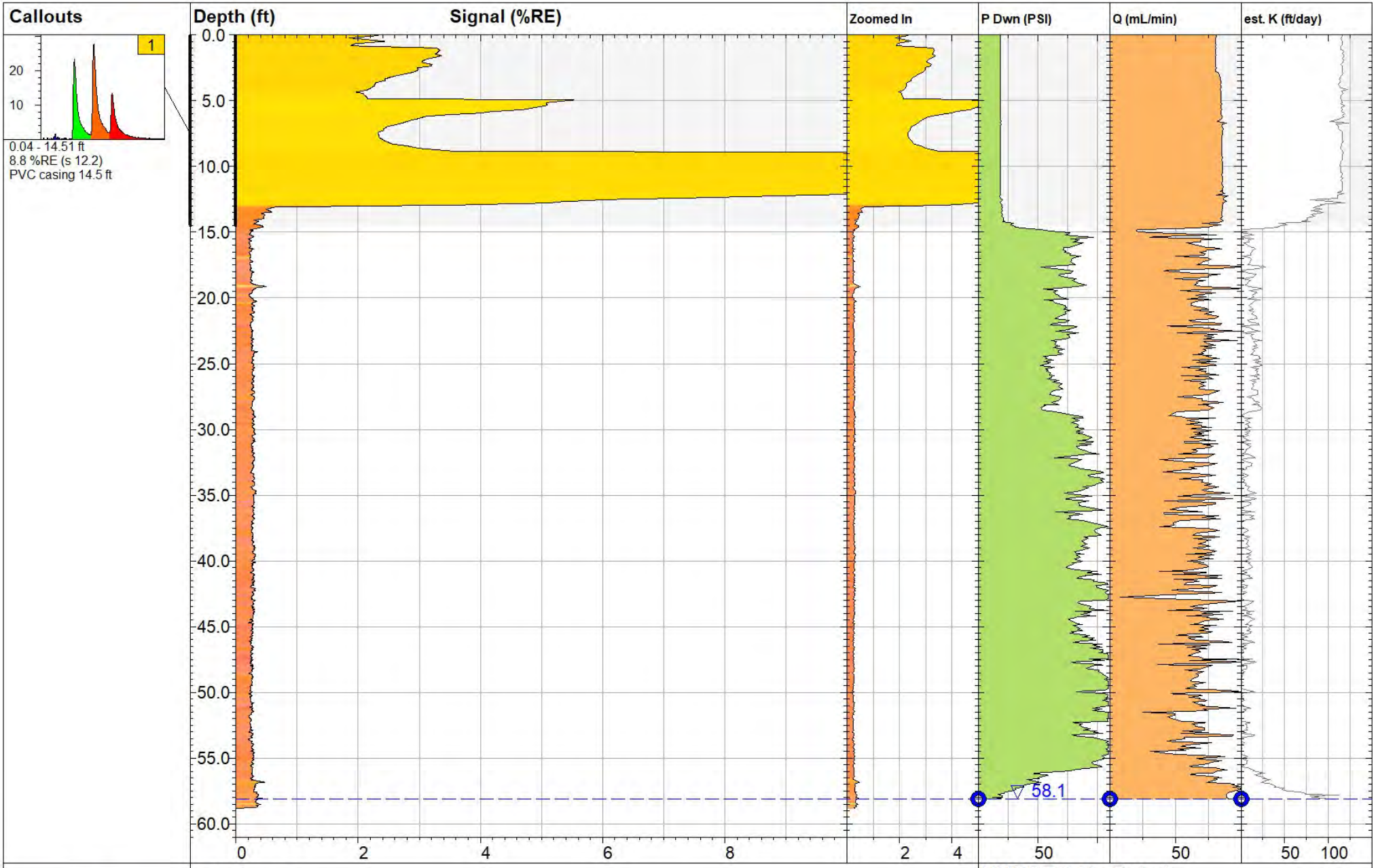
Site: **Chelan Chevron Station**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **42.73 ft**
Client / Job: **Leidos / 0380.20**	X Coord.(Long/East): **Unavailable**	Max Signal: **9.2 %RE @ 9.88 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2020-12-18 08:08 PST**



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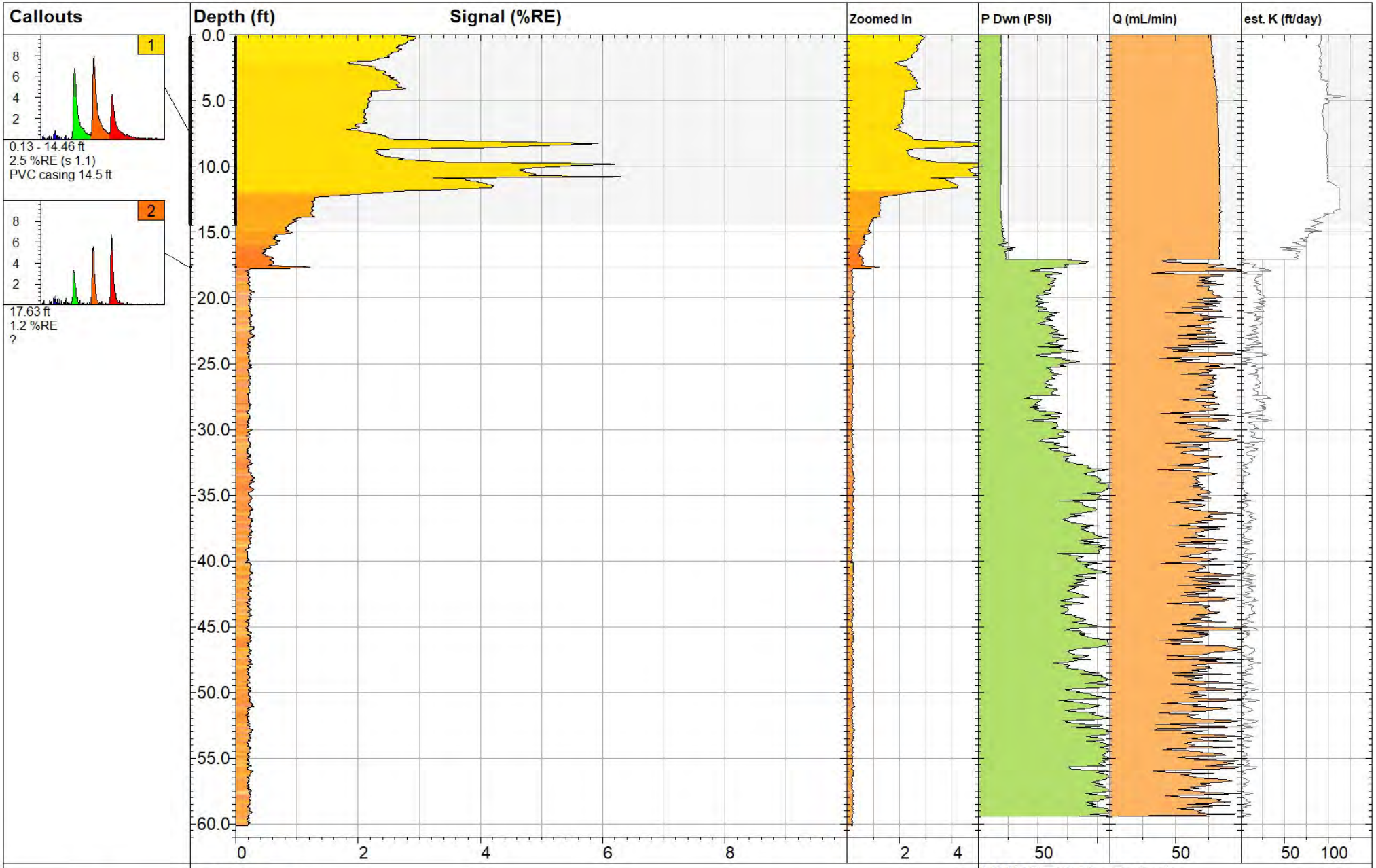
UHP-03

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Chelan Chevron Station**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **58.80 ft**
Client / Job: **Leidos / 0380.20**	X Coord.(Long/East): **Unavailable**	Max Signal: **38.9 %RE @ 9.66 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2020-12-17 11:09 PST**



UHP-04

UVOST® By Dakota
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Site: **Chelan Chevron Station**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **60.11 ft**
Client / Job: **Leidos / 0380.20**	X Coord.(Long/East): **Unavailable**	Max Signal: **6.3 %RE @ 10.77 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2020-12-17 09:36 PST**

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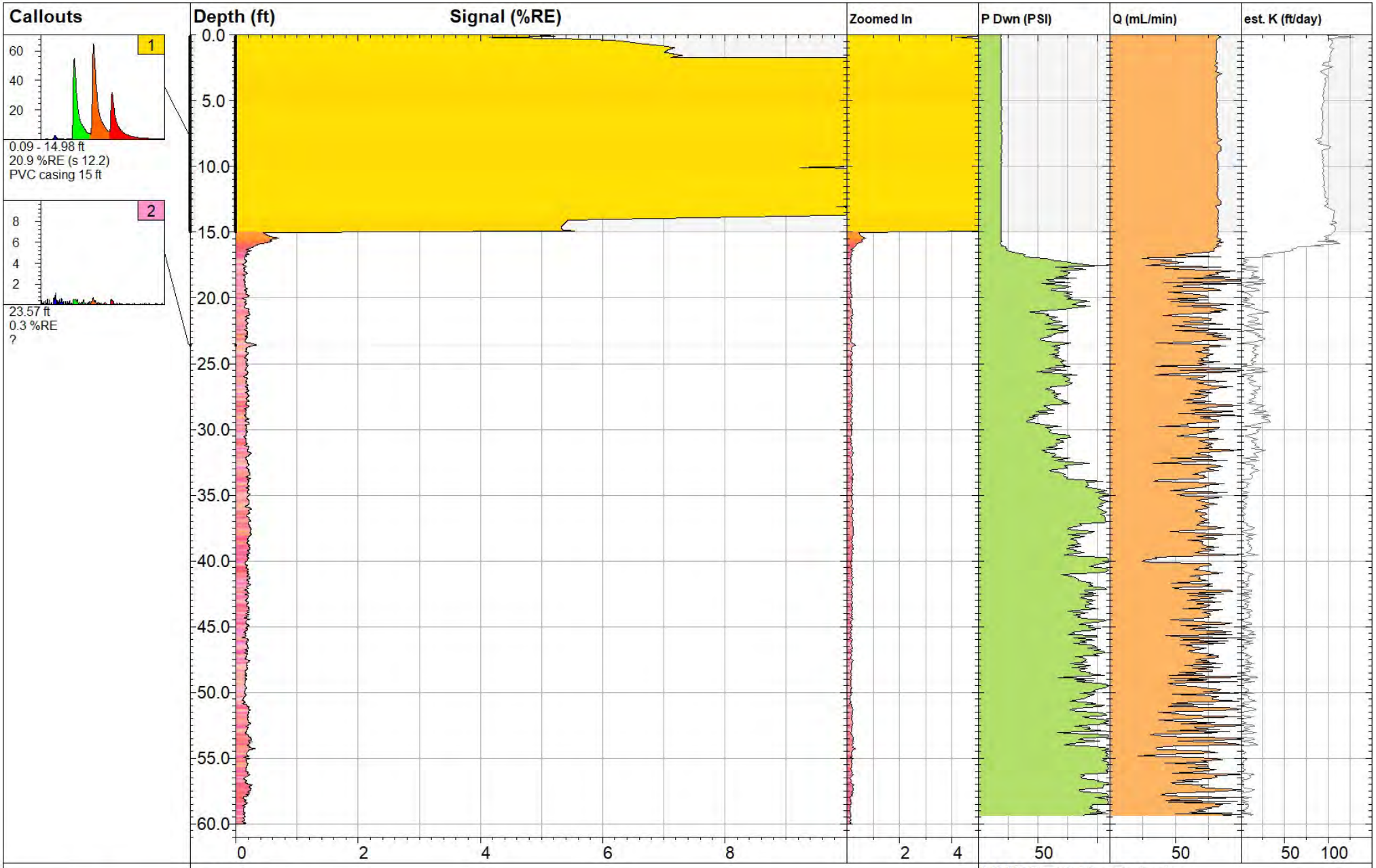

UHP-05

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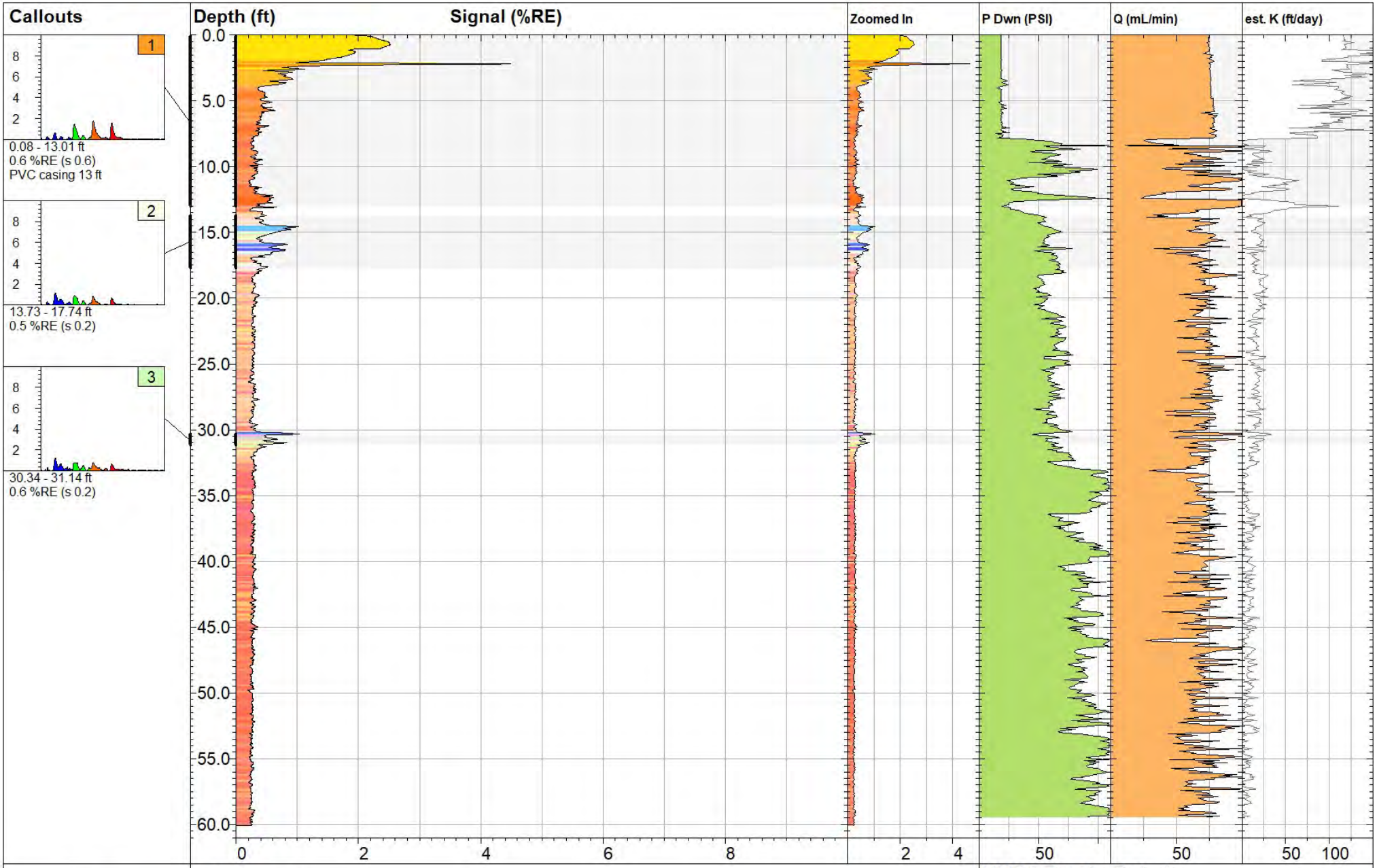
DAKOTA TECHNOLOGIES
WWW.DAKOTATECHNOLOGIES.COM

Site: **Chelan Chevron Station**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **60.04 ft**
Client / Job: **Leidos / 0380.20**	X Coord.(Long/East): **Unavailable**	Max Signal: **42.4 %RE @ 9.62 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2020-12-17 17:16 PST**



UHP-06

UVOST® By Dakota
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Site: **Chelan Chevron Station**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **60.09 ft**
Client / Job: **Leidos / 0380.20**	X Coord.(Long/East): **Unavailable**	Max Signal: **4.6 %RE @ 2.20 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2020-12-17 13:14 PST**

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Appendix C

UVOST®-HP Logs 100 % RE

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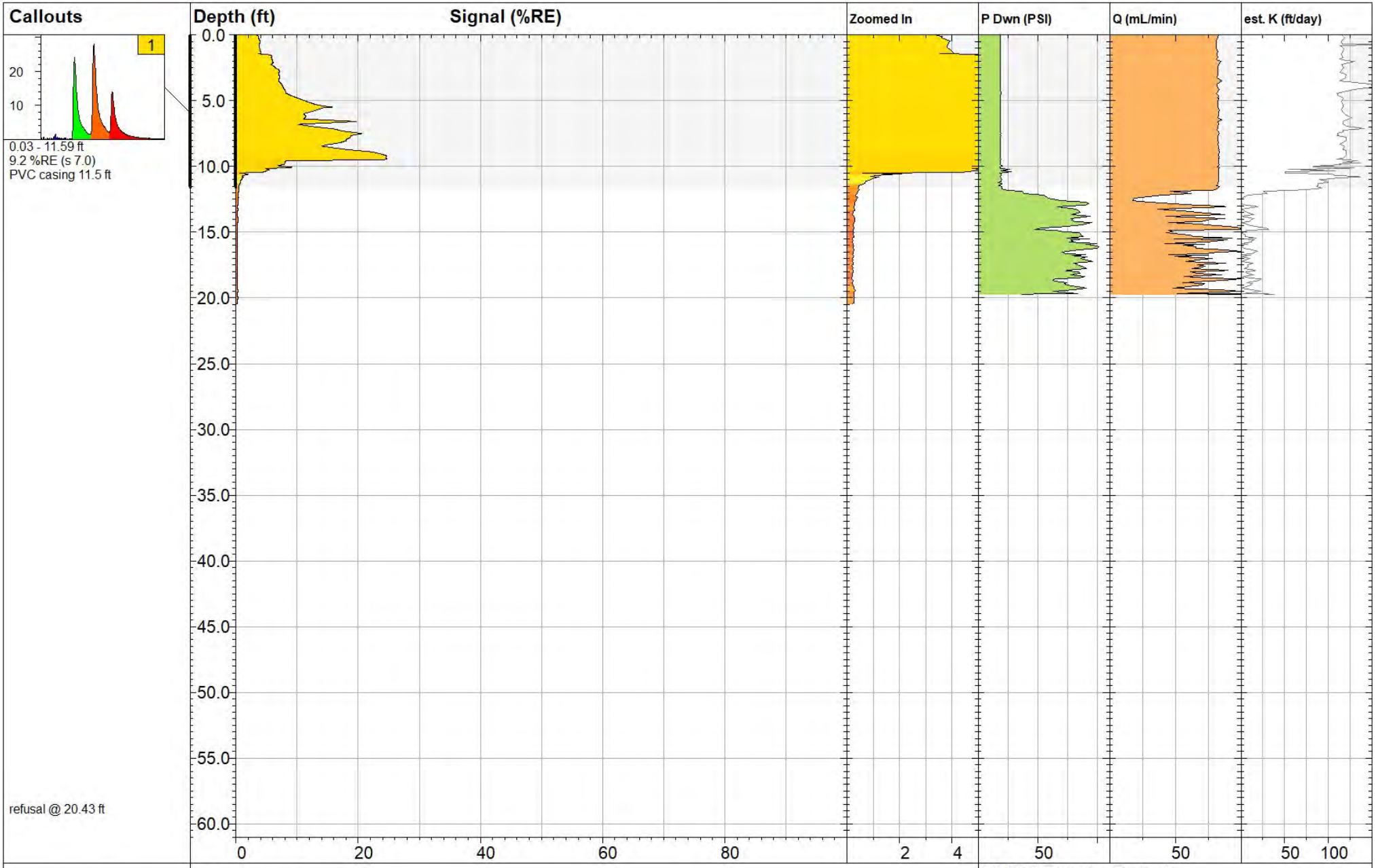

DAKOTA TECHNOLOGIES
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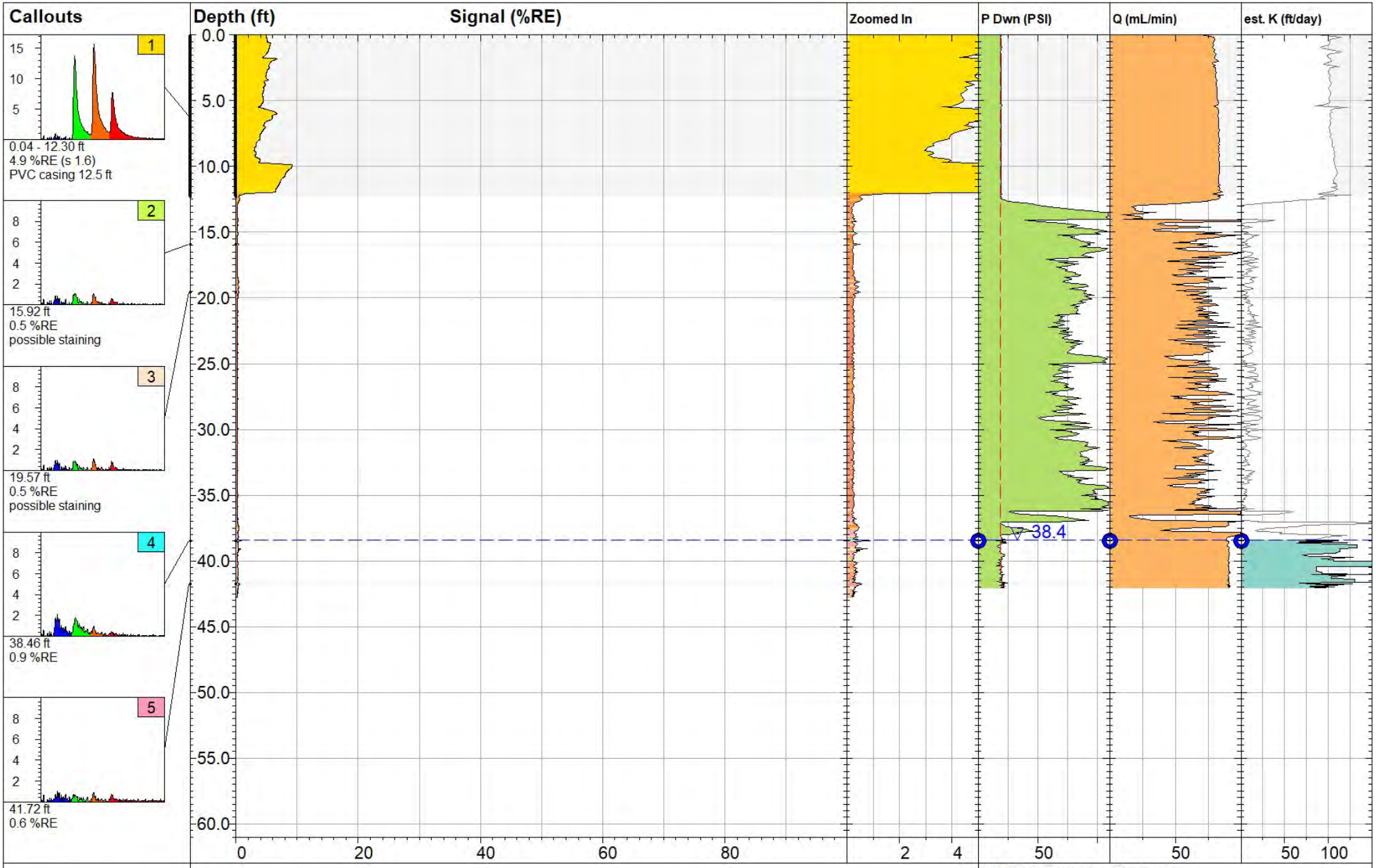
UHP-01

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Chelan Chevron Station**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **20.43 ft**
Client / Job: **Leidos / 0380.20**	X Coord.(Long/East): **Unavailable**	Max Signal: **24.7 %RE @ 9.44 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2020-12-17 15:30 PST**



UHP-02

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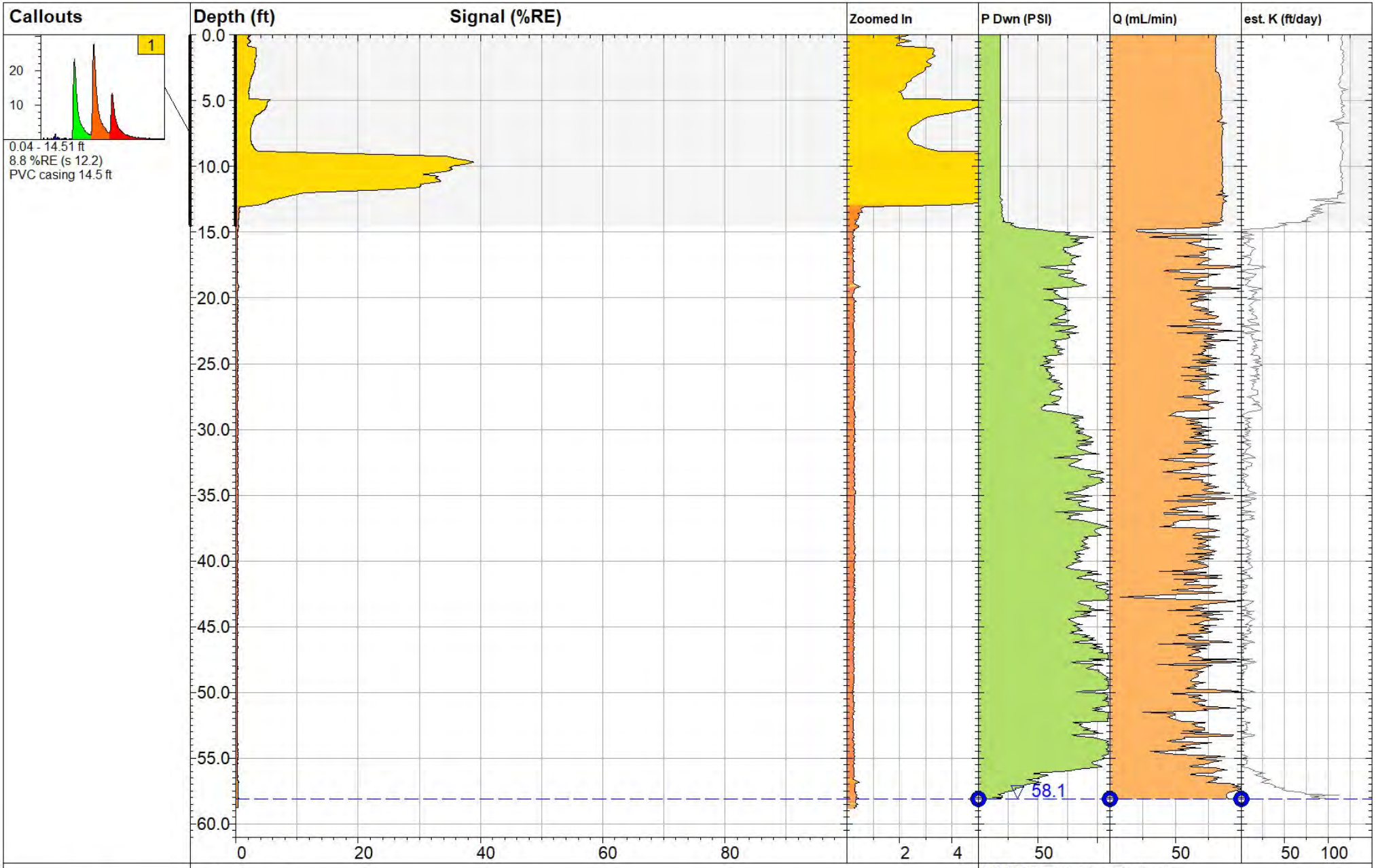
WWW.DAKOTATECHNOLOGIES.COM

Site: **Chelan Chevron Station**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **42.73 ft**
Client / Job: **Leidos / 0380.20**	X Coord.(Long/East): **Unavailable**	Max Signal: **9.2 %RE @ 9.88 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2020-12-18 08:08 PST**



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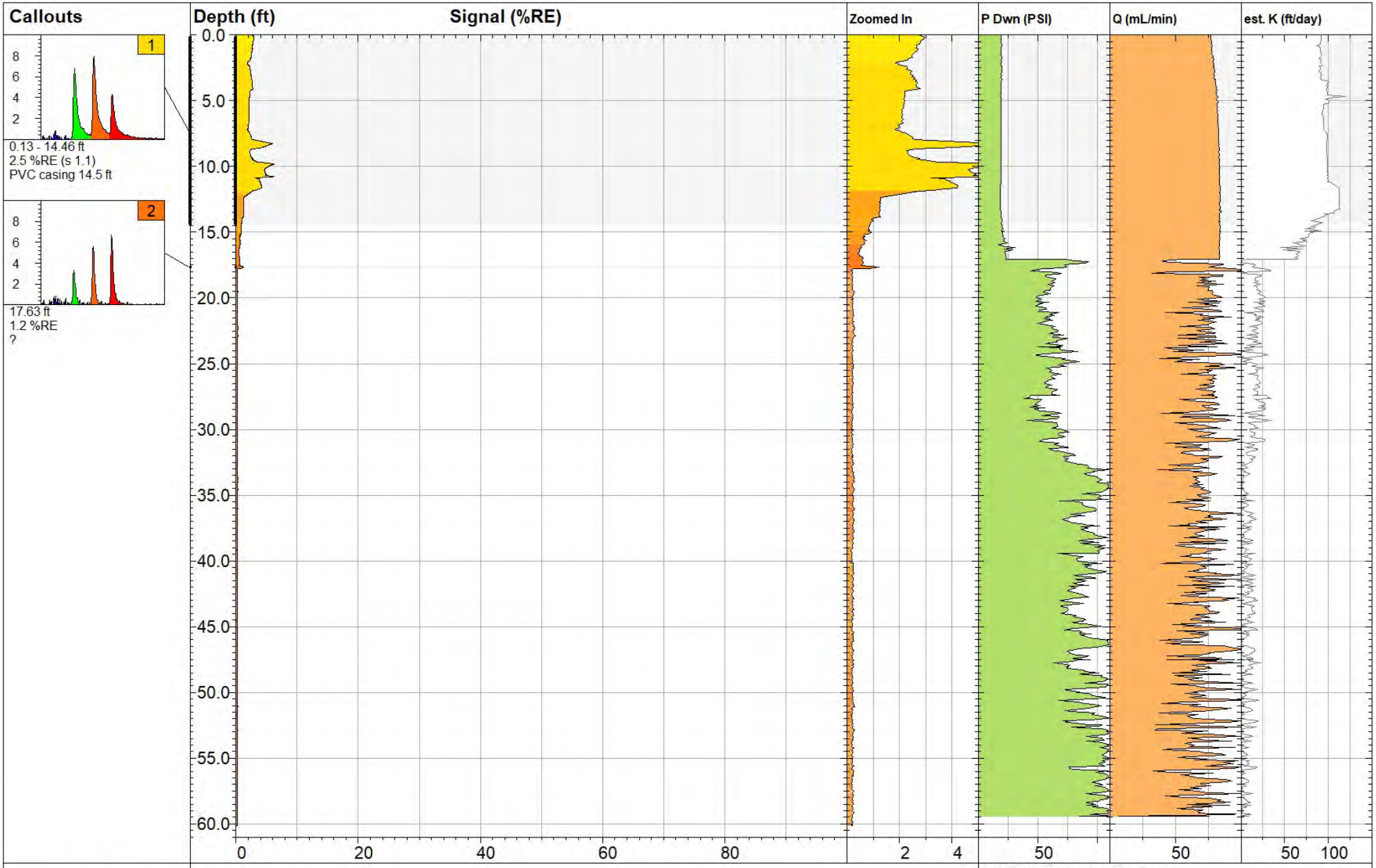
UHP-03

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Chelan Chevron Station**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **58.80 ft**
Client / Job: **Leidos / 0380.20**	X Coord.(Long/East): **Unavailable**	Max Signal: **38.9 %RE @ 9.66 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2020-12-17 11:09 PST**



UHP-04

UVOST® By Dakota
www.DakotaTechnologies.com

Site: **Chelan Chevron Station**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **60.11 ft**
Client / Job: **Leidos / 0380.20**	X Coord.(Long/East): **Unavailable**	Max Signal: **6.3 %RE @ 10.77 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2020-12-17 09:36 PST**

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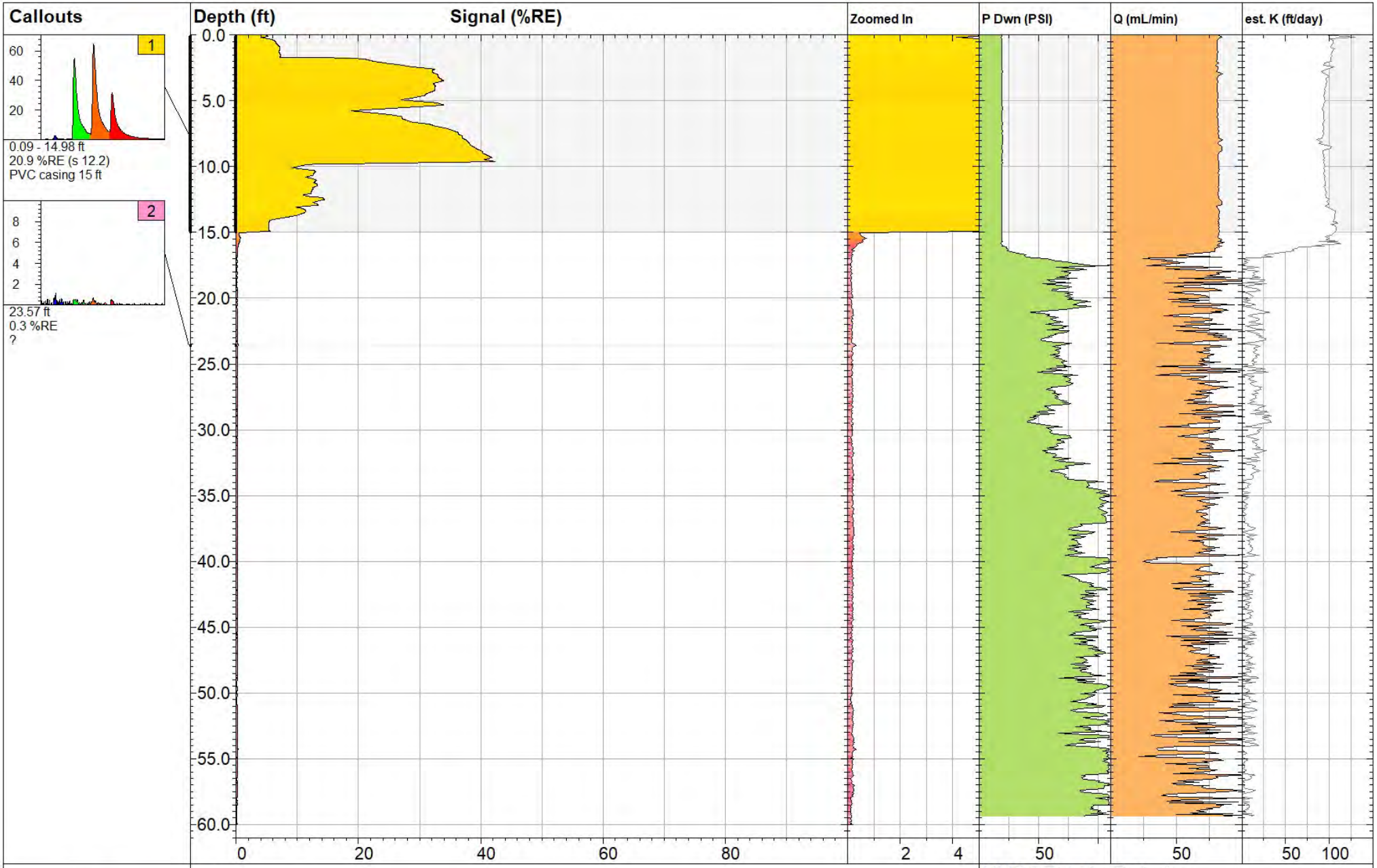

UHP-05

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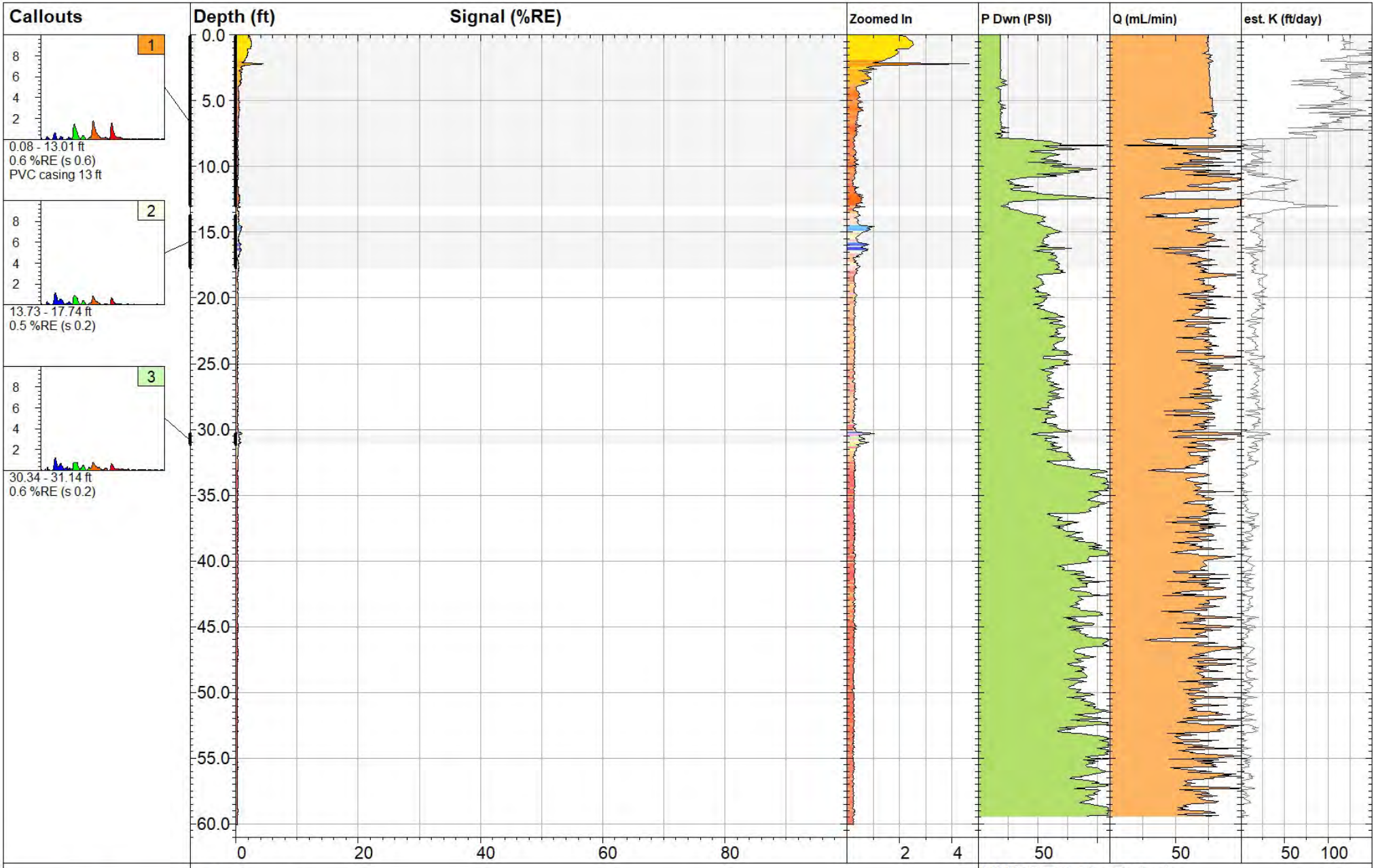
DAKOTA TECHNOLOGIES
WWW.DAKOTATECHNOLOGIES.COM

Site: **Chelan Chevron Station**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **60.04 ft**
Client / Job: **Leidos / 0380.20**	X Coord.(Long/East): **Unavailable**	Max Signal: **42.4 %RE @ 9.62 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2020-12-17 17:16 PST**



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UHP-06

UVOST® By Dakota
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Site: **Chelan Chevron Station**	Y Coord.(Lat/North): **Unavailable**	Final Depth: **60.09 ft**
Client / Job: **Leidos / 0380.20**	X Coord.(Long/East): **Unavailable**	Max Signal: **4.6 %RE @ 2.20 ft**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**	Date & Time: **2020-12-17 13:14 PST**

Appendix D

UVOST®-HP Reference Log

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UVOST®-HP Reference Log

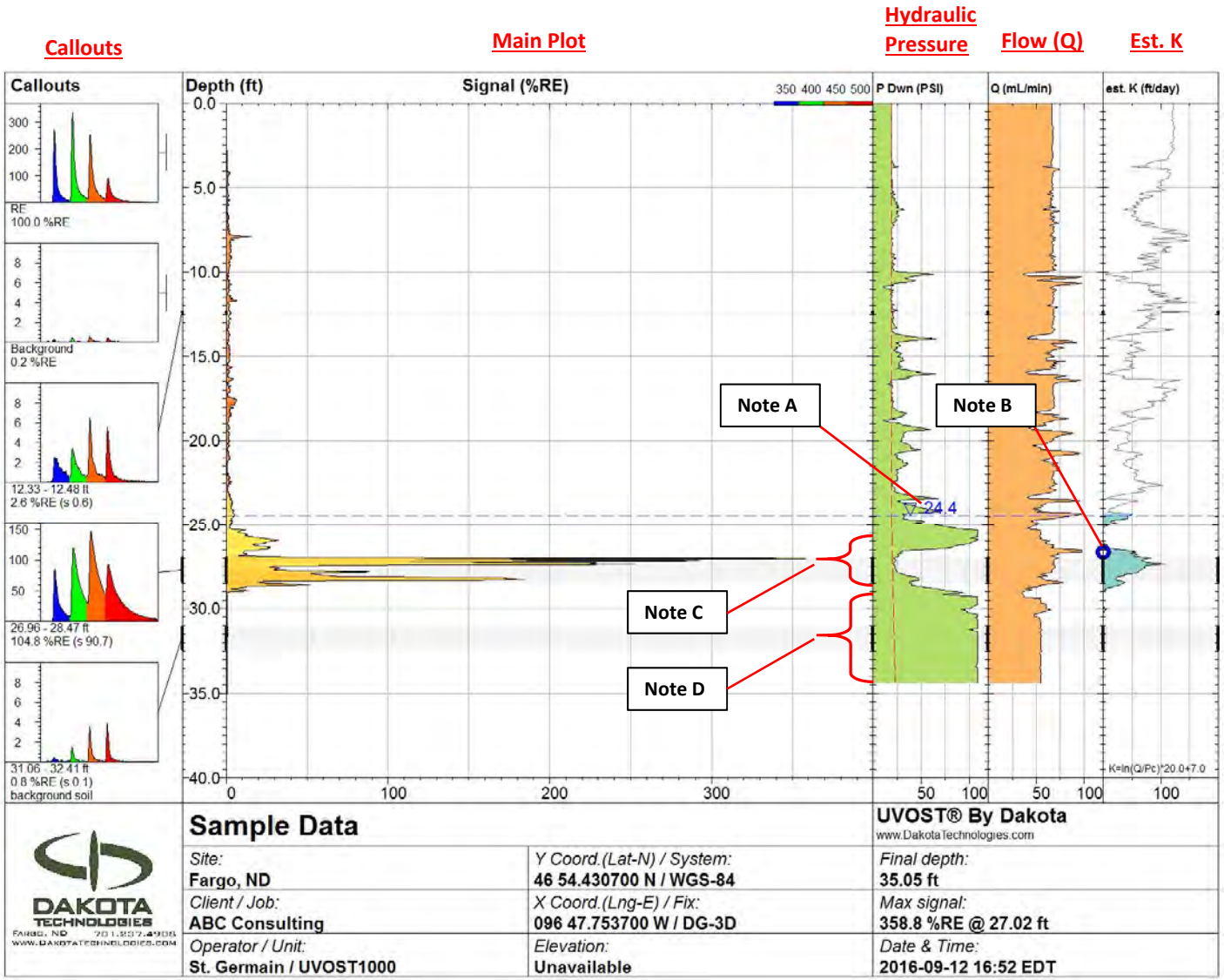
Callouts: Waveforms from selected depths or depth ranges showing the multi-wavelength waveform for that depth. The four peaks are due to fluorescence at four wavelengths and referred to as “channels”. Each channel is assigned a color. Various NAPLs will have a unique waveform “fingerprint” due to the relative amplitude of the four channels and/or broadening of one or more channels. Basic waveform statistics and any operator notes are given below the callout.

Main Plot: Signal (total fluorescence) versus depth where signal is relative to the Reference Emitter (RE). The total area of the waveform is divided by the total area of the Reference Emitter yielding the %RE. This %RE scales with the NAPL fluorescence. The fill color is based on the relative distribution of each channel’s area to the total waveform area (see callout waveform). The channel-to-color relationship and corresponding wavelengths are given in the upper right corner of the plot.

Hydraulic Pressure (P Dwn): Downhole hydraulic pressure is measured in response to pumping water into the formation at a constant rate. Measurements are logged simultaneously with UVOST data. The resulting log gives insight into the permeability of the soils.

Flow (Q): Water is pumped out of the port of the UVOST-HP probe at a constant rate of 60 mL/min. A change in flow (usually accompanied by an inverse pressure change) is an indicator of hydraulic properties of the soil.

Estimated K: The estimated hydraulic conductivity (K) is internally calculated by utilizing pressure and flow data in conjunction with dissipation test(s) performed at each location. The estimated K is calculated by the equation: K = ln(Q/P’)*20.0 + 7.0.

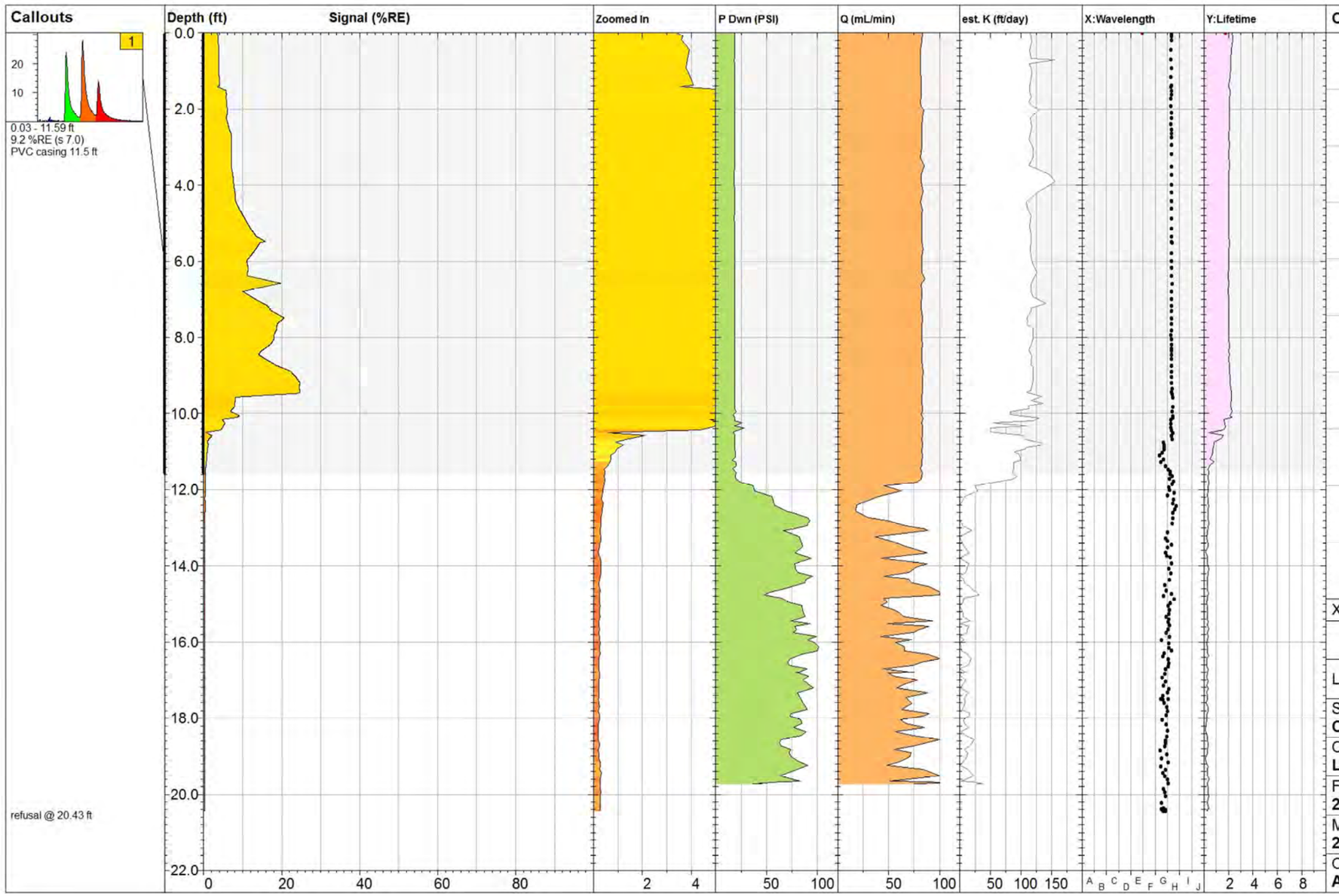


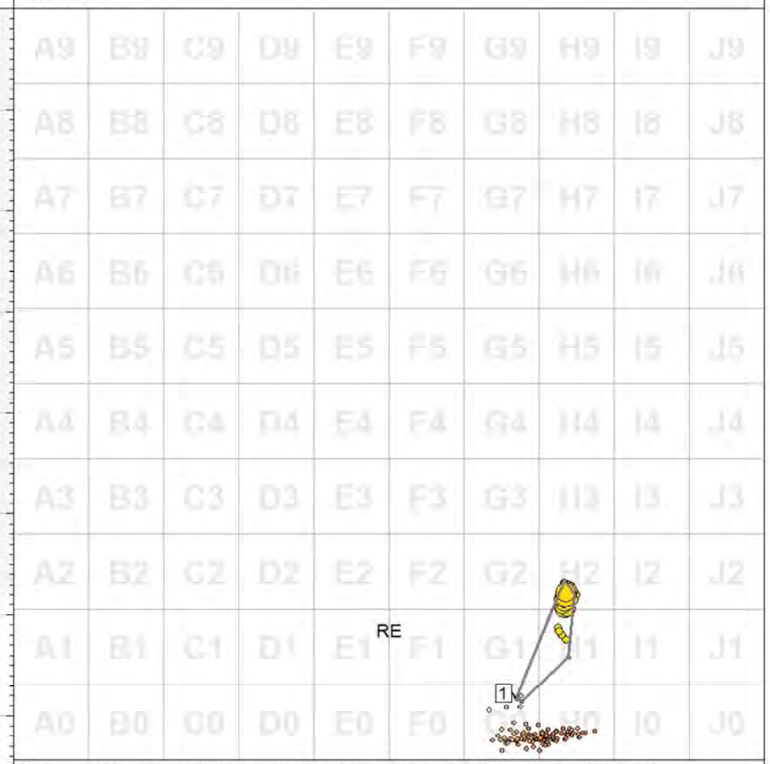
Note A: The water table has been calculated and plotted at 24.4’ bgs.

Note B: The circle on the Estimated K plot represents the location(s) of dissipation tests. Here, a single dissipation test was performed at 26.67 bgs’.

Note C: The highest LNAPL response in this log is present in an area of relatively higher permeability, as indicated by low pressure and higher estimated k values at approximately 26’ to 28’.

Note D: The increase in pressure starting near 29’ (transducer is maxed out, 100 psi) is due to low permeability conditions. In this example, the increase in pressure below the LNAPL represents a potential confining unit.





X-axis = Wavelength balance of waveform; Y-axis = Lifetime avg. of waveform

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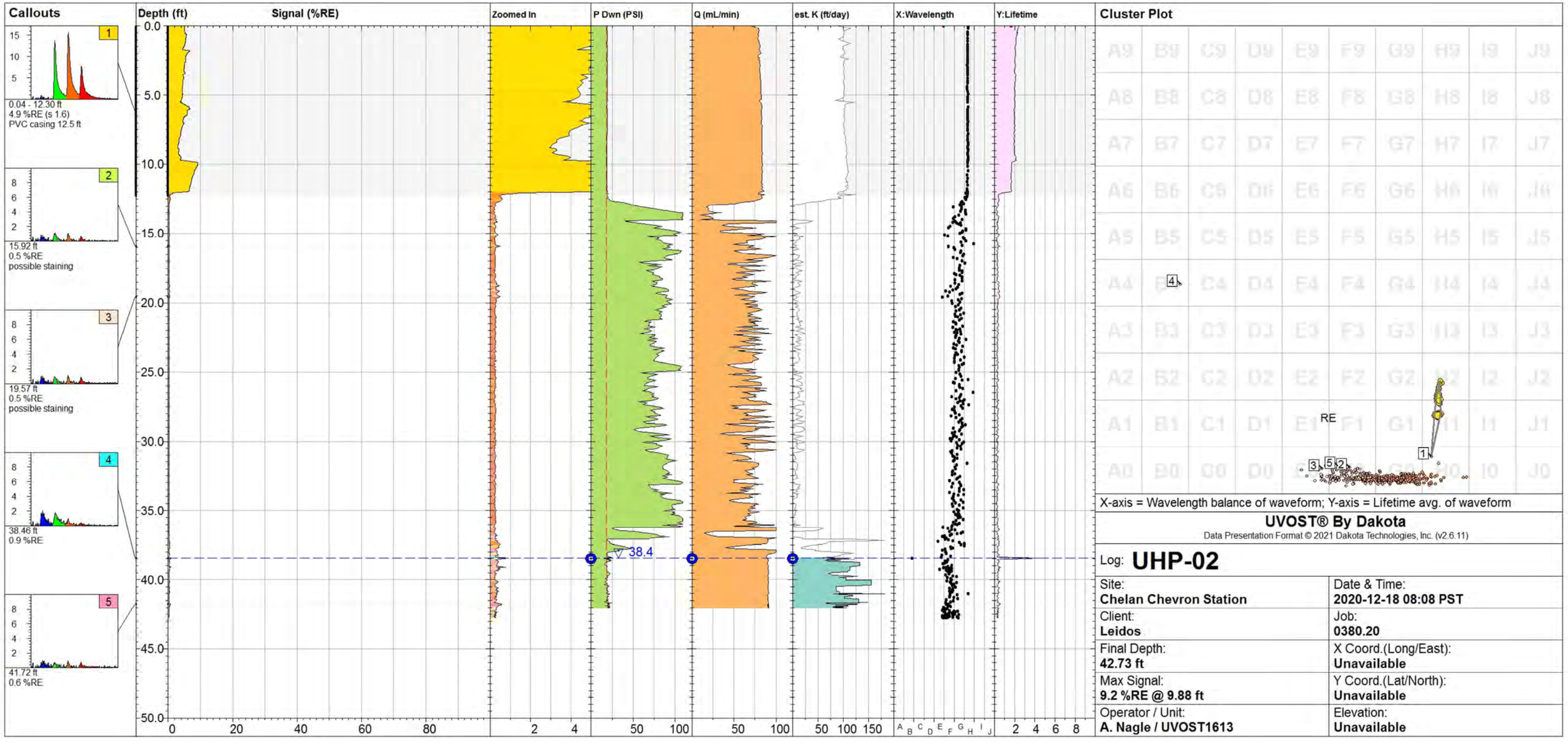
Log: **UHP-01**

Site: **Chelan Chevron Station**	Date & Time: **2020-12-17 15:30 PST**
Client: **Leidos**	Job: **0380.20**
Final Depth: **20.43 ft**	X Coord.(Long/East): **Unavailable**
Max Signal: **24.7 %RE @ 9.44 ft**	Y Coord.(Lat/North): **Unavailable**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**



X-axis = Wavelength balance of waveform; Y-axis = Lifetime avg. of waveform

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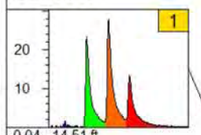
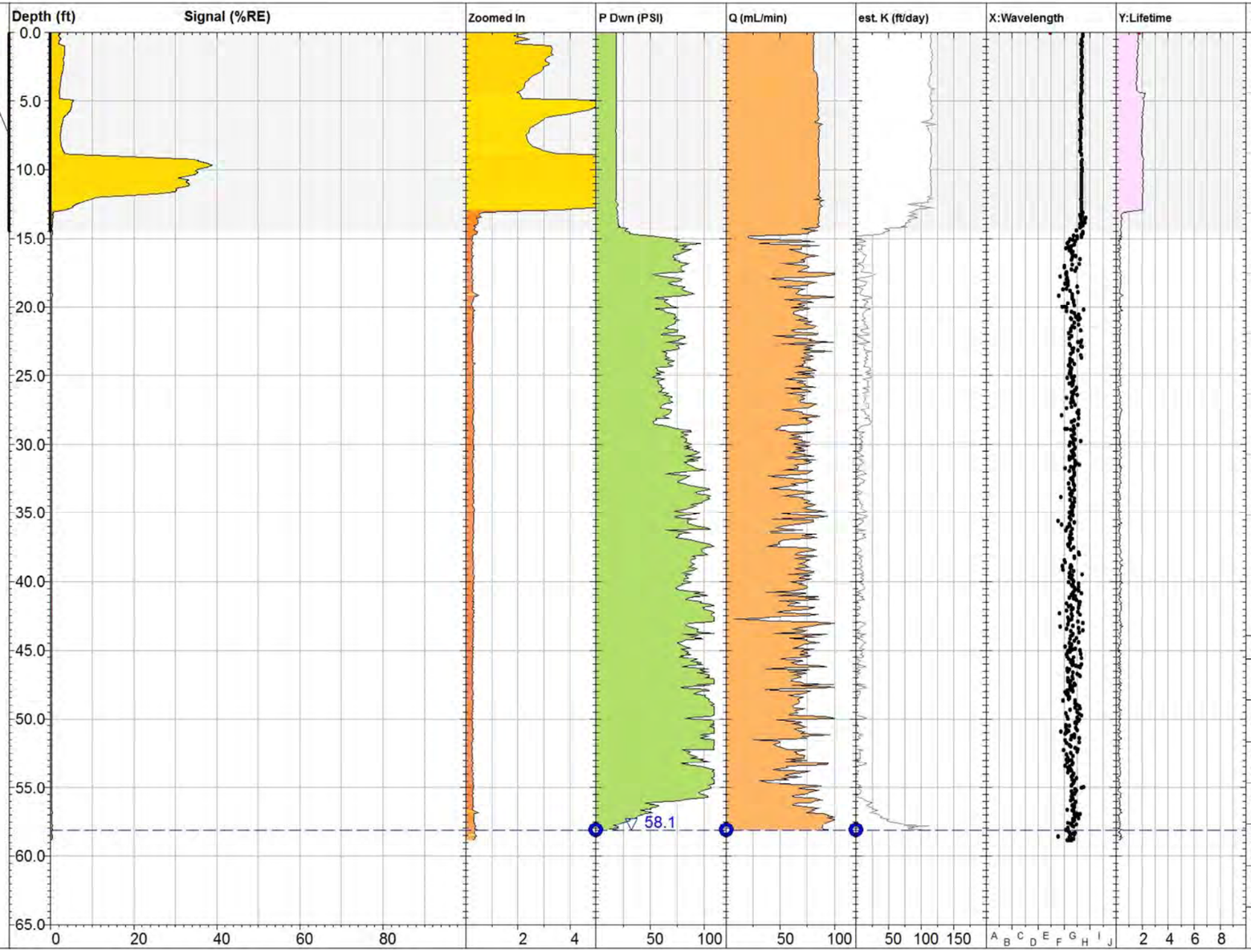
Log: **UHP-02**

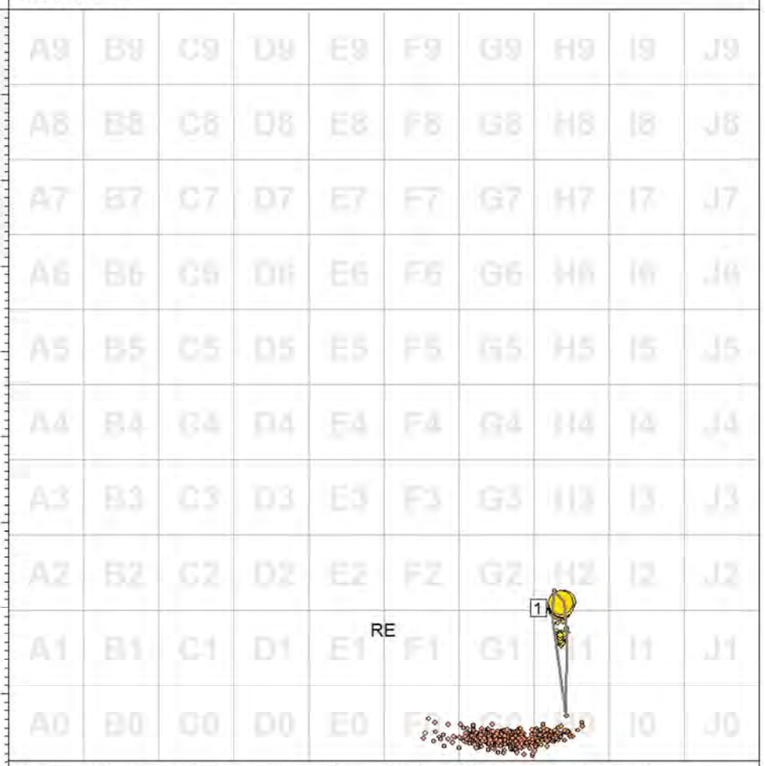
Site: **Chelan Chevron Station**	Date & Time: **2020-12-18 08:08 PST**
Client: **Leidos**	Job: **0380.20**
Final Depth: **42.73 ft**	X Coord.(Long/East): **Unavailable**
Max Signal: **9.2 %RE @ 9.88 ft**	Y Coord.(Lat/North): **Unavailable**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**

Callouts





Cluster Plot



X-axis = Wavelength balance of waveform; Y-axis = Lifetime avg. of waveform

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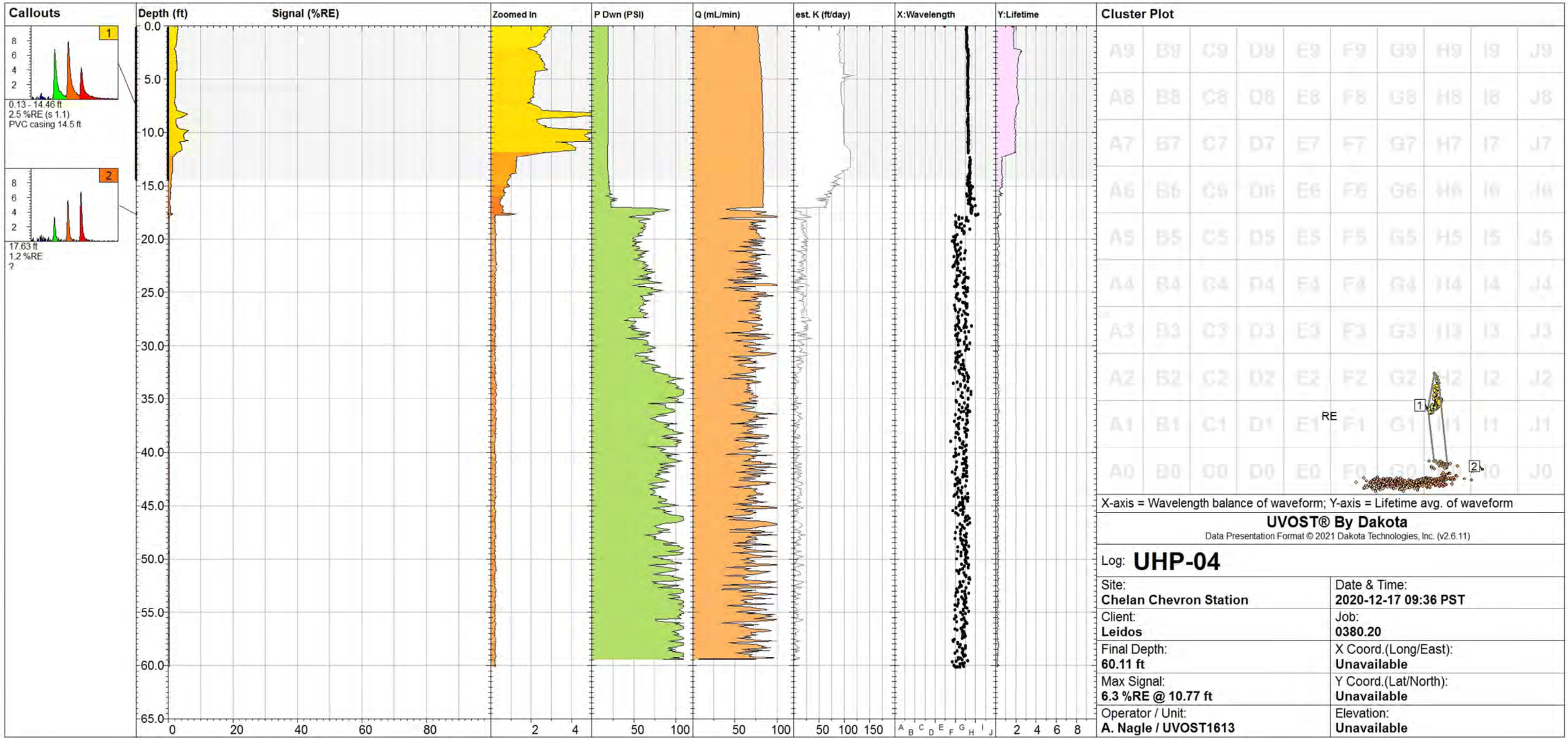
Log: **UHP-03**

Site: **Chelan Chevron Station**	Date & Time: **2020-12-17 11:09 PST**
Client: **Leidos**	Job: **0380.20**
Final Depth: **58.80 ft**	X Coord.(Long/East): **Unavailable**
Max Signal: **38.9 %RE @ 9.66 ft**	Y Coord.(Lat/North): **Unavailable**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**



X-axis = Wavelength balance of waveform; Y-axis = Lifetime avg. of waveform

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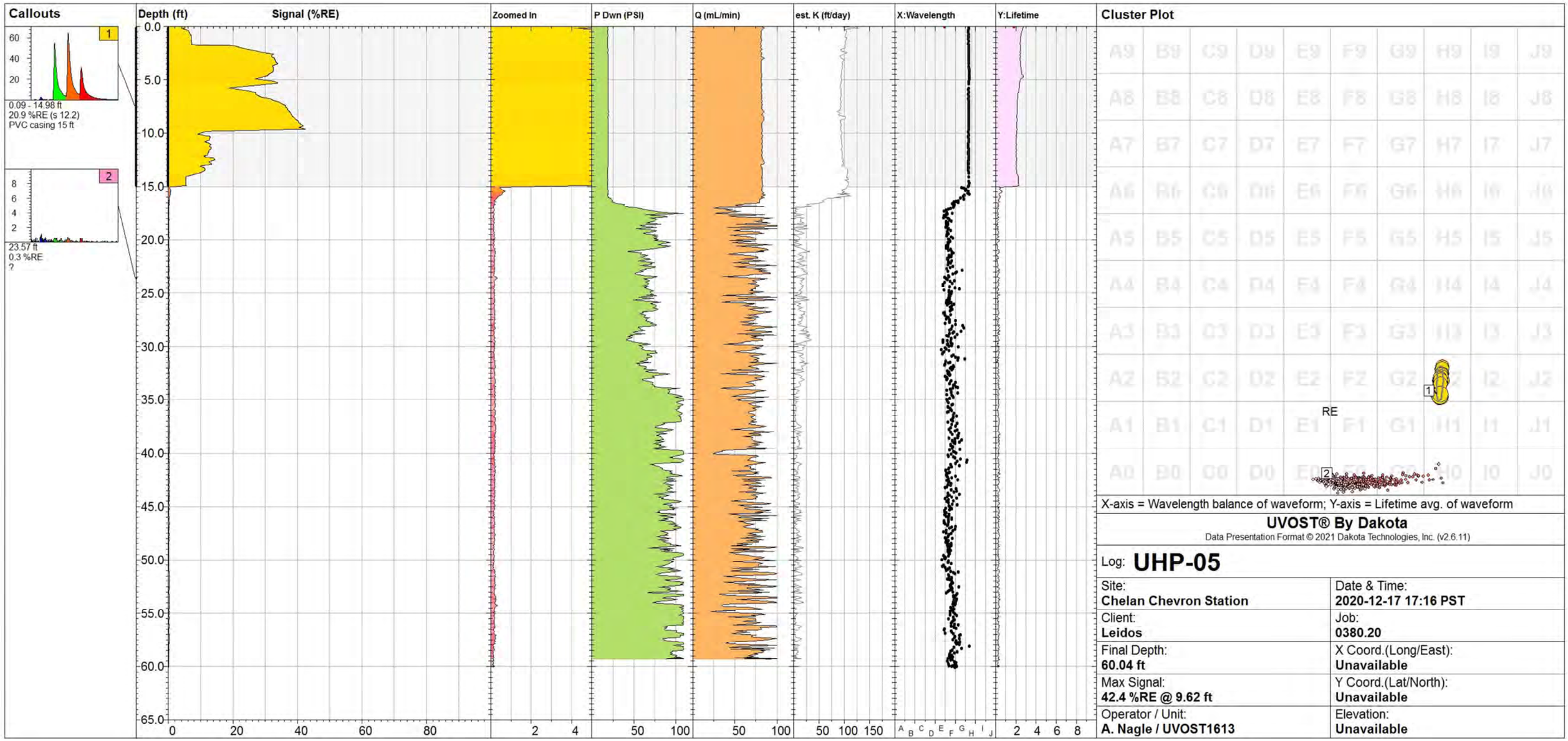
Log: **UHP-04**

Site: **Chelan Chevron Station**	Date & Time: **2020-12-17 09:36 PST**
Client: **Leidos**	Job: **0380.20**
Final Depth: **60.11 ft**	X Coord.(Long/East): **Unavailable**
Max Signal: **6.3 %RE @ 10.77 ft**	Y Coord.(Lat/North): **Unavailable**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**



X-axis = Wavelength balance of waveform; Y-axis = Lifetime avg. of waveform

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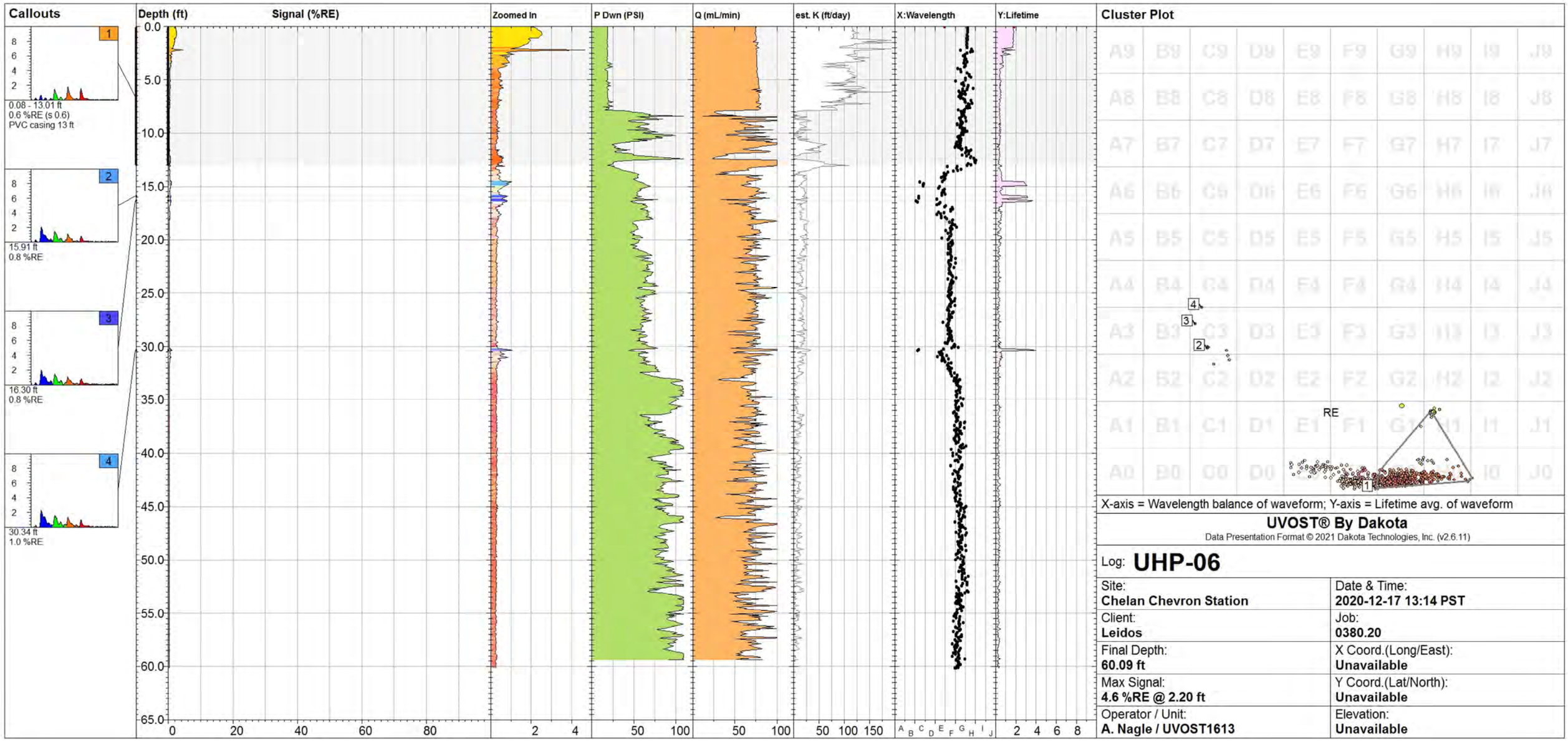
Log: **UHP-05**

Site: **Chelan Chevron Station**	Date & Time: **2020-12-17 17:16 PST**
Client: **Leidos**	Job: **0380.20**
Final Depth: **60.04 ft**	X Coord.(Long/East): **Unavailable**
Max Signal: **42.4 %RE @ 9.62 ft**	Y Coord.(Lat/North): **Unavailable**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**



X-axis = Wavelength balance of waveform; Y-axis = Lifetime avg. of waveform

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Log: **UHP-06**

Site: **Chelan Chevron Station**	Date & Time: **2020-12-17 13:14 PST**
Client: **Leidos**	Job: **0380.20**
Final Depth: **60.09 ft**	X Coord.(Long/East): **Unavailable**
Max Signal: **4.6 %RE @ 2.20 ft**	Y Coord.(Lat/North): **Unavailable**
Operator / Unit: **A. Nagle / UVOST1613**	Elevation: **Unavailable**