

**PUBLIC REVIEW DRAFT
REMEDIAL INVESTIGATION REPORT
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington**

May 26, 2023

**Prepared for:
Washington State Department of Ecology – NW Region Office
15700 Dayton Ave. N.
Shoreline, Washington 98133**

**Prepared by:
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Bothell, Washington 98011**

**On Behalf of:
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6001 Bollinger Canyon Road
San Ramon, California 94583**

**Nordic Properties, Inc.
P.O. Box 84
Port Orchard, Washington 98366**

and

**Victory Business Park LLC
1503 Lower Marine Drive
Bremerton, Washington 98312**

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5-26-2023

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LIST OF ACRONYMS

ARAR	Applicable or Relevant and Appropriate Requirement
ASTM	American Society for Testing and Materials
bgs	below ground surface
CEMC	Chevron Environmental Management Company
COC	contaminant of concern
CSM	conceptual site model
DRO	diesel-range organics
Ecology	Washington State Department of Ecology
FS	feasibility study
GPR	ground penetrating radar
GRO	gasoline-range organics
HRO	heavy-range organics
mg/kg	milligrams per kilogram
MTCA	Model Toxics Control Act
ND	non-detect
NFA	No Further Action
PAH	polycyclic aromatic hydrocarbon
PID	photoionization detector
PLP	Potentially Liable Person
ppm	parts per million
QA	quality assurance
QC	quality control
RI	remedial investigation
RIWP	remedial investigation work plan
SB	soil boring
SIM	selected ion monitoring
SVP	soil vapor probe
SSVP	sub-slab vapor point
TPH	total petroleum hydrocarbons
µg/L	micrograms per liter
µg/m ³	micrograms per cubic meter
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VI	vapor intrusion
VOC	volatile organic compound
WAC	Washington Administrative Code

**PUBLIC REVIEW DRAFT
REMEDIAL INVESTIGATION REPORT
NEWMAN'S CHEVRON**

1 INTRODUCTION

Leidos, Inc. (Leidos), has prepared this draft Remedial Investigation (RI) report, on behalf of Chevron Environmental Management Company (CEMC), Nordic Properties, Inc. (Nordic), and Victory Business Park, LLC (Victory), collectively (the Parties), for the Newman's Chevron site (the Site), located at 2021 6th Street in Bremerton, Washington. A Site vicinity map is included as Figure 1.

The RI was performed as required per Section VII of Agreed Order No. DE 14246 (the Agreed Order), which was entered into by the State of Washington, Department of Ecology (Ecology) and the Parties, and fully executed on February 6, 2018.

This draft RI Report summarizes information and conclusions generated from implementation of the RI activities, as well as from available pre-RI information.

1.1 GENERAL SITE INFORMATION

- **Site Name:** Newman's Chevron
- **Alternate Names:** 6th Street Fuel
- **Address:** 2021 6th Street, Bremerton, WA 98337
- **Assessor Parcel Number:** Kitsap County 3717-002-015-0106
- **Ecology Cleanup Site ID:** 5252
- **Ecology Facility/Site ID:** 1436359
- **Ecology UST ID:** 7972
- **Ecology Agreed Order No.:** DE14246
- **Latitude/Longitude:** 47.56707/-122.64572
- **Township/Range/Section:** 24N 1E 14
- **Current Owner/Operator:** Victory Business Park, LLC
- **Potentially Liable Persons (PLPs):**
 - CEMC
 - Nordic Properties Inc. (formerly known as Wilkins Distributing Company)
 - Victory Business Park, LLC
 - Karin Newman
- **Designated Project Coordinators:**
 - Washington Department of Ecology – Mr. Dale Myers
 - CEMC – Mr. James Kiernan
 - Nordic Properties Inc. – Mr. Roger Jensen
 - Victory Business Park, LLC – Mr. Jim Reed
 - Primary Project Coordinator for the PLPs – Mr. James Kiernan
- **Project Consultant:** Leidos, Project Manager – Mr. Russ Shropshire, PE

1.2 SITE DESCRIPTION AND SETTING

For the purposes of this document, the following terminology will apply:

- “Property” refers to the property located at 2021 6th Street, which was previously determined to be impacted by one or more petroleum releases from past operations of a service station on the Property.
- “Site” refers to the area where petroleum contamination, originating from the Property, has come to be located. A Site may include both on-Property and off-Property areas. The Site area is defined by the findings of the RI.

The Property is located at the southeast corner of the intersection of Naval Avenue and 6th Street in Bremerton, Washington, as shown on Figure 2. The Property is identified by the Kitsap County Assessor as Parcel No. 3717-002-015-0106 and is approximately 0.39 acre in size. Title records for the Property indicate that the current parcel was formerly three separate parcels (Parcels I, II, and III). Legal descriptions of the Property still retain references to these former parcel numbers. A map showing the current and former parcel boundaries is included as Figure 3.

The Property is currently occupied by a closed gasoline service station and convenience store. The retail building has an area of approximately 2,500 square feet and the canopy has an area of approximately 1,200 square feet. Three regulated underground storage tanks (USTs) are present in the northeastern portion of the Property (Figure 2). Current Ecology UST records indicate their status is “Temporarily Closed”.

1.2.1 Adjacent Properties

The Property is bounded by 6th Street to the north followed by commercial businesses across 6th street (a bank and store with parking lot); private residences to the east and southeast; a paved alley to the south followed by a tire shop and private residences; and Naval Avenue to the west. An ARCO service station is located to the west of the Property across Naval Avenue at 2101 6th Street. This ARCO station (former Budget Rent-a-Car) is identified as Ecology Facility/Site ID No. 53813326 and received a No Further Action (NFA) determination in September 2013 (Ecology, 2013a).

1.2.2 Topography

The Property lies at an elevation between approximately 106 and 110 feet above sea level (NAVD88). The property surface is generally level, but the western half slopes gently to the west. It is a paved, rectangular lot located in the West Bremerton neighborhood. Concrete retaining walls border the Property on the east and south sides, and the walls are several feet in height. The alley and parcels south of the Property range in elevation from approximately 103 to 107 feet. The residential parcel to the east of the Property ranges from approximately 107 to 114 feet.

1.2.3 Surface Water

The Property is located approximately 4,900 feet south of Anderson Cove. Oyster Bay is located approximately 5,600 feet to the northwest, and Sinclair Inlet is approximately 3,700 feet to the south and 5,600 feet to the east of the Property. No surface water bodies are located in the nearby vicinity of the Site.

1.2.4 Climate

The Bremerton climate is characterized by mild temperatures and an extended rainy season, with an average annual rainfall of 56 inches. Average temperatures vary between 34°F and 45°F in the winter and 53°F to 75°F in the summer. The driest month of the year is typically July, with the rainy season extending from October to March.

1.3 SITE OPERATING HISTORY

As discussed in Section 1.2, the current tax parcel associated with the Property formerly consisted of three separate parcels (Parcels I, II and III; Figure 3). The Agreed Order alleges that CEMC's affiliate, Texaco Inc. (Texaco), began leasing Parcel III (the westernmost parcel) in 1928, and that Texaco purchased Parcel III in 1943.

The Agreed Order alleges that Texaco began leasing Parcels I and II in 1961, and that a gasoline service station was reconfigured to occupy all three parcels. Kitsap County Assessor's records indicate that the current service station building and canopy were constructed at that time. The Agreed Order alleges that in 1981, Texaco sold Parcel III and assigned its interest in the leases of Parcels I and II to Wilkins Distributing Company (Wilkins), known now as Nordic. Wilkins subsequently sublet Parcels I and II to Robert and Karin Newman in 1981. Wilkins then purchased Parcels I and II in 1985.

The Newmans operated the service station beginning in 1981. The Newmans purchased Parcels I, II, and III from Wilkins in 1990 and continued to operate the service station as Newman's Chevron until 2004, when the Property was sold to SJ-N-SJ Corporation (SJ-N-SJ). The deed from this sale, and all subsequent property transfers, reference the current tax parcel number (3717-002-015-0106).

SJ-N-SJ owned the Property and operated the service station from 2004 to 2006. In 2006, Chang S. Choe purchased the Property and continued to operate the service station until it was closed in 2008.

1.4 SITE USE

1.4.1 Current Site Use

The current owner, Victory, acquired the Property in December 2012. Service station infrastructure, including a convenience store building, three regulated USTs, and dispenser islands remain on the Property. However, they are believed to have been unused since the service station closed in 2008. The convenience store building is currently vacant and Ecology UST records indicate that the status of the regulated USTs is "Temporarily Closed".

1.4.2 Land Use/Zoning

The Site is located in the incorporated Bremerton city limits within Kitsap County, Washington. The Property is zoned General Commercial (GC), which allows for high intensity commercial uses. The off-Property areas of the Site are zoned Low Density Residential (R-10), which are adjacent to the GC zone, located to the east and southeast of the Property (Figure 2).

1.4.3 Future Use Plans

Leidos is not aware of specific future use plans for the Property. However, based on its location and zoning, it is expected that the Property will either be reopened as a service station and convenience store location or redeveloped for other commercial use.

2 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

This section provides a summary of environmental investigation activities performed on the Property prior to initiation of RI field activities in 2018. Pre-RI sampling locations are shown on Figure 4 and pre-RI analytical data tables are presented in Appendix A.

2.1 PRE-RI ENVIRONMENTAL ACTIONS/INVESTIGATIONS PERFORMED BY APPLIED GEOTECHNOLOGY INC. (1990)

Petroleum-hydrocarbon impacts were first encountered on the eastern portion of the Property in August 1990 during UST removal operations being performed by Pacific Environmental Services Company (PESCO) for Wilkins. Applied Geotechnology Inc. (AGI) observed and documented the UST removals and collected soil samples for laboratory analysis.

Five gasoline USTs and one waste oil UST were reported removed from the Site. This included four 4,000-gallon steel tanks and one 6,000-gallon steel tank (gasoline), and one 550-gallon steel tank (waste oil). The gasoline USTs were removed from one excavation east of the dispenser islands and northeast of the store building, and the waste oil UST was removed from a separate excavation adjacent to the north side of the store building (Figure 4). The excavations were completed to maximum depths of approximately 10 and 14 feet below ground surface (bgs). Groundwater was not encountered during the excavation activities. Several holes were observed in the waste oil UST upon removal. In addition, an apparent piping leak was observed in the southeast corner of the gasoline USTs excavation. The volume and disposition of the excavated soil are unknown.

Nine soil samples were collected from the gasoline USTs excavation and analyzed for total petroleum hydrocarbons (TPH) using United States Environmental Protection Agency (USEPA) Method 8015 Modified. Gasoline-range TPH was detected in six of the samples, with a maximum concentration of 10,230 milligrams per kilogram (mg/kg) at a depth of 10.5 feet bgs at the east end of the excavation. TPH was not detected in the one soil sample collected from the bottom of the used oil UST excavation (10 feet bgs). A composite soil sample was also collected from the four sides of the waste oil UST excavation and analyzed for TPH, pesticides, polychlorinated biphenyls (PCBs), halogenated volatile organic compounds (HVOCs), and metals. TPH (40.4 mg/kg), metals (chromium, copper, and lead), and several pesticide compounds were detected. Prior to the gasoline UST excavation being backfilled, a series of horizontal vapor extraction pipes were installed at depths between 10 and 12 feet bgs to be used for a potential future vapor extraction system. However, a remedial system was reportedly never installed (AGI, 1990a, 1990c).

Later in August 1990, AGI excavated two test pits to the south (Pit-1) and to the east (Pit-2) of the eastern end of the former 6,000-gallon gasoline UST. The work was reportedly performed to further assess the extent of hydrocarbon impacts in the general area where gasoline-range TPH had been detected over 10,000 mg/kg. Gasoline-range TPH was detected at concentrations of 634 mg/kg in Pit-1 and 4 mg/kg in Pit-2, at approximately 13.8 and 13.0 feet bgs, respectively (AGI, 1990b, 1990c).

2.2 PRE-RI ENVIRONMENTAL INVESTIGATIONS PERFORMED BY GEOSCIENCE MANAGEMENT, INC. (2000)

In September 2000, GeoScience Management, Inc. (GSM) performed additional subsurface assessment on the Property, on behalf of Nordic. Seven direct push borings (B-1 through B-7) were advanced to depths of approximately 15 feet bgs outside the limits of the 1990 excavation (Figure 4). Nine soil samples were collected at depths between 10.5 and 14 feet bgs and analyzed for gasoline-range organics (GRO), BTEX, methyl tertiary butyl ether (MTBE), naphthalene, and lead. Two samples from soil boring B-5 were also analyzed for volatile petroleum hydrocarbons (VPH). Concentrations of GRO, BTEX, and naphthalene were reported above their respective Model Toxics Control Act (MTCA) Method A cleanup levels in samples collected from boring B-5 at depths of 10.5 and 12.5 feet bgs. This boring was completed near the southeastern corner of the former UST basin. In addition, GRO was reported at a concentration just above the MTCA Method A cleanup level in a sample from boring B-7 (completed southeast of the gasoline USTs excavation near Pit-1) at a depth of approximately 14 feet bgs (GSM, 2001).

In December 2000, GSM removed approximately 20 cubic yards of impacted soil from the southeast corner of the 1990 gasoline UST excavation, in the area of boring B-5. Two soil samples were collected from the walls (at depths of approximately 11.5 feet bgs) and one soil sample was collected from the bottom (at a depth of approximately 14.5 feet bgs) of the excavation. The samples were analyzed for GRO and BTEX. GRO was detected above the MTCA Method A cleanup level in the sample collected from the bottom of the excavation. Soils removed from the excavation were transported to Olympic View Landfill for disposal (GSM, 2001).

2.3 PRE-RI ENVIRONMENTAL INVESTIGATIONS PERFORMED BY PINNACLE ENVIRONMENTAL, INC. (2009)

In April 2009, Pinnacle Environmental, Inc. (PEI) completed a Phase I Environmental Site Assessment on the Property, on behalf of First Citizens Bank & Trust (Phase I assessments for the Site were also reportedly completed in 2000 by AdaPT Engineering, Inc. and in 2006 by Associated Environmental Group). Based on the results of the Phase I assessment, PEI recommended the following additional investigation work:

- A subsurface investigation of the USTs and dispensers to evaluate the Property for possible unknown or unreported leakage;
- A subsurface investigation in the western portion of the Property to evaluate possible impact from operations of previous historical service stations on the Property;
- Investigation of a 1,000-gallon capacity fuel oil UST (west of station building) noted on a 1961 plan of the Property; and
- A subsurface investigation of the former auto repair areas (east end of station building).

In July 2009, PEI returned to the Property to perform a Limited Phase II Environmental Site Assessment. The scope of work for the Limited Phase II included a geophysical survey using ground penetrating radar (GPR) to evaluate possible additional historical USTs and advancement of 14 direct-push soil borings. Results of the geophysical survey indicated that three large anomalies were detected in the westernmost portion of the Property, adjacent to Naval Avenue.

PEI reported that the geophysical survey contractor (Underground Detection Services, Inc.) believed these anomalies to be buried USTs. However, a magnetic locator used in conjunction with the radar did not respond with a strong signal. The geophysical survey did not find direct evidence of the reported 1,000-gallon fuel oil UST to the west of the service station building (PEI 2009).

PEI advanced 14 direct-push soil borings (BM-1 through BM-9, BM-9A, and BM-10 through BM-13) on the Property to depths between approximately 20 to 28 feet bgs (Figure 4). Selected soil samples related to the existing gas station USTs and dispenser islands were analyzed for GRO, volatile organic compounds (VOCs), and total lead. Selected soil samples related to the former fuel oil and waste oil USTs, and the exterior oil/water separator, were analyzed for diesel-range organics (DRO) and heavy-range organics (HRO), select polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and total lead. GRO, BTEX and naphthalene were detected at concentrations exceeding their respective MTCA Method A cleanup levels in borings located in the vicinity of fuel dispensers (BM-4 through BM-7), and northeast of the former waste oil UST (BM-8). BTEX were also detected above Method A cleanup levels in boring BM-12, east of the gasoline USTs excavation (PEI, 2009).

Due to an inability to access the interior of the service station building, PEI was unable to complete their proposed investigation of the former auto repair area (PEI, 2009).

2.4 PRE-RI SITE HAZARD ASSESSMENT BY ECOLOGY (2010)

In February 2010, Ecology completed a site hazard assessment (SHA), which assigns a rank to sites based on their estimated potential threat to human health and the environment relative to all other cleanup sites in Washington State. The Site was ranked a 5, where 1 represents the highest relative risk and 5 the lowest (Ecology, 2010).

3 REMEDIAL INVESTIGATION ACTIVITIES AND RESULTS

This section provides a summary of the work performed and results of RI activities conducted under Agreed Order No. DE 14246. As proposed in the RI Work Plan (RIWP), the scope of work for the RI included the following investigation components:

- A soil investigation to delineate the lateral and vertical extents of petroleum impacts to soil (Section 3.2);
- Investigation of suspected orphaned USTs in the western portion of the Property (Section 3.3);
- Investigation of potential petroleum impacts to groundwater (Section 3.4); and
- Investigation of the potential for petroleum vapor intrusion to existing or future buildings at the Site (Section 3.5).

Section 3.6 includes a discussion of RI data validation and management.

3.1 CHRONOLOGY OF RI FIELD ACTIVITIES

Completion of the RI was carried out in a step-wise fashion that included the following six major phases of field activities. RI sampling locations referenced in this Section are shown on Figures 5 and 6. Additional details regarding the methods utilized and results of these activities are presented in Sections 3.2 through 3.5.

3.1.1 Initial Field Activities – August/September 2018

The first phase of RI field activities at the Site were completed in August and September 2018, following Ecology approval of the RIWP (Leidos, 2018) on July 10, 2018. The objective of these activities was to characterize the nature and extent of petroleum-range constituents within the boundaries of the Property. This phase of the RI included the following investigation components:

- A visual inspection of the Property and building interior was completed, as well as a utility-locate survey and geophysical investigation to look for evidence of undocumented USTs or other former service station infrastructure below the ground surface. Geophysical survey and utility location reports are presented in Appendix B.
- The presence of three undocumented USTs was confirmed by shallow air-vacuum excavation borings in the southwest portion of the Property, and ten shallow soil borings (UST-1 through UST-10) were advanced by hand-auger/air-vacuum excavation to assess potential petroleum hydrocarbon impacts to soil in the vicinity of these USTs.
- Nine soil borings (SB-1 through SB-9) were completed to further delineate the extents of petroleum-hydrocarbon impacts to soil previously detected in the vicinity of the current (eastern) UST basin and dispenser islands. One of these borings, SB-1, was advanced to a depth of approximately 51.5 feet bgs to evaluate the presence of groundwater at the Site.
- Three soil borings were completed for installation of permanent shallow soil vapor sampling probes SVP-1 through SVP-3. SVP-1 and SVP-2 were located inside the station building and SVP-3 was located on the eastern Property boundary. Soil vapor samples were collected from these locations in September 2018.

Results of the August/September 2018 RI field activities indicated that additional investigation was necessary to delineate the lateral extents of petroleum impacts to soil both on, and beyond, the boundaries of the Property.

3.1.2 Addendum 1 Field Activities – July/August 2019

Based on the results of the August/September 2018 RI field activities, Leidos prepared Addendum 1 (Leidos, 2019a) to the RIWP in June 2019 to further delineate the extent of petroleum impacts to soil in the southern and western portions of the Property, and on the residential property immediately to the east (2005/2007 6th Street). Planning for the implementation of this work was contingent upon coordination of access to the 2005/2007 6th Street property. The Addendum 1 field activities included the following investigation components:

- Eleven soil borings (SB-10 through SB-20) were completed to further delineate the extents of petroleum-hydrocarbon impacts in soil.
- Each of the three undocumented USTs present in the southwest portion of the Property were opened to confirm their contents (see Section 3.3 for additional details).

Results of the Addendum 1 field activities confirmed the presence of petroleum-related impacts in soil in areas beyond the Property boundaries.

3.1.3 Addendum 2 Field Activities – February/March 2020

In November 2019, Leidos submitted Addendum 2 (Leidos, 2019b) to the RIWP to Ecology, which identified additional work necessary to complete the RI. The proposed scope of work included further investigation to delineate the lateral extents of petroleum impacts to soil at the Site, and to assess the potential for petroleum vapor intrusion (VI) to three residential properties in the vicinity of the Property. Addendum 2 field activities included the following:

- Five soil borings (SB-21, SB-23, SB-24, SB-26, and SB-29) were completed in the western portion of the Site in order to further delineate the northern and western extents of petroleum impacts to soil from the abandoned UST basin in that area.
- Two soil borings (SB-27 and SB-28) were completed to further delineate the eastern extent of petroleum impacts to soil on the property at 2005/2007 6th Street.
- Three soil borings (SB-22, SB-25, and SB-30) were completed to delineate the southern extent of petroleum impacts to soil to the south of the Property.
- Three soil borings were completed as permanent shallow soil vapor sampling probes (SVP-4 through SVP-6) to evaluate the potential for petroleum VI to residences located east and south of the Property. Soil vapor samples were collected from these locations in March 2020.

3.1.4 Pre-RI Check-In and Supplemental Petroleum Vapor Intrusion Assessment Activities

A summary of the results of the Addendum 2 field activities was submitted to Ecology on May 29, 2020, and these results were reviewed and discussed during a Pre-RI Check-in meeting with Ecology on June 10, 2020. Following further review, Ecology provided comments on June 16, 2020, which included a request for additional VI assessment, including analysis of soil vapor samples utilizing the Massachusetts Department of Environmental Protection Air-Phase

Hydrocarbons (MADEP APH) method. In response to Ecology's comments, Leidos proposed modifications to the Ecology-approved Sampling and Analysis Plan (SAP) for the project, which were communicated to Ecology by email on July 10, 2020. Ecology approved the modifications to the SAP on July 16, 2020. The following two VI assessment sampling events were subsequently conducted utilizing the modified SAP:

- In August 2020, soil vapor samples were collected from three shallow soil vapor sampling probes (SVP-4 through SVP-6).
- In December 2020, soil vapor samples were collected from all six shallow soil vapor sampling probes at the Site (SVP-1 through SVP-6).

Results of these sampling events indicated that naphthalene was detected in shallow soil gas at the Site at concentrations near or above the MTCA Method B screening level for soil gas.

3.1.5 Addendum 3 Field Activities

In May 2021, Leidos submitted Addendum 3 (Leidos, 2021) to the RIWP to Ecology in order to conduct additional petroleum VI assessment at the Site, utilizing USEPA Method TO-17 (Method TO-17). This work was proposed in an attempt to more accurately quantify low levels of naphthalene detected in shallow soil vapor at the Site. The Addendum 3 field activities included:

- In June 2021, soil vapor samples were collected for analysis by Method TO-17 from each of the six shallow soil vapor sampling probes then present at the Site (SVP-1 through SVP-6).

Results of the June 2021 sampling event indicated that naphthalene was detected in all six sampling locations at concentrations exceeding the MTCA Method B screening level for soil gas. Leidos provided notification to Ecology of these results by email on August 25, 2021 and proposed to conduct Tier 2 VI assessment activities at the Site, in order to evaluate potential VI concerns for indoor air in the service station building and nearby residences. Ecology approved this proposal for further VI assessment by email on September 8, 2021.

3.1.6 Tier 2 VI Assessment

Following Ecology approval of the proposal to conduct Tier 2 VI assessment activities at the Site, the Parties began efforts to obtain property access to conduct VI sampling inside the residences on the properties at 2005/2007 6th Street and 1936 5th Street. The Tier 2 VI assessment included the following components:

- In November 2021, one new shallow soil vapor sampling probe (SVP-7) was installed at 1932 5th Street in order to evaluate the potential need for Tier 2 sampling at this property.
- In February 2022, a soil vapor sample was collected from SVP-7 for analysis by Method TO-17. Naphthalene was not detected in this sample; therefore, no further VI assessment was proposed for the property at 1932 5th Street.
- In April 2022, Leidos conducted pre-sampling inspections of the residences at 1936 5th Street and 2005/2007 6th Street in order to facilitate planning of Tier 2 sampling activities on these properties.
- On July 14, 2022, Leidos submitted an Agency review draft copy of Addendum 4 of the RIWP to Ecology. Ecology approved the draft of Addendum 4 on July 28, 2022.

- In August 2022, Leidos completed installation of the VI assessment sampling locations specified by Addendum 4 at 1936 5th Street and 2005/2007 6th Street (soil vapor sampling probe SVP-8, and sub-slab points SSVP-1 through SSVP-3).
- Tier 2 VI assessment sampling activities were completed at the Site in October 2022. This work represents the final field sampling event performed for the RI.

3.2 RI SOIL INVESTIGATION

This section presents a summary of the procedures, field events performed, and results of sampling activities to delineate the extent of petroleum impacts to soil at the Site. The delineation of petroleum impacts to soil completed for the RI was based on field screening and analysis of soil samples collected from the following 46 soil boring locations (Figure 5):

- SB-1 through SB-30;
- UST-1 through UST-8; and
- SVP-1 through SVP-8.

3.2.1 Soil Boring and Sampling Procedures

Soil boring and sampling activities were conducted according to the procedures specified in Section 3 of the SAP, which was appended to the RIWP, and which are briefly summarized in the following subsections.

3.2.1.1 Borehole Clearance

Prior to the start of any subsurface work, Leidos contacted the Utilities Underground Location Center and conducted a private utility location survey. In order to comply with CEMC safety requirements, each boring was initially cleared to a depth of at least 8 feet bgs using a compressed air and vacuum excavation system (air-knife) and/or manual hand tools such as a hand-auger. Where soil samples were collected above 8 feet bgs, use of compressed air was terminated at least 6 inches above the sample interval, and the hand auger was then used to collect fresh, unoxidized samples. Within this interval, soil samples were collected approximately every 2 feet for soil classification, field screening, and potential selection for laboratory analysis.

3.2.1.2 Drilling and Sampling Methods

For those borings that went below 8 feet bgs, borings were advanced using hollow-stem auger (HSA) drilling equipment (August 2018 field event) or direct-push sampling equipment (July 2019 and February 2020 field events). For the HSA borings, soil sampling was conducted on a continuous basis from 8 to 25 feet bgs, and every 5 feet thereafter if field screening results suggested that the lower extent of petroleum impacts had been defined. For the direct-push borings, all soil sampling below 8 feet bgs was performed on a continuous basis. Drilling services were provided by Cascade Drilling.

3.2.1.3 Soil Classification and Field Screening

Soil samples were logged in the field in accordance with the Unified Soil Classification System and field screened for the presence of VOCs by visual and olfactory observations, headspace vapor measurements using a photoionization detector (PID) calibrated with isobutylene gas at a concentration of 100 parts per million (ppm), and sheen testing.

3.2.1.4 Sample Selection and Laboratory Analysis

Soil logging and field screening results were used to select samples to be submitted for laboratory analysis. These samples typically included those with field screening indicators of petroleum-hydrocarbon impact and the bottom-most sample from each boring, which were analyzed to confirm that the lower vertical extent of hydrocarbon impact had been delineated. As a result, the extent of soil impacts was defined using a combination of field screening parameters and analytical sampling results.

Soil samples selected for laboratory analysis were submitted to Eurofins Lancaster Laboratories Environmental (Eurofins Lancaster), of Lancaster, Pennsylvania for the following analyses:

- GRO by Ecology method 97-602 NWTPH-Gx;
- DRO and HRO by Ecology method 97-602 NWTPH-Dx;
- BTEX by USEPA method 8260B;
- Naphthalenes by USEPA method 8270; and
- Total lead by USEPA method 6010B.

Select soil samples (those displaying strong indications of petroleum hydrocarbon impact based on field screening results, or those collected from specific areas of interest) were also analyzed for one or more of the following additional analytes:

- MTBE, ethylene dibromide (EDB), and ethylene dichloride (EDC) by USEPA method 8260B;
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) by USEPA method 8270 SIM;
- Halogenated volatile organic compounds (HVOCs) by USEPA 8260B;
- PCBs by USEPA method 8082;
- Extractable petroleum hydrocarbons (EPH) by Ecology method 97-602 WA EPH; and
- Volatile petroleum hydrocarbons (VPH) by Ecology method 97-602 WA VPH.

Duplicate soil samples were collected at a rate of approximately one per 20 soil samples and submitted for the same analyses as the primary sample 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. Trip blank and equipment rinse QA/QC samples were submitted for the following analyses:

- GRO by Ecology method 97-602 NWTPH-Gx; and
- BTEX by USEPA method 8260B.

3.2.2 Soil Sample Field Screening and Laboratory Analytical Results

Field screening results for the 46 soil borings completed for the RI are included on the boring logs, which are presented in Appendix C. A discussion of the geologic conditions encountered at the Site is provided in Section 4.1. Laboratory analytical results for soil samples collected for the RI are presented in Tables 1 through 3. Laboratory analytical reports are included in Appendix D and third-party data validation reports are presented in Appendix E.

Based on these results, the following constituents were detected in RI soil samples at concentrations exceeding MTCA Method A cleanup levels¹.

- GRO at 14 boring locations (34 mg/kg to 3,500 mg/kg)
- DRO at 3 boring locations (2,100 mg/kg to 3,500 mg/kg)
- Benzene at one location (SB-7, 0.18 mg/kg to 0.46 mg/kg)
- Ethylbenzene at one location (SB-11, 12 mg/kg)
- Total xylenes at one location (SB-11, 100 mg/kg)
- Naphthalene at one location (SB-11, 11 mg/kg)

3.2.3 RI Soil Investigation Conclusions

Results of the soil investigation activities performed for the RI indicate that sufficient data has been collected to adequately characterize petroleum impacts to soil at the Site for the purpose of developing and evaluating cleanup action alternatives in the future feasibility study (FS). Further discussion regarding the nature and extent of petroleum impacts to soil at the Site is presented in Section 4.4.

3.3 INVESTIGATION OF ORPHANED UST BASIN

This section presents a summary of RI activities performed to investigate the orphaned USTs in the western portion of the Property, which had previously been identified during a GPR survey performed by PEI in 2009.

3.3.1 Orphaned UST Confirmation and Soil Sampling Activities

In August 2018, the locations of three suspected USTs were re-located using GPR and marked by Geophysical Survey LLC. A copy of Geophysical Survey LLC's Ground Penetrating Radar Investigation report is included in Appendix B.

Later in August 2018, Cascade Drilling used an air-knife rig to advance shallow "pothole" borings in the central portion of each suspected UST. The presence of an abandoned steel UST was confirmed at a depth of 3 feet bgs, or less, at each of the three suspected locations. Based on the GPR survey results, the northern and southern USTs are estimated to be approximately 1,000 gallons each, and the central UST is estimated to be approximately 500 gallons. The approximate locations and sizes of the USTs are shown on Figure 5.

In association with the orphaned UST investigation activities, shallow soil samples were collected using air-knife and hand-auger equipment at eight locations (UST-1 through UST-8) along the sides and ends of the three USTs (using the procedures described in Section 3.2.1.1). Soil sampling methods and the results of this sampling effort were previously presented in Section 3.2 as part of the RI soil investigation. Two additional borings (UST-9 and UST-10) were attempted on the western side of the USTs; however, these borings could not be completed due to the proximity of the sidewalk and utilities immediately west of the Property.

¹ The use of MTCA Method A cleanup levels in this Section is for screening-level purposes only. Further discussion regarding the selection of appropriate cleanup levels for the Site is presented in Section 5.1.

3.3.2 Orphaned UST Contents Confirmation and Sampling

Work proposed within the original RIWP to sample the contents of the orphaned USTs was delayed by discussions of a possible interim remedial action to remove the tanks. However, an interim remedial action was ultimately not performed at the time. Therefore, investigation activities to confirm the contents of the USTs was performed in July and August 2019, in association with the Addendum 1 field activities.

In July 2019, Leidos was able to obtain a liquid sample from the southernmost of the three abandoned USTs. The UST was accessed through an opening present at the top of the tank. Liquid in the UST had the appearance of water, with no petroleum odor and no visual indications of the presence of separate-phase hydrocarbons. A peristaltic pump was used to collect a sample of the liquid (sample I.D.: USTSOUTH-CONTENTS-W-190725 Grab Water) that was submitted to Eurofins Lancaster for analysis. Laboratory results for the sample indicated that it contained DRO at a concentration of 1,400 micrograms per liter ($\mu\text{g/L}$), which exceeded the MTCA Method A cleanup level (500 $\mu\text{g/L}$). GRO, HRO, and barium were also detected; however, at concentrations less than applicable MTCA cleanup levels. Complete analytical results for this sample are presented in Appendix D.

In August 2019, Leidos returned to the Site to evaluate the contents of the two other orphaned USTs. Clearcreek Contractors Inc. of Everett, Washington provided access to these USTs by limited-area excavations to expose the top of each tank. The tanks were then accessed, under the supervision of a marine chemist and after providing notice to the Bremerton Fire Department, in order to determine their contents. Both tanks were found to have been previously filled with sand. As such, no samples were collected of the contents of either UST.

3.3.3 Orphaned UST Investigation Conclusions

Results of the orphaned UST investigation activities performed for the RI have confirmed the presence of three undocumented USTs in the southwest portion of the Property. One (the southernmost) of the three USTs was determined to contain liquid that included DRO at a concentration exceeding the MTCA Method A cleanup level for groundwater. Results of shallow soil sampling in this area at locations UST-1 through UST-8 also confirmed petroleum releases resulting in GRO and DRO concentrations in soil in this area that exceed MTCA Method A cleanup levels. Additional discussion regarding the nature and extent of petroleum impacts to soil at the Site is presented in Section 4.

3.4 RI GROUNDWATER INVESTIGATION

This section presents a summary of work performed for the RI to evaluate the potential for petroleum impacts to groundwater at the Site.

3.4.1 RI Groundwater Investigation Field Activities

Pre-RI field investigations did not encounter groundwater to the maximum depth explored, 28 feet bgs, and results of nearby investigations suggested that groundwater may be present in the vicinity of the Site at depths of approximately 70 to 75 feet bgs (AGI, 1990a). Based on discussions with Ecology during the RI planning and scoping meeting on February 28, 2018, it was agreed that the RI scope of work would contain completion of at least one soil boring to at least 50 feet bgs to evaluate the presence of groundwater at the Site.

Soil boring SB-1 was completed in August 2018 to its maximum depth of 51.5 feet bgs. Groundwater was not observed during advancement of the boring, or within a 2-hour monitoring period after the boring was completed to its maximum depth.

3.4.2 Review of Existing Hydrogeologic Data for the Site Vicinity

To further assess hydrogeological conditions in the vicinity of the Site, Leidos also completed a review of existing data collected from previous investigations in the area. The following results were identified:

- At a site located approximately 0.25 mile west of the Site (2513 6th Street), 17 soil borings were advanced and 4 monitoring wells were installed to approximately 10 feet bgs. Groundwater was not encountered in any of the borings.
- At the ARCO service station (Figure 2), located west of the Site (2102 6th Street), four monitoring wells were installed at this property to depths of approximately 35 feet bgs. Groundwater was not encountered in any of the wells. In addition, one well was installed to approximately 80 feet bgs. At the time of installation static water level was at a depth of 69 feet bgs, and at the time of decommissioning the static water level was at 71 feet bgs in this well. Six soil borings were advanced at this property to depths of approximately 50 feet bgs, and groundwater was not encountered in any of the borings.
- The Bremerton Naval Base site is located approximately 0.4 mile to the southwest of the Site (120 Dewey Street). Two monitoring wells were installed at this facility to depths of approximately 29 and 65 feet bgs. Groundwater was not encountered in the shallower well, and the static water level was 51 feet bgs in the deeper well.
- Several soil borings were advanced at a property located approximately 0.1 mile to the southwest of the Site (301 Naval Avenue). The borings were advanced to depths of approximately 21 feet bgs, and groundwater was not encountered in any of the borings.
- Several soil borings were advanced at a property located approximately 0.15 mile to the southwest of the Site (2101 Burwell Place). The borings were advanced to depths of approximately 15 to 20 feet bgs, and groundwater was not encountered in any of the borings.

3.4.3 Conclusions Regarding Potential Petroleum Impacts to Groundwater

Based on the results of the RI soil and groundwater investigation field activities, and review of existing hydrogeological data for the Site vicinity, Leidos concludes that groundwater is not a media of concern for the Site. Throughout the Site, no petroleum impacts in soil that exceed MTCA Method A cleanup levels were detected at depths greater than 26 feet bgs (deepest in SB-27). As stated above, the extent of hydrocarbon impacts to soil is based on a combination of field screening and analytical sampling results. MTCA Method A cleanup levels are based on the protection of groundwater. Therefore, based on the vertical extent of petroleum impacts to soil at the Site, there appears to be a sufficient interval of non-impacted to minimally impacted soil (40+ feet), such that soil impacts leaching to groundwater is not a contaminant transport pathway of concern. Additional discussion regarding the nature and extent of petroleum impacts to the Site is presented in Section 4.

3.5 EVALUATION OF POTENTIAL FOR VAPOR INTRUSION

Vapor intrusion (VI) is the process by which chemical vapors can potentially migrate from the subsurface through soil and into indoor air, which may result in human exposure to hazardous substances. As a result, Ecology expects that all site investigations include an assessment of the VI pathway whenever volatile hazardous substances are present in the subsurface.

Ecology has established a multi-tiered process for evaluating the potential for VI to occur at a site, which includes the following major steps (Ecology, 2022):

- Preliminary Assessments;
- Tier 1 Evaluations; and
- Tier 2 Evaluations.

A preliminary assessment of VI potential at the Site was presented in the RIWP (Leidos, 2018). The preliminary assessment was based on the pre-RI investigations at the Site, the results of which indicated that benzene and naphthalene were detected in vadose zone soils within close proximity to the former service station building present on the Property. Based on these results, the Parties determined that additional investigation, in the form of a Tier 1 evaluation, was warranted.

3.5.1 Tier 1 Evaluation Activities

A Tier 1 evaluation is completed during site investigation activities to evaluate whether the concentrations of volatile contaminants in the subsurface are high enough to potentially result in unacceptable levels of hazardous substances in indoor air. Tier 1 evaluation activities for the Site consisted of the following five sampling events. The results of these activities are presented in Tables 4 through 7 and sampling locations are shown on Figure 6.

1. **September 2018** – The first round of VI assessment sampling was conducted, as specified by the RIWP. This sampling event utilized three shallow soil vapor sampling probes (SVP-1, SVP-2, and SVP-3) that were installed on the Property during the August 2018 RI field activities. Soil vapor samples were collected in 1-liter Summa canisters, which were analyzed by ALS Laboratory of Simi Valley, California using USEPA Method TO-15 (Method TO-15) with selected ion monitoring (SIM), ASTM D1946, and USEPA Method 3C modified.
2. **March 2020** – As part of the Addendum 2 RI field activities, three additional shallow soil vapor sampling probes (SVP-4, SVP-5, and SVP-6) were installed in February 2020 to assess soil vapor conditions to the south and east of the former service station property. Soil vapor samples were collected at these locations using 1-liter Summa canisters, which were analyzed by H&P Mobile Geochemistry, Inc. of Carlsbad, California using Method TO-15, ASTM D1945, and ASTM D1945 modified.
3. **August 2020** – In June 2020, Ecology requested that another round of soil vapor sampling be conducted at SVP-4 through SVP-6, including laboratory analysis for petroleum fractions using the MADEP APH method, and use of a modified sample collection method to achieve a lower reporting limit for quantification of naphthalene by Method TO-15. Samples were analyzed by Eurofins Air Toxics of Folsom, California. Results of this sampling event indicated that naphthalene was detected in the samples collected from SVP-5 ($4.4 \text{ J } \mu\text{g}/\text{m}^3$) and SVP-6 ($4.7 \text{ J } \mu\text{g}/\text{m}^3$) at concentrations exceeding

the MTCA Method B soil gas screening level ($2.5 \mu\text{g}/\text{m}^3$). The laboratory J-flag indicates an estimated concentration that is less than the laboratory reporting limit (or practical quantitation limit), but above the method detection limit.

4. **December 2020** – Based on the results of the August 2020 sampling event, another round of soil vapor sampling was performed that included all then-existing soil vapor sampling probes (SVP-1 through SVP-6). This round of sampling also included collection of ambient air samples at three outdoor locations (OA-1 through OA-3). Samples were analyzed by Method TO-15, ASTM D-1946, and MADEP APH by Eurofins Air Toxics. Results of this sampling event indicated that naphthalene was present at all sampling locations at concentrations near (SVP-3 through SVP-6) or above (SVP-1 and SVP-2) the Method B soil gas screening level. These analytical results also indicated that benzene was detected at concentrations exceeding the MTCA Method B cleanup level for indoor air ($0.321 \mu\text{g}/\text{m}^3$) in all of the outdoor air samples (see Tables 4 and 6). Benzene concentrations in the outdoor air samples ranged from 1.5 to $1.7 \mu\text{g}/\text{m}^3$, while benzene results for the shallow soil vapor samples were non-detect at laboratory reporting limits of 0.21 to $0.22 \mu\text{g}/\text{m}^3$. The presence of benzene in outdoor air at concentrations exceeding the Method B cleanup level for indoor air is not unusual in urban settings.
5. **June 2021** – Based on the results of the previous sampling events, an additional round of sampling was conducted to focus specifically on quantification of low-levels of naphthalene previously detected in each of the then-existing soil vapor sampling probes (SVP-1 through SVP-6). Samples were analyzed by Eurofins Air Toxics for naphthalene only by Method TO-17, which is better suited than Method TO-15 to accurately quantify low levels of naphthalene. Results of this sampling event indicated that naphthalene was detected at all six sampling locations at concentrations (ranging from 2.9 to $14 \mu\text{g}/\text{m}^3$) exceeding the Method B soil gas screening level.

3.5.2 Tier 2 Evaluation Activities

Based on the results of the Tier 1 VI assessment, the Parties proposed further investigation at the Site, in the form of a Tier 2 VI assessment, to Ecology via e-mail on August 25, 2021. This proposal was accepted by Ecology on September 8, 2021.

The Tier 2 VI assessment was proposed to evaluate potential VI concerns for indoor air in the service station building and nearby residences on the properties located at 1936 5th Street and 2005/2007 6th Street (Figure 6). However, further investigation was also conducted to determine whether Tier 2 sampling was also warranted for the property at 1932 5th Street.

3.5.2.1 Evaluation of Need for Tier 2 Sampling at 1932 5th Street Property

As part of the Tier 2 VI assessment, additional Tier 1 soil vapor sampling was conducted to determine whether the Tier 2 VI assessment should be extended to include the property at 1932 5th Street. One shallow soil vapor sampling probe (SVP-7) was installed near the northwest corner of this property in November 2021. Analytical results for the soil sample collected in conjunction with installation of SVP-7 are presented in Table 1 and a boring log for this location is included in Appendix C.

Due to wet weather conditions, vapor sample collection at SVP-7 did not occur until February 2022. A single soil vapor sample (SVP-7-021822) was collected and analyzed by Eurofins Air Toxics for naphthalene by Method TO-17. Naphthalene was not detected above the laboratory

reporting limit ($1.2 \mu\text{g}/\text{m}^3$) in this sample (see Table 7). Based on this result, no further VI assessment activities were proposed for the 1932 5th Street property.

3.5.2.2 Property Inspections

Following access coordination, Leidos conducted pre-sampling inspections in April 2022 of the residences on the properties at 1936 5th Street and 2005/2007 6th Street. The pre-sampling inspections were conducted to understand the layout, use, and construction of the existing residential structures. Results of the pre-sampling inspections were presented in Addendum 4 to the RIWP (Leidos, 2022).

3.5.2.3 Tier 2 VI Assessment Scope of Work

Results of the property inspections described above were used to develop the sampling strategy and scope of work for the Tier 2 VI assessment that was proposed by Addendum 4 to the RIWP. The proposed scope of work included one round of sampling for naphthalene by Method TO-17 at the following sampling locations:

- Indoor air sampling at three locations;
 - Two in the former service station building (IA-1 and IA-2)
 - One in the 2005 6th Street residence (IA-3)
- Crawlspace air sampling at two locations;
 - 2007 6th Street residence (CSA-1)
 - 1936-½ 5th Street residence (CSA-2)
- Outdoor air sample collection at three locations;
 - 2021 6th Street property (former service station building) (OA-1)
 - 2005/2007 6th Street property (OA-2)
 - 1936 5th Street property (OA-3)
- Sub-slab soil vapor sampling at three locations;
 - Two in the former service station building (SSVP-1 and SSVP-2)
 - One in the 2005 6th Street residence (SSVP-3)
- Shallow soil vapor sample collection at one location.
 - 1936 5th Street (SVP-8)

3.5.2.4 Installation of Tier 2 VI Assessment Sampling Locations

Installation of the Tier 2 VI assessment sampling locations was performed on August 25-26, 2022.

Sub-slab soil vapor sampling points (SSVP-1, SSVP-2, and SSVP-3) were installed using a rotary hammer to drill through the concrete floor slab at each location. A threaded Swagelok stainless steel fitting was then cemented in-place within the floor slab and sealed with a stainless-steel male-threaded cap wrapped with Teflon thread sealing tape. Additional details regarding installation of the sub-slab soil vapor sampling points were presented in Addendum 4 to the RIWP.

Shallow soil vapor sampling probe SVP-8 was installed on August 26, 2022, in the backyard of the residence at 1936 5th Street, approximately 1 foot from the foundation of the residence. Analytical results for the soil sample collected in conjunction with installation of SVP-8 are presented in Table 1 and a boring log for this location is included in Appendix C.

3.5.2.5 Tier 2 VI Assessment Sampling Event

Tier 2 VI assessment sampling was completed on October 6, 2022.

One day prior to the sampling event, lengths of Teflon tubing were placed into the crawlspace areas of the residences at 1936-½ 5th Street and 2007 6th Street. This was performed in order to allow connection of sample collection equipment on the following day without entering or otherwise disturbing the air space within these crawlspace areas. The tubing was attached to a length of 2x4 inch dimensional lumber in order to keep the tubing straight and allow it to be pushed into the crawlspace areas without the need for personnel to completely enter these spaces.

Indoor air, outdoor air, and crawlspace air samples were all collected using laboratory-grade low-flow air sampling pumps (SKC Pocket Pump Touch) provided by SKC. Use of these pumps allowed collection of a relatively large sample volume (approximately 14 liters) over an approximate 8-hour sampling duration. The flowrate of each pump was set prior to the start of sample collection and checked at the end of the sample collection using an SKC Chek-Mate calibrator. The initial and final flowrate values were used to calculate an average air flowrate for each sample collected, which is used to determine the sample volume. An equipment blank sample (CSA-B-100622) was also collected using the same inlet tubing setup that was used for collection of the crawlspace air samples. This sample was collected in the lawn area west of the 2005 6th Street residence.

Soil vapor samples collected at the sub-slab vapor points (SSVP-1 through SSVP-3) and shallow soil vapor sampling probe (SVP-8) were 0.8-liter samples that were collected using sampling syringes. Samples were collected at the sub-slab vapor points after completing collection of the indoor air samples, in order to minimize the presence of Leidos personnel in the interior spaces while indoor air samples were being collected.

The Tier 2 sampling event also included collection of two field blank samples. Field blank samples for Method TO-17 were collected by removing the endcaps of a TO-17 sorbent sampling tube momentarily and then resealing the endcaps without actively drawing any air through the tube.

All air and vapor samples collected for the Tier 2 VI assessment were submitted to Eurofins Air Toxics for analysis of naphthalene by Method TO-17.

3.5.2.6 Tier 2 VI Assessment Results

Laboratory analytical results for the shallow soil vapor sample collected at location SVP-8, and the sub-slab soil vapor samples collected at locations SSVP-1, SSVP-2, and SSVP-3, are included in Table 7. Results for indoor air, outdoor air, and crawlspace air samples are presented in Table 8. The laboratory analytical report and third-party data validation results for this sampling event are included in Appendices D and E, respectively.

As shown in Table 7, naphthalene was not detected above the laboratory reporting limit (1.2 µg/m³) in the shallow soil vapor sample collected at SVP-8, or in any of the samples collected from the sub-slab soil vapor sampling locations (SSVP-1, SSVP-2, and SSVP-3). This reporting limit is less than the MTCA Method B screening level for soil gas (2.5 µg/m³).

As shown in Table 8, naphthalene was not detected above the laboratory reporting limit (0.056-0.058 µg/m³) in any of the outdoor air samples. However, naphthalene was detected at

concentrations exceeding the MTCA Method B indoor air cleanup level ($0.0735 \mu\text{g}/\text{m}^3$) in samples from each of the indoor air sampling locations (IA-1, IA-2, and IA-3; ranging from 0.099 to $0.48 \mu\text{g}/\text{m}^3$) and in the crawlspace air sample collected at the 1936 5th Street property (CSA-2; $0.12 \mu\text{g}/\text{m}^3$). Naphthalene was also detected in the crawlspace air sample collected at location CSA-1 (2007 5th Street property) and in the crawlspace air equipment blank sample (CSA-B), but at concentrations below the MTCA Method B indoor air cleanup level.

3.5.3 Evaluation of VI Assessment Results

Results of the Tier 1 VI assessment work completed for the RI indicate that TPH and BTEX are not COCs in soil vapor at the Site. Naphthalene has been detected in shallow soil vapor at concentrations that exceed the MTCA Method B screening level for soil gas, and in indoor air and crawlspace air samples at concentrations that exceed the MTCA Method B cleanup level for indoor air. However, multiple lines of evidence suggest that naphthalene detected in the indoor and crawlspace air samples appears to be due to background sources and not vapor intrusion. These lines of evidence include:

- Sub-slab soil vapor sampling results for sampling locations SSVP-1 through SSVP-3, which indicate that naphthalene is not present in sub-slab soil vapor at concentrations high enough to result in naphthalene concentrations in indoor air that would exceed the MTCA Method B cleanup level for indoor air;
- Findings of recent petroleum VI studies that have documented how readily petroleum vapors degrade in well oxygenated near-surface soils;
- Findings of numerous studies by government agencies and others that have documented the ubiquitous presence of naphthalene in residential indoor air at concentrations that exceed the MTCA Method B cleanup level for naphthalene in indoor air; and
- Results of modeling using the United States Environmental Protection Agency (USEPA) Johnson and Ettinger Model Spreadsheet Tool, Version 6.0 (J&E Model) to predict the concentration of naphthalene that would be expected in a crawlspace, based on the laboratory results of shallow soil vapor samples.

Further discussion of these lines of evidence are provided below.

Although naphthalene was detected above the MTCA Method B screening level at shallow soil vapor sampling locations SVP-1 through SVP-6, naphthalene was not detected in any samples collected from the sub-slab soil vapor sampling locations, SSVP-1 through SSVP-3. These results, which are presented in Table 7, are consistent with recent petroleum VI science, which has demonstrated that petroleum vapors, including naphthalene (Lahvis, 2018), readily degrade in well-oxygenated soils, such as those typically found at shallow depths. Results of the initial Tier 1 sampling events, which included analyses of oxygen levels, indicated relatively high levels of oxygen in the shallow soil gas samples collected at SVP-1 through SVP-6, ranging from 11 to 20 percent (Table 5). Therefore, in combination with soil gas diffusion, biodegradation appears to be contributing to these reductions of naphthalene in shallow soil gas.

The lack of naphthalene detections in the sub-slab soil vapor samples provides another line of evidence that VI is not occurring at the Site. Assuming a conservative attenuation factor of 0.03, which is consistent with Ecology VI guidance, naphthalene concentrations in sub-slab soil vapor would need to exceed $2.5 \mu\text{g}/\text{m}^3$ to result in naphthalene concentrations in indoor air exceeding the Method B cleanup level for indoor air. As stated above, naphthalene was not detected above

the laboratory reporting limit ($1.2 \mu\text{g}/\text{m}^3$) in any of the sub-slab samples. Therefore, naphthalene was not present at high enough concentrations in the sub-slab samples to result in naphthalene concentrations in indoor air that would exceed the MTCA Method B cleanup level for indoor air.

As was previously discussed in Addendum 4 to the RIWP, the presence of naphthalene in indoor air in residential homes and other buildings is ubiquitous due to its use/presence in many consumer and building products. Common sources of naphthalene in indoor air include woodstoves and fireplaces, cooking, cigarette smoke, home furnishings, and exhaust from vehicles and other gas-powered equipment. Consumer and building products containing naphthalene include moth and pest repellents, air fresheners, caulking, carpet pads, flooring materials, and wall coverings. Numerous studies conducted by state agencies [(Montana DEQ, 2012), (Maine DEP, 2014)], the Canadian government (Health Canada, 2013) and others [(Batterman, S. et al., 2012), (Jia, C. et al., 2010), (Hammond, K. et al., 2006)] have determined that naphthalene can be expected to be found in the indoor air of residential homes at concentrations ranging from approximately 0.3 to $6 \mu\text{g}/\text{m}^3$. These typical "background" levels of naphthalene exceed the MTCA Method B cleanup level for naphthalene in indoor air, which is $0.0735 \mu\text{g}/\text{m}^3$. The concentrations of naphthalene detected in indoor air samples IA-1 through IA-3 and crawlspace air sample CSA-2, which ranged from 0.099 to $0.48 \mu\text{g}/\text{m}^3$, are less than or within this range of typical background concentrations for naphthalene in indoor air demonstrated by those studies. Therefore, the presence of naphthalene above the cleanup level in the indoor air samples and crawlspace air sample CSA-2 is not a conclusive indicator that VI is occurring at these structures.

Appendix F presents a figure adapted from an invited presentation (Luo, 2023) to the 32nd Association for Environmental Health and Sciences (AEHS) Foundation that depicts a typical VI conceptual site model (CSM) for buildings with a crawlspace where there is a VOC source beneath the building. As shown in the figure, constant air exchange between indoor air, outdoor air and crawlspace is expected for these types of buildings. Therefore, the naphthalene sources impacting indoor air quality will also impact crawlspace air.

To further assess the results of the crawlspace air sample collected at 1936-½ 5th Street (sample location CSA-2), modeling was conducted using the United States Environmental Protection Agency (USEPA) Johnson and Ettinger Model Spreadsheet Tool, Version 6.0 (J&E Model). The J&E Model was used to predict the crawlspace naphthalene concentration that could be reasonably expected to be generated by the presence of naphthalene in shallow soil vapor at sampling location SVP-6, which is located in the alley immediately north of the 1936-½ 5th Street residence. Using location-specific data for the soil gas concentration in SVP-6 ($4.7 \mu\text{g}/\text{m}^3$, which represents the maximum naphthalene concentration detected at this location), sample depth (5 feet), soil stratum type (silt), enclosed space floor area (550 square feet), and enclosed space mixing height (2 feet), and a default value for the residential indoor air exchange rate, the model predicted a soil gas to indoor air attenuation coefficient of 0.0051 and an indoor air concentration of naphthalene due to VI of $0.025 \mu\text{g}/\text{m}^3$. These results further demonstrate that levels of naphthalene detected in shallow soil gas near the 1936-½ 5th Street residence are not high enough to result in naphthalene concentrations in crawlspace or indoor air that exceed the Method B indoor air cleanup level ($0.0735 \mu\text{g}/\text{m}^3$).

Based on the results of the sub-slab vapor sampling conducted at locations SSVP-1 through SSVP-3, as well as J&E Model evaluation of the shallow soil vapor results for sampling location

SVP-6, Leidos concludes that naphthalene exceedances of the Method B indoor air cleanup level at sampling locations IA-1 through IA-3 and CSA-2 are the result of naphthalene contributions from indoor and/or crawlspace sources. These findings are consistent with the VI CSM for buildings with a crawlspace and the findings of multiple studies documenting typical background naphthalene concentrations in residential homes. Collectively, this data and information provide multiple lines of evidence indicating that VI is not adversely impacting indoor air quality within the existing buildings at the Site.

Based on the results of the VI assessment work completed for the RI and the above evaluation, VI does not appear to be impacting indoor air in the existing service station building, or in nearby residences. However, if the land-use scenario changes, potential VI may need to be re-evaluated.

3.6 REMEDIAL INVESTIGATION DATA VALIDATION AND MANAGEMENT

As required per the Scope of Work (Exhibit B) of the Agreed Order, all environmental data collected in association with the RI field activities was validated by a third-party review performed at Quality Assurance Level 2 (EAP2). Third-party data validation was performed by EcoChem, Inc. of Seattle, Washington.

Following completion of third-party data validation, all sampling data generated under the RIWP was entered into Ecology's Environmental Information Management System (EIM) in accordance with WAC 173-340-840(5) and Ecology's Toxics Cleanup Program Policy 840: Data Submittal Requirements.

4 CURRENT CONCEPTUAL SITE MODEL

A CSM is a written and/or illustrative representation of the collective information that is known or suspected regarding the presence of contamination at a site, and the physical, chemical, or biological processes that may impact contaminant migration, transport to other media, or exposure by human and/or ecological receptors. Development and refinement of a CSM is an iterative process, in which the CSM is updated when new investigation data or other information is available for a site. Preparation and updates of a CSM are beneficial within the RI process to identify data gaps and to provide a comprehensive understanding of the potential risks associated with a site.

To initiate the RI process for the Site, Leidos developed a preliminary CSM that was presented in the RIWP, which summarized our understanding of known and potential environmental impacts to the Site, and the potential risks to human health or the environment that could be associated with those impacts. The preliminary CSM relied on information collected from previous site investigations and site history information, site plans, aerial photographs, and utility information provided by the City of Bremerton.

This section presents an updated version of the CSM, which incorporates additional information gathered through completion of the RI.

4.1 GEOLOGY AND HYDROGEOLOGY

4.1.1 Geology

This section summarizes the geologic setting of the Site, based on the soil boring and sampling activities during the RI, as well as available soil descriptions from pre-RI activities. The lithologic units vary across the Site and are depicted in a cross section that extends east-west through the Site. The location of this section line (A-A') is shown on a map on Figure 7, and the cross section is presented on Figure 8. The section extends from Naval Avenue on the west, through the western UST basin, to between the southern dispensers and the station building, extending south of the eastern UST basin, and into the adjacent residential property east of the Property.

The four lithologic units identified at the Site include the following (youngest to oldest):

- Unit A: Fill and recent deposits
- Unit B: Glacial lacustrine silt with clay
- Unit C: Glacial till and related material
- Unit D: Glacial advance outwash sand

Unit A

The uppermost lithologic unit throughout the Site consists of fill material, other disturbed or redistributed soils, and possibly some other recent (Holocene) post-glacial deposits. This unit consists of sand, silt, silty sand, and gravel in varying proportions. The thickness typically ranges from 2 to 8 feet; however, in areas of tank basins and excavation pits, the fill thickness may extend up to 13 feet. The fill is depicted as approximately 13 feet thick in the UST basin on the west side of the Site (Figure 8). The fill material at most of the Site is not always readily distinguishable from the native material beneath it, so its presence and thickness while drilling/sampling are inferred in many places.

Unit B

The lithologic unit below Unit A is a silt layer with variable amounts of clay, minor fine-grained sand, and up to several percent gravel. The clay-rich silt is commonly finely laminated and varies from low to high plasticity; its consistency is typically soft to firm. This unit everywhere is underlain by Unit C (glacial till), and in places this unit may grade coarser downward into the till. Unit B is up to 13 feet thick and is only present in the eastern two-thirds of the Site; it pinches out to the west of borings SB-7 and SB-8 (Figure 8). This unit also pinches out north of SB-7 and was not identified in borings SB-1 and SB-2. Unit B was found in all seven borings drilled in 2000 outside the periphery of the eastern tank basin (B-1 to B-7). Unit B contains widely scattered fine gravel suspended within the fine-grained laminated matrix, and it appears to be gradational with Unit C. Thus, Unit B is believed to be a glacial-lacustrine deposit.

Note that another silt-rich unit is also present in borings under Naval Avenue and in the northwestern portion of the Site (SB-21 and SB-29), up to 10 feet thick. However, this is a coarser silt unit without clay, and with a greater amount of gravel, and is considered to be part of Unit A.

Unit C

Below Units A and B is a lithologic unit that includes a heterogeneous mix of silt, sand, gravel, and minor clay, often with a fine matrix of silty sand. This unit includes some layers of medium-grained sand and gravelly sand. Unit C includes glacial till and related till-like material, which is marked by a greater hardness and a wide range of grain sizes, including significant but variable amounts of gravel. This unit, known as the Vashon till, is present across the Site and varies in thickness from approximately 8 feet to at least 17 feet (Figure 8). Within the western UST basin, the top of Unit C appears to be present at a depth of approximately 8 to 9 feet bgs. In the area immediately south of the eastern UST basin, the top of the till is present at approximately 15 to 16 feet bgs. The consistency of the till material is generally described as dense to very dense or firm to hard. The upper few feet of this unit is locally less dense and grades upward into silty sand and then into the silt of Unit B. The till was rarely observed to perch small seams of water (a few inches thick) on top of it.

Unit D

Below the glacial till is a unit of fine sand that has been observed wherever drilling extended beyond the base of the till. The sand typically ranges from very fine to medium-grained, and includes trace coarse silt ranging up to 10 percent, with up to several percent gravel. The top of this sand was identified in 15 RI borings at depths ranging from 17 to 25 feet. In RI borings that did not penetrate through Unit C, the top of Unit D would range to greater than 31.5 feet bgs. This Unit D sand was found to be greater than 28 feet thick in boring SB-1, to a drilled depth of 51.5 feet bgs. Drilling at the ARCO station to the west of the Site revealed that this unit extends to a depth of at least 80 feet bgs (Ecology 2013a). Based on the lithology of this unit and its thick presence below glacial till, Unit D likely represents Vashon glacial advance outwash material.

Lithology in Eastern UST Basin

The geology within the area of the former eastern UST basin is somewhat different than that shown on the cross section (Figure 8) located just south of the basin. Pre-RI reports indicated

that native shallow soils surrounding the former UST basin consisted of medium dense sandy silt (Units A and B). Within the tank basin, the former backfill material (sandy gravel) extended from near the surface to approximately 10 feet bgs, with medium dense sand from 10 to 12 feet bgs, and sandy silt (Unit B) from 12 to at least 14 feet bgs (the maximum excavation depth). As noted above, the seven B-borings also identified the silt-rich Unit B around the outside periphery of the tank basin. The 2-foot thick sand layer (10 to 12 feet bgs) was identified on the north, west, and south walls of the tank-pit excavation completed in 1990, but not in the two test pits excavated to 13 feet bgs near the southeast corner of the main tank basin (AGI, 1990c). Based on the differing geology outside the tank basin, the sand layer at a depth of 10 to 12 feet bgs appears to be tank-bed material placed on top of excavated silt at the time of the UST installation (possibly 1961). Therefore, this tank-basin sand would laterally terminate against the silty soil of Unit B.

4.1.2 Hydrogeology

Groundwater was not encountered during drilling at the Site, except for a few thin seams of water perched in small pockets overlying glacial till. As stated in Section 3.4, the water table within the upper aquifer in this area is expected to be situated at approximately 70 feet bgs. This aquifer appears to be present within the lower portion of Unit D, the Vashon advance outwash sand. At the adjacent ARCO station, only one monitoring well was installed to the water table, and thus the direction of groundwater flow could not be determined (AGI, 1990c; Ecology, 2013a).

4.2 CONTAMINANT RELEASE

A review of available historical data indicates that no releases have been documented by Ecology for the Site. In addition, no documented off-site releases were identified in the available historical data. Therefore, Leidos is currently not aware of any details regarding specific contaminant release events at or affecting the Site.

Based on data from the RI and previous environmental investigations, as well as information that is known or suspected regarding service station operations at the Site between approximately 1928 and 2008, Leidos has identified the following as likely potential sources for the petroleum hydrocarbon impacts at the Site:

- Past releases to the subsurface associated with leaking petroleum USTs;
- Past releases to soil associated with leaking product conveyance piping associated with the former service station configurations;
- Past releases to the ground surface or near-surface soils from UST overfills in the current or former UST basin areas; and
- Past releases to the ground surface associated with vehicle refueling or pump maintenance operations at the current or former dispenser island locations.

4.3 CONTAMINANTS OF CONCERN

MTCA defines a contaminant as “any hazardous substance that does not occur naturally or occurs at greater than natural background levels.” Contaminants of concern (COCs) are those hazardous substances that are known to be present at a site and those which may be present based on information regarding the nature of a known release or past operations at a site. Based

on the results of the RI, and previous environmental investigations performed at the Site, the following hazardous substances have been identified as COCs:

- GRO
- DRO/HRO
- Benzene
- Ethylbenzene
- Xylenes
- Naphthalene

4.4 EXTENT OF PETROLEUM IMPACTS

Petroleum impacts to soil, consisting of the COCs identified above in Section 4.3, have been determined to be present in vadose zone soils at the Site. The approximate extent of these impacts, based on MTCA Method A cleanup level exceedances for Site soil sample results, is depicted on Figures 8 and 9. As previously discussed in Section 3.2.2, the use of MTCA Method A cleanup levels on these figures is for screening-level purposes only, and further discussion regarding the selection of appropriate cleanup levels for the Site is presented in Section 5.1.

As shown on Figure 9, soil sampling results from the RI indicate that two distinct areas of petroleum impacted soil are present at the Site:

- (1) MTCA Method A cleanup level exceedances for GRO and related constituents are present in the large area that comprises the eastern UST basin, the station building, pump islands, and extending to the east and southeast of the station.
- (2) MTCA Method A cleanup level exceedances for DRO, GRO and related constituents are present in the smaller area of the western UST basin near Naval Avenue and extending to the northeast and west/southwest of the basin.

The first of these two areas appears to have originated from multiple release locations on the eastern portion of the Property, including the former regulated UST basin removed in 1990 and the service station pump islands, and it extends a short distance off-Property to the east and a shorter distance to the southeast. This impacted zone does not appear to reach the residential structure at 2005 6th Street; however, it may reach the western portion of the structure at 2007 6th Street. Petroleum contamination (exceeding Method A cleanup levels) in this zone has been identified at depths as shallow as 10 feet bgs in RI soil boring SB-7, near the southern pump island. Shallow impacts to soil at the former station were also detected in pre-RI soil sampling locations B, C, N, and W (AGI, 1990c) and pre-RI soil borings BM-4 through BM-8 and BM-12, with impacts as shallow as 7 feet bgs (PEI, 2009; Appendix A). The contamination generally is deeper to the east and reaches its deepest level in boring SB-27, at a maximum sample depth of 26.5 feet bgs (Figure 8). In SB-27, a deeper sample at 29 feet bgs, within Unit C, showed all results as non-detect.

The second of these two areas likely originated from the western former tank basin on the Property, and it extends a short distance off-Property to the west/southwest under Naval Avenue. For RI soil samples, the petroleum contamination in this zone was identified at depths as shallow as 8 feet bgs in borings UST-2, UST-4, SB-20, and SB-24. This widespread area of shallow petroleum impact implies that contamination was able to be transported in an approximately

horizontal direction, likely migrating on top of the till layer (Figure 8). The contamination was identified as being deepest at SB-17 at a maximum depth of 24.5 feet bgs. Figure 9 shows the area between SB-17, SB-24, and borings around the northern UST, where petroleum impacts to soil include both GRO and DRO.

The vertical extent of contamination in Site soil is identified within the fine-grained material of Units B and C in the eastern area, and Units A and C in the western area. The sample at 24-24.5 feet bgs in SB-17 is the only contaminated soil identified within Unit D, situated 3 feet below the upper contact and with uncontaminated soil below (results for the sample at 29.5 feet bgs are all at or below reporting limits). Aside from this single sample, the low-permeability lithologies of Unit C appear to significantly retard the downward transport of infiltrating water, and in all but this one location act to keep the petroleum hydrocarbons from reaching Unit D. The very fine to medium sand with minor silt of Unit D appears to further impede the downward transport of hydrocarbon contamination (maximum depth of 24.5 feet bgs) and protect the deep underlying aquifer situated at approximately 70 feet bgs.

As previously discussed in Section 3.4, based on the vertical extent of petroleum impacts to soil at the Site that exceed MTCA Method A cleanup levels (which are intended to be protective of groundwater), there appears to be a sufficient interval of non-impacted soil (40+ feet), such that residual soil impacts leaching to groundwater is not a contaminant transport pathway of concern.

4.5 ENVIRONMENTAL MEDIA OF CONCERN

The RI evaluated the following environmental media that were identified as potential media of concern by the RIWP:

Evaluation of Potential Media of Concern		
Potential Media of Concern Evaluated by the RI	Retained as a Media of Concern?	Justification
Soil	Yes	One or more hazardous substances have been detected in soil above naturally occurring background conditions. Therefore, soil is considered a media of concern for the Site.
Groundwater	No	Groundwater has not been encountered at the Site within the maximum depth explored (51.5 feet bgs). As described in Sections 3.4 and 4.4, groundwater at the Site is expected to be first encountered at a depth of approximately 70 feet bgs. This deep groundwater is separated from any Site contamination by 40+ feet of intervening relatively low-permeability soil of Units C and/or D. Therefore, groundwater is not considered a media of concern for the Site.
Soil Vapor	Yes	As previously discussed in Section 3.5, results of recent Tier 2 VI assessment activities indicate that the presence of petroleum contamination at the Site is not resulting in VI to existing buildings on the former service station property or nearby properties. However, Tier 1 results indicate that naphthalene has been detected in shallow soil vapor at concentrations that exceed current MTCA Method B screening levels for soil gas. Therefore, soil vapor is considered a media of concern for potential future land use scenarios.

Evaluation of Potential Media of Concern		
Potential Media of Concern Evaluated by the RI	Retained as a Media of Concern?	Justification
Surface Water	No	The RIWP identified surface water as a media of potential concern due to groundwater's ability to infiltrate subgrade stormwater conveyance piping that may drain to surface water. However, based on the results of the RI, this potential contaminant transport pathway has been determined to be incomplete because groundwater is not present at the shallow depths where stormwater piping is present near the Site (generally less than 10 feet bgs).

4.6 POTENTIAL RECEPTOR AND TRANSPORT/EXPOSURE PATHWAY EVALUATION

4.6.1 Potential Receptors

Receptors are individuals or populations that are at risk of being exposed to hazardous substances at or originating from a contaminated site. Based on the location and setting of the Site, the RI evaluated the following potential receptors:

Evaluation of Potential Receptors		
Potential Receptors Evaluated by the RI	Retained as a Receptor of Concern?	Justification
Humans	Yes	The Site is located in a commercial and residential area in the City of Bremerton, Washington. Based on current and future expected land use on and in the vicinity of the Site, humans are considered receptors of concern for the hazardous substances present at the Site.
Terrestrial Ecological Organisms	No	Based on the exclusion criteria established by WAC 173-340-7491(1), terrestrial ecological organisms are not considered as receptors of concern for the Site. See Section 4.6.1.1 for additional details.
Aquatic Ecological Organisms	No	Based on results of the RI, surface water is not considered an environmental media of concern. Therefore, aquatic ecological organisms are not considered receptors of concern for the Site.

4.6.1.1 Terrestrial Ecological Evaluation

For sites impacted by releases of hazardous substances to soil, WAC chapters 173-340-7490 through 173-340-7494 establish the requirement, and define the procedures, for conducting a terrestrial ecological evaluation (TEE) to determine whether conditions at the site may pose a threat to the terrestrial environment.

Within the TEE procedure, WAC 173-340-7491(1) provides an exclusion from the requirement to complete a TEE, for sites where there is less than 1.5 acres of contiguous undeveloped land on

the site or within 500 feet of any area of the site.²

Based on the urban setting, and land use in the area within 500 feet of any portion of the Site, this exclusion from the requirement to complete a TEE is applicable to the Site. Therefore, terrestrial ecological organisms are not considered receptors of concern for the Site.

4.6.2 Exposure Pathway Analysis

Exposure pathways are the paths that hazardous substances may take from a source to a receptor. Exposure pathways include transport pathways (how a hazardous substance moves through and across different environmental media) and an exposure route (the path by which receptors may be exposed to hazardous substances). Examples of exposure routes include:

- Direct contact – Ingestion and/or dermal contact with hazardous substances
- Inhalation – Breathing hazardous substances in air (dust, vapor, or gases)

This section presents an analysis of potential exposure pathways for the two media of concern that have been identified for the Site: soil and soil vapor.

4.6.2.1 Potential Transport Pathways and Exposure Routes for Soil

The following tables provide an evaluation of potential transport pathways and exposure routes that may be associated with the presence of petroleum impacted soil at the Site.

Evaluation of Potential Transport Pathways – Soil		
Potential Transport Pathways	Retained as a Transport Pathway of Concern?	Justification
Migration	No	Based on the Site operating history and results of pre-RI investigations, most petroleum impacts to soil are expected to have occurred prior to 1990. Based on the expected age of these releases, petroleum impacts to soil would be expected to have reached stable conditions with no significant further migration.
Leaching to groundwater	No	The bottom-most extents of petroleum impacts to soil that exceed cleanup levels based on protection of groundwater (MTCA Method A) have been delineated well above the level of groundwater (at least 40 feet) at the Site; the water table is situated at approximately 70 feet bgs. Surface water infiltration through soils at the Site are limited due to the urban nature of the Site, which is predominantly covered by impermeable surfaces, and due to fine-grained soils at depth.
Volatilization to soil vapor	Yes	Petroleum-range hydrocarbon impacts to soil vapor have been confirmed by soil vapor sampling. However, the results of this work indicate that petroleum constituents in soil vapor are readily attenuated in shallow soils, which is likely due to the presence of sufficient oxygen to facilitate aerobic degradation.

² This exclusion applies only for sites contaminated with hazardous substances other than those specified in WAC 173-340-7491(1)(c)(ii)

Evaluation of Potential Exposure Routes – Soil	
Potential Exposure Routes	Applicability
Ingestion of, or dermal contact with, contaminated soil	Exposure route of concern for future subsurface work – The areas of soil impacted by petroleum-range hydrocarbons at the Site are mostly covered by buildings and pavement and are generally present at depths that would not be encountered by routine construction activities. Therefore, the potential for ingestion or dermal contact by human receptors is considered limited. However, potential ingestion or dermal contact exposures may be possible for workers or the public if impacted soils are exposed during future subsurface construction activities.
Inhalation of hazardous vapors and/or airborne particulates (i.e., dust) in outdoor air	Exposure route of concern for future subsurface work – Similar to above, under typical conditions the potential for exposure by inhalation of hazard vapors or dust in outdoor air from contaminated soil is limited. However, potential for exposure by inhalation may exist for workers or the public if impacted soils are exposed during future subsurface construction activities.

4.6.2.2 Potential Transport Pathways and Exposure Routes for Soil Vapor

The following tables provide an evaluation of potential transport pathways and exposure routes that may be associated with the presence of petroleum impacted soil vapor at the Site.

Evaluation of Potential Transport Pathways – Soil Vapor		
Potential Transport Pathways	Retained as a Transport Pathway of Concern?	Justification
Migration to indoor air	Yes	VI assessment results for work performed to date indicate that petroleum impacted soil vapor is not impacting indoor air quality in existing buildings on or near the Site. However, Tier 1 VIA sampling results indicate that naphthalene has been detected in shallow soil vapor at concentrations exceeding current MTCA Method B screening levels for sub-slab soil gas. Therefore, migration of impacted soil vapor to indoor air has been retained as a pathway of concern for future buildings or changes in land use at, or near, the Site.

Evaluation of Potential Exposure Routes – Soil Vapor	
Potential Exposure Routes	Applicability
Inhalation	Exposure route of potential future concern - Not an exposure route of concern under current land use. However, may need re-evaluation under future building construction or other land use changes.

5 CLEANUP STANDARDS

Cleanup standards define the requirements that must be achieved by a cleanup action. As defined in WAC 173-340-700, cleanup standards consist of the following three components:

- Cleanup levels for the hazardous substances present;
- The location(s) where these cleanup levels must be met, i.e., the point(s) of compliance; and
- Other regulatory requirements that apply to the site because of the type of action and/or location of the site. These requirements are specified in applicable state and federal laws and are generally established in conjunction with the selection of a specific cleanup action.

5.1 DEVELOPMENT OF CLEANUP LEVELS

A cleanup level defines the concentration of a hazardous substance above which a contaminated medium (e.g., soil or groundwater) must be remediated in some manner (Ecology, 2013b). The MTCA Cleanup Regulation provides the following three options for establishing cleanup levels:

- **Method A** - Method A cleanup levels are intended to provide conservative cleanup levels for relatively simple sites undergoing routine cleanup actions or for sites with relatively few hazardous substances. Most petroleum-contaminated sites can use this method. Method A provides tables of cleanup levels that are protective of human health for a number of the most common hazardous substances found in soil and groundwater at contaminated sites. For soil, the Method A cleanup level must also be at least as stringent as a concentration that will not result in significant adverse effects on the protection and propagation of terrestrial ecological receptors, unless it can be demonstrated that such impacts are not a concern at the site.
- **Method B** - Method B is the universal method to establish cleanup levels under MTCA. It can be used at any site to develop site-specific cleanup levels for all of the hazardous substances present.
- **Method C** - Method C can only be used under limited circumstances for cleanup at industrial facilities. Based on the Site setting and land use, Method C cleanup levels cannot be used for this Site.

WAC 173-340-700 provides specific procedures for setting cleanup levels at petroleum contaminated sites.

5.1.1 Proposed Cleanup Levels for Soil

As described above, Method B is the universal method to establish cleanup levels under MTCA that can be used at any site. WAC chapters 173-340-700(8)(ii) and 173-340-740 address development of Method B cleanup levels for petroleum contaminated sites. Leidos recommends use of Method B to develop cleanup levels for this Site, because Method B allows cleanup levels to be based on the presence or absence of exposure pathways, as determined through the CSM.

As previously discussed in Section 4.6.2.1, for petroleum impacted soil, the leaching pathway has been eliminated as a transport pathway of concern. Previous sections discuss the lack of groundwater in RI borings to a maximum explored depth of 51.5 feet bgs, and the estimated

depth of Site groundwater at 70 feet bgs. Therefore, cleanup levels for soil will be based on the direct contact pathway.

For petroleum contaminated sites, Method B allows the use of site-specific petroleum compositional data to calculate a site-specific cleanup level for TPH that is representative of the TPH mixture as a whole, as opposed to Method A, which specifies individual cleanup levels for common petroleum product constituents such as BTEX. Ecology, in their June 16, 2020 response to the Newman's Chevron Pre-RI Check-in Meeting, determined that the proposed use of site-specific soil cleanup levels at the Site is appropriate.

In accordance with Ecology guidance, Leidos utilized the MTCA TPH 11.1 Workbook Tool to develop site-specific cleanup levels for total petroleum hydrocarbons (TPH) that would be protective of a direct contact exposure pathway at the Site. Because the Site appears to have been impacted by two discrete petroleum sources: 1) the eastern UST basin and pump islands; and 2) the orphaned UST basin in the western portion of the Property, Leidos calculated site-specific Method B TPH cleanup values for each source area, in order to account for potential compositional differences in the petroleum products that were historically stored/used in these areas. Worksheets from the MTCA TPH 11.1 Workbook Tool are presented in Appendix F and the results are presented in the following table:

Proposed Cleanup Levels for TPH in Soil	
Method B TPH Cleanup Level for Soil (mg/kg)	Applicable Site Area
3,353	Soils impacted by petroleum releases from the dispenser islands and eastern UST basin.
2,477	Soils impacted by petroleum releases from the undocumented UST basin in the western portion of the Site.

5.1.2 Cleanup Levels for Soil Vapor

Although soil vapor has been identified as a media of concern, due to the potential to impact indoor air under a future land-use change, petroleum impacts to soil vapor will not drive the development of cleanup standards for the Site. At this time, MTCA does not include development of cleanup levels for soil vapor.

In the event of a future land-use change that may increase the potential for VI to indoor air, Leidos expects that MTCA Method B screening levels for soil gas, or Method B indoor air cleanup levels, will be used to evaluate the need for future VI mitigation measures.

5.2 POINTS OF COMPLIANCE

Points of Compliance (POCs) are the locations on a site where cleanup levels must be met. MTCA defines the standard POC for each environmental media (soil, groundwater, air, and surface water).

5.2.1 POCs for Soil

The standard POCs for the exposure pathways of concern for petroleum impacted soil at the Site are limited to:

- Direct contact – Soils from the ground surface to a depth of 15 feet bgs.

5.3 OTHER REGULATORY REQUIREMENTS

WAC 173-340-710 requires that all cleanup actions conducted under MTCA comply with applicable state and federal laws. Applicable state and federal laws include those that are legally applicable requirements, as well as those requirements that Ecology determines are relevant and appropriate. Applicable, relevant, and appropriate requirements are collectively referred to as ARARs.

For the purpose of this document, detailed analysis and discussion of potential ARARs are not intended. Potential ARARs that may be associated with specific cleanup actions will be addressed in the future FS for the Site.

5.4 PROPOSED CLEANUP STANDARDS AND KNOWN POINTS OF EXCEEDENCES

The following table presents a summary of the proposed cleanup standards for the Site. As previously discussed, additional components of these cleanup standards, in the form of ARARs, will be integrated, as necessary, during the FS process for the Site.

Proposed Cleanup Standards				
Method B TPH Cleanup Level (mg/kg)	Media	Point of Compliance	ARARs	Applicable Site Area
3,353	Soil	Ground surface to a depth of 15 feet bgs	To be identified in the FS.	Soils impacted by petroleum releases from the dispenser islands and eastern UST basin.
2,477	Soil	Ground surface to a depth of 15 feet bgs	To be identified in the FS.	Soils impacted by petroleum releases from the undocumented UST basin in the western portion of the Site.

Based on review of the RI and pre-RI soil sampling results, petroleum impacts to soil have been detected above the proposed cleanup standards at the following sampling locations (Figure 10):

Soil Sample Location ID	Sample Depth (feet bgs)	Investigation	Sample Date	Results
Eastern Portion of Site, TPH Cleanup Level = 2,477 mg/kg				
B	10.5	Pre-RI AGI (1990)	8/1990	TPH detected at 4,875 mg/kg
BM-5	11-12	Pre-RI PEI (2009)	7/20/2009	GRO detected at 4,100 mg/kg and 4,400 mg/kg in duplicate sample
Western Portion of Site, TPH Cleanup Level = 3,353 mg/kg				
UST-2	8	RI Leidos (2018)	8/28/2018	GRO detected at 670 mg/kg DRO detected at 2,800 mg/kg (combined TPH = 3,470 mg/kg)

6 SUMMARY AND CONCLUSIONS

RI field activities conducted at the Site between July 2018 and October 2022 were sufficient to collect the data necessary to adequately characterize the Site for the purpose of developing and evaluating cleanup action alternatives. The results of this work indicate that petroleum contamination, which appears to have originated from past operations of service stations at two discrete locations on the Site, is present in soils at concentration exceeding natural background levels. Petroleum contamination in soil has also resulted in the presence of naphthalene in soil vapor at concentrations exceeding MTCA Method B screening levels for soil gas. However, based on the vertical extent of petroleum impacts to soil and local hydrogeological conditions, contamination at the Site does not appear to be a risk to local groundwater quality.

Based on the results of the RI, the CSM was updated, including an evaluation of potential receptors, and transport and exposure pathways. In conjunction with this work, Leidos has developed proposed cleanup levels for the Site using MTCA Method B that would be protective of a direct contact exposure pathway for soil. Petroleum VI to indoor air is not considered a complete exposure pathway for the Site under current land use conditions. However, the presence of naphthalene in shallow soil vapor at the Site would warrant further consideration in the event of a land use change or redevelopment which could create conditions that may result in potential VI.

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LIMITATIONS

This technical document was prepared on behalf of the Parties and is intended for their 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.

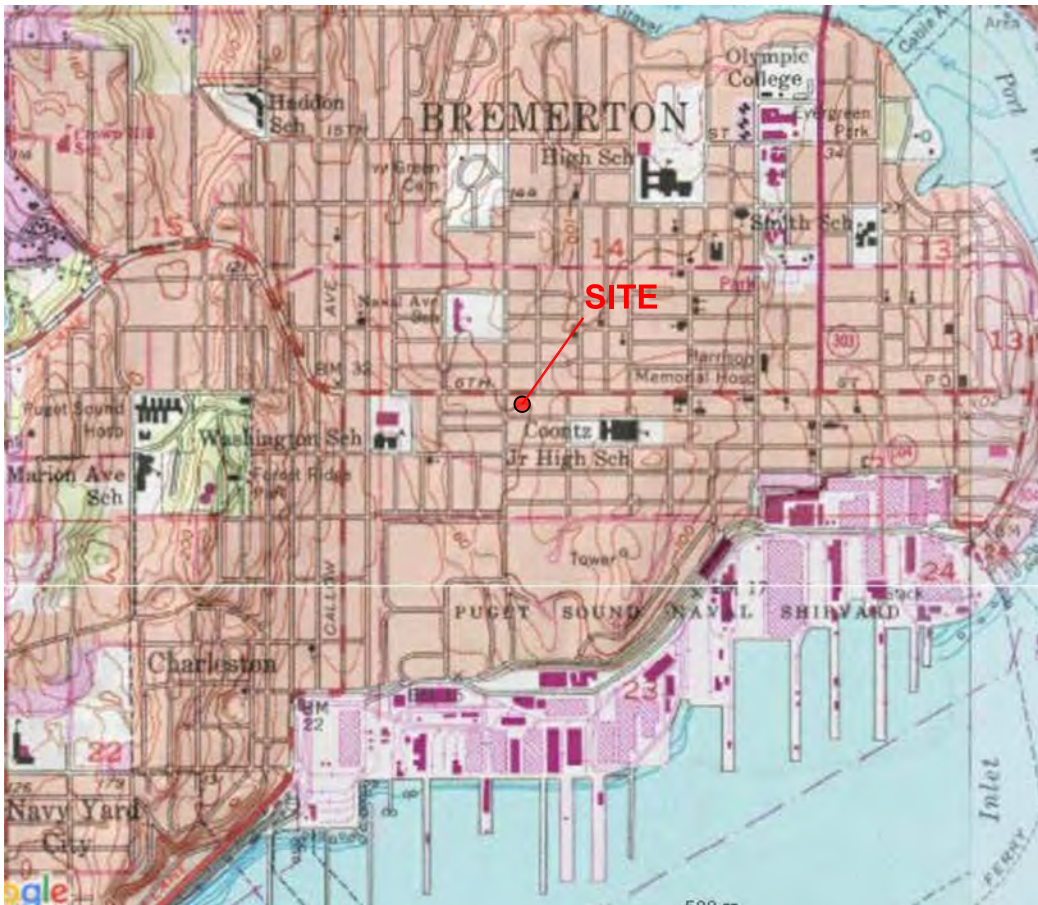
Site history and background information provided in this technical document are based on sources that may include interviews with environmental regulatory agencies and property management personnel and a review of acquired environmental regulatory agency documents and property information obtained from the Parties 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



Newman's Chevron
2021 6th Street
Bremerton, Washington

FIGURE 1
Site Vicinity Map

DATE: 1/12/2023

DRAWING: 204177_Bremerton_Vicinity_Map.dwg



Approximate Property Boundary

Newman's Chevron
2021 6th Street
Bremerton, WA 98337
Ecology Facility/Site ID No. 1436359
Kitsap County Parcel No. 3717-002-015-0106

PUMP ISLAND

10,000 gal. UST

8,000 gal. UST

PUMP ISLAND

6,000 gal. UST

2005 6th Street

2007 6th Street

Active ARCO Service Station
2101 6th Street
Ecology Facility/Site ID No. 53813326

Naval Avenue

6th Street

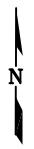
Alley

1936-1/2 5th Street

1932 5th Street

1936 5th Street

IMAGE SOURCE: GOOGLE EARTH, 2017.



Newman's Chevron
2021 6th Street
Bremerton, Washington

FIGURE 2
Site Map

LEGEND:

- Approximate Current Parcel Boundary
- Approximate Former Parcel Boundaries
- - - - - Approximate Lot Boundaries
- 15 Kitsap County Assessor's Tax Lot Identification Number

Approximate Parcel Boundary
Kitsap County Parcel No. 3717-002=015-0106



Tax Description for Kitsap County Parcel # 3717-002-015-0106

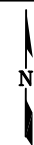
Parcel I: Lots 15 and 16, and the East 5 feet of Lot 17, Block 2, Wm. Bremer's First Addition of the Cities of Bremerton and Charleston, as per plat recorded in Volume 3 of Plats, Page 4, records of Kitsap County, Washington.

Parcel II: The West 25 feet of Lot 17, and all of Lot 18, Block 2, Wm. Bremer's First Addition of the Cities of Bremerton and Charleston, as per plat recorded in Volume 3 of Plats, Page 4, records of Kitsap County, Washington.

Parcel III: The North 75 feet of Lots 19 and 20, Block 2, Wm. Bremer's First Addition of the Cities of Bremerton and Charleston, as per plat recorded in Volume 3 of Plats, Page 4, records of Kitsap County, Washington.

IMAGE SOURCE: GOOGLE EARTH, 2017.

SCALE




Newman's Chevron
2021 6th Street
Bremerton, Washington

FIGURE 3
Current and Former
Property Boundaries

DATE: 1/12/2023

DRAWING: 204177 RI Summary Report Figures.dwg

- LEGEND:**
- BM-1 ● Approximate Soil Boring Location (PEI, 2009)
 - B-3 ⊕ Approximate Soil Boring Location (Geoscience Management, 2000)
 -  Approximate Location of Test Excavation and Confirmation Samples (Geoscience Management, 2000)






-  Approximate Location of Confirmation Soil Sample (AGI, 1990)
-  Approximate Location of Test Pit (AGI, 1990)
-  Approximate Location of Former Service Bay Hoist



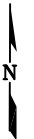
IMAGE SOURCE: GOOGLE EARTH, 2017.



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



0 20 40 60ft







Newman's Chevron
2021 6th Street
Bremerton, Washington

FIGURE 4
Pre-RI Sampling Locations

DATE: 1/12/2023 DRAWING: 204177 RI Summary Report Figures.dwg

- LEGEND:**
- SB-9  RI Soil Boring Location (August 2018)
 - SB-20  RI Soil Boring Location (July 2019)
 - SB-30  RI Soil Boring Location (February 2020)
 - SVP-1  RI Soil Vapor Sampling Probe Location
 -  Approximate Location of Undocumented UST
 - BM-1  Pre-RI Soil Boring Location (PEI, 2009)
 - B-2  Pre-RI Soil Boring Location (Geoscience Management, 2000)

-  Pre-RI Test Excavation and Confirmation Samples (Geoscience Management, 2000)
-  Pre-RI Confirmation Soil Sample (AGI, 1990)
-  Pre-RI Test Pit (AGI, 1990)
-  Approximate Location of Former Service Bay Hoist

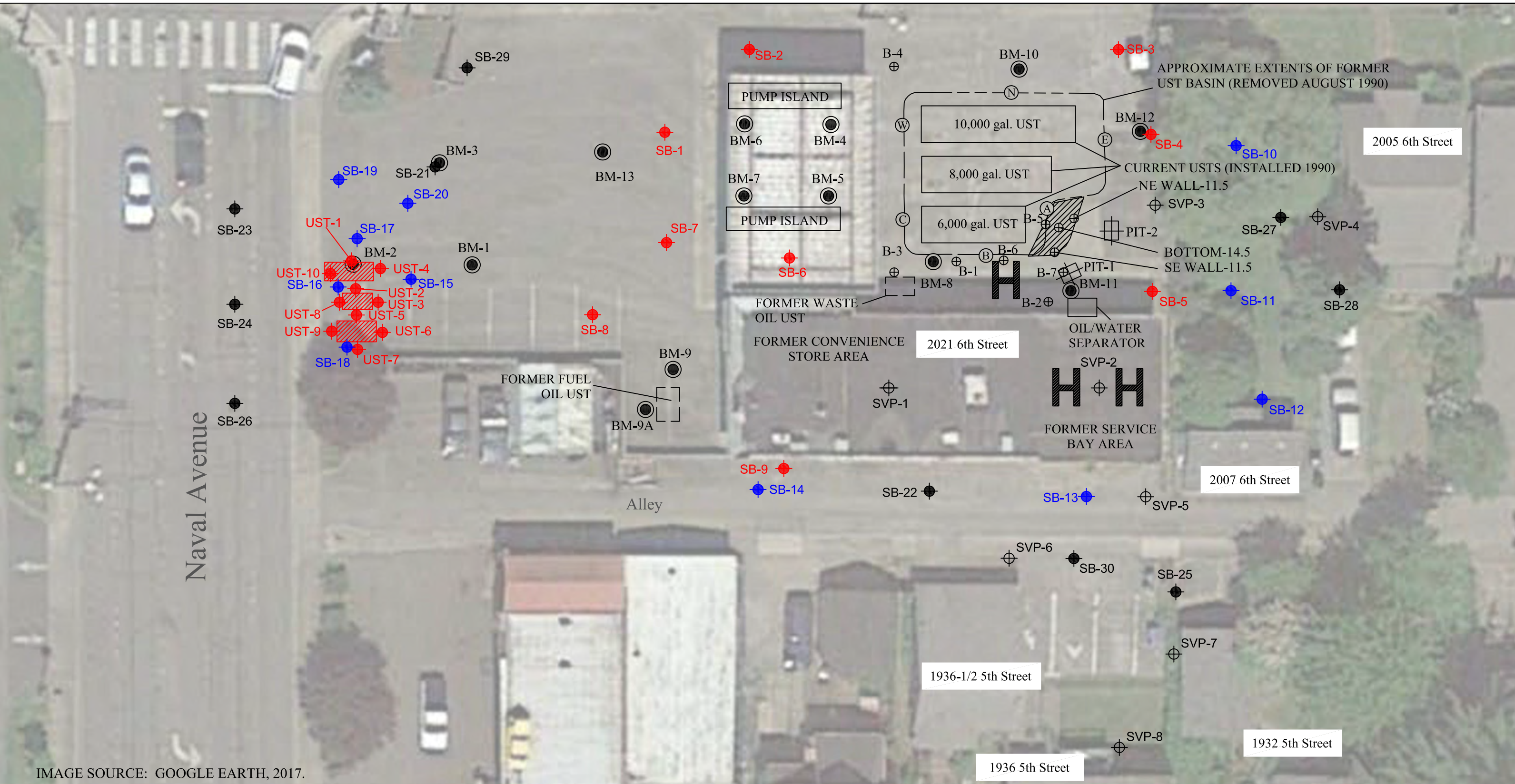

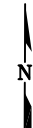


IMAGE SOURCE: GOOGLE EARTH, 2017.

 **SCALE**

0 20 40 60ft



Newman's Chevron
2021 6th Street
Bremerton, Washington

FIGURE 5
Pre-RI and RI Soil Sampling Locations

LEGEND:

SVP-1 ⊕ Location of Permanent Soil Vapor Sampling Probe

SSVP-1 △ Location of Permanent Sub-Slab Soil Vapor Sampling Point

OA-1-100622 ● Sample ID and Approximate Location for Collection of Air Samples from Temporary Sampling Location

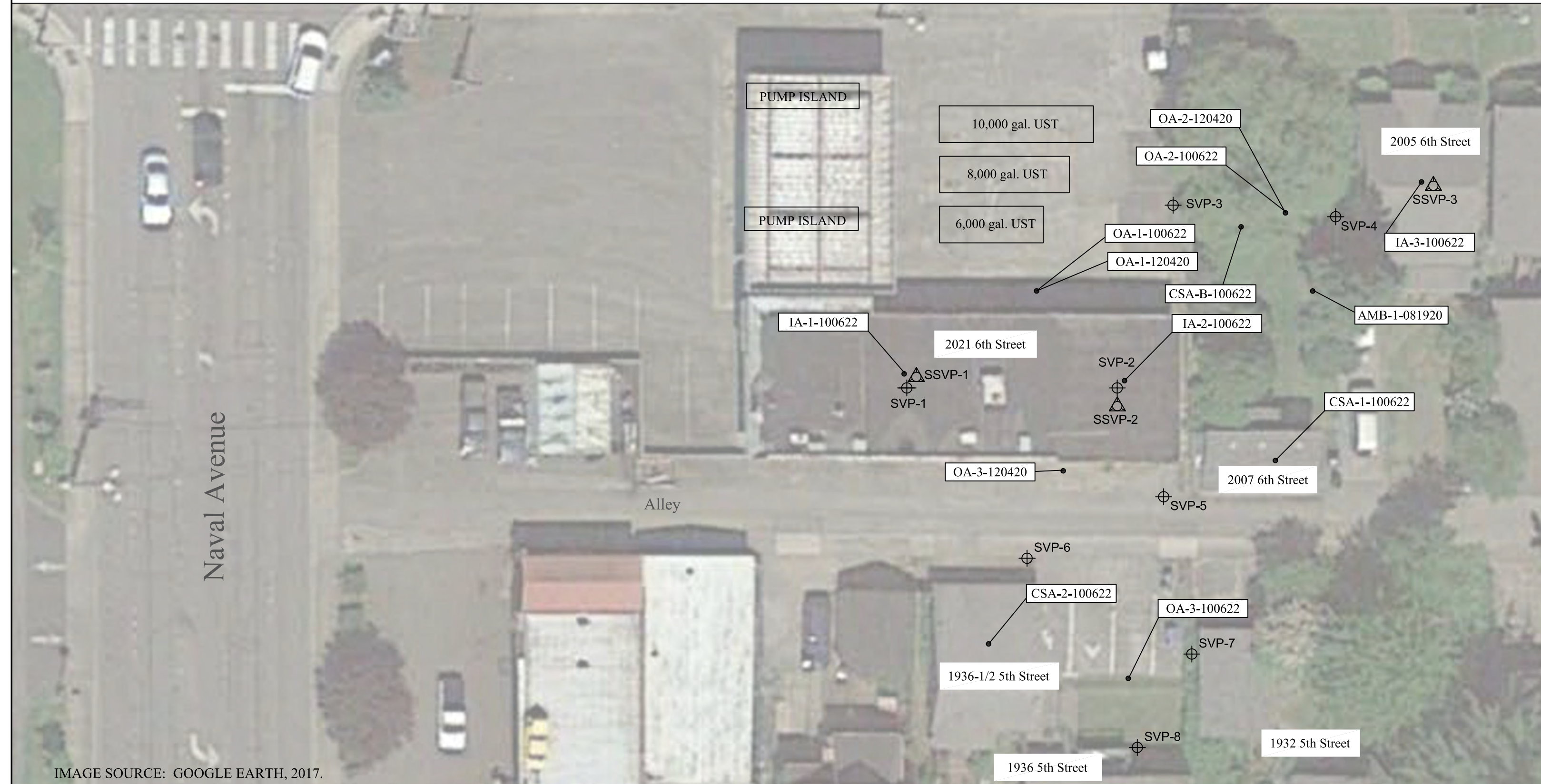
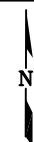


IMAGE SOURCE: GOOGLE EARTH, 2017.



Newman's Chevron
2021 6th Street
Bremerton, Washington

FIGURE 6
RI VI Assessment Sampling Locations

- LEGEND:**
- SB-9 RI Soil Boring Location (August 2018)
 - SB-20 RI Soil Boring Location (July 2019)
 - SB-30 RI Soil Boring Location (February 2020)
 - SVP-1 RI Soil Vapor Sampling Probe Location
 - Approximate Location of Undocumented UST
 - BM-1 Pre-RI Soil Boring Location (PEI, 2009)
 - B-2 Pre-RI Soil Boring Location (Geoscience Management, 2000)

- Pre-RI Test Excavation and Confirmation Samples (Geoscience Management, 2000)
- Pre-RI Confirmation Soil Sample (AGI, 1990)
- Pre-RI Test Pit (AGI, 1990)
- Approximate Location of Former Service Bay Hoist
- AHA' Geologic Cross-Section Location Line

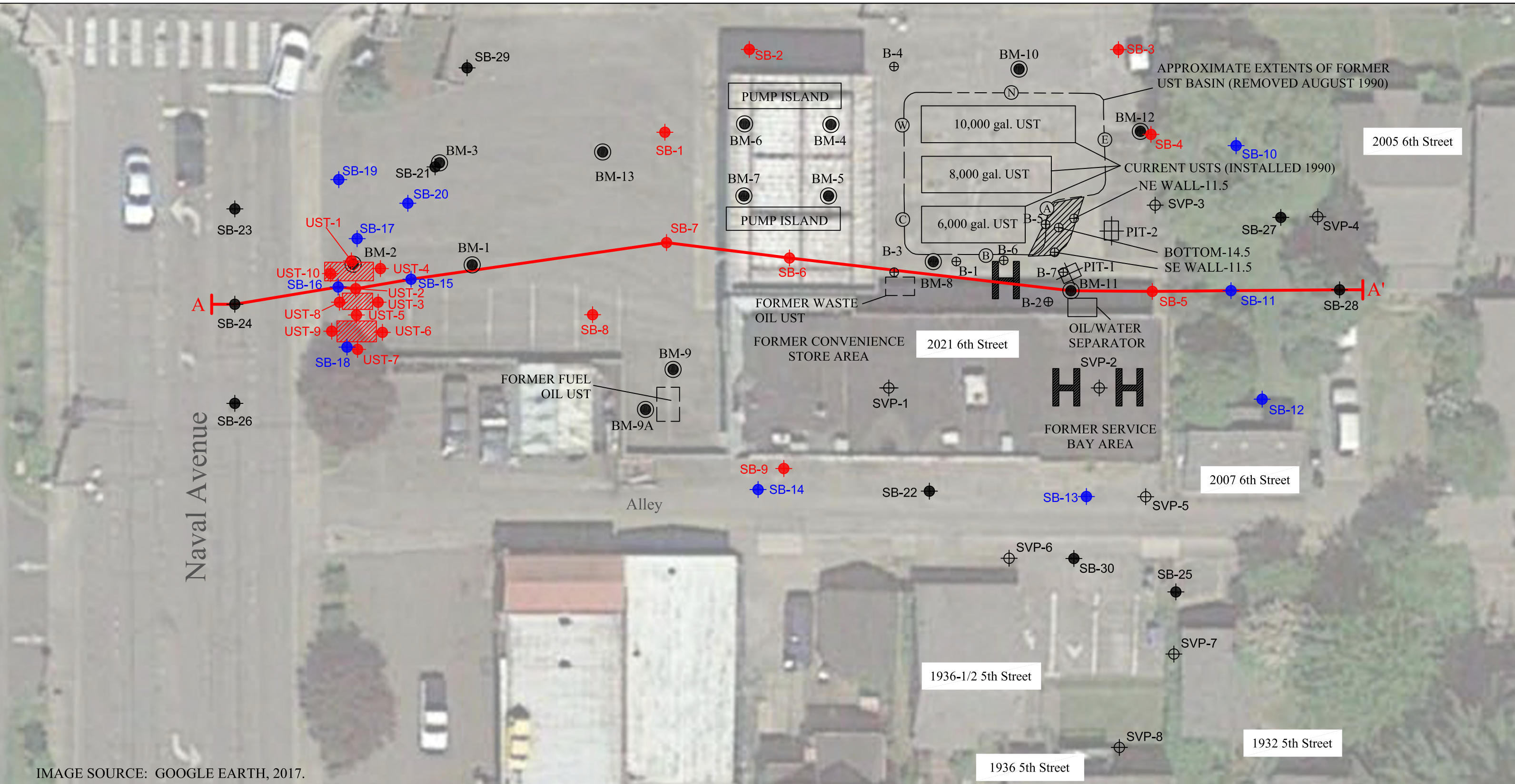
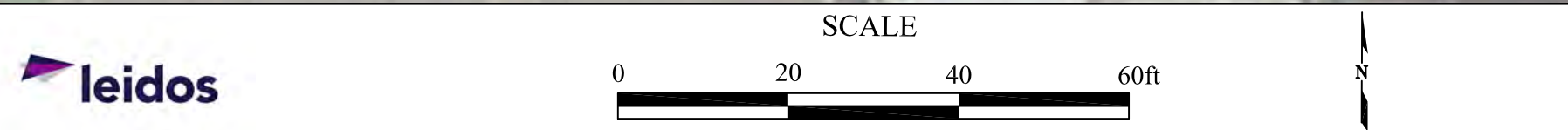


IMAGE SOURCE: GOOGLE EARTH, 2017.








Newman's Chevron
2021 6th Street
Bremerton, Washington





FIGURE 7
Location of Cross-Section Line A-A'

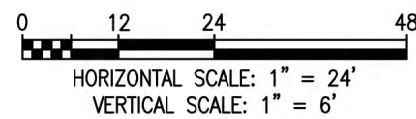
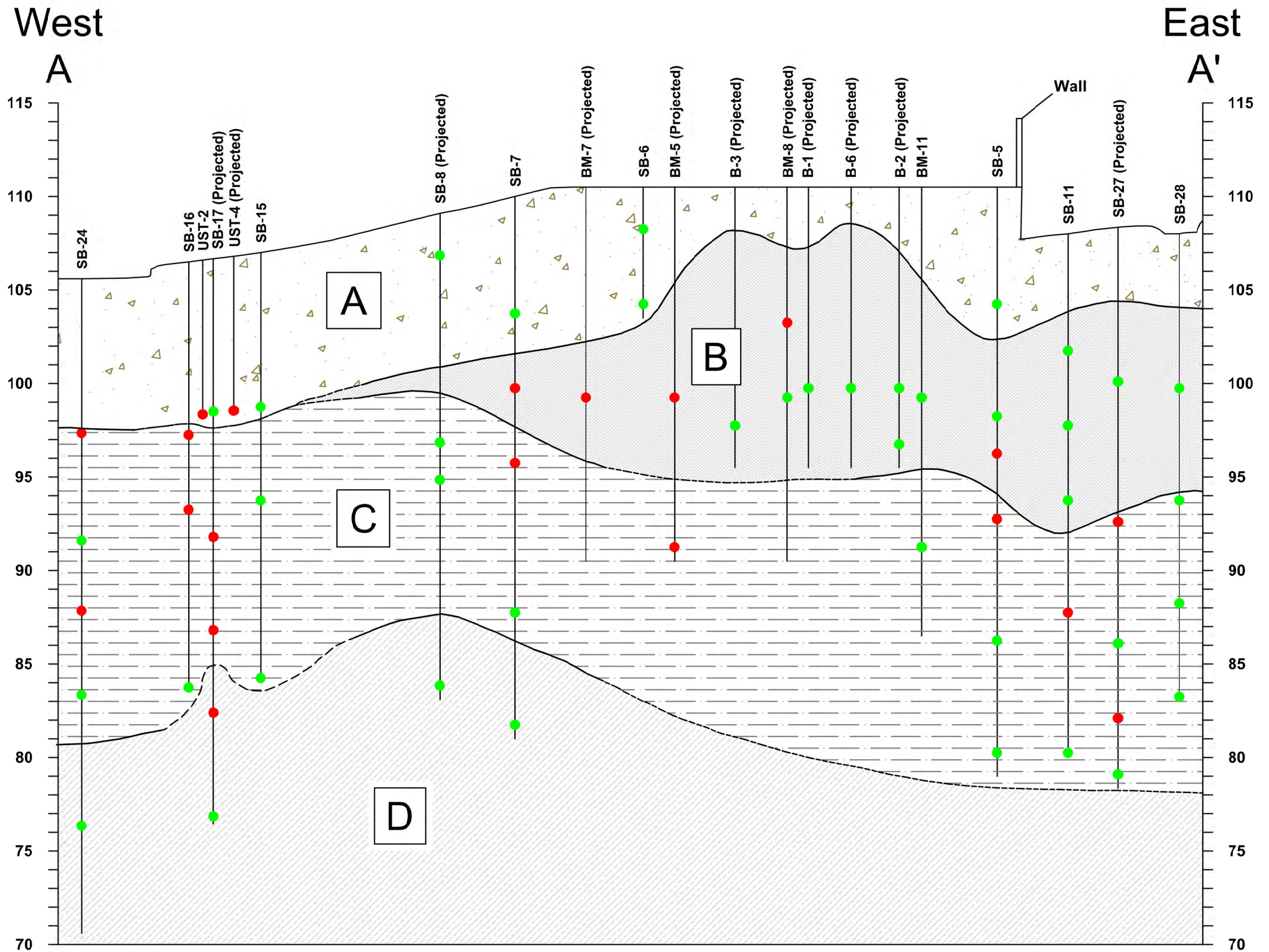


LEGEND:

-  Soil Boring
-  Contact line between soil types
-  Contact line between soil types (inferred)
-  Location of soil sample with laboratory results exceeding MTCA Method A cleanup levels for one or more analytes
-  Location of soil sample with laboratory results less than MTCA Method A cleanup levels for all analytes

SOIL LITHOLOGY LEGEND:

-  Unit A: Fill and recent deposits
-  Unit B: Glacial lacustrine silt with clay
-  Unit C: Glacial till and related material
-  Unit D: Glacial advance outwash sand



Newman's Chevron
2021 6th Street
Bremerton, Washington

FIGURE 8
Geologic Cross-Section A-A'

DATE: 4/10/2023

DRAWING: 204177 X-Section.dwg

LEGEND:

- SB-9 RI Soil Boring Location (August 2018)
- SB-20 RI Soil Boring Location (July 2019)
- SB-30 RI Soil Boring Location (February 2020)

- ⊕ SVP-1 RI Soil Vapor Sampling Probe Location
- Approximate Location of Undocumented UST
- BM-1 Pre-RI Soil Boring Location (PEI, 2009)
- B-2 Pre-RI Soil Boring Location (Geoscience Management, 2000)

- Pre-RI Test Excavation and Confirmation Samples (Geoscience Management, 2000)
- Pre-RI Confirmation Soil Sample (AGI, 1990)
- Pre-RI Test Pit (AGI, 1990)

- Approximate Location of Former Service Bay Hoist
- Approximate Extent of Soil Containing Gasoline-Range Petroleum Impacts (GRO and/or BTEX) at Concentrations Greater than MTCA Method A Cleanup Levels
- Approximate Extent of Soil Containing GRO and DRO at Concentrations Greater than MTCA Method A Cleanup Levels

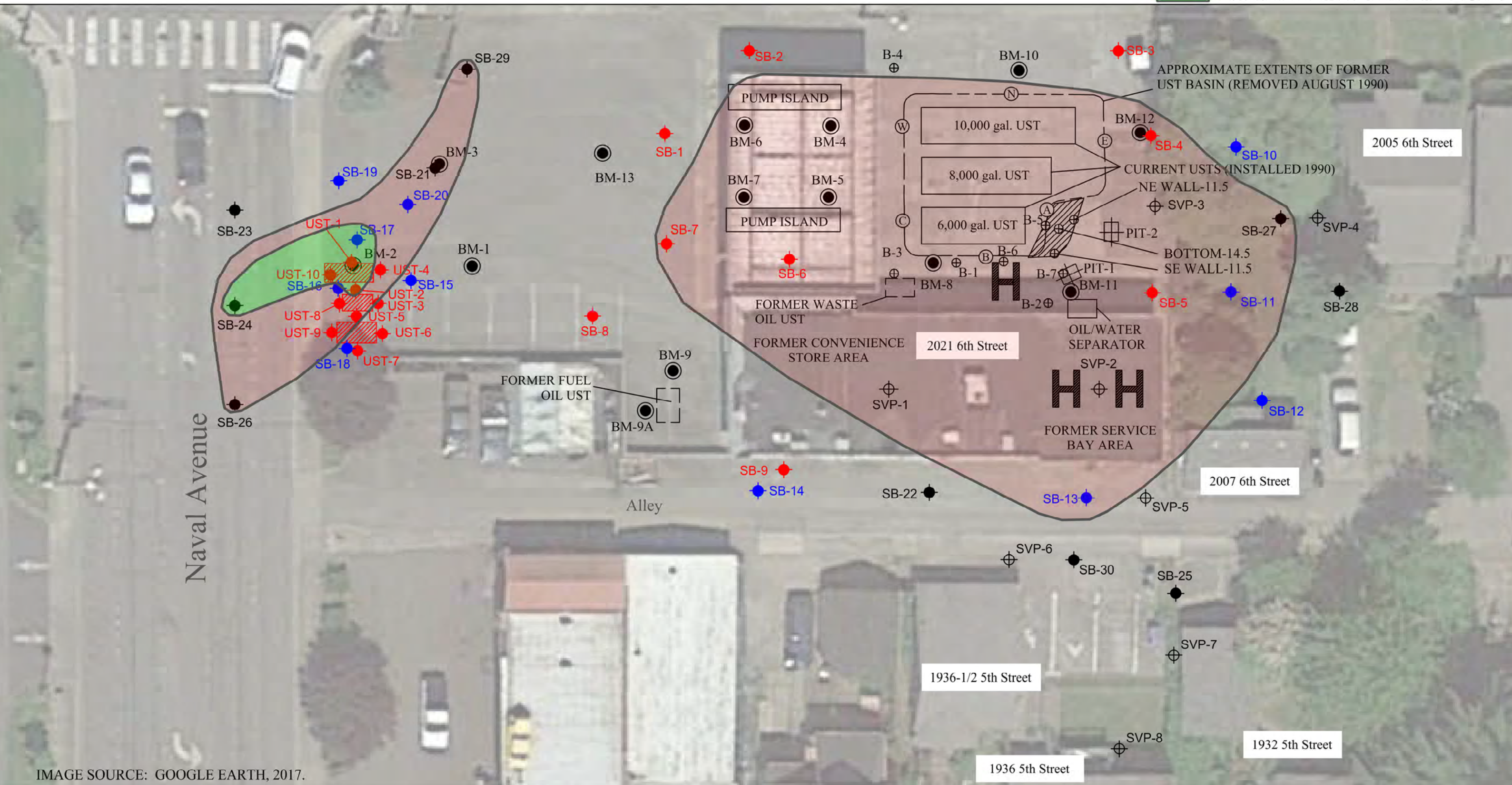
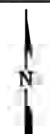


IMAGE SOURCE: GOOGLE EARTH, 2017.



Newman's Chevron
2021 6th Street
Bremerton, Washington

FIGURE 9
Approximate Extents of
Petroleum Impacted Soil

LEGEND:

- SB-9 RI Soil Boring Location (August 2018)
- SB-20 RI Soil Boring Location (July 2019)
- SB-30 RI Soil Boring Location (February 2020)

- ⊕ SVP-1 RI Soil Vapor Sampling Probe Location
- Approximate Location of Undocumented UST
- BM-1 Pre-RI Soil Boring Location (PEI, 2009)
- ⊕ B-2 Pre-RI Soil Boring Location (Geoscience Management, 2000)

- Pre-RI Test Excavation and Confirmation Samples (Geoscience Management, 2000)
- Pre-RI Confirmation Soil Sample (AGI, 1990)
- Pre-RI Test Pit (AGI, 1990)

- Approximate Location of Former Service Bay Hoist
- | Depth (feet) | Date | Results |
|--------------|--------|-------------------|
| 10.5 | 8/1990 | TPH @ 4,875 mg/kg |

 Soil Sampling Data for Soil Samples Exceeding Site-Specific Method B Cleanup Levels Above the Standard Point of Compliance for Direct-Contact (15 feet bgs)

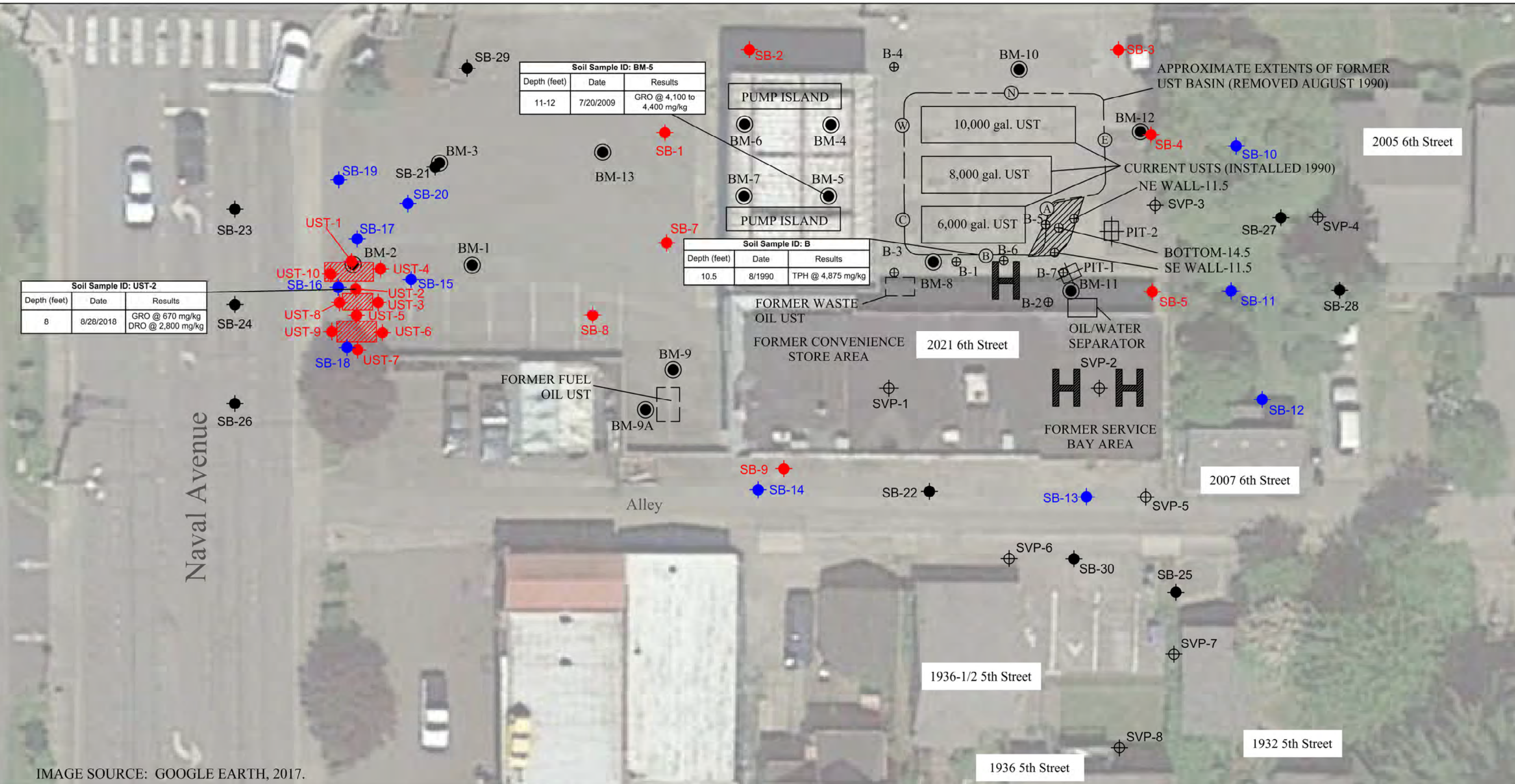


IMAGE SOURCE: GOOGLE EARTH, 2017.



Newman's Chevron
2021 6th Street
Bremerton, Washington

FIGURE 10
Exceedances of Method B Soil
Cleanup Levels

Tables

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS - PETROLEUM CONSTITUENTS
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington
Concentrations reported in milligrams per kilogram (mg/kg)

Boring ID	Depth (feet)	Sample Date	GRO	DRO	HRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	MTBE	EDB	EDC	Lead
SB-1	6	08/23/18	0.4	<3.2	<11	0.002	0.004	0.0008	0.006	<0.007	--	--	--	5.35
	12	08/27/18	<0.2	<3.3	<11	<0.0005	0.001	<0.0004	<0.001	<0.007	--	--	--	2.40
	14	08/27/18	0.3	<3.3	<11	<0.0004	0.001	<0.0004	<0.0009	<0.007	--	--	--	<2.35
	16	08/27/18	0.3	<3.2	<11	<0.0005	0.001	<0.0004	<0.0009	<0.007	--	--	--	1.35
	51	08/27/18	<0.2	<3.1	<10	<0.0005	0.0007	<0.0004	<0.0009	<0.007	--	--	--	1.93
SB-2	6	08/24/18	1.4	<3.3	<11	0.0009	0.003	0.0004	0.009	<0.007	--	--	--	4.02
	8	08/28/18	<0.2	13	49	<0.0005	0.0009	U <0.0004	<0.0009	<0.007	--	--	--	1.48
	11	08/28/18	6.3	<3.3	<11	<0.0004	0.001	U <0.0003	0.001	<0.007	--	--	--	2.66
	15	08/28/18	0.3	<3.3	<11	<0.0005	0.0006	U <0.0004	<0.001	<0.007	--	--	--	5.29
SB-3	20	08/28/18	0.2	<3.2	<11	<0.0005	<0.0006	<0.0004	<0.0009	<0.007	--	--	--	4.14
	10	08/28/18	<0.3	<3.8	<13	<0.0005	<0.0006	<0.0004	<0.0009	<0.009	--	--	--	5.42
	12	08/28/18	<0.2	<3.3	<11	<0.0004	<0.0005	<0.0003	<0.0008	<0.007	--	--	--	2.50
	16	08/28/18	<0.2	<3.3	<11	<0.0004	<0.0005	<0.0003	<0.0009	<0.007	--	--	--	2.06
SB-4	24	08/28/18	<0.2	<3.2	<11	<0.0005	<0.0006	<0.0004	<0.0009	<0.007	--	--	--	3.41
	6	08/23/18	<0.2	3.2	<11	<0.0004	<0.0005	<0.0003	<0.0008	<0.007	--	--	--	4.72
	12	08/29/18	550	<3.7	<12	<0.0005	0.001	0.002	J <0.0009	<0.007	--	--	--	2.37
	12 (D)	08/29/18	410	6.7	<12	<0.0005	0.001	0.0005	J <0.001	<0.008	--	--	--	2.67
	14	08/29/18	<0.2	<3.2	<11	<0.0005	0.0008	<0.0004	<0.0009	<0.007	--	--	--	1.40
SB-5	25	08/29/18	0.8	<3.1	<10	0.0005	0.001	<0.0004	<0.001	<0.007	--	--	--	1.27
	6	08/23/18	<0.1	<3.2	<11	<0.0004	<0.0005	<0.0004	<0.0009	<0.007	--	--	--	4.51
	12	08/28/18	0.5	<3.9	<13	<0.0005	<0.0006	<0.0004	<0.0009	<0.009	--	--	--	3.50
	14	08/28/18	420	<3.7	<12	<0.029	<0.035	<0.023	<0.058	0.020	<0.029	<0.023	<0.035	2.36
	17.5	08/28/18	1,100	23	<11	<0.023	0.042	0.67	9.8	0.34	<0.023	<0.018	<0.027	1.70
	24	08/28/18	0.7	<3.3	<11	<0.0005	0.001	U <0.0004	0.004	0.012	--	--	--	1.76
SB-6	30	08/29/18	0.3	<3.2	<11	0.0006	0.002	<0.0004	0.002	<0.007	--	--	--	1.54
	2	08/24/18	<0.2	<3.2	<11	<0.0005	<0.0005	<0.0004	<0.0009	<0.007	--	--	--	2.20
SB-7	6	08/24/18	<0.2	<3.1	<10	<0.0004	<0.0004	<0.0003	<0.0007	<0.007	--	--	--	2.20
	6	08/23/18	0.3	<3.1	14	<0.0005	<0.0006	<0.0004	<0.001	<0.007	--	--	--	16.2
	10	08/27/18	2.5	<3.8	<13	0.46	0.15	0.16	J 0.38	J 0.034	<0.0005	<0.0004	<0.0006	5.51
	14	08/27/18	3.0	<3.4	<11	0.18	0.38	0.056	0.28	0.015	--	--	--	2.18
	22	08/27/18	<0.2	<3.2	<11	0.001	0.002	<0.0003	<0.0008	<0.007	--	--	--	2.62
SB-8	28	08/27/18	<0.2	<3.2	<11	<0.0005	0.001	<0.0004	<0.001	<0.007	--	--	--	2.73
	2	08/29/18	2.1	<3.4	45	<0.0005	0.0006	<0.0004	<0.001	0.033	--	--	--	22.8
	12	08/29/18	0.4	<3.3	<11	<0.0005	0.001	<0.0004	<0.0009	<0.007	--	--	--	<2.34
	14	08/29/18	<0.2	<3.1	<10	<0.0005	<0.0006	<0.0004	<0.001	0.011	--	--	--	<12.5
SB-9	25	08/29/18	<0.2	<3.3	<11	<0.0005	<0.0006	<0.0004	<0.001	<0.007	--	--	--	<0.542
	7	08/31/18	0.8	<3.5	13	<0.0005	<0.0006	<0.0004	<0.001	0.040	--	--	--	27.3
	11.5	08/31/18	<0.3	<3.5	14	<0.0005	<0.0006	<0.0004	<0.001	0.009	--	--	--	25.4
SB-10	8	07/24/19	<0.3	<5.2	21	<0.0005	0.001	U <0.0004	<0.001	<0.009	--	--	--	1.95
	14	07/24/19	<0.3	<4.7	<12	<0.0005	0.001	U <0.0004	<0.0009	<0.008	--	--	--	4.05
	20	07/24/19	<0.3	<4.3	<11	<0.0004	0.001	U <0.0004	<0.0009	<0.007	--	--	--	1.83
	27.5	07/24/19	<0.3	<4.4	<11	<0.0005	0.002	U <0.0004	<0.001	<0.007	--	--	--	<0.614

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS - PETROLEUM CONSTITUENTS
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington
Concentrations reported in milligrams per kilogram (mg/kg)

Boring ID	Depth (feet)	Sample Date	GRO	DRO	HRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	MTBE	EDB	EDC	Lead
SB-11	6	07/23/19	<0.3	<4.9	<12	<0.0006	<0.0007	<0.0005	<0.001	<0.008	--	--	--	8.75
	10	07/24/19	1.0	<5.1	<13	<0.0005	<0.0006	<0.0004	<0.001	<0.009	--	--	--	7.28
	14	07/24/19	1.5	<5.1	<13	<0.0005	<0.0006	0.001	0.011	<0.008	--	--	--	11.2
	20	07/24/19	3,200	55	J 24	<0.047	UJ 0.58	J 12	J 100	J 11	--	--	--	2.36
	27.5	07/24/19	0.6	<4.3	<11	0.0005	0.004	U 0.001	0.009	<0.007	--	--	--	2.06
SB-12	6	07/23/19	<0.3	<5.1	<13	<0.0005	<0.0006	<0.0004	<0.001	<0.009	--	--	--	16.9
	14.5	07/24/19	<0.3	<5.1	<13	<0.0005	0.002	U <0.0004	<0.001	<0.008	--	--	--	18.8
	20	07/24/19	<0.2	<4.3	<11	<0.0004	0.001	U <0.0003	<0.0008	<0.007	--	--	--	2.42
	27.5	07/24/19	<0.2	<4.3	<11	<0.0005	0.001	U <0.0004	<0.0009	3.2	--	--	--	2.58
SB-13	12	07/24/19	460	<4.5	<11	<0.022	<0.027	<0.018	<0.044	<0.007	--	--	--	<0.544
	16	07/24/19	<0.4	<4.3	<11	<0.0005	<0.0005	<0.0004	<0.0009	<0.007	--	--	--	1.79
	27.5	07/24/19	<0.2	<4.1	<10	<0.0004	<0.0005	<0.0003	<0.0009	<0.007	--	--	--	1.78
SB-14	12	07/24/19	<0.2	<4.3	<11	<0.0004	<0.0005	<0.0003	<0.0008	0.051	--	--	--	2.03
	20	07/24/19	29	130	J 120	<0.0004	0.001	U 0.0005	0.003	<0.007	--	--	--	6.65
	27.5	07/24/19	<0.2	<4.2	<10	<0.0005	0.002	U <0.0004	<0.0009	<0.007	--	--	--	1.74
SB-15	8	07/23/19	3.1	290	<100	<0.0004	UJ 0.001	J <0.0004	UJ <0.0009	UJ <0.007	--	--	--	1.25
	13	07/23/19	3.2	1,100	<210	<0.0004	0.0007	<0.0003	<0.0008	<0.007	--	--	--	3.36
	22.5	07/23/19	1.2	18	<10	<0.0005	<0.0006	<0.0004	<0.0009	0.021	--	--	--	1.77
SB-16	9	07/23/19	1,500	46	<11	<0.023	<0.028	<0.019	<0.047	<0.007	--	--	--	1.80
	13	07/23/19	78	760	<110	0.0005	0.001	<0.0003	0.002	<0.007	--	--	--	11.7
	22.5	07/23/19	<0.2	<4.2	<10	<0.0004	<0.0005	<0.0003	<0.0008	<0.007	--	--	--	1.56
SB-17	8	07/23/19	<0.2	<4.4	<11	<0.0004	<0.0005	<0.0003	<0.0008	<0.007	--	--	--	2.18
	14.5	07/23/19	210	610	25	<0.024	<0.028	<0.019	<0.047	0.003	<0.024	<0.019	<0.028	6.76
	19.5	07/23/19	1,400	3,500	J <110	<0.023	<0.027	<0.018	<0.046	<0.007	--	--	--	5.06
	19.5 (D)	07/23/19	1,100	730	J 140	<0.024	<0.029	<0.019	<0.048	<0.007	--	--	--	4.46
	24	07/23/19	140	2,800	110	<0.025	<0.030	<0.020	<0.050	<0.07	--	--	--	2.19
SB-18	29.5	07/23/19	0.2	<4.1	<10	<0.0004	<0.0005	<0.0003	<0.0009	<0.007	--	--	--	1.92
	8	07/23/19	0.3	85	<11	<0.0004	0.0008	<0.0003	<0.0007	<0.007	--	--	--	1.91
	18	07/23/19	<0.2	8.1	41	<0.0004	<0.0005	<0.0003	<0.0008	<0.007	--	--	--	4.32
SB-19	22.5	07/23/19	<0.2	<4.4	<11	<0.0004	<0.0005	<0.0003	<0.0008	<0.007	--	--	--	2.09
	8	07/25/19	<0.2	<4.2	<11	<0.0005	<0.0006	<0.0004	<0.0009	<0.007	--	--	--	1.72
	8 (D)	07/25/19	<0.2	11	43	<0.0004	0.0009	<0.0003	<0.0008	<0.007	--	--	--	3.89
	14	07/25/19	<0.2	<4.3	<11	<0.0004	0.0005	<0.0003	<0.0008	<0.007	--	--	--	2.37
SB-20	22.5	07/25/19	<0.4	120	20	<0.0007	<0.0008	<0.0005	<0.001	<0.007	--	--	--	<0.539
	27.5	07/25/19	<2.4	340	35	<0.0004	0.001	<0.0004	<0.0009	<0.007	--	--	--	<0.542
	8	07/25/19	46	<4.3	<11	0.001	0.007	0.005	0.037	<0.007	--	--	--	10.2
	14	07/25/19	170	23	53	<0.034	<0.041	<0.027	<0.068	<0.007	--	--	--	8.23
SB-21	22.5	07/25/19	<0.2	<4.1	<10	<0.0005	0.0007	<0.0004	<0.0009	<0.007	--	--	--	3.98
	27.5	07/25/19	<2.4	210	32	<0.0004	0.0007	<0.0003	<0.0008	<0.007	--	--	--	1.56
	8	02/24/20	0.8	<4.4	12	<0.0004	<0.0005	<0.0003	<0.001	<0.007	--	--	--	2.03
	16	02/25/20	150	29	<11	<0.025	<0.030	<0.020	<0.069	<0.001	<0.025	<0.025	<0.020	2.00
SB-21	18	02/25/20	3.0	<4.3	<11	<0.0006	0.0008	<0.0005	<0.002	<0.007	--	--	--	<2.37
	20.5	02/25/20	5.3	82	160	0.0004	<0.0004	<0.0003	<0.001	<0.036	--	--	--	6.53

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS - PETROLEUM CONSTITUENTS
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington
Concentrations reported in milligrams per kilogram (mg/kg)

Boring ID	Depth (feet)	Sample Date	GRO	DRO	HRO	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	MTBE	EDB	EDC	Lead
SB-22	8	02/24/20	<0.3	<5.4	<13	<0.0005	<0.0006	<0.0004	<0.001	<0.009	--	--	--	6.02 J
	16	02/26/20	<2.3	180	280	<0.0004	<0.0005	<0.0003	<0.001	0.027	--	--	--	4.11 J
SB-23	8	02/25/20	<0.2	<4.5	<11	<0.0004	<0.0005	<0.0003	<0.001	<0.007	--	--	--	2.59 J
	16	02/25/20	6.7	110	1,300	0.0005	0.002	0.0007	0.004	<0.007	--	--	--	2.35 J
	19.5	02/25/20	0.3	<4.4	<11	<0.0005	<0.0005	<0.0004	<0.001	<0.007	--	--	--	1.96 J
	23	02/25/20	0.4	4.6	54	<0.0004	<0.0005	<0.0003	<0.001	<0.007	--	--	--	1.98 J
SB-24	8	02/25/20	<0.2	2,100	75	<0.0004	<0.0005	<0.0003	<0.001	<0.007	--	--	--	2.81 J
	14	02/25/20	<0.2	<4.7	<12	<0.0004	<0.0005	<0.0003	<0.001	<0.008	--	--	--	1.93 J
	17.5	02/25/20	930	6.0	<11	<0.023	<0.028	<0.018	<0.065	<0.015	<0.023	<0.018	<0.028	1.81 J
	22	02/25/20	<0.3	430	96	<0.0004	<0.0005	<0.0003	<0.001	<0.007	<0.0004	<0.0003	<0.0005	3.00 J
SB-25	29	02/25/20	<0.3	<4.2	<10	<0.0006	<0.0007	<0.0004	<0.002	<0.007	--	--	--	1.79 J
	8.5	02/26/20	<0.3	10	43	<0.0005	<0.0006	<0.0004	<0.001	<0.009	--	--	--	18.5 J
	12	02/26/20	0.3	<4.5	<11	<0.0004	<0.0004	<0.0003	<0.001	<0.007	--	--	--	0.836 J
SB-26	19	02/26/20	<0.2	<4.3	<11	<0.0004	<0.0005	<0.0003	<0.001	<0.007	--	--	--	2.34 J
	8	02/26/20	<0.3	<4.6	<11	<0.0004	<0.0005	<0.0003	<0.001	<0.008	--	--	--	1.23 J
	15.5	02/26/20	<0.3	<4.3	<11	<0.0004	<0.0005	<0.0003	<0.001	<0.007	--	--	--	1.74 J
SB-27	20	02/26/20	34	340	760	0.0005	0.003	0.001	0.010	0.082	--	--	--	14.2 J
	8	02/26/20	<0.3	<5.2	<13	<0.0005	<0.0006	<0.0004	<0.001	<0.009	--	--	--	6.36 J
	15.5	02/26/20	96	590	2,000	<0.034	<0.040	<0.027	<0.094	<0.031	<0.034	<0.027	<0.040	19.7 J
	22	02/26/20	4.6	570	1,000	0.0009	0.003	0.0009	0.007	0.048	--	--	--	16.1 J
	26	02/26/20	210	210	440	<0.033	<0.040	<0.027	<0.094	0.077	--	--	--	27.1 J
SB-28	29	02/26/20	<0.3	<4.2	<10	<0.0004	<0.0005	<0.0003	<0.001	<0.007	--	--	--	1.64 J
	8	02/27/20	<0.3	<5.4	<13	<0.0005	<0.0006	<0.0004	<0.001	<0.009	--	--	--	5.63 J
	8 (D)	02/27/20	<0.4	<5.7	<14	<0.0005	<0.0006	<0.0004	<0.001	<0.01	--	--	--	5.73 J
	14	02/27/20	4.3	13	<11	<0.0004	0.0007	<0.0003	<0.001	0.18	--	--	--	2.37 J
	19.5	02/27/20	<0.2	<4.4	<11	<0.0004	<0.0005	<0.0003	<0.001	<0.007	--	--	--	1.55 J
SB-29	24.5	02/27/20	<0.2	<4.2	<10	<0.0004	<0.0005	<0.0003	<0.001	<0.007	--	--	--	<3.08
	8	02/26/20	<0.3	<4.8	<12	<0.0004	<0.0005	<0.0003	<0.001	<0.008	--	--	--	3.83
	16	02/27/20	37	350	700	<0.0004	<0.0004	<0.0003	<0.001	0.009	--	--	--	2.59 J
	18	02/27/20	<0.3	<4.5	<11	<0.0004	<0.0005	<0.0003	<0.001	0.014	--	--	--	1.68 J
	18 (D)	02/27/20	<0.2	<4.4	<11	<0.0004	<0.0005	<0.0003	<0.001	<0.007	--	--	--	1.92 J
SB-30	22	02/27/20	<0.3	<4.2	<11	<0.0004	<0.0005	<0.0003	<0.001	<0.007	--	--	--	2.03 J
	8	02/28/20	<0.3	<5.1	<13	<0.0005	<0.0006	<0.0004	<0.001	0.35	--	--	--	2.35 J
	11.5	02/28/30	<0.2	<4.5	<11	<0.0004	<0.0005	<0.0003	<0.001	<0.007	--	--	--	2.01 J
UST-1	15.5	02/28/20	<0.2	4.3	25	<0.0005	<0.0006	<0.0004	<0.001	<0.007	--	--	--	3.88 J
	8	08/28/18	<0.2	5.7	59	<0.0004	<0.0005	<0.0003	<0.0009	<0.007	--	--	--	4.19
UST-2	8	08/28/18	670	2,800	<110	<0.026	<0.031	<0.021	<0.051	<0.007	--	--	--	2.51
	8 (D)	08/28/18	530	2,500	<220	<0.026	<0.031	<0.020	<0.051	0.1	--	--	--	1.98
UST-3	8	08/29/18	0.5	480	<21	<0.0004	<0.0005	<0.0004	<0.0009	<0.007	--	--	--	4.47
UST-4	8	08/29/18	130	1,700	140	<0.025	<0.030	<0.020	<0.050	<0.007	--	--	--	11.9
UST-5	8	08/29/18	0.8	230	73	<0.0005	0.001	<0.0004	<0.001	<0.007	--	--	--	8.24
UST-6	8	08/29/18	0.2	160	J 47 J	0.0008	0.002	<0.0004	0.001	<0.007	--	--	--	2.64
UST-7	8	08/29/18	<0.2	4.1	39	<0.0005	<0.0005	<0.0004	<0.0009	<0.007	--	--	--	9.51
UST-8	8	08/29/18	<0.3	60	14	<0.0005	0.002	<0.0004	<0.001	<0.007	--	--	--	3.21

TABLE 1
SUMMARY OF SOIL ANALYTICAL RESULTS - PETROLEUM CONSTITUENTS
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington
Concentrations reported in milligrams per kilogram (mg/kg)

Boring ID	Depth (feet)	Sample Date	GRO		DRO		HRO		Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	MTBE	EDB	EDC	Lead
SVP-1	8	08/30/18	0.3		11		35		0.0008	0.0006	<0.0004	<0.0009	<0.007	--	--	--	41.3
	10	08/30/18	<0.3		<3.8		<13		0.0006	0.001	<0.0004	<0.001	0.011	--	--	--	9.82
SVP-2	8	08/30/18	0.4		<3.7		<12		<0.0005	0.0007	<0.0004	<0.001	0.017	--	--	--	11.8
	10	08/30/18	<0.3		<0.8		<13		<0.0005	<0.0006	<0.0004	<0.001	<0.008	--	--	--	7.53
SVP-3	8	08/30/18	<0.3		4.9		13		<0.0005	<0.0006	<0.0004	<0.001	0.64	--	--	--	10.9
	10	08/30/18	<0.3		<4.0		<13		<0.0005	<0.0006	<0.0004	<0.001	<0.009	--	--	--	7.11
SVP-4	5	02/27/20	<0.4		<5.3		<13		<0.0005	<0.0006	<0.0004	<0.001	<0.009	--	--	--	7.22 J
SVP-5	5	02/27/20	<0.4		<5.3		<13		<0.0007	<0.0008	<0.0005	<0.002	0.016	--	--	--	5.18 J
SVP-6	5	02/28/20	<0.3		<4.9		<12		0.0006	0.0007	<0.0004	<0.001	0.033	--	--	--	3.56 J
SVP-7	6.5	11/01/21	0.52		<5.2		<13		<0.00058	0.00079	<0.00046	<0.0016	0.017	--	--	--	4.6
SVP-8	5	08/26/22	1.0	J	<5.0		<13		<0.00051	0.001	<0.00041	<0.0014	<0.0083	--	--	--	4.1
MTCA Method A Cleanup Level:			30		2,000				0.03	7	6	9	5	0.1	0.005	Not Established	250
MTCA Method B Cleanup Level for Direct-Contact:					2,477/3,353¹				18	6,400	8,000	16,000	1,600	560	0.5	11	Not Established

NOTES:

1 - See Section 5.1.1 of RI report text for additional details regarding development and applicability of site-specific cleanup levels for total petroleum hydrocarbons (TPH)

Bold values indicate results exceeding MTCA Method A Cleanup Levels

Bold and highlighted values indicate results exceeding MTCA Method B Cleanup Levels for direct-contact in soil samples collected above the standard point of compliance (15 feet bgs)

D = Duplicate sample

GRO = Gasoline-range organics

DRO = Diesel-range organics

HRO = Heavy oil-range organics

EDB = Ethylene dibromide

EDC = Ethylene dichloride

MTBE = Methyl tertiary-butyl ether

MTCA = Model Toxics Control Act

USEPA = United States Environmental Protection Agency

< = Analyte not detected at or above method detection limit; value represents limit.

-- = not analyzed

THIRD-PARTY DATA VALIDATION QUALIFIERS:

Third-party data validation performed, and data validation qualifiers assigned, by Ecochem, Inc.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

ANALYTICAL METHODS:

TPH-GRO analyzed by NWTPH-Gx

TPH-DRO and TPH-HRO analyzed by NWTPH-Dx

BTEX, MTBE, EDB, and EDC analyzed by USEPA 8260C

Naphthalene analyzed by USEPA 8270D

Lead analyzed by USEPA 6010D

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS - CPAHs, HALOGENATED VOCs, and PCBs
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington
Concentrations reported in milligrams per kilogram (mg/kg)

Boring ID	Depth (feet)	Sample Date	Carcinogenic PAHs								Halogenated VOCs				PCBs							
			Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total cPAHs	Methylene Chloride	PCE	1,1,1-TCA	TCE	PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260	Total PCBs
SB-1	6	08/23/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12	08/27/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14	08/27/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	16	08/27/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	51	08/27/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-2	6	08/24/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	15	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-3	10	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	16	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	24	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-4	6	08/23/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12 (D)	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	25	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-5	6	08/23/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14	08/28/18	<0.0008	<0.0008	<0.0008	<0.0008	0.0005	<0.0008	<0.0008	0.000045	--	--	--	--	--	--	--	--	--	--	--	--
	17.5	08/28/18	0.0008	<0.0007	<0.0007	<0.0007	0.002	<0.0007	<0.0007	0.0001	--	--	--	--	--	--	--	--	--	--	--	--
	24	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-6	2	08/24/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6	08/24/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-7	6	08/23/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10	08/27/18	<0.0009	<0.0009	<0.0009	<0.0009	<0.0004	<0.0009	<0.0009	0.000047	--	--	--	--	--	--	--	--	--	--	--	--
	14	08/27/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	22	08/27/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-8	28	08/27/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-9	14	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	25	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	7	08/31/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-10	11.5	08/31/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	20	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	27.5	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS - CPAHs, HALOGENATED VOCs, and PCBs
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington
Concentrations reported in milligrams per kilogram (mg/kg)

Boring ID	Depth (feet)	Sample Date	Carcinogenic PAHs								Halogenated VOCs				PCBs							
			Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total cPAHs	Methylene Chloride	PCE	1,1,1-TCA	TCE	PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260	Total PCBs
SB-11	6	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	20	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	27.5	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-12	6	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14.5	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	20	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	27.5	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-13	12	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	16	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	27.5	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-14	12	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	20	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	27.5	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-15	8	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	13	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	22.5	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-16	9	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	13	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	22.5	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-17	8	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14.5	07/23/19	<0.0007	<0.0007	<0.0007	<0.0007	<0.0004	<0.0007	<0.0007	0.000037	--	--	--	--	<0.0038	<0.0049	<0.0085	<0.0035	<0.0035	<0.0035	<0.0052	<0.0085
	19.5	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	19.5 (D)	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	24	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-18	8	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	18	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	22.5	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	27.5	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-19	8	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8 (D)	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	22.5	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-20	8	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	22.5	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	27.5	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS - CPAHs, HALOGENATED VOCs, and PCBs
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington
Concentrations reported in milligrams per kilogram (mg/kg)

Boring ID	Depth (feet)	Sample Date	Carcinogenic PAHs								Halogenated VOCs				PCBs							
			Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Indeno (1,2,3-cd)pyrene	Total cPAHs	Methylene Chloride	PCE	1,1,1-TCA	TCE	PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260	Total PCBs
SB-21	8	02/24/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	16	02/25/20	<0.0007	<0.0007	<0.0007	<0.0007	0.0004	<0.0007	<0.0007	0.000004	--	--	--	--	--	--	--	--	--	--	--	--
	18	02/25/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	20.5	02/25/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-22	8	02/24/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	16	02/26/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-23	8	02/25/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	16	02/25/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	19.5	02/25/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-24	23	02/25/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	02/25/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14	02/25/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	17.5	02/25/20	<0.007	<0.007	<0.007	<0.007	0.019	<0.007	<0.007	0.00019	--	--	--	--	--	--	--	--	--	--	--	--
SB-25	22	02/25/20	<0.004	<0.004	<0.004	<0.004	0.005	<0.004	<0.004	0.00005	--	--	--	--	--	--	--	--	--	--	--	--
	29	02/25/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8.5	02/26/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12	02/26/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-26	19	02/26/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	02/26/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	15.5	02/26/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-27	20	02/26/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	02/26/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	15.5	02/26/20	<0.016	0.024	<0.016	<0.016	0.047	<0.016	<0.016	0.02447	--	--	--	--	--	--	--	--	--	--	--	--
	22	02/26/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-28	26	02/26/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	29	02/26/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	02/27/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14	02/27/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-29	19.5	02/27/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	24.5	02/27/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	02/26/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-30	16	02/27/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	18	02/27/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	22	02/27/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	02/28/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UST-1	11.5	02/28/30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	15.5	02/28/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UST-2	8	08/28/18	--	--	--	--	--	--	--	--	<0.10	<0.026	<0.031	<0.026	<0.0041	<0.0052	<0.0090	<0.0037	<0.0037	<0.0037	<0.0055	<0.0090
	8 (D)	08/28/18	--	--	--	--	--	--	--	--	<0.10	<0.026	<0.031	<0.026	<0.0039	<0.0050	<0.0087	<0.0036	<0.0036	<0.0036	<0.0054	<0.0087
UST-3	8	08/29/18	--	--	--	--	--	--	--	<0.002	<0.0004	<0.0005	<0.0004	<0.0039	<0.0049	<0.0086	<0.0035	<0.0035	<0.0035	<0.0053	<0.0086	
UST-4	8	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UST-5	8	08/29/18	--	--	--	--	--	--	--	<0.002	<0.0005	<0.0006	<0.0005	<0.0040	<0.0051	<0.0089	<0.0037	<0.0037	<0.0037	<0.0054	<0.0089	
UST-6	8	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UST-7	8	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UST-8	8	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 2
SUMMARY OF SOIL ANALYTICAL RESULTS - CPAHs, HALOGENATED VOCs, and PCBs
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington
Concentrations reported in milligrams per kilogram (mg/kg)

Boring ID	Depth (feet)	Sample Date	Carcinogenic PAHs								Halogenated VOCs				PCBs								
			Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Total cPAHs	Methylene Chloride	PCE	1,1,1-TCA	TCE	PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260	Total PCBs	
SVP-1	8	08/30/18	--	--	--	--	--	--	--	--	<0.002	0.0005	<0.0006	<0.0005	<0.020	<0.025	<0.043	<0.018	<0.018	<0.018	<0.027	<0.043	
	10	08/30/18	--	--	--	--	--	--	--	--	<0.002	0.0006	<0.0006	<0.0005	<0.0045	<0.0057	<0.010	<0.0041	<0.0041	<0.0041	<0.0061	<0.010	
SVP-2	8	08/30/18	--	--	--	--	--	--	--	--	<0.002	<0.0005	<0.0006	<0.0005	<0.0044	<0.0057	<0.0099	<0.0041	<0.0041	<0.0041	<0.0061	<0.0099	
	10	08/30/18	--	--	--	--	--	--	--	--	<0.002	<0.0005	<0.0006	<0.0005	<0.0045	<0.0058	<0.010	<0.0041	<0.0041	<0.0041	<0.0061	<0.010	
SVP-3	8	08/30/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
	10	08/30/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SVP-4	5	02/27/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SVP-5	5	02/27/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SVP-6	5	02/28/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SVP-7	6.5	11/01/21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SVP-8	5	08/26/22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
MTCA Method A Cleanup Level:			See Total Carcinogenic PAHs (Total cPAHs)								0.1	0.02	0.05	2	0.03	See Total PCBs							1

NOTES:

D = Duplicate sample
MTCA = Model Toxics Control Act
PAHs = Polycyclic aromatic hydrocarbons
PCBs = polychlorinated biphenyls
PCE = Tetrachloroethylene
TCA = Trichloroethane
TCE = Trichloroethylene
VOCs = Volatile organic compounds
USEPA = United States Environmental Protection Agency
< = Analyte not detected at or above method detection limit; value represents limit.
-- = not analyzed
Total cPAHs is the total toxicity equivalent of benzo(a)pyrene.

ANALYTICAL METHODS:

PAHs analyzed by USEPA 8270D SIM
VOCs analyzed by USEPA 8260C
PCBs analyzed by USEPA 8082A

TABLE 3
SUMMARY OF SOIL ANALYTICAL RESULTS - EPH and VPH
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington
Concentrations reported in milligrams per kilogram (mg/kg)

Boring ID	Depth (feet)	Sample Date	EPH								VPH										
			>C10-C12 Aliphatic	>C10-C12 Aromatic	>C12-C16 Aliphatic	>C12-C16 Aromatic	>C16-C21 Aliphatic	>C16-C21 Aromatic	>C21-C34 Aliphatic	>C21-C34 Aromatic	C5-C6 Aliphatic	C6-C8 Aliphatic	C8-C10 Aliphatic	C8-C10 Aromatic	Benzene	Ethylbenzene	MTBE	Toluene	o-Xylene	m,p-Xylenes	
SB-1	6	08/23/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12	08/27/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14	08/27/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	16	08/27/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	51	08/27/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-2	6	08/24/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	15	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-3	10	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	16	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	24	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-4	6	08/23/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12 (D)	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-5	25	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6	08/23/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14	08/28/18	6.4	<1.2	<1.2	<1.2	<3.7	<2.5	<7.5	<2.5	<2.97	52.8	32.7	10.9	<0.0594	<0.0594	<0.0594	<0.0594	0.155	<0.119	
	17.5	08/28/18	8.3	3	2.1	4.4	<3.2	<2.1	<6.3	<2.1	<2.49	9.67	108	93.0	<0.0498	0.751	<0.0498	<0.0498	2.57	5.45	
SB-6	24	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	30	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-6	2	08/24/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6	08/24/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-7	6	08/23/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10	08/27/18	<1.3	<1.3	<1.3	<1.3	<3.9	<2.6	<7.7	<2.6	<3.16	<3.16	<3.16	<3.16	0.654	0.177	<0.0632	0.214	0.0997	0.449	
	14	08/27/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	22	08/27/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-8	28	08/27/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	2	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-8	14	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	25	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-9	7	08/31/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	11.5	08/31/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 3
SUMMARY OF SOIL ANALYTICAL RESULTS - EPH and VPH
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington
Concentrations reported in milligrams per kilogram (mg/kg)

Boring ID	Depth (feet)	Sample Date	EPH								VPH										
			>C10-C12 Aliphatic	>C10-C12 Aromatic	>C12-C16 Aliphatic	>C12-C16 Aromatic	>C16-C21 Aliphatic	>C16-C21 Aromatic	>C21-C34 Aliphatic	>C21-C34 Aromatic	C5-C6 Aliphatic	C6-C8 Aliphatic	C8-C10 Aliphatic	C8-C10 Aromatic	Benzene	Ethylbenzene	MTBE	Toluene	o-Xylene	m,p-Xylenes	
SB-10	8	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	20	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	27.5	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-11	6	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	20	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-12	27.5	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	6	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14.5	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	20	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-13	27.5	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	16	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-14	27.5	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	12	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	20	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-15	27.5	07/24/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	13	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-16	22.5	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	9	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	13	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-17	22.5	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14.5	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	19.5	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	19.5 (D)	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	24	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-18	29.5	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	18	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-19	22.5	07/23/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	8 (D)	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SB-19	22.5	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	27.5	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

TABLE 3
SUMMARY OF SOIL ANALYTICAL RESULTS - EPH and VPH
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington
Concentrations reported in milligrams per kilogram (mg/kg)

Boring ID	Depth (feet)	Sample Date	EPH								VPH										
			>C10-C12 Aliphatic	>C10-C12 Aromatic	>C12-C16 Aliphatic	>C12-C16 Aromatic	>C16-C21 Aliphatic	>C16-C21 Aromatic	>C21-C34 Aliphatic	>C21-C34 Aromatic	C5-C6 Aliphatic	C6-C8 Aliphatic	C8-C10 Aliphatic	C8-C10 Aromatic	Benzene	Ethylbenzene	MTBE	Toluene	o-Xylene	m,p-Xylenes	
SB-20	8	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	14	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	22.5	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	27.5	07/25/19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UST-1	8	08/28/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UST-2	8	08/28/18	69	3.5	550	96	340	210	32	16	<2.76	<2.76	12.7	9.74	<0.0552	<0.0552	<0.0552	<0.0552	<0.0552	<0.110	
	8 (D)	08/28/18																			
UST-3	8	08/29/18	<1.1	<1.1	29	1.1	130	37	15	6.3	<2.60	<2.60	<2.60	<2.60	<0.0519	<0.0519	<0.0519	<0.0519	<0.0519	<0.104	
UST-4	8	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UST-5	8	08/29/18	<1.1	<1.1	5.0	<1.1	66	13	29	14	<2.89	<2.89	<2.89	<2.89	<0.0578	<0.0578	<0.0578	<0.0578	<0.0578	<0.116	
UST-6	8	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UST-7	8	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
UST-8	8	08/29/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVP-1	8	08/30/18	<1.1	<1.1	<1.1	<1.1	<3.2	<2.1	7.1	6.1	<2.48	<2.48	<2.48	<2.48	<0.00496	<0.0496	<0.0496	<0.0496	<0.0496	<0.0993	
	10	08/30/18	<1.2	<1.2	<1.2	<1.2	<3.7	<2.5	<7.4	<2.5	<3.06	<3.06	<3.06	<3.06	<0.0613	<0.0613	<0.0613	<0.0613	<0.0613	<0.123	
SVP-2	8	08/30/18	<1.2	<1.2	<1.2	<1.2	<3.6	<2.4	<7.2	<2.4	<3.85	<3.85	<3.85	<3.85	<0.0770	<0.0770	<0.0770	<0.0770	<0.0770	<0.154	
	10	08/30/18	<1.2	<1.2	<1.2	<1.2	<3.7	<2.4	<7.3	<2.4	<3.23	<3.23	<3.23	<3.23	<0.0647	<0.0647	<0.0647	<0.0647	<0.0647	<0.129	
SVP-3	8	08/30/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	10	08/30/18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVP-4	5	02/27/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVP-5	5	02/27/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVP-6	5	02/28/20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVP-7	6.5	11/01/21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
SVP-8	5	08/26/22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Level:			Not Established												0.03	6	0.1	7	9		

For EPH analyses all samples were re-extracted outside the method required holding time. Results for the first trial are included in the table. For the results of the second trial refer to the laboratory report.

NOTES:

Bold values indicate results exceeding MTCA Method A Cleanup Levels

BTEX = Benzene, Toluene, Ethylbenzene, and Total Xylenes

D = Duplicate sample

EPH = Extractable Petroleum Hydrocarbons

MTBE = Methyl t-butyl ether

VPH = Volatile Petroleum Hydrocarbons

< = Analyte is not detected at or above the method detection limit; value represents limit.

-- = not analyzed

ANALYTICAL METHODS:

EPHs analyzed by NWEPH Method

VPHs analyzed by NWVPH Method

TABLE 4
SUMMARY OF SOIL GAS SAMPLING ANALYTICAL RESULTS BY USEPA METHOD TO-15
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington
Concentrations in micrograms per cubic meter (µg/m³)

Sample Location	Sample Date	Sample ID	MTBE	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylenes	Naphthalene	
SVP-1	09/27/18	SVP-1-092718	<0.033	0.46 J	1.8 J	0.12 J	0.35 J	0.34 J	0.23 J	
	12/04/20	SVP-1-120420	<0.49	<0.22	<0.26	<0.12	<0.24	<0.12	5.8	
SVP-2	09/27/18	SVP-2-092718	<0.031	0.26 J	0.26 J	0.096 J	0.15 J	0.083 J	<0.054	
	9/27/18*	DUP-1-092718	<0.031	0.58 J	0.8 J	0.26 J	0.7 J	0.52 J	0.16 J	
	12/04/20	SVP-2-120420	<0.49	<0.22	<0.26	<0.12	<0.24	<0.12	6.6	
SVP-3	09/27/18	SVP-3-092718	<0.03	0.18 J	1.7 J	0.3 J	0.66 J	0.47 J	1.4 J	
	12/04/20	SVP-3-120420	<0.47	<0.21	<0.24	<0.11	<0.22	<0.11	2.4	
SVP-4	03/25/20	SVP-4-032520	<0.3	4.9	50	13	67	J 26	1.4 J	UJ
	08/19/20	SVP-4-081920	<0.55	<0.24	<0.29	<0.13	<0.26	<0.13	1.9	J
	12/04/20	SVP-4-120420	<0.48	<0.21	0.74	J 0.34	J 6.2	J 2.0	J 1.0	
	12/4/20*	DUP-1-120420	<0.48	<0.21	1.60	J 0.62	J 12	J 3.5	J 1.1	
SVP-5	03/25/20	SVP-5-032520	<0.3	0.3 J	UJ 1.6 J	UJ 0.3 J	UJ 0.9 J	UJ 0.3 J	UJ <0.2	UJ
	3/25/20*	DUP-1--32520	<0.3	4.6	J 50	J 16	J 79	J 33	J 3.1	UJ
	08/19/20	SVP-5-081920	<0.57	<0.25	0.34	U 0.19	U <0.27	<0.14	4.4	J
	8/19/20*	DUP-1-081920	<0.57	0.27	<0.30	0.15	U <0.27	<0.14	4.4	J
	12/04/20	SVP-5-120420	<0.48	<0.21	<0.25	<0.12	<0.23	<0.12	0.93	
SVP-6	03/25/20	SVP-6-032520	<0.3	0.9	UJ 4.6	U 1.0 J	U 2.0	UJ 0.9 J	U 0.3 J	UJ
	08/19/20	SVP-6-081920	<0.54	<0.24	0.31	U 0.91	U <0.26	<0.13	4.7	J
	12/04/20	SVP-6-120420	<0.49	<0.22	<0.26	0.19	<0.24	<0.12	1.2	
Equipment Blank	09/26/18	EB-1-092618	<0.048	0.38 J	5.7	0.46 J	1.5 J	0.33 J	<0.082	
	09/28/18	EB-1-092818	<0.044	0.36 J	14	0.58 J	2.1 J	0.47 J	1.1 J	
	03/24/20	EB-1-032420	<0.3	0.6 J	8.3	1.4 J	7.1	J 2.5	0.9 J	J
	08/19/20	EB-1-081920	<0.55	<0.24	1.2	0.23	0.77	0.27	<0.40	
Outdoor Air	08/19/20	AMB-1-081920	<0.56	<0.25	0.96	U 0.20	U 0.68	U 0.23	U <0.41	
	12/04/20	OA-1-120420	<0.50	1.7	3.6	0.55	1.9	0.63	<0.36	
	12/04/20	OA-2-120420	<0.56	1.5	3.2	0.53	1.8	0.60	<0.41	
	12/04/20	OA-3-120420	<0.50	1.6	3.3	0.52	1.8	0.60	<0.36	
MTCA Method B Screening Levels for Sub-Slab Soil Gas			320	10.7	76,200	15,200	1,500		2.5	
MTCA Method B Cleanup Levels for Indoor Air			9.62	0.321	2,290	457	45.7		0.074	

NOTES:

Bold highlighted value indicate results exceeding MTCA Method B Screening Levels for Sub-Slab Soil Gas

* = Duplicate sample

J = Laboratory assigned sata validation qualifier - Estimated Value

MTCA = Model Toxics Control Act

MTBE = Methyl Tertiary Butyl Ether

< = Analyte not detected above laboratory method detection limits

THIRD-PARTY DATA VALIDATION QUALIFIERS (in bold):

Third-party data validation performed, and data validation qualifiers assigned, by Ecochem, Inc.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

TABLE 5
SUMMARY OF SOIL GAS SAMPLING ANALYTICAL RESULTS BY ASTM D-1946
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington
Concentrations listed as percentage (unless otherwise noted)

Sample Location	Sample Date	Sample ID	Hydrogen	Nitrogen	Oxygen	Carbon Monoxide	Methane	Carbon Dioxide	Helium
SVP-1	09/27/18	SVP-1-092718	<0.14	NA	14.6	<0.14	<0.14	5.79	69 (ppm)
	12/04/20	SVP-1-120420	<0.014	82	11	NA	<0.00014	7.5	<0.068
SVP-2	09/27/18	SVP-2-092718	<0.14	NA	13.8	<0.14	<0.14	5.71	250 (ppm)
	9/27/18*	DUP-1-092718	<0.14	NA	13.8	<0.14	<0.14	5.68	250 (ppm)
	12/04/20	SVP-2-120420	<0.014	79	14	NA	<0.00014	7.3	<0.068
SVP-3	09/27/18	SVP-3-092718	<0.13	NA	17.9	<0.13	<0.13	3.63	140 (ppm)
	12/04/20	SVP-3-120420	<0.013	80	16	NA	<0.00013	4.4	<0.065
SVP-4	03/25/20	SVP-4-032520	NA	82	16	NA	<1.0	1.8	<0.10
	08/19/20	SVP-4-081920	<0.015	79	18	NA	<0.00015	2.7	<0.076
	12/04/20	SVP-4-120420	<0.013	79	19	NA	<0.00013	2.3	<0.067
	12/4/20*	DUP-1-120420	<0.013	79	19	NA	<0.00013	2.3	<0.067
SVP-5	03/25/20	SVP-5-032520	NA	80	19	NA	<1.0	1.2	<0.10
	3/25/20*	DUP-1--32520	NA	79	20	NA	<1.0	1.1	<0.10
	08/19/20	SVP-5-081920	<0.016	80	17	NA	<0.00016	3.2	<0.079
	8/19/20*	DUP-1-081920	<0.016	80	17	NA	<0.00016	3.2	<0.079
	12/04/20	SVP-5-120420	<0.013	80	18	NA	<0.00013	2.3	<0.067
SVP-6	03/25/20	SVP-6-032520	NA	80	19	NA	<1.0	1.4	<0.10
	08/19/20	SVP-6-081920	<0.015	79	16	NA	<0.00015	5.4	<0.074
	12/04/20	SVP-6-120420	<0.014	80	17	NA	<0.00014	3.0	<0.068
Equipment Blank	09/26/18	EB-1-092618	<0.21	NA	12.5	<0.21	<0.21	<0.21	3,700 (ppm)
	09/28/18	EB-1-092818	<0.19	NA	19.9	<0.19	<0.19	<0.19	850 (ppm)
	03/24/20	EB-1-032420	NA	89	11	NA	<1.0	<0.20	<0.10
	08/19/20	EB-1-081920	<0.015	79	21	NA	0.00019	0.044	<0.076
Outdoor Air	08/19/20	AMB-1-081920	<0.016	79	21	NA	0.00019	0.044	<0.078
	12/04/20	OA-1-120420	<0.014	79	21	NA	0.00021	0.051	<0.070
	12/04/20	OA-2-120420	<0.016	78	22	NA	0.00020	0.052	<0.078
	12/04/20	OA-3-120420	<0.014	79	21	NA	0.00022	0.052	<0.070

NOTES:

ASTM = American Society for Testing and Materials

* = Duplicate sample

NA = Not analyzed

Helium results reported in ppm concentration were analyzed by Method 3C Modified

ppm = parts per million

< = Analyte not detected above laboratory method reporting limits

TABLE 6
SUMMARY OF SOIL GAS SAMPLING ANALYTICAL RESULTS BY MADEP - APH
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington
Concentrations in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)

Sample Location	Sample Date	Sample ID	MTBE	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylenes	Naphthalene	C9-C10 Aromatics	C5-C8 Aliphatics	C9-C12 Aliphatics	Total TPH Concentration
SVP-1	12/04/20	SVP-1-120420	<0.53	<0.47	<0.55	<0.64	<0.64	<0.64	4.2 B U	<3.7	73	<5.2	83.7
SVP-2	12/04/20	SVP-2-120420	<0.53	<0.47	<0.55	<0.64	<0.64	<0.64	5.6 B U	<3.7	30	<5.2	41.5
SVP-3	12/04/20	SVP-3-120420	<0.53	<0.47	<0.55	<0.64	<0.64	<0.64	2.5 B U	<3.7	68	<5.2	75.2
SVP-4	08/19/20	SVP-4-081920	<1.1	<0.97	<1.1	<1.3	<1.3	<1.3	2.7	<7.6	18	11	36.0
	12/04/20	SVP-4-120420	<0.54	<0.48	0.59	J <0.65	6.0	J 2.1	J 2.0 B U	9.6	J 11	<5.3	33.6
	12/4/20*	DUP-1-120420	<0.54	<0.48	1.2	J <0.65	11	J 3.6	J 5.0 B U	15	J 12	7.9	53.8
SVP-5	08/19/20	SVP-5-081920	<1.1	<1.0	<1.2	<1.4	<1.4	<1.4	4.1	<7.9	99	15	123.1
	8/19/20*	DUP-1-081920	<1.1	<1.0	<1.2	<1.4	<1.4	<1.4	3.9	<7.9	95	13	117.1
	12/04/20	SVP-5-120420	<0.54	<0.48	<0.56	<0.65	<0.65	<0.65	1.4 B U	<3.8	58	<5.3	63.9
SVP-6	08/19/20	SVP-6-081920	<1.1	<0.95	<1.1	<1.3	<1.3	<1.3	4.3	<7.5	410	39	458.9
	12/04/20	SVP-6-120420	<0.53	<0.47	<0.55	<0.64	<0.64	<0.64	1.9 B U	<3.7	170	35	208.6
Equipment Blank	08/19/20	EB-1-081920	<1.1	<0.97	<1.1	<1.3	<1.3	<1.3	<1.6	<7.6	25	<11	---
Field Blank	08/19/20	AMB-1-081920	<1.1	<0.94	<1.1	<1.3	<1.3	<1.3	<1.5	<7.4	22	<10	---
Outdoor Air	12/04/20	OA-1-120420	<0.52	1.0	2.6	<0.63	1.8	0.67	1.1 B U	<3.6	24	<5.1	---
	12/04/20	OA-2-120420	<0.46	0.84	2.1	<0.56	1.6	0.58	1.0 B U	<3.2	18	<4.6	---
	12/04/20	OA-3-120420	<0.52	0.97	2.4	<0.63	1.7	0.63	1.2 B U	<3.6	22	<5.1	---
MTCA Method B Screening Levels for Sub-Slab Soil Gas			320	10.7	76,200	15,200	1,500		2.5	Not Applicable			4,700

NOTES:

Bold highlighted value indicates result exceeding applicable regulatory screening level

* = Duplicate sample

B = Laboratory assigned data validation qualifier - Analyte detected in laboratory QA/QC blank sample

J = Laboratory assigned data validation qualifier - Estimated Value

MTCA = Model Toxics Control Act

MTBE = Methyl Tertiary Butyl Ether

< = Analyte not detected above laboratory method detection limits

THIRD-PARTY DATA VALIDATION QUALIFIERS (in bold):

Third-party data validation performed, and data validation qualifiers assigned, by Ecochem, Inc.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

TABLE 7
SUMMARY OF SOIL GAS SAMPLING ANALYTICAL RESULTS BY USEPA METHOD TO-17
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington
Concentrations in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)

Sample Location	Sample Type	Sample Date	Sample ID	Naphthalene	
SVP-1	Shallow Soil Vapor	06/22/21	SVP-1-062221	14	
SVP-2		06/22/21	SVP-2-062221	23	
SVP-3		06/22/21	SVP-3-062221	9.0	
SVP-4		06/22/21	SVP-4-062221	2.9	
SVP-5		06/22/21	SVP-5-062221	4.9	
SVP-6		06/22/21	SVP-6-062221	3.9	
SVP-7		02/18/22	SVP-7-021822	<1.2	
SVP-8		10/06/22	SVP-8-100622	<1.2	
SSVP-1	Sub-Slab Soil Vapor	10/06/22	SSVP-1-100622	<1.2	
SSVP-2		10/06/22	SSVP-2-100622	<1.2	
SSVP-3		10/06/22	SSVP-3-100622	<1.2	
Field Blank	TO-17 Field Blank	06/22/21	FB-1-062221	<1.2	
		02/18/22	FB-1-021822	<1.2	
		10/06/22	FB-2-100622	<0.056	
MTCA Method B Screening Level for Sub-Slab Soil Gas				2.5	

NOTES:

Bold highlighted value indicates result exceeding applicable regulatory screening level

MTCA = Model Toxics Control Act

< = Analyte not detected above laboratory reporting limit

THIRD-PARTY DATA VALIDATION QUALIFIERS (in bold):

Third-party data validation performed, and data validation qualifiers assigned, by Ecochem, Inc.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

TABLE 8
SUMMARY OF AIR SAMPLING ANALYTICAL RESULTS BY USEPA METHOD TO-17
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington
Concentrations in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)

Sample Location	Sample Type	Sample Date	Sample ID	Naphthalene	
OA-1	Outdoor Air	10/06/22	OA-1-100622	<0.057	
OA-2		10/06/22	OA-2-100622	<0.056	
OA-3		10/06/22	OA-3-100622	<0.058	
IA-1	Indoor Air	10/06/22	IA-1-100622	0.099	
IA-2		10/06/22	IA-2-100622	0.10	
IA-3		10/06/22	IA-3-100622	0.48	
CSA-1	Crawlspace Air	02/18/22	CSA-1-100622	0.072	
CSA-2		10/06/22	CSA-2-100622	0.12	
CSA-B	Equipment Blank	10/06/22	CSA-B-100622	0.064	
Field Blank	TO-17 Field Blank	10/06/22	FB-1-100622	<0.056	
MTCA Method B Cleanup Level for Indoor Air				0.0735	

NOTES:

Bold highlighted value indicates result exceeding applicable cleanup level

MTCA = Model Toxics Control Act

< = Analyte not detected above laboratory reporting limit

THIRD-PARTY DATA VALIDATION QUALIFIERS (in bold):

Third-party data validation performed, and data validation qualifiers assigned, by Ecochem, Inc.

J = The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

U = The analyte was analyzed for, but was not detected above the reported sample quantitation limit.

UJ = The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

**Appendix A:
Pre-RI Analytical Data**

1.4 Analytical Results and Conclusions

Modified EPA Method 8015 provides both a concentration value and a description of the predominant petroleum product based upon the detected carbon range. The analytical results for soil samples collected from the main tank cavity and the base of the waste oil tank cavity are presented in Table 1. Reports of the analytical testing results from the laboratory are attached.

TABLE 1
 Soil Analytical Results

<u>Sample ID</u>	<u>Sample Locations</u>	<u>Sample Depth (ft)</u>	<u>TPH (ppm)</u>	<u>Product</u>
A	South 1/2 of pit, east wall	10.5	10,230	Gas
B	South 1/2 of pit, south wall	10.5	4,875	Gas
C	South 1/2 of pit, west wall	10.0	245	Aged Gas
N	North 1/2 of pit, north wall	10 - 11.0	346	Gas
W	North 1/2 of pit, west wall	10 - 11.0	1,550	Aged Gas, Mineral Spirits, Diesel
E	North 1/2 of pit, east wall	10 - 11.0	<10	
1	Under Tank No. 4, north 1/2 of pit	13.5	<10	
2	Under Tank No. 2, north 1/2 of pit	13.5	57	Gas
3	Under Tank No. 5, north 1/2 of pit	14.0	<10	
5	Base of Waste Oil Pit	10.0	<10	
6	Composite of Walls of Waste Oil Pit	7 to 7.5	40.4	
Pit 1	Test Pit No. 1 (south)	13.8	634	Gas
Pit 2	Test Pit No. 2 (east)	13.0	4	Gas
Ecology Cleanup Guideline			200	Waste Oil and Diesel
			100	Gas

Testing results indicate hydrocarbon levels in subsurface soil exceed Washington State Department of Ecology (Ecology) cleanup guidelines along the west and north walls, and in the southeast corner of the main tank cavity. This soil contamination likely originated from overflow spillage and/or small tank or line leaks over an extended period of time.

Applied Geotechnology Inc.

All the analyses presented in Table 1 are representative of soil remaining in-place. This Work Plan outlines procedures to remediate the remaining contamination around the gasoline tank cavity.

A single composite soil sample of the four sides of the waste oil tank cavity was analyzed for pesticides, PCBs, and halogenated volatiles and heavy metals; copies of the analytical laboratory reports are attached. Analytical results indicate no detectable PCBs or halogenated volatiles, but show the presence of chromium, copper, lead, and pesticides. The metals and pesticides detected were below their respective cleanup guidelines or accepted tolerance levels as shown in Table 2 below, and, in our opinion, do not pose a risk to human health or the environment. We believe no further action is necessary with regard to the soil around the waste oil tank cavity.

TABLE 2
Metals and Pesticides in Soil

<u>Contaminant</u>	<u>Concentration (ppm)</u>	<u>Cleanup Guideline (ppm)</u>
Total Chromium	16.3	100
Total Copper	25.1	500
Total Lead	69.8	250
Aldrin	0.03	0.1
		(tolerance level)
g-BHC (isomer of Lindane)	0.15	1.0
4,4'-DDD	1.16	Insecticidally inert
4,4'-DDE	0.37	Insecticidally inert
4,4'-DDT	0.06	1.0
Endosulfan I	0.13	2.0
		(tolerance level)

Notes: Tolerance levels were taken from Pesticide Manufacturing and Toxic Materials Control Encyclopedia, edited by Marshall Sittig, Noyes Data Corporation, Park Ridge, New Jersey, 1989, 810 pp.

Cleanup guidelines derived from interim draft Method A Cleanup Levels for Soil, Washington Department of Ecology.

1.5 Recommendations

Hydrocarbon contamination levels in the vicinity of the tank cavity are above Ecology action guidelines. We believe the most cost effective way to remediate this remaining contamination is by installation of a VES. Sections 2 and 3 of this Work Plan describe installation, operation, and demobilization of the proposed VES.

Because contamination was above Ecology guidelines at the greatest depth penetrated in the test pits, AGI recommends drilling a well in the vicinity of test pit TP1, as discussed between you and AGI in a telephone conversation on September 14, 1990. This well would evaluate the maximum depth of contamination, and would be available if remediation at greater depths than the tank cavity were necessary.

Table 1
Summary of AGI's Analytical Data from 1999
Newman's Texaco (Formerly Newman's Chevron)
2021 6th Street, Bremerton, Washington

Soil Samples	Depth (Feet)	Collection Date	TPH ⁽¹⁾ (mg/kg)	Product ⁽²⁾
A	10.5	August 1999	10,230	Gas
B	10.5	August 1999	4,875	Gas
C	10.0	August 1999	245	Aged Gas
N	10-11.0	August 1999	346	Gas
W	10-11.0	August 1999	1,550	Aged Gas, Mineral Spirits, Diesel
E	10-11.0	August 1999	<10	
1	13.5	August 1999	<10	
2	13.5	August 1999	57	Gas
3	14.0	August 1999	<10	
4	10.0	August 1999	<10 (TPH by EPA Method 418.1)	
5	7-7.5	August 1999	40.4 (TPH by EPA Method 418.1)	
Pit 1 (South)	13.8	August 1999	634	Gas
Pit 2 (East)	13.8	August 1999	4	Gas

Notes:

⁽¹⁾ Total Petroleum Hydrocarbons, EPA Method 8015, Modified, unless otherwise noted.

⁽²⁾ Product as identified by Sound Analytical Services, Inc.

Soil analytical data reported in mg/kg which approximates parts per million (ppm) concentrations.

Table 2
Summary of Assessment Analytical Data from 2000
Newman's Texaco (Formerly Newman's Chevron)
2021 6th Street, Bremerton, Washington

Soil Samples	Depth (feet)	Date	TPH-G ⁽¹⁾		Benzene ⁽²⁾		Toluene		Ethylbenzene		Xylenes		Naphthalene (ug/kg)	MTBE (ug/kg)	Total ⁽³⁾ Lead (mg/kg)
			(mg/kg)		(ug/kg)		(ug/kg)		(ug/kg)		(ug/kg)				
			TEG	NCA	8021b	8260b	8021b	8260b	8021b	8260b	8021b	8260b			
Soil Borings															
B1-S4	10.5	9/15/00	ND	--	ND	--	ND	--	ND	--	ND	--	--	--	--
B2-S4	10.5	9/15/00	ND	--	ND	--	ND	--	ND	--	ND	--	--	--	--
B2-S5	13.5	9/15/00	7.1	--	ND	--	ND	--	ND	--	120	--	--	--	--
B3-S4	12.5	9/15/00	ND	--	ND	--	ND	--	ND	--	ND	--	--	--	--
B4-S4	12.5	9/15/00	11	--	ND	--	ND	--	ND	--	1,100	--	--	--	--
<i>B5-S1</i>	10.5	9/15/00	8,700	4,750	24,000	ND	19,000	40,800	42,000	64,100	500,000	711,000	25,600	ND	13
<i>B5-S2</i>	12.5	9/15/00	160	5,300	260	ND	3,200	152,000	1,200	83,000	15,000	709,000	56,800	ND	--
B6-S4	10.5	9/15/00	ND	--	ND	--	ND	--	ND	--	ND	--	--	--	--
B7-S1	14.0	9/15/00	--	130	--	ND	--	ND	--	ND	--	ND	--	ND	--
Excavation Samples															
Bottom-14.5	14.5	12/27/00	--	179	--	178	--	4,180	--	1,680	--	12,300	--	--	--
NE Wall-11.5	11.5	12/27/00	--	19.4	--	ND	--	337	--	79.9	--	465	--	--	--
SE Wall-11.5	11.5	12/27/00	--	18.7	--	ND	--	137	--	79	--	257	--	--	--
MTCA Method A Cleanup Level			100		500		40,000		20,000		20,000		250		
MTCA Method B Cleanup Level			2,000 ⁽⁴⁾												

Notes:
⁽¹⁾ Total Petroleum Hydrocarbons as Gasoline, WDOE Method WTPH-G, by TEG Northwest, Inc. and NorthCreek Analytical, Inc.
⁽²⁾ BTEX by EPA Methods 8021b, (gas chromatography by TEG Northwest, Inc.) and EPA Method 8260b (gas chromatography with confirmation by mass spectrometer by NCA).
⁽³⁾ Total lead by EPA Method 7420.
 -- Indicates analysis not performed on specified sample.
 Soil analytical data reported in mg/kg, and ug/kg which approximate parts per million (ppm) and parts per billion (ppb) concentrations, respectively.
Italics denotes samples which were later excavated.
⁽⁴⁾ Method B cleanup level for gasoline in soil proposed for this site.

Table 3
Results of Volatile Petroleum Hydrocarbons Analyses
Newman's Texaco (Formerly Newman's Chevron)
2021 6th Street, Bremerton, Washington

Analyte	Soil Sample B-5, S-1 VPH Results in mg/kg	Soil Sample B-5, S-1 VPH Results in mg/kg
C5-C6 Aliphatics	ND	318
C6-C8 Aliphatics	936.0	809
C8-C10 Aliphatics	482.0	453
C10-C12 Aliphatics	309.0	437
C8-C10 Aromatics	326.0	334
C10-C12 Aromatics	599.0	368
C12-C13 Aromatics	501.0	392
Total VPH (TVPH)	3150.0	3110

Notes:

VPH mean Volatile Petroleum Hydrocarbons by WDOE Interim TPH Policy Method.

Soil analytical data reported in mg/kg which approximates parts per million (ppm) concentrations.

Gasoline-range organics (TPH and BTEX) were detected at elevated levels, especially at 12-foot bgs, in the soil samples analyzed from the dispenser area of the Site (BM-4, -5, -6, and -7). The results are shown below in Table 1. A laboratory report is provided in the Laboratory Results, Appendix D.

TABLE 1
Soil Sample Analytical Results

Soil Sample #	TPH (8015M) (Gasoline Range) C4-C10 (mg/kg)	Benzene (8260B) (ug/kg)	Toluene (8260B) (ug/kg)	Ethyl- benzene (8260B) (ug/kg)	Xylenes (8260B) (ug/kg)	Isopropyl- benzene (8260B) (ug/kg)	n-Propyl- benzene (8260B) (ug/kg)	1,3,5- Trimethyl- benzene (8260B) (ug/kg)	1,2,4- Trimethyl- benzene (8260B) (ug/kg)	Isopropyl- toluene (8260B) (ug/kg)	Naphtha- lene (8260B) (ug/kg)
BM-1 10-11	12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BM-1 15-16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BM-2 11-12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BM-2 23-24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BM-3 11-12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BM-3 25-26	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BM-4 11-12	1600	1800	39000	14000	110000	ND	6900	12000	39000	1700	5900
BM-4 15-16	1800	1800	83000	39000	310000	4300	21000	32000	100000	3600	13000
BM-4 15-16 d	1600	1000	48000	23000	190000	2600	13000	20000	66000	2500	9300
BM-5 11-12	4100	9500	198000	105000	770000	9700	43000	63000	204000	7100	21000
BM-5 11-12 d	4400	10000	200000	11000	790000	11000	48000	84000	220000	8500	22000
BM-5 19-20	160	99	950	650	5100	110	530	610	2000	ND	390
BM-6 11-12	2200	1900	74000	29000	220000	2700	520000	20000	64000	2400	7200
BM-7 11-12	39	3100	3700	930	4800	ND	180	230	810	ND	ND
BM-8 7-8	190	230	300	370	2600	ND	ND	200	230	ND	65
BM-8 11-12	12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BM-9 9-10	NS	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BM-10 15-16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BM-10 23-24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BM-11 11-12	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BM-11 19-20	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BM-12 11-12	ND	110	120	64	560	ND	ND	ND	110	ND	ND
BM-12 23-24	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BM-13 15-16	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
BM-13 27-28	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
MTCA Method A cleanup level	100 mg/kg*	30 ug/kg	7,000 ug/kg	6,000 ug/kg	9,000 ug/kg	NL	NL	NL	NL	NL	5,000 ug/kg

mg/kg = milligrams per kilogram (parts per million)

ug/kg = micrograms per kilogram (parts per billion)

NS = Not Sampled

NA = Not Analyzed

ND = Not Detected above laboratory detection limits (PQL)

NL = Not listed in the MTCA guide

* where no benzene is present and toluene, ethylbenzene, and xylene concentrations do not exceed 1% of TPH concentration

Appendix B:
RI Geophysical Survey and Utility Location Reports

Geophysical Survey LLC
711 S Tacoma Street
Kennewick, Washington 99336

September 1, 2018

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

Re: *Ground Penetrating Radar Investigation
Project #326971.00.18.W.182F.0706.0100
Bremerton, WA*

Mr. Shropshire:

Geophysical Survey LLC conducted a ground penetrating radar (GPR) investigation at the Chevron site 204117 in Bremerton, Washington on August 22, 2018. The objectives of the investigation were to delineate underground storage tanks (USTs) and clear boring locations.

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 for mapping of surface features and boring locations.

GPR Data Acquisition

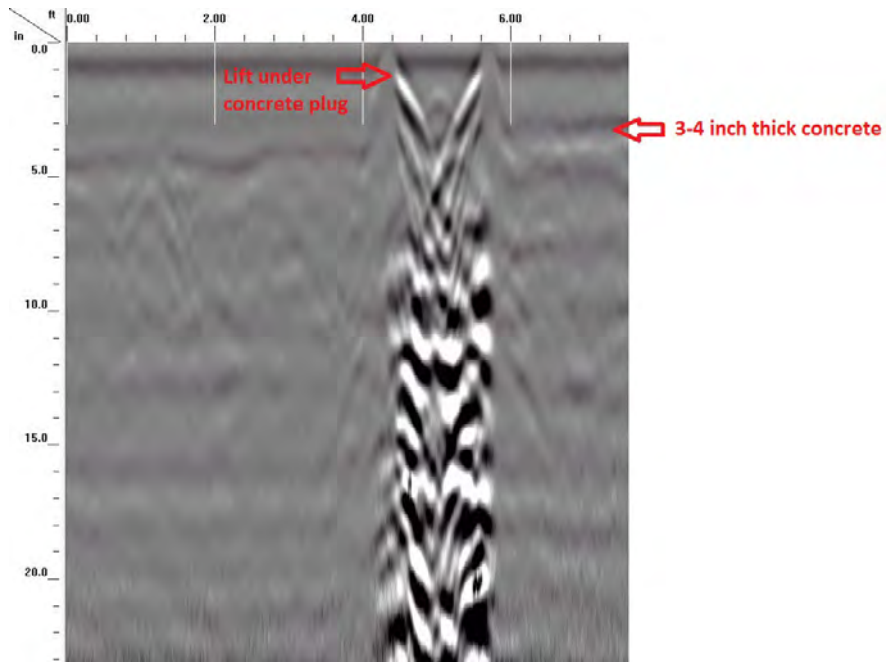
GPR data were acquired with a Geophysical Survey Systems, Inc. (GSSI) G1 control unit a 350 MHz antenna on exterior locations and a SIR3000 control unit with a 1.6 GHz antenna for interior locations. GPR data were collected at 18 scans/foot with a 60 nanoSecond window (approximately 9 feet with a dielectric constant of 8) on exterior locations. Interior locations were collected at 90 scans per foot with a 14 nanoSecond window (approximately 2 feet with a dielectric constant of 9).

RESULTS AND INTERPRETATION

Three USTs were delineated at the west extent of the site. The tanks measured, from south to north; 8 x 5 feet, 6 x 3 feet and 10 x 4 feet. Piping was detected above the tanks as shown in the attached figure.

Eight exterior and two interior locations were cleared for subsurface utilities. The exterior locations were mapped with GPS, the accuracy of location SB-6 was affected by the canopy.

The interior of the store had a 6 ½ to 7 inch thick concrete slab with a 6 x 6 reinforcing mesh. The concrete slab in the attached garage area was not reinforced. The lift cylinder was detected under the concrete plug.



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,

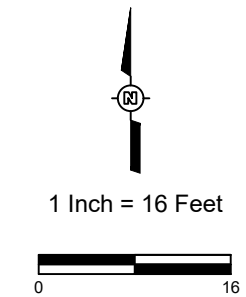
Geophysical Survey LLC

Mark Villa L.G.
Geophysicist

**GPR Investigation
Chevron 204117
Bremerton, WA**

LIST OF FIGURES

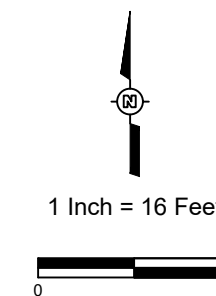
Figure 1 Utility Map



Legend

- 2.0 Depth to top in feet
- Unidentified utility
- E Electric line
- COM Communication line
- W Water line
- SAN Sanitary sewer
- GAS Gas line
- UST

FIGURE 1
Utility Map
Chevron 204117
Bremerton, WA



Legend

- 2.0 Depth to top in feet
- Unidentified utility
- Electric line
- Communication line
- Water line
- Sanitary sewer
- Gas line
- UST

Geophysical Survey LLC
711 S Tacoma Street
Kennewick, Washington 99336

March 1, 2020

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

Re: *Utility Locate
2021 6th Street
Bremerton, WA*

Mr. Shropshire:

Geophysical Survey LLC conducted a utility locate at 2021 6th Street Bremerton, Washington on February 22 & 23, 2020. The objectives of the investigation were to detect and delineate subsurface utility lines and other subsurface interferences prior to drilling.

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 for mapping.

GPR Data Acquisition

GPR data were acquired with a Geophysical Survey Systems, Inc. (GSSI) SIR4000 control unit a 350 MHz antenna. GPR data were collected at 18 scans/foot with a 60 nanoSecond window (approximately 9 feet with a dielectric constant of 8) on transects in two orthogonal directions across the survey area.

Electromagnetic Line Locating

A passive radio frequency search was conducted across the area for conductive piping and utilities. Indirect induction was used on passive radio frequency targets and GPR targets. Induction and conduction were used on accessible utilities.

RESULTS AND INTERPRETATION

Lines were painted in the field, marked lines were mapped and are shown on Figure 1.

Utility locate
Bremerton, WA
March 1, 2020

Page 3

CLOSURE

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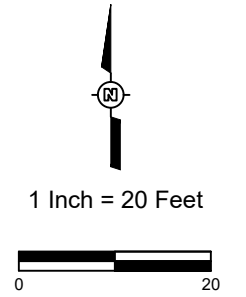
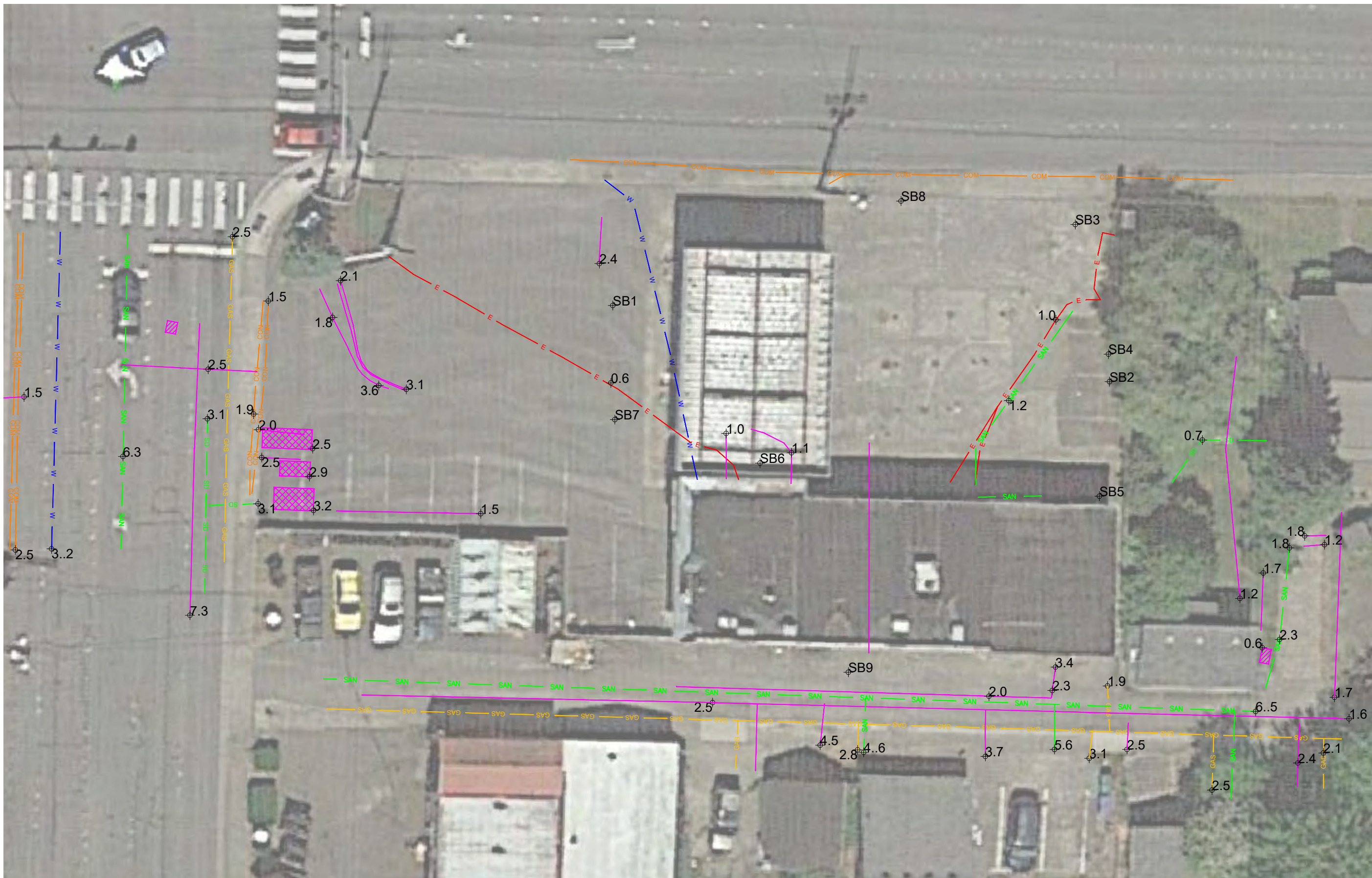
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Respectfully,

Geophysical Survey LLC

A handwritten signature in cursive script, appearing to read "Mark Villa".

Mark Villa L.G.



Legend

- 2.0 Depth to top in feet
- Unidentified utility
- Electric line
- Communication line
- Water line
- Sanitary sewer
- Storm drain
- Gas line
- UST
- GPR anomaly

FIGURE 1
Utility Map
Chevron 204117
Bremerton, WA

Geophysical Survey LLC
711 S Tacoma Street
Kennewick, Washington 99336

September 21, 2022

Russell Shropshire
Leidos
11824 North Creek Parkway, Suite 101
Bothell, WA 98011

Re: *Utility Locate
Chevron 204117
Bremerton, Washington*

Mr. Shropshire:

Geophysical Survey LLC conducted utility locating at four locations in Bremerton, Washington on August 25, 2022. The objectives of the survey were to detect and delineate subsurface utilities for boring clearance. Three locations were inside on concrete slabs and one location was outside south of the former Chevron station.

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.

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FIELD SURVEY

GPR Data Acquisition

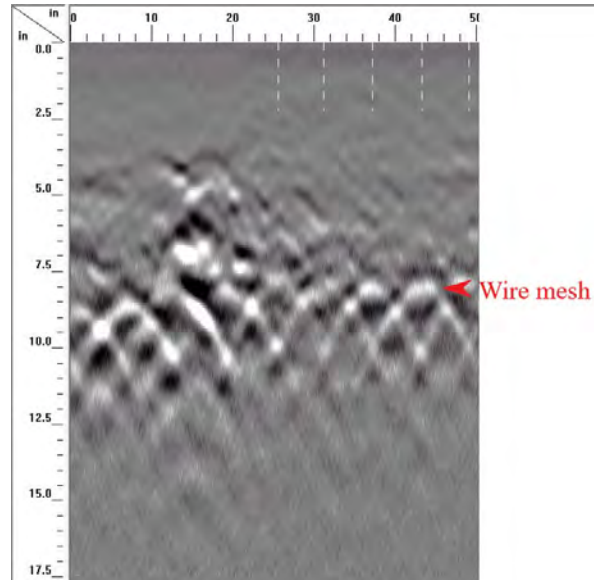
Exterior GPR data were acquired with a Geophysical Survey Systems, Inc. (GSSI) SIR G1 control unit and a 350 MHz Hyperstacking antenna. GPR data were collected at 18 scans/foot with a 60 nano-Second window (approximately 9 feet with a dielectric constant of 9).

Interior GPR data were acquired with a Geophysical Survey Systems, Inc. (GSSI) MiniXT control unit with a 2.7 GHz antenna. GPR data were collected at 10 scans per inch with a 10 nano-Second window (approximately 20 inches with a dielectric constant of 9).

RESULTS AND INTERPRETATION

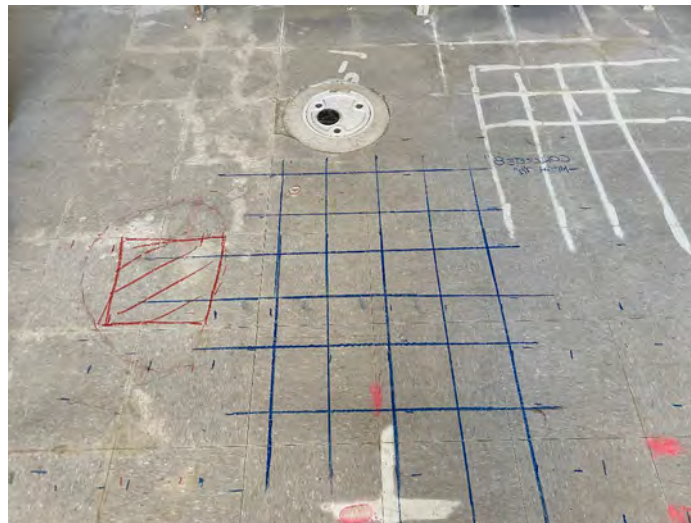
At 1936 5th Street utilities were painted in the fenced in back yard. Utility lines are shown on Figure 1.

Two interior locations were cleared at 2017 6th Street. The location on the west side of the building is shown below in image GPR Data 1.



GPR Data 1

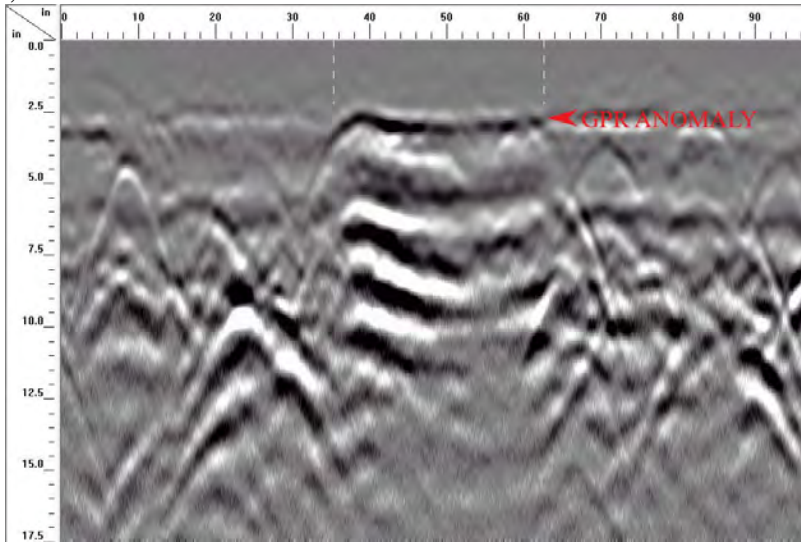
Reinforcement is a 6 by 6 inch mesh, concrete is approximately 7 ½ inches thick. The scanned area is shown below in image Location1. Reinforcement was marked with a blue grease pencil. The red hatched area is interpreted as a floor drain.



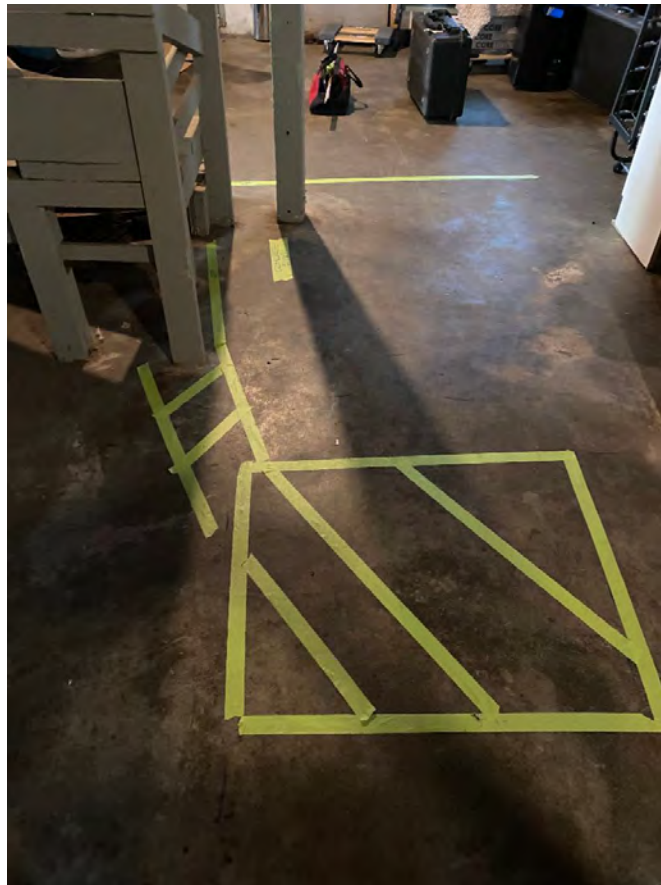
Location 1

The inside location on the east side of the building did not have reinforcement or subsurface utilities associated with the location.

An interior location was cleared at 2005 6th Street in the basement. The basement area had a GPR anomaly, approximately 24 inches by 24 inches, at a depth of 2.5 inches. The anomaly had associated piping. The anomaly is shown below in image GPR Data 2. The anomaly and piping were marked with green tape.



GPR Data 2



Location 2

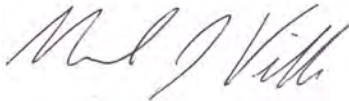
CLOSURE

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Respectfully,

Geophysical Survey LLC

A handwritten signature in black ink, appearing to read "Mark Villa L.G.", is positioned below the typed name. The signature is written in a cursive, flowing style.

Mark Villa L.G.

**Utility Locate
Chevron 204117**

LIST OF FIGURES

Figure 1 Utility Map

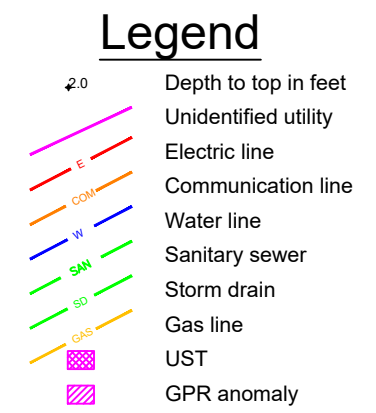
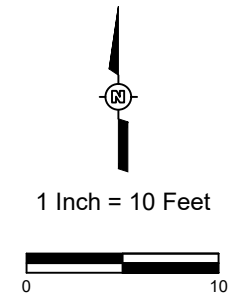


FIGURE 1
Utility Map
Chevron 204117
Bremerton, WA

**Appendix C:
RI Boring Logs**



Soil Boring: SB-1

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 8/23/2018
 Date Completed: 8/27/2018

Driller: Cascade
 Drill Method: Air Knife/HSA
 Total Boring Depth: 51.5 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6"	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
								asphalt (3 inches)
								FILL brown, silty SAND
dry	0.0				SM		1	
							2	(SM) SAA, no odor, no sheen
							3	
dry	0.0				SM		4	(SM) SAA, no odor, no sheen
							5	
dry	0.0				SM		6	(SM) SAA, no odor, no sheen
							7	
damp	5.0				SM		8	light brown, silty SAND, 5% well graded gravel, 10% silt
		6 10 10					9	
damp	0.2				SW		10	(SW) SAA, no odor, no sheen
		10 14 25					11	



Soil Boring: SB-1

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 8/23/2018
 Date Completed: 8/27/2018

Driller: Cascade
 Drill Method: Air Knife/HSA
 Total Boring Depth: 51.5 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6"	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
dry	0.2				SW			light brown, silty SAND, 5% well graded gravel, 10% silt <i>(continued)</i> (SW) SAA, no odor, no sheen
dry	0.2	15 19 20		SB-1-12.0	SW		12	(SW) SAA, 15% gravel, no odor, slight sheen
moist		8 12 13			SW		13	(SW) SAA, 25% gravel, no odor, no sheen
	0.2			SB-1-14.0	SW		14	
dry		18 22 25					15	light brown, well graded gravelly SAND, 20% gravel, trace to no fines, no odor, slight sheen
dry	5.2	18 23 14		SB-1-16.0	GW		16	(GW) SAA, <5% silt, no odor, no sheen
damp	5.3	18 19 23			GW		18	(GW) light brown, gravelly SAND, 5% silt, 5% clay, 20-25% gravel, no odor, no sheen
damp		13 14 15			GW		19	(GW) SAA, well graded, gravelly SAND, no odor, no sheen
damp	0.3	18 20 22			GW		20	(GW) light brown, gravelly SAND, 10% silt, 5% clay, rare cobbles, no odor, no sheen
					GW		21	
					GW		22	(GW) light brown, well graded, gravelly SAND, 5% silt, 10-15% gravel, no odor, slight sheen



Soil Boring: SB-1

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 8/23/2018
 Date Completed: 8/27/2018

Driller: Cascade
 Drill Method: Air Knife/HSA
 Total Boring Depth: 51.5 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6"	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
damp	0.4	15 20 23			SP		34 35 36	(SP) SAA, light brown, medium to fine SAND, poorly graded, trace silt, no odor, no sheen
damp to dry	5.2	20 30 32			SP		37 38 39 40 41 42 43 44	(SP) SAA, trace silt, no gravel, no odor, no sheen

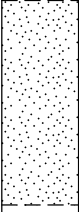
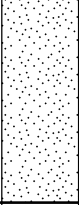


Soil Boring: SB-1

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 8/23/2018
 Date Completed: 8/27/2018

Driller: Cascade
 Drill Method: Air Knife/HSA
 Total Boring Depth: 51.5 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6" SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
damp	0.0	15 20 25		SP		45 46	(SP) SAA, poorly graded SAND, no odor, no sheen
damp	0.0	15 15 20	SB-1-51.0	SP		50 51	(SP) SAA, no odor, no sheen
						52 53 54 55	Bottom of borehole at 51.5 feet.



Soil Boring: SB-2

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 8/24/2018
 Date Completed: 8/28/2018

Driller: Cascade
 Drill Method: Air Knife/Hand Auger/HSA
 Total Boring Depth: 21.5 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6"	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
							0	concrete (6 inches)
damp	3.9				SW		1	
					SW		2	(SW) light brown, well graded, silty SAND, 10% silt, 5% gravel, 85% coarse to fine sand, no sheen, no odor
damp	3.0				SW		4	(SW) SAA, no odor, no sheen
damp	3.9			SB-2-6.0	SW		6	(SW) SAA, no odor, slight sheen
damp	4.8	50/6"		SB-2-8.0	SP		8	grey-brown to light brown, poorly graded, medium to fine, very dense SAND, 5% gravel, 5% silt, slight odor, slight sheen
damp	3.0				SP		10	(SP) SAA, no odor, no sheen



Soil Boring: SB-3

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 8/24/2018
 Date Completed: 8/28/2018

Driller: Cascade
 Drill Method: Air Knife/HSA
 Total Boring Depth: 24.5 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6"	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
							0	concrete
damp	4.1				SW		1	
							2	(SW) light brown, well graded, gravelly SAND (FILL), 5% silt, 10% gravel, 85% coarse to fine sand, no odor, no sheen
damp	0.8				SW		4	(SW) SAA, no odor, no sheen cobbles at 4 feet ~4 inches long, well rounded, some wood fragments
							5	
damp	2.0				SW		6	(SW) SAA, no odor, no sheen
							7	
damp	4.1				SW		8	light brown, sandy SILT, 5% clay, 20% fine sand, mottling and lamination, sand content increasing with depth to approximately 40%, no odor, no sheen
		10 15 16					9	
damp	18.0				SM		10	(SM) light brown, silty SAND, laminated, some stratification, no odor, no sheen
		10 8 14		SB-3-10.0			11	



Soil Boring: SB-4

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 8/23/2018
 Date Completed: 8/29/2018

Driller: Cascade
 Drill Method: Air Knife/HSA
 Total Boring Depth: 26 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6"	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
								asphalt (3 inches)
damp	1.0				SW		1	
					SW		2	(SW) light brown, well graded, gravelly SAND, trace to no fines, no odor, no sheen (Fill)
damp	1.0				SW		3	
					SW		4	(SW) lighth brown, well graded SAND, 85% coarse to fine sand, 10% coarse to fine rounded gravel, 5% silt, no odor, no sheen
					SW		5	
					SW		5.5	cobbles at 5.5 feet, 5% cobbles
damp	1.2			SB-4-6.0	SW		6	(SW) light brown, well graded, gravelly SAND, rounded gravel up to 2 inches, no odor, slight globular sheen
					SW		7	
damp	8.3	8 12 15					8	light brown-grey SILT (mottled and laminated), 5% sand, 5% clay, 90% silt, no odor, no sheen
							9	
moist	7.2	7 7 11			ML		10	(ML) SAA, no odor, no sheen



Soil Boring: SB-4

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 8/23/2018
 Date Completed: 8/29/2018

Driller: Cascade
 Drill Method: Air Knife/HSA
 Total Boring Depth: 26 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6"	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
					ML		11	(ML) SAA, no odor, no sheen <i>(continued)</i>
moist	784	6 7 10		SB-4-12.0	SM		12	(SM) light brown, silty SAND, poorly graded, 30-40% silt, well laminated, 60% fine sand, slight odor, no sheen
					CL		12	(CL) 2 inch CLAY layer
moist		7 20 20			SW-SM		13	(SW-SM) light brown, poorly graded, silty SAND, 10% silt, 5% coarse gravel, no odor, no sheen
damp	3.6			SB-4-14.0	SW-SM		14	(SW-SM) light brown, well graded SAND, 5% silt, 5% gravel, 90% coarse to fine sand
		20 20 25					15	
damp	5.6				SW-SM		16	(SW-SM) SAA, no odor, no sheen
		25 50/6"					17	
damp	6.5				SW-SM		17	(SW-SM) SAA, no odor, no sheen
		25 50/6"					18	
					SW-SM		19	(SW-SM) SAA, no odor, no sheen
		50/6"					20	
	6.3				SW-SM		20	(SW-SM) SAA, no odor, no sheen
		50/6"					21	



Soil Boring: SB-5

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 8/23/2018
 Date Completed: 8/29/2018

Driller: Cascade
 Drill Method: Air Knife/Hand Auger/HSA
 Total Boring Depth: 31.5 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6"	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
					ML		12	(ML) light brown SILT (laminated), no odor, no sheen
damp to moist	2.6			SB-5-12.0	ML		13	(ML) SAA, no odor, no sheen
damp to moist	565.0	12 8 8					14	(ML) light brown SILT, 5% sand, HC odor, no sheen
		8 4 4		SB-5-14.0	ML		15	
damp	1285	4 18 26					16	
							17	poorly graded SAND, 5% silt, no odor, slight sheen
damp	2395	23 50/6"		SB-5-17.5	SP		18	(SP) SAA, strong HC odor, no sheen
damp	1132	20 50/6"			SP		19	(SP) SAA, strong HC odor, medium sheen
damp	49.0	25 50/6"			SP		20	(SP) SAA, slight odor, no sheen
					SM		21	
							22	(SM) ligh brown, silty SAND with gravel



Soil Boring: SB-5

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 8/23/2018
 Date Completed: 8/29/2018

Driller: Cascade
 Drill Method: Air Knife/Hand Auger/HSA
 Total Boring Depth: 31.5 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6" SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
damp	7.6	25 50/5"		SW		23	well graded SAND, 20% coarse to fine gravel, slight odor, no sheen (SW) SAA, no odor, no sheen
damp	10.3	24 50	SB-5-24.0	SW		24	(SW) SAA, no odor, no sheen
damp		30 50		SW		25	cobble, <1 inch recovery
damp	13.3	60		GM		26	(GM) well graded, brown-grey, gravelly SAND, 5% clay, trace silt, 20% gravel, 75% coarse to fine sand, slight HC odor, no sheen
						28	no recovery
damp	2.6	100 100/5"	SB-5-30.0	GM		30	(GM) SAA, well graded, brown, gravelly SAND, no odor, no sheen
						32	Bottom of borehole at 31.5 feet.



Soil Boring: SB-7

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 8/27/2018
 Date Completed: 8/27/2018

Driller: Cascade
 Drill Method: Air Knife/HSA
 Total Boring Depth: 29 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6" SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
damp	409	2 2 2		ML		12	(ML) SAA, mottled SILT
damp		11 11 11		SM		13	(SM) grey, silty SAND, slight HC odor, no sheen
damp	501	7 8 9	SB-7-14.0			14	grey, poorly graded SAND, 10% silt, no odor, no sheen
damp		50/6"		SP-SM		15	perched water seam at ~15.25 feet, few pockets of coarse sand (SP-SM) SAA, no odor, no sheen
damp	220.1	25 50/6"		SP		16	(SP) grey-brown, gravelly SAND, 5% silt, 5% clay, 15-20% gravel, slight HC odor, no sheen
damp to wet	225.1	12 14 15		SP		17	(SP) grey-brown, gravelly SAND with pockets of well graded sand, slight HC odor, no sheen
damp		15 17 18		SP-SC		18	(SP-SC) brown to gray-brown, gravelly SAND, 5% clay, 5% silt, slight HC odor
				SP-SM		19	(SP-SM) light brown, gravelly SAND, 5% silt, slight HC odor, no sheen



Soil Boring: SB-9

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 8/31/2018
 Date Completed: 8/31/2018

Driller: Cascade
 Drill Method: Air Knife
 Total Boring Depth: 11.8 ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	BLOWS/6"	SAMP. INTERVAL	ANALYTICAL SAMPLE	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
							0	asphalt (5 inches)
damp	2.1				SM		1	
							2	(SM) brown, silty, fine SAND, trace bricks, 5% fine gravel, well graded, no odor, no sheen
damp	2.0				SM		3	
							4	(SM) SAA, no odor, no sheen
damp	3.1				SM		5	
							6	(SM) SAA, no odor, no sheen
damp	2.4				ML		7	(ML) brown, fine, sandy SILT, trace clay, no odor, slight globular sheen
					CL		8	(CL) brown, silty CLAY, trace fine sand and fine gravel, no odor, no sheen

SB-9-7.0



Soil Boring: SB-10

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/24/2019
 Date Completed: 7/24/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 28 ft
 Elevation: ft

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	ivy/dirt
dry	0.0				SM		1	
							2	(SM) orange-brown sandy SILT / silty SAND, 5-10% gravel, no odor, no sheen
							3	
dry	0.0				SM		4	(SM) SAA, no odor, no sheen
							5	
damp	0.0				ML		6	(ML) gray-brown, mottled SILT, 5% sand, 5% clay, no odor, no sheen
							7	
damp	0.0			G < 0.3 D < 5.2 HQ = 21 B < 0.0005	ML		8	(ML) SAA, no odor, no sheen
							9	
							10	

SB-10-8

G < 0.3
 D < 5.2
 HQ = 21
 B < 0.0005



Soil Boring: SB-11

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/23/2019
 Date Completed: 7/24/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 28 ft
 Elevation: ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
damp	7.3		SB-11-10	G = 1.0 D < 5.1 HO < 13 B < 0.0005	ML		11	(ML) brown SILT, no odor, no sheen
damp	1.3				ML		12	(ML) SAA, no odor, no sheen
					ML		13	(ML) SAA except color change to orange
					ML		13	(ML) SAA except color change to brown
damp	276		SB-11-14	G = 1.5 D < 5.1 HO < 13 B < 0.0005	ML		14	(ML) orange-brown SILT, no odor, slight sheen
							15	
damp	324				SM		16	(SM) gray-brown silty SAND, 15% silt, 1% gravel, HC odor, no sheen
							17	
damp	280				SM		18	(SM) SAA, HC odor, slight sheen
damp	402				SM		18	(SM) SAA, strong HC odor, slight sheen
							19	
					SP-		20	



Soil Boring: SB-12

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/23/2019
 Date Completed: 7/24/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 28 ft
 Elevation: ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
	0.0				ML		11	(ML) light brown SILT, no odor, no sheen
damp	0.0				ML		12	(ML) SAA, no odor, no sheen
damp	0.0				ML		14	(ML) SAA, no odor, no sheen
			SB-12-14.5	G < 0.3 D < 5.1 HO < 13 B < 0.0005			15	
damp	0.0				SM		16	(SM) brown-gray silty SAND / gravelly SAND, 15-20% gravel, 15-20% silt, 60% coarse to fine sand, no odor, no sheen
					SM		17	
damp	0.0				ML		18	(ML) brown SILT, no odor, no sheen
					SM		19	(SM) brown silty SAND / gravelly SAND, 15-20% gravel, 15-20% silt, well graded sand, no odor, no sheen
					SM		20	



Soil Boring: SB-15

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/22/2019
 Date Completed: 7/23/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 23 ft
 Elevation: ft

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 (3 inches)
damp	4.6				SM		1	
							2	(SM) brown silty SAND, well graded, 10% silt, 5% gravel, no odor, no sheen
							3	
damp	4.4				SM		4	(SM) orangish-brown silty SAND, well graded, no gravel, 5-10% silt, no odor, no sheen
							5	
damp	4.3				SM		6	(SM) light brown silty SAND, well graded, 5% gravel, no odor, no sheen
							7	
damp	13.9			G = 3.1 D = 290 HO <100 B <0.0004	SM		8	(SM) orange-brown silty SAND, no odor, no sheen
							9	
							10	

SB-15-8



Soil Boring: SB-15

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/22/2019
 Date Completed: 7/23/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 23 ft
 Elevation: ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
damp	13.1				SM		10	(SM) SAA, no odor, no sheen at 10 ft
							11	
damp	7.5				SM		12	(SM) SAA, no odor, no sheen
damp	20.7				SM		13	(SM) light brown-gray silty SAND, slight odor, slight sheen
damp	0.6				SM		14	(SM) SAA, slight odor, slight sheen
					SM		15	(SM) light brown-gray silty SAND, 5% gravel, no odor, no sheen
damp	0.6				SM		16	(SM) SAA, no odor, no sheen
							17	
damp	8.6				SM	18	(SM) SAA, no odor, no sheen	
						19		
						20		

SB-15-13
 G = 3.2
 D = 1100
 HO < 210
 B < 0.0004



Soil Boring: SB-15

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/22/2019
 Date Completed: 7/23/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 23 ft
 Elevation: ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
damp	3.2				SM		21	(SM) SAA, no odor, no sheen
	5.1		SB-15-22.5	G = 1.2 D = 18 HO < 10 B < 0.0005	SM		22	
							23	(SM) SAA, no odor, no sheen
							23	Bottom of borehole at 23.0 feet.
							24	
							25	
							26	
							27	
							28	
							29	
							30	



Soil Boring: SB-16

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/22/2019
 Date Completed: 7/23/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 23 ft
 Elevation: ft

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 (3 inches)
damp	3.0				SM		1	
							2	(SM) light orangish-brown silty SAND, 5% gravel (up to 2 inches), rounded gravel, no odor, slight globular (organic) sheen
							3	
damp	2.0				SM		4	(SM) SAA, no odor, no sheen
							5	
damp	2.0				SM		6	(SM) SAA, 10% gravel, 15% silt, no odor, no sheen
							7	
damp	91.0				SM		8	(SM) light brown silty SAND, 15% silt, <5% gravel, no odor, no sheen
					SP		9	(SP)
damp	303			G = 1500 D = 46 HO <11 B <0.023	SP		9	(SP) gray, medium SAND, 5% silt, strong HC odor, heavy sheen
							10	

SB-16-9



Soil Boring: SB-16

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/22/2019
 Date Completed: 7/23/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 23 ft
 Elevation: ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
damp	41.2				SP			(SP) gray, medium SAND, HC odor, no sheen
					SP		11	(SP) SAA
damp	21.2				SP		12	(SP) SAA, no odor, no sheen
damp	88.8				SM		13	(SM) gray silty SAND, 5-10% gravel, HC odor, moderate to heavy sheen
damp	7.1						14	
							15	
damp	12.1				SM		16	(SM) SAA, 10% gravel, HC odor, moderate sheen
damp	4.5				SM		17	(SM) SAA, no odor, no sheen
damp	34.9					18		
						19		
						20		

SB-16-13
 G = 78
 D = 760
 HO < 110
 B = 0.0005



Soil Boring: SB-16

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/22/2019
 Date Completed: 7/23/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 23 ft
 Elevation: ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
damp	12.1				SM	[Stippled pattern representing soil texture]	21	(SM) SAA, no odor, no sheen
damp	4.0				SM		22	(SM) SAA, no odor, no sheen
damp	4.0		SB-16-22.5	G <0.2 D <4.2 HO <10 B <0.0004			23	Bottom of borehole at 23.0 feet.
							24	
							25	
							26	
							27	
							28	
							29	
							30	



Soil Boring: SB-17

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/22/2019
 Date Completed: 7/23/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 30 ft
 Elevation: ft

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 (3 inches)
damp	4.0				SM		1	
							2	(SM) brown silty SAND, 10% silt, 5% gravel, no odor, no sheen
damp	4.2				SM		3	
							4	(SM) orangish-brown silty SAND, 5% gravel, 10% silt, no odor, no sheen
damp	4.6				SM		5	
							6	(SM) light brown silty SAND, 5% gravel, no odor, no sheen
damp	4.4			G <0.2 D <4.4 HO <11 B <0.0004	SM		7	
							8	(SM) gray-brown silty SAND, 5% gravel, no odor, slight globular sheen
					SM		9	(SM) gray-brown silty SAND, 15% gravel
							10	

SB-17-8



Soil Boring: SB-17

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/22/2019
 Date Completed: 7/23/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 30 ft
 Elevation: ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
damp	24.0				SM			(SM) orangish-brown silty SAND, 15% silt at 10 ft
					SP			(SP) gray, medium SAND, poorly graded
					SP		11	(SP) gray, medium SAND, 10% gravel
damp	12.6				SM		12	(SM) gray silty SAND, HC odor, moderate sheen
damp	70.5				SM		13	(SM) orangish-brown silty SAND, 15% gravel, HC odor, moderate sheen
damp	130.5				SM		14	(SM) SAA, HC odor, moderate sheen
damp	169.5		SB-17-14.5	G = 210 D = 610 HO = 25 B < 0.024	SM		15	(SM) light brown silty SAND, 5% gravel, HC odor, moderate sheen
damp	41.5				SM		16	(SM) SAA, 10-15% gravel, HC odor, moderate sheen
					SM		17	(SM) SAA, HC odor, moderate sheen
damp	68.5				SM		18	(SM) SAA, HC odor, moderate sheen
damp	331		SB-17-19.5	G = 1400 D = 3500 HO < 110 B < 0.023 G = 1100 (D) D = 730 (D) HO = 140 (D) B < 0.024 (D)	SP-SM		19	(SP-SM) brown, medium SAND, 5% silt, 5% gravel, HC odor, moderate sheen
							20	HC odor, moderate to heavy sheen



Soil Boring: SB-17

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/22/2019
 Date Completed: 7/23/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 30 ft
 Elevation: ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
					SM		20	(SM) light brown silty SAND, 15% silt, 5% gravel, HC odor, moderate sheen
damp	104.7				SM		21	(SM) SAA, HC odor, moderate sheen
					SP		22	(SP)
damp	56.1				SP		22	(SP) brown, medium SAND, 5% gravel, HC odor, moderate sheen
					SP		23	(SP) gray, medium SAND, <5% silt, HC odor, moderate sheen
damp	80.1			G = 140 D = 2800 HO = 110 B <0.025	SP		24	(SP) gray-light brown, medium SAND, <5% silt, no gravel, HC odor, moderate sheen
damp	31.7		SB-17-24		SP		25	(SP) SAA, HC odor, moderate sheen
damp	3.7				SP		26	(SP) SAA
damp	4.5				SP		27	(SP) SAA, HC odor, slight sheen
					SP		28	(SP) SAA, HC odor, slight sheen
damp	5.3		SB-17-29.5	G = 0.2 D <4.1 HO <10 B <0.0004	SP		29	(SP) SAA, no odor, no sheen
							30	

Bottom of borehole at 30.0 feet.



Soil Boring: SB-18

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/22/2019
 Date Completed: 7/23/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 23 ft
 Elevation: ft

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 (3 inches)
damp	3.0				SM		1	
damp	3.0				SM		2	(SM) orangish-brown silty SAND, 5% gravel, 10% silt, no odor, slight sheen
damp	4.0				SM		4	(SM) SAA, no odor, slight globular sheen
damp	6.2			G = 0.3 D = 85 HO <11 B <0.0004	SM		6	(SM) light brown silty SAND, 10% silt, 5% rounded gravel, small pieces of charred wood, no odor, no sheen
							8	(SM) brown silty SAND, 5% gravel, no odor, no sheen
							10	

SB-18-8



Soil Boring: SB-18

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/22/2019
 Date Completed: 7/23/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 23 ft
 Elevation: ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
damp	2.1				SM		10	(SM) SAA, no odor, no sheen
damp	2.0				SM		11	(SM) SAA, no odor, no sheen
					SP		12	(SM) SAA, no odor, no sheen
					SM		13	(SP) brown, medium SAND, 5% silt, 5% gravel
damp	2.1				SM		14	(SM) brown silty SAND, no odor, no sheen
					SM		15	(SM) SAA, no odor, no sheen
damp	3.9				SM		16	(SM) SAA, 10% silt, no odor, no sheen
							17	
damp	4.2			G < 0.2 D = 8.1 HO = 41 B < 0.0004	SM		18	(SM) brown silty SAND, no odor, slight sheen
							19	
							20	

SB-18-18



Soil Boring: SB-18

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/22/2019
 Date Completed: 7/23/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 23 ft
 Elevation: ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
damp	3.8				SM		21	(SM) SAA, no odor, no sheen
					SM		22	(SM) SAA, no odor, no sheen
damp	3.2		SB-18-22.5	G <0.2 D <4.4 HO <11 B <0.0004	SM		23	(SM) SAA, no odor, no sheen
							23	Bottom of borehole at 23.0 feet.
							24	
							25	
							26	
							27	
							28	
							29	
							30	



Soil Boring: SB-19

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/25/2019
 Date Completed: 7/25/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 28 ft
 Elevation: ft

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 (3 inches)
damp	6.3				SM		1	
							2	(SM) orangish-brown sandy SILT, 10-15% sand, 5% gravel, no odor, no sheen
							3	
damp	6.4				SM		4	(SM) orangish-brown silty SAND, 5% rounded gravel, 10-15% silt, no odor, no sheen
							5	
damp	6.7				SM		6	(SM) SAA except larger rounded gravel up to 5 inches, no odor, no sheen
							7	
damp	0.0			G <0.2 D <4.2 HO <11 B <0.0005 G <0.2 (D) D = 11 (D) HO = 43 (D) B <0.0004 (D)	SM		8	(SM) orangish-brown silty SAND, 5-10% gravel, well graded sand, 15% silt, no odor, no sheen
							9	
							10	

SB-19-8



Soil Boring: SB-19

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/25/2019
 Date Completed: 7/25/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 28 ft
 Elevation: ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
damp	0.0				SM		11	(SM) SAA, no odor, no sheen
damp	0.0				SM		12	(SM) SAA, no odor, no sheen
					SM		13	(SM) SAA, no odor, no sheen
damp	0.0			G <0.2 D <4.3 HO <11 B <0.0004	SM		14	(SM) SAA, no odor, no sheen
							15	
damp	0.0				SP		16	(SP) light brown, medium, poorly graded SAND, 5% gravel, no odor, no sheen
							17	
					SM		18	(SM) light brown silty SAND, no odor, no sheen
damp	0.0				SM		19	(SM) SAA, no odor, no sheen
					SP		19	(SP) brown, medium SAND, little to no fines, <5% silt, 5% gravel, no odor, no sheen
						20		

SB-19-14

G <0.2
D <4.3
HO <11
B <0.0004



Soil Boring: SB-20

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: R. Otteman
 Date Started: 7/25/2019
 Date Completed: 7/25/2019

Driller: AEC
 Drill Method: Direct Push
 Total Boring Depth: 28 ft
 Elevation: ft

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION
damp	20.6				SM		11	(SM) SAA, orange-light brown silty SAND, no odor, no sheen
damp	18.6				SM		12	(SM) SAA, no odor, no sheen
							13	large gravel, >2 inches at 12.5 ft
damp	49.0				SM		14	(SM) SAA, no odor, no sheen
							15	
damp	3.2				SP		16	
							17	(SP) light brown, medium SAND, poorly graded, 5% gravel, <5% silt, no odor, no sheen
damp	19.0				SP		18	(SP) SAA, no odor, no sheen
							19	
							20	

SB-20-14

G = 170
 D = 23
 HO = 53
 B < 0.034



Soil Boring: SB-22

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: TD
 Date Started: 2/24/2020
 Date Completed: 2/26/2020

Driller: AEC Drilling
 Drill Method: Air Knife/Direct Push
 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
							asphalt (3 inches)
moist						0	(ML) 3 in - 2 ft: brown SILT with some gravel
moist	0.0			ML		2	2 - 2.5 ft: medium dark brown SILT with ~20% gravel and fill debris (up to 1.5 inches), trace very fine sand, soft; no odor, no sheen
wet	0.0			ML-CL		4	(ML-CL) 4 - 4.5 ft: light brown, clayey SILT, soft, medium plastic (rolls to 3 inches); no odor, no sheen
moist to damp	1.4			ML		6	(ML) 6 - 6.5 ft: light gray-brown, laminated SILT with some clay (less clayey than above), slightly plastic (rolls to <2 inches), stiff; no odor, no sheen
wet	1.3		SB-22-8	ML-CL		8	(ML-CL) 8 - 8.5 ft: light brown, laminated, clayey SILT (more clayey than above), medium plastic (rolls to 4 inches), firm; no odor, no sheen 8.5 - 10 ft: SAA; no odor, no sheen
moist	0.0			ML-CL		9	
	0.0					10	10 - 11 ft: no recovery, slough



Soil Boring: SB-22

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: TD
 Date Started: 2/24/2020
 Date Completed: 2/26/2020

Driller: AEC Drilling
 Drill Method: Air Knife/Direct Push
 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 to moist	2.3			ML-CL		11 - 12 ft	(ML-CL) 11 - 12 ft: SAA, laminated, clayey SILT; no odor, no sheen
moist	4.9			ML		12 - 15 ft	(ML) 12 - 15 ft: gray-brown SILT with ~15-20% gravel up to 1 inch, with ~2-5% very fine sand, hard; probable till; no odor, no sheen
	3.6			ML		13 - 14 ft	
	1.1			ML		14 - 15 ft	
	3.7					15 - 16 ft	15 - 16 ft: no recovery
moist	5.5		SB-22-16	ML		16 - 20 ft	(ML) 16 - 20 ft: SAA; probable till; no odor, no sheen
	6.7			ML		17 - 18 ft	
	5.5			ML		18 - 19 ft	
	3.4			ML		19 - 20 ft	
moist	2.0					20 - 21 ft	20 - 21 ft: SAA; probable till
moist	1.8			SM		21 - 22 ft	(SM) 21 - 22 ft: medium brown-gray, silty, very fine to medium SAND with ~35% gravel up to 2 cm, very dense; no odor, no sheen







Soil Boring: SB-23

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: TD
 Date Started: 2/25/2020
 Date Completed: 2/25/2020

Driller: AEC Drilling
 Drill Method: Air Knife/Direct Push
 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
						1	asphalt (6 inches) concrete (7 inches)
moist	5.2					2	2 - 2.5 ft: medium yellow-brown SILT with ~10% gravel to 2 cm, firm; no odor, no sheen
moist	7.0					4	4 - 4.5 ft: light brown-gray, coarse SILT with ~7% very fine sand, with ~10% gravel up to 1 inch, soft; no odor, no sheen
moist	6.6			ML		6	6 - 6.5 ft: medium brown-gray SILT with sand, similar to above, gravel up to 1.5 inches, soft; no odor, medium organic sheen
moist	5.6					8	8 - 8.5 ft: medium gray-brown SILT, SAA; no odor, no sheen
moist to wet	6.5					9	8.5 - 10 ft: light brown SILT with ~15% gravel up to 1 inch, stiff; no odor, no sheen
moist	6.9					10	10 - 10.5 ft: slough, no recovery
						11	10.5 - 11.5 ft: light brown SILT with ~20% gravel up to 1 inch, stiff; probable till; no odor, no sheen

SB-23-8



Soil Boring: SB-24

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: TD
 Date Started: 2/25/2020
 Date Completed: 2/25/2020

Driller: AEC Drilling
 Drill Method: Air Knife/Direct Push
 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 (5 inches)
						1	concrete (10 inches)
						1	(ML)
moist	0.8					2	2 - 2.5 ft: medium red-brown SILT with ~15% gravel up to 0.5 inch, soft; no odor, no sheen
						3	
moist	2.0					4	4 - 4.5 ft: medium gray-brown, coarse SILT with 10-15% gravel, with ~2% very fine sand, firm; no odor, no sheen
						5	5 - 8 ft: large cobbles up to 10 inches
moist	2.8			ML		6	6 - 6.5 ft: SAA
						7	
moist	4.1					8	8 - 8.5 ft: SAA with ~20-25% gravel up to 1.5 inch, stiff; no odor, no sheen
						8.5	8.5 - 10 ft: medium dark brown SILT with 25% gravel up to 1 inch, stiff; no odor, no sheen
moist	0.0					9	
						10	10 - 11 ft: poor recovery
	0.0					11	

SB-24-8



Soil Boring: SB-24

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: TD
 Date Started: 2/25/2020
 Date Completed: 2/25/2020

Driller: AEC Drilling
 Drill Method: Air Knife/Direct Push
 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	1.1					(GM) 11 - 13 ft: medium dark brown, silty GRAVEL up to 1.5 inches, very dense; no odor, no sheen	
	0.8			GM		12	
moist to wet	2.1					(ML) 13 - 15 ft: medium light brown SILT with ~8% gravel up to 1 inch, stiff to hard; no odor, no sheen	
	1.7		SB-24-14	ML		14	
moist	1.4					(GM) 15 - 16.5 ft: medium brown, silty GRAVEL up to 1 inch, very dense; no to very weak odor, no sheen	
	6.5			GM		16	
moist to wet	107					(ML) 16.5 - 17 ft: medium light brown SILT with ~5% gravel up to 0.5 inch; weak HC odor, no sheen 17 - 18 ft: SAA, but green-gray; strong HC odor, heavy sheen	
	44.6		SB-24-17.5	ML		18	
moist	2.5					19	
	6.4					20	
						20 - 21.5 ft: no recovery, slough	
						21	
moist						(GM) 21.5 - 22 ft: medium yellow-brown, silty GRAVEL up to 1 inch, very dense; weak odor, light to medium sheen	
				GM		22	



























Soil Boring: SB-25

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: TD
 Date Started: 2/25/2020
 Date Completed: 2/26/2020

Driller: AEC Drilling
 Drill Method: Air Knife/Direct Push
 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	grass at surface
moist	0.0					1	(ML)
moist	0.0					2	2 - 2.5 ft: orange-brown SILT with 5% gravel up to 0.5 inch, plant debris/roots, soft; no odor, no sheen
moist	0.0					3	
moist	0.0					4	4 - 4.5 ft: yellow-brown SILT with 5% gravel up to 1 inch, plant debris/roots, firm; no odor, no sheen
moist	0.0					5	
moist	0.0					6	6 - 6.5 ft: SAA with no gravel; no odor, no sheen
moist	0.0					7	
moist	0.0					8	8 - 8.5 ft: SAA; no odor, no sheen
moist	0.0					8.5	8.5 - 10 ft: yellow-brown SILT with clay, firm, medium plastic (rolls to 3 inches) in upper half, low to non-plastic in lower half; no odor, no sheen
moist	0.0					9	
moist	0.0					10	10 - 13 ft (approx): medium light brown SILT with 7% very fine sand, with 10% gravel up to 1 inch, hard; probable till; no odor, no sheen
						11	



Soil Boring: SB-26

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: TD
 Date Started: 2/26/2020
 Date Completed: 2/26/2020

Driller: AEC Drilling
 Drill Method: Air Knife/Direct Push
 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)
						1	concrete (7 inches)
						1	(ML)
damp	0.1					2	2 - 2.5 ft: yellow-brown SILT with ~20% gravel up to 2 inches, soft; no odor, no sheen
						3	
damp	0.0					4	4 - 4.5 ft: medium brown SILT with ~25% gravel up to 2.5 inches, firm; no odor, no sheen
						5	
moist	3.8			ML		6	6 - 6.5 ft: medium light brown-gray SILT with ~5% gravel/rock up to 0.5 inch, firm; no odor, no sheen
						7	
moist	4.2					8	8 - 8.5 ft: SAA, gravel up to 1 inch
moist						8.5	8.5 - 9 ft: medium brown SILT with ~8% gravel up to 1.5 inches, firm; no odor, no sheen
moist	4.9					9	9 - 10 ft: medium brown SILT with some layers of very fine to medium sand (~20% overall), with ~3% gravel, firm; no odor, no sheen
						10	10 - 10.75 ft: no recovery
moist	4.7					11	(ML)

SB-26-8

ML



Soil Boring: SB-27

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: TD
 Date Started: 2/26/2020
 Date Completed: 2/26/2020

Driller: AEC Drilling
 Drill Method: Air Knife/Direct Push
 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	grass at surface
moist	4.0			ML		1	(ML)
						2	2 - 2.5 ft: medium dark orange-brown SILT with ~5% gravel up to 2 cm, roots, soft; no odor, no sheen
moist	0.0			ML-CL		4	(ML-CL)
						5	4 - 4.5 ft: medium yellow-brown, clayey SILT, soft to firm, very plastic (rolls to >5 inches); no odor, no sheen
moist	0.0			ML		6	(ML)
						7	6 - 6.5 ft: medium yellow-brown SILT, not plastic, firm; no odor, no sheen
moist to wet	0.9		SB-27-8	ML-CL		8	(ML-CL)
						9	8 - 8.5 ft: medium dark brown, clayey SILT, very plastic (rolls to >6 inches), firm; no odor, no sheen
moist to very moist	4.3					10	8.5 - 10 ft: SAA, medium light yellow-brown clayey SILT, laminated, firm, very plastic (rolls to 5-6 inches); no odor, no sheen (lowest couple inches have slight organic sheen)
						11	10 - 13 ft: assumed upper 3 feet (10-13 ft) was the unrecovered interval



Soil Boring: SB-27

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: TD
 Date Started: 2/26/2020
 Date Completed: 2/26/2020

Driller: AEC Drilling
 Drill Method: Air Knife/Direct Push
 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
						10 - 13 ft:	assumed upper 3 feet (10-13 ft) was the unrecovered interval (<i>continued</i>)
	8.6					12	
moist	6.4					13	(ML) 13 - 14 ft (approx): SAA, but less clayey SILT, less plastic
moist	3.3					14	14 - 15 ft (approx): light to dark brown to red-brown SILT with ~15% very fine to fine sand, with ~15% gravel up to 1 inch, stiff; no odor, no sheen
	77.6					15	15 - 15.5 ft: possible slough; PID reading (77.6) is thus questionable
	19.2					16	15.5 - 17 ft: light to medium brown SILT with ~10% gravel up to 0.5 inch, firm; no odor, no sheen (slight sheen, possibly organic, at 15.5-16 ft)
	7.8		SB-27-15.5			17	
moist	17.3			ML		18	17 - 20 ft: medium gray-brown SILT with ~20% very fine sand, with ~15% gravel up to 1 inch, stiff to hard; probable till; no odor, no sheen
	16.9					19	
	11.3					20	
moist	4.4					21	20 - 21.5 ft: medium brown SILT, soft to firm; no odor, no sheen likely slough at 20 - 21 ft
moist	5.1					22	21.5 - 25 ft: medium gray-brown SILT with ~15% very fine to fine sand, with ~20% gravel up to 1.5 inches, hard; probable till; no odor, slight sheen at 22-22.5 ft (possibly organic)



Soil Boring: SB-28

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: TD
 Date Started: 2/27/2020
 Date Completed: 2/27/2020

Driller: AEC Drilling
 Drill Method: Air Knife/Direct Push
 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
				ML-CL			(ML-CL) <i>(continued)</i>
						12	11.5 - 13.5 ft: assumed 2 ft (11.5-13.5 ft) was the unrecovered interval
moist	0.0		SB-28-14	ML-CL		14	(ML-CL) 13.5 - 14 ft (approx): SAA, gray-brown, laminated SILT, firm; no odor, no sheen
moist	2.9			ML		15	(ML) 14 - 15 ft (approx): gray-brown SILT with ~15% gravel up to 0.5 inch, stiff; probable till; no odor, no sheen
						16	15 - 16.5 ft: assumed 1.5 ft (15-16.5 ft) was the unrecovered interval
damp	3.7					17	(ML) 16.5 - 20 ft (approx): medium gray-brown SILT with 20% gravel up to 1 inch, with ~4% very fine to fine sand, hard; probable till; no odor, no sheen
	3.7			ML		18	
	2.5		SB-28-19.5			19	
						20	20 - 21.5 ft: assumed 1.5 ft (20-21.5 ft) was the unrecovered interval and slough
						21	
				ML		22	(ML)



Soil Boring: SB-29

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: TD
 Date Started: 2/26/2020
 Date Completed: 2/27/2020

Driller: AEC Drilling
 Drill Method: Air Knife/Direct Push
 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
	1.9						(ML) 11 - 15 ft (approx): medium orange-brown to medium gray-brown SILT with ~3% very fine sand, with ~30% gravel up to 1.5 inches, hard; probable till; no odor, no sheen
damp to wet	1.0					12	
	2.0					13	
	1.9			ML		14	
						15	
moist	1.7		SB-29-16			16	15.5 - 16.5 ft: medium brown-gray (slightly greenish hue) SILT with ~8% gravel up to 1 cm, firm; no odor, slight sheen (possible organic sheen)
	1.5					17	16.5 - 17.5 ft: medium yellow-brown, gravelly, sandy SILT, very fine to coarse sand, gravel up to 1 inch
moist	1.6		SB-29-18	SP-SM		18	(SP-SM) 17.5 - 19 ft: medium brown, very fine to medium SAND with ~7% silt and ~5% gravel up to 1 cm, dense; no odor, no sheen
moist	1.1					19	(ML) 19 - 20 ft: medium yellow-brown SILT with ~10% very fine to medium sand, with ~20% gravel up to 1 inch, hard; probable till; no odor, no sheen
moist	0.4			ML		20	20 - 21 ft: medium brown SILT with ~20% gravel up to 0.5 inch, firm to stiff; probable till; no odor, no sheen
moist to wet	0.4					21	21 - 21.5 ft: orange-brown, coarse SILT with ~10% very fine sand, stiff; no odor, no sheen (grades coarser into layer below)
moist				SP		22	(SP)



Soil Boring: SB-30

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: TD
 Date Started: 2/28/2020
 Date Completed: 2/28/2020

Driller: AEC Drilling
 Drill Method: Air Knife/Direct Push
 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 - 0.5	concrete (5.5 inches)
						0.5 - 1.0	(ML)
moist	3.2			ML		1.0 - 2.0	2 - 2.5 ft: medium orange-brown SILT, soft; no odor, no sheen
moist	3.4			ML		2.0 - 4.0	4 - 4.5 ft: medium yellow-brown SILT, firm; no odor, no sheen
						4.0 - 5.0	(ML-CL)
moist to wet	3.0			ML-CL		5.0 - 8.0	6 - 6.5 ft: light gray-brown to orange-brown; clayey SILT, laminated, firm, very plastic (rolls to >5 inches); no odor, no sheen
moist to wet	2.9			ML-CL		8.0 - 8.5	8 - 8.5 ft: medium gray-brown, clayey SILT, laminated, firm, very plastic (rolls to 4-5 inches); no odor, no sheen
	2.3					8.5 - 9.25	8.5 - 9.25 ft: SAA laminated SILT; no odor, no sheen
moist	2.3			ML-CL		9.25 - 10.0	(ML) 9.25 - 10 ft: medium gray-brown SILT with ~10% very fine sand, with ~15% gravel up to 1 cm, stiff; probable till; no odor, no sheen
moist	2.5			ML		10.0 - 11.0	10 - 15 ft: SAA SILT, stiff to hard, 15% gravel up to 1.5 inches (2 inch zone in lower part of very fine to medium sand); probable till; no odor, no sheen



Soil Boring: SB-30

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA

Logged By: TD
 Date Started: 2/28/2020
 Date Completed: 2/28/2020

Driller: AEC Drilling
 Drill Method: Air Knife/Direct Push
 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
	2.2						(ML) (continued)
	3.5		SB-30-11.5			12	
	2.5					13	
	2.7					14	
moist						15	15 - 18.5 ft: SAA, no odor, no sheen
	2.8		SB-30-15.5			16	
				ML		17	
	2.8					18	
moist						19	18.5 - 20 ft: medium gray-brown, gravelly SILT with ~45% gravel up to 1.5 inches, hard; probable till; no odor, no sheen
	3.2					20	
moist						21	20 - 22.5 ft: SAA gravelly SILT; no odor, no sheen
	3.1					22	



Soil Vapor Well: SVP-1

Project: 204114 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA
 Logged By: BRG

Date Started: 8/30/2018
 Date Completed: 8/30/2018
 Driller: Cascade
 Drill Method: Hand Auger

Total Boring Depth: 10.5 ft
 Hole Diameter: 3.25 in
 Well Depth: 5.5 ft
 Well Diameter: 0.25 in

Well Screen: 0.75 in
 Filter Pack: 2/12 Colorado 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	two layers of concrete (6 and 4 inches deep).	Well Box
damp	2.1				SP		1		Cement Seal
damp	2.5				SM		2	(SP) light brown, poorly graded medium to fine SAND with silt, no odor, no sheen	Pre-hydrated granular bentonite slurry
damp to moist	2.7				SW		3		0.25 inch teflon tubing
damp to moist	5.2		SVP-1-8.0	G = 0.3 D = 11 HO = 35 B = 0.0008	SW		4	(SM) light brown to brown silty, coarse to fine SAND with 5-10% fine to coarse gravel, no odor, no sheen	Dry granular bentonite
moist	5.2		SVP-1-10.0	G < 0.3 D < 3.8 HO < 13 B = 0.0006	SM		5	gravel seam at 5 feet, small cobbles present in boring	2/12 Monterey Sand
							6	(SW) brown coarse to fine gravelly, coarse to fine SAND with 10% silt, no odor, no sheen	0.75 inch diameter stainless steel screen with 0.0057 inch pore diameter
							7	large cobble at 7 feet	
							8	SAA, no odor, slight sheen	2/12 Monterey Sand Pack
							9		
							10	(SM) brown, well graded gravelly SAND with 10% clay, 5% silt, 25% coarse to fine gravel, 60% coarse to fine sand, no odor, no sheen	
							10.5	Bottom of borehole at 10.5 feet.	



Soil Vapor Well: SVP-2

Project: 204114 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA
 Logged By: BRG

Date Started: 8/30/2018
 Date Completed: 8/30/2018
 Driller: Cascade
 Drill Method: Hand Auger

Total Boring Depth: 10.5 ft
 Hole Diameter: 3.25 in
 Well Depth: 5.5 ft
 Well Diameter: 0.25 in

Well Screen: 0.75 in
 Filter Pack: 2/12 Colorado 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
							1	brown SAND with gravel	Cement Seal
damp	11.8				SW		2	intact, buried asphalt (SW) dark brown, gravelly, coarse to fine SAND with 15% silt, asphalt fragments, no odor, faint sheen (sheen likely associated with above pavement)	-0.25 inch teflon tubing
							3		Pre-hydrated granular bentonite slurry
damp	4.1				SM		4	(SM) brown SAND with 5% gravel, poorly graded silty sand with 10% silt, no odor, no sheen	Dry granular bentonite
							5		2/12 Monterey Sand
							6		0.75 inch diameter stainless steel screen with 0.0057 inch pore diameter
damp	4.9						7	orange-brown, silty (15-20%) fine SAND with 5-10% fine gravel, no odor, no sheen	
							8		2/12 Monterey Sand Pack
damp	2.5		SVP-2-8.0	G = 0.4 D < 3.7 HO < 12 B < 0.0005	ML		9	(ML) orange-brown and olive-brown SILT with 10% medium to fine sand and 5% clay, some mottling, no odor, no sheen	
							10	SAA, no odor, no sheen	
damp	2.1		SVP-2-10.0	G < 0.3 D < 0.8 HO < 13 B < 0.0005			10.5	Bottom of borehole at 10.5 feet.	



Soil Vapor Well: SVP-3

Project: 204114 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA
 Logged By: BRG

Date Started: 8/30/2018
 Date Completed: 8/30/2018
 Driller: Cascade
 Drill Method: Hand Auger

Total Boring Depth: 10.5 ft
 Hole Diameter: 3.25 in
 Well Depth: 8.75 ft
 Well Diameter: 0.25 in

Well Screen: 0.75 in
 Filter Pack: 2/12 Colorado 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
damp	3.2						1		Well Box
							2	(SP-SM) brown to gray-brown, poorly graded, medium to fine SAND with 10% silt and 10% coarse to fine, rounded gravel, trace roots, no odor, no sheen	- Cement Seal
damp	2.9				SP-SM		3		- 0.25 inch teflon tubing
damp	2.6				SM		4	(SM) dark brown, silty (15%), coarse to fine SAND with 15% coarse to fine gravel, containing charcoal fragments, no odor, no sheen	- Pre-hydrated granular bentonite slurry
damp	2.8		SVP-3-8.0	G < 0.3 D = 4.9 HO = 13 B < 0.0005			5		
							6	SAA, increase in coarse sand, no odor, no sheen	
							7	gravel seam	
damp	2.0		SVP-3-10.0	G < 0.3 D < 4.0 HO < 13 B < 0.0005	ML		8	light brown silty, medium to fine SAND with 10% coarse to fine gravel, some mottling, no odor, no sheen	- Dry granular bentonite
							9		- 2/12 Monterey Sand
							10	cobbles	- 0.75 inch diameter stainless steel screen with 0.0057 inch pore diameter
							10	(ML) light brown, clayey SILT, 10% clay, no gravel, occasional sand seams, no odor, no sheen	- 2/12 Monterey Sand Pack
							11	Bottom of borehole at 10.5 feet.	



Soil Vapor Well: SVP-4

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA
 Logged By: TD

Date Started: 2/27/2020
 Date Completed: 2/27/2020
 Driller: AEC Drilling
 Drill Method: Hand Auger

Total Boring Depth: 6 ft
 Hole Diameter: 3.25 in
 Well Depth: 5.5 ft
 Well Diameter: 0.25 in

Well Screen: 0.75 in
 Filter Pack: 2/12 Monterey 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	grass at surface	
moist	1.2				ML		1	(ML)	Well Box
							2	2 - 2.5 ft: medium orange-brown SILT with roots, soft; no odor, no sheen	Ecology Well ID BLY329
							3		- Cement Seal
moist	0.2						4	3.5 - 4 ft: medium yellow-brown SILT, firm; no odor, no sheen	- 0.25 inch teflon tubing
							5		- Pre-hydrated granular bentonite slurry
moist	1.1		SVP-4-5		ML-CL		6	(ML-CL) 5 - 5.5 ft: medium brown, clayey SILT, very plastic (rolls to >5 inches), soft to firm; no odor, no sheen	- Dry granular bentonite
							7		- Sand
							8		- 0.75 inch diameter stainless steel screen with 0.0057 inch pore diameter
							9		Sand
							10		
							11	Bottom of borehole at 6.0 feet.	



Soil Vapor Well: SVP-5

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA
 Logged By: TD

Date Started: 2/27/2020
 Date Completed: 2/27/2020
 Driller: AEC Drilling
 Drill Method: Hand Auger

Total Boring Depth: 6 ft
 Hole Diameter: 3.25 in
 Well Depth: 5.5 ft
 Well Diameter: 0.25 in

Well Screen: 0.75 in
 Filter Pack: 2/12 Monterey 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
moist	0.0				ML		0	1.5-inch asphalt (ML)	Well Box
moist	0.0						1	1.5 - 2 ft: medium red-brown SILT with ~3% gravel up to 2 cm, soft; no odor, no sheen	Ecology Well ID BLY330
moist	0.0						2		- Cement Seal
moist	0.0						3	3 - 3.5 ft: medium yellow-brown SILT with ~ 5% gravel to 0.5 inch, soft; no odor, no sheen	- 0.25 inch teflon tubing
moist	0.0		SVP-5-5				4		- Pre-hydrated granular bentonite slurry
							5	5 - 5.5 ft: light gray-brown SILT, laminated, firm, moist; no odor, no sheen	- Dry granular bentonite
							6	Bottom of borehole at 6.0 feet.	- Sand
							7		- 0.75 inch diameter stainless steel screen with 0.0057 inch pore diameter
							8		Sand
							9		
							10		
							11		



Soil Vapor Well: SVP-6

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA
 Logged By: TD

Date Started: 2/28/2020
 Date Completed: 2/28/2020
 Driller: AEC Drilling
 Drill Method: Hand Auger

Total Boring Depth: 6.5 ft
 Hole Diameter: 3.25 in
 Well Depth: 5.5 ft
 Well Diameter: 0.25 in

Well Screen: 0.75 in
 Filter Pack: 2/12 Monterey 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
moist	2.6				ML		0 - 0.5	concrete (3.5 inches)	Well Box
moist	3.7				ML		1 - 2	1.5 - 2 ft: medium red-brown SILT with ~8% gravel up to 1 cm, soft; no odor, no sheen	Ecology Well ID BLY331 - Cement Seal - 0.25 inch teflon tubing
moist	4.4		SVP-6-5		ML-CL		3 - 3.5	3 - 3.5 ft: medium orange-brown SILT, firm; no odor, no sheen	- Pre-hydrated granular bentonite slurry
					ML-CL		4 - 5	5 - 5.5 ft: light gray-brown to orange-brown (localized oxidation) clayey SILT, laminated, high plasticity (rolls to > 5 inches); no odor, no sheen	- Dry granular bentonite - Sand - 0.75 inch diameter stainless steel screen with 0.0057 inch pore diameter - Sand
							6.5	Bottom of borehole at 6.5 feet.	



Soil Vapor Well: SVP-7

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA
 Logged By: TD

Date Started: 11/1/2021
 Date Completed: 11/1/2021
 Driller: Leidos
 Drill Method: Hand Auger

Total Boring Depth: 7.5 ft
 Hole Diameter: 3.25 in
 Well Depth: 7 ft
 Well Diameter: 0.25 in

Well Screen: 0.75 in
 Filter Pack: 2/12 Monterey 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
damp					ML		0	Rock at surface (~2" thick)	
damp	1.5	Hand icon			ML	1	2 -15 inch: medium brown SILT with root material, ~8-10% gravel, soft, no odor, no sheen		
		Hand icon			ML	2	15 inch - 3.5 ft: medium-light yellow-brown SILT, soft, no odor, no sheen		
	1.8	Hand icon			ML	3	3.5 - 4.5 ft: medium-light yellow-brown SILT (finer than above), possibly with thin clay-rich layers near the top (more gray colored than straight silt), ~2% fine gravel (up to 0.3 inch), firm to stiff, no odor, no sheen		
moist	2.0	Hand icon			ML	4	4.5 - 5.75 ft: medium-light brown-gray, coarse SILT, firm, no odor, no sheen		
	2.2	Hand icon			ML	5	5.75 - 7.0 ft: medium-light brown to reddish brown (oxidized) and light gray, laminated SILT and clay-rich SILT, moderately plastic (rolls to 3.5 inches), firm, no odor, no sheen		
moist	2.1	Hand icon			ML	6	7.0 - 7.5 ft: similar to above, with less clay, silt is overall coarser (rolls out to ~ 1 inch), firm, no odor, no sheen		
moist	2.3	Hand icon			ML	7	Bottom of borehole at 7.5 feet		
	2.4	Hand icon			ML				
	2.4	Hand icon	SVP-7-S-6.5-211101						



Soil Vapor Well: SVP-8

Project: 204117 Bremerton
 Client: Chevron EMC
 Location: 2021 6th Street, Bremerton, WA
 Logged By: TD

Date Started: 8/26/2022
 Date Completed: 8/26/2022
 Driller: Leidos
 Drill Method: Hand Auger

Total Boring Depth: 6.0 ft
 Hole Diameter: 3.25 in
 Well Depth: 5.5 ft
 Well Diameter: 0.25 in

Well Screen: 0.75 in
 Filter Pack: 2/12 Monterey 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
moist					ML		0 - 0.5 ft: Grass/soil at surface		
moist						0.5 - 1 ft: medium brown gravelly SILT with roots; soft, no odor			
moist	5.0	Hand icon				1 1 - 1.5 ft: same as above, with anthropogenic debris (plastic, metal)			
		Hand icon				1.5 - 2 ft: medium brown SILT with clots of harder silt; no gravel, minor roots, firm, no odor, no sheen			
moist	5.4	Hand icon				2 2 - 2.5 ft: light to medium brown SILT			
moist		Hand icon				2.5 - 3 ft: medium brown SILT with ~5% fine gravel; firm, no odor, no sheen			
moist	5.0	Hand icon			ML	3 3 - 3.5 ft: pale to orange-brown (varying iron oxidation) SILT with minor clay (rolls to 1 inch); firm, no odor			
moist		Hand icon				3.5 - 4 ft: same as above; no odor, no sheen			
moist	5.7	Hand icon				4 4 - 4.5 ft: same as above, with abundant brown-red (oxidized) silt			
very moist		Hand icon				4.5 - 4.8 ft: same as 3 - 3.5 ft			
moist	5.0	Hand icon	SVP-8-S-5-220826			5 4.8 - 5 ft: medium brown SILT with some clay (rolls to 2.5 inches); firm, no odor			
moist		Hand icon				5.5 - 5.5 ft: similar to 4.5 - 5 ft interval, SILT with some clay; mixed color, no odor, no sheen			
		Hand icon				5.5 - 6 ft: same as above			
						6 Bottom of borehole at 6.0 feet			
						7			
						8			
						9			
						10			
						11			

Appendix D:
RI Laboratory Analytical Reports



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Chevron c/o Leidos, Inc.
6310 Allentown Blvd.
Suite 110
Harrisburg PA 17112

Report Date: October 08, 2018 18:37

Project: 204117

Account #: 13271
Group Number: 1982153
SDG: LDC01
PO Number: P010215249
Release Number: HETRICK
State of Sample Origin: WA

Electronic Copy To Leidos
Electronic Copy To EcoChem

Attn: Russ Shropshire
Attn: Christine Ransom

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

To view our laboratory's current scopes of accreditation please go to <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>. Historical copies may be requested through your project manager.



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
SB-4-S-6.0-180823 Grab Soil	08/23/2018 14:50	9780531
SB-1-S-6.0-180823 Grab Soil	08/23/2018 11:30	9780532
SB-7-S-6.0-180823 Grab Soil	08/23/2018 12:20	9780533
SB-2-S-6.0-180824 Grab Soil	08/24/2018 11:00	9780534
SB-6-S-2.0-180824 Grab Soil	08/24/2018 08:50	9780535
SB-6-S-6.0-180824 Grab Soil	08/24/2018 09:30	9780536
SB-1-S-12.0-180827 Grab Soil	08/27/2018 10:10	9780537
SB-1-S-51.0-180827 Grab Soil	08/27/2018 11:30	9780538
SB-7-S-10.0-180827 Grab Soil	08/27/2018 15:30	9780539
SB-7-S-14.0-180827 Grab Soil	08/27/2018 15:45	9780540
SB-7-S-22.0-180827 Grab Soil	08/27/2018 16:15	9780541
SB-7-S-28.0-180827 Grab Soil	08/27/2018 16:30	9780542
SB-3-S-10.0-180828 Grab Soil	08/28/2018 11:20	9780543
SB-3-S-12.0-180828 Grab Soil	08/28/2018 11:45	9780544
SB-3-S-16.0-180828 Grab Soil	08/28/2018 12:15	9780545
SB-3-S-24.0-180828 Grab Soil	08/28/2018 12:25	9780546
UST-1-S-8.0-180828 Grab Soil	08/28/2018 14:30	9780547
SB-2-S-11.0-180828 Grab Soil	08/28/2018 14:10	9780548
SB-2-S-15.0-180828 Grab Soil	08/28/2018 14:40	9780549
SB-2-S-20.0-180828 Grab Soil	08/28/2018 14:50	9780550
SB-2-S-8.0-180828 Grab Soil	08/28/2018 13:55	9780551
QA-1-O-180828 Grab Water	08/28/2018 15:20	9780552
UST-2-S-8.0-180828 Grab Soil	08/28/2018 16:00	9780553
SB-5-S-12.0-180828 Grab Soil	08/28/2018 16:40	9780554
SB-5-S-17.5-180828 Grab Soil	08/28/2018 17:20	9780555
SB-1-S-14.0-180827 Grab Soil	08/27/2018 10:20	9780556
SB-1-S-16.0-180827 Grab Soil	08/27/2018 10:40	9780557
DUP-1-SD-180828 Grab Soil	08/28/2018 16:20	9780558
SB-5-S-24.0-180828 Grab Soil	08/28/2018 17:35	9780559
SB-5-S-6.0-180823 Grab Soil	08/23/2018 16:57	9780560
SB-5-S-14.0-180828 Grab Soil	08/28/2018 16:50	9780561
QA-1-T-180829 Water	08/29/2018 09:00	9780562
QA-2-T-180829 Water	08/29/2018 12:40	9780563
QA-3-T-180829 Water	08/29/2018 12:50	9780564
QA-4-T-180829 Water	08/29/2018 13:00	9780565
QA-5-T-180829 Water	08/29/2018 13:05	9780566
UST-1-S-4.0-180828 Grab Soil	08/28/2018 11:55	9780567
SB-8-S-2.0-180829 Grab Soil	08/29/2018 09:20	9780568
SB-5-S-30.0-180829 Grab Soil	08/29/2018 09:30	9780569
UST-3-S-8.0-180829 Grab Soil	08/29/2018 10:25	9780570
SB-4-S-12.0-180829 Grab Soil	08/29/2018 11:20	9780571
DUP-2-SD-180829 Grab Soil	08/29/2018 11:30	9780572
SB-4-S-14.0-180829 Grab Soil	08/29/2018 11:40	9780573
UST-4-S-8.0-180829 Grab Soil	08/29/2018 11:45	9780574
SB-4-S-25.0-180829 Grab Soil	08/29/2018 11:55	9780575
UST-5-S-8.0-180829 Grab Soil	08/29/2018 13:25	9780576
UST-6-S-8.0-180829 Grab Soil	08/29/2018 14:10	9780577
SB-8-S-12.0-180829 Grab Soil	08/29/2018 14:20	9780578
SB-8-S-14.0-180829 Grab Soil	08/29/2018 14:25	9780579



Client Sample Description

Sample Collection
Date/Time

ELLE#

SB-8-S-25.0-180829 Grab Soil

08/29/2018 14:50

9780580

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: SB-4-S-6.0-180823 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780531
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/23/2018 14:50
SDG#: LDC01-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.75
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.75
11995	Toluene	108-88-3	N.D.	0.0005	0.75
11995	Xylene (Total)	1330-20-7	N.D.	0.0008	0.75
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	19.36
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	3.2	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	4.72	0.542	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	6.2	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182492AA	09/06/2018 13:53	Linda C Pape	0.75
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/23/2018 14:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/23/2018 14:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/23/2018 14:50	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18248SLA026	09/07/2018 06:11	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18248SLA026	09/05/2018 18:00	Sally L Appleyard	1

Sample Description: SB-4-S-6.0-180823 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780531
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/23/2018 14:50
SDG#: LDC01-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/05/2018 19:17	Jeremy C Giffin	19.36
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/23/2018 14:50	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182470023A	09/07/2018 19:36	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182470023A	09/05/2018 09:00	Olivia Arosemena	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 13:58	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004A	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-1-S-6.0-180823 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780532
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/23/2018 11:30
SDG#: LDC01-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.002	0.0005	0.94
11995	Ethylbenzene	100-41-4	0.0008	0.0004	0.94
11995	Toluene	108-88-3	0.004	0.0006	0.94
11995	Xylene (Total)	1330-20-7	0.006	0.001	0.94
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.4	0.3	25.67
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	5.35	0.529	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	8.5	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182492AA	09/06/2018 14:15	Linda C Pape	0.94
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/23/2018 11:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/23/2018 11:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/23/2018 11:30	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18248SLA026	09/07/2018 06:36	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18248SLA026	09/05/2018 18:00	Sally L Appleyard	1

Sample Description: SB-1-S-6.0-180823 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780532
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/23/2018 11:30
SDG#: LDC01-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/05/2018 19:53	Jeremy C Giffin	25.67
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/23/2018 11:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182470023A	09/07/2018 19:56	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182470023A	09/05/2018 09:00	Olivia Arosemena	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 14:14	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004A	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-7-S-6.0-180823 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780533
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/23/2018 12:20
SDG#: LDC01-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.93
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.93
11995	Toluene	108-88-3	N.D.	0.0006	0.93
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.93
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.3	0.2	19.73
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.1	1
08272	Heavy Range Organics C24-C40	n.a.	14	10	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	16.2	0.419	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	3.8	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182492AA	09/06/2018 14:38	Linda C Pape	0.93
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/23/2018 12:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/23/2018 12:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/23/2018 12:20	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18248SLA026	09/07/2018 13:31	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18248SLA026	09/05/2018 18:00	Sally L Appleyard	1

Sample Description: SB-7-S-6.0-180823 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780533
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/23/2018 12:20
SDG#: LDC01-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/05/2018 20:29	Jeremy C Giffin	19.73
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/23/2018 12:20	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182470023A	09/07/2018 20:16	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182470023A	09/05/2018 09:00	Olivia Arosemena	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 14:17	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004A	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-2-S-6.0-180824 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780534
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/24/2018 11:00
SDG#: LDC01-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.0009	0.0005	0.84
11995	Ethylbenzene	100-41-4	0.0004	0.0004	0.84
11995	Toluene	108-88-3	0.003	0.0006	0.84
11995	Xylene (Total)	1330-20-7	0.009	0.0009	0.84
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	1.4	0.2	21.24
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	4.02	0.614	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	10.4	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182492AA	09/06/2018 15:23	Linda C Pape	0.84
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/24/2018 11:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/24/2018 11:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/24/2018 11:00	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18248SLA026	09/07/2018 14:31	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18248SLA026	09/05/2018 18:00	Sally L Appleyard	1

Sample Description: SB-2-S-6.0-180824 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780534
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/24/2018 11:00
SDG#: LDC01-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/05/2018 21:42	Jeremy C Giffin	21.24
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/24/2018 11:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182470023A	09/07/2018 21:16	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182470023A	09/05/2018 09:00	Olivia Arosemena	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 14:25	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004A	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-6-S-2.0-180824 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780535
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/24/2018 08:50
SDG#: LDC01-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.83
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.83
11995	Toluene	108-88-3	N.D.	0.0005	0.83
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.83
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	23.05
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.20	0.455	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	7.8	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182492AA	09/06/2018 15:46	Linda C Pape	0.83
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/24/2018 08:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/24/2018 08:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/24/2018 08:50	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/07/2018 18:31	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Osvaldo R Sanchez	1

Sample Description: SB-6-S-2.0-180824 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780535
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/24/2018 08:50
SDG#: LDC01-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/05/2018 22:25	Jeremy C Giffin	23.05
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/24/2018 08:50	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182470023A	09/07/2018 21:36	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182470023A	09/05/2018 09:00	Olivia Arosemena	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 14:27	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004A	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-6-S-6.0-180824 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780536
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/24/2018 09:30
SDG#: LDC01-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.72
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.72
11995	Toluene	108-88-3	N.D.	0.0004	0.72
11995	Xylene (Total)	1330-20-7	N.D.	0.0007	0.72
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	20.14
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.1	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	10	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.20	0.604	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	3.6	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182492AA	09/06/2018 16:09	Linda C Pape	0.72
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/24/2018 09:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/24/2018 09:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/24/2018 09:30	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/07/2018 18:55	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Oswaldo R Sanchez	1

Sample Description: SB-6-S-6.0-180824 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780536
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/24/2018 09:30
SDG#: LDC01-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/05/2018 23:01	Jeremy C Giffin	20.14
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/24/2018 09:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182470023A	09/07/2018 21:55	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182470023A	09/05/2018 09:00	Olivia Arosemena	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 14:30	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004A	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-1-S-12.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780537
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 10:10
SDG#: LDC01-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.96
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.96
11995	Toluene	108-88-3	0.001	0.0006	0.96
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.96
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	21.98
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.40	0.561	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	9.3	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182493AA	09/07/2018 04:41	Patrick T Herres	0.96
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/27/2018 10:10	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/27/2018 10:10	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/27/2018 10:10	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/07/2018 19:18	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Osvaldo R Sanchez	1

Sample Description: SB-1-S-12.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780537
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 10:10
SDG#: LDC01-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/06/2018 00:13	Jeremy C Giffin	21.98
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/27/2018 10:10	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182470023A	09/07/2018 22:15	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182470023A	09/05/2018 09:00	Olivia Arosemena	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 14:32	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004A	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-1-S-51.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780538
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 11:30
SDG#: LDC01-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.86
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.86
11995	Toluene	108-88-3	0.0007	0.0005	0.86
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.86
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	22.93
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.1	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	10	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.93	0.529	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	4.6	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182493AA	09/07/2018 05:04	Patrick T Herres	0.86
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/27/2018 11:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/27/2018 11:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/27/2018 11:30	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/07/2018 19:42	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Osvaldo R Sanchez	1

Sample Description: SB-1-S-51.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780538
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 11:30
SDG#: LDC01-08

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/06/2018 00:49	Jeremy C Giffin	22.93
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/27/2018 11:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182470023A	09/07/2018 22:35	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182470023A	09/05/2018 09:00	Olivia Arosemena	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 14:35	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004A	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-7-S-10.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780539
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 15:30
SDG#: LDC01-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.46	0.030	47.11
11995	1,2-Dibromoethane	106-93-4	N.D.	0.0004	0.76
11995	1,2-Dichloroethane	107-06-2	N.D.	0.0006	0.76
11995	Ethylbenzene	100-41-4	0.15	0.0004	0.76
11995	n-Hexane	110-54-3	0.074	0.0005	0.76
11995	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0005	0.76
11995	Toluene	108-88-3	0.16	0.0006	0.76
11995	Xylene (Total)	1330-20-7	0.38	0.001	0.76
GC/MS Semivolatiles		SW-846 8270D SIM	mg/kg	mg/kg	
12969	Benzo(a)anthracene	56-55-3	N.D.	0.0009	1
12969	Benzo(a)pyrene	50-32-8	N.D.	0.0009	1
12969	Benzo(b)fluoranthene	205-99-2	N.D.	0.0009	1
12969	Benzo(k)fluoranthene	207-08-9	N.D.	0.0009	1
12969	Chrysene	218-01-9	N.D.	0.0004	1
12969	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0009	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0009	1
12969	Naphthalene	91-20-3	0.034	0.002	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	2.5	0.3	24.03
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.8	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
GC Petroleum Hydrocarbons		ECY 97-602 WA EPH	mg/kg	mg/kg	
05970	>C10-C12 Aliphatic	n.a.	N.D.	1.3	1
05970	>C10-C12 Aromatic	n.a.	N.D.	1.3	1
05970	>C12-C16 Aliphatic	n.a.	N.D.	1.3	1
05970	>C12-C16 Aromatic	n.a.	N.D.	1.3	1
05970	>C16-C21 Aliphatic	n.a.	N.D.	3.9	1
05970	>C16-C21 Aromatic	n.a.	N.D.	2.6	1
05970	>C21-C34 Aliphatic	n.a.	N.D.	7.7	1
05970	>C21-C34 Aromatic	n.a.	N.D.	2.6	1
Trial ID: RE					
05970	>C10-C12 Aliphatic	n.a.	N.D.	1.3	1
05970	>C10-C12 Aromatic	n.a.	N.D.	1.3	1
05970	>C12-C16 Aliphatic	n.a.	N.D.	1.3	1
05970	>C12-C16 Aromatic	n.a.	N.D.	1.3	1
05970	>C16-C21 Aliphatic	n.a.	N.D.	3.8	1
05970	>C16-C21 Aromatic	n.a.	N.D.	2.5	1
05970	>C21-C34 Aliphatic	n.a.	N.D.	7.6	1
05970	>C21-C34 Aromatic	n.a.	N.D.	2.5	1

Sample Description: SB-7-S-10.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780539
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 15:30
SDG#: LDC01-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
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The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. Results are reported from both trials.

GC Petroleum Hydrocarbons		ECY 97-602 WA VPH	mg/kg	mg/kg	
05666	Benzene	71-43-2	0.654	0.0632	49.14
05666	C5-C6 Aliphatic Hydrocarbons	n.a.	N.D.	3.16	49.14
05666	C6-C8 Aliphatic Hydrocarbons	n.a.	N.D.	3.16	49.14
05666	C8-C10 Aliphatic Hydrocarbons	n.a.	N.D.	3.16	49.14
05666	C8-C10 Aromatic Hydrocarbons	n.a.	N.D.	3.16	49.14
05666	Ethylbenzene	100-41-4	0.177	0.0632	49.14
05666	Methyl t-butyl ether	1634-04-4	N.D.	0.0632	49.14
05666	Toluene	108-88-3	0.214	0.0632	49.14
05666	o-Xylene	95-47-6	0.0997	0.0632	49.14
05666	m,p-Xylenes	179601-23-1	0.449	0.126	49.14

Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	5.51	0.728	1

Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	22.2	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX/MTBE/EDB/EDC/n-hexane	SW-846 8260C	1	R182502AA	09/07/2018 23:07	Patrick T Herres	47.11
11995	BTEX/MTBE/EDB/EDC/n-hexane	SW-846 8260C	1	A182521AA	09/09/2018 12:48	Stephen C Nolte	0.76
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/27/2018 15:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/27/2018 15:30	Client Supplied	1

Sample Description: SB-7-S-10.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780539
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 15:30
SDG#: LDC01-09

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	3	201824351084	08/27/2018 15:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	4	201824351084	08/27/2018 15:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/27/2018 15:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	2	201824351084	08/27/2018 15:30	Client Supplied	1
12969	SIM SVOAs 8270D (microwave)	SW-846 8270D SIM	1	18250SLA026	09/11/2018 08:31	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	18250SLA026	09/07/2018 18:15	Sally L Appleyard	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/06/2018 01:32	Jeremy C Giffin	24.03
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/27/2018 15:30	Client Supplied	n.a.
06647	GC-5g Field Preserved MeOH	SW-846 5035A	2	201824351084	08/27/2018 15:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182490010A	09/08/2018 00:14	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 04:45	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 05:26	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 09:51	Amy Lehr	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 10:31	Amy Lehr	1
05666	WA- VPH soils	ECY 97-602 WA VPH	1	18253A08A	09/10/2018 16:26	Thomas C Wildermuth	49.14
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182490010A	09/06/2018 17:50	Elizabeth E Donovan	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	1	182500003A	09/08/2018 11:20	Sally L Appleyard	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	2	182700031A	09/28/2018 09:00	Michelle A Newswanger	1
00388	GC - Field Preserved (MA-VPH)	MA DEP VPH modified	1	201824351081	08/27/2018 15:30	Client Supplied	1
00497	Silica Gel Fractionation	SW-846 3630C modified	1	182500003A	09/18/2018 08:00	David S Schrum	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 14:38	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004A	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-7-S-14.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780540
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 15:45
SDG#: LDC01-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.18	0.0004	0.74
11995	Ethylbenzene	100-41-4	0.056	0.0003	0.74
11995	Toluene	108-88-3	0.38	0.029	43.67
11995	Xylene (Total)	1330-20-7	0.28	0.0008	0.74
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	0.015	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	3.0	0.2	22.85
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.4	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.18	0.482	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	11.1	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	R182502AA	09/07/2018 23:32	Patrick T Herres	43.67
11995	BTEX 8260 Soil	SW-846 8260C	1	A182521AA	09/09/2018 13:56	Stephen C Nolte	0.74
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/27/2018 15:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/27/2018 15:45	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/27/2018 15:45	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/07/2018 20:05	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Oswaldo R Sanchez	1

Sample Description: SB-7-S-14.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780540
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 15:45
SDG#: LDC01-10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/06/2018 02:08	Jeremy C Giffin	22.85
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/27/2018 15:45	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182490010A	09/08/2018 00:34	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182490010A	09/06/2018 17:50	Elizabeth E Donovan	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 14:41	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004A	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-7-S-22.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780541
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 16:15
SDG#: LDC01-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.001	0.0004	0.78
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.78
11995	Toluene	108-88-3	0.002	0.0005	0.78
11995	Xylene (Total)	1330-20-7	N.D.	0.0008	0.78
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	20.64
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.62	0.467	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	6.2	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182493AA	09/07/2018 05:27	Patrick T Herres	0.78
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/27/2018 16:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/27/2018 16:15	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/27/2018 16:15	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/07/2018 20:28	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Oswaldo R Sanchez	1

Sample Description: SB-7-S-22.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780541
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 16:15
SDG#: LDC01-11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/06/2018 02:44	Jeremy C Giffin	20.64
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/27/2018 16:15	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182490010A	09/08/2018 00:54	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182490010A	09/06/2018 17:50	Elizabeth E Donovan	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 14:43	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004B	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-7-S-28.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780542
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 16:30
SDG#: LDC01-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.9
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.9
11995	Toluene	108-88-3	0.001	0.0006	0.9
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.9
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	24.14
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.73	0.626	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	7.0	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182493AA	09/07/2018 05:49	Patrick T Herres	0.9
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/27/2018 16:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/27/2018 16:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/27/2018 16:30	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/07/2018 20:52	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Osvaldo R Sanchez	1

Sample Description: SB-7-S-28.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780542
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 16:30
SDG#: LDC01-12

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/06/2018 03:20	Jeremy C Giffin	24.14
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/27/2018 16:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182490010A	09/08/2018 01:14	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182490010A	09/06/2018 17:50	Elizabeth E Donovan	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 14:46	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004B	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-3-S-10.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780543
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 11:20
SDG#: LDC01-13

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
	SW-846 8260C		mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.72
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.72
11995	Toluene	108-88-3	N.D.	0.0006	0.72
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.72
GC/MS Semivolatiles					
	SW-846 8270D		mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.009	1
GC Volatiles					
	ECY 97-602 NWTPH-Gx		mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.3	24.44
GC Petroleum Hydrocarbons					
	ECY 97-602 NWTPH-Dx modified		mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.8	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
Metals					
	SW-846 6010D Rev.4, July 2014		mg/kg	mg/kg	
06955	Lead	7439-92-1	5.42	0.586	1
Wet Chemistry					
	SM 2540 G-2011 %Moisture Calc		%	%	
00111	Moisture	n.a.	22.4	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182493AA	09/07/2018 06:12	Patrick T Herres	0.72
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/28/2018 11:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/28/2018 11:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/28/2018 11:20	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/07/2018 21:15	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Oswaldo R Sanchez	1

Sample Description: SB-3-S-10.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780543
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 11:20
SDG#: LDC01-13

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/06/2018 03:57	Jeremy C Giffin	24.44
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/28/2018 11:20	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182490010A	09/08/2018 01:34	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182490010A	09/06/2018 17:50	Elizabeth E Donovan	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 14:49	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004B	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-3-S-12.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780544
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 11:45
SDG#: LDC01-14

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.71
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.71
11995	Toluene	108-88-3	N.D.	0.0005	0.71
11995	Xylene (Total)	1330-20-7	N.D.	0.0008	0.71
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	19.42
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.50	0.622	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	9.9	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 10:27	Jennifer K Howe	0.71
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/28/2018 11:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/28/2018 11:45	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/28/2018 11:45	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/07/2018 21:39	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Osvaldo R Sanchez	1

Sample Description: SB-3-S-12.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780544
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 11:45
SDG#: LDC01-14

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/06/2018 04:39	Jeremy C Giffin	19.42
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/28/2018 11:45	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182490010A	09/08/2018 01:53	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182490010A	09/06/2018 17:50	Elizabeth E Donovan	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 14:57	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004B	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-3-S-16.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780545
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 12:15
SDG#: LDC01-15

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.79
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.79
11995	Toluene	108-88-3	N.D.	0.0005	0.79
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.79
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	21.49
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.06	0.507	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	8.9	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 10:50	Jennifer K Howe	0.79
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/28/2018 12:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/28/2018 12:15	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/28/2018 12:15	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/07/2018 22:03	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Osvaldo R Sanchez	1

Sample Description: SB-3-S-16.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780545
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 12:15
SDG#: LDC01-15

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/06/2018 05:16	Jeremy C Giffin	21.49
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/28/2018 12:15	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182490010A	09/08/2018 02:53	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182490010A	09/06/2018 17:50	Elizabeth E Donovan	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 14:59	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004B	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-3-S-24.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780546
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 12:25
SDG#: LDC01-16

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.87
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.87
11995	Toluene	108-88-3	N.D.	0.0006	0.87
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.87
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	20.5
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	3.41	0.574	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	6.6	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 11:13	Jennifer K Howe	0.87
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/28/2018 12:25	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/28/2018 12:25	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/28/2018 12:25	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/07/2018 22:26	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Osvaldo R Sanchez	1

Sample Description: SB-3-S-24.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780546
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 12:25
SDG#: LDC01-16

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/06/2018 05:52	Jeremy C Giffin	20.5
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/28/2018 12:25	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182490010A	09/08/2018 03:13	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182490010A	09/06/2018 17:50	Elizabeth E Donovan	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 15:02	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	2	18248820002A	09/05/2018 15:04	Larry E Bevins	1

Sample Description: UST-1-S-8.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780547
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 14:30
SDG#: LDC01-17

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.81
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.81
11995	Toluene	108-88-3	N.D.	0.0005	0.81
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.81
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	22.97
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	5.7	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	59	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	4.19	0.528	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	6.8	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 11:36	Jennifer K Howe	0.81
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/28/2018 14:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/28/2018 14:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/28/2018 14:30	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/07/2018 22:49	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Osvaldo R Sanchez	1

Sample Description: UST-1-S-8.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780547
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 14:30
SDG#: LDC01-17

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/06/2018 07:04	Jeremy C Giffin	22.97
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/28/2018 14:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182490010A	09/08/2018 03:52	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182490010A	09/06/2018 17:50	Elizabeth E Donovan	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 15:05	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004B	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-2-S-11.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780548
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 14:10
SDG#: LDC01-18

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.72
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.72
11995	Toluene	108-88-3	0.001	0.0005	0.72
11995	Xylene (Total)	1330-20-7	0.001	0.0008	0.72
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	6.3	0.2	21.86
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.66	0.483	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	10.6	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 18:25	Jennifer K Howe	0.72
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/28/2018 14:10	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/28/2018 14:10	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/28/2018 14:10	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/07/2018 23:13	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Oswaldo R Sanchez	1

Sample Description: SB-2-S-11.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780548
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 14:10
SDG#: LDC01-18

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247D34A	09/05/2018 20:46	Jeremy C Giffin	21.86
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/28/2018 14:10	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500015A	09/12/2018 02:01	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500015A	09/08/2018 09:00	Michelle A Newswanger	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 15:07	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004B	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-2-S-15.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780549
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 14:40
SDG#: LDC01-19

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.86
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.86
11995	Toluene	108-88-3	0.0006	0.0006	0.86
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.86
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.3	0.3	26.4
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	5.29	0.657	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	10.5	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 11:58	Jennifer K Howe	0.86
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/28/2018 14:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/28/2018 14:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/28/2018 14:40	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/07/2018 23:37	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Osvaldo R Sanchez	1

Sample Description: SB-2-S-15.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780549
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 14:40
SDG#: LDC01-19

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247D34A	09/05/2018 21:21	Jeremy C Giffin	26.4
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/28/2018 14:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500015A	09/12/2018 03:00	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500015A	09/08/2018 09:00	Michelle A Newswanger	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 15:10	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004B	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-2-S-20.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780550
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 14:50
SDG#: LDC01-20

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.85
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.85
11995	Toluene	108-88-3	N.D.	0.0006	0.85
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.85
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.2	0.2	20.61
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	4.14	0.527	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	7.4	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 12:21	Jennifer K Howe	0.85
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/28/2018 14:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/28/2018 14:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/28/2018 14:50	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/08/2018 00:00	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Osvaldo R Sanchez	1

Sample Description: SB-2-S-20.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780550
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 14:50
SDG#: LDC01-20

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247D34A	09/05/2018 21:56	Jeremy C Giffin	20.61
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/28/2018 14:50	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500015A	09/12/2018 03:20	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500015A	09/08/2018 09:00	Michelle A Newswanger	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404901	09/10/2018 15:12	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404901	09/06/2018 07:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18247820004B	09/04/2018 10:23	William C Schwebel	1

Sample Description: SB-2-S-8.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780551
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 13:55
SDG#: LDC01-21

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.82
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.82
11995	Toluene	108-88-3	0.0009	0.0005	0.82
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.82
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	23.49
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	13	3.3	1
08272	Heavy Range Organics C24-C40	n.a.	49	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.48	0.603	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	9.6	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 12:44	Jennifer K Howe	0.82
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/28/2018 13:55	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/28/2018 13:55	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/28/2018 13:55	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/10/2018 05:27	Anthony P Bauer	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Oswaldo R Sanchez	1

Sample Description: SB-2-S-8.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780551
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 13:55
SDG#: LDC01-21

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247D34A	09/05/2018 22:31	Jeremy C Giffin	23.49
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/28/2018 13:55	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500015A	09/12/2018 05:58	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500015A	09/08/2018 09:00	Michelle A Newswanger	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 15:03	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820008A	09/03/2018 06:15	William C Schwebel	1

Sample Description: QA-1-O-180828 Grab Water
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 9780552
ELLE Group #: 1982153
Matrix: Water

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 15:20
SDG#: LDC01-22EB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	0.7	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z182472AA	09/04/2018 19:34	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z182472AA	09/04/2018 19:34	Hu Yang	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	18253A20A	09/10/2018 22:51	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	18253A20A	09/10/2018 22:51	Marie D Beamenderfer	1

Sample Description: UST-2-S-8.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780553
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 16:00
SDG#: LDC01-23

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.026	45.35
11995	Bromodichloromethane	75-27-4	N.D.	0.021	45.35
11995	Bromoform	75-25-2	N.D.	0.26	45.35
11995	Bromomethane	74-83-9	N.D.	0.036	45.35
11995	Carbon Tetrachloride	56-23-5	N.D.	0.026	45.35
11995	Chlorobenzene	108-90-7	N.D.	0.026	45.35
11995	Chloroethane	75-00-3	N.D.	0.051	45.35
11995	Chloroform	67-66-3	N.D.	0.031	45.35
11995	Chloromethane	74-87-3	N.D.	0.031	45.35
11995	Dibromochloromethane	124-48-1	N.D.	0.021	45.35
11995	1,2-Dichlorobenzene	95-50-1	N.D.	0.026	45.35
11995	1,3-Dichlorobenzene	541-73-1	N.D.	0.026	45.35
11995	1,4-Dichlorobenzene	106-46-7	N.D.	0.021	45.35
11995	1,1-Dichloroethane	75-34-3	N.D.	0.026	45.35
11995	1,2-Dichloroethane	107-06-2	N.D.	0.031	45.35
11995	1,1-Dichloroethene	75-35-4	N.D.	0.026	45.35
11995	cis-1,2-Dichloroethene	156-59-2	N.D.	0.026	45.35
11995	trans-1,2-Dichloroethene	156-60-5	N.D.	0.026	45.35
11995	1,2-Dichloropropane	78-87-5	N.D.	0.026	45.35
11995	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.021	45.35
11995	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.015	45.35
11995	Ethylbenzene	100-41-4	N.D.	0.021	45.35
11995	Freon 113	76-13-1	N.D.	0.031	45.35
11995	Methylene Chloride	75-09-2	N.D.	0.10	45.35
11995	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.021	45.35
11995	Tetrachloroethene	127-18-4	N.D.	0.026	45.35
11995	Toluene	108-88-3	N.D.	0.031	45.35
11995	1,1,1-Trichloroethane	71-55-6	N.D.	0.031	45.35
11995	1,1,2-Trichloroethane	79-00-5	N.D.	0.026	45.35
11995	Trichloroethene	79-01-6	N.D.	0.026	45.35
11995	Trichlorofluoromethane	75-69-4	N.D.	0.036	45.35
11995	Vinyl Chloride	75-01-4	N.D.	0.031	45.35
11995	Xylene (Total)	1330-20-7	N.D.	0.051	45.35

Reporting limits were raised due to interference from the sample matrix.

GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	670	9.1	873.71
PCBs		SW-846 8082A Feb 2007	mg/kg	mg/kg	
		Rev 1			
10885	PCB-1016	12674-11-2	N.D. D1	0.0041	1
10885	PCB-1221	11104-28-2	N.D. D1	0.0052	1
10885	PCB-1232	11141-16-5	N.D. D1	0.0090	1
10885	PCB-1242	53469-21-9	N.D. D1	0.0037	1

Sample Description: UST-2-S-8.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780553
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 16:00
SDG#: LDC01-23

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
PCBs		SW-846 8082A Feb 2007 Rev 1	mg/kg	mg/kg	
10885	PCB-1248	12672-29-6	N.D. D1	0.0037	1
10885	PCB-1254	11097-69-1	N.D. D1	0.0037	1
10885	PCB-1260	11096-82-5	N.D. D1	0.0055	1

The response for a target analyte(s) in the ending calibration verification standard is outside the upper QC acceptance limits.

The following action was taken:

The analysis was repeated and the continuing calibration verification standard bracketing the sample on the second trial is also outside the acceptance limits. This effect is attributed to the sample matrix and the data is reported.

GC Petroleum Hydrocarbons	ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272 Diesel Range Organics C12-C24	n.a.	2,800	34	10
08272 Heavy Range Organics C24-C40	n.a.	N.D.	110	10

GC Petroleum Hydrocarbons	ECY 97-602 WA EPH	mg/kg	mg/kg	
05970 >C10-C12 Aliphatic	n.a.	69	2.2	2
05970 >C10-C12 Aromatic	n.a.	3.5	1.1	1
05970 >C12-C16 Aliphatic	n.a.	550	2.2	2
05970 >C12-C16 Aromatic	n.a.	96	1.1	1
05970 >C16-C21 Aliphatic	n.a.	340	6.5	2
05970 >C16-C21 Aromatic	n.a.	210	2.2	1
05970 >C21-C34 Aliphatic	n.a.	32	13	2
05970 >C21-C34 Aromatic	n.a.	16	2.2	1

Trial ID: RE

05970 >C10-C12 Aliphatic	n.a.	100	5.4	5
05970 >C10-C12 Aromatic	n.a.	7.5	1.1	1
05970 >C12-C16 Aliphatic	n.a.	750	5.4	5
05970 >C12-C16 Aromatic	n.a.	120	1.1	1
05970 >C16-C21 Aliphatic	n.a.	460	16	5
05970 >C16-C21 Aromatic	n.a.	290	2.2	1
05970 >C21-C34 Aliphatic	n.a.	35	32	5
05970 >C21-C34 Aromatic	n.a.	29	2.2	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. Results are reported from both trials.

GC Petroleum Hydrocarbons	ECY 97-602 WA VPH	mg/kg	mg/kg	
05666 Benzene	71-43-2	N.D.	0.0552	48.7
05666 C5-C6 Aliphatic Hydrocarbons	n.a.	N.D.	2.76	48.7

Sample Description: UST-2-S-8.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780553
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 16:00
SDG#: LDC01-23

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons		ECY 97-602 WA VPH	mg/kg	mg/kg	
05666	C6-C8 Aliphatic Hydrocarbons	n.a.	N.D.	2.76	48.7
05666	C8-C10 Aliphatic Hydrocarbons	n.a.	12.7	2.76	48.7
05666	C8-C10 Aromatic Hydrocarbons	n.a.	9.74	2.76	48.7
05666	Ethylbenzene	100-41-4	N.D.	0.0552	48.7
05666	Methyl t-butyl ether	1634-04-4	N.D.	0.0552	48.7
05666	Toluene	108-88-3	N.D.	0.0552	48.7
05666	o-Xylene	95-47-6	N.D.	0.0552	48.7
05666	m,p-Xylenes	179601-23-1	N.D.	0.110	48.7
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.51	0.602	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	11.8	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	HVOCs + BTEX	SW-846 8260C	1	Q182521AA	09/09/2018 12:34	Stephen C Nolte	45.35
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/28/2018 16:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/28/2018 16:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	3	201824351084	08/28/2018 16:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	4	201824351084	08/28/2018 16:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/28/2018 16:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	2	201824351084	08/28/2018 16:00	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/10/2018 05:51	Anthony P Bauer	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Oswaldo R Sanchez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18248A34A	09/06/2018 22:01	Jeremy C Giffin	873.71

Sample Description: UST-2-S-8.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780553
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 16:00
SDG#: LDC01-23

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/28/2018 16:00	Client Supplied	n.a.
10885	PCBs 8082A/3546	SW-846 8082A Feb 2007 Rev 1	1	182480026A	09/07/2018 01:34	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	182480026A	09/06/2018 07:00	Joshua S Ruth	1
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500015A	09/12/2018 03:40	Thomas C Wildermuth	10
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 06:06	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/20/2018 11:16	Heather E Williams	2
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 11:11	Amy Lehr	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/04/2018 00:55	Amy Lehr	5
05666	WA- VPH soils	ECY 97-602 WA VPH	1	18253A08A	09/10/2018 18:32	Thomas C Wildermuth	48.7
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500015A	09/08/2018 09:00	Michelle A Newswanger	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	1	182500003A	09/08/2018 11:20	Sally L Appleyard	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	2	182700031A	09/28/2018 09:00	Michelle A Newswanger	1
00388	GC - Field Preserved (MA-VPH)	MA DEP VPH modified	1	201824351081	08/28/2018 16:00	Client Supplied	1
00497	Silica Gel Fractionation	SW-846 3630C modified	1	182500003A	09/18/2018 08:00	David S Schrum	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 15:19	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820008A	09/03/2018 06:15	William C Schwebel	1

Sample Description: SB-5-S-12.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780554
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 16:40
SDG#: LDC01-24

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.71
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.71
11995	Toluene	108-88-3	N.D.	0.0006	0.71
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.71
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.009	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.5	0.3	26.29
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.9	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	3.50	3.46	5
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	24.5	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 18:02	Jennifer K Howe	0.71
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/28/2018 16:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/28/2018 16:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/28/2018 16:40	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/10/2018 06:14	Anthony P Bauer	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Oswaldo R Sanchez	1

Sample Description: SB-5-S-12.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780554
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 16:40
SDG#: LDC01-24

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247D34A	09/05/2018 19:35	Jeremy C Giffin	26.29
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/28/2018 16:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500015A	09/12/2018 03:59	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500015A	09/08/2018 09:00	Michelle A Newswanger	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 16:57	Cindy M Gehman	5
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820007B	09/03/2018 05:44	William C Schwebel	1

Sample Description: SB-5-S-17.5-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780555
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 17:20
SDG#: LDC01-25

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.023	42.65
11995	1,2-Dibromoethane	106-93-4	N.D.	0.018	42.65
11995	1,2-Dichloroethane	107-06-2	N.D.	0.027	42.65
11995	Ethylbenzene	100-41-4	0.67	0.018	42.65
11995	n-Hexane	110-54-3	N.D.	0.023	42.65
11995	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.023	42.65
11995	Toluene	108-88-3	0.042	0.027	42.65
11995	Xylene (Total)	1330-20-7	9.8	0.046	42.65
GC/MS Semivolatiles		SW-846 8270D SIM	mg/kg	mg/kg	
12969	Benzo(a)anthracene	56-55-3	0.0008	0.0007	1
12969	Benzo(a)pyrene	50-32-8	N.D.	0.0007	1
12969	Benzo(b)fluoranthene	205-99-2	N.D.	0.0007	1
12969	Benzo(k)fluoranthene	207-08-9	N.D.	0.0007	1
12969	Chrysene	218-01-9	0.002	0.0004	1
12969	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0007	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0007	1
12969	Naphthalene	91-20-3	0.34	0.001	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	1,100	22	2258.55
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	23	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
GC Petroleum Hydrocarbons		ECY 97-602 WA EPH	mg/kg	mg/kg	
05970	>C10-C12 Aliphatic	n.a.	8.3	1.1	1
05970	>C10-C12 Aromatic	n.a.	3.0	1.1	1
05970	>C12-C16 Aliphatic	n.a.	2.1	1.1	1
05970	>C12-C16 Aromatic	n.a.	4.4	1.1	1
05970	>C16-C21 Aliphatic	n.a.	N.D.	3.2	1
05970	>C16-C21 Aromatic	n.a.	N.D.	2.1	1
05970	>C21-C34 Aliphatic	n.a.	N.D.	6.3	1
05970	>C21-C34 Aromatic	n.a.	N.D.	2.1	1
Trial ID: RE					
05970	>C10-C12 Aliphatic	n.a.	10	1.0	1
05970	>C10-C12 Aromatic	n.a.	5.1	1.0	1
05970	>C12-C16 Aliphatic	n.a.	6.0	1.0	1
05970	>C12-C16 Aromatic	n.a.	6.6	1.0	1
05970	>C16-C21 Aliphatic	n.a.	N.D.	3.1	1
05970	>C16-C21 Aromatic	n.a.	2.8	2.1	1
05970	>C21-C34 Aliphatic	n.a.	N.D.	6.3	1
05970	>C21-C34 Aromatic	n.a.	N.D.	2.1	1

Sample Description: SB-5-S-17.5-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780555
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 17:20
SDG#: LDC01-25

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
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The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. Results are reported from both trials.

GC Petroleum Hydrocarbons		ECY 97-602 WA VPH	mg/kg	mg/kg	
05666	Benzene	71-43-2	N.D.	0.0498	46.68
05666	C5-C6 Aliphatic Hydrocarbons	n.a.	N.D.	2.49	46.68
05666	C6-C8 Aliphatic Hydrocarbons	n.a.	9.67	2.49	46.68
05666	C8-C10 Aliphatic Hydrocarbons	n.a.	108	13.3	250
05666	C8-C10 Aromatic Hydrocarbons	n.a.	93.0	13.3	250
05666	Ethylbenzene	100-41-4	0.751	0.0498	46.68
05666	Methyl t-butyl ether	1634-04-4	N.D.	0.0498	46.68
05666	Toluene	108-88-3	N.D.	0.0498	46.68
05666	o-Xylene	95-47-6	2.57	0.0498	46.68
05666	m,p-Xylenes	179601-23-1	5.45	0.0996	46.68

Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.70	0.427	1

Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	6.3	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX/MTBE/EDB/EDC/n-hexane	SW-846 8260C	1	Q182521AA	09/09/2018 12:57	Stephen C Nolte	42.65
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/28/2018 17:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/28/2018 17:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	3	201824351084	08/28/2018 17:20	Client Supplied	1

Sample Description: SB-5-S-17.5-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780555
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 17:20
SDG#: LDC01-25

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	4	201824351084	08/28/2018 17:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/28/2018 17:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	2	201824351084	08/28/2018 17:20	Client Supplied	1
12969	SIM SVOAs 8270D (microwave)	SW-846 8270D SIM	1	18250SLA026	09/11/2018 09:02	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	18250SLA026	09/07/2018 18:15	Sally L Appleyard	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247D34A	09/06/2018 07:16	Jeremy C Giffin	2258.55
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/28/2018 17:20	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500015A	09/12/2018 04:19	Thomas C Wildermuth	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 07:27	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 08:08	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 12:33	Amy Lehr	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 13:13	Amy Lehr	1
05666	WA- VPH soils	ECY 97-602 WA VPH	1	18253A08A	09/10/2018 19:13	Thomas C Wildermuth	46.68
05666	WA- VPH soils	ECY 97-602 WA VPH	1	18253A08A	09/11/2018 13:43	Thomas C Wildermuth	250
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500015A	09/08/2018 09:00	Michelle A Newswanger	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	1	182500003A	09/08/2018 11:20	Sally L Appleyard	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	2	182700031A	09/28/2018 09:00	Michelle A Newswanger	1
00388	GC - Field Preserved (MA-VPH)	MA DEP VPH modified	1	201824351081	08/28/2018 17:20	Client Supplied	1
00497	Silica Gel Fractionation	SW-846 3630C modified	1	182500003A	09/18/2018 08:00	David S Schrum	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 15:30	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820007B	09/03/2018 05:44	William C Schwebel	1

Sample Description: SB-1-S-14.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780556
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 10:20
SDG#: LDC01-26

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.8
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.8
11995	Toluene	108-88-3	0.001	0.0005	0.8
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.8
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.3	0.2	23.55
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	N.D.	2.35	5
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	10.6	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 13:07	Jennifer K Howe	0.8
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/27/2018 10:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/27/2018 10:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/27/2018 10:20	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/10/2018 06:38	Anthony P Bauer	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Oswaldo R Sanchez	1

Sample Description: SB-1-S-14.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780556
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 10:20
SDG#: LDC01-26

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/06/2018 07:47	Jeremy C Giffin	23.55
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/27/2018 10:20	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500015A	09/12/2018 05:19	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500015A	09/08/2018 09:00	Michelle A Newswanger	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 17:00	Cindy M Gehman	5
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820007B	09/03/2018 05:44	William C Schwebel	1

Sample Description: SB-1-S-16.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780557
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 10:40
SDG#: LDC01-27

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.86
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.86
11995	Toluene	108-88-3	0.001	0.0006	0.86
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.86
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.3	0.2	23.05
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.35	0.623	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	7.4	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 13:29	Jennifer K Howe	0.86
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/27/2018 10:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/27/2018 10:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/27/2018 10:40	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18249SLA026	09/10/2018 07:01	Anthony P Bauer	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18249SLA026	09/06/2018 17:00	Osvaldo R Sanchez	1

Sample Description: SB-1-S-16.0-180827 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780557
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/27/2018 10:40
SDG#: LDC01-27

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/06/2018 08:23	Jeremy C Giffin	23.05
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/27/2018 10:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500015A	09/12/2018 05:38	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500015A	09/08/2018 09:00	Michelle A Newswanger	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 15:36	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820007B	09/03/2018 05:44	William C Schwebel	1

Sample Description: DUP-1-SD-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780558
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 16:20
SDG#: LDC01-28FD

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.026	45.92
11995	Bromodichloromethane	75-27-4	N.D.	0.020	45.92
11995	Bromoform	75-25-2	N.D.	0.26	45.92
11995	Bromomethane	74-83-9	N.D.	0.036	45.92
11995	Carbon Tetrachloride	56-23-5	N.D.	0.026	45.92
11995	Chlorobenzene	108-90-7	N.D.	0.026	45.92
11995	Chloroethane	75-00-3	N.D.	0.051	45.92
11995	Chloroform	67-66-3	N.D.	0.031	45.92
11995	Chloromethane	74-87-3	N.D.	0.031	45.92
11995	Dibromochloromethane	124-48-1	N.D.	0.020	45.92
11995	1,2-Dichlorobenzene	95-50-1	N.D.	0.026	45.92
11995	1,3-Dichlorobenzene	541-73-1	N.D.	0.026	45.92
11995	1,4-Dichlorobenzene	106-46-7	N.D.	0.020	45.92
11995	1,1-Dichloroethane	75-34-3	N.D.	0.026	45.92
11995	1,2-Dichloroethane	107-06-2	N.D.	0.031	45.92
11995	1,1-Dichloroethene	75-35-4	N.D.	0.026	45.92
11995	cis-1,2-Dichloroethene	156-59-2	N.D.	0.026	45.92
11995	trans-1,2-Dichloroethene	156-60-5	N.D.	0.026	45.92
11995	1,2-Dichloropropane	78-87-5	N.D.	0.026	45.92
11995	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.020	45.92
11995	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.015	45.92
11995	Ethylbenzene	100-41-4	N.D.	0.020	45.92
11995	Freon 113	76-13-1	N.D.	0.031	45.92
11995	Methylene Chloride	75-09-2	N.D.	0.10	45.92
11995	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.020	45.92
11995	Tetrachloroethene	127-18-4	N.D.	0.026	45.92
11995	Toluene	108-88-3	N.D.	0.031	45.92
11995	1,1,1-Trichloroethane	71-55-6	N.D.	0.031	45.92
11995	1,1,2-Trichloroethane	79-00-5	N.D.	0.026	45.92
11995	Trichloroethene	79-01-6	N.D.	0.026	45.92
11995	Trichlorofluoromethane	75-69-4	N.D.	0.036	45.92
11995	Vinyl Chloride	75-01-4	N.D.	0.031	45.92
11995	Xylene (Total)	1330-20-7	N.D.	0.051	45.92

Reporting limits were raised due to interference from the sample matrix.

GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	0.10	0.007	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	530	9.2	901.33
PCBs		SW-846 8082A Feb 2007	mg/kg	mg/kg	
		Rev 1			
10885	PCB-1016	12674-11-2	N.D. D1	0.0039	1
10885	PCB-1221	11104-28-2	N.D. D1	0.0050	1
10885	PCB-1232	11141-16-5	N.D. D1	0.0087	1
10885	PCB-1242	53469-21-9	N.D. D1	0.0036	1

Sample Description: DUP-1-SD-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780558
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 16:20
SDG#: LDC01-28FD

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
PCBs		SW-846 8082A Feb 2007 Rev 1	mg/kg	mg/kg	
10885	PCB-1248	12672-29-6	N.D. D1	0.0036	1
10885	PCB-1254	11097-69-1	N.D. D1	0.0036	1
10885	PCB-1260	11096-82-5	N.D. D1	0.0054	1

The response for a target analyte(s) in the ending calibration verification standard is outside the upper QC acceptance limits.

The following action was taken:

The analysis was repeated and the continuing calibration verification standard bracketing the sample on the second trial is also outside the acceptance limits. This effect is attributed to the sample matrix and the data is reported.

GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	2,500	66	20
08272	Heavy Range Organics C24-C40	n.a.	N.D.	220	20

Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.98	0.580	1

Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	10.0	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	HVOCs + BTEX	SW-846 8260C	1	Q182521AA	09/09/2018 13:20	Stephen C Nolte	45.92
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/28/2018 16:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/28/2018 16:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/28/2018 16:20	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18250SLB026	09/10/2018 14:32	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18250SLB026	09/07/2018 18:00	Sally L Appleyard	1

Sample Description: DUP-1-SD-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780558
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 16:20
SDG#: LDC01-28FD

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18248A34A	09/06/2018 22:36	Jeremy C Giffin	901.33
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/28/2018 16:20	Client Supplied	n.a.
10885	PCBs 8082A/3546	SW-846 8082A Feb 2007 Rev 1	1	182480026A	09/07/2018 01:45	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	182480026A	09/06/2018 07:00	Joshua S Ruth	1
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500017A	09/12/2018 10:56	Thomas C Wildermuth	20
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500017A	09/09/2018 10:30	Michelle A Newswanger	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 15:39	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820007B	09/03/2018 05:44	William C Schwebel	1

Sample Description: SB-5-S-24.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780559
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 17:35
SDG#: LDC01-29

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.89
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.89
11995	Toluene	108-88-3	0.001	0.0006	0.89
11995	Xylene (Total)	1330-20-7	0.004	0.001	0.89
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	0.012	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.7	0.2	22.52
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.76	0.521	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	9.4	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 13:52	Jennifer K Howe	0.89
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/28/2018 17:35	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/28/2018 17:35	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/28/2018 17:35	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18250SLB026	09/10/2018 14:57	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18250SLB026	09/07/2018 18:00	Sally L Appleyard	1

Sample Description: SB-5-S-24.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780559
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 17:35
SDG#: LDC01-29

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247D34A	09/05/2018 23:06	Jeremy C Giffin	22.52
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/28/2018 17:35	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500017A	09/12/2018 07:37	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500017A	09/09/2018 10:30	Michelle A Newswanger	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 15:41	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820007B	09/03/2018 05:44	William C Schwebel	1

Sample Description: SB-5-S-6.0-180823 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780560
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/23/2018 16:57
SDG#: LDC01-30

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.84
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.84
11995	Toluene	108-88-3	N.D.	0.0005	0.84
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.84
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.1	12.11
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	4.51	2.65	5
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	5.8	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182492AA	09/06/2018 15:01	Linda C Pape	0.84
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/23/2018 16:57	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/23/2018 16:57	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/23/2018 16:57	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18248SLA026	09/07/2018 15:22	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18248SLA026	09/05/2018 18:00	Sally L Appleyard	1

Sample Description: SB-5-S-6.0-180823 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780560
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/23/2018 16:57
SDG#: LDC01-30

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247A31A	09/05/2018 21:06	Jeremy C Giffin	12.11
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/23/2018 16:57	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182490010A	09/08/2018 03:33	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182490010A	09/06/2018 17:50	Elizabeth E Donovan	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 17:02	Cindy M Gehman	5
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820007B	09/03/2018 05:44	William C Schwebel	1

Sample Description: SB-5-S-14.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780561
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 16:50
SDG#: LDC01-31

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.029	46.13
11995	1,2-Dibromoethane	106-93-4	N.D.	0.023	46.13
11995	1,2-Dichloroethane	107-06-2	N.D.	0.035	46.13
11995	Ethylbenzene	100-41-4	N.D.	0.023	46.13
11995	n-Hexane	110-54-3	1.2	0.029	46.13
11995	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.029	46.13
11995	Toluene	108-88-3	N.D.	0.035	46.13
11995	Xylene (Total)	1330-20-7	N.D.	0.058	46.13

Reporting limits were raised due to interference from the sample matrix.

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Semivolatiles		SW-846 8270D SIM	mg/kg	mg/kg	
12969	Benzo(a)anthracene	56-55-3	N.D.	0.0008	1
12969	Benzo(a)pyrene	50-32-8	N.D.	0.0008	1
12969	Benzo(b)fluoranthene	205-99-2	N.D.	0.0008	1
12969	Benzo(k)fluoranthene	207-08-9	N.D.	0.0008	1
12969	Chrysene	218-01-9	0.0005	0.0004	1
12969	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0008	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0008	1
12969	Naphthalene	91-20-3	0.020	0.002	1

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	420	5.6	483.35

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.7	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	12	1

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons		ECY 97-602 WA EPH	mg/kg	mg/kg	
05970	>C10-C12 Aliphatic	n.a.	6.4	1.2	1
05970	>C10-C12 Aromatic	n.a.	N.D.	1.2	1
05970	>C12-C16 Aliphatic	n.a.	N.D.	1.2	1
05970	>C12-C16 Aromatic	n.a.	N.D.	1.2	1
05970	>C16-C21 Aliphatic	n.a.	N.D.	3.7	1
05970	>C16-C21 Aromatic	n.a.	N.D.	2.5	1
05970	>C21-C34 Aliphatic	n.a.	N.D.	7.5	1
05970	>C21-C34 Aromatic	n.a.	N.D.	2.5	1

Trial ID: RE

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
05970	>C10-C12 Aliphatic	n.a.	5.3	1.2	1
05970	>C10-C12 Aromatic	n.a.	1.6	1.2	1
05970	>C12-C16 Aliphatic	n.a.	1.4	1.2	1
05970	>C12-C16 Aromatic	n.a.	N.D.	1.2	1
05970	>C16-C21 Aliphatic	n.a.	N.D.	3.6	1
05970	>C16-C21 Aromatic	n.a.	N.D.	2.4	1
05970	>C21-C34 Aliphatic	n.a.	N.D.	7.2	1

Sample Description: SB-5-S-14.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780561
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 16:50
SDG#: LDC01-31

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons					
	ECY 97-602 WA EPH		mg/kg	mg/kg	
05970	>C21-C34 Aromatic	n.a.	N.D.	2.4	1
The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. Results are reported from both trials.					
GC Petroleum Hydrocarbons					
	ECY 97-602 WA VPH		mg/kg	mg/kg	
05666	Benzene	71-43-2	N.D.	0.0594	46.92
05666	C5-C6 Aliphatic Hydrocarbons	n.a.	N.D.	2.97	46.92
05666	C6-C8 Aliphatic Hydrocarbons	n.a.	52.8	2.97	46.92
05666	C8-C10 Aliphatic Hydrocarbons	n.a.	32.7	2.97	46.92
05666	C8-C10 Aromatic Hydrocarbons	n.a.	10.9	2.97	46.92
05666	Ethylbenzene	100-41-4	N.D.	0.0594	46.92
05666	Methyl t-butyl ether	1634-04-4	N.D.	0.0594	46.92
05666	Toluene	108-88-3	N.D.	0.0594	46.92
05666	o-Xylene	95-47-6	0.155	0.0594	46.92
05666	m,p-Xylenes	179601-23-1	N.D.	0.119	46.92
Metals					
	SW-846 6010D Rev.4, July 2014		mg/kg	mg/kg	
06955	Lead	7439-92-1	2.36	0.612	1
Wet Chemistry					
	SM 2540 G-2011 %Moisture Calc		%	%	
00111	Moisture	n.a.	21.0	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX/MTBE/EDB/EDC/n-hexane	SW-846 8260C	1	Q182521AA	09/09/2018 13:42	Stephen C Nolte	46.13
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/28/2018 16:50	Client Supplied	1

Sample Description: SB-5-S-14.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780561
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 16:50
SDG#: LDC01-31

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/28/2018 16:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	3	201824351084	08/28/2018 16:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	4	201824351084	08/28/2018 16:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/28/2018 16:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	2	201824351084	08/28/2018 16:50	Client Supplied	1
12969	SIM SVOAs 8270D (microwave)	SW-846 8270D SIM	1	18250SLA026	09/11/2018 09:32	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	18250SLA026	09/07/2018 18:15	Sally L Appleyard	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18248A34A	09/06/2018 21:26	Jeremy C Giffin	483.35
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/28/2018 16:50	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500017A	09/12/2018 08:37	Thomas C Wildermuth	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 08:48	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 09:29	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 13:54	Amy Lehr	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 14:34	Amy Lehr	1
05666	WA- VPH soils	ECY 97-602 WA VPH	1	18253A08A	09/10/2018 19:55	Thomas C Wildermuth	46.92
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500017A	09/09/2018 10:30	Michelle A Newswanger	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	1	182500003A	09/08/2018 11:20	Sally L Appleyard	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	2	182700031A	09/28/2018 09:00	Michelle A Newswanger	1
00388	GC - Field Preserved (MA-VPH)	MA DEP VPH modified	1	201824351081	08/28/2018 16:50	Client Supplied	1
00497	Silica Gel Fractionation	SW-846 3630C modified	1	182500003A	09/18/2018 08:00	David S Schrum	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 15:47	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820007B	09/03/2018 05:44	William C Schwebel	1

Sample Description: QA-1-T-180829 Water
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 9780562
ELLE Group #: 1982153
Matrix: Water

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 09:00
SDG#: LDC01-32TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z182472AA	09/04/2018 19:59	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z182472AA	09/04/2018 19:59	Hu Yang	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	18253A20A	09/10/2018 23:19	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	18253A20A	09/10/2018 23:19	Marie D Beamenderfer	1

Sample Description: QA-2-T-180829 Water
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 9780563
ELLE Group #: 1982153
Matrix: Water

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 12:40
SDG#: LDC01-33TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z182502AA	09/07/2018 19:18	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z182502AA	09/07/2018 19:18	Hu Yang	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	18249A53A	09/09/2018 01:41	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	18249A53A	09/09/2018 01:41	Jeremy C Giffin	1

Sample Description: QA-3-T-180829 Water
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 9780564
ELLE Group #: 1982153
Matrix: Water

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 12:50
SDG#: LDC01-34TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z182502AA	09/07/2018 19:42	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z182502AA	09/07/2018 19:42	Hu Yang	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	18249A53A	09/09/2018 02:09	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	18249A53A	09/09/2018 02:09	Jeremy C Giffin	1

Sample Description: QA-4-T-180829 Water
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 9780565
ELLE Group #: 1982153
Matrix: Water

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 13:00
SDG#: LDC01-35TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z182502AA	09/07/2018 20:07	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z182502AA	09/07/2018 20:07	Hu Yang	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	18249A53A	09/09/2018 02:37	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	18249A53A	09/09/2018 02:37	Jeremy C Giffin	1

Sample Description: QA-5-T-180829 Water
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 9780566
ELLE Group #: 1982153
Matrix: Water

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 13:05
SDG#: LDC01-36TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z182502AA	09/07/2018 20:31	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z182502AA	09/07/2018 20:31	Hu Yang	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	18249A53A	09/09/2018 03:05	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	18249A53A	09/09/2018 03:05	Jeremy C Giffin	1

Sample Description: UST-1-S-4.0-180828 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780567
ELLE Group #: 1982153

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/28/2018 11:55
SDG#: LDC01-37

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18251SLC026	09/10/2018 18:50	Sally L Appleyard	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	182510002A	09/11/2018 07:00	Joshua S Ruth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500069A	09/11/2018 09:00	Michelle A Newswanger	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	1	182510005A	09/11/2018 01:15	Sherry L Morrow	1
00497	Silica Gel Fractionation	SW-846 3630C modified	1	182510005A	09/13/2018 08:00	David S Schrum	1

Sample Description: SB-8-S-2.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780568
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 09:20
SDG#: LDC01-38

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.87
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.87
11995	Toluene	108-88-3	0.0006	0.0006	0.87
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.87
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	0.033	0.008	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	2.1	0.2	23.05
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.4	1
08272	Heavy Range Organics C24-C40	n.a.	45	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	22.8	0.551	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	12.2	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 14:15	Jennifer K Howe	0.87
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/29/2018 09:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/29/2018 09:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/29/2018 09:20	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18250SLB026	09/10/2018 17:04	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18250SLB026	09/07/2018 18:00	Sally L Appleyard	1

Sample Description: SB-8-S-2.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780568
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 09:20
SDG#: LDC01-38

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247D34A	09/05/2018 20:11	Jeremy C Giffin	23.05
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/29/2018 09:20	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500017A	09/12/2018 11:16	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500017A	09/09/2018 10:30	Michelle A Newswanger	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 15:50	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820007B	09/03/2018 05:44	William C Schwebel	1

Sample Description: SB-5-S-30.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780569
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 09:30
SDG#: LDC01-39

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.0006	0.0004	0.83
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.83
11995	Toluene	108-88-3	0.002	0.0005	0.83
11995	Xylene (Total)	1330-20-7	0.002	0.0009	0.83
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.3	0.2	24.75
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.54	0.581	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	6.9	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 14:37	Jennifer K Howe	0.83
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/29/2018 09:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/29/2018 09:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/29/2018 09:30	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18250SLB026	09/10/2018 17:29	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18250SLB026	09/07/2018 18:00	Sally L Appleyard	1

Sample Description: SB-5-S-30.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780569
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 09:30
SDG#: LDC01-39

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247D34A	09/05/2018 23:41	Jeremy C Giffin	24.75
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/29/2018 09:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500017A	09/12/2018 08:57	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500017A	09/09/2018 10:30	Michelle A Newswanger	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 15:52	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820007B	09/03/2018 05:44	William C Schwebel	1

Sample Description: UST-3-S-8.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780570
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 10:25
SDG#: LDC01-40

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.81
11995	Bromodichloromethane	75-27-4	N.D.	0.0004	0.81
11995	Bromoform	75-25-2	N.D.	0.004	0.81
11995	Bromomethane	74-83-9	N.D.	0.0006	0.81
11995	Carbon Tetrachloride	56-23-5	N.D.	0.0004	0.81
11995	Chlorobenzene	108-90-7	N.D.	0.0004	0.81
11995	Chloroethane	75-00-3	N.D.	0.0009	0.81
11995	Chloroform	67-66-3	N.D.	0.0005	0.81
11995	Chloromethane	74-87-3	N.D.	0.0005	0.81
11995	Dibromochloromethane	124-48-1	N.D.	0.0004	0.81
11995	1,2-Dichlorobenzene	95-50-1	N.D.	0.0004	0.81
11995	1,3-Dichlorobenzene	541-73-1	N.D.	0.0004	0.81
11995	1,4-Dichlorobenzene	106-46-7	N.D.	0.0004	0.81
11995	1,1-Dichloroethane	75-34-3	N.D.	0.0004	0.81
11995	1,2-Dichloroethane	107-06-2	N.D.	0.0005	0.81
11995	1,1-Dichloroethene	75-35-4	N.D.	0.0004	0.81
11995	cis-1,2-Dichloroethene	156-59-2	N.D.	0.0004	0.81
11995	trans-1,2-Dichloroethene	156-60-5	N.D.	0.0004	0.81
11995	1,2-Dichloropropane	78-87-5	N.D.	0.0004	0.81
11995	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.0004	0.81
11995	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.0003	0.81
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.81
11995	Freon 113	76-13-1	N.D.	0.0005	0.81
11995	Methylene Chloride	75-09-2	N.D.	0.002	0.81
11995	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.0004	0.81
11995	Tetrachloroethene	127-18-4	N.D.	0.0004	0.81
11995	Toluene	108-88-3	N.D.	0.0005	0.81
11995	1,1,1-Trichloroethane	71-55-6	N.D.	0.0005	0.81
11995	1,1,2-Trichloroethane	79-00-5	N.D.	0.0004	0.81
11995	Trichloroethene	79-01-6	N.D.	0.0004	0.81
11995	Trichlorofluoromethane	75-69-4	N.D.	0.0006	0.81
11995	Vinyl Chloride	75-01-4	N.D.	0.0005	0.81
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.81

GC/MS Semivolatiles	SW-846 8270D	mg/kg	mg/kg	
10726 Naphthalene	91-20-3	N.D.	0.007	1
The recovery for the sample surrogate(s) is outside the QC acceptance limits as noted on the QC Summary. Since the recovery is high and no target analytes were detected, the data is reported.				

GC Volatiles	ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005 NWT PH-GX Soil C7-C12	n.a.	0.5	0.2	21.2

PCBs	SW-846 8082A Feb 2007 Rev 1	mg/kg	mg/kg	
10885 PCB-1016	12674-11-2	N.D. D1	0.0039	1

Sample Description: UST-3-S-8.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780570
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 10:25
SDG#: LDC01-40

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
PCBs		SW-846 8082A Feb 2007 Rev 1	mg/kg	mg/kg	
10885	PCB-1221	11104-28-2	N.D. D1	0.0049	1
10885	PCB-1232	11141-16-5	N.D. D1	0.0086	1
10885	PCB-1242	53469-21-9	N.D. D1	0.0035	1
10885	PCB-1248	12672-29-6	N.D. D1	0.0035	1
10885	PCB-1254	11097-69-1	N.D. D1	0.0035	1
10885	PCB-1260	11096-82-5	N.D. D1	0.0053	1

The response for a target analyte(s) in the ending calibration verification standard is outside the upper QC acceptance limits.

The following action was taken:

The analysis was repeated and the continuing calibration verification standard bracketing the sample on the second trial is also outside the acceptance limits. This effect is attributed to the sample matrix and the data is reported.

GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	480	6.4	2
08272	Heavy Range Organics C24-C40	n.a.	N.D.	21	2

GC Petroleum Hydrocarbons		ECY 97-602 WA EPH	mg/kg	mg/kg	
05970	>C10-C12 Aliphatic	n.a.	N.D.	1.1	1
05970	>C10-C12 Aromatic	n.a.	N.D.	1.1	1
05970	>C12-C16 Aliphatic	n.a.	29	1.1	1
05970	>C12-C16 Aromatic	n.a.	1.1	1.1	1
05970	>C16-C21 Aliphatic	n.a.	130	3.2	1
05970	>C16-C21 Aromatic	n.a.	37	2.2	1
05970	>C21-C34 Aliphatic	n.a.	15	6.5	1
05970	>C21-C34 Aromatic	n.a.	6.3	2.2	1

Trial ID: RE

05970	>C10-C12 Aliphatic	n.a.	N.D.	1.1	1
05970	>C10-C12 Aromatic	n.a.	N.D.	1.1	1
05970	>C12-C16 Aliphatic	n.a.	77	1.1	1
05970	>C12-C16 Aromatic	n.a.	1.7	1.1	1
05970	>C16-C21 Aliphatic	n.a.	170	3.2	1
05970	>C16-C21 Aromatic	n.a.	58	2.1	1
05970	>C21-C34 Aliphatic	n.a.	22	6.4	1
05970	>C21-C34 Aromatic	n.a.	9.0	2.1	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. Results are reported from both trials.

Sample Description: UST-3-S-8.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780570
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 10:25
SDG#: LDC01-40

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons			mg/kg	mg/kg	
ECY 97-602 WA VPH					
05666	Benzene	71-43-2	N.D.	0.0519	48.1
05666	C5-C6 Aliphatic Hydrocarbons	n.a.	N.D.	2.60	48.1
05666	C6-C8 Aliphatic Hydrocarbons	n.a.	N.D.	2.60	48.1
05666	C8-C10 Aliphatic Hydrocarbons	n.a.	N.D.	2.60	48.1
05666	C8-C10 Aromatic Hydrocarbons	n.a.	N.D.	2.60	48.1
05666	Ethylbenzene	100-41-4	N.D.	0.0519	48.1
05666	Methyl t-butyl ether	1634-04-4	N.D.	0.0519	48.1
05666	Toluene	108-88-3	N.D.	0.0519	48.1
05666	o-Xylene	95-47-6	N.D.	0.0519	48.1
05666	m,p-Xylenes	179601-23-1	N.D.	0.104	48.1

Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	4.74	0.554	1

Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	7.4	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	HVOCs + BTEX	SW-846 8260C	1	A182501AA	09/07/2018 15:00	Jennifer K Howe	0.81
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/29/2018 10:25	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/29/2018 10:25	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	3	201824351084	08/29/2018 10:25	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	4	201824351084	08/29/2018 10:25	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/29/2018 10:25	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	2	201824351084	08/29/2018 10:25	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18250SLB026	09/10/2018 18:44	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18250SLB026	09/07/2018 18:00	Sally L Appleyard	1

Sample Description: UST-3-S-8.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780570
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 10:25
SDG#: LDC01-40

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247D34A	09/06/2018 00:16	Jeremy C Giffin	21.2
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/29/2018 10:25	Client Supplied	n.a.
10885	PCBs 8082A/3546	SW-846 8082A Feb 2007 Rev 1	1	182480026A	09/07/2018 01:55	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	182480026A	09/06/2018 07:00	Joshua S Ruth	1
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500017A	09/12/2018 15:43	Thomas C Wildermuth	2
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 11:30	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 12:10	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 04:26	Amy Lehr	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 05:07	Amy Lehr	1
05666	WA- VPH soils	ECY 97-602 WA VPH	1	18253A08A	09/10/2018 20:36	Thomas C Wildermuth	48.1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500017A	09/09/2018 10:30	Michelle A Newswanger	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	1	182500003A	09/08/2018 11:20	Sally L Appleyard	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	2	182700031A	09/28/2018 09:00	Michelle A Newswanger	1
00388	GC - Field Preserved (MA-VPH)	MA DEP VPH modified	1	201824351081	08/29/2018 10:25	Client Supplied	1
00497	Silica Gel Fractionation	SW-846 3630C modified	1	182500003A	09/18/2018 08:00	David S Schrum	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 15:55	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820007B	09/03/2018 05:44	William C Schwebel	1

Sample Description: SB-4-S-12.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780571
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 11:20
SDG#: LDC01-41

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.75
11995	Ethylbenzene	100-41-4	0.002	0.0004	0.75
11995	Toluene	108-88-3	0.001	0.0006	0.75
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.75
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.008	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	550	21	1854.3
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.7	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	12	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.37	0.647	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	19.4	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182541AA	09/11/2018 10:58	Linda C Pape	0.75
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/29/2018 11:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/29/2018 11:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/29/2018 11:20	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18250SLB026	09/10/2018 19:09	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18250SLB026	09/07/2018 18:00	Sally L Appleyard	1

Sample Description: SB-4-S-12.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780571
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 11:20
SDG#: LDC01-41

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247D34A	09/06/2018 07:51	Jeremy C Giffin	1854.3
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/29/2018 11:20	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500017A	09/12/2018 09:17	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500017A	09/09/2018 10:30	Michelle A Newswanger	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 16:03	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820004B	08/31/2018 09:33	William C Schwebel	1

Sample Description: DUP-2-SD-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780572
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 11:30
SDG#: LDC01-42FD

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.78
11995	Ethylbenzene	100-41-4	0.0005	0.0004	0.78
11995	Toluene	108-88-3	0.001	0.0006	0.78
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.78
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.008	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	410	6.0	517.11
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	6.7	3.7	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	12	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.67	0.594	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	20.5	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182541AA	09/11/2018 13:38	Linda C Pape	0.78
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/29/2018 11:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/29/2018 11:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/29/2018 11:30	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18250SLB026	09/11/2018 12:38	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18250SLB026	09/07/2018 18:00	Sally L Appleyard	1

Sample Description: DUP-2-SD-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780572
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 11:30
SDG#: LDC01-42FD

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247D34A	09/06/2018 06:41	Jeremy C Giffin	517.11
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/29/2018 11:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500017A	09/12/2018 09:36	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500017A	09/09/2018 10:30	Michelle A Newswanger	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 16:06	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820004B	08/31/2018 09:33	William C Schwebel	1

Sample Description: SB-4-S-14.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780573
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 11:40
SDG#: LDC01-43

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.87
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.87
11995	Toluene	108-88-3	0.0008	0.0006	0.87
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.87
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	23.26
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.40	0.492	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	7.7	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 16:08	Jennifer K Howe	0.87
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/29/2018 11:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/29/2018 11:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/29/2018 11:40	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18250SLB026	09/10/2018 13:17	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18250SLB026	09/07/2018 18:00	Sally L Appleyard	1

Sample Description: SB-4-S-14.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780573
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 11:40
SDG#: LDC01-43

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247D34A	09/06/2018 00:51	Jeremy C Giffin	23.26
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/29/2018 11:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500017A	09/12/2018 09:56	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500017A	09/09/2018 10:30	Michelle A Newswanger	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 16:09	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820004B	08/31/2018 09:33	William C Schwebel	1

Sample Description: UST-4-S-8.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780574
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 11:45
SDG#: LDC01-44

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.025	46.11
11995	Ethylbenzene	100-41-4	N.D.	0.020	46.11
11995	Toluene	108-88-3	N.D.	0.030	46.11
11995	Xylene (Total)	1330-20-7	N.D.	0.050	46.11
Reporting limits were raised due to interference from the sample matrix.					
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	130	2.3	233.4
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	1,700	16	5
08272	Heavy Range Organics C24-C40	n.a.	140	54	5
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	11.9	0.464	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	8.2	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	Q182521AA	09/09/2018 15:58	Stephen C Nolte	46.11
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/29/2018 11:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/29/2018 11:45	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/29/2018 11:45	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18250SLB026	09/11/2018 00:28	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18250SLB026	09/07/2018 18:00	Sally L Appleyard	1

Sample Description: UST-4-S-8.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780574
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 11:45
SDG#: LDC01-44

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18248A34A	09/06/2018 20:51	Jeremy C Giffin	233.4
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/29/2018 11:45	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500017A	09/12/2018 11:55	Thomas C Wildermuth	5
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500017A	09/09/2018 10:30	Michelle A Newswanger	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 16:11	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820004B	08/31/2018 09:33	William C Schwebel	1

Sample Description: SB-4-S-25.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780575
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 11:55
SDG#: LDC01-45

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.0005	0.0005	0.96
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.96
11995	Toluene	108-88-3	0.001	0.0006	0.96
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.96
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.8	0.3	29.18
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.1	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	10	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.27	0.605	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	5.6	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 16:31	Jennifer K Howe	0.96
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/29/2018 11:55	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/29/2018 11:55	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/29/2018 11:55	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18250SLB026	09/11/2018 00:53	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18250SLB026	09/07/2018 18:00	Sally L Appleyard	1

Sample Description: SB-4-S-25.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780575
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 11:55
SDG#: LDC01-45

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247D34A	09/06/2018 02:01	Jeremy C Giffin	29.18
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/29/2018 11:55	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500053A	09/13/2018 10:33	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500053A	09/10/2018 16:15	Ryan J Dowdy	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 16:14	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820004B	08/31/2018 09:33	William C Schwebel	1

Sample Description: UST-5-S-8.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780576
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 13:25
SDG#: LDC01-46

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.91
11995	Bromodichloromethane	75-27-4	N.D.	0.0004	0.91
11995	Bromoform	75-25-2	N.D.	0.005	0.91
11995	Bromomethane	74-83-9	N.D.	0.0007	0.91
11995	Carbon Tetrachloride	56-23-5	N.D.	0.0005	0.91
11995	Chlorobenzene	108-90-7	N.D.	0.0005	0.91
11995	Chloroethane	75-00-3	N.D.	0.001	0.91
11995	Chloroform	67-66-3	N.D.	0.0006	0.91
11995	Chloromethane	74-87-3	N.D.	0.0006	0.91
11995	Dibromochloromethane	124-48-1	N.D.	0.0004	0.91
11995	1,2-Dichlorobenzene	95-50-1	N.D.	0.0005	0.91
11995	1,3-Dichlorobenzene	541-73-1	N.D.	0.0005	0.91
11995	1,4-Dichlorobenzene	106-46-7	N.D.	0.0004	0.91
11995	1,1-Dichloroethane	75-34-3	N.D.	0.0005	0.91
11995	1,2-Dichloroethane	107-06-2	N.D.	0.0006	0.91
11995	1,1-Dichloroethene	75-35-4	N.D.	0.0005	0.91
11995	cis-1,2-Dichloroethene	156-59-2	N.D.	0.0005	0.91
11995	trans-1,2-Dichloroethene	156-60-5	N.D.	0.0005	0.91
11995	1,2-Dichloropropane	78-87-5	N.D.	0.0005	0.91
11995	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.0004	0.91
11995	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.0003	0.91
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.91
11995	Freon 113	76-13-1	N.D.	0.0006	0.91
11995	Methylene Chloride	75-09-2	N.D.	0.002	0.91
11995	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.0004	0.91
11995	Tetrachloroethene	127-18-4	N.D.	0.0005	0.91
11995	Toluene	108-88-3	0.001	0.0006	0.91
11995	1,1,1-Trichloroethane	71-55-6	N.D.	0.0006	0.91
11995	1,1,2-Trichloroethane	79-00-5	N.D.	0.0005	0.91
11995	Trichloroethene	79-01-6	N.D.	0.0005	0.91
11995	Trichlorofluoromethane	75-69-4	N.D.	0.0007	0.91
11995	Vinyl Chloride	75-01-4	N.D.	0.0006	0.91
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.91
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.8	0.3	25.37
PCBs		SW-846 8082A Feb 2007 Rev 1	mg/kg	mg/kg	
10885	PCB-1016	12674-11-2	N.D. D1	0.0040	1
10885	PCB-1221	11104-28-2	N.D. D1	0.0051	1
10885	PCB-1232	11141-16-5	N.D. D1	0.0089	1
10885	PCB-1242	53469-21-9	N.D. D1	0.0037	1
10885	PCB-1248	12672-29-6	N.D. D1	0.0037	1

Sample Description: UST-5-S-8.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780576
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 13:25
SDG#: LDC01-46

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
PCBs		SW-846 8082A Feb 2007 Rev 1	mg/kg	mg/kg	
10885	PCB-1254	11097-69-1	N.D. D1	0.0037	1
10885	PCB-1260	11096-82-5	N.D. D1	0.0054	1

The response for a target analyte(s) in the ending calibration verification standard is outside the upper QC acceptance limits. The following action was taken:
The analysis was repeated and the continuing calibration verification standard bracketing the sample on the second trial is also outside the acceptance limits. This effect is attributed to the sample matrix and the data is reported.

GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	230	3.4	1
08272	Heavy Range Organics C24-C40	n.a.	73	11	1

GC Petroleum Hydrocarbons		ECY 97-602 WA EPH	mg/kg	mg/kg	
05970	>C10-C12 Aliphatic	n.a.	N.D.	1.1	1
05970	>C10-C12 Aromatic	n.a.	N.D.	1.1	1
05970	>C12-C16 Aliphatic	n.a.	5.0	1.1	1
05970	>C12-C16 Aromatic	n.a.	N.D.	1.1	1
05970	>C16-C21 Aliphatic	n.a.	66	3.3	1
05970	>C16-C21 Aromatic	n.a.	13	2.2	1
05970	>C21-C34 Aliphatic	n.a.	29	6.6	1
05970	>C21-C34 Aromatic	n.a.	14	2.2	1

Trial ID: RE

05970	>C10-C12 Aliphatic	n.a.	N.D.	1.1	1
05970	>C10-C12 Aromatic	n.a.	N.D.	1.1	1
05970	>C12-C16 Aliphatic	n.a.	16	1.1	1
05970	>C12-C16 Aromatic	n.a.	N.D.	1.1	1
05970	>C16-C21 Aliphatic	n.a.	79	3.2	1
05970	>C16-C21 Aromatic	n.a.	27	2.1	1
05970	>C21-C34 Aliphatic	n.a.	260	6.4	1
05970	>C21-C34 Aromatic	n.a.	210	2.1	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. Results are reported from both trials.

GC Petroleum Hydrocarbons		ECY 97-602 WA VPH	mg/kg	mg/kg	
05666	Benzene	71-43-2	N.D.	0.0578	51.34
05666	C5-C6 Aliphatic Hydrocarbons	n.a.	N.D.	2.89	51.34
05666	C6-C8 Aliphatic Hydrocarbons	n.a.	N.D.	2.89	51.34

Sample Description: UST-5-S-8.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780576
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 13:25
SDG#: LDC01-46

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC Petroleum Hydrocarbons			mg/kg	mg/kg	
ECY 97-602 WA VPH					
05666	C8-C10 Aliphatic Hydrocarbons	n.a.	N.D.	2.89	51.34
05666	C8-C10 Aromatic Hydrocarbons	n.a.	N.D.	2.89	51.34
05666	Ethylbenzene	100-41-4	N.D.	0.0578	51.34
05666	Methyl t-butyl ether	1634-04-4	N.D.	0.0578	51.34
05666	Toluene	108-88-3	N.D.	0.0578	51.34
05666	o-Xylene	95-47-6	N.D.	0.0578	51.34
05666	m,p-Xylenes	179601-23-1	N.D.	0.116	51.34
Metals			mg/kg	mg/kg	
SW-846 6010D Rev.4, July 2014					
06955	Lead	7439-92-1	8.24	0.608	1
Wet Chemistry			%	%	
SM 2540 G-2011 %Moisture Calc					
00111	Moisture	n.a.	11.1	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	HVOCs + BTEX	SW-846 8260C	1	A182501AA	09/07/2018 16:54	Jennifer K Howe	0.91
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/29/2018 13:25	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/29/2018 13:25	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	3	201824351084	08/29/2018 13:25	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	4	201824351084	08/29/2018 13:25	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/29/2018 13:25	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	2	201824351084	08/29/2018 13:25	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18250SLB026	09/11/2018 01:18	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18250SLB026	09/07/2018 18:00	Sally L Appleyard	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247D34A	09/06/2018 02:36	Jeremy C Giffin	25.37
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/29/2018 13:25	Client Supplied	n.a.

Sample Description: UST-5-S-8.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780576
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 13:25
SDG#: LDC01-46

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10885	PCBs 8082A/3546	SW-846 8082A Feb 2007 Rev 1	1	182480026A	09/07/2018 02:06	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	182480026A	09/06/2018 07:00	Joshua S Ruth	1
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500053A	09/13/2018 13:14	Thomas C Wildermuth	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/18/2018 23:22	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 00:02	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 23:34	Amy Lehr	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/04/2018 00:15	Amy Lehr	1
05666	WA- VPH soils	ECY 97-602 WA VPH	1	18253A08A	09/10/2018 21:18	Thomas C Wildermuth	51.34
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500053A	09/10/2018 16:15	Ryan J Dowdy	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	1	182500003A	09/08/2018 11:20	Sally L Appleyard	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	2	182700031A	09/28/2018 09:00	Michelle A Newswanger	1
00388	GC - Field Preserved (MA-VPH)	MA DEP VPH modified	1	201824351081	08/29/2018 13:25	Client Supplied	1
00497	Silica Gel Fractionation	SW-846 3630C modified	1	182500003A	09/18/2018 08:00	David S Schrum	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 16:17	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820004B	08/31/2018 09:33	William C Schwebel	1

Sample Description: UST-6-S-8.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780577
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 14:10
SDG#: LDC01-47

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.0008	0.0005	0.84
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.84
11995	Toluene	108-88-3	0.002	0.0005	0.84
11995	Xylene (Total)	1330-20-7	0.001	0.0009	0.84
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.2	0.2	22.29
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	160	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	47	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.64	0.488	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	6.8	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 17:17	Jennifer K Howe	0.84
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/29/2018 14:10	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/29/2018 14:10	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/29/2018 14:10	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18250SLB026	09/11/2018 01:43	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18250SLB026	09/07/2018 18:00	Sally L Appleyard	1

Sample Description: UST-6-S-8.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780577
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 14:10
SDG#: LDC01-47

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18247D34A	09/06/2018 03:11	Jeremy C Giffin	22.29
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/29/2018 14:10	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500053A	09/13/2018 12:34	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500053A	09/10/2018 16:15	Ryan J Dowdy	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404902	09/10/2018 16:20	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404902	09/06/2018 07:10	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820004B	08/31/2018 09:33	William C Schwebel	1

Sample Description: SB-8-S-12.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780578
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 14:20
SDG#: LDC01-48

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.82
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.82
11995	Toluene	108-88-3	0.001	0.0005	0.82
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.82
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.4	0.2	21.35
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	N.D.	2.34	5
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	9.8	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182501AA	09/07/2018 17:39	Jennifer K Howe	0.82
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/29/2018 14:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/29/2018 14:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/29/2018 14:20	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18250SLB026	09/11/2018 02:09	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18250SLB026	09/07/2018 18:00	Sally L Appleyard	1

Sample Description: SB-8-S-12.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780578
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 14:20
SDG#: LDC01-48

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18248A34A	09/06/2018 19:06	Jeremy C Giffin	21.35
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/29/2018 14:20	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500053A	09/13/2018 10:53	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500053A	09/10/2018 16:15	Ryan J Dowdy	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404903	09/06/2018 08:16	Eric L Eby	5
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404903	09/05/2018 07:45	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820004B	08/31/2018 09:33	William C Schwebel	1

Sample Description: SB-8-S-14.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780579
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 14:25
SDG#: LDC01-49

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.97
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.97
11995	Toluene	108-88-3	N.D.	0.0006	0.97
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.97
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	0.011	0.007	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	25.72
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.1	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	10	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	N.D.	12.5	20
	An interfering analyte exceeded the linear range of the instrument, and all affected analytes were analyzed at a higher dilution. The reporting limits were raised accordingly.				
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	5.2	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182521AA	09/09/2018 16:58	Stephen C Nolte	0.97
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/29/2018 14:25	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/29/2018 14:25	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/29/2018 14:25	Client Supplied	1

Sample Description: SB-8-S-14.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780579
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 14:25
SDG#: LDC01-49

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naphthalene 8270D	SW-846 8270D	1	18250SLB026	09/11/2018 02:34	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18250SLB026	09/07/2018 18:00	Sally L Appleyard	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18248A34A	09/06/2018 19:41	Jeremy C Giffin	25.72
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/29/2018 14:25	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500053A	09/13/2018 11:14	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500053A	09/10/2018 16:15	Ryan J Dowdy	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404903	09/09/2018 23:26	Elaine F Stoltzfus	20
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404903	09/05/2018 07:45	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820004B	08/31/2018 09:33	William C Schwebel	1

Sample Description: SB-8-S-25.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780580
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submission Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 14:50
SDG#: LDC01-50

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.91
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.91
11995	Toluene	108-88-3	N.D.	0.0006	0.91
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.91
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	24.73
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	N.D.	0.542	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	8.5	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182521AA	09/09/2018 17:21	Stephen C Nolte	0.91
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201824351084	08/29/2018 15:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201824351084	08/29/2018 15:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201824351084	08/29/2018 15:00	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18250SLB026	09/11/2018 02:59	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18250SLB026	09/07/2018 18:00	Sally L Appleyard	1

Sample Description: SB-8-S-25.0-180829 Grab Soil
Facility# 204117
2021 6th Street - Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9780580
ELLE Group #: 1982153
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 08/30/2018 09:40
Collection Date/Time: 08/29/2018 14:50
SDG#: LDC01-50

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18248A34A	09/06/2018 20:16	Jeremy C Giffin	24.73
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201824351084	08/29/2018 15:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500053A	09/13/2018 11:34	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500053A	09/10/2018 16:15	Ryan J Dowdy	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182471404903	09/05/2018 19:24	Elaine F Stoltzfus	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182471404903	09/05/2018 07:45	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18243820004B	08/31/2018 09:33	William C Schwebel	1

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL
	mg/kg	mg/kg
Batch number: A182492AA	Sample number(s): 9780531-9780536,9780560	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: A182493AA	Sample number(s): 9780537-9780538,9780541-9780543	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: A182501AA	Sample number(s): 9780544-9780551,9780554,9780556-9780557,9780559,9780568-9780570,9780573,9780575-9780578	
Benzene	N.D.	0.0005
Bromodichloromethane	N.D.	0.0004
Bromoform	N.D.	0.005
Bromomethane	N.D.	0.0007
Carbon Tetrachloride	N.D.	0.0005
Chlorobenzene	N.D.	0.0005
Chloroethane	N.D.	0.001
Chloroform	N.D.	0.0006
Chloromethane	N.D.	0.0006
Dibromochloromethane	N.D.	0.0004
1,2-Dichlorobenzene	N.D.	0.0005
1,3-Dichlorobenzene	N.D.	0.0005
1,4-Dichlorobenzene	N.D.	0.0004
1,1-Dichloroethane	N.D.	0.0005
1,2-Dichloroethane	N.D.	0.0006
1,1-Dichloroethene	N.D.	0.0005
cis-1,2-Dichloroethene	N.D.	0.0005
trans-1,2-Dichloroethene	N.D.	0.0005
1,2-Dichloropropane	N.D.	0.0005
cis-1,3-Dichloropropene	N.D.	0.0004
trans-1,3-Dichloropropene	N.D.	0.0003
Ethylbenzene	N.D.	0.0004
Freon 113	N.D.	0.0006
Methylene Chloride	N.D.	0.002
1,1,2,2-Tetrachloroethane	N.D.	0.0004
Tetrachloroethene	N.D.	0.0005
Toluene	N.D.	0.0006

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Method Blank (continued)

Analysis Name	Result	MDL
	mg/kg	mg/kg
1,1,1-Trichloroethane	N.D.	0.0006
1,1,2-Trichloroethane	N.D.	0.0005
Trichloroethene	N.D.	0.0005
Trichlorofluoromethane	N.D.	0.0007
Vinyl Chloride	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: A182521AA	Sample number(s): 9780539-9780540,9780579-9780580	
Benzene	N.D.	0.0005
1,2-Dibromoethane	N.D.	0.0004
1,2-Dichloroethane	N.D.	0.0006
Ethylbenzene	N.D.	0.0004
n-Hexane	N.D.	0.0005
Methyl Tertiary Butyl Ether	N.D.	0.0005
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: A182541AA	Sample number(s): 9780571-9780572	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: Q182521AA	Sample number(s): 9780553,9780555,9780558,9780561,9780574	
Benzene	N.D.	0.025
Bromodichloromethane	N.D.	0.020
Bromoform	N.D.	0.25
Bromomethane	N.D.	0.035
Carbon Tetrachloride	N.D.	0.025
Chlorobenzene	N.D.	0.025
Chloroethane	N.D.	0.050
Chloroform	N.D.	0.030
Chloromethane	N.D.	0.030
Dibromochloromethane	N.D.	0.020
1,2-Dibromoethane	N.D.	0.020
1,2-Dichlorobenzene	N.D.	0.025
1,3-Dichlorobenzene	N.D.	0.025
1,4-Dichlorobenzene	N.D.	0.020
1,1-Dichloroethane	N.D.	0.025
1,2-Dichloroethane	N.D.	0.030
1,1-Dichloroethene	N.D.	0.025
cis-1,2-Dichloroethene	N.D.	0.025
trans-1,2-Dichloroethene	N.D.	0.025
1,2-Dichloropropane	N.D.	0.025
cis-1,3-Dichloropropene	N.D.	0.020
trans-1,3-Dichloropropene	N.D.	0.015

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Method Blank (continued)

Analysis Name	Result	MDL
	mg/kg	mg/kg
Ethylbenzene	N.D.	0.020
Freon 113	N.D.	0.030
n-Hexane	N.D.	0.025
Methyl Tertiary Butyl Ether	N.D.	0.025
Methylene Chloride	N.D.	0.10
1,1,2,2-Tetrachloroethane	N.D.	0.020
Tetrachloroethene	N.D.	0.025
Toluene	N.D.	0.030
1,1,1-Trichloroethane	N.D.	0.030
1,1,2-Trichloroethane	N.D.	0.025
Trichloroethene	N.D.	0.025
Trichlorofluoromethane	N.D.	0.035
Vinyl Chloride	N.D.	0.030
Xylene (Total)	N.D.	0.050
Batch number: R182502AA	Sample number(s): 9780539-9780540	
Benzene	N.D.	0.025
Toluene	N.D.	0.030
	ug/l	ug/l
Batch number: Z182472AA	Sample number(s): 9780552,9780562	
Benzene	N.D.	0.2
Ethylbenzene	N.D.	0.4
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
Batch number: Z182502AA	Sample number(s): 9780563-9780566	
Benzene	N.D.	0.2
Ethylbenzene	N.D.	0.4
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
	mg/kg	mg/kg
Batch number: 18248SLA026	Sample number(s): 9780531-9780534,9780560	
Naphthalene	N.D.	0.007
Batch number: 18249SLA026	Sample number(s): 9780535-9780538,9780540-9780551,9780553-9780554,9780556-9780557	
Naphthalene	N.D.	0.007
Batch number: 18250SLA026	Sample number(s): 9780539,9780555,9780561	
Benzo(a)anthracene	N.D.	0.0007
Benzo(a)pyrene	N.D.	0.0007
Benzo(b)fluoranthene	N.D.	0.0007
Benzo(k)fluoranthene	N.D.	0.0007
Chrysene	N.D.	0.0003
Dibenz(a,h)anthracene	N.D.	0.0007
Indeno(1,2,3-cd)pyrene	N.D.	0.0007

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Method Blank (continued)

Analysis Name	Result	MDL
	mg/kg	mg/kg
Naphthalene	N.D.	0.001
Batch number: 18250SLB026	Sample number(s): 9780558-9780559,9780568-9780580	
Naphthalene	N.D.	0.007
Batch number: 18247A31A	Sample number(s): 9780531-9780547,9780556-9780557,9780560	
NWTPH-GX Soil C7-C12	N.D.	0.2
Batch number: 18247D34A	Sample number(s): 9780548-9780551,9780554-9780555,9780559,9780568-9780573,9780575-9780577	
NWTPH-GX Soil C7-C12	N.D.	0.2
Batch number: 18248A34A	Sample number(s): 9780553,9780558,9780561,9780574,9780578-9780580	
NWTPH-GX Soil C7-C12	N.D.	0.2
	ug/l	ug/l
Batch number: 18249A53A	Sample number(s): 9780563-9780566	
NWTPH-Gx water C7-C12	25	19
Batch number: 18253A20A	Sample number(s): 9780552,9780562	
NWTPH-Gx water C7-C12	N.D.	19
	mg/kg	mg/kg
Batch number: 182480026A	Sample number(s): 9780553,9780558,9780570,9780576	
PCB-1016	N.D.	0.0036
PCB-1221	N.D.	0.0046
PCB-1232	N.D.	0.0080
PCB-1242	N.D.	0.0033
PCB-1248	N.D.	0.0033
PCB-1254	N.D.	0.0033
PCB-1260	N.D.	0.0049
Batch number: 182470023A	Sample number(s): 9780531-9780538	
Diesel Range Organics C12-C24	N.D.	3.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 182490010A	Sample number(s): 9780539-9780547,9780560	
Diesel Range Organics C12-C24	N.D.	3.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 182500003A	Sample number(s): 9780539,9780553,9780555,9780561,9780570,9780576	
>C10-C12 Aliphatic	N.D.	1.0
>C10-C12 Aromatic	N.D.	1.0
>C12-C16 Aliphatic	N.D.	1.0
>C12-C16 Aromatic	N.D.	1.0
>C16-C21 Aliphatic	N.D.	3.0
>C16-C21 Aromatic	N.D.	2.0
>C21-C34 Aliphatic	N.D.	6.0
>C21-C34 Aromatic	N.D.	2.0
Batch number: 182500015A	Sample number(s): 9780548-9780551,9780553-9780557	

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Method Blank (continued)

Analysis Name	Result	MDL
	mg/kg	mg/kg
Diesel Range Organics C12-C24	N.D.	3.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 182500017A	Sample number(s): 9780558-9780559,9780561,9780568-9780574	
Diesel Range Organics C12-C24	N.D.	3.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 182500053A	Sample number(s): 9780575-9780580	
Diesel Range Organics C12-C24	N.D.	3.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 18253A08A	Sample number(s): 9780539,9780553,9780555,9780561,9780570,9780576	
Benzene	N.D.	0.0500
C5-C6 Aliphatic Hydrocarbons	N.D.	2.50
C6-C8 Aliphatic Hydrocarbons	N.D.	2.50
C8-C10 Aliphatic Hydrocarbons	N.D.	2.50
C8-C10 Aromatic Hydrocarbons	N.D.	2.50
Ethylbenzene	N.D.	0.0500
Methyl t-butyl ether	N.D.	0.0500
Toluene	N.D.	0.0500
o-Xylene	N.D.	0.0500
m,p-Xylenes	N.D.	0.100
Batch number: 182700031A	Sample number(s): 9780539,9780553,9780555,9780561,9780570,9780576	
>C10-C12 Aliphatic	N.D.	1.0
>C10-C12 Aromatic	N.D.	1.0
>C12-C16 Aliphatic	N.D.	1.0
>C12-C16 Aromatic	N.D.	1.0
>C16-C21 Aliphatic	N.D.	3.0
>C16-C21 Aromatic	N.D.	2.0
>C21-C34 Aliphatic	N.D.	6.0
>C21-C34 Aromatic	N.D.	2.0
Batch number: 182471404901	Sample number(s): 9780531-9780550	
Lead	N.D.	0.600
Batch number: 182471404902	Sample number(s): 9780551,9780553-9780561,9780568-9780577	
Lead	N.D.	0.600
Batch number: 182471404903	Sample number(s): 9780578-9780580	
Lead	N.D.	0.600

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
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*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

LCS/LCSD

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: A182492AA	Sample number(s): 9780531-9780536,9780560								
Benzene	0.0200	0.0184	0.0200	0.0161	92	80	80-120	13	30
Ethylbenzene	0.0200	0.0181	0.0200	0.0155	91	78	78-120	15	30
Toluene	0.0200	0.0185	0.0200	0.0160	93	80	80-120	15	30
Xylene (Total)	0.0600	0.0551	0.0600	0.0472	92	79	75-120	16	30
Batch number: A182493AA	Sample number(s): 9780537-9780538,9780541-9780543								
Benzene	0.0200	0.0186	0.0200	0.0188	93	94	80-120	1	30
Ethylbenzene	0.0200	0.0185	0.0200	0.0185	92	92	78-120	0	30
Toluene	0.0200	0.0189	0.0200	0.0190	95	95	80-120	0	30
Xylene (Total)	0.0600	0.0565	0.0600	0.0569	94	95	75-120	1	30
Batch number: A182501AA	Sample number(s): 9780544-9780551,9780554,9780556-9780557,9780559,9780568-9780570,9780573,9780575-9780578								
Benzene	0.0200	0.0190	0.0200	0.0186	95	93	80-120	2	30
Bromodichloromethane	0.0200	0.0176	0.0200	0.0173	88	87	70-120	1	30
Bromoform	0.0200	0.0158	0.0200	0.0155	79	78	51-127	2	30
Bromomethane	0.0200	0.0183	0.0200	0.0178	91	89	45-140	3	30
Carbon Tetrachloride	0.0200	0.0184	0.0200	0.0176	92	88	64-134	4	30
Chlorobenzene	0.0200	0.0194	0.0200	0.0190	97	95	80-120	2	30
Chloroethane	0.0200	0.0161	0.0200	0.0156	81	78	43-135	3	30
Chloroform	0.0200	0.0192	0.0200	0.0188	96	94	80-120	2	30
Chloromethane	0.0200	0.0154	0.0200	0.0148	77	74	56-120	4	30
Dibromochloromethane	0.0200	0.0175	0.0200	0.0171	88	85	69-125	3	30
1,2-Dichlorobenzene	0.0200	0.0184	0.0200	0.0182	92	91	76-120	1	30
1,3-Dichlorobenzene	0.0200	0.0182	0.0200	0.0178	91	89	75-120	2	30
1,4-Dichlorobenzene	0.0200	0.0184	0.0200	0.0182	92	91	80-120	1	30
1,1-Dichloroethane	0.0200	0.0189	0.0200	0.0184	94	92	79-120	2	30
1,2-Dichloroethane	0.0200	0.0185	0.0200	0.0183	93	91	71-128	1	30
1,1-Dichloroethene	0.0200	0.0209	0.0200	0.0203	105	102	73-129	3	30
cis-1,2-Dichloroethene	0.0200	0.0202	0.0200	0.0196	101	98	80-123	3	30
trans-1,2-Dichloroethene	0.0200	0.0204	0.0200	0.0198	102	99	80-125	3	30
1,2-Dichloropropane	0.0200	0.0188	0.0200	0.0184	94	92	80-120	2	30
cis-1,3-Dichloropropene	0.0200	0.0162	0.0200	0.0163	81	81	66-120	0	30
trans-1,3-Dichloropropene	0.0200	0.0167	0.0200	0.0167	83	84	68-122	0	30
Ethylbenzene	0.0200	0.0190	0.0200	0.0185	95	93	78-120	2	30
Freon 113	0.0200	0.0187	0.0200	0.0179	93	90	64-135	4	30
Methylene Chloride	0.0200	0.0205	0.0200	0.0197	102	99	76-122	4	30
1,1,2,2-Tetrachloroethane	0.0200	0.0164	0.0200	0.0165	82	83	69-125	1	30
Tetrachloroethene	0.0200	0.0197	0.0200	0.0188	98	94	73-120	5	30
Toluene	0.0200	0.0192	0.0200	0.0187	96	93	80-120	3	30
1,1,1-Trichloroethane	0.0200	0.0174	0.0200	0.0170	87	85	69-123	2	30
1,1,2-Trichloroethane	0.0200	0.0194	0.0200	0.0194	97	97	80-120	0	30
Trichloroethene	0.0200	0.0185	0.0200	0.0181	93	90	80-120	2	30
Trichlorofluoromethane	0.0200	0.0188	0.0200	0.0180	94	90	55-134	5	30

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Vinyl Chloride	0.0200	0.0165	0.0200	0.0158	83	79	52-120	4	30
Xylene (Total)	0.0600	0.0576	0.0600	0.0564	96	94	75-120	2	30
Batch number: A182521AA	Sample number(s): 9780539-9780540,9780579-9780580								
Benzene	0.0200	0.0189	0.0200	0.0185	94	92	80-120	2	30
1,2-Dibromoethane	0.0200	0.0178	0.0200	0.0189	89	95	76-120	6	30
1,2-Dichloroethane	0.0200	0.0183	0.0200	0.0188	91	94	71-128	3	30
Ethylbenzene	0.0200	0.0186	0.0200	0.0181	93	90	78-120	3	30
n-Hexane	0.0200	0.0139	0.0200	0.0131	70	65	50-132	6	30
Methyl Tertiary Butyl Ether	0.0200	0.0158	0.0200	0.0171	79	86	72-120	8	30
Toluene	0.0200	0.0190	0.0200	0.0183	95	92	80-120	3	30
Xylene (Total)	0.0600	0.0569	0.0600	0.0552	95	92	75-120	3	30
Batch number: A182541AA	Sample number(s): 9780571-9780572								
Benzene	0.0200	0.0190	0.0200	0.0191	95	96	80-120	1	30
Ethylbenzene	0.0200	0.0187	0.0200	0.0190	94	95	78-120	2	30
Toluene	0.0200	0.0185	0.0200	0.0188	93	94	80-120	2	30
Xylene (Total)	0.0600	0.0565	0.0600	0.0576	94	96	75-120	2	30
Batch number: Q182521AA	Sample number(s): 9780553,9780555,9780558,9780561,9780574								
Benzene	1.00	1.02	1.00	1.00	102	100	80-120	2	30
Bromodichloromethane	1.00	1.01	1.00	0.954	101	95	70-120	5	30
Bromoform	1.00	0.921	1.00	0.935	92	93	51-127	1	30
Bromomethane	1.00	1.33	1.00	1.36	133	136	45-140	2	30
Carbon Tetrachloride	1.00	1.01	1.00	0.964	101	96	64-134	5	30
Chlorobenzene	1.00	0.953	1.00	0.944	95	94	80-120	1	30
Chloroethane	1.00	1.20	1.00	1.25	120	125	43-135	4	30
Chloroform	1.00	1.06	1.00	1.00	106	100	80-120	6	30
Chloromethane	1.00	1.02	1.00	1.03	102	103	56-120	1	30
Dibromochloromethane	1.00	0.984	1.00	0.977	98	98	69-125	1	30
1,2-Dibromoethane	1.00	0.964	1.00	0.969	96	97	76-120	1	30
1,2-Dichlorobenzene	1.00	0.988	1.00	0.966	99	97	76-120	2	30
1,3-Dichlorobenzene	1.00	0.946	1.00	0.939	95	94	75-120	1	30
1,4-Dichlorobenzene	1.00	0.950	1.00	0.953	95	95	80-120	0	30
1,1-Dichloroethane	1.00	1.05	1.00	1.00	105	100	79-120	4	30
1,2-Dichloroethane	1.00	1.08	1.00	1.05	108	105	71-128	2	30
1,1-Dichloroethene	1.00	1.11	1.00	1.07	111	107	73-129	4	30
cis-1,2-Dichloroethene	1.00	1.06	1.00	0.997	106	100	80-123	6	30
trans-1,2-Dichloroethene	1.00	1.06	1.00	1.01	106	101	80-125	5	30
1,2-Dichloropropane	1.00	1.04	1.00	0.996	104	100	80-120	4	30
cis-1,3-Dichloropropene	1.00	0.975	1.00	0.957	97	96	66-120	2	30
trans-1,3-Dichloropropene	1.00	0.965	1.00	0.967	97	97	68-122	0	30
Ethylbenzene	1.00	0.917	1.00	0.927	92	93	78-120	1	30
Freon 113	1.00	1.10	1.00	1.07	110	107	64-135	3	30
n-Hexane	1.00	1.01	1.00	0.969	101	97	50-132	4	30

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Methyl Tertiary Butyl Ether	1.00	0.945	1.00	0.933	94	93	72-120	1	30
Methylene Chloride	1.00	1.05	1.00	0.994	105	99	76-122	5	30
1,1,2,2-Tetrachloroethane	1.00	0.924	1.00	0.911	92	91	69-125	1	30
Tetrachloroethene	1.00	0.949	1.00	0.971	95	97	73-120	2	30
Toluene	1.00	0.956	1.00	0.949	96	95	80-120	1	30
1,1,1-Trichloroethane	1.00	0.995	1.00	0.950	100	95	69-123	5	30
1,1,2-Trichloroethane	1.00	0.961	1.00	0.971	96	97	80-120	1	30
Trichloroethene	1.00	0.960	1.00	0.936	96	94	80-120	3	30
Trichlorofluoromethane	1.00	1.04	1.00	1.05	104	105	55-134	1	30
Vinyl Chloride	1.00	1.03	1.00	1.02	103	102	52-120	2	30
Xylene (Total)	3.00	2.73	3.00	2.75	91	92	75-120	1	30
Batch number: R182502AA	Sample number(s): 9780539-9780540								
Benzene	1.00	1.05	1.00	0.971	105	97	80-120	8	30
Toluene	1.00	1.06	1.00	0.954	106	95	80-120	10	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: Z182472AA	Sample number(s): 9780552,9780562								
Benzene	20	21.09			105		80-120		
Ethylbenzene	20	20.34			102		80-120		
Toluene	20	21.95			110		80-120		
Xylene (Total)	60	62.44			104		80-120		
Batch number: Z182502AA	Sample number(s): 9780563-9780566								
Benzene	20	21.07			105		80-120		
Ethylbenzene	20	20.53			103		80-120		
Toluene	20	22.01			110		80-120		
Xylene (Total)	60	62.98			105		80-120		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 18248SLA026	Sample number(s): 9780531-9780534,9780560								
Naphthalene	1.67	1.63			98		81-111		
Batch number: 18249SLA026	Sample number(s): 9780535-9780538,9780540-9780551,9780553-9780554,9780556-9780557								
Naphthalene	1.67	1.51			90		81-111		
Batch number: 18250SLA026	Sample number(s): 9780539,9780555,9780561								
Benzo(a)anthracene	0.0333	0.0315			95		76-109		
Benzo(a)pyrene	0.0333	0.0340			102		69-111		
Benzo(b)fluoranthene	0.0333	0.0336			101		69-122		
Benzo(k)fluoranthene	0.0333	0.0329			99		64-117		
Chrysene	0.0333	0.0315			95		75-106		
Dibenz(a,h)anthracene	0.0333	0.0338			101		66-119		
Indeno(1,2,3-cd)pyrene	0.0333	0.0335			101		65-114		
Naphthalene	0.0333	0.0337			101		72-103		

*- Outside of specification

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Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 18250SLB026 Naphthalene	Sample number(s): 9780558-9780559,9780568-9780580 1.67	1.64			99		81-111		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 18247A31A NWTPH-GX Soil C7-C12	Sample number(s): 9780531-9780547,9780556-9780557,9780560 11	9.42	11	9.43	86	86	55-145	0	30
Batch number: 18247D34A NWTPH-GX Soil C7-C12	Sample number(s): 9780548-9780551,9780554-9780555,9780559,9780568-9780573,9780575-9780577 11	10.24	11	10.29	93	94	55-145	1	30
Batch number: 18248A34A NWTPH-GX Soil C7-C12	Sample number(s): 9780553,9780558,9780561,9780574,9780578-9780580 11	9.93	11	9.90	90	90	55-145	0	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 18249A53A NWTPH-Gx water C7-C12	Sample number(s): 9780563-9780566 1100	1054.53	1100	1063.1	96	97	64-131	1	30
Batch number: 18253A20A NWTPH-Gx water C7-C12	Sample number(s): 9780552,9780562 1100	1112.9	1100	1110.35	101	101	64-131	0	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 182480026A PCB-1016 PCB-1260	Sample number(s): 9780553,9780558,9780570,9780576 0.167 0.167	0.148 0.166			89 100		76-121 79-130		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 182470023A Diesel Range Organics C12-C24	Sample number(s): 9780531-9780538 133.83	92.33			69		61-115		
Batch number: 182490010A Diesel Range Organics C12-C24	Sample number(s): 9780539-9780547,9780560 133.83	88.61			66		61-115		
Batch number: 182500003A >C10-C12 Aliphatic >C10-C12 Aromatic >C12-C16 Aliphatic >C12-C16 Aromatic >C16-C21 Aliphatic >C16-C21 Aromatic >C21-C34 Aliphatic >C21-C34 Aromatic	Sample number(s): 9780539,9780553,9780555,9780561,9780570,9780576 4.01 4.01 8.02 12.02 12.03 20.06 20.06 32.08	2.41 2.28 2.52 7.29 8.33 13.42 13.65 20.05	4.01 4.01 8.02 12.02 12.03 20.06 20.06 32.08	1.82 1.91 2.09 6.31 7.42 13.31 12.22 20.63	60 57 31* 61 69 67 68 62	45 48 26* 52 62 66 61 64	31-137 22-119 42-146 24-136 57-111 34-143 50-124 44-134	28 18 18 14 11 1 11 3	50 50 50 50 50 50 50 50
Batch number: 182500015A Diesel Range Organics C12-C24	Sample number(s): 9780548-9780551,9780553-9780557 133.83	96.73			72		61-115		
Batch number: 182500017A	Sample number(s): 9780558-9780559,9780561,9780568-9780574								

*- Outside of specification

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- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Diesel Range Organics C12-C24	133.83	108.23			81		61-115		
Batch number: 182500053A	Sample number(s): 9780575-9780580								
Diesel Range Organics C12-C24	133.83	103.72			77		61-115		
Batch number: 18253A08A	Sample number(s): 9780539,9780553,9780555,9780561,9780570,9780576								
Benzene	2.53	2.31	2.53	2.31	91	91	70-130	0	50
C5-C6 Aliphatic Hydrocarbons	5.08	4.05	5.08	3.97	80	78	70-130	2	50
C6-C8 Aliphatic Hydrocarbons	2.55	2.09	2.55	2.11	82	83	70-130	1	50
C8-C10 Aliphatic Hydrocarbons	2.55	2.27	2.55	2.36	89	93	70-130	4	50
C8-C10 Aromatic Hydrocarbons	2.57	2.32	2.57	2.34	91	91	70-130	1	50
Ethylbenzene	2.54	2.37	2.54	2.38	93	94	70-130	0	50
Methyl t-butyl ether	2.55	2.42	2.55	2.40	95	94	70-130	1	50
Toluene	2.54	2.33	2.54	2.34	92	92	70-130	0	50
o-Xylene	2.50	2.37	2.50	2.38	95	95	70-130	0	50
m,p-Xylenes	5.10	4.72	5.10	4.72	93	93	70-130	0	50
Batch number: 182700031A	Sample number(s): 9780539,9780553,9780555,9780561,9780570,9780576								
>C10-C12 Aliphatic	4.01	2.50			62		31-137		
>C10-C12 Aromatic	4.01	4.07			101		22-119		
>C12-C16 Aliphatic	8.02	5.70			71		42-146		
>C12-C16 Aromatic	12.02	13.33			111		24-136		
>C16-C21 Aliphatic	12.03	9.38			78		57-111		
>C16-C21 Aromatic	20.06	24.87			124		34-143		
>C21-C34 Aliphatic	20.06	15.15			76		50-124		
>C21-C34 Aromatic	32.08	40.46			126		44-134		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 182471404901	Sample number(s): 9780531-9780550								
Lead	15	14.88			99		80-120		
Batch number: 182471404902	Sample number(s): 9780551,9780553-9780561,9780568-9780577								
Lead	15	15.29			102		80-120		
Batch number: 182471404903	Sample number(s): 9780578-9780580								
Lead	15	14.12			94		80-120		
	%	%	%	%					
Batch number: 18243820004B	Sample number(s): 9780571-9780580								
Moisture	89.5	89.43			100		99-101		
Batch number: 18243820007B	Sample number(s): 9780554-9780561,9780568-9780570								
Moisture	89.5	89.35			100		99-101		
Batch number: 18243820008A	Sample number(s): 9780551,9780553								
Moisture	89.5	89.4			100		99-101		

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
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Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

LCS/LCSD (continued)

Analysis Name	LCS Spike Added %	LCS Conc %	LCSD Spike Added %	LCSD Conc %	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 18247820004A Moisture	Sample number(s): 9780531-9780540				100		99-101		
	89.5	89.43							
Batch number: 18247820004B Moisture	Sample number(s): 9780541-9780545,9780547-9780550				100		99-101		
	89.5	89.43							
Batch number: 18248820002A Moisture	Sample number(s): 9780546				100		99-101		
	89.5	89.42							

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: A182501AA	Sample number(s): 9780544-9780551,9780554,9780556-9780557,9780559,9780568-9780570,9780573,9780575-9780578 UNSPK: 9780570									
Benzene	N.D.	0.0164	0.0170	0.0162	0.0166	103	102	80-120	2	30
Bromodichloromethane	N.D.	0.0164	0.0155	0.0162	0.0149	95	92	70-120	4	30
Bromoform	N.D.	0.0164	0.0144	0.0162	0.0138	88	85	51-127	5	30
Bromomethane	N.D.	0.0164	0.0163	0.0162	0.0159	99	98	45-140	2	30
Carbon Tetrachloride	N.D.	0.0164	0.0168	0.0162	0.0158	102	98	64-134	6	30
Chlorobenzene	N.D.	0.0164	0.0169	0.0162	0.0162	103	100	80-120	4	30
Chloroethane	N.D.	0.0164	0.0144	0.0162	0.0141	88	87	43-135	2	30
Chloroform	N.D.	0.0164	0.0171	0.0162	0.0165	104	102	80-120	3	30
Chloromethane	N.D.	0.0164	0.0139	0.0162	0.0137	84	85	56-120	1	30
Dibromochloromethane	N.D.	0.0164	0.0161	0.0162	0.0156	98	96	69-125	4	30
1,2-Dichlorobenzene	N.D.	0.0164	0.0151	0.0162	0.0147	92	91	76-120	3	30
1,3-Dichlorobenzene	N.D.	0.0164	0.0151	0.0162	0.0144	92	89	75-120	5	30
1,4-Dichlorobenzene	N.D.	0.0164	0.0155	0.0162	0.0148	94	91	80-120	5	30
1,1-Dichloroethane	N.D.	0.0164	0.0166	0.0162	0.0163	101	101	79-120	2	30
1,2-Dichloroethane	N.D.	0.0164	0.0169	0.0162	0.0160	103	99	71-128	6	30
1,1-Dichloroethene	N.D.	0.0164	0.0191	0.0162	0.0186	117	115	73-129	3	30
cis-1,2-Dichloroethene	N.D.	0.0164	0.0175	0.0162	0.0172	107	106	80-123	2	30
trans-1,2-Dichloroethene	N.D.	0.0164	0.0183	0.0162	0.0177	111	109	80-125	3	30
1,2-Dichloropropane	N.D.	0.0164	0.0159	0.0162	0.0159	97	98	80-120	0	30
cis-1,3-Dichloropropene	N.D.	0.0164	0.0137	0.0162	0.0137	83	84	66-120	0	30
trans-1,3-Dichloropropene	N.D.	0.0164	0.0154	0.0162	0.0155	94	96	68-122	1	30
Ethylbenzene	N.D.	0.0164	0.0158	0.0162	0.0150	96	93	78-120	5	30
Freon 113	N.D.	0.0164	0.0162	0.0162	0.0159	99	98	64-135	2	30

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Methylene Chloride	N.D.	0.0164	0.0177	0.0162	0.0174	108	108	76-122	1	30
1,1,2,2-Tetrachloroethane	N.D.	0.0164	0.0198	0.0162	0.0193	120	119	69-125	2	30
Tetrachloroethene	N.D.	0.0164	0.0166	0.0162	0.0157	101	97	73-120	5	30
Toluene	N.D.	0.0164	0.0180	0.0162	0.0177	110	109	80-120	2	30
1,1,1-Trichloroethane	N.D.	0.0164	0.0159	0.0162	0.0154	97	95	69-123	3	30
1,1,2-Trichloroethane	N.D.	0.0164	0.0186	0.0162	0.0178	113	110	80-120	5	30
Trichloroethene	N.D.	0.0164	0.0164	0.0162	0.0159	100	98	80-120	3	30
Trichlorofluoromethane	N.D.	0.0164	0.0173	0.0162	0.0168	105	104	55-134	3	30
Vinyl Chloride	N.D.	0.0164	0.0146	0.0162	0.0148	89	92	52-120	2	30
Xylene (Total)	N.D.	0.0493	0.0469	0.0485	0.0452	95	93	75-120	4	30
Batch number: A182521AA Sample number(s): 9780539-9780540,9780579-9780580 UNSPK: 9780539										
Benzene	0.432	0.0147	0.457	0.0142	0.395	168 (2)	-258 (2)	80-120	14	30
1,2-Dibromoethane	N.D.	0.0147	0.0172	0.0142	0.0163	117	115	76-120	5	30
1,2-Dichloroethane	N.D.	0.0147	0.0171	0.0142	0.0160	116	113	71-128	7	30
Ethylbenzene	0.113	0.0147	0.0924	0.0142	0.0973	-141 (2)	-112 (2)	78-120	5	30
n-Hexane	0.0577	0.0147	0.0911	0.0142	0.0576	227*	0 (2)	50-132	45*	30
Methyl Tertiary Butyl Ether	N.D.	0.0147	0.0153	0.0142	0.0148	104	104	72-120	4	30
Toluene	0.121	0.0147	0.0428	0.0142	0.184	-533 (2)	442 (2)	80-120	125*	30
Xylene (Total)	0.295	0.0442	0.166	0.0426	0.313	-291 (2)	43 (2)	75-120	61*	30
Batch number: 18249SLA026 Sample number(s): 9780535-9780538,9780540-9780551,9780553-9780554,9780556-9780557 UNSPK: 9780550										
Naphthalene	N.D.	1.64	1.48	1.65	1.44	90	87	81-111	3	30
Batch number: 18250SLB026 Sample number(s): 9780558-9780559,9780568-9780580 UNSPK: 9780573										
Naphthalene	N.D.	1.66	1.58	1.66	1.56	95	94	81-111	1	30
Batch number: 182480026A Sample number(s): 9780553,9780558,9780570,9780576 UNSPK: 9780576										
PCB-1016	N.D.	0.167	0.157	0.166	0.149	94	90	76-121	5	50
PCB-1260	N.D.	0.167	0.181	0.166	0.172	109	104	79-130	5	50
Batch number: 182470023A Sample number(s): 9780531-9780538 UNSPK: 9780533										
Diesel Range Organics C12-C24	N.D.	133.39	85.54			64		61-115		
Batch number: 182490010A Sample number(s): 9780539-9780547,9780560 UNSPK: 9780544										
Diesel Range Organics C12-C24	N.D.	132.03	234.99			178*		61-115		
Batch number: 182500003A Sample number(s): 9780539,9780553,9780555,9780561,9780570,9780576 UNSPK: 9780576										
>C10-C12 Aliphatic	N.D.	3.88	1.94	3.89	2.02	50	52	31-137	4	50

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
>C10-C12 Aromatic	N.D.	3.88	1.95	3.89	2.08	50	53	22-119	6	50
>C12-C16 Aliphatic	4.45	7.75	14.14	7.77	6.76	125	30*	42-146	71*	50
>C12-C16 Aromatic	N.D.	11.62	6.73	11.66	7.15	58	61	24-136	6	50
>C16-C21 Aliphatic	58.25	11.64	69.9	11.67	65.06	100 (2)	58 (2)	57-111	7	50
>C16-C21 Aromatic	11.49	19.4	27.09	19.46	24.99	80	69	34-143	8	50
>C21-C34 Aliphatic	25.56	19.4	44.42	19.45	41.34	97	81	50-124	7	50
>C21-C34 Aromatic	12.09	31.03	38.21	31.12	34.14	84	71	44-134	11	50
Batch number: 182500015A Diesel Range Organics C12-C24	Sample number(s): 9780548-9780551,9780553-9780557 UNSPK: 9780548 N.D. 132.07 100.98 76 61-115									
Batch number: 182500017A Diesel Range Organics C12-C24	Sample number(s): 9780558-9780559,9780561,9780568-9780574 UNSPK: 9780559 N.D. 132.03 99.06 75 61-115									
Batch number: 182500053A Diesel Range Organics C12-C24	Sample number(s): 9780575-9780580 UNSPK: 9780577 150.11 132.37 288.1 104 61-115									
Batch number: 182700031A	Sample number(s): 9780539,9780553,9780555,9780561,9780570,9780576 UNSPK: 9780570									
>C10-C12 Aliphatic	N.D.	3.97	2.67			67		31-137		
>C10-C12 Aromatic	N.D.	3.97	3.99			101		22-119		
>C12-C16 Aliphatic	71.19	7.94	70.2			-11 (2)		42-146		
>C12-C16 Aromatic	1.54	11.9	15			113		24-136		
>C16-C21 Aliphatic	153.42	11.91	145.27			-67 (2)		57-111		
>C16-C21 Aromatic	53.65	19.86	81.43			140		34-143		
>C21-C34 Aliphatic	20.32	19.86	28.25			40*		50-124		
>C21-C34 Aromatic	8.29	31.76	48.09			125		44-134		
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 182471404901 Lead	Sample number(s): 9780531-9780550 UNSPK: 9780531 4.42 12.82 17.21 12.82 18.05 100 106 75-125 5 20									
Batch number: 182471404902 Lead	Sample number(s): 9780551,9780553-9780561,9780568-9780577 UNSPK: 9780551 1.33 14.29 15.4 14.29 15.32 98 98 75-125 1 20									

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 182470023A	Sample number(s): 9780531-9780538 BKG: 9780533			

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Diesel Range Organics C12-C24	N.D.	N.D.	0 (1)	20
Heavy Range Organics C24-C40	13.47	16.27	19 (1)	20
Batch number: 182490010A	Sample number(s): 9780539-9780547,9780560 BKG: 9780544			
Diesel Range Organics C12-C24	N.D.	121.07	200* (1)	20
Heavy Range Organics C24-C40	N.D.	N.D.	0 (1)	20
Batch number: 182500015A	Sample number(s): 9780548-9780551,9780553-9780557 BKG: 9780548			
Diesel Range Organics C12-C24	N.D.	N.D.	0 (1)	20
Heavy Range Organics C24-C40	N.D.	N.D.	0 (1)	20
Batch number: 182500017A	Sample number(s): 9780558-9780559,9780561,9780568-9780574 BKG: 9780559			
Diesel Range Organics C12-C24	N.D.	N.D.	0 (1)	20
Heavy Range Organics C24-C40	N.D.	N.D.	0 (1)	20
Batch number: 182500053A	Sample number(s): 9780575-9780580 BKG: 9780577			
Diesel Range Organics C12-C24	150.11	190.23	24*	20
Heavy Range Organics C24-C40	44.03	29.48	40* (1)	20
Batch number: 182700031A	Sample number(s): 9780539,9780553,9780555,9780561,9780570,9780576 BKG: 9780570			
>C10-C12 Aliphatic	N.D.	N.D.	0 (1)	25
>C10-C12 Aromatic	N.D.	N.D.	0 (1)	25
>C12-C16 Aliphatic	71.19	77.27	8	25
>C12-C16 Aromatic	1.54	1.75	13 (1)	25
>C16-C21 Aliphatic	153.42	164.87	7	25
>C16-C21 Aromatic	53.65	61.72	14	25
>C21-C34 Aliphatic	20.32	18.13	11 (1)	25
>C21-C34 Aromatic	8.29	12.41	40* (1)	25
	mg/kg	mg/kg		
Batch number: 182471404901	Sample number(s): 9780531-9780550 BKG: 9780531			
Lead	4.42	7.72	54* (1)	20
Batch number: 182471404902	Sample number(s): 9780551,9780553-9780561,9780568-9780577 BKG: 9780551			
Lead	1.33	1.78	28* (1)	20
	%	%		
Batch number: 18243820004B	Sample number(s): 9780571-9780580 BKG: 9780573			
Moisture	7.72	8.09	5	5
Batch number: 18247820004A	Sample number(s): 9780531-9780540 BKG: 9780534			
Moisture	10.45	10.8	3	5
Batch number: 18247820004B	Sample number(s): 9780541-9780545,9780547-9780550 BKG: 9780546			
Moisture	8.23	6.95	17*	5

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Laboratory Duplicate (continued)

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc %	DUP Conc %	DUP RPD	DUP RPD Max
Batch number: 18248820002A	Sample number(s): 9780546 BKG: 9780546			
Moisture	6.56	7.14	8*	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: A182492AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9780531	106	110	101	87
9780532	106	111	103	89
9780533	106	111	99	91
9780534	105	111	102	90
9780535	107	108	98	91
9780536	106	111	95	93
9780560	106	109	98	92
Blank	104	109	97	93
LCS	103	102	103	99
LCSD	102	107	101	101

Limits: 50-141 54-135 52-141 50-131

Analysis Name: BTEX 8260 Soil
Batch number: A182493AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9780537	106	109	96	92
9780538	106	109	97	91
9780541	105	108	97	94
9780542	107	107	96	93
9780543	108	109	95	93
Blank	102	106	98	94
LCS	101	97	102	98
LCSD	101	99	102	99

Limits: 50-141 54-135 52-141 50-131

Analysis Name: BTEX 8260 Soil
Batch number: A182501AA

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: A182501AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9780544	105	107	97	93
9780545	106	102	97	86
9780546	108	112	96	93
9780547	108	109	98	93
9780548	103	103	98	101
9780549	107	104	96	91
9780550	106	106	95	92
9780551	108	108	97	92
9780554	104	103	98	92
9780556	106	107	97	92
9780557	107	109	97	92
9780559	104	108	97	99
9780568	109	108	102	92
9780569	106	107	97	93
9780570	108	109	102	87
9780573	103	108	98	95
9780575	101	103	98	94
9780576	105	107	101	87
9780577	104	104	103	86
9780578	104	106	97	93
Blank	106	106	98	92
LCS	101	102	102	100
LCSD	102	103	102	100
MS	103	105	107	93
MSD	103	105	105	93
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260 Soil
Batch number: A182521AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9780539	102	105	100	99
9780540	100	107	100	99
9780579	106	109	96	93
9780580	105	109	96	92
Blank	105	106	98	94
LCS	101	102	102	100
LCSD	102	105	101	100
MS	101	106	102	98
MSD	100	102	103	98

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: A182521AA

Limits: 50-141 54-135 52-141 50-131

Analysis Name: BTEX 8260 Soil
Batch number: A182541AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9780571	104	113	96	94
9780572	95	102	131	129
Blank	110	107	96	93
LCS	105	102	100	103
LCSD	103	104	100	102

Limits: 50-141 54-135 52-141 50-131

Analysis Name: HVOCs + BTEX
Batch number: Q182521AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9780553	90	94	92	92
9780555	95	97	94	97
9780558	87	91	88	89
9780561	82	83	88	86
9780574	93	96	92	93
Blank	96	99	96	91
LCS	102	99	97	94
LCSD	98	100	97	95

Limits: 50-141 54-135 52-141 50-131

Analysis Name: BTEX 8260C
Batch number: Z182472AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9780552	103	102	102	93
9780562	101	101	102	93
Blank	101	103	103	95
LCS	98	103	103	98

Limits: 80-120 80-120 80-120 80-120

Analysis Name: BTEX 8260C
Batch number: Z182502AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9780563	101	101	103	94
9780564	100	103	102	92

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260C
Batch number: Z182502AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9780565	103	103	102	94
9780566	103	103	102	93
Blank	102	104	102	95
LCS	98	105	104	100
Limits:	80-120	80-120	80-120	80-120

Analysis Name: Naphthalene 8270D
Batch number: 18248SLA026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
9780531	89	93	100
9780532	102	97	101
9780533	95	89	97
9780534	88	87	96
9780560	90	93	100
Blank	115	95	109
LCS	88	95	104
Limits:	49-118	57-116	55-118

Analysis Name: Naphthalene 8270D
Batch number: 18249SLA026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
9780535	79	92	86
9780536	84	92	88
9780537	80	93	89
9780538	80	97	87
9780540	83	95	89
9780541	88	97	94
9780542	81	90	91
9780543	75	87	82
9780544	78	91	87
9780545	87	95	93
9780546	77	86	87
9780547	79	94	86
9780548	80	86	89
9780549	84	91	93
9780550	80	90	86
9780551	70	93	85
9780553	90	73	83
9780554	74	92	85
9780556	70	98	88

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Naphthalene 8270D
Batch number: 18249SLA026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
9780557	66	83	79
Blank	85	100	93
LCS	88	96	92
MS	87	92	89
MSD	86	92	92
Limits:	49-118	57-116	55-118

Analysis Name: SIM SVOAs 8270D (microwave)
Batch number: 18250SLA026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
9780539	83	76	85
9780555	76	71	79
9780561	79	76	85
Blank	70	65	73
LCS	89	81	91
Limits:	54-122	54-122	61-111

Analysis Name: Naphthalene 8270D
Batch number: 18250SLB026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
9780558	74	80	86
9780559	79	94	94
9780568	77	100	96
9780569	80	99	104
9780570	160*	102	122*
9780571	77	91	96
9780572	88	110	100
9780573	74	90	92
9780574	90	96	105
9780575	80	91	94
9780576	86	89	97
9780577	83	87	92
9780578	79	92	97
9780579	76	86	93
9780580	80	92	95
Blank	85	104	105
LCS	82	97	98
MS	79	95	95
MSD	80	92	97

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Naphthalene 8270D
Batch number: 18250SLB026

Limits: 49-118 57-116 55-118

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 18247A31A

	Trifluorotoluene-F
9780531	108
9780532	90
9780533	98
9780534	83
9780535	96
9780536	105
9780537	95
9780538	89
9780539	81
9780540	85
9780541	99
9780542	89
9780543	96
9780544	90
9780545	102
9780546	88
9780547	82
9780556	88
9780557	93
9780560	100
Blank	98
LCS	103
LCSD	104

Limits: 50-150

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 18247D34A

	Trifluorotoluene-F
9780548	100
9780549	94
9780550	86
9780551	97
9780554	89
9780555	124
9780559	90
9780568	109

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-GX Soil C7-C12

Batch number: 18247D34A

	Trifluorotoluene-F
9780569	97
9780570	98
9780571	112
9780572	93
9780573	88
9780575	103
9780576	110
9780577	96
Blank	97
LCS	101
LCSD	100

Limits: 50-150

Analysis Name: NWTPH-GX Soil C7-C12

Batch number: 18248A34A

	Trifluorotoluene-F
9780553	97
9780558	115
9780561	70
9780574	103
9780578	108
9780579	100
9780580	91
Blank	94
LCS	101
LCSD	98

Limits: 50-150

Analysis Name: NWTPH-Gx water C7-C12

Batch number: 18249A53A

	Trifluorotoluene-F
9780563	87
9780564	87
9780565	87
9780566	87
Blank	88
LCS	97
LCSD	97

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 18249A53A

Limits: 50-150

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 18253A20A

Trifluorotoluene-F

9780552	88
9780562	82
Blank	89
LCS	102
LCS D	102

Limits: 50-150

Analysis Name: PCBs 8082A/3546
Batch number: 182480026A

	Tetrachloro-m-xylene-D1	Decachlorobiphenyl-D1	Tetrachloro-m-xylene-D2	Decachlorobiphenyl-D2
9780553	70	97	98	110
9780558	74	102	102	111
9780570	70	104	100	102
9780576	73	95	97	102
Blank	108	100	109	93
LCS	99	102	104	94
MS	77	95	101	105
MSD	74	97	98	103

Limits: 53-140 45-143 53-140 45-143

Analysis Name: NWTPH-Dx soil
Batch number: 182470023A

Orthoterphenyl

9780531	97
9780532	95
9780533	98
9780534	89
9780535	93
9780536	102
9780537	96
9780538	95
Blank	94
DUP	100
LCS	95
MS	103

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Dx soil
Batch number: 182470023A

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 182490010A

	Orthoterphenyl
9780539	84
9780540	90
9780541	87
9780542	88
9780543	84
9780544	85
9780545	89
9780546	85
9780547	87
9780560	91
Blank	87
DUP	86
LCS	90
MS	91

Limits: 50-150

Analysis Name: WA EPH in Soil
Batch number: 182500003A

	Orthoterphenyl	1-chlorooctadecane
9780539	74	50
9780553	64	36
9780555	80	58
9780561	75	52
9780570	49	36
9780576	66	37
Blank	72	52
LCS	61	49
LCSD	62	45
MS	60	35
MSD	43	33

Limits: 42-115 33-122

Analysis Name: NWTPH-Dx soil
Batch number: 182500015A

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Dx soil
Batch number: 182500015A

	Orthoterphenyl
9780548	106
9780549	104
9780550	99
9780551	105
9780553	77
9780554	96
9780555	106
9780556	102
9780557	102
Blank	105
DUP	102
LCS	104
MS	106

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 182500017A

	Orthoterphenyl
9780558	75
9780559	105
9780561	99
9780568	100
9780569	95
9780570	88
9780571	103
9780572	102
9780573	101
9780574	58
Blank	105
DUP	105
LCS	112
MS	104

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 182500053A

	Orthoterphenyl
9780575	106
9780576	98
9780577	97

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/08/2018 18:37

Group Number: 1982153

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Dx soil
Batch number: 182500053A

	Orthoterphenyl
9780578	103
9780579	106
9780580	103
Blank	103
DUP	91
LCS	105
MS	93

Limits: 50-150

Analysis Name: WA- VPH soils
Batch number: 18253A08A

	Trifluorotoluene-P	Trifluorotoluene-F
9780539	79	80
9780553	94	94
9780555	107	121
9780561	107	122
9780570	91	94
9780576	93	94
Blank	83	85
LCS	93	94
LCSD	93	94

Limits: 60-140 60-140

Analysis Name: WA EPH in Soil
Batch number: 182700031A

	Orthoterphenyl	1-chlorooctadecane
9780539RE	89	64
9780553RE	74	61
9780555RE	97	63
9780561RE	107	58
9780570RE	79	48
9780576RE	95	52
Blank	93	44
DUP	83	54
LCS	111	56
MS	78	49

Limits: 42-115 33-122

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

Acct. # 13271

For Eurofins Lancaster Laboratories Environmental use only
 Group # 1982153 Sample # 9780331-80
 Instructions on reverse side correspond with circled numbers.

1 Client Information			4 Matrix			5 Analyses Requested					
Facility # <u>204117</u> WBS <u>PO10215249</u>			Sediment <input type="checkbox"/> Ground <input type="checkbox"/> Surface <input type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Air <input type="checkbox"/> Oil <input type="checkbox"/>	Water	Total Number of Containers	<input type="checkbox"/> BTEX + MTBE 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphth <input type="checkbox"/> 8260 full scan Oxygenates NWTPH-Gx NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/> NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/> WA VPH <input checked="" type="checkbox"/> WA EPH <input checked="" type="checkbox"/> 97-602WA Lead Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method Naphthalenes EPA 8270 MTBE, EPB, EOL, n-hexane SWCS CPAHs 8270 SIM					
Site Address <u>2021 6th Street, Burmerton, WA</u>											
Chevron PM <u>Eric Hetrick</u> Lead Consultant <u>Leidos</u>											
Consultant/Office <u>Leidos / Bothell, WA</u>											
Consultant Project Mgr. <u>Russ Shropshire</u>											
Consultant Phone # <u>425-482-3323</u>											
Sampler <u>Ruth Otteman</u>			3								

SCR #: 229929

- Results in Dry Weight
- J value reporting needed
- Must meet lowest detection limits possible for 8260 compounds
 - 8021 MTBE Confirmation
 - Confirm MTBE + Naphthalene
 - Confirm highest hit by 8260
 - Confirm all hits by 8260
 - Run ____ oxy's on highest hit
 - Run ____ oxy's on all hits

Sample Identification	Collected		Grab	Composite	Soil	Water	Oil	Total Number of Containers	BTEX + MTBE 8021	8260 full scan	Oxygenates	NWTPH-Gx	NWTPH-Dx with Silica Gel Cleanup	NWTPH-Dx without Silica Gel Cleanup	WA VPH	WA EPH	Lead	Diss.	Method	
	Date	Time																		
SB-4-6.0-S-082318	8/23/18	1455	X		X			7												
SB-1-6.0-S-082318		1130	X		X			7												
SB-7-6.0-S-082318		1220	X		X			7												
SB-2-6.0-S-082418	8/24/18	1100	X		X			7												
SB-6-2.0-S-082418		0850	X		X			7												
SB-6-2.0-S-082418		0930	X		X			7												
SB-1-12.0-S-082718	8/27/18	1010	X		X			7												
SB-1-51.0-S-082718	8/27/18	1130	X		X			7												
SB-7-10.0-S-082718		1530	X		X			14												
SB-7-14.0-S-082718		1545	X		X			7												
SB-7-22.0-S-082718		1615	X		X			7												
SB-7-28.0-S-082718		1630	X		X			7												
SB-3-10.0-S-082818	8/28/18	1120	X		X			7												

6 Remarks

Bill to
Leidos Inc.
PO10215249

7 Turnaround Time Requested (TAT) (please circle) <input checked="" type="checkbox"/> Standard 5 day 4 day 72 hour 48 hour 24 hour	Relinquished by <u>Chelsea West</u>	Date <u>8-16-18</u>	Time <u>15:39</u>	Received by <u>[Signature]</u>	Date	Time	
	Relinquished by <u>Ruth Ott</u>	Date <u>8/29/18</u>	Time <u>1600</u>	Received by <u>[Signature]</u>	Date	Time	
8 Data Package (circle if required) <input checked="" type="checkbox"/> Type I - Full Type VI (Raw Data)	EDD (circle if required) CVX-RTBU-FI_05 (default) Other: _____	Relinquished by Commercial Carrier: UPS <u>ROX</u> FedEx _____ Other _____			Received by <u>[Signature]</u>	Date <u>8/30/18</u>	Time <u>940</u>
		Temperature Upon Receipt <u>14-5.8 °C</u>			Custody Seals Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

Acct. # 13271

For Eurofins Lancaster Laboratories Environmental use only
 Group # 1982153 Sample # 9780531-80
 Instructions on reverse side correspond with circled numbers.

1 Client Information				4 Matrix				5 Analyses Requested										6 Remarks			
Facility # <u>204177</u>		WBS <u>P010215249</u>		<input type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Oil <input type="checkbox"/> Air	<input type="checkbox"/> Ground <input type="checkbox"/> Surface	<input type="checkbox"/> Total Number of Containers	BTEX <input type="checkbox"/> MTBE <input type="checkbox"/> 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphth 8260 full scan <u>HVOCs by 8260B</u> Oxygenates NWTPH-Gx NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/> NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/> WA VPH <input checked="" type="checkbox"/> WA EPH <input checked="" type="checkbox"/> Lead <input checked="" type="checkbox"/> Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>6000B</u> Naphthalenes EPA 8270 MTBE, EDB, EDC, n-hexane 8260B C-PATHs 8270 SIM PCBs EPA 8082										SCR #: _____				
Site Address <u>2021 6th Street, Burmerton, WA</u>							Grab <input type="checkbox"/> Composite <input type="checkbox"/>		Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits <input type="checkbox"/>												
Chevron PM <u>Eric Hetrick</u>		Lead Consultant <u>Leidos Inc.</u>																			
Consultant/Office <u>Leidos / Bothell, WA</u>																					
Consultant Project Mgr. <u>Russ Shropshire</u>																					
Consultant Phone # <u>425-482-3323</u>																					
Sampler <u>R. Otteman and B. Govoni</u>																					
2 Sample Identification		Collected																			
Date	Time	Grab	Composite																		
<u>SB-3-12.0-S-082818</u>	<u>8/28/18</u>	<u>1145</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																	Bill to Leidos Inc P010215249
<u>SB-3-16.0-S-082818</u>		<u>1215</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																	
<u>SB-3-24.0-S-082818</u>		<u>1225</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																	
<u>UST-1-4.0-S-082818</u>		<u>1155</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																	
<u>UST-1-8.0-S-082818</u>		<u>1430</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																	
<u>SB-2-11.0-S-082818</u>		<u>1410</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																	
<u>SB-2-15.0-S-082818</u>		<u>1440</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																	
<u>SB-2-20.0-S-082818</u>		<u>1450</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																	
<u>SB-2-8.0-S-082818</u>		<u>1355</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>																	
						<u>Auto ch</u>															
						<u>8/28/18</u>															
7 Turnaround Time Requested (TAT) (please circle)				Relinquished by		Date	Time	Received by		Date	Time										
Standard <input checked="" type="radio"/> 5 day 4 day 72 hour 48 hour 24 hour				<u>Auto ch</u>		<u>8/29/18</u>	<u>1600</u>														
8 Data Package (circle if required)				Relinquished by Commercial Carrier:		Received by		Date	Time												
Type I - Full <input checked="" type="radio"/> Type VI (Raw Data)				UPS <input checked="" type="checkbox"/> FedEx _____ Other _____		<u>[Signature]</u>		<u>8/30/18</u>	<u>940</u>												
EDD (circle if required)				CVX-RTBU-FI_05 (default)		Temperature Upon Receipt <u>14-5.5°C</u>		Custody Seals Intact? <input checked="" type="checkbox"/> Yes													

Chevron Northwest Region Analysis Request/Chain of Custody



**Lancaster Laboratories
Environmental**

Acct. # 13271

For Eurofins Lancaster Laboratories Environmental use only
Group # 1982153 Sample # 9780531-80
Instructions on reverse side correspond with circled numbers.

1 Client Information		4 Matrix		5 Analyses Requested					
Facility # <u>204117</u> WBS <u>PO10215249</u>		Sediment <input type="checkbox"/> Ground <input type="checkbox"/> Surface <input type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Air <input type="checkbox"/> Oil <input type="checkbox"/>	Water <input type="checkbox"/> Total Number of Containers	BTEX+MTBE 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphth <input type="checkbox"/>				Total Lead <input checked="" type="checkbox"/> Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>CO10B</u>	Naphthalenes EPA 8270 MTBE, EDB, EDC, n-hexane 8260R CPAHS 8270 SEM PCBs EPA 8082
Site Address <u>2021 6th Street, Bremerton, WA</u>				e260 full scan <u>AUOCs by 8260B</u>					
Chevron PM <u>Eric Hetrick</u> Lead Consultant <u>Leidos Inc</u>				Oxygenates					
Consultant/Office <u>Leidos / Bothell, WA</u>				NWTPH-Gx					
Consultant Project Mgr. <u>Russ Shropshire</u>				NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/>					
Consultant Phone # <u>425-482-3323</u>				NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/>					
Sampler <u>R. Ottoman and B. Gouni</u>		Soil <input type="checkbox"/> Composite <input type="checkbox"/>		WA VPH <input checked="" type="checkbox"/> WA EPH <input checked="" type="checkbox"/>		Lead <input checked="" type="checkbox"/> Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>CO10B</u>			

SCR #: _____

- Results in Dry Weight
- J value reporting needed
- Must meet lowest detection limits possible for 8260 compounds
- 8021 MTBE Confirmation
- Confirm MTBE + Naphthalene
- Confirm highest hit by 8260
- Confirm all hits by 8260
- Run _____ oxy's on highest hit
- Run _____ oxy's on all hits

2 Sample Identification		Collected		3 Grab	Composite	Soil	Water	Oil	Total Number of Containers	BTEX+MTBE	8021	8260	Naphth	e260 full scan	Oxygenates	NWTPH-Gx	NWTPH-Dx with Silica Gel Cleanup	NWTPH-Dx without Silica Gel Cleanup	WA VPH	WA EPH	Lead	Total	Diss.	Method	
Date	Time	Date	Time																						
<u>EP-1-082818</u>	<u>8/28/18</u>	<u>1520</u>	<input checked="" type="checkbox"/>						<u>6</u>																
<u>UST-2-8.0-5-082818</u>		<u>1600</u>	<input checked="" type="checkbox"/>						<u>14</u>																
<u>SB-5-12.0-5-082818</u>		<u>1640</u>	<input checked="" type="checkbox"/>						<u>7</u>																
<u>SB-5-17.5-5-082818</u>		<u>1720</u>	<input checked="" type="checkbox"/>						<u>14</u>																
<u>RO SB-5-24.0-5-082818</u>		<u>1725</u>	<input checked="" type="checkbox"/>						<u>7</u>																
<u>SB-1-14.0-5-082718</u>	<u>8/27/18</u>	<u>1020</u>	<input checked="" type="checkbox"/>						<u>7</u>																
<u>SB-1-16.0-5-082718</u>		<u>1040</u>	<input checked="" type="checkbox"/>						<u>7</u>																
<u>DUP-1-082818</u>	<u>8/28/18</u>	<u>1620</u>	<input checked="" type="checkbox"/>						<u>7</u>																
<u>SB-5-24.0-5-082818</u>	<u>8/28/18</u>	<u>1735</u>	<input checked="" type="checkbox"/>						<u>7</u>																
<u>SB-5-6.0-5-082318</u>	<u>8/23/18</u>	<u>1657</u>	<input checked="" type="checkbox"/>						<u>7</u>																
<u>SB-5-14.0-5-082818</u>	<u>8/29/18</u>	<u>1650</u>	<input checked="" type="checkbox"/>						<u>14</u>																

6 Remarks

Bill to Leidos
PO10215249

7 Turnaround Time Requested (TAT) (please circle)

<input checked="" type="radio"/> Standard	5 day	4 day
<input type="radio"/> 72 hour	48 hour	24 hour

Relinquished by <u>Muth dk</u>	Date <u>8/29/18</u>	Time <u>1600</u>	Received by <u>[Signature]</u>	Date	Time
Relinquished by	Date	Time	Received by	Date	Time

8 Data Package (circle if required)

<input checked="" type="radio"/> Type I - Full	<input type="radio"/> EDD (circle if required)
Type VI (Raw Data)	CVX-RTBU-FI_05 (default)
	Other: _____

Relinquished by Commercial Carrier:	Date	Time	Received by	Date	Time
UPS <input checked="" type="checkbox"/> FedEx _____ Other _____			<u>[Signature]</u>	<u>8/30/18</u>	<u>140</u>
Temperature Upon Receipt <u>4-5.8°C</u>	Custody Seals Intact?		<input checked="" type="radio"/> Yes	<input type="radio"/> No	

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

Acct. # 13271 For Eurofins Lancaster Laboratories Environmental use only
 Group # 1952153 Sample # 918053180
Instructions on reverse side correspond with circled numbers.

1 Client Information				4 Matrix			5 Analyses Requested										6 Remarks			
Facility # <u>204177</u> WBS PO10215249 Site Address <u>2021 6th Street, Bremerton, WA</u> Chevron PM <u>Eric Hatrick</u> Lead Consultant Leidos Consultant/Office <u>Leidos / Bothell, WA</u> Consultant Project Mgr. <u>Russ Sharpshire</u> Consultant Phone # <u>425-482-3328</u>				<input type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> Ground <input type="checkbox"/> NPDES <input type="checkbox"/> Surface <input type="checkbox"/> Oil <input type="checkbox"/> Air			Total Number of Containers BTEX + MTBE 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphth <input type="checkbox"/> 8260 full scan <u>HVOCs 8260B</u> Oxygenates <u>PCBs EPA 808</u> NWTPH-Gx NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/> NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/> WA VPH <input checked="" type="checkbox"/> WA EPH <input checked="" type="checkbox"/> Lead Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>6010B</u> Naphthalenes <u>EPA 8270</u> MTBE, EDB, EPC, N-hexane <u>8260B</u> cPATS <u>8270 SEM</u> hold										SCR #: _____ <input type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits			
2 Sample Identification Collected Date Time TB-1-082918 8/31/18 0900 TB-2-082918 1240 TB-3-082918 1250 TB-4-082918 1300 TB-5-082918 1305 UST-1-4.0-S-082918 8/28/18 1155 SB-8-2.0-S-082918 9/29/18 0920 SB-5-30.0-S-082918 0930 UST-3-8.0-S-082918 1025 SB-4-12.0-S-082918 1120 DUP-2-082918 1130 SB-4-14.0-S-082918 1140 UST-4-8.0-S-082918 1145				3 Composite <input type="checkbox"/> Grab <input checked="" type="checkbox"/> Composite													B.Y. to Leidos Inc. PO10215249			
7 Turnaround Time Requested (TAT) (please circle) Standard 5 day 4 day 72 hour 48 hour 24 hour				Relinquished by <u>Mitchell</u> Date <u>8/29/18</u> Time <u>1600</u>			Received by _____ Date _____ Time _____										Date _____ Time _____			
8 Data Package (circle if required) Type I - Full Type VI (Raw Data)				EDD (circle if required) CVX-RTBU-FI_05 (default) Other: _____			Relinquished by Commercial Carrier: UPS <input checked="" type="checkbox"/> FedEx _____ Other _____ Temperature Upon Receipt <u>14-5.8 °C</u>										Received by <u>[Signature]</u> Date <u>8/31/18</u> Time <u>940</u>		Custody Seals Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

Acct. # 13271

For Eurofins Lancaster Laboratories Environmental use only
 Group # 1982153 Sample # 9780531-80
Instructions on reverse side correspond with circled numbers.

1 Client Information				4 Matrix				5 Analyses Requested										6 Remarks	
Facility # <u>204177</u>		WBS <u>PO10215249</u>		<input type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Oil <input type="checkbox"/> Air		<input type="checkbox"/> Ground <input type="checkbox"/> Surface		Total Number of Containers BTEX + MTBE 8021 <input type="checkbox"/> Naphth <input type="checkbox"/> 8260 full-screen <input checked="" type="checkbox"/> <u>HVOCs by 8260B</u> Oxygenates NWTPH-Gx NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/> NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/> WA VPH <input checked="" type="checkbox"/> WA EPH <input checked="" type="checkbox"/> <u>97-603 WA</u> Lead Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>6010B</u> <u>Naphthalenes EPA 8270</u> <u>MTBE, EPX, EOX, n-heptane 8260B</u> <u>CPAHs 8270-GM</u> <u>PCBs EPA 8082</u>										SCR #: _____	
Site Address <u>2021 6th Street, Bremerton, WA</u>		Lead Consultant <u>Leidos</u>																	
Chevron PM <u>Eric Hetrick</u>		Consultant/Office <u>Leidos / Bothell, WA</u>																	
Consultant Project Mgr. <u>Russ Shropshire</u>		Consultant Phone # <u>425-482-3323</u>																	
Sampler <u>R. Otteman and B. Gwoni</u>		Collected																	
Sample Identification		Date	Time															Grab	Composite
<u>SB-4-25.0-S-082918</u>		<u>8/29/18</u>	<u>1155</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>UST-5-8.0-S-082918</u>			<u>1325</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>UST-6-8.0-S-082918</u>			<u>1410</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>SB-8-12.0-S-082918</u>			<u>1420</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>SB-8-14.0-S-082918</u>			<u>1425</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>SB-8-25.0-S-082918</u>			<u>1450</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>UST-7-8.0-S-082918</u>			<u>1500</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
7 Turnaround Time Requested (TAT) (please circle)				Relinquished by		Date		Time		Received by		Date		Time					
<input checked="" type="radio"/> Standard 5 day 4 day 72 hour 48 hour 24 hour				<u>Walt dh</u>		<u>8/29/18</u>		<u>1600</u>											
8 Data Package (circle if required)				Relinquished by Commercial Carrier:		Date		Time		Received by		Date		Time					
<input checked="" type="radio"/> Type I - Full Type VI (Raw Data)				<input checked="" type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Other						<u>Walt dh</u>		<u>8/31/18</u>		<u>940</u>					
EDD (circle if required)				Temperature Upon Receipt		Custody Seals Intact?													
<input type="radio"/> Type I - Full <input type="radio"/> Type VI (Raw Data)				<u>14-5.8 °C</u>		<input checked="" type="checkbox"/> Yes													

Lancaster Laboratories Pre-Job Notification Form

Submit to Lancaster coordinator at least 2 days prior to start of sampling (preferably before their weekly Thursday morning meeting).
Contact Lancaster coordinator prior to submission regarding sampling & analysis objectives.

Site Number:	204117	Site Address:	2021 6 th Street, Bremerton, WA
WBS Number:		Chevron PM:	Mark Horne
S.O. Number:	Service Order with Leidos Inc.	Supplier/PM:	Leidos/Russell Shropshire

Matrix	Estimated Total No. of Samples Sent to Lab (including archives)	Estimated Numbers and Types of Lab Analyses (fill in analytical method name, with numbers below it for each matrix)													Requested Rushed TAT (<10 days)
		97-602 NWTPH-Gx (GRO)	97-602 NWTPH-Dx (DRO) and (ORO)	BTEX (8260B)	Naphthalenes (8270)	Total Lead (6010B)	MTBE, EDB, EDC, n-hexane (8260B)	EPH 97-602 WA EPH	VPH 97-602 WA VPH	cPAHs (8270 SIM)	PCBs (8082)	HVOCs (8260B)	EPH 97-602 WA EPH	VPH 97-602 WA VPH	
oil	50	50	50	50	50	50	15	15	15	15	4	4	4	4	STAT
C (Trip)	12	12		12											STAT
Water (equipment rinse)	3	3		3											STAT
DI Water	3	3		3											STAT

Notes:
3 liters of laboratory grade DI water, enough for 3 equipment rinse samples

Dates when samples are expected to arrive at lab (full range of dates, including any Saturday):
Soil samples expected to arrive at lab between August 24 th and September 5 th , 2018.
Special requests (QC data package, raw data, special detection limits, etc.):
Detection limits per at or below attached Table B-1. Level IV data package.
Supplies needed now (sample containers, trip blanks, labels, airbills, custody seals, etc.):
Send sample containers for all parameters, including trip blanks, T-handle syringe (5035 collection method), laboratory distilled water , and air bills by 8/20/2018 . Send equipment to Ruth Otteman, Leidos Inc., 18939 120th Avenue NE, Suite 112, Bothell, WA 98011

8/15/2018



Client: Leidos

Delivery and Receipt Information

Delivery Method: UPS Arrival Timestamp: 08/30/2018 9:40
 Number of Packages: 5 Number of Projects: 1
 State/Province of Origin: WA

Arrival Condition Summary

Shipping Container Sealed:	No	Sample IDs on COC match Containers:	No
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace \geq 6mm:	Yes
Samples Chilled:	Yes	VOA IDs (\geq 6mm):	See Below
Paperwork Enclosed:	Yes	Total Trip Blank Qty:	20
Samples Intact:	Yes	Trip Blank Type:	HCl
Missing Samples:	Yes	Air Quality Samples Present:	No
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

VOA Vial IDs (Headspace \geq 6mm): TB-4: All vials

Unpacked by Wesley Miller (2308) at 20:14 on 08/30/2018

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	2.1	DT	Wet	Y	Bagged	N
2	DT146	1.8	DT	Wet	Y	Bagged	N
3	DT146	3.5	DT	Wet	Y	Bagged	N
4	DT146	5.8	DT	Wet	Y	Bagged	N
5	DT146	1.4	DT	Wet	Y	Bagged	N

Missing Sample Details

<u>Sample ID on COC</u>	<u>Comments</u>
UST-7-8.0-S-082918	

Sample ID Discrepancy Details

<u>Sample ID on COC</u>	<u>Sample ID on Label</u>	<u>Comments</u>
SB-2-15.0-S-082818	SB-2-15.5-S-082818	

General Comments: Cooler #5 received not sealed

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Chevron c/o Leidos, Inc.
6310 Allentown Blvd.
Suite 110
Harrisburg PA 17112

Report Date: October 05, 2018 10:16

Project: 204117

Account #: 13271
Group Number: 1984163
SDG: LDC03
PO Number: P010215249
Release Number: HETRICK
State of Sample Origin: WA

Electronic Copy To Leidos
Electronic Copy To EcoChem

Attn: Russ Shropshire
Attn: Christine Ransom

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

To view our laboratory's current scopes of accreditation please go to <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>. Historical copies may be requested through your project manager.



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
SVP-1-S-10.0-180830 Grab Soil	08/30/2018 10:15	9789519
SVP-1-S-8.0-180830 Grab Soil	08/30/2018 10:05	9789520
UST-8-S-8.0-180829 Grab Soil	08/29/2018 15:45	9789521
UST-7-S-8.0-180829 Grab Soil	08/29/2018 15:00	9789522
SVP-2-S-8.0-180830 Grab Soil	08/30/2018 13:20	9789523
SVP-2-S-10.0-180830 Grab Soil	08/30/2018 13:30	9789524
SVP-3-S-8.0-180830 Grab Soil	08/30/2018 14:45	9789525
SVP-3-S-10.0-180830 Grab Soil	08/30/2018 15:20	9789526
SB-9-S-7.0-180831 Grab Soil	08/31/2018 10:40	9789527
SB-9-S-11.5-180831 Grab Soil	08/31/2018 11:50	9789528
QA-2-O-180831 NA Water	08/31/2018 12:00	9789529
QA-6-T-180831 NA Water	08/31/2018 15:00	9789530

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: SVP-1-S-10.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789519
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 10:15
SDG#: LDC03-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.0006	0.0005	0.83
11995	Bromodichloromethane	75-27-4	N.D.	0.0004	0.83
11995	Bromoform	75-25-2	N.D.	0.005	0.83
11995	Bromomethane	74-83-9	N.D.	0.0007	0.83
11995	Carbon Tetrachloride	56-23-5	N.D.	0.0005	0.83
11995	Chlorobenzene	108-90-7	N.D.	0.0005	0.83
11995	Chloroethane	75-00-3	N.D.	0.001	0.83
11995	Chloroform	67-66-3	N.D.	0.0006	0.83
11995	Chloromethane	74-87-3	N.D.	0.0006	0.83
11995	Dibromochloromethane	124-48-1	N.D.	0.0004	0.83
11995	1,2-Dichlorobenzene	95-50-1	N.D.	0.0005	0.83
11995	1,3-Dichlorobenzene	541-73-1	N.D.	0.0005	0.83
11995	1,4-Dichlorobenzene	106-46-7	N.D.	0.0004	0.83
11995	1,1-Dichloroethane	75-34-3	N.D.	0.0005	0.83
11995	1,2-Dichloroethane	107-06-2	N.D.	0.0006	0.83
11995	1,1-Dichloroethene	75-35-4	N.D.	0.0005	0.83
11995	cis-1,2-Dichloroethene	156-59-2	N.D.	0.0005	0.83
11995	trans-1,2-Dichloroethene	156-60-5	N.D.	0.0005	0.83
11995	1,2-Dichloropropane	78-87-5	N.D.	0.0005	0.83
11995	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.0004	0.83
11995	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.0003	0.83
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.83
11995	Freon 113	76-13-1	N.D.	0.0006	0.83
11995	Methylene Chloride	75-09-2	N.D.	0.002	0.83
11995	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.0004	0.83
11995	Tetrachloroethene	127-18-4	0.0006	0.0005	0.83
11995	Toluene	108-88-3	0.001	0.0006	0.83
11995	1,1,1-Trichloroethane	71-55-6	N.D.	0.0006	0.83
11995	1,1,2-Trichloroethane	79-00-5	N.D.	0.0005	0.83
11995	Trichloroethene	79-01-6	N.D.	0.0005	0.83
11995	Trichlorofluoromethane	75-69-4	N.D.	0.0007	0.83
11995	Vinyl Chloride	75-01-4	N.D.	0.0006	0.83
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.83
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	0.011	0.008	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.3	26.79
PCBs		SW-846 8082A Feb 2007 Rev 1	mg/kg	mg/kg	
10885	PCB-1016	12674-11-2	N.D. D1	0.0045	1
10885	PCB-1221	11104-28-2	N.D. D1	0.0057	1
10885	PCB-1232	11141-16-5	N.D. D1	0.010	1
10885	PCB-1242	53469-21-9	N.D. D1	0.0041	1
10885	PCB-1248	12672-29-6	N.D. D1	0.0041	1

Sample Description: SVP-1-S-10.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789519
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 10:15
SDG#: LDC03-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
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PCBs		SW-846 8082A Feb 2007 Rev 1	mg/kg	mg/kg	
10885	PCB-1254	11097-69-1	N.D. D1	0.0041	1
10885	PCB-1260	11096-82-5	N.D. D1	0.0061	1

GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.8	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1

GC Petroleum Hydrocarbons		ECY 97-602 WA EPH	mg/kg	mg/kg	
05970	>C10-C12 Aliphatic	n.a.	N.D.	1.2	1
05970	>C10-C12 Aromatic	n.a.	N.D.	1.2	1
05970	>C12-C16 Aliphatic	n.a.	N.D.	1.2	1
05970	>C12-C16 Aromatic	n.a.	N.D.	1.2	1
05970	>C16-C21 Aliphatic	n.a.	N.D.	3.7	1
05970	>C16-C21 Aromatic	n.a.	N.D.	2.5	1
05970	>C21-C34 Aliphatic	n.a.	N.D.	7.4	1
05970	>C21-C34 Aromatic	n.a.	N.D.	2.5	1

Trial ID: RE

05970	>C10-C12 Aliphatic	n.a.	N.D.	1.2	1
05970	>C10-C12 Aromatic	n.a.	N.D.	1.2	1
05970	>C12-C16 Aliphatic	n.a.	N.D.	1.2	1
05970	>C12-C16 Aromatic	n.a.	N.D.	1.2	1
05970	>C16-C21 Aliphatic	n.a.	N.D.	3.7	1
05970	>C16-C21 Aromatic	n.a.	N.D.	2.4	1
05970	>C21-C34 Aliphatic	n.a.	N.D.	7.3	1
05970	>C21-C34 Aromatic	n.a.	N.D.	2.4	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. Results are reported from both trials.

GC Petroleum Hydrocarbons		ECY 97-602 WA VPH	mg/kg	mg/kg	
05666	Benzene	71-43-2	N.D.	0.0613	48.41
05666	C5-C6 Aliphatic Hydrocarbons	n.a.	N.D.	3.06	48.41
05666	C6-C8 Aliphatic Hydrocarbons	n.a.	N.D.	3.06	48.41
05666	C8-C10 Aliphatic Hydrocarbons	n.a.	N.D.	3.06	48.41
05666	C8-C10 Aromatic Hydrocarbons	n.a.	N.D.	3.06	48.41
05666	Ethylbenzene	100-41-4	N.D.	0.0613	48.41
05666	Methyl t-butyl ether	1634-04-4	N.D.	0.0613	48.41
05666	Toluene	108-88-3	N.D.	0.0613	48.41
05666	o-Xylene	95-47-6	N.D.	0.0613	48.41
05666	m,p-Xylenes	179601-23-1	N.D.	0.123	48.41

Sample Description: SVP-1-S-10.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789519
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 10:15
SDG#: LDC03-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
Metals			SW-846 6010D Rev.4, July 2014	mg/kg	
06955	Lead	7439-92-1	9.82	0.575	1
Wet Chemistry			SM 2540 G-2011 %Moisture Calc	%	
00111	Moisture	n.a.	21.0	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.
The temperature of the temperature blank bottle(s) upon receipt at the lab was 6.3 C using a digital thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 14.3-19.0 C.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	HVOCs + BTEX	SW-846 8260C	1	A182521AA	09/09/2018 18:29	Stephen C Nolte	0.83
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201825051158	08/30/2018 10:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201825051158	08/30/2018 10:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	3	201825051158	08/30/2018 10:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	4	201825051158	08/30/2018 10:15	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201825051158	08/30/2018 10:15	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	2	201825051158	08/30/2018 10:15	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18251SLD026	09/14/2018 11:58	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18251SLD026	09/11/2018 16:45	Kate E Lutte	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18253B16A	09/11/2018 03:32	Jeremy C Giffin	26.79
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201825051158	08/30/2018 10:15	Client Supplied	n.a.
10885	PCBs 8082A/3546	SW-846 8082A Feb 2007 Rev 1	1	182540003A	09/13/2018 00:48	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	182540003A	09/12/2018 09:00	Michelle A Newswanger	1
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182500053A	09/13/2018 11:54	Thomas C Wildermuth	1

Sample Description: SVP-1-S-10.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789519
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 10:15
SDG#: LDC03-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 12:51	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 13:31	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 15:15	Amy Lehr	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 15:55	Amy Lehr	1
05666	WA- VPH soils	ECY 97-602 WA VPH	1	18253A08A	09/10/2018 22:00	Thomas C Wildermuth	48.41
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182500053A	09/10/2018 16:15	Ryan J Dowdy	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	1	182500003A	09/08/2018 11:20	Sally L Appleyard	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	2	182700031A	09/28/2018 09:00	Michelle A Newswanger	1
00388	GC - Field Preserved (MA-VPH)	MA DEP VPH modified	1	201825151160	08/30/2018 10:15	Client Supplied	1
00497	Silica Gel Fractionation	SW-846 3630C modified	1	182500003A	09/18/2018 08:00	David S Schrum	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182501404903	09/12/2018 08:21	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182501404903	09/10/2018 07:25	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18250820004B	09/07/2018 11:22	Larry E Bevins	1

Sample Description: SVP-1-S-8.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789520
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 10:05
SDG#: LDC03-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.0008	0.0005	0.86
11995	Bromodichloromethane	75-27-4	N.D.	0.0004	0.86
11995	Bromoform	75-25-2	N.D.	0.005	0.86
11995	Bromomethane	74-83-9	N.D.	0.0007	0.86
11995	Carbon Tetrachloride	56-23-5	N.D.	0.0005	0.86
11995	Chlorobenzene	108-90-7	N.D.	0.0005	0.86
11995	Chloroethane	75-00-3	N.D.	0.0009	0.86
11995	Chloroform	67-66-3	N.D.	0.0006	0.86
11995	Chloromethane	74-87-3	N.D.	0.0006	0.86
11995	Dibromochloromethane	124-48-1	N.D.	0.0004	0.86
11995	1,2-Dichlorobenzene	95-50-1	N.D.	0.0005	0.86
11995	1,3-Dichlorobenzene	541-73-1	N.D.	0.0005	0.86
11995	1,4-Dichlorobenzene	106-46-7	N.D.	0.0004	0.86
11995	1,1-Dichloroethane	75-34-3	N.D.	0.0005	0.86
11995	1,2-Dichloroethane	107-06-2	N.D.	0.0006	0.86
11995	1,1-Dichloroethene	75-35-4	N.D.	0.0005	0.86
11995	cis-1,2-Dichloroethene	156-59-2	N.D.	0.0005	0.86
11995	trans-1,2-Dichloroethene	156-60-5	N.D.	0.0005	0.86
11995	1,2-Dichloropropane	78-87-5	N.D.	0.0005	0.86
11995	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.0004	0.86
11995	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.0003	0.86
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.86
11995	Freon 113	76-13-1	N.D.	0.0006	0.86
11995	Methylene Chloride	75-09-2	N.D.	0.002	0.86
11995	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.0004	0.86
11995	Tetrachloroethene	127-18-4	0.0005	0.0005	0.86
11995	Toluene	108-88-3	0.0006	0.0006	0.86
11995	1,1,1-Trichloroethane	71-55-6	N.D.	0.0006	0.86
11995	1,1,2-Trichloroethane	79-00-5	N.D.	0.0005	0.86
11995	Trichloroethene	79-01-6	N.D.	0.0005	0.86
11995	Trichlorofluoromethane	75-69-4	N.D.	0.0007	0.86
11995	Vinyl Chloride	75-01-4	N.D.	0.0006	0.86
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.86
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.3	0.2	23.33
PCBs		SW-846 8082A Feb 2007 Rev 1	mg/kg	mg/kg	
10885	PCB-1016	12674-11-2	N.D. D1	0.020	5
10885	PCB-1221	11104-28-2	N.D. D1	0.025	5
10885	PCB-1232	11141-16-5	N.D. D1	0.043	5
10885	PCB-1242	53469-21-9	N.D. D1	0.018	5
10885	PCB-1248	12672-29-6	N.D. D1	0.018	5

Sample Description: SVP-1-S-8.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789520
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 10:05
SDG#: LDC03-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
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PCBs		SW-846 8082A Feb 2007 Rev 1	mg/kg	mg/kg	
10885	PCB-1254	11097-69-1	N.D. D1	0.018	5
10885	PCB-1260	11096-82-5	N.D. D1	0.027	5

GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	11	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	35	11	1

GC Petroleum Hydrocarbons		ECY 97-602 WA EPH	mg/kg	mg/kg	
05970	>C10-C12 Aliphatic	n.a.	N.D.	1.1	1
05970	>C10-C12 Aromatic	n.a.	N.D.	1.1	1
05970	>C12-C16 Aliphatic	n.a.	N.D.	1.1	1
05970	>C12-C16 Aromatic	n.a.	N.D.	1.1	1
05970	>C16-C21 Aliphatic	n.a.	N.D.	3.2	1
05970	>C16-C21 Aromatic	n.a.	N.D.	2.1	1
05970	>C21-C34 Aliphatic	n.a.	7.1	6.4	1
05970	>C21-C34 Aromatic	n.a.	6.1	2.1	1

Trial ID: RE

05970	>C10-C12 Aliphatic	n.a.	N.D.	1.1	1
05970	>C10-C12 Aromatic	n.a.	N.D.	1.1	1
05970	>C12-C16 Aliphatic	n.a.	N.D.	1.1	1
05970	>C12-C16 Aromatic	n.a.	N.D.	1.1	1
05970	>C16-C21 Aliphatic	n.a.	N.D.	3.2	1
05970	>C16-C21 Aromatic	n.a.	N.D.	2.2	1
05970	>C21-C34 Aliphatic	n.a.	9.7	6.5	1
05970	>C21-C34 Aromatic	n.a.	11	2.2	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. Results are reported from both trials.

GC Petroleum Hydrocarbons		ECY 97-602 WA VPH	mg/kg	mg/kg	
05666	Benzene	71-43-2	N.D.	0.0496	45.46
05666	C5-C6 Aliphatic Hydrocarbons	n.a.	N.D.	2.48	45.46
05666	C6-C8 Aliphatic Hydrocarbons	n.a.	N.D.	2.48	45.46
05666	C8-C10 Aliphatic Hydrocarbons	n.a.	N.D.	2.48	45.46
05666	C8-C10 Aromatic Hydrocarbons	n.a.	N.D.	2.48	45.46
05666	Ethylbenzene	100-41-4	N.D.	0.0496	45.46
05666	Methyl t-butyl ether	1634-04-4	N.D.	0.0496	45.46
05666	Toluene	108-88-3	N.D.	0.0496	45.46
05666	o-Xylene	95-47-6	N.D.	0.0496	45.46
05666	m,p-Xylenes	179601-23-1	N.D.	0.0993	45.46

Sample Description: SVP-1-S-8.0-180830 Grab Soil
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Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789520
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 10:05
SDG#: LDC03-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	41.3	0.478	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.	n.a.	8.4	0.50	1

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.
The temperature of the temperature blank bottle(s) upon receipt at the lab was 6.3 C using a digital thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 14.3-19.0 C.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	HVOCs + BTEX	SW-846 8260C	1	A182521AA	09/09/2018 18:52	Stephen C Nolte	0.86
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201825051158	08/30/2018 10:05	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201825051158	08/30/2018 10:05	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	3	201825051158	08/30/2018 10:05	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	4	201825051158	08/30/2018 10:05	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201825051158	08/30/2018 10:05	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	2	201825051158	08/30/2018 10:05	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18251SLD026	09/14/2018 13:07	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18251SLD026	09/11/2018 16:45	Kate E Lutte	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18253B16A	09/11/2018 04:10	Jeremy C Giffin	23.33
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201825051158	08/30/2018 10:05	Client Supplied	n.a.
10885	PCBs 8082A/3546	SW-846 8082A Feb 2007 Rev 1	1	182540003A	09/13/2018 01:10	Kirby B Turner	5
10497	PCB Microwave Soil Extraction	SW-846 3546	1	182540003A	09/12/2018 09:00	Michelle A Newswanger	1
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182550017A	09/15/2018 00:32	Thomas C Wildermuth	1

Sample Description: SVP-1-S-8.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789520
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 10:05
SDG#: LDC03-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 14:11	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 14:51	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 22:13	Amy Lehr	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 22:54	Amy Lehr	1
05666	WA- VPH soils	ECY 97-602 WA VPH	1	18253A08A	09/10/2018 22:41	Thomas C Wildermuth	45.46
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182550017A	09/12/2018 17:50	Elizabeth E Donovan	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	1	182500003A	09/08/2018 11:20	Sally L Appleyard	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	2	182700031A	09/28/2018 09:00	Michelle A Newswanger	1
00388	GC - Field Preserved (MA-VPH)	MA DEP VPH modified	1	201825151160	08/30/2018 10:05	Client Supplied	1
00497	Silica Gel Fractionation	SW-846 3630C modified	1	182500003A	09/18/2018 08:00	David S Schrum	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182501404903	09/12/2018 09:05	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182501404903	09/10/2018 07:25	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18250820004B	09/07/2018 11:22	Larry E Bevins	1

Sample Description: UST-8-S-8.0-180829 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789521
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/29/2018 15:45
SDG#: LDC03-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.9
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.9
11995	Toluene	108-88-3	0.002	0.0006	0.9
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.9
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.3	26.79
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	60	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	14	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	3.21	0.486	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	7.2	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.
The temperature of the temperature blank bottle(s) upon receipt at the lab was 6.3 C using a digital thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 14.3-19.0 C.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182521AA	09/09/2018 19:14	Stephen C Nolte	0.9
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201825051158	08/29/2018 15:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201825051158	08/29/2018 15:45	Client Supplied	1

Sample Description: UST-8-S-8.0-180829 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789521
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/29/2018 15:45
SDG#: LDC03-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201825051158	08/29/2018 15:45	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18251SLD026	09/14/2018 13:30	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18251SLD026	09/11/2018 16:45	Kate E Lutte	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18253B16A	09/11/2018 04:47	Jeremy C Giffin	26.79
01150	GC - Bulk Soil Prep	SW-846 5030A	1	201825051149	09/07/2018 11:02	Anastasia K Jaynes	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182550017A	09/14/2018 22:13	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182550017A	09/12/2018 17:50	Elizabeth E Donovan	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182501404903	09/12/2018 09:07	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182501404903	09/10/2018 07:25	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18250820004B	09/07/2018 11:22	Larry E Bevins	1

Sample Description: UST-7-S-8.0-180829 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789522
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/29/2018 15:00
SDG#: LDC03-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.81
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.81
11995	Toluene	108-88-3	N.D.	0.0005	0.81
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.81
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	24.06
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	4.1	3.4	1
08272	Heavy Range Organics C24-C40	n.a.	39	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	9.51	0.461	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	10.9	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.
The temperature of the temperature blank bottle(s) upon receipt at the lab was 6.3 C using a digital thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 14.3-19.0 C.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182521AA	09/09/2018 19:37	Stephen C Nolte	0.81
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201825051158	08/29/2018 15:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201825051158	08/29/2018 15:00	Client Supplied	1

Sample Description: UST-7-S-8.0-180829 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789522
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/29/2018 15:00
SDG#: LDC03-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201825051158	08/29/2018 15:00	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18251SLD026	09/14/2018 13:54	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18251SLD026	09/11/2018 16:45	Kate E Lutte	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18253B16A	09/11/2018 05:25	Jeremy C Giffin	24.06
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201825051158	08/29/2018 15:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182550017A	09/15/2018 00:52	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182550017A	09/12/2018 17:50	Elizabeth E Donovan	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182501404903	09/12/2018 09:10	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182501404903	09/10/2018 07:25	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18250820004B	09/07/2018 11:22	Larry E Bevins	1

Sample Description: SVP-2-S-8.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789523
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 13:20
SDG#: LDC03-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.85
11995	Bromodichloromethane	75-27-4	N.D.	0.0004	0.85
11995	Bromoform	75-25-2	N.D.	0.005	0.85
11995	Bromomethane	74-83-9	N.D.	0.0007	0.85
11995	Carbon Tetrachloride	56-23-5	N.D.	0.0005	0.85
11995	Chlorobenzene	108-90-7	N.D.	0.0005	0.85
11995	Chloroethane	75-00-3	N.D.	0.001	0.85
11995	Chloroform	67-66-3	N.D.	0.0006	0.85
11995	Chloromethane	74-87-3	N.D.	0.0006	0.85
11995	Dibromochloromethane	124-48-1	N.D.	0.0004	0.85
11995	1,2-Dichlorobenzene	95-50-1	N.D.	0.0005	0.85
11995	1,3-Dichlorobenzene	541-73-1	N.D.	0.0005	0.85
11995	1,4-Dichlorobenzene	106-46-7	N.D.	0.0004	0.85
11995	1,1-Dichloroethane	75-34-3	N.D.	0.0005	0.85
11995	1,2-Dichloroethane	107-06-2	N.D.	0.0006	0.85
11995	1,1-Dichloroethene	75-35-4	N.D.	0.0005	0.85
11995	cis-1,2-Dichloroethene	156-59-2	N.D.	0.0005	0.85
11995	trans-1,2-Dichloroethene	156-60-5	N.D.	0.0005	0.85
11995	1,2-Dichloropropane	78-87-5	N.D.	0.0005	0.85
11995	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.0004	0.85
11995	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.0003	0.85
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.85
11995	Freon 113	76-13-1	N.D.	0.0006	0.85
11995	Methylene Chloride	75-09-2	N.D.	0.002	0.85
11995	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.0004	0.85
11995	Tetrachloroethene	127-18-4	N.D.	0.0005	0.85
11995	Toluene	108-88-3	0.0007	0.0006	0.85
11995	1,1,1-Trichloroethane	71-55-6	N.D.	0.0006	0.85
11995	1,1,2-Trichloroethane	79-00-5	N.D.	0.0005	0.85
11995	Trichloroethene	79-01-6	N.D.	0.0005	0.85
11995	Trichlorofluoromethane	75-69-4	N.D.	0.0007	0.85
11995	Vinyl Chloride	75-01-4	N.D.	0.0006	0.85
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.85
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	0.017	0.008	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.4	0.3	26.59
PCBs		SW-846 8082A Feb 2007 Rev 1	mg/kg	mg/kg	
10885	PCB-1016	12674-11-2	N.D. D1	0.0044	1
10885	PCB-1221	11104-28-2	N.D. D1	0.0057	1
10885	PCB-1232	11141-16-5	N.D. D1	0.0099	1
10885	PCB-1242	53469-21-9	N.D. D1	0.0041	1
10885	PCB-1248	12672-29-6	N.D. D1	0.0041	1

Sample Description: SVP-2-S-8.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789523
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 13:20
SDG#: LDC03-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
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PCBs		SW-846 8082A Feb 2007 Rev 1	mg/kg	mg/kg	
10885	PCB-1254	11097-69-1	N.D. D1	0.0041	1
10885	PCB-1260	11096-82-5	N.D. D1	0.0061	1

GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.7	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	12	1

GC Petroleum Hydrocarbons		ECY 97-602 WA EPH	mg/kg	mg/kg	
05970	>C10-C12 Aliphatic	n.a.	N.D.	1.2	1
05970	>C10-C12 Aromatic	n.a.	N.D.	1.2	1
05970	>C12-C16 Aliphatic	n.a.	N.D.	1.2	1
05970	>C12-C16 Aromatic	n.a.	N.D.	1.2	1
05970	>C16-C21 Aliphatic	n.a.	N.D.	3.6	1
05970	>C16-C21 Aromatic	n.a.	N.D.	2.4	1
05970	>C21-C34 Aliphatic	n.a.	N.D.	7.2	1
05970	>C21-C34 Aromatic	n.a.	N.D.	2.4	1

Trial ID: RE

05970	>C10-C12 Aliphatic	n.a.	N.D.	1.2	1
05970	>C10-C12 Aromatic	n.a.	N.D.	1.2	1
05970	>C12-C16 Aliphatic	n.a.	N.D.	1.2	1
05970	>C12-C16 Aromatic	n.a.	N.D.	1.2	1
05970	>C16-C21 Aliphatic	n.a.	N.D.	3.7	1
05970	>C16-C21 Aromatic	n.a.	N.D.	2.5	1
05970	>C21-C34 Aliphatic	n.a.	N.D.	7.4	1
05970	>C21-C34 Aromatic	n.a.	N.D.	2.5	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following action was taken:

The sample was re-extracted outside the method required holding time and the QC is compliant. Results are reported from both trials.

GC Petroleum Hydrocarbons		ECY 97-602 WA VPH	mg/kg	mg/kg	
05666	Benzene	71-43-2	N.D.	0.0770	61.94
05666	C5-C6 Aliphatic Hydrocarbons	n.a.	N.D.	3.85	61.94
05666	C6-C8 Aliphatic Hydrocarbons	n.a.	N.D.	3.85	61.94
05666	C8-C10 Aliphatic Hydrocarbons	n.a.	N.D.	3.85	61.94
05666	C8-C10 Aromatic Hydrocarbons	n.a.	N.D.	3.85	61.94
05666	Ethylbenzene	100-41-4	N.D.	0.0770	61.94
05666	Methyl t-butyl ether	1634-04-4	N.D.	0.0770	61.94
05666	Toluene	108-88-3	N.D.	0.0770	61.94
05666	o-Xylene	95-47-6	N.D.	0.0770	61.94
05666	m,p-Xylenes	179601-23-1	N.D.	0.154	61.94

Sample Description: SVP-2-S-8.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789523
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 13:20
SDG#: LDC03-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
Metals			SW-846 6010D Rev.4, July 2014	mg/kg	
06955	Lead	7439-92-1	11.8	0.526	1
Wet Chemistry			SM 2540 G-2011 %Moisture Calc	%	
00111	Moisture	n.a.	19.6	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.
The temperature of the temperature blank bottle(s) upon receipt at the lab was 6.3 C using a digital thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 14.3-19.0 C.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	HVOCs + BTEX	SW-846 8260C	1	A182521AA	09/09/2018 20:00	Stephen C Nolte	0.85
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201825051158	08/30/2018 13:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201825051158	08/30/2018 13:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	3	201825051158	08/30/2018 13:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	4	201825051158	08/30/2018 13:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201825051158	08/30/2018 13:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	2	201825051158	08/30/2018 13:20	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18251SLD026	09/14/2018 14:17	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18251SLD026	09/11/2018 16:45	Kate E Lutte	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18253B16A	09/11/2018 06:03	Jeremy C Giffin	26.59
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201825051158	08/30/2018 13:20	Client Supplied	n.a.
10885	PCBs 8082A/3546	SW-846 8082A Feb 2007 Rev 1	1	182540003A	09/13/2018 01:22	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	182540003A	09/12/2018 09:00	Michelle A Newswanger	1
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182550017A	09/14/2018 22:33	Thomas C Wildermuth	1

Sample Description: SVP-2-S-8.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789523
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 13:20
SDG#: LDC03-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 15:32	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 16:12	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 17:57	Amy Lehr	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 19:52	Amy Lehr	1
05666	WA- VPH soils	ECY 97-602 WA VPH	1	18253A08A	09/10/2018 23:23	Thomas C Wildermuth	61.94
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182550017A	09/12/2018 17:50	Elizabeth E Donovan	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	1	182500003A	09/08/2018 11:20	Sally L Appleyard	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	2	182700031A	09/28/2018 09:00	Michelle A Newswanger	1
00388	GC - Field Preserved (MA-VPH)	MA DEP VPH modified	1	201825151160	08/30/2018 13:20	Client Supplied	1
00497	Silica Gel Fractionation	SW-846 3630C modified	1	182500003A	09/18/2018 08:00	David S Schrum	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182501404903	09/12/2018 09:18	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182501404903	09/10/2018 07:25	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18250820004B	09/07/2018 11:22	Larry E Bevins	1

Sample Description: SVP-2-S-10.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789524
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 13:30
SDG#: LDC03-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.8
11995	Bromodichloromethane	75-27-4	N.D.	0.0004	0.8
11995	Bromoform	75-25-2	N.D.	0.005	0.8
11995	Bromomethane	74-83-9	N.D.	0.0007	0.8
11995	Carbon Tetrachloride	56-23-5	N.D.	0.0005	0.8
11995	Chlorobenzene	108-90-7	N.D.	0.0005	0.8
11995	Chloroethane	75-00-3	N.D.	0.001	0.8
11995	Chloroform	67-66-3	N.D.	0.0006	0.8
11995	Chloromethane	74-87-3	N.D.	0.0006	0.8
11995	Dibromochloromethane	124-48-1	N.D.	0.0004	0.8
11995	1,2-Dichlorobenzene	95-50-1	N.D.	0.0005	0.8
11995	1,3-Dichlorobenzene	541-73-1	N.D.	0.0005	0.8
11995	1,4-Dichlorobenzene	106-46-7	N.D.	0.0004	0.8
11995	1,1-Dichloroethane	75-34-3	N.D.	0.0005	0.8
11995	1,2-Dichloroethane	107-06-2	N.D.	0.0006	0.8
11995	1,1-Dichloroethene	75-35-4	N.D.	0.0005	0.8
11995	cis-1,2-Dichloroethene	156-59-2	N.D.	0.0005	0.8
11995	trans-1,2-Dichloroethene	156-60-5	N.D.	0.0005	0.8
11995	1,2-Dichloropropane	78-87-5	N.D.	0.0005	0.8
11995	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.0004	0.8
11995	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.0003	0.8
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.8
11995	Freon 113	76-13-1	N.D.	0.0006	0.8
11995	Methylene Chloride	75-09-2	N.D.	0.002	0.8
11995	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.0004	0.8
11995	Tetrachloroethene	127-18-4	N.D.	0.0005	0.8
11995	Toluene	108-88-3	N.D.	0.0006	0.8
11995	1,1,1-Trichloroethane	71-55-6	N.D.	0.0006	0.8
11995	1,1,2-Trichloroethane	79-00-5	N.D.	0.0005	0.8
11995	Trichloroethene	79-01-6	N.D.	0.0005	0.8
11995	Trichlorofluoromethane	75-69-4	N.D.	0.0007	0.8
11995	Vinyl Chloride	75-01-4	N.D.	0.0006	0.8
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.8
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.008	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.3	24.04
PCBs		SW-846 8082A Feb 2007 Rev 1	mg/kg	mg/kg	
10885	PCB-1016	12674-11-2	N.D. D1	0.0045	1
10885	PCB-1221	11104-28-2	N.D. D1	0.0058	1
10885	PCB-1232	11141-16-5	N.D. D1	0.010	1
10885	PCB-1242	53469-21-9	N.D. D1	0.0041	1
10885	PCB-1248	12672-29-6	N.D. D1	0.0041	1

Sample Description: SVP-2-S-10.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789524
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 13:30
SDG#: LDC03-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
PCBs		SW-846 8082A Feb 2007 Rev 1	mg/kg	mg/kg	
10885	PCB-1254	11097-69-1	N.D. D1	0.0041	1
10885	PCB-1260	11096-82-5	N.D. D1	0.0061	1
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.8	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
GC Petroleum Hydrocarbons		ECY 97-602 WA EPH	mg/kg	mg/kg	
05970	>C10-C12 Aliphatic	n.a.	N.D.	1.2	1
05970	>C10-C12 Aromatic	n.a.	N.D.	1.2	1
05970	>C12-C16 Aliphatic	n.a.	N.D.	1.2	1
05970	>C12-C16 Aromatic	n.a.	N.D.	1.2	1
05970	>C16-C21 Aliphatic	n.a.	N.D.	3.7	1
05970	>C16-C21 Aromatic	n.a.	N.D.	2.4	1
05970	>C21-C34 Aliphatic	n.a.	N.D.	7.3	1
05970	>C21-C34 Aromatic	n.a.	N.D.	2.4	1
Trial ID: RE					
05970	>C10-C12 Aliphatic	n.a.	N.D.	1.2	1
05970	>C10-C12 Aromatic	n.a.	N.D.	1.2	1
05970	>C12-C16 Aliphatic	n.a.	N.D.	1.2	1
05970	>C12-C16 Aromatic	n.a.	N.D.	1.2	1
05970	>C16-C21 Aliphatic	n.a.	N.D.	3.7	1
05970	>C16-C21 Aromatic	n.a.	N.D.	2.4	1
05970	>C21-C34 Aliphatic	n.a.	N.D.	7.3	1
05970	>C21-C34 Aromatic	n.a.	N.D.	2.4	1
The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. The following action was taken: The sample was re-extracted outside the method required holding time and the QC is compliant. Results are reported from both trials.					
GC Petroleum Hydrocarbons		ECY 97-602 WA VPH	mg/kg	mg/kg	
05666	Benzene	71-43-2	N.D.	0.0647	50.78
05666	C5-C6 Aliphatic Hydrocarbons	n.a.	N.D.	3.23	50.78
05666	C6-C8 Aliphatic Hydrocarbons	n.a.	N.D.	3.23	50.78
05666	C8-C10 Aliphatic Hydrocarbons	n.a.	N.D.	3.23	50.78
05666	C8-C10 Aromatic Hydrocarbons	n.a.	N.D.	3.23	50.78
05666	Ethylbenzene	100-41-4	N.D.	0.0647	50.78
05666	Methyl t-butyl ether	1634-04-4	N.D.	0.0647	50.78
05666	Toluene	108-88-3	N.D.	0.0647	50.78
05666	o-Xylene	95-47-6	N.D.	0.0647	50.78
05666	m,p-Xylenes	179601-23-1	N.D.	0.129	50.78

Sample Description: SVP-2-S-10.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789524
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 13:30
SDG#: LDC03-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
Metals			SW-846 6010D Rev.4, July 2014	mg/kg	
06955	Lead	7439-92-1	7.53	0.611	1
Wet Chemistry			SM 2540 G-2011 %Moisture Calc	%	
00111	Moisture	n.a.	21.5	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.
The temperature of the temperature blank bottle(s) upon receipt at the lab was 6.3 C using a digital thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 14.3-19.0 C.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	HVOCs + BTEX	SW-846 8260C	1	A182521AA	09/09/2018 20:22	Stephen C Nolte	0.8
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201825051158	08/30/2018 13:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201825051158	08/30/2018 13:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	3	201825051158	08/30/2018 13:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	4	201825051158	08/30/2018 13:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201825051158	08/30/2018 13:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	2	201825051158	08/30/2018 13:30	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18251SLD026	09/14/2018 14:40	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18251SLD026	09/11/2018 16:45	Kate E Lutte	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18253B16A	09/11/2018 06:40	Jeremy C Giffin	24.04
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201825051158	08/30/2018 13:30	Client Supplied	n.a.
10885	PCBs 8082A/3546	SW-846 8082A Feb 2007 Rev 1	1	182540003A	09/13/2018 01:33	Kirby B Turner	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	182540003A	09/12/2018 09:00	Michelle A Newswanger	1
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182550017A	09/14/2018 22:53	Thomas C Wildermuth	1

Sample Description: SVP-2-S-10.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789524
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 13:30
SDG#: LDC03-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 16:52	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	182500003A	09/19/2018 17:32	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 20:52	Amy Lehr	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	2-RE	182700031A	10/03/2018 21:32	Amy Lehr	1
05666	WA- VPH soils	ECY 97-602 WA VPH	1	18253A08A	09/11/2018 00:04	Thomas C Wildermuth	50.78
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182550017A	09/12/2018 17:50	Elizabeth E Donovan	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	1	182500003A	09/08/2018 11:20	Sally L Appleyard	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	2	182700031A	09/28/2018 09:00	Michelle A Newswanger	1
00388	GC - Field Preserved (MA-VPH)	MA DEP VPH modified	1	201825151160	08/30/2018 13:30	Client Supplied	1
00497	Silica Gel Fractionation	SW-846 3630C modified	1	182500003A	09/18/2018 08:00	David S Schrum	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182501404903	09/12/2018 09:20	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182501404903	09/10/2018 07:25	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18250820004B	09/07/2018 11:22	Larry E Bevins	1

Sample Description: SVP-3-S-8.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789525
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 14:45
SDG#: LDC03-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.88
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.88
11995	Toluene	108-88-3	N.D.	0.0006	0.88
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.88
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	0.64	0.008	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.3	23.91
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	4.9	3.5	1
08272	Heavy Range Organics C24-C40	n.a.	13	12	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	10.9	0.476	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	14.3	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.
The temperature of the temperature blank bottle(s) upon receipt at the lab was 6.3 C using a digital thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 14.3-19.0 C.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182521AA	09/09/2018 20:45	Stephen C Nolte	0.88
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201825051158	08/30/2018 14:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201825051158	08/30/2018 14:45	Client Supplied	1

Sample Description: SVP-3-S-8.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789525
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 14:45
SDG#: LDC03-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201825051158	08/30/2018 14:45	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18251SLD026	09/14/2018 15:03	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18251SLD026	09/11/2018 16:45	Kate E Lutte	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18253B16A	09/11/2018 07:18	Jeremy C Giffin	23.91
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201825051158	08/30/2018 14:45	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182550017A	09/14/2018 23:13	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182550017A	09/12/2018 17:50	Elizabeth E Donovan	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182501404903	09/12/2018 09:23	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182501404903	09/10/2018 07:25	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18250820004B	09/07/2018 11:22	Larry E Bevins	1

Sample Description: SVP-3-S-10.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789526
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 15:20
SDG#: LDC03-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.76
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.76
11995	Toluene	108-88-3	0.001	0.0006	0.76
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.76
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.009	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.3	27.19
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.0	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	7.11	0.676	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	25.4	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.
The temperature of the temperature blank bottle(s) upon receipt at the lab was 6.3 C using a digital thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 14.3-19.0 C.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182541AA	09/11/2018 12:06	Linda C Pape	0.76
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201825051158	08/30/2018 15:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201825051158	08/30/2018 15:20	Client Supplied	1

Sample Description: SVP-3-S-10.0-180830 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789526
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/30/2018 15:20
SDG#: LDC03-08

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201825051158	08/30/2018 15:20	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18251SLD026	09/14/2018 15:26	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18251SLD026	09/11/2018 16:45	Kate E Lutte	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18253B16A	09/11/2018 07:56	Jeremy C Giffin	27.19
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201825051158	08/30/2018 15:20	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182550017A	09/14/2018 23:33	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182550017A	09/12/2018 17:50	Elizabeth E Donovan	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182501404903	09/12/2018 09:26	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182501404903	09/10/2018 07:25	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18250820004B	09/07/2018 11:22	Larry E Bevins	1

Sample Description: SB-9-S-7.0-180831 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789527
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/31/2018 10:40
SDG#: LDC03-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.87
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.87
11995	Toluene	108-88-3	N.D.	0.0006	0.87
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.87
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	0.040	0.008	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.8	0.3	25.23
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.5	1
08272	Heavy Range Organics C24-C40	n.a.	13	12	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	27.3	0.623	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	16.2	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.
The temperature of the temperature blank bottle(s) upon receipt at the lab was 6.3 C using a digital thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 14.3-19.0 C.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182541AA	09/11/2018 12:29	Linda C Pape	0.87
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201825051158	08/31/2018 10:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201825051158	08/31/2018 10:40	Client Supplied	1

Sample Description: SB-9-S-7.0-180831 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789527
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/31/2018 10:40
SDG#: LDC03-09

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201825051158	08/31/2018 10:40	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18251SLD026	09/14/2018 15:50	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18251SLD026	09/11/2018 16:45	Kate E Lutte	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18253B16A	09/11/2018 08:34	Jeremy C Giffin	25.23
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201825051158	08/31/2018 10:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182550017A	09/14/2018 23:52	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182550017A	09/12/2018 17:50	Elizabeth E Donovan	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182501404903	09/12/2018 09:28	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182501404903	09/10/2018 07:25	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18250820004B	09/07/2018 11:22	Larry E Bevins	1

Sample Description: SB-9-S-11.5-180831 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789528
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/31/2018 11:50
SDG#: LDC03-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.86
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.86
11995	Toluene	108-88-3	N.D.	0.0006	0.86
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.86
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	0.009	0.008	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.3	26.53
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.5	1
08272	Heavy Range Organics C24-C40	n.a.	14	12	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	25.4	0.490	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	13.7	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.
The temperature of the temperature blank bottle(s) upon receipt at the lab was 6.3 C using a digital thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 14.3-19.0 C.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A182541AA	09/11/2018 12:52	Linda C Pape	0.86
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201825051158	08/31/2018 11:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201825051158	08/31/2018 11:50	Client Supplied	1

Sample Description: SB-9-S-11.5-180831 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 9789528
ELLE Group #: 1984163
Matrix: Soil

Project Name: 204117

Submission Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/31/2018 11:50
SDG#: LDC03-10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201825051158	08/31/2018 11:50	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	18251SLD026	09/14/2018 16:13	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	18251SLD026	09/11/2018 16:45	Kate E Lutte	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	18253B16A	09/11/2018 09:11	Jeremy C Giffin	26.53
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201825051158	08/31/2018 11:50	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	182550017A	09/15/2018 00:12	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	182550017A	09/12/2018 17:50	Elizabeth E Donovan	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	182501404903	09/12/2018 09:31	Eric L Eby	1
14049	ICP/ICPMS-SW, 3050B - U5	SW-846 3050B	1	182501404903	09/10/2018 07:25	Denise L Trimby	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18250820004B	09/07/2018 11:22	Larry E Bevins	1

Sample Description: QA-2-O-180831 NA Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 9789529
ELLE Group #: 1984163
Matrix: Water

Project Name: 204117

Submittal Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/31/2018 12:00
SDG#: LDC03-11EB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	0.2	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457
The temperature of the temperature blank bottle(s) upon receipt at the lab was 6.3 C using a digital thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 14.3-19.0 C.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z182542AA	09/11/2018 20:05	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z182542AA	09/11/2018 20:05	Hu Yang	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	18249A53A	09/09/2018 03:33	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	18249A53A	09/09/2018 03:33	Jeremy C Giffin	1

Sample Description: QA-6-T-180831 NA Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 9789530
ELLE Group #: 1984163
Matrix: Water

Project Name: 204117

Submittal Date/Time: 09/05/2018 10:00
Collection Date/Time: 08/31/2018 15:00
SDG#: LDC03-12TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457
The temperature of the temperature blank bottle(s) upon receipt at the lab was 6.3 C using a digital thermometer. The sample bottles were then measured using an IR thermometer and were recorded at 14.3-19.0 C.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z182542AA	09/11/2018 20:29	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z182542AA	09/11/2018 20:29	Hu Yang	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	18249A53A	09/09/2018 04:00	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	18249A53A	09/09/2018 04:00	Jeremy C Giffin	1

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/05/2018 10:16

Group Number: 1984163

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result mg/kg	MDL mg/kg
Batch number: A182521AA	Sample number(s): 9789519-9789525	
Benzene	N.D.	0.0005
Bromodichloromethane	N.D.	0.0004
Bromoform	N.D.	0.005
Bromomethane	N.D.	0.0007
Carbon Tetrachloride	N.D.	0.0005
Chlorobenzene	N.D.	0.0005
Chloroethane	N.D.	0.001
Chloroform	N.D.	0.0006
Chloromethane	N.D.	0.0006
Dibromochloromethane	N.D.	0.0004
1,2-Dichlorobenzene	N.D.	0.0005
1,3-Dichlorobenzene	N.D.	0.0005
1,4-Dichlorobenzene	N.D.	0.0004
1,1-Dichloroethane	N.D.	0.0005
1,2-Dichloroethane	N.D.	0.0006
1,1-Dichloroethene	N.D.	0.0005
cis-1,2-Dichloroethene	N.D.	0.0005
trans-1,2-Dichloroethene	N.D.	0.0005
1,2-Dichloropropane	N.D.	0.0005
cis-1,3-Dichloropropene	N.D.	0.0004
trans-1,3-Dichloropropene	N.D.	0.0003
Ethylbenzene	N.D.	0.0004
Freon 113	N.D.	0.0006
Methylene Chloride	N.D.	0.002
1,1,2,2-Tetrachloroethane	N.D.	0.0004
Tetrachloroethene	N.D.	0.0005
Toluene	N.D.	0.0006
1,1,1-Trichloroethane	N.D.	0.0006
1,1,2-Trichloroethane	N.D.	0.0005
Trichloroethene	N.D.	0.0005
Trichlorofluoromethane	N.D.	0.0007
Vinyl Chloride	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: A182541AA	Sample number(s): 9789526-9789528	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/05/2018 10:16

Group Number: 1984163

Method Blank (continued)

Analysis Name	Result	MDL
	ug/l	ug/l
Batch number: Z182542AA	Sample number(s): 9789529-9789530	
Benzene	N.D.	0.2
Ethylbenzene	N.D.	0.4
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
	mg/kg	mg/kg
Batch number: 18251SLD026	Sample number(s): 9789519-9789528	
Naphthalene	N.D.	0.007
Batch number: 18253B16A	Sample number(s): 9789519-9789528	
NWTPH-GX Soil C7-C12	N.D.	0.2
	ug/l	ug/l
Batch number: 18249A53A	Sample number(s): 9789529-9789530	
NWTPH-Gx water C7-C12	25	19
	mg/kg	mg/kg
Batch number: 182540003A	Sample number(s): 9789519-9789520,9789523-9789524	
PCB-1016	N.D.	0.0036
PCB-1221	N.D.	0.0046
PCB-1232	N.D.	0.0080
PCB-1242	N.D.	0.0033
PCB-1248	N.D.	0.0033
PCB-1254	N.D.	0.0033
PCB-1260	N.D.	0.0049
Batch number: 182500003A	Sample number(s): 9789519-9789520,9789523-9789524	
>C10-C12 Aliphatic	N.D.	1.0
>C10-C12 Aromatic	N.D.	1.0
>C12-C16 Aliphatic	N.D.	1.0
>C12-C16 Aromatic	N.D.	1.0
>C16-C21 Aliphatic	N.D.	3.0
>C16-C21 Aromatic	N.D.	2.0
>C21-C34 Aliphatic	N.D.	6.0
>C21-C34 Aromatic	N.D.	2.0
Batch number: 182500053A	Sample number(s): 9789519	
Diesel Range Organics C12-C24	N.D.	3.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 18253A08A	Sample number(s): 9789519-9789520,9789523-9789524	
Benzene	N.D.	0.0500
C5-C6 Aliphatic Hydrocarbons	N.D.	2.50
C6-C8 Aliphatic Hydrocarbons	N.D.	2.50
C8-C10 Aliphatic Hydrocarbons	N.D.	2.50
C8-C10 Aromatic Hydrocarbons	N.D.	2.50

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/05/2018 10:16

Group Number: 1984163

Method Blank (continued)

Analysis Name	Result	MDL
	mg/kg	mg/kg
Ethylbenzene	N.D.	0.0500
Methyl t-butyl ether	N.D.	0.0500
Toluene	N.D.	0.0500
o-Xylene	N.D.	0.0500
m,p-Xylenes	N.D.	0.100
Batch number: 182550017A	Sample number(s): 9789520-9789528	
Diesel Range Organics C12-C24	N.D.	3.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 182700031A	Sample number(s): 9789519-9789520,9789523-9789524	
>C10-C12 Aliphatic	N.D.	1.0
>C10-C12 Aromatic	N.D.	1.0
>C12-C16 Aliphatic	N.D.	1.0
>C12-C16 Aromatic	N.D.	1.0
>C16-C21 Aliphatic	N.D.	3.0
>C16-C21 Aromatic	N.D.	2.0
>C21-C34 Aliphatic	N.D.	6.0
>C21-C34 Aromatic	N.D.	2.0
Batch number: 182501404903	Sample number(s): 9789519-9789528	
Lead	N.D.	0.600

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: A182521AA	Sample number(s): 9789519-9789525								
Benzene	0.0200	0.0189	0.0200	0.0185	94	92	80-120	2	30
Bromodichloromethane	0.0200	0.0175	0.0200	0.0178	88	89	70-120	1	30
Bromoform	0.0200	0.0156	0.0200	0.0165	78	82	51-127	5	30
Bromomethane	0.0200	0.0166	0.0200	0.0160	83	80	45-140	4	30
Carbon Tetrachloride	0.0200	0.0176	0.0200	0.0168	88	84	64-134	5	30
Chlorobenzene	0.0200	0.0193	0.0200	0.0189	97	94	80-120	2	30
Chloroethane	0.0200	0.0148	0.0200	0.0143	74	72	43-135	4	30
Chloroform	0.0200	0.0189	0.0200	0.0188	95	94	80-120	1	30
Chloromethane	0.0200	0.0126	0.0200	0.0123	63	61	56-120	2	30
Dibromochloromethane	0.0200	0.0176	0.0200	0.0179	88	89	69-125	1	30
1,2-Dichlorobenzene	0.0200	0.0181	0.0200	0.0182	91	91	76-120	0	30
1,3-Dichlorobenzene	0.0200	0.0178	0.0200	0.0176	89	88	75-120	1	30
1,4-Dichlorobenzene	0.0200	0.0179	0.0200	0.0180	90	90	80-120	0	30
1,1-Dichloroethane	0.0200	0.0184	0.0200	0.0179	92	90	79-120	3	30

*- Outside of specification

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- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/05/2018 10:16

Group Number: 1984163

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,2-Dichloroethane	0.0200	0.0183	0.0200	0.0188	91	94	71-128	3	30
1,1-Dichloroethene	0.0200	0.0197	0.0200	0.0187	99	94	73-129	5	30
cis-1,2-Dichloroethene	0.0200	0.0199	0.0200	0.0195	99	98	80-123	2	30
trans-1,2-Dichloroethene	0.0200	0.0197	0.0200	0.0192	98	96	80-125	2	30
1,2-Dichloropropane	0.0200	0.0186	0.0200	0.0187	93	94	80-120	1	30
cis-1,3-Dichloropropene	0.0200	0.0166	0.0200	0.0170	83	85	66-120	2	30
trans-1,3-Dichloropropene	0.0200	0.0168	0.0200	0.0173	84	87	68-122	3	30
Ethylbenzene	0.0200	0.0186	0.0200	0.0181	93	90	78-120	3	30
Freon 113	0.0200	0.0157	0.0200	0.0151	79	75	64-135	4	30
Methylene Chloride	0.0200	0.0196	0.0200	0.0196	98	98	76-122	0	30
1,1,2,2-Tetrachloroethane	0.0200	0.0160	0.0200	0.0182	80	91	69-125	13	30
Tetrachloroethene	0.0200	0.0189	0.0200	0.0181	94	90	73-120	4	30
Toluene	0.0200	0.0190	0.0200	0.0183	95	92	80-120	3	30
1,1,1-Trichloroethane	0.0200	0.0165	0.0200	0.0160	83	80	69-123	3	30
1,1,2-Trichloroethane	0.0200	0.0190	0.0200	0.0201	95	100	80-120	6	30
Trichloroethene	0.0200	0.0184	0.0200	0.0177	92	88	80-120	4	30
Trichlorofluoromethane	0.0200	0.0161	0.0200	0.0152	80	76	55-134	5	30
Vinyl Chloride	0.0200	0.0142	0.0200	0.0130	71	65	52-120	9	30
Xylene (Total)	0.0600	0.0569	0.0600	0.0552	95	92	75-120	3	30
Batch number: A182541AA									
Sample number(s): 9789526-9789528									
Benzene	0.0200	0.0190	0.0200	0.0191	95	96	80-120	1	30
Ethylbenzene	0.0200	0.0187	0.0200	0.0190	94	95	78-120	2	30
Toluene	0.0200	0.0185	0.0200	0.0188	93	94	80-120	2	30
Xylene (Total)	0.0600	0.0565	0.0600	0.0576	94	96	75-120	2	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: Z182542AA									
Sample number(s): 9789529-9789530									
Benzene	20	20.32	20	20.43	102	102	80-120	1	30
Ethylbenzene	20	19.5	20	20.09	98	100	80-120	3	30
Toluene	20	21.42	20	21.57	107	108	80-120	1	30
Xylene (Total)	60	59.92	60	61.08	100	102	80-120	2	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 18251SLD026									
Sample number(s): 9789519-9789528									
Naphthalene	1.67	1.44			87		81-111		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 18253B16A									
Sample number(s): 9789519-9789528									
NWTPH-GX Soil C7-C12	11	8.79	11	8.86	80	81	55-145	1	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 18249A53A									
Sample number(s): 9789529-9789530									
NWTPH-Gx water C7-C12	1100	1054.53	1100	1063.1	96	97	64-131	1	30

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/05/2018 10:16

Group Number: 1984163

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 182540003A	Sample number(s): 9789519-9789520,9789523-9789524								
PCB-1016	0.167	0.180			108		76-121		
PCB-1260	0.167	0.190			114		79-130		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 182500003A	Sample number(s): 9789519-9789520,9789523-9789524								
>C10-C12 Aliphatic	4.01	2.41	4.01	1.82	60	45	31-137	28	50
>C10-C12 Aromatic	4.01	2.28	4.01	1.91	57	48	22-119	18	50
>C12-C16 Aliphatic	8.02	2.52	8.02	2.09	31*	26*	42-146	18	50
>C12-C16 Aromatic	12.02	7.29	12.02	6.31	61	52	24-136	14	50
>C16-C21 Aliphatic	12.03	8.33	12.03	7.42	69	62	57-111	11	50
>C16-C21 Aromatic	20.06	13.42	20.06	13.31	67	66	34-143	1	50
>C21-C34 Aliphatic	20.06	13.65	20.06	12.22	68	61	50-124	11	50
>C21-C34 Aromatic	32.08	20.05	32.08	20.63	62	64	44-134	3	50
Batch number: 182500053A	Sample number(s): 9789519								
Diesel Range Organics C12-C24	133.83	103.72			77		61-115		
Batch number: 18253A08A	Sample number(s): 9789519-9789520,9789523-9789524								
Benzene	2.53	2.31	2.53	2.31	91	91	70-130	0	50
C5-C6 Aliphatic Hydrocarbons	5.08	4.05	5.08	3.97	80	78	70-130	2	50
C6-C8 Aliphatic Hydrocarbons	2.55	2.09	2.55	2.11	82	83	70-130	1	50
C8-C10 Aliphatic Hydrocarbons	2.55	2.27	2.55	2.36	89	93	70-130	4	50
C8-C10 Aromatic Hydrocarbons	2.57	2.32	2.57	2.34	91	91	70-130	1	50
Ethylbenzene	2.54	2.37	2.54	2.38	93	94	70-130	0	50
Methyl t-butyl ether	2.55	2.42	2.55	2.40	95	94	70-130	1	50
Toluene	2.54	2.33	2.54	2.34	92	92	70-130	0	50
o-Xylene	2.50	2.37	2.50	2.38	95	95	70-130	0	50
m,p-Xylenes	5.10	4.72	5.10	4.72	93	93	70-130	0	50
Batch number: 182550017A	Sample number(s): 9789520-9789528								
Diesel Range Organics C12-C24	133.83	98.31			73		61-115		
Batch number: 182700031A	Sample number(s): 9789519-9789520,9789523-9789524								
>C10-C12 Aliphatic	4.01	2.50			62		31-137		
>C10-C12 Aromatic	4.01	4.07			101		22-119		
>C12-C16 Aliphatic	8.02	5.70			71		42-146		
>C12-C16 Aromatic	12.02	13.33			111		24-136		
>C16-C21 Aliphatic	12.03	9.38			78		57-111		
>C16-C21 Aromatic	20.06	24.87			124		34-143		
>C21-C34 Aliphatic	20.06	15.15			76		50-124		
>C21-C34 Aromatic	32.08	40.46			126		44-134		

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/05/2018 10:16

Group Number: 1984163

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 182501404903 Lead	15	14.51			97		80-120		
	%	%	%	%					
Batch number: 18250820004B Moisture	89.5	89.41			100		99-101		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 18251SLD026 Naphthalene	0.00873	1.66	1.50	1.64	1.46	90	88	81-111	3	30
Batch number: 182501404903 Lead	7.75	14.85	21.61	14.85	25.62	93	120	75-125	17	20

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 182501404903 Lead	7.75	7.50	3 (1)	20
Batch number: 18250820004B Moisture	21.52	21.37	1	5

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/05/2018 10:16

Group Number: 1984163

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: HVOCs + BTEX
Batch number: A182521AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9789519	104	106	100	88
9789520	104	107	105	84
9789521	105	104	99	93
9789522	104	107	99	91
9789523	102	106	99	92
9789524	105	108	99	91
9789525	106	109	97	90
Blank	105	106	98	94
LCS	101	102	102	100
LCSD	102	105	101	100
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260 Soil
Batch number: A182541AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9789526	100	104	100	95
9789527	100	106	100	94
9789528	102	107	104	85
Blank	110	107	96	93
LCS	105	102	100	103
LCSD	103	104	100	102
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260C
Batch number: Z182542AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9789529	99	103	104	95
9789530	102	104	104	94
Blank	99	103	105	96
LCS	97	103	104	100
LCSD	96	103	104	100
Limits:	80-120	80-120	80-120	80-120

Analysis Name: Naphthalene 8270D
Batch number: 18251SLD026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
9789519	88	90	83	88	93	93
Blank	93	98	93	87	101	97
LCS	92	93	79	85	93	87

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/05/2018 10:16

Group Number: 1984163

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Naphthalene 8270D
Batch number: 18251SLD026

	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
MS	102	104	92	87	98	94
MSD	96	95	85	85	90	94
Limits:	47-120	51-123	19-137	49-118	57-116	55-118

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
9789520	89	98	91
9789521	87	94	93
9789522	88	95	92
9789523	87	94	93
9789524	87	94	93
9789525	84	91	89
9789526	85	93	96
9789527	88	102	93
9789528	88	95	91
Limits:	49-118	57-116	55-118

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 18249A53A

	Trifluorotoluene-F
9789529	86
9789530	102
Blank	88
LCS	97
LCSD	97
Limits:	50-150

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 18253B16A

	Trifluorotoluene-F
9789519	66
9789520	64
9789521	79
9789522	73
9789523	58
9789524	56
9789525	68
9789526	59
9789527	65
9789528	65

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/05/2018 10:16

Group Number: 1984163

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-GX Soil C7-C12

Batch number: 18253B16A

	Trifluorotoluene-F
Blank	89
LCS	95
LCS D	95

Limits: 50-150

Analysis Name: PCBs 8082A/3546

Batch number: 182540003A

	Tetrachloro-m-xylene-D1	Decachlorobiphenyl-D1	Tetrachloro-m-xylene-D2	Decachlorobiphenyl-D2
9789519	112	97	113	98
9789520	108	92	106	103
9789523	114	95	108	94
9789524	112	92	108	93
Blank	117	99	115	97
LCS	114	99	116	97

Limits: 53-140 45-143 53-140 45-143

Analysis Name: WA EPH in Soil

Batch number: 182500003A

	Orthoterphenyl	1-chlorooctadecane
9789519	86	55
9789520	63	47
9789523	72	58
9789524	75	55
Blank	72	52
LCS	61	49
LCS D	62	45

Limits: 42-115 33-122

Analysis Name: NWTPH-Dx soil

Batch number: 182500053A

	Orthoterphenyl
9789519	101
Blank	103
LCS	105

Limits: 50-150

Analysis Name: WA- VPH soils

Batch number: 18253A08A

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 10/05/2018 10:16

Group Number: 1984163

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: WA- VPH soils
Batch number: 18253A08A

	Trifluorotoluene-P	Trifluorotoluene-F
9789519	100	101
9789520	100	101
9789523	103	103
9789524	99	100
Blank	83	85
LCS	93	94
LCS D	93	94
Limits:	60-140	60-140

Analysis Name: NWTPH-Dx soil
Batch number: 182550017A

	Orthoterphenyl
9789520	119
9789521	104
9789522	103
9789523	94
9789524	88
9789525	103
9789526	87
9789527	95
9789528	97
Blank	98
LCS	100
Limits:	50-150

Analysis Name: WA EPH in Soil
Batch number: 182700031A

	Orthoterphenyl	1-chlorooctadecane
9789519RE	85	63
9789520RE	93	68
9789523RE	92	65
9789524RE	89	65
Blank	93	44
LCS	111	56
Limits:	42-115	33-122

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody

223559



For Lancaster Laboratories use only
 Acct. #: 13271 Sample #: 9789519-30 SCR#: _____

G-1984163

Facility #: 204117
 Site Address: 2021 6th Street, Bremerton, WA
 Chevron PM: Eric Hetrick Lead Consultant: Leidos Inc
 Consultant/Office: Leidos / Bothell, WA
 Consultant Prj. Mgr.: Russ Shropshire
 Consultant Phone #: 425-482-3323 Fax#:
 Sampler: R. Otteman and K. Gowri
 Service Order #: PO10215249 Non SAR: _____

Matrix		Analyses Requested												Preservative Codes						
		Preservation Codes												H = HCl	T = Thiosulfate					
Soil	Water	Oil <input type="checkbox"/> Air <input type="checkbox"/>	Total Number of Containers	BTEX + MTBE	8021	8260	<input checked="" type="checkbox"/> Naphth	8260 full scan	Oxygenates	NMTPH G	NMTPH D	Lead Total	VPH/EPH	NMTPH H	HClID	quantification	HVOCS 8260B	PCBs EPA 8082	Naphthalenes EPA 8070	N = HNO ₃ S = H ₂ SO ₄ B = NaOH O = Other
				<input type="checkbox"/> Potable	<input type="checkbox"/> NPDES	<input type="checkbox"/> Extended Rng.	<input type="checkbox"/> Silica Gel Cleanup													

Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Oil	Air	Total Number of Containers	BTEX + MTBE	8021	8260	<input checked="" type="checkbox"/> Naphth	8260 full scan	Oxygenates	NMTPH G	NMTPH D	Lead Total	VPH/EPH	NMTPH H	HClID	quantification	HVOCS 8260B	PCBs EPA 8082	Naphthalenes EPA 8070
SVP-1-10.0-S-083018	8/30/18	1015	/	/	/	/	/	/	14	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
SVP-1-8.0-S-083018	↓	1005	/	/	/	/	/	/	14	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
UST-8-8.0-S-082918	8/29/18	1545	/	/	/	/	/	/	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
UST-7-8.0-S-082918	8/29/18	1500	/	/	/	/	/	/	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
SVP-2-8.0-S-082818	8/30/18	1320	/	/	/	/	/	/	14	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
SVP-2-10.0-S-083018	8/30/18	1330	/	/	/	/	/	/	14	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
SVP-3-8.0-S-083018	9/30/18	1445	/	/	/	/	/	/	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
SVP-3-10.0-S-083018	8/30/18	1520	/	/	/	/	/	/	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
SB-9-7.0-S-083118	8/31/18	1040	/	/	/	/	/	/	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
SB-9-11.5-S-083118	↓	1150	/	/	/	/	/	/	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
SB-9 ^{ER} -2-083118	↓	1200	/	/	/	/	/	/	6	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
UST-7-8.0-S-082918	8/29/18	1500	/	/	/	/	/	/	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
TB-6-083118	8/31/18	1500	/	/	/	/	/	/	4	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

Comments / Remarks
 Bill to Leidos Inc.

Turnaround Time Requested (TAT) (please circle) STD. TAT: 72 hour, 48 hour, 24 hour 24 hour	Relinquished by: <u>[Signature]</u>	Date: <u>9/4/18</u>	Time: <u>1030</u>	Received by: _____	Date: _____	Time: _____
	Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
Data Package Options (please circle if required) QC Summary: Type I - Full Type VI (Raw Data): Disk/EDD WIP (RWQCB): Standard Format Disk: _____ Other.	Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
	Relinquished by Commercial Carrier: <u>UPS</u>	FedEx: _____	Other: _____	Received by: <u>[Signature]</u>	Date: <u>9-5-18</u>	Time: <u>10:00</u>
Temperature Upon Receipt: <u>63.3</u> °C			Custody Seals Intact? <u>Yes</u> No			



Client: Chevron

Delivery and Receipt Information

Delivery Method: Fed Ex Arrival Timestamp: 09/05/2018 10:00
 Number of Packages: 1 Number of Projects: 1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace \geq 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	4
Paperwork Enclosed:	Yes	Trip Blank Type:	HCI
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Wanita Curry (14057) at 16:54 on 09/05/2018

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?	<u>Samples Collected Same Day as Receipt?</u>
1	DT42-02	6.3	DT	Wet	N	Bagged	Y	N

Elevated Temperature Details

All Temperatures in °C

Cooler #	Thermometer ID	Top Left Temp	Top Right Temp	Bottom Left Temp	Bottom Right Temp	Center Temp	Factors Contributing to Elevated Temp	Comments
1	32170023	19.0	16.1	16.3	15.7	14.3		

General Comments: UST-7-8.0-5-0-082918- COC lists two sets of this sample ID. Only one set arrived

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.



2655 Park Center Dr., Suite A
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www.alsglobal.com

LABORATORY REPORT

October 23, 2018

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

RE: Newman's Chevron / 204117

Dear Russell:

Enclosed are the results of the samples submitted to our laboratory on October 2, 2018. For your reference, these analyses have been assigned our service request number P1 805236.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Sue Anderson at 12:10 pm, Oct 23, 2018

Sue Anderson
Project Manager



2655 Park Center Dr., Suite A
Simi Valley, CA 93065
T: +1 805 526 7161
F: +1 805 526 7270
www.alsglobal.com

Client: Leidos
Project: Newman's Chevron / 204117

Service Request No: P1805236

CASE NARRATIVE

The samples were received intact under chain of custody on October 2, 2018 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Helium Analysis

The samples were analyzed for helium according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This method is not included on the laboratory's NELAP or DoD-ELAP scope of accreditation.

Fixed Gases Analysis

The samples were also analyzed for fixed gases (oxygen, nitrogen, methane and carbon dioxide) according to modified EPA Method 3C (single injection) using a gas chromatograph equipped with a thermal conductivity detector (TCD). This procedure is described in laboratory SOP VOA-EPA3C. This method is included on the laboratory's DoD-ELAP scope of accreditation, however it is not part of the NELAP accreditation.

Volatile Organic Compound Analysis

The samples were also analyzed in SIM mode for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. For projects requiring DoD QSM 5.1 compliance canisters were cleaned to <1/2 the MRL. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

The results of analyses are given in the attached laboratory report. All results are intended to be considered in their entirety, and ALS Environmental (ALS) is not responsible for utilization of less than the complete report.

Use of ALS Environmental (ALS)'s Name. Client shall not use ALS's name or trademark in any marketing or reporting materials, press releases or in any other manner ("Materials") whatsoever and shall not attribute to ALS any test result, tolerance or specification derived from ALS's data ("Attribution") without ALS's prior written consent, which may be withheld by ALS for any reason in its sole discretion. To request ALS's consent, Client shall provide copies of the proposed Materials or Attribution and describe in writing Client's proposed use of such Materials or Attribution. If ALS has not provided written approval of the Materials or Attribution within ten (10) days of receipt from Client, Client's request to use ALS's name or trademark in any Materials or Attribution shall be deemed denied. ALS may, in its discretion, reasonably charge Client for its time in reviewing Materials or Attribution requests. Client acknowledges and agrees that the unauthorized use of ALS's name or trademark may cause ALS to incur irreparable harm for which the recovery of money damages will be inadequate. Accordingly, Client acknowledges and agrees that a violation shall justify preliminary injunctive relief. For questions contact the laboratory.



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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
Alaska DEC	http://dec.alaska.gov/eh/lab.aspx	17-019
Arizona DHS	http://www.azdhs.gov/preparedness/state-laboratory/lab-licensure-certification/index.php#laboratory-licensure-home	AZ0694
Florida DOH (NELAP)	http://www.floridahealth.gov/licensing-and-regulation/environmental-laboratories/index.html	E871020
Louisiana DEQ (NELAP)	http://www.deq.louisiana.gov/page/la-lab-accreditation	05071
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/dwp/professionals/labCert.shtml	2016036
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	1347317
New Jersey DEP (NELAP)	http://www.nj.gov/dep/enforcement/oqa.html	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://www.oregon.gov/oha/ph/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-005
Pennsylvania DEP	http://www.dep.pa.gov/Business/OtherPrograms/Labs/Pages/Laboratory-Accreditation-Program.aspx	68-03307 (Registration)
PJLA (DoD ELAP)	http://www.pjlabs.com/search-accredited-labs	65818 (Testing)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/agency/qa/env_lab_accreditation.html	T104704413- 18-9
Utah DOH (NELAP)	http://health.utah.gov/lab/lab_cert_env	CA01627201 8-9
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: Leidos
 Project ID: Newman's Chevron / 204117

Service Request: P1805236

Date Received: 10/2/2018
 Time Received: 09:30

ASTM D1946-90(2006) - Fxd Gases Can	3C Modified - Helium Can	TO-15 Modified - VOC SIM
-------------------------------------	--------------------------	--------------------------

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	ASTM D1946-90(2006) - Fxd Gases Can	3C Modified - Helium Can	TO-15 Modified - VOC SIM
SVP-1-092718	P1805236-001	Air	9/27/2018	10:10	1SC00712	-0.24	5.57	X	X	X
SVP-2-092718	P1805236-002	Air	9/27/2018	11:16	1SC00522	0.37	5.66	X	X	X
SVP-3-092718	P1805236-003	Air	9/27/2018	11:59	1SC01378	0.40	5.09	X	X	X
DUP-1-092718	P1805236-004	Air	9/27/2018	00:00	1SC00702	0.39	5.72	X	X	X
EB-1-092618	P1805236-005	Air	9/26/2018	14:20	1SC00703	-4.56	6.16	X	X	X
EB-1-092818	P1805236-006	Air	9/28/2018	11:26	1SS00042	-4.22	5.09	X	X	X



Air - Chain of Custody Record & Analytical Service Request

2655 Park Center Drive, Suite A
Simi Valley, California 93065
Phone (805) 526-7161
Fax (805) 526-7270

ALS quote # 44579

Requested Turnaround Time in Business Days (Surcharges) please circle
1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10-Day-Standard

ALS Project ID: 1805231

Company Name & Address (Reporting Information)
 Leidos
 18939 120th Ave NE, Suite 112
 Bothell, WA 98011

Project Manager: Russ Shropshire

Phone: 425-482-3323
 Fax: [Blank]

Email Address for Result Reporting
 shropshire@leidos.com

Project Name: Newmags Chevron

Project Number: 204117

P.O. # / Billing Information: PO 10215233

Sampler (Print & Sign): Russell Shropshire [Signature]

ALS Contact: [Blank]

Analysis Method: H2, CO2, CO, Ne, CH4, O2 by ASTM method
TO-15 Modified
Naphthalene by BTEX, MTBE, H11um using GC method

Comments: e.g. Actual Preservative or specific instructions

Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - FC #)	Canister Start Pressure (Psi)	Canister End Pressure (Psi)	Sample Volume
SVP-1-092718	15C00712	9/27/18	10:10	5M00082	29.96	-1	1L
SVP-2-092718	15C00522	11:16	11:16	5M00109	30.07	-1.75	1L
SVP-3-092718	15C01378	11:59	11:59	5M00118	30.02	-1	1L
DUP-1-092718	15C00702	↓		15C00702	30.08		1L
EB-1-092618		9/26/18	14:20	5M00076	30.24	-10.49	1L
EB-1-092818		9/28/18	11:26	5M00119	29.87 30.25	-9.33	1L

Canister ID (Bar code # - FC #)	Canister Start Pressure (Psi)	Canister End Pressure (Psi)	Sample Volume
5M00082	29.96	-1	1L
5M00109	30.07	-1.75	1L
5M00118	30.02	-1	1L
15C00702	30.08		1L
5M00076	30.24	-10.49	1L
5M00119	29.87 30.25	-9.33	1L

1 2 3 4 5 6

Report Tier Levels - please select
 Tier I (Results in not specified)
 Tier II (Results + QC Summaries)
 Tier III (Results + QC & Calibration Summaries)
 Tier IV (Date Validation Package) 10% Surcharge

Relinquished by: (Signature) [Signature] Date: 9/28/18 Time: 11:40
 Relinquished by: (Signature) [Signature] Date: [Blank] Time: [Blank]

Chain of Custody Seal (Circle)
 EDD required YES No
 Type: [Blank] Units: [Blank]

Received by: (Signature) [Signature] Date: [Blank] Time: [Blank]
 Received by: (Signature) [Signature] Date: 10-2-18 Time: 8:30

Project Requirements (MRLs, QAPP)
 INTACT
 BROKEN
 Project Requirements (MRLs, QAPP)
 Cooler / Blank Temperature °C

**ALS Environmental
Sample Acceptance Check Form**

Client: Leidos Work order: P1805236
 Project: Newman's Chevron / 204117
 Sample(s) received on: 10/2/18 Date opened: 10/2/18 by: ADAVID

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

- | | <u>Yes</u> | <u>No</u> | <u>N/A</u> |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1 Were sample containers properly marked with client sample ID? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2 Did sample containers arrive in good condition? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3 Were chain-of-custody papers used and filled out? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4 Did sample container labels and/or tags agree with custody papers? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 5 Was sample volume received adequate for analysis? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6 Are samples within specified holding times? | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7 Was proper temperature (thermal preservation) of cooler at receipt adhered to? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8 Were custody seals on outside of cooler/Box/Container? | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Location of seal(s)? _____ Sealing Lid? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Were signature and date included? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Were seals intact? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 9 Do containers have appropriate preservation , according to method/SOP or Client specified information? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Is there a client indication that the submitted samples are pH preserved? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Were VOA vials checked for presence/absence of air bubbles? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Does the client/method/SOP require that the analyst check the sample pH and <u>if necessary</u> alter it? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 10 Tubes: Are the tubes capped and intact? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 11 Badges: Are the badges properly capped and intact? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| Are dual bed badges separated and individually capped and intact? | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1805236-001.01	1.0 L Source Can					
P1805236-002.01	1.0 L Source Can					
P1805236-003.01	1.0 L Source Can					
P1805236-004.01	1.0 L Source Can					
P1805236-005.01	1.0 L Source Can					
P1805236-006.01	1.0 L Source Silonite Canister					

Explain any discrepancies: (include lab sample ID numbers): _____

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: Leidos
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236

Helium

Test Code: EPA 3C Modified
Instrument ID: HP5890 II/GC8/TCD
Analyst: Gilbert Gutierrez
Sample Type: 1.0 L Summa Canister(s)
Test Notes:

Date(s) Collected: 9/26 - 9/28/18
Date Received: 10/2/18
Date Analyzed: 10/9/18

Client Sample ID	ALS Sample ID	Injection Volume ml(s)	Container Dilution Factor	Result ppmV	MRL ppmV	MDL ppmV	Data Qualifier
SVP-1-092718	P1805236-001	1.00	1.40	69	35	7.7	
SVP-2-092718	P1805236-002	1.00	1.35	250	34	7.4	
SVP-3-092718	P1805236-003	1.00	1.31	140	33	7.2	
DUP-1-092718	P1805236-004	1.00	1.35	250	34	7.4	
EB-1-092618	P1805236-005	1.00	2.06	3,700	52	11	
EB-1-092818	P1805236-006	1.00	1.89	850	47	10	
Method Blank	P181009-MB	1.00	1.00	ND	25	5.5	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

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Client: Leidos
Client Sample ID: Lab Control Sample
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
ALS Sample ID: P181009-LCS

Test Code: EPA 3C Modified
Instrument ID: HP5890 II/GC8/TCD
Analyst: Gilbert Gutierrez
Sample Type: 1.0 L Summa Canister
Test Notes:

Date Collected: NA
Date Received: NA
Date Analyzed: 10/09/18
Volume(s) Analyzed: NA ml(s)

CAS #	Compound	Spike Amount ppmV	Result ppmV	% Recovery	ALS Acceptance Limits	Data Qualifier
7440-59-7	Helium	10,000	11,500	115	83-129	

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: Leidos
Client Sample ID: SVP-1-092718
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
 ALS Sample ID: P1805236-001

Test Code: ASTM D1946
 Instrument ID: HP5890 II/GC1/TCD
 Analyst: Gilbert Gutierrez
 Sample Type: 1.0 L Summa Canister
 Test Notes:
 Container ID: 1SC00712

Date Collected: 9/27/18
 Date Received: 10/2/18
 Date Analyzed: 10/10/18
 Volume(s) Analyzed: 0.10 ml(s)

Initial Pressure (psig): -0.24 Final Pressure (psig): 5.57

Container Dilution Factor: 1.40

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.14	
7782-44-7	Oxygen*	14.6	0.14	
630-08-0	Carbon Monoxide	ND	0.14	
74-82-8	Methane	ND	0.14	
124-38-9	Carbon Dioxide	5.79	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: Leidos
Client Sample ID: SVP-2-092718
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
 ALS Sample ID: P1805236-002

Test Code: ASTM D1946
 Instrument ID: HP5890 II/GC1/TCD
 Analyst: Gilbert Gutierrez
 Sample Type: 1.0 L Summa Canister
 Test Notes:
 Container ID: 1SC00522

Date Collected: 9/27/18
 Date Received: 10/2/18
 Date Analyzed: 10/10/18
 Volume(s) Analyzed: 0.10 ml(s)

Initial Pressure (psig): 0.37 Final Pressure (psig): 5.66

Container Dilution Factor: 1.35

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.14	
7782-44-7	Oxygen*	13.8	0.14	
630-08-0	Carbon Monoxide	ND	0.14	
74-82-8	Methane	ND	0.14	
124-38-9	Carbon Dioxide	5.71	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: Leidos
Client Sample ID: SVP-3-092718
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
 ALS Sample ID: P1805236-003

Test Code: ASTM D1946
 Instrument ID: HP5890 II/GC1/TCD
 Analyst: Gilbert Gutierrez
 Sample Type: 1.0 L Summa Canister
 Test Notes:
 Container ID: 1SC01378

Date Collected: 9/27/18
 Date Received: 10/2/18
 Date Analyzed: 10/10/18
 Volume(s) Analyzed: 0.10 ml(s)

Initial Pressure (psig): 0.40 Final Pressure (psig): 5.09

Container Dilution Factor: 1.31

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.13	
7782-44-7	Oxygen*	17.9	0.13	
630-08-0	Carbon Monoxide	ND	0.13	
74-82-8	Methane	ND	0.13	
124-38-9	Carbon Dioxide	3.63	0.13	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: Leidos
Client Sample ID: DUP-1-092718
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
 ALS Sample ID: P1805236-004

Test Code: ASTM D1946
 Instrument ID: HP5890 II/GC1/TCD
 Analyst: Gilbert Gutierrez
 Sample Type: 1.0 L Summa Canister
 Test Notes:
 Container ID: 1SC00702

Date Collected: 9/27/18
 Date Received: 10/2/18
 Date Analyzed: 10/10/18
 Volume(s) Analyzed: 0.10 ml(s)

Initial Pressure (psig): 0.39 Final Pressure (psig): 5.72

Container Dilution Factor: 1.35

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.14	
7782-44-7	Oxygen*	13.8	0.14	
630-08-0	Carbon Monoxide	ND	0.14	
74-82-8	Methane	ND	0.14	
124-38-9	Carbon Dioxide	5.68	0.14	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: Leidos
Client Sample ID: EB-1-092618
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
 ALS Sample ID: P1805236-005

Test Code: ASTM D1946
 Instrument ID: HP5890 II/GC1/TCD
 Analyst: Gilbert Gutierrez
 Sample Type: 1.0 L Summa Canister
 Test Notes:
 Container ID: 1SC00703

Date Collected: 9/26/18
 Date Received: 10/2/18
 Date Analyzed: 10/10/18
 Volume(s) Analyzed: 0.10 ml(s)

Initial Pressure (psig): -4.56 Final Pressure (psig): 6.16

Container Dilution Factor: 2.06

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.21	
7782-44-7	Oxygen*	12.5	0.21	
630-08-0	Carbon Monoxide	ND	0.21	
74-82-8	Methane	ND	0.21	
124-38-9	Carbon Dioxide	ND	0.21	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: Leidos
Client Sample ID: EB-1-092818
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
 ALS Sample ID: P1805236-006

Test Code: ASTM D1946
 Instrument ID: HP5890 II/GC1/TCD
 Analyst: Gilbert Gutierrez
 Sample Type: 1.0 L Silonite Summa Canister
 Test Notes:
 Container ID: 1SS00042

Date Collected: 9/28/18
 Date Received: 10/2/18
 Date Analyzed: 10/10/18
 Volume(s) Analyzed: 0.10 ml(s)

Initial Pressure (psig): -4.22 Final Pressure (psig): 5.09

Container Dilution Factor: 1.89

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.19	
7782-44-7	Oxygen*	19.9	0.19	
630-08-0	Carbon Monoxide	ND	0.19	
74-82-8	Methane	ND	0.19	
124-38-9	Carbon Dioxide	ND	0.19	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

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RESULTS OF ANALYSIS

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Client: Leidos
Client Sample ID: Method Blank
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
 ALS Sample ID: P181010-MB

Test Code: ASTM D1946
 Instrument ID: HP5890 II/GC1/TCD
 Analyst: Gilbert Gutierrez
 Sample Type: 1.0 L Summa Canister
 Test Notes:

Date Collected: NA
 Date Received: NA
 Date Analyzed: 10/10/18
 Volume(s) Analyzed: 0.10 ml(s)

CAS #	Compound	Result %, v/v	MRL %, v/v	Data Qualifier
1333-74-0	Hydrogen	ND	0.10	
7782-44-7	Oxygen*	ND	0.10	
630-08-0	Carbon Monoxide	ND	0.10	
74-82-8	Methane	ND	0.10	
124-38-9	Carbon Dioxide	ND	0.10	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

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LABORATORY CONTROL SAMPLE SUMMARY

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Client: Leidos
Client Sample ID: Lab Control Sample
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
 ALS Sample ID: P181010-LCS

Test Code: ASTM D1946
 Instrument ID: HP5890 II/GC1/TCD
 Analyst: Gilbert Gutierrez
 Sample Type: 1.0 L Summa Canister
 Test Notes:

Date Collected: NA
 Date Received: NA
 Date Analyzed: 10/10/18
 Volume(s) Analyzed: NA ml(s)

CAS #	Compound	Spike Amount ppmV	Result ppmV	% Recovery	ALS Acceptance Limits	Data Qualifier
1333-74-0	Hydrogen	40,000	42,100	105	94-107	
7782-44-7	Oxygen*	40,000	41,400	104	98-109	
630-08-0	Carbon Monoxide	50,000	52,500	105	98-109	
74-82-8	Methane	40,000	41,700	104	98-110	
124-38-9	Carbon Dioxide	50,000	49,000	98	95-108	

* = The oxygen result may include argon due to coelution. Ambient air includes 0.93% argon.

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RESULTS OF ANALYSIS

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Client: Leidos
Client Sample ID: SVP-1-092718
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
 ALS Sample ID: P1805236-001

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Wida Ang
 Sample Type: 1.0 L Summa Canister
 Test Notes:
 Container ID: 1SC00712

Date Collected: 9/27/18
 Date Received: 10/2/18
 Date Analyzed: 10/12/18
 Volume(s) Analyzed: 0.40 Liter(s)

Initial Pressure (psig): -0.24 Final Pressure (psig): 5.57

Container Dilution Factor: 1.40

CAS #	Compound	Result µg/m ³	MRL µg/m ³	MDL µg/m ³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	1.9	0.033	ND	0.52	0.0090	
71-43-2	Benzene	0.46	1.8	0.070	0.14	0.57	0.022	J
108-88-3	Toluene	1.8	1.9	0.039	0.48	0.49	0.010	J
100-41-4	Ethylbenzene	0.12	1.8	0.034	0.028	0.42	0.0078	J
179601-23-1	m,p-Xylenes	0.35	3.9	0.067	0.081	0.89	0.015	J
95-47-6	o-Xylene	0.34	1.9	0.031	0.078	0.43	0.0072	J
91-20-3	Naphthalene	0.23	1.8	0.056	0.044	0.34	0.011	J

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

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Client: Leidos
Client Sample ID: SVP-2-092718
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
 ALS Sample ID: P1805236-002

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Wida Ang
 Sample Type: 1.0 L Summa Canister
 Test Notes:
 Container ID: 1SC00522

Date Collected: 9/27/18
 Date Received: 10/2/18
 Date Analyzed: 10/12/18
 Volume(s) Analyzed: 0.40 Liter(s)

Initial Pressure (psig): 0.37 Final Pressure (psig): 5.66

Container Dilution Factor: 1.35

CAS #	Compound	Result μg/m ³	MRL μg/m ³	MDL μg/m ³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	1.8	0.031	ND	0.51	0.0087	
71-43-2	Benzene	0.26	1.8	0.068	0.080	0.55	0.021	J
108-88-3	Toluene	0.26	1.8	0.037	0.069	0.47	0.0099	J
100-41-4	Ethylbenzene	0.096	1.8	0.033	0.022	0.40	0.0075	J
179601-23-1	m,p-Xylenes	0.15	3.7	0.064	0.034	0.86	0.015	J
95-47-6	o-Xylene	0.083	1.8	0.030	0.019	0.41	0.0069	J
91-20-3	Naphthalene	ND	1.7	0.054	ND	0.33	0.010	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

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RESULTS OF ANALYSIS

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Client: Leidos
Client Sample ID: SVP-3-092718
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
 ALS Sample ID: P1805236-003

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Wida Ang
 Sample Type: 1.0 L Summa Canister
 Test Notes:
 Container ID: 1SC01378

Date Collected: 9/27/18
 Date Received: 10/2/18
 Date Analyzed: 10/12/18
 Volume(s) Analyzed: 0.40 Liter(s)

Initial Pressure (psig): 0.40 Final Pressure (psig): 5.09

Container Dilution Factor: 1.31

CAS #	Compound	Result µg/m ³	MRL µg/m ³	MDL µg/m ³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	1.8	0.030	ND	0.49	0.0085	
71-43-2	Benzene	0.18	1.7	0.066	0.056	0.53	0.021	J
108-88-3	Toluene	1.7	1.7	0.036	0.45	0.46	0.0096	J
100-41-4	Ethylbenzene	0.30	1.7	0.032	0.069	0.39	0.0073	J
179601-23-1	m,p-Xylenes	0.66	3.6	0.062	0.15	0.83	0.014	J
95-47-6	o-Xylene	0.47	1.7	0.029	0.11	0.40	0.0067	J
91-20-3	Naphthalene	1.4	1.7	0.052	0.27	0.32	0.010	J

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

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RESULTS OF ANALYSIS

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Client: Leidos
Client Sample ID: DUP-1-092718
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
 ALS Sample ID: P1805236-004

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Wida Ang
 Sample Type: 1.0 L Summa Canister
 Test Notes:
 Container ID: 1SC00702

Date Collected: 9/27/18
 Date Received: 10/2/18
 Date Analyzed: 10/12/18
 Volume(s) Analyzed: 0.40 Liter(s)

Initial Pressure (psig): 0.39 Final Pressure (psig): 5.72

Container Dilution Factor: 1.35

CAS #	Compound	Result µg/m ³	MRL µg/m ³	MDL µg/m ³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	1.8	0.031	ND	0.51	0.0087	
71-43-2	Benzene	0.58	1.8	0.068	0.18	0.55	0.021	J
108-88-3	Toluene	0.80	1.8	0.037	0.21	0.47	0.0099	J
100-41-4	Ethylbenzene	0.26	1.8	0.033	0.061	0.40	0.0075	J
179601-23-1	m,p-Xylenes	0.70	3.7	0.064	0.16	0.86	0.015	J
95-47-6	o-Xylene	0.52	1.8	0.030	0.12	0.41	0.0069	J
91-20-3	Naphthalene	0.16	1.7	0.054	0.030	0.33	0.010	J

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

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RESULTS OF ANALYSIS

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Client: Leidos
Client Sample ID: EB-1-092618
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
 ALS Sample ID: P1805236-005

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Wida Ang
 Sample Type: 1.0 L Summa Canister
 Test Notes:
 Container ID: 1SC00703

Date Collected: 9/26/18
 Date Received: 10/2/18
 Date Analyzed: 10/12/18
 Volume(s) Analyzed: 0.40 Liter(s)

Initial Pressure (psig): -4.56 Final Pressure (psig): 6.16

Container Dilution Factor: 2.06

CAS #	Compound	Result µg/m ³	MRL µg/m ³	MDL µg/m ³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	2.8	0.048	ND	0.77	0.013	
71-43-2	Benzene	0.38	2.7	0.10	0.12	0.84	0.032	J
108-88-3	Toluene	5.7	2.7	0.057	1.5	0.72	0.015	
100-41-4	Ethylbenzene	0.46	2.7	0.050	0.11	0.62	0.012	J
179601-23-1	m,p-Xylenes	1.5	5.7	0.098	0.34	1.3	0.023	J
95-47-6	o-Xylene	0.33	2.7	0.046	0.076	0.63	0.011	J
91-20-3	Naphthalene	ND	2.6	0.082	ND	0.50	0.016	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

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Client: Leidos
Client Sample ID: EB-1-092818
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
 ALS Sample ID: P1805236-006

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Wida Ang
 Sample Type: 1.0 L Silonite Summa Canister
 Test Notes:
 Container ID: 1SS00042

Date Collected: 9/28/18
 Date Received: 10/2/18
 Date Analyzed: 10/12/18
 Volume(s) Analyzed: 0.40 Liter(s)

Initial Pressure (psig): -4.22 Final Pressure (psig): 5.09

Container Dilution Factor: 1.89

CAS #	Compound	Result µg/m ³	MRL µg/m ³	MDL µg/m ³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	2.6	0.044	ND	0.71	0.012	
71-43-2	Benzene	0.36	2.5	0.095	0.11	0.77	0.030	J
108-88-3	Toluene	14	2.5	0.052	3.7	0.66	0.014	
100-41-4	Ethylbenzene	0.58	2.5	0.046	0.13	0.57	0.011	J
179601-23-1	m,p-Xylenes	2.1	5.2	0.090	0.47	1.2	0.021	J
95-47-6	o-Xylene	0.47	2.5	0.042	0.11	0.58	0.0097	J
91-20-3	Naphthalene	1.1	2.4	0.076	0.21	0.46	0.014	J

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

J = The result is an estimated concentration that is less than the MRL but greater than or equal to the MDL.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: Leidos
Client Sample ID: Method Blank
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
 ALS Sample ID: P181012-MB

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Wida Ang
 Sample Type: 1.0 L Summa Canister
 Test Notes:

Date Collected: NA
 Date Received: NA
 Date Analyzed: 10/12/18
 Volume(s) Analyzed: 1.00 Liter(s)

Container Dilution Factor: 1.00

CAS #	Compound	Result µg/m ³	MRL µg/m ³	MDL µg/m ³	Result ppbV	MRL ppbV	MDL ppbV	Data Qualifier
1634-04-4	Methyl tert-Butyl Ether	ND	0.54	0.0093	ND	0.15	0.0026	
71-43-2	Benzene	ND	0.52	0.020	ND	0.16	0.0063	
108-88-3	Toluene	ND	0.53	0.011	ND	0.14	0.0029	
100-41-4	Ethylbenzene	ND	0.52	0.0097	ND	0.12	0.0022	
179601-23-1	m,p-Xylenes	ND	1.1	0.019	ND	0.25	0.0044	
95-47-6	o-Xylene	ND	0.53	0.0089	ND	0.12	0.0020	
91-20-3	Naphthalene	ND	0.51	0.016	ND	0.097	0.0031	

ND = Compound was analyzed for, but not detected above the laboratory detection limit.

MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Page 1 of 1

Client: Leidos
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Wida Ang
 Sample Type: 1.0 L Summa Canister(s) / 1.0 L Silonite Summa Canister(s)
 Test Notes:

Date(s) Collected: 9/26 - 9/28/18
 Date(s) Received: 10/2/18
 Date(s) Analyzed: 10/12/18

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4	Toluene-d8	Bromofluorobenzene	Acceptance Limits	Data Qualifier
		% Recovered	% Recovered	% Recovered		
Method Blank	P181012-MB	99	104	103	70-130	
Lab Control Sample	P181012-LCS	97	100	110	70-130	
SVP-1-092718	P1805236-001	99	105	104	70-130	
SVP-2-092718	P1805236-002	99	105	104	70-130	
SVP-3-092718	P1805236-003	99	107	100	70-130	
DUP-1-092718	P1805236-004	98	104	106	70-130	
EB-1-092618	P1805236-005	98	103	106	70-130	
EB-1-092818	P1805236-006	99	103	105	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.

Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Page 1 of 1

Client: Leidos
Client Sample ID: Lab Control Sample
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236
 ALS Sample ID: P181012-LCS

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19
 Analyst: Wida Ang
 Sample Type: 1.0 L Summa Canister
 Test Notes:

Date Collected: NA
 Date Received: NA
 Date Analyzed: 10/12/18
 Volume(s) Analyzed: 0.125 Liter(s)

CAS #	Compound	Spike Amount µg/m ³	Result µg/m ³	% Recovery	ALS	Data Qualifier
					Acceptance Limits	
1634-04-4	Methyl tert-Butyl Ether	8.58	8.20	96	69-125	
71-43-2	Benzene	8.44	7.84	93	76-126	
108-88-3	Toluene	8.48	8.06	95	69-122	
100-41-4	Ethylbenzene	8.49	8.57	101	76-122	
179601-23-1	m,p-Xylenes	17.0	17.8	105	73-126	
95-47-6	o-Xylene	8.56	8.89	104	70-129	
91-20-3	Naphthalene	8.12	8.63	106	26-143	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
 Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Page 1 of 1

Client: Leidos
Client Project ID: Newman's Chevron / 204117

ALS Project ID: P1805236

Internal Standard Area and RT Summary

Test Code: EPA TO-15 SIM
 Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/7890A/MS19
 Analyst: Wida Ang
 Sample Type: 1.0 L Summa Canister(s)
 Test Notes:

Lab File ID: 10121802.D
 Date Analyzed: 10/12/18
 Time Analyzed: 03:46

	IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
	AREA #	RT #	AREA #	RT #	AREA #	RT #
24 Hour Standard	19534	9.62	89611	11.58	11132	15.92
Upper Limit	27348	9.95	125455	11.91	15585	16.25
Lower Limit	11720	9.29	53767	11.25	6679	15.59

Client Sample ID		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
01	Method Blank	18092	9.62	77381	11.58	10109	15.92
02	Lab Control Sample	18769	9.62	86003	11.58	10717	15.92
03	EB-1-092618	18247	9.62	82106	11.58	10610	15.92
04	EB-1-092818	18689	9.61	83171	11.58	10888	15.92
05	SVP-1-092718	18723	9.62	85533	11.58	12091	15.92
06	SVP-2-092718	18649	9.62	84471	11.58	11705	15.92
07	SVP-3-092718	18364	9.62	83356	11.58	12234	15.92
08	DUP-1-092718	18966	9.62	87158	11.58	12021	15.92
09							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 (BCM) = Bromochloromethane
 IS2 (DFB) = 1,4-Difluorobenzene
 IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
 AREA LOWER LIMIT = 60% of internal standard area
 RT UPPER LIMIT = 0.33 minutes of internal standard RT
 RT LOWER LIMIT = 0.33 minutes of internal standard RT

Column used to flag values outside QC limits with an I.
 I = Internal standard not within the specified limits. See case narrative.

Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
 Data File : 10091813.D
 Signal(s) : TCD1A.CH
 Acq On : 09-Oct-2018, 10:48:26
 Operator : GG
 Sample : P1805236-001 1.0ml
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Oct 10 11:16:36 2018
 Quant Method : J:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Tue Sep 26 13:09:57 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units

Target Compounds				
1) Helium	0.767	1785	49.561	ppm m
2) Hydrogen	0.000	0	N.D.	ppm

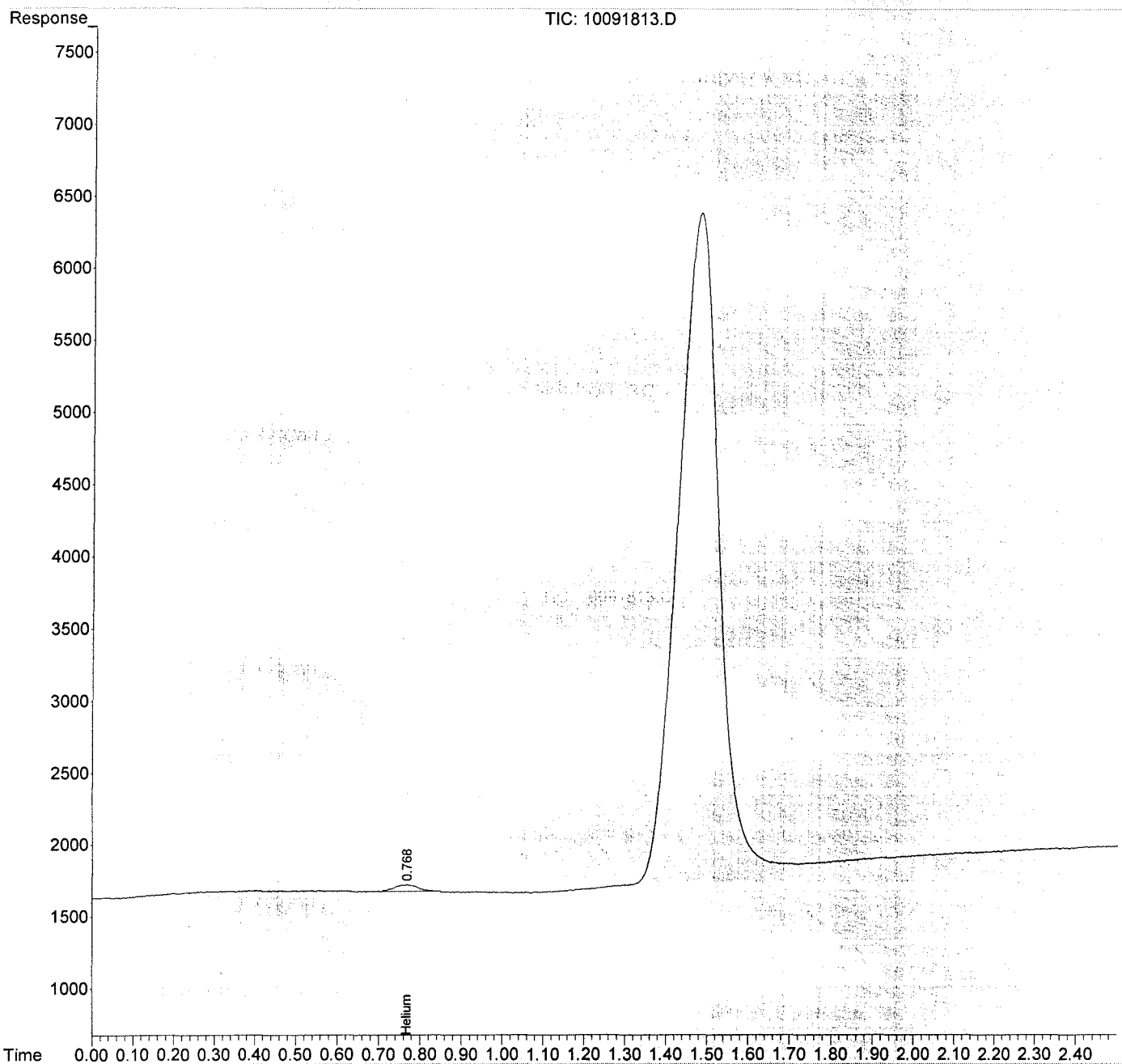
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
Data File : 10091813.D
Signal(s) : TCD1A.CH
Acq On : 09-Oct-2018, 10:48:26
Operator : GG
Sample : P1805236-001 1.0ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 10 11:16:36 2018
Quant Method : J:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Tue Sep 26 13:09:57 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :

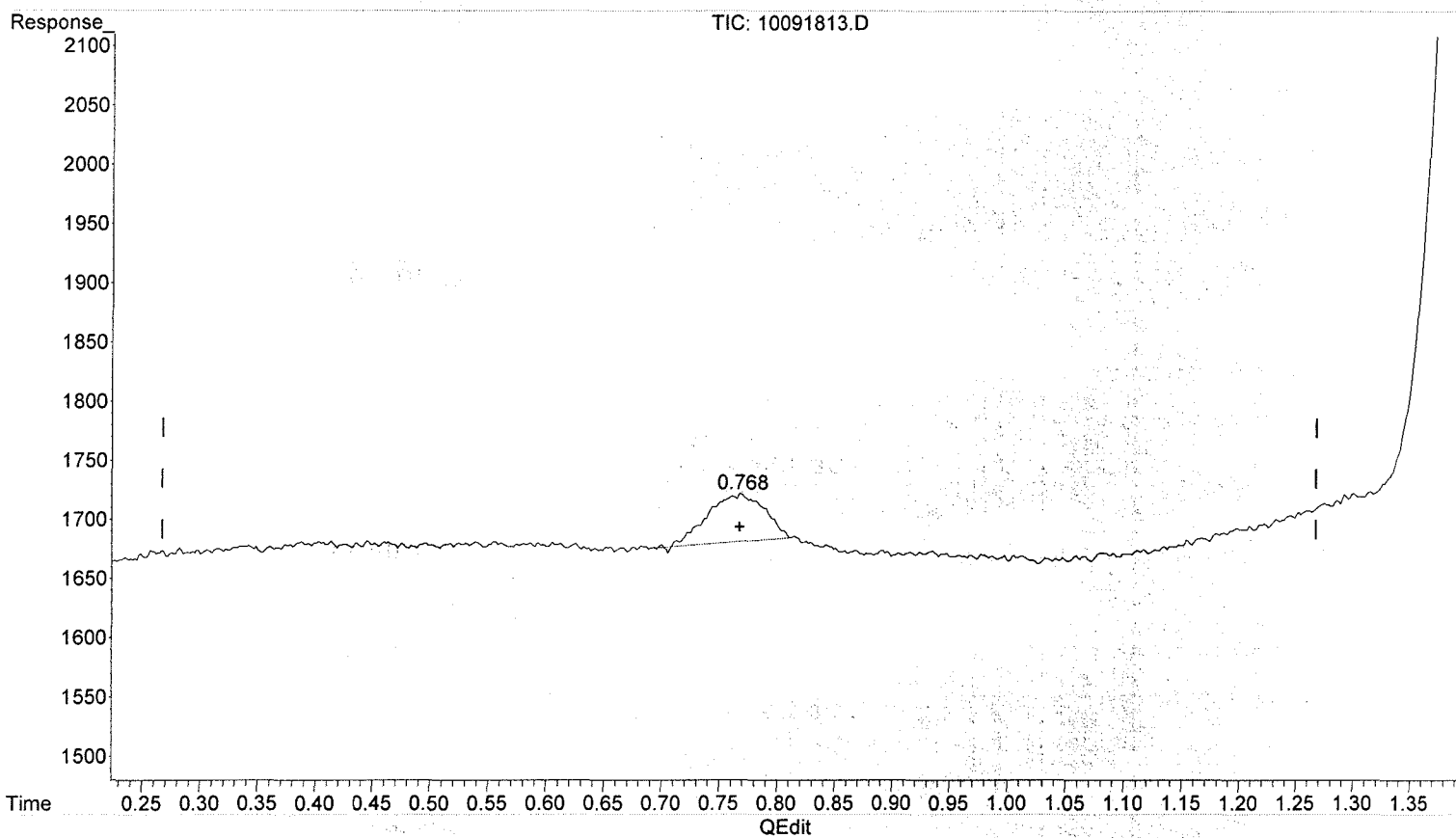


Quantitation Report (Qedit)

Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
Data File : 10091813.D
Signal(s) : TCD1A.CH
Acq On : 09-Oct-2018, 10:48:26
Operator : GG
Sample : P1805236-001 1.0ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 10 11:16:36 2018
Quant Method : J:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Tue Sep 26 13:09:57 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



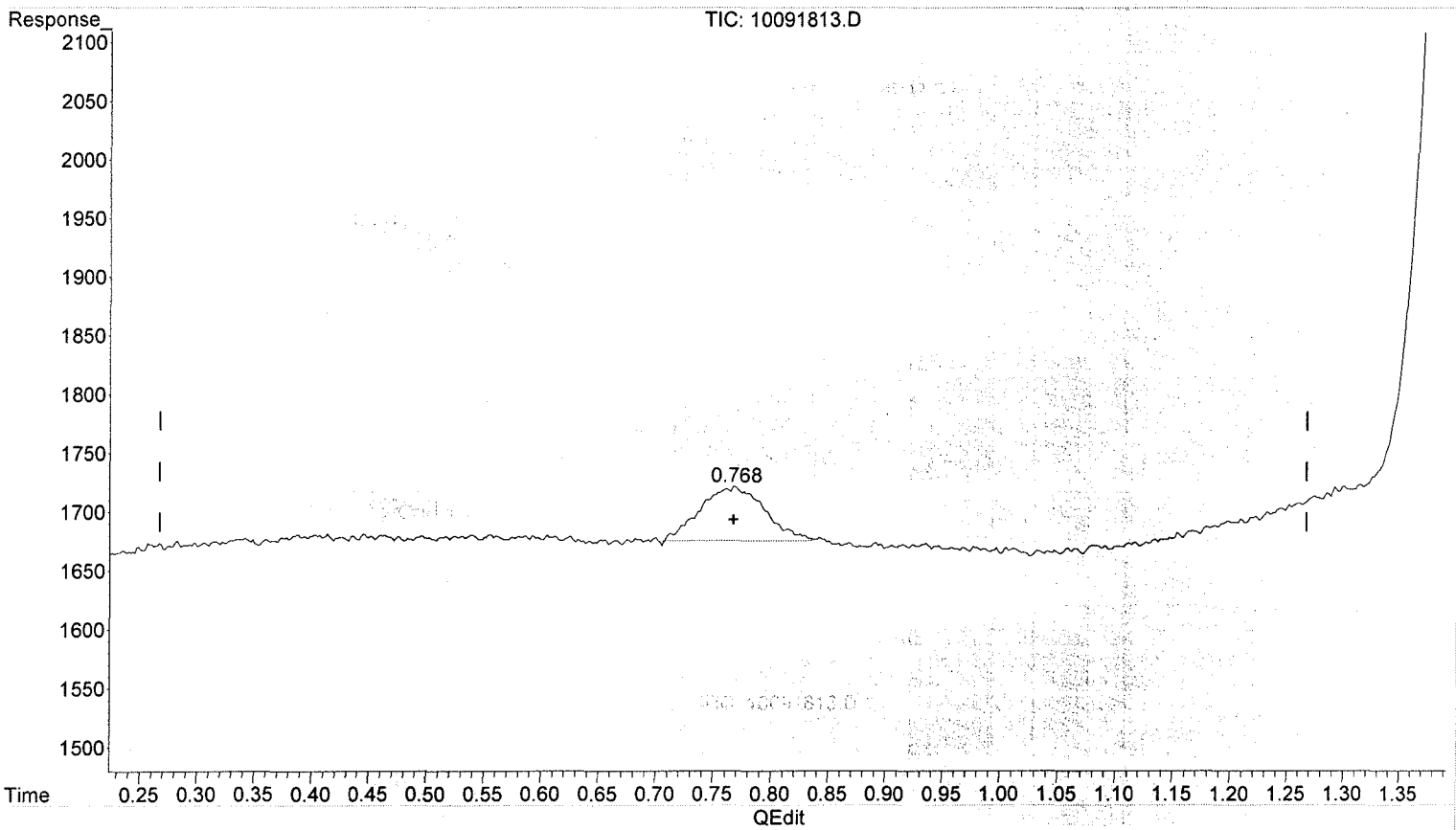
(1) Helium
0.769min 37.695 ppm
response 1358

Quantitation Report (Qedit)

Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
Data File : 10091813.D
Signal(s) : TCD1A.CH
Acq On : 09-Oct-2018, 10:48:26
Operator : GG
Sample : P1805236-001 1.0ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 10 11:16:36 2018
Quant Method : J:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Tue Sep 26 13:09:57 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



(1) Helium
0.767min 49.561 ppm m
response 1785

BLC
10/10/18
[Signature]

WA
10/12/18

Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
 Data File : 10091814.D
 Signal(s) : TCD1A.CH
 Acq On : 09-Oct-2018, 10:55:16
 Operator : GG
 Sample : P1805236-002 1.0ml
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Oct 10 11:17:19 2018
 Quant Method : J:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Tue Sep 26 13:09:57 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Helium	0.773	6734	186.976 ppm
2) Hydrogen	0.000	0	N.D. ppm

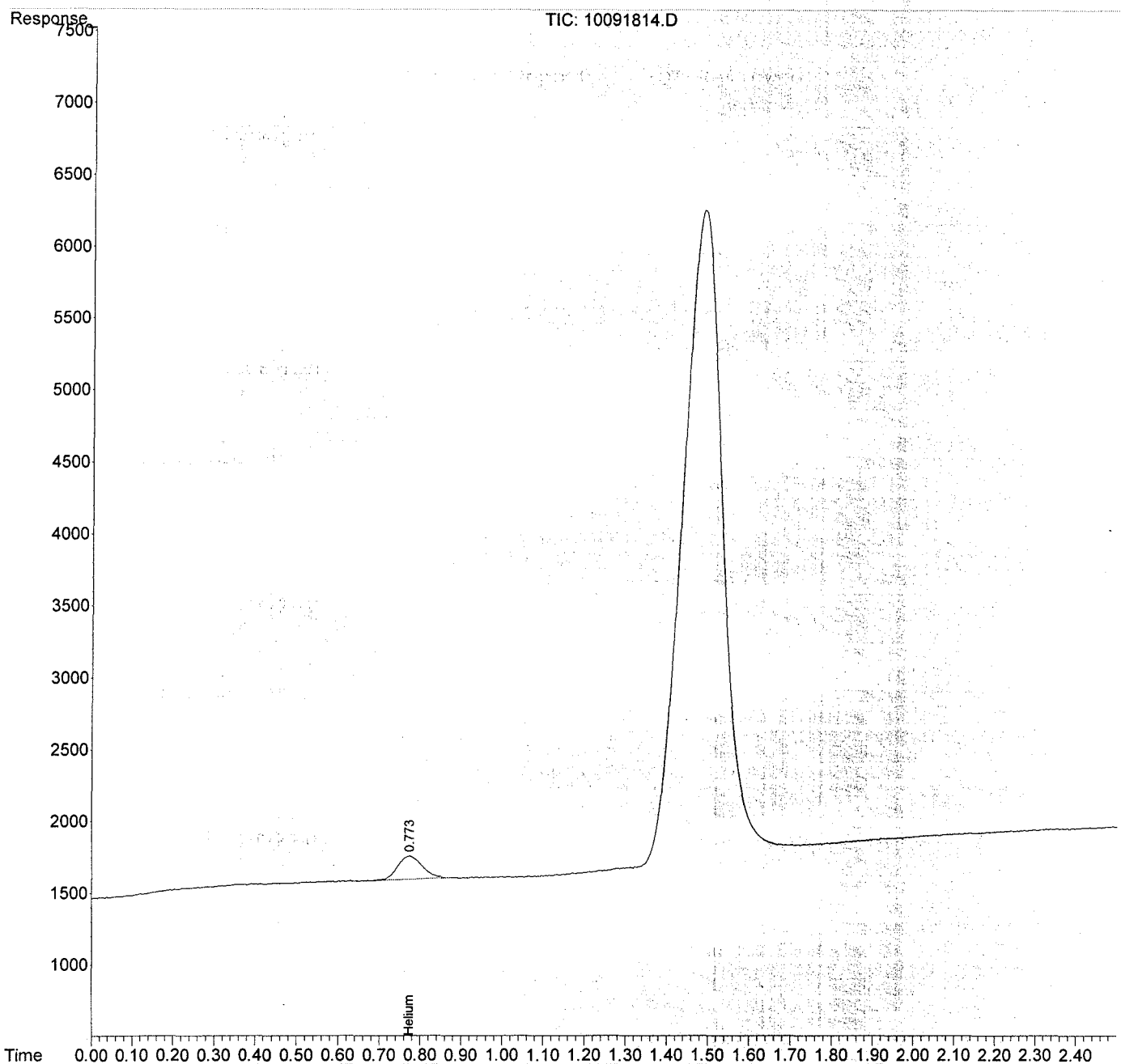
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
Data File : 10091814.D
Signal(s) : TCD1A.CH
Acq On : 09-Oct-2018, 10:55:16
Operator : GG
Sample : P1805236-002 1.0ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 10 11:17:19 2018
Quant Method : J:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Tue Sep 26 13:09:57 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
 Data File : 10091816.D
 Signal(s) : TCD1A.CH
 Acq On : 09-Oct-2018, 11:12:35
 Operator : GG
 Sample : P1805236-003 1.0ml
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Oct 10 11:17:47 2018
 Quant Method : J:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Tue Sep 26 13:09:57 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Helium	0.766	3780	104.957 ppm
2) Hydrogen	0.000	0	N.D. ppm

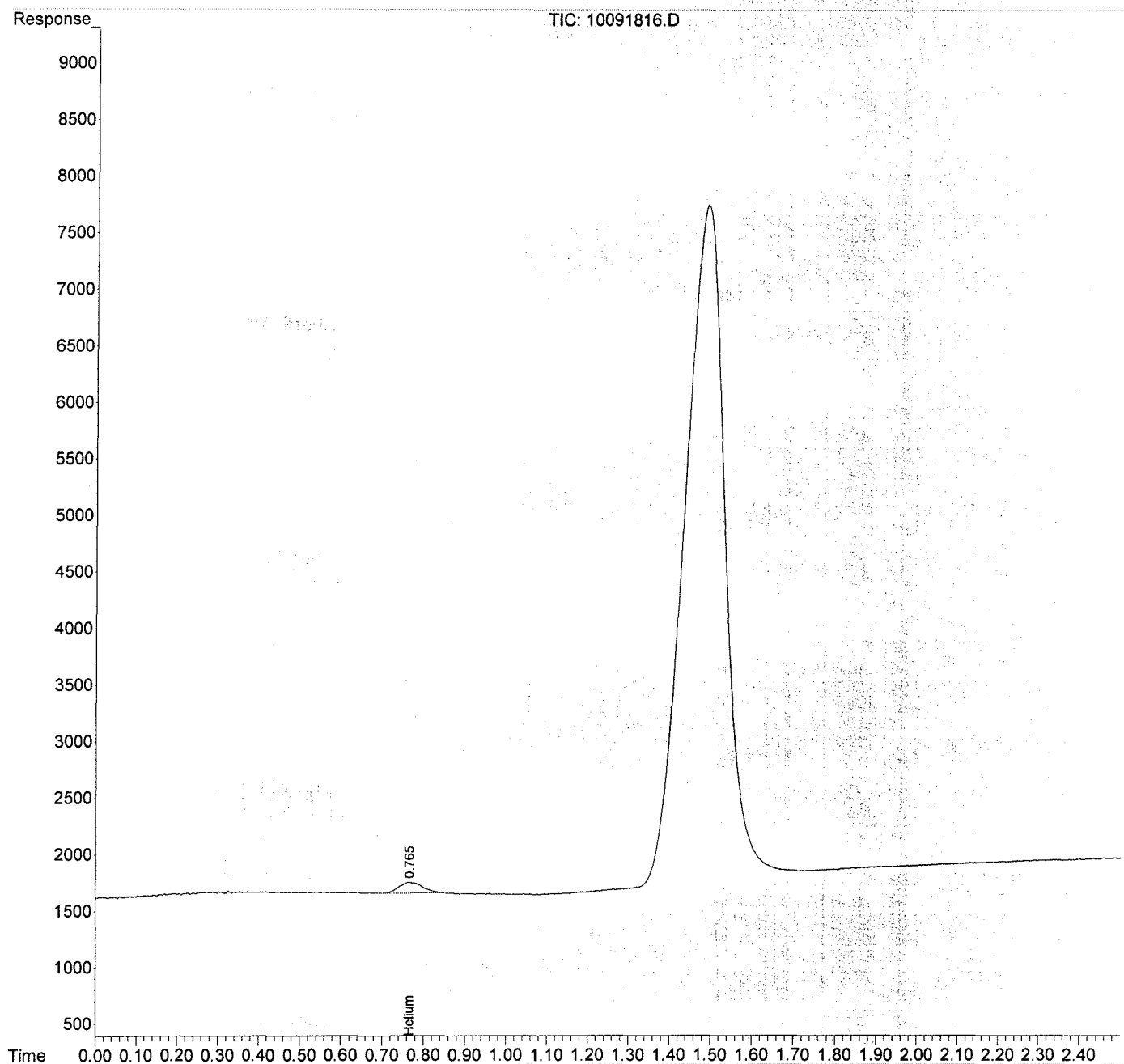
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
Data File : 10091816.D
Signal(s) : TCD1A.CH
Acq On : 09-Oct-2018, 11:12:35
Operator : GG
Sample : P1805236-003 1.0ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 10 11:17:47 2018
Quant Method : J:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Tue Sep 26 13:09:57 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
 Data File : 10091817.D
 Signal(s) : TCD1A.CH
 Acq On : 09-Oct-2018, 11:19:52
 Operator : GG
 Sample : P1805236-004 1.0ml
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Oct 10 11:18:06 2018
 Quant Method : J:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Tue Sep 26 13:09:57 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Helium	0.774	6553	181.957 ppm
2) Hydrogen	0.000	0	N.D. ppm

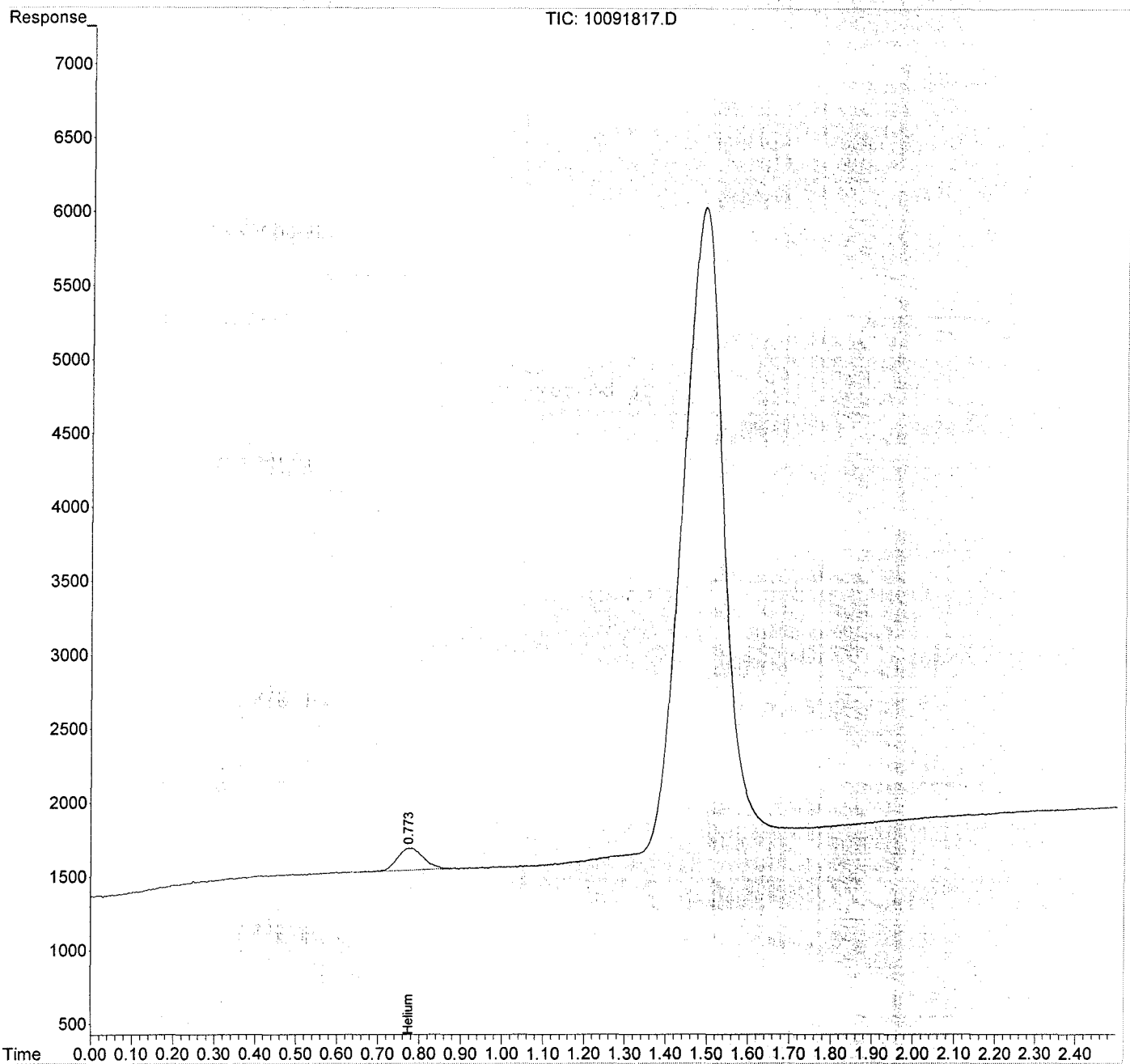
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
Data File : 10091817.D
Signal(s) : TCD1A.CH
Acq On : 09-Oct-2018, 11:19:52
Operator : GG
Sample : P1805236-004 1.0ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 10 11:18:06 2018
Quant Method : J:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Tue Sep 26 13:09:57 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
 Data File : 10091818.D
 Signal(s) : TCD1A.CH
 Acq On : 09-Oct-2018, 11:38:49
 Operator : GG
 Sample : P1805236-005 1.0ml
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Oct 10 11:18:33 2018
 Quant Method : J:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Tue Sep 26 13:09:57 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Helium	0.772	65540	1819.842 ppm
2) Hydrogen	0.000	0	N.D. ppm

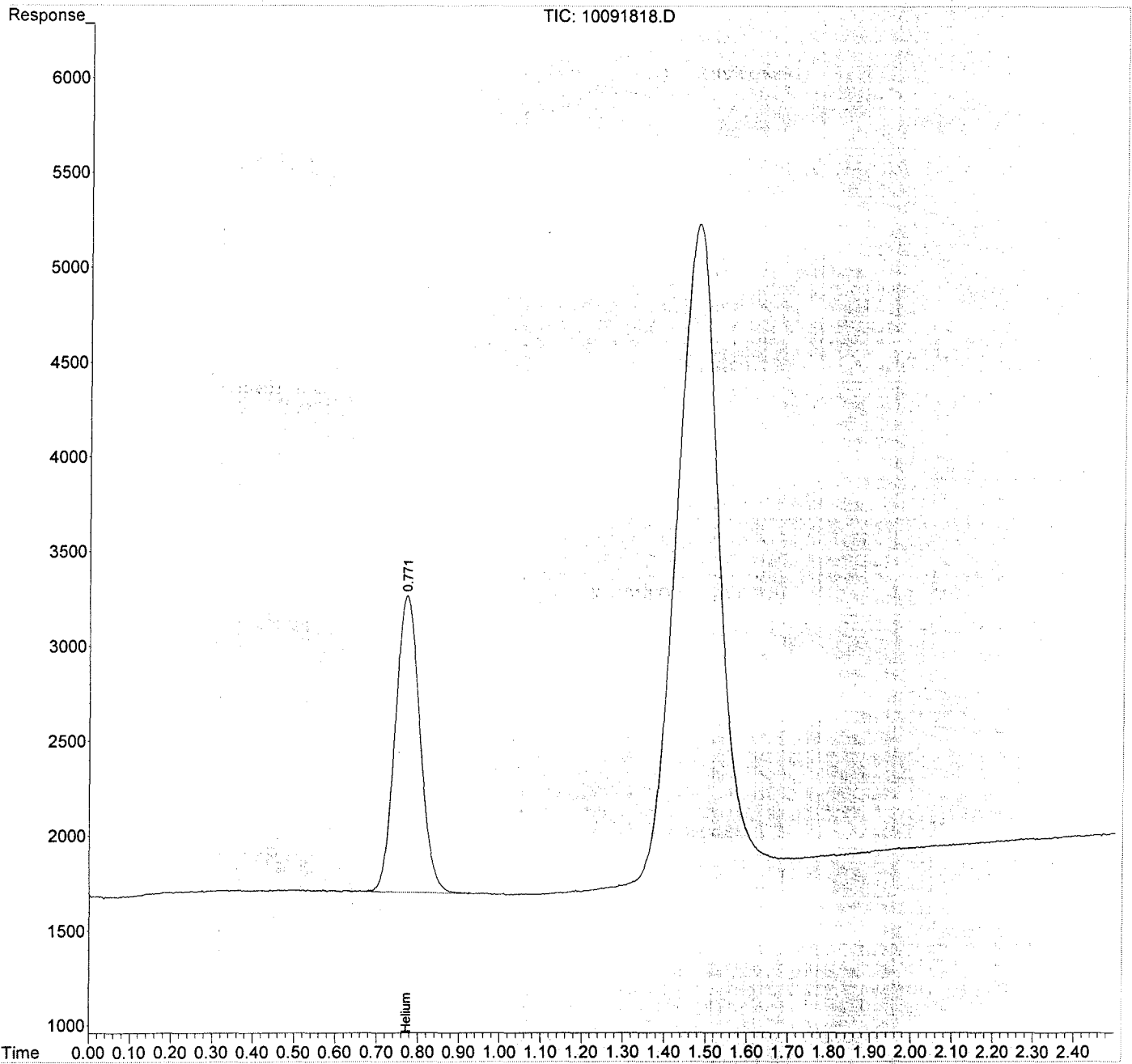
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
Data File : 10091818.D
Signal(s) : TCD1A.CH
Acq On : 09-Oct-2018, 11:38:49
Operator : GG
Sample : P1805236-005 1.0ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 10 11:18:33 2018
Quant Method : J:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Tue Sep 26 13:09:57 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
 Data File : 10091819.D
 Signal(s) : TCD1A.CH
 Acq On : 09-Oct-2018, 12:18:02
 Operator : GG
 Sample : P1805236-006 1.0ml
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Oct 10 11:19:28 2018
 Quant Method : J:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Tue Sep 26 13:09:57 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Helium	0.773	16147	448.340 ppm
2) Hydrogen	0.000	0	N.D. ppm

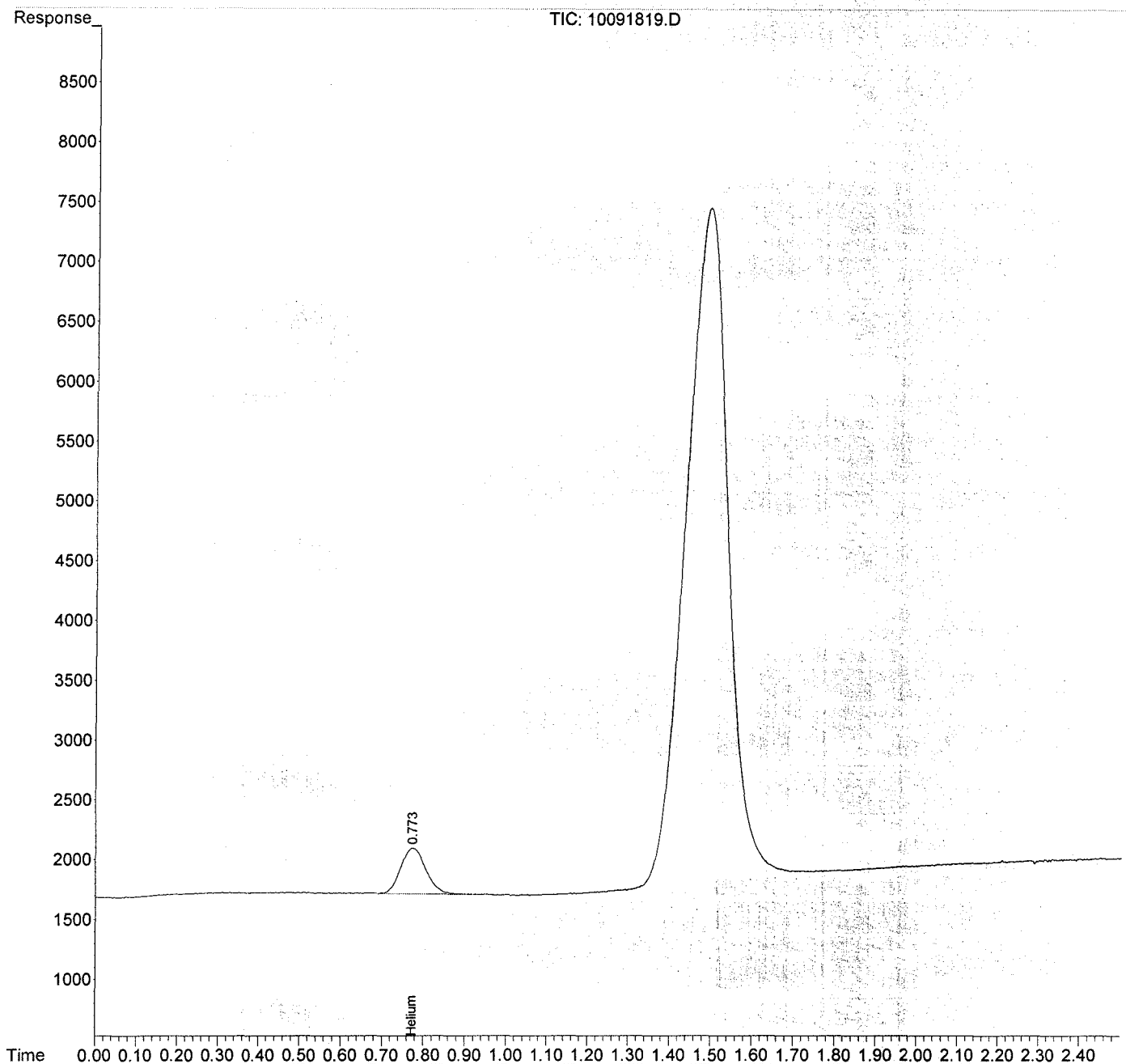
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
 Data File : 10091819.D
 Signal(s) : TCD1A.CH
 Acq On : 09-Oct-2018, 12:18:02
 Operator : GG
 Sample : P1805236-006 1.0ml
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Oct 10 11:19:28 2018
 Quant Method : J:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Tue Sep 26 13:09:57 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :



Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
 Data File : 10091802.D
 Signal(s) : TCD1A.CH
 Acq On : 09-Oct-2018, 09:19:22
 Operator : GG
 Sample : MB 1.0ml
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Oct 10 10:02:05 2018
 Quant Method : J:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Tue Sep 26 13:09:57 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units

Target Compounds				
1) Helium	0.000	0	N.D.	ppm
2) Hydrogen	0.000	0	N.D.	ppm

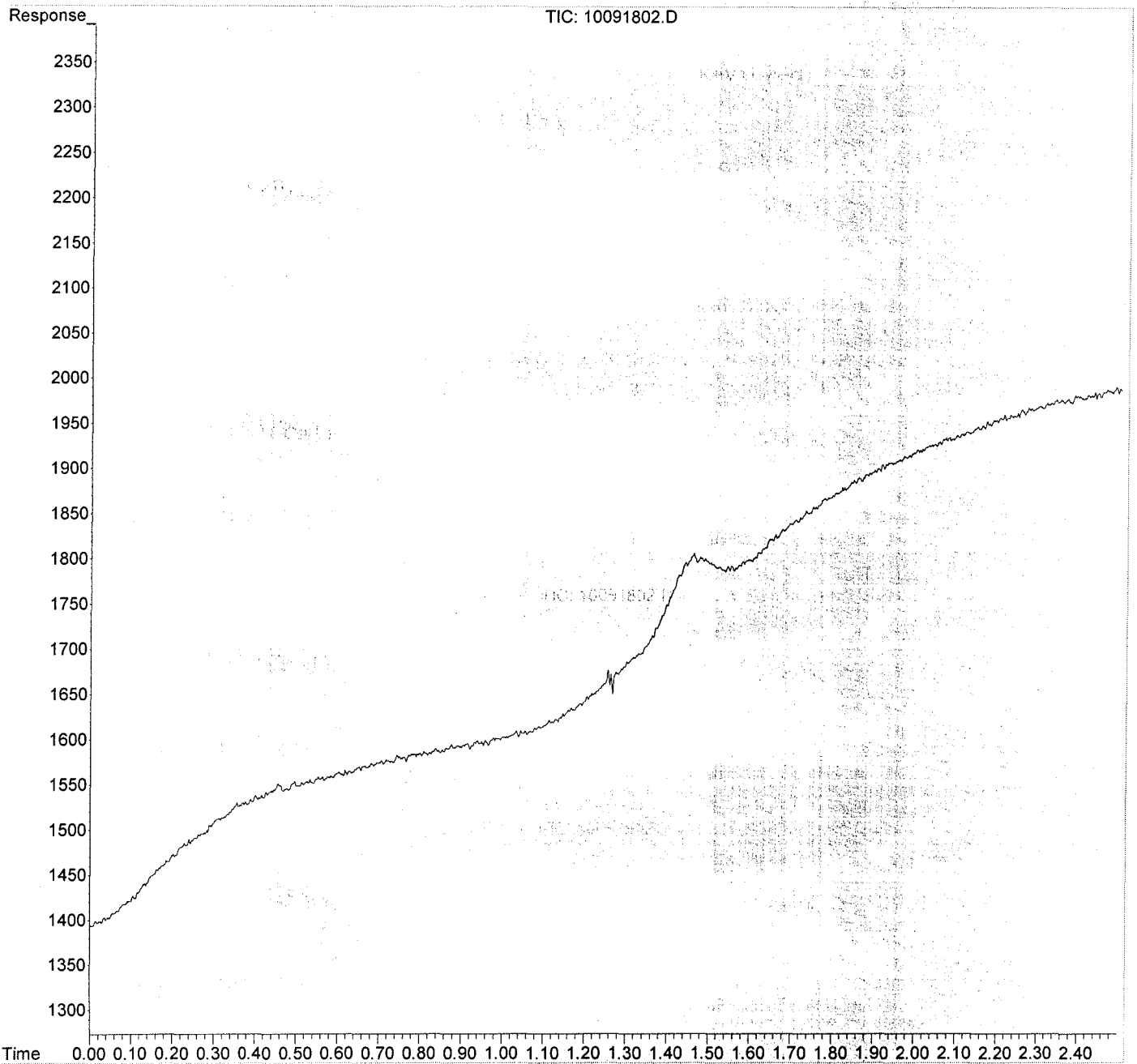
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
Data File : 10091802.D
Signal(s) : TCD1A.CH
Acq On : 09-Oct-2018, 09:19:22
Operator : GG
Sample : MB 1.0ml
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 10 10:02:05 2018
Quant Method : J:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Tue Sep 26 13:09:57 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
 Data File : 10091803.D
 Signal(s) : TCD1A.CH
 Acq On : 09-Oct-2018, 09:27:01
 Operator : GG
 Sample : LCS S32-10091802
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Oct 10 10:02:19 2018
 Quant Method : J:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Tue Sep 26 13:09:57 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Helium	0.762	41380	1148.989 ppm
2) Hydrogen	0.000	0	N.D. ppm

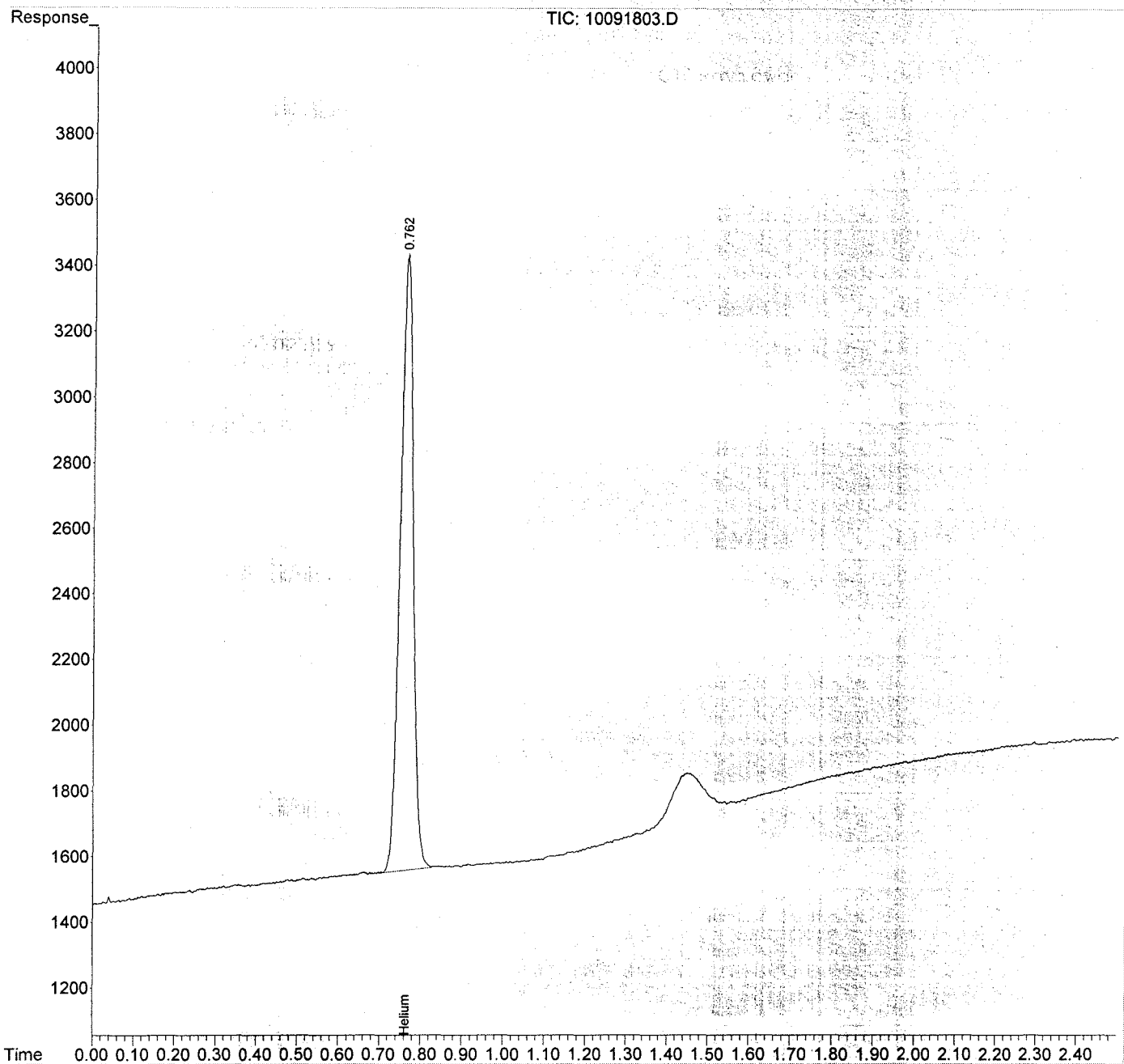
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
Data File : 10091803.D
Signal(s) : TCD1A.CH
Acq On : 09-Oct-2018, 09:27:01
Operator : GG
Sample : LCS S32-10091802
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 10 10:02:19 2018
Quant Method : J:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Tue Sep 26 13:09:57 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Response Factor Report HP5890

Method Path : I:\GC08\METHODS\
 Method File : H2HE092517.M
 Title : Hydrogen and Helium by EPA Method 3C
 Last Update : Tue Sep 26 13:09:57 2017
 Response Via : Initial Calibration

Calibration Files

1 =09251703.D 2 =09251704.D 3 =09251705.D
 4 =09251706.D 5 =09251707.D

Compound	1	2	3	4	5	Avg	%RSD
1) Helium	3.697	2.953	3.773	3.842	3.741	3.601 E1	10.17
2) Hydrogen	5.493	4.748	5.681	5.795	5.694	5.482 E1	7.75

(#) = Out of Range

H2HE092517.M Tue Oct 10 09:59:28 2017

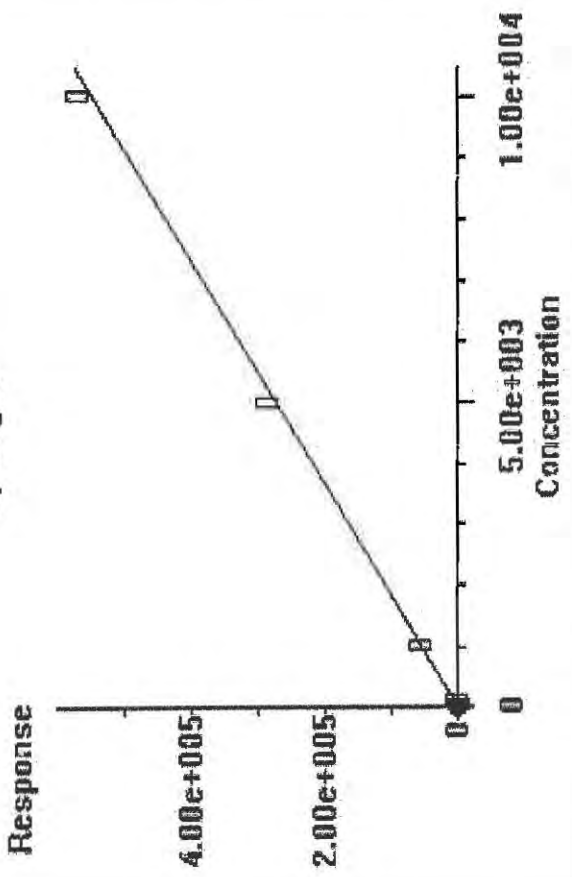
Search by: Ret Time Name Index First Compound

Compound Database External Standard Compound

Helium
Hydrogen

LvlID	Concentration	Response	LvlID	Concentration	Response
1	20.000000	1093.662565			
2	100.000000	4747.620750			
3	1000.000000	56811.425000			
4	5000.000000	289740.073715			
5	10000.000000	569434.835823			

Hydrogen



0.000e+000	Quadratic term
5.482e+001	Linear term
0.000e+000	Constant term
8%	RF Rel Std Dev

Search by Ret Time

Name

Index

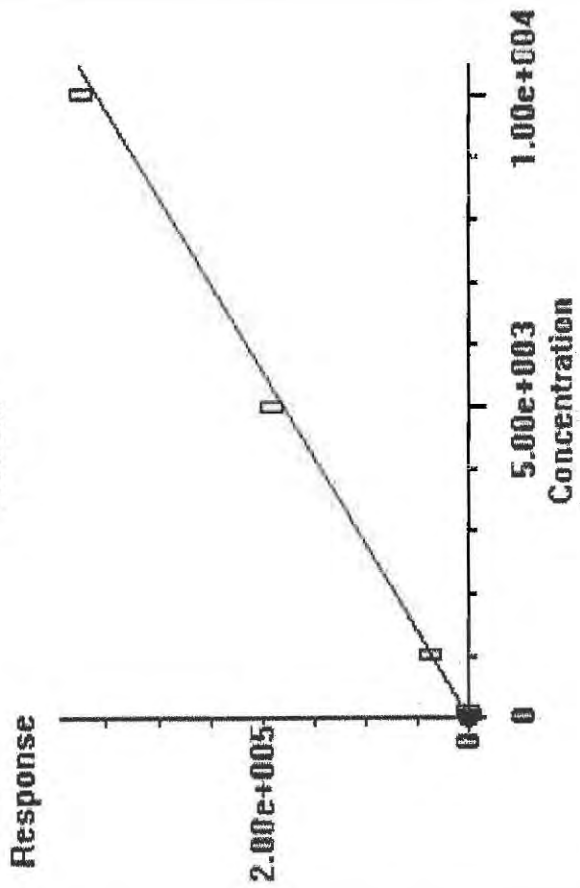
Compound Database
External Standard Compound

- Helium
- Hydrogen

Identification | Calibration | User-Defined | Advanced | Reporting

Lvl ID	Concentration	Response	Lvl ID	Concentration	Response
1	20.000000	739.481516			
2	100.000000	2953.330737			
3	1000.000000	37734.456000			
4	5000.000000	192081.649285			
5	10000.000000	374130.495177			

Helium



0.000e+000	Quadratic term
3.601e+001	Linear term
0.000e+000	Constant term
10%	RF Rel Std Dev

Calibration Status Report HP5890

Method Path : I:\GC08\METHODS\
 Method File : H2HE092517.M
 Title : Hydrogen and Helium by EPA Method 3C
 Last Update : Tue Sep 26 13:09:57 2017
 Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
1	1	20	0	I:\GC08\DATA\TO_3M\2017_09\25HEH2\09251703.D
2	2	100	0	I:\GC08\DATA\TO_3M\2017_09\25HEH2\09251704.D
3	3	1000	0	I:\GC08\DATA\TO_3M\2017_09\25HEH2\09251705.D
4	4	5000	0	I:\GC08\DATA\TO_3M\2017_09\25HEH2\09251706.D
5	5	10000	0	I:\GC08\DATA\TO_3M\2017_09\25HEH2\09251707.D

#	ID	Update Time	Quant Time	Acquisition Time
1	1	Sep 26 13:08 2017	Sep 26 11:17 2017	25-Sep-2017, 09:02:44
2	2	Sep 26 13:09 2017	Sep 25 09:23 2017	25-Sep-2017, 09:13:33
3	3	Sep 26 13:09 2017	Sep 25 09:31 2017	25-Sep-2017, 09:27:09
4	4	Sep 26 13:09 2017	Sep 25 09:47 2017	25-Sep-2017, 09:38:45
5	5	Sep 26 13:09 2017	Sep 25 10:05 2017	25-Sep-2017, 09:51:09

H2HE092517.M Tue Oct 10 09:59:52 2017

Data Path : I:\GC08\DATA\TO_3M\2017_09\25HEH2\
 Data File : 09251703.D
 Signal(s) : TCD1A.CH
 Acq On : 25-Sep-2017, 09:02:44
 Operator : RS
 Sample : 20ppm s32-09251702
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Sep 26 11:16:47 2017
 Quant Method : I:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Mon Sep 25 10:05:52 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc	Units

Target Compounds				
1) Helium	0.796	739	17.187	ppm m
2) Hydrogen	0.946	1099	16.747	ppm m

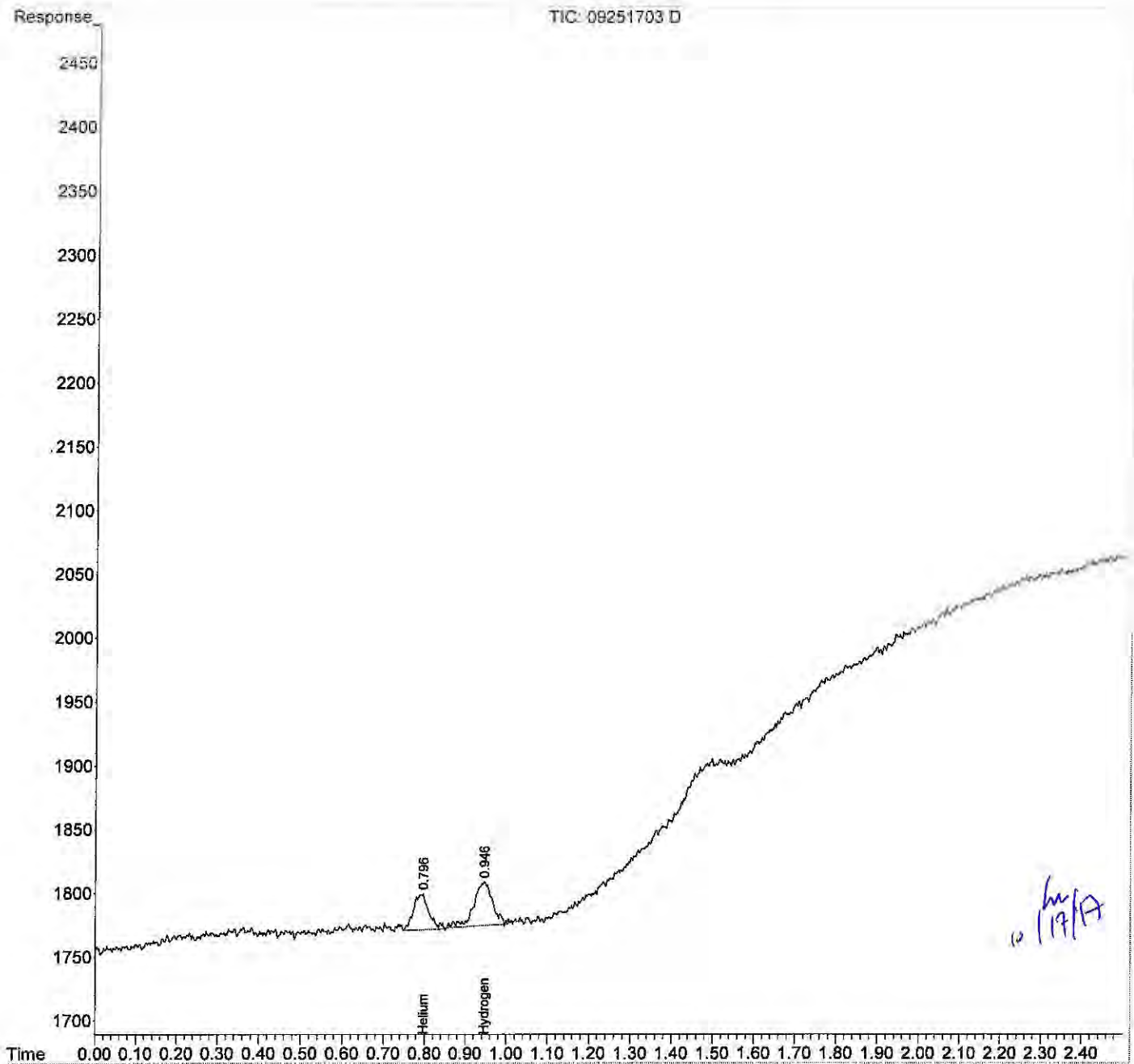
(f)=RT Delta > 1/2 Window

(m)=manual int.

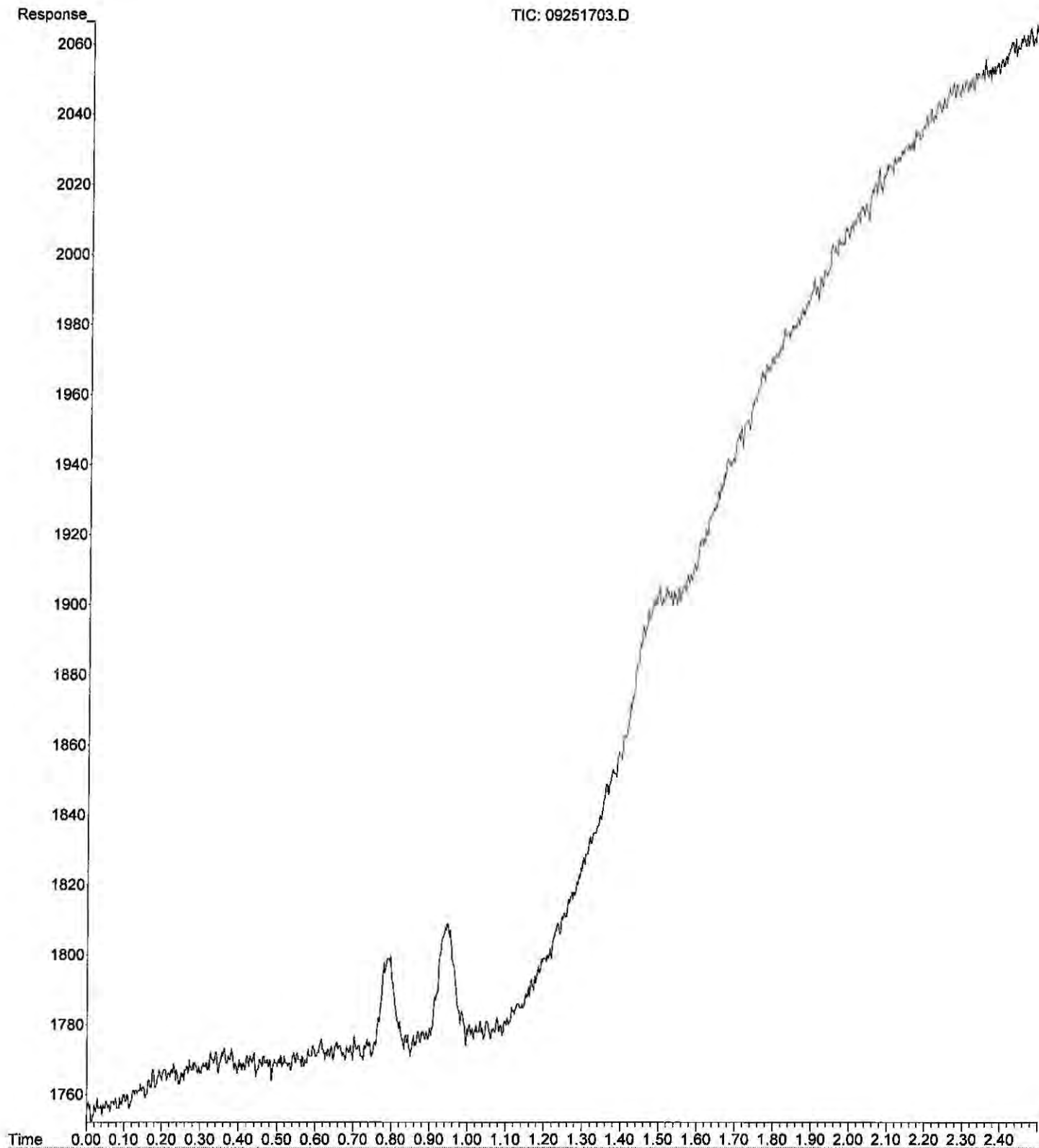
Data Path : I:\GC08\DATA\TO_3M\2017_09\25HEH2\
Data File : 09251703.D
Signal(s) : TCD1A.CH
Acq On : 25-Sep-2017, 09:02:44
Operator : RS
Sample : 20ppm s32-09251702
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 26 11:16:47 2017
Quant Method : I:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Mon Sep 25 10:05:52 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



File : I:\GC08\DATA\TO_3M\2017_09\25HEH2\09251703.D
Operator : RS
Acquired : 25-Sep-2017, 09:02:44 using AcqMethod H2_HE.M
Instrument : HP5890
Sample Name: 20ppm s32-09251702
Misc Info :
Vial Number: 1



Data Path : I:\GC08\DATA\TO_3M\2017_09\25HEH2\
 Data File : 09251704.D
 Signal(s) : TCD1A.CH
 Acq On : 25-Sep-2017, 09:13:33
 Operator : RS
 Sample : 100ppm s32-09251702
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Sep 25 09:21:50 2017
 Quant Method : I:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Mon Sep 25 09:16:25 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Helium	0.783	2953	69.001 ppm m
2) Hydrogen	0.936	4748	70.884 ppm

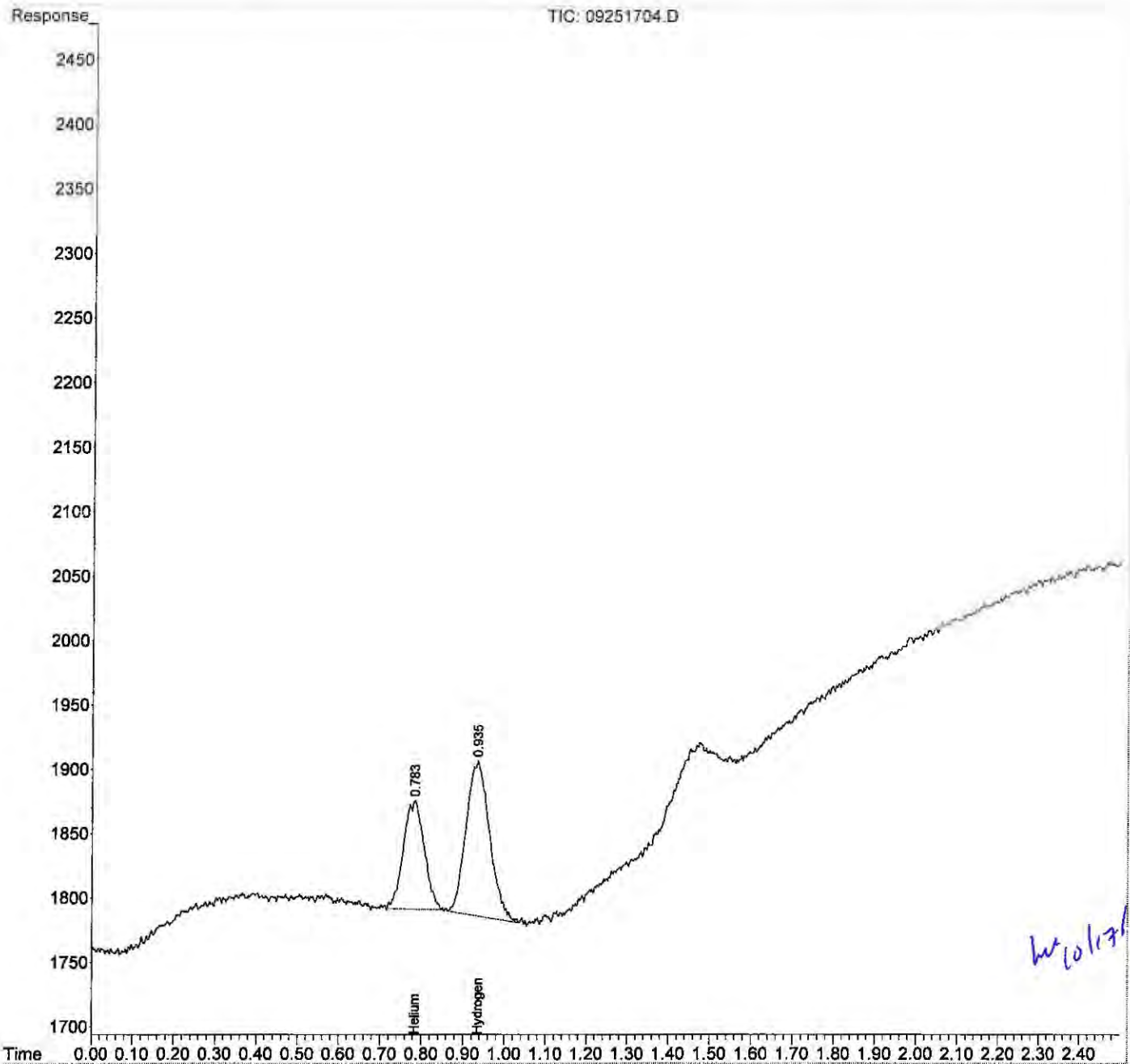
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : I:\GC08\DATA\TO_3M\2017_09\25HEH2\
Data File : 09251704.D
Signal(s) : TCD1A.CH
Acq On : 25-Sep-2017, 09:13:33
Operator : RS
Sample : 100ppm s32-09251702
Misc :
ALS Vial : 1 Sample Multiplier: 1

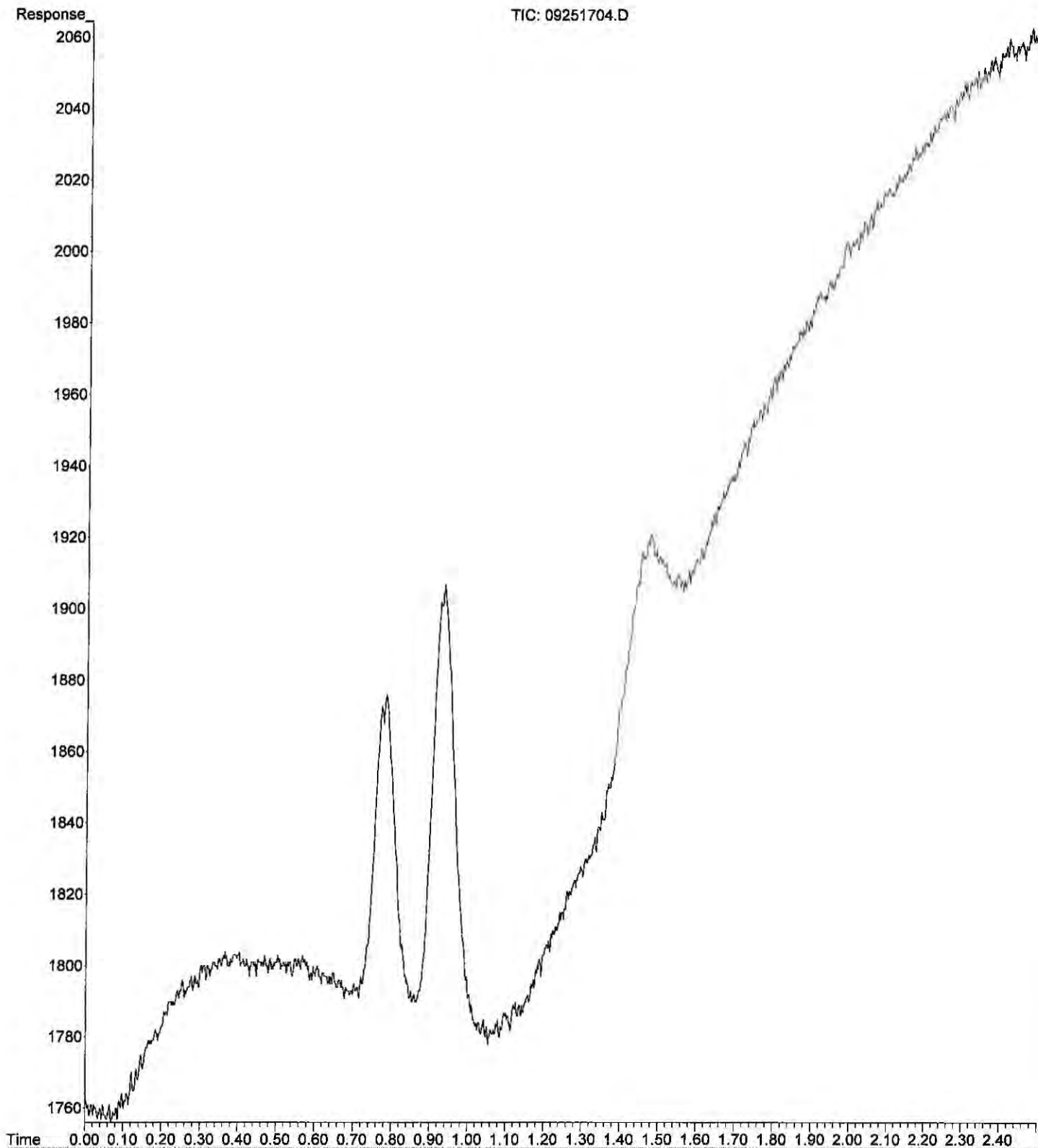
Integration File: autoint1.e
Quant Time: Sep 25 09:21:50 2017
Quant Method : I:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Mon Sep 25 09:16:25 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



RS 9/26/17
MR

File :I:\GC08\DATA\TO_3M\2017_09\25HEH2\09251704.D
Operator : RS
Acquired : 25-Sep-2017, 09:13:33 using AcqMethod H2_HE.M
Instrument : HP5890
Sample Name: 100ppm s32-09251702
Misc Info :
Vial Number: 1



Data Path : I:\GC08\DATA\TO_3M\2017_09\25HEH2\
 Data File : 09251705.D
 Signal(s) : TCD1A.CH
 Acq On : 25-Sep-2017, 09:27:09
 Operator : RS
 Sample : 1000ppm s32-09251701
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Sep 25 09:31:38 2017
 Quant Method : I:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Mon Sep 25 09:23:40 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Helium	0.794	37734	918.944 ppm
2) Hydrogen	0.946	56811	883.819 ppm

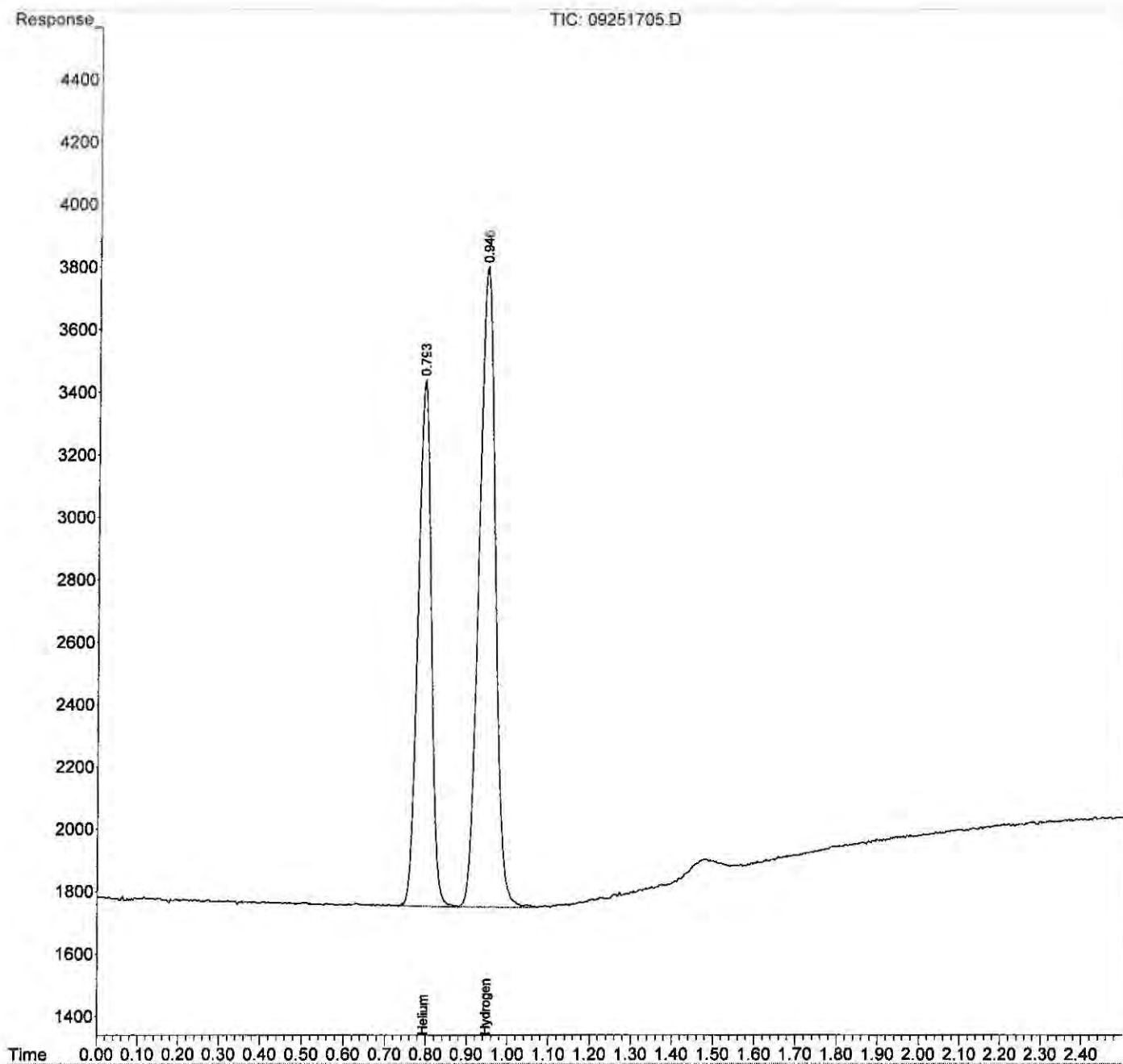
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : I:\GC08\DATA\TO_3M\2017_09\25HEH2\
Data File : 09251705.D
Signal(s) : TCD1A.CH
Acq On : 25-Sep-2017, 09:27:09
Operator : RS
Sample : 1000ppm s32-09251701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 25 09:31:38 2017
Quant Method : I:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Mon Sep 25 09:23:40 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Data Path : I:\GC08\DATA\TO_3M\2017_09\25HEH2\
 Data File : 09251706.D
 Signal(s) : TCD1A.CH
 Acq On : 25-Sep-2017, 09:38:45
 Operator : RS
 Sample : 5000ppm s32-09251701
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Sep 25 09:47:15 2017
 Quant Method : I:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Mon Sep 25 09:37:21 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Helium	0.794	192082	4561.698 ppm
2) Hydrogen	0.945	289740	4534.333 ppm

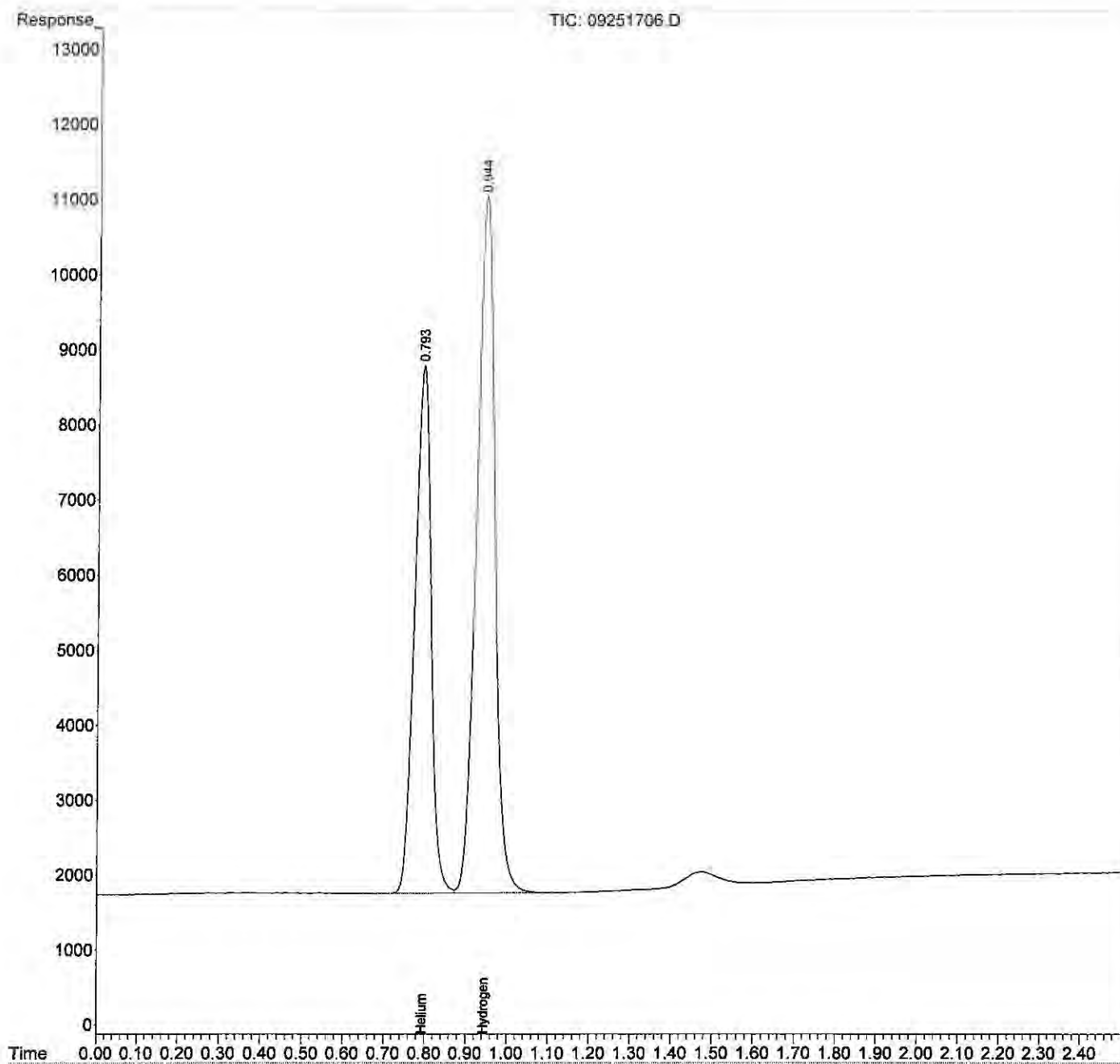
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : I:\GC08\DATA\TO_3M\2017_09\25HEH2\
 Data File : 09251706.D
 Signal(s) : TCD1A.CH
 Acq On : 25-Sep-2017, 09:38:45
 Operator : RS
 Sample : 5000ppm s32-09251701
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Sep 25 09:47:15 2017
 Quant Method : I:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Mon Sep 25 09:37:21 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :



Data Path : I:\GC08\DATA\TO_3M\2017_09\25HEH2\
 Data File : 09251707.D
 Signal(s) : TCD1A.CH
 Acq On : 25-Sep-2017, 09:51:09
 Operator : RS
 Sample : 10000ppm s32-09251701
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Sep 25 10:05:31 2017
 Quant Method : I:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Mon Sep 25 09:47:45 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Helium	0.788	374130	8695.568 ppm
2) Hydrogen	0.939	569435	8679.983 ppm

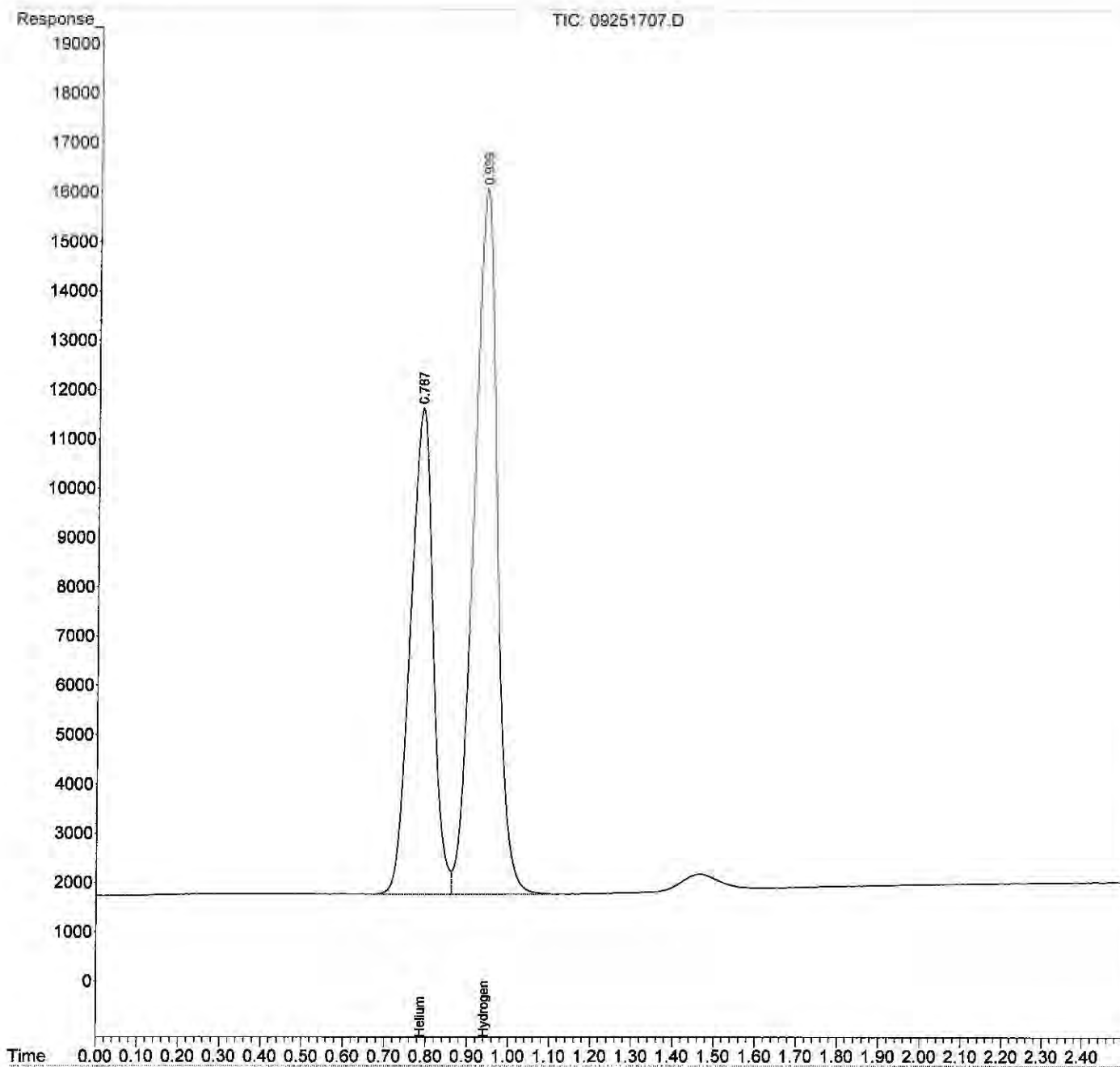
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : I:\GC08\DATA\TO_3M\2017_09\25HEH2\
Data File : 09251707.D
Signal(s) : TCD1A.CH
Acq On : 25-Sep-2017, 09:51:09
Operator : RS
Sample : 10000ppm s32-09251701
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 25 10:05:31 2017
Quant Method : I:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Mon Sep 25 09:47:45 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Data Path : I:\GC08\DATA\TO_3M\2017_09\25HEH2\
 Data File : 09251709.D
 Signal(s) : TCD1A.CH
 Acq On : 25-Sep-2017, 10:17:24
 Operator : RS
 Sample : ICV s32-09251703
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Sep 26 13:10:30 2017
 Quant Method : I:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Tue Sep 26 13:09:57 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Helium	0.804	40923	1136.305 ppm
2) Hydrogen	0.956	61315	1118.436 ppm

actual %D 113.6%
actual %D 119%

(f)=RT Delta > 1/2 Window

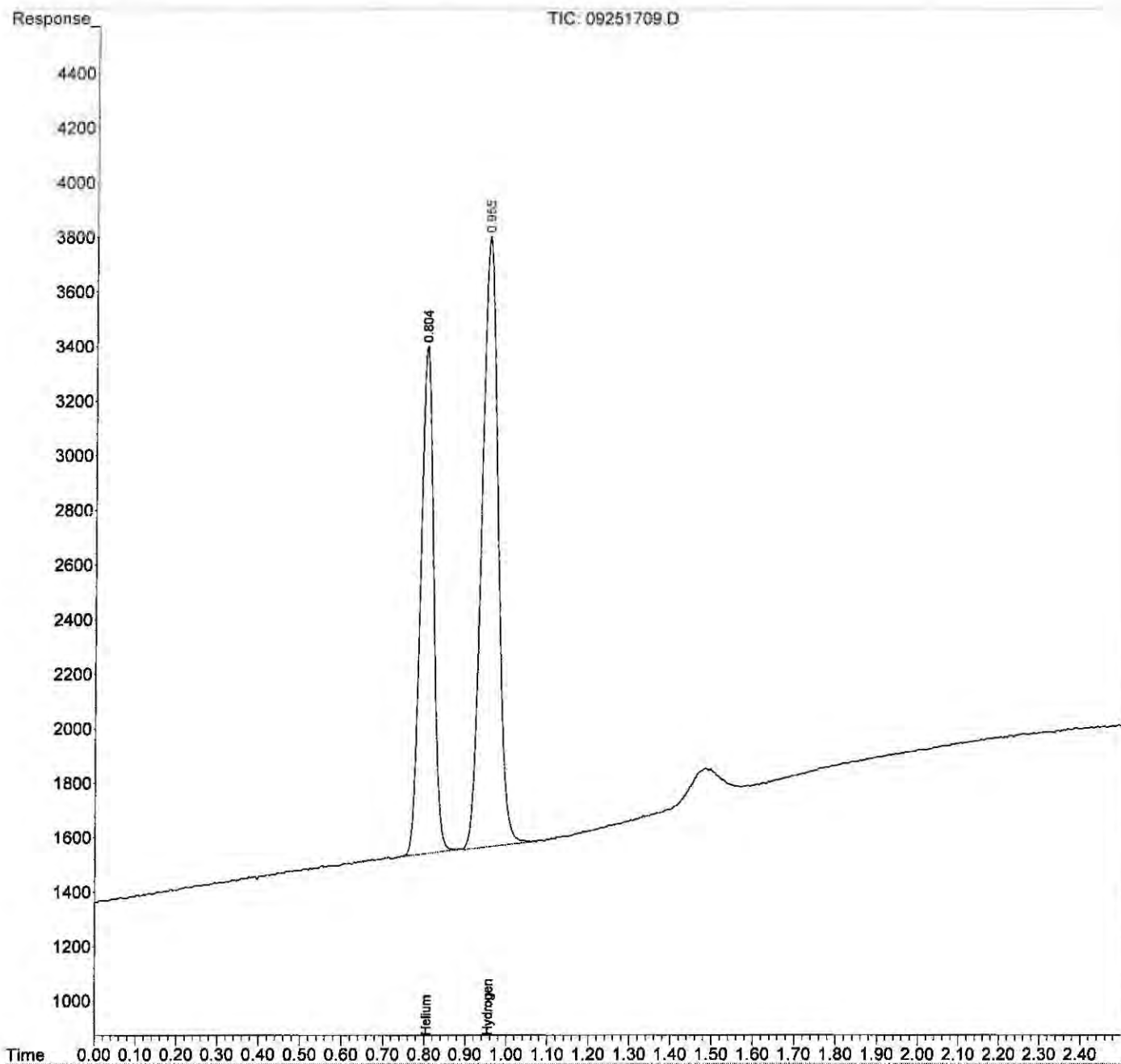
(m)=manual int.

W 10/17/17

Data Path : I:\GC08\DATA\TO_3M\2017_09\2SHEH2\
Data File : 09251709.D
Signal(s) : TCD1A.CH
Acq On : 25-Sep-2017, 10:17:24
Operator : RS
Sample : ICV s32-09251703
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Sep 26 13:10:30 2017
Quant Method : I:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Tue Sep 26 13:09:57 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



ALS Environmental

REPORT SUMMARY

Method : Helium by modified EPA 3C
 Client : Leidos
 Analyst : GG

Service Request : P1805236
 Instrument : Instrument #8 / TCD #8
 Date Acquired : 10/9/2018
 Sample Amount : 1 mL

Opening CCV ¹		He		Opening CCV ¹		He		Laboratory Control Spike ²	
STD S32-10091801	Sample result (ppm)	10949.47	ACTUAL	Sample result (ppm)	11030.60	10000.00	10.31%	LCS S32-10091802	sample result ppm
	%Difference	9.49%		%Difference					spike amount
									% recovery
Closing CCV ¹		He		Laboratory Control Spike ⁴		He		LCS S32-10091802	
STD S32-10091801	Sample result (ppm)	10453.86	ACTUAL	sample result ppm	11235.33	10000	112.35%	sample result ppm	11489.89
	%Difference	4.54%		spike amount				spike amount	10000
				% recovery				% recovery	114.90%
				% RPD				% RPD	2.24%

FINAL SAMPLE RESULT SUMMARIES

Sample ID	Inject. Vol(ml)	Dilution	Pi	Pf	Pi/Pf	He Result (ppm)	FINAL HELIUM RESULT ppm	FINAL HELIUM RESULT mg/M3	File ID	Acq time
MBW_0ml	1.000	1.0			1.00	0.00	ND	ND		09:19:22
P-1805236-001 1.0ml	1.00	1.0	-0.24	5.57	1.40	49.56	69.475	11.369	10091813.D	10:48:26
P-1805236-002 1.0ml	1.00	1.0	0.37	5.66	1.35	186.98	252.610	41.337	10091814.D	10:55:16
P-1805236-003 1.0ml	1.00	1.0	0.40	5.09	1.31	104.96	137.556	22.510	10091816.D	11:12:35
P-1805236-004 1.0ml	1.00	1.0	0.39	5.72	1.35	181.96	246.227	40.292	10091817.D	11:19:52
P-1805236-005 1.0ml	1.00	1.0	-4.56	6.16	2.06	1819.84	3743.778	612.626	10091818.D	11:38:49
P-1805236-006 1.0ml	1.00	1.0	-4.22	5.09	1.89	448.34	846.627	138.541	10091819.D	12:18:02

- 15% difference allowed for the opening and closing standards.
- 83-129% helium recovery for the lab control spike.
- 13% helium RPD allowed between duplicate samples.

Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
 Data File : 10091801.D
 Signal(s) : TCD1A.CH
 Acq On : 09-Oct-2018, 09:13:11
 Operator : GG
 Sample : STD S32-10091801
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

10/10/18
 @

Integration File: autoint1.e
 Quant Time: Oct 10 10:01:50 2018
 Quant Method : J:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Wed Oct 10 10:01:45 2018
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Helium	0.772	39434	1094.947 ppm
2) Hydrogen	0.000	0	N.D. ppm

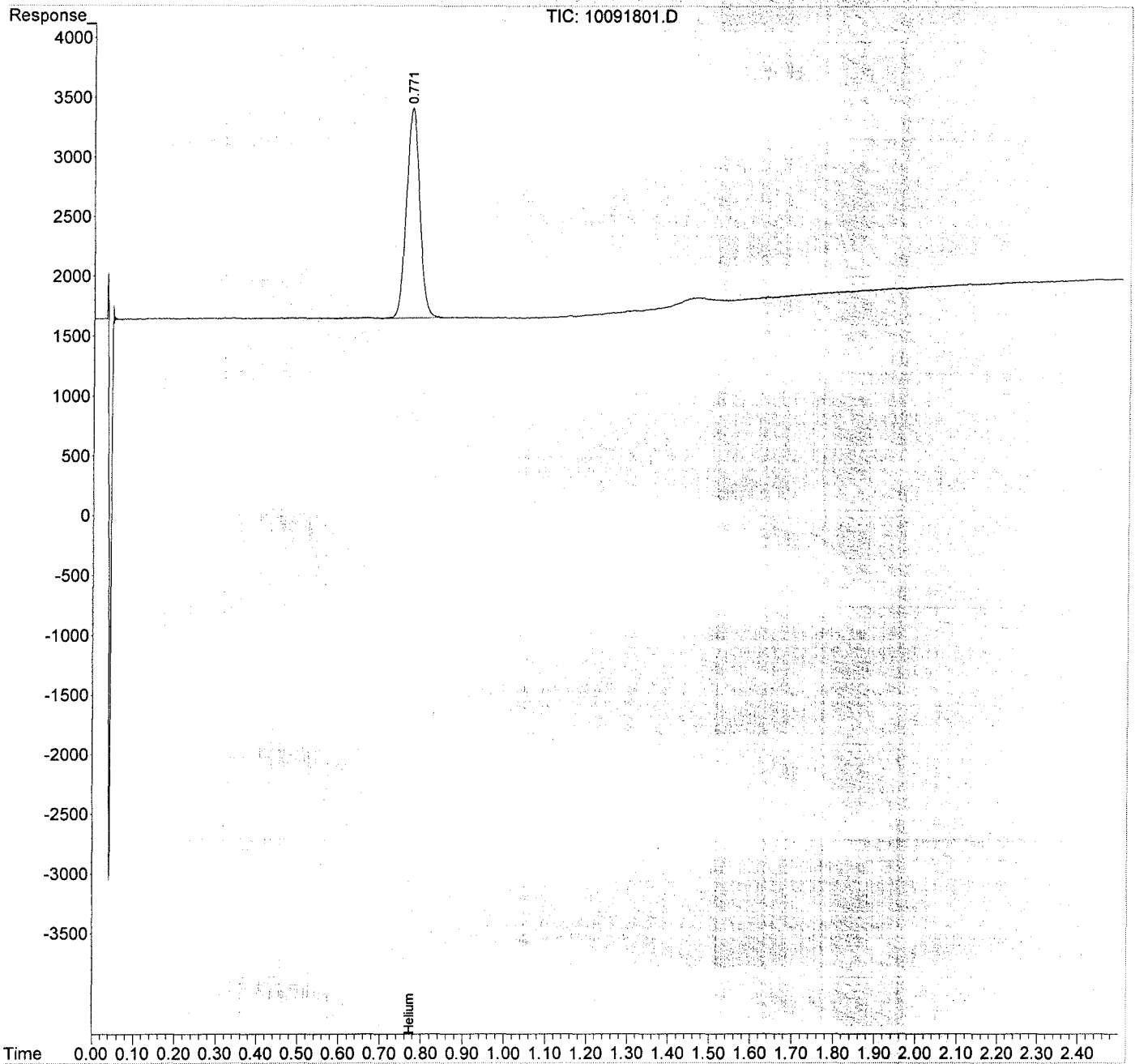
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
Data File : 10091801.D
Signal(s) : TCD1A.CH
Acq On : 09-Oct-2018, 09:13:11
Operator : GG
Sample : STD S32-10091801
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 10 10:01:50 2018
Quant Method : J:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Wed Oct 10 10:01:45 2018
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
 Data File : 10091815.D
 Signal(s) : TCD1A.CH
 Acq On : 09-Oct-2018, 11:03:14
 Operator : GG
 Sample : STD S32-10091801
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Oct 10 10:03:50 2018
 Quant Method : J:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Tue Sep 26 13:09:57 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Helium	0.775	37649	1045.386 ppm
2) Hydrogen	0.000	0	N.D. ppm

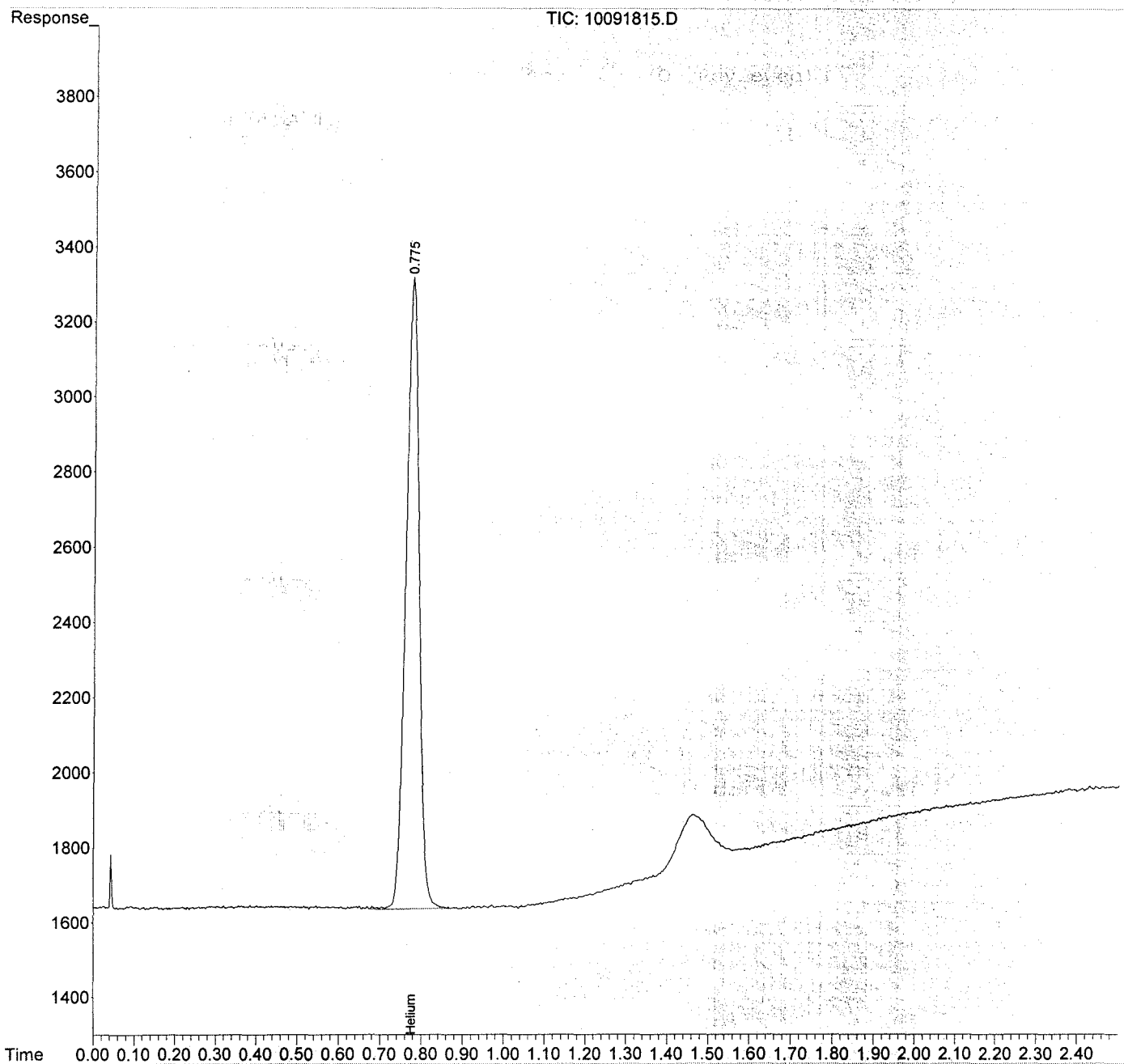
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
Data File : 10091815.D
Signal(s) : TCD1A.CH
Acq On : 09-Oct-2018, 11:03:14
Operator : GG
Sample : STD S32-10091801
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 10 10:03:50 2018
Quant Method : J:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Tue Sep 26 13:09:57 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
 Data File : 10091826.D
 Signal(s) : TCD1A.CH
 Acq On : 09-Oct-2018, 13:16:55
 Operator : GG
 Sample : STD S32-10091801
 Misc :
 ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
 Quant Time: Oct 10 11:19:55 2018
 Quant Method : J:\GC08\METHODS\H2HE092517.M
 Quant Title : Hydrogen and Helium by EPA Method 3C
 QLast Update : Tue Sep 26 13:09:57 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. :
 Signal Phase :
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Helium	0.786	39726	1103.060 ppm
2) Hydrogen	0.000	0	N.D. ppm

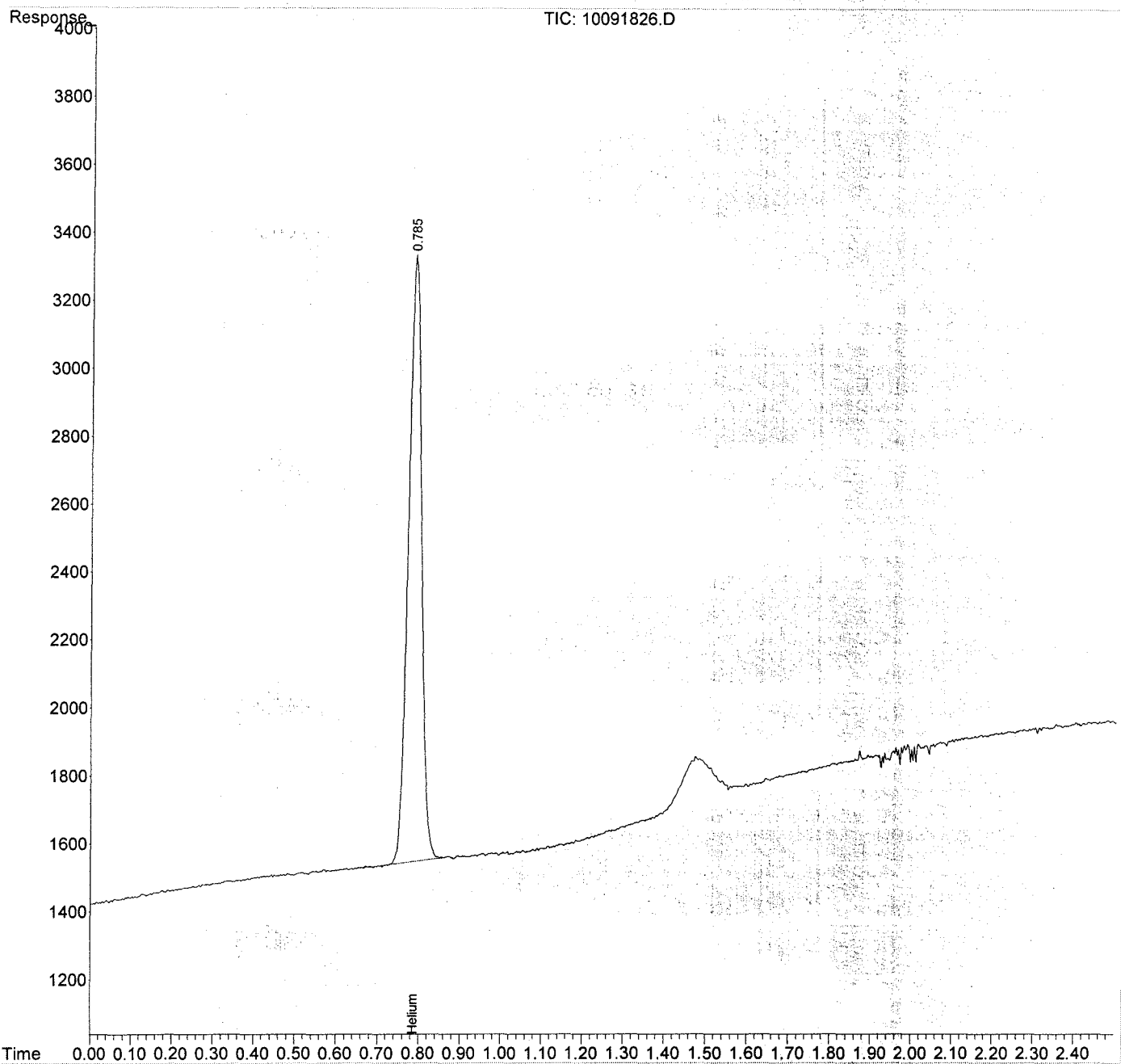
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC08\DATA\TO_3M\2018_10\09HE\
Data File : 10091826.D
Signal(s) : TCD1A.CH
Acq On : 09-Oct-2018, 13:16:55
Operator : GG
Sample : STD S32-10091801
Misc :
ALS Vial : 1 Sample Multiplier: 1

Integration File: autoint1.e
Quant Time: Oct 10 11:19:55 2018
Quant Method : J:\GC08\METHODS\H2HE092517.M
Quant Title : Hydrogen and Helium by EPA Method 3C
QLast Update : Tue Sep 26 13:09:57 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. :
Signal Phase :
Signal Info :



Injection Log

Directory: I:\GC08\DATA\H2_HE\2018_10\09\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Acquisition Method	Comments
1	09-Oct-18, 09:13:11	10091801.D	STD S32-10091801		GG	H2_HE.M	pass
2	09-Oct-18, 09:19:22	10091802.D	MB 1.0ml		GG	H2_HE.M	pass
3	09-Oct-18, 09:27:01	10091803.D	LCS S32-10091802		GG	H2_HE.M	pass
4	09-Oct-18, 09:32:12	10091804.D	LCSD S32-10091802		GG	H2_HE.M	pass
5	09-Oct-18, 09:42:48	10091805.D	xP1805287-001 1.0		GG	H2_HE.M	
6	09-Oct-18, 09:58:19	10091806.D	P1805287-001 0.1ml		GG	H2_HE.M	
7	09-Oct-18, 10:05:35	10091807.D	P1805237-001 1.0ml		GG	H2_HE.M	
8	09-Oct-18, 10:12:02	10091808.D	P1805237-002 1.0ml		GG	H2_HE.M	
9	09-Oct-18, 10:18:02	10091809.D	P1805237-003 1.0ml		GG	H2_HE.M	
10	09-Oct-18, 10:26:04	10091810.D	P1805324-001 1.0ml		GG	H2_HE.M	
11	09-Oct-18, 10:33:07	10091811.D	P1805324-002 1.0ml		GG	H2_HE.M	
12	09-Oct-18, 10:40:57	10091812.D	P1805324-006 1.0ml		GG	H2_HE.M	
13	09-Oct-18, 10:48:26	10091813.D	P1805236-001 1.0ml		GG	H2_HE.M	
14	09-Oct-18, 10:55:16	10091814.D	P1805236-002 1.0ml		GG	H2_HE.M	
15	09-Oct-18, 11:03:14	10091815.D	STD S32-10091801		GG	H2_HE.M	pass
16	09-Oct-18, 11:12:35	10091816.D	P1805236-003 1.0ml		GG	H2_HE.M	
17	09-Oct-18, 11:19:52	10091817.D	P1805236-004 1.0ml		GG	H2_HE.M	
18	09-Oct-18, 11:38:49	10091818.D	P1805236-005 1.0ml		GG	H2_HE.M	
19	09-Oct-18, 12:18:02	10091819.D	P1805236-006 1.0ml		GG	H2_HE.M	
20	09-Oct-18, 12:36:23	10091820.D	P1805327-001 1.0ml		GG	H2_HE.M	
21	09-Oct-18, 12:42:11	10091821.D	P1805327-002 1.0ml		GG	H2_HE.M	
22	09-Oct-18, 12:48:37	10091822.D	P1805327-003 1.0ml		GG	H2_HE.M	
23	09-Oct-18, 12:55:01	10091823.D	P1805327-004 1.0ml		GG	H2_HE.M	
24	09-Oct-18, 13:02:48	10091824.D	P1805327-005 1.0ml		GG	H2_HE.M	
25	09-Oct-18, 13:10:28	10091825.D	P1805327-006 1.0ml		GG	H2_HE.M	
26	09-Oct-18, 13:16:55	10091826.D	STD S32-10091801		GG	H2_HE.M	pass
27	09-Oct-18, 13:24:12	10091827.D	MB 1.0ml		GG	H2_HE.M	pass
28	09-Oct-18, 13:29:44	10091828.D	LCS S32-10091802		GG	H2_HE.M	pass
29	09-Oct-18, 13:34:36	10091829.D	LCSD S32-10091802		GG	H2_HE.M	pass
30	09-Oct-18, 13:40:13	10091830.D	P1805327-007 1.0ml		GG	H2_HE.M	
31	09-Oct-18, 13:45:26	10091831.D	P1805327-008 1.0ml		GG	H2_HE.M	
32	09-Oct-18, 13:52:58	10091832.D	P1805327-009 1.0ml		GG	H2_HE.M	
33	09-Oct-18, 13:59:59	10091833.D	P1805327-010 1.0ml		GG	H2_HE.M	
34	09-Oct-18, 14:06:14	10091834.D	P1805327-011 1.0ml		GG	H2_HE.M	
35	09-Oct-18, 14:13:55	10091835.D	P1805327-012 1.0ml		GG	H2_HE.M	
36	09-Oct-18, 14:19:43	10091836.D	P1805327-013 1.0ml		GG	H2_HE.M	
37	09-Oct-18, 14:27:16	10091837.D	P1805327-014 1.0ml		GG	H2_HE.M	
38	09-Oct-18, 14:33:04	10091838.D	P1805327-015 1.0ml		GG	H2_HE.M	

Data Path : J:\GC01\DATA\FXG\2018_10\10\
 Data File : 10101808.D
 Signal(s) : TCD1A.CH
 Acq On : 10 Oct 2018 10:01 am
 Operator : GG
 Sample : P1805236-001
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Oct 12 07:17:51 2018
 Quant Method : J:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 17:15:32 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.000	0	N.D. ppm
2) Oxygen	2.246	154361	100998.452 ppm
3) Nitrogen	2.367	1477299	831043.520 ppm
4) Carbon Monoxide	0.000	0	N.D. ppm
5) Methane	0.000	0	N.D. ppm
6) Carbon Dioxide	6.807	81735	40154.412 ppm

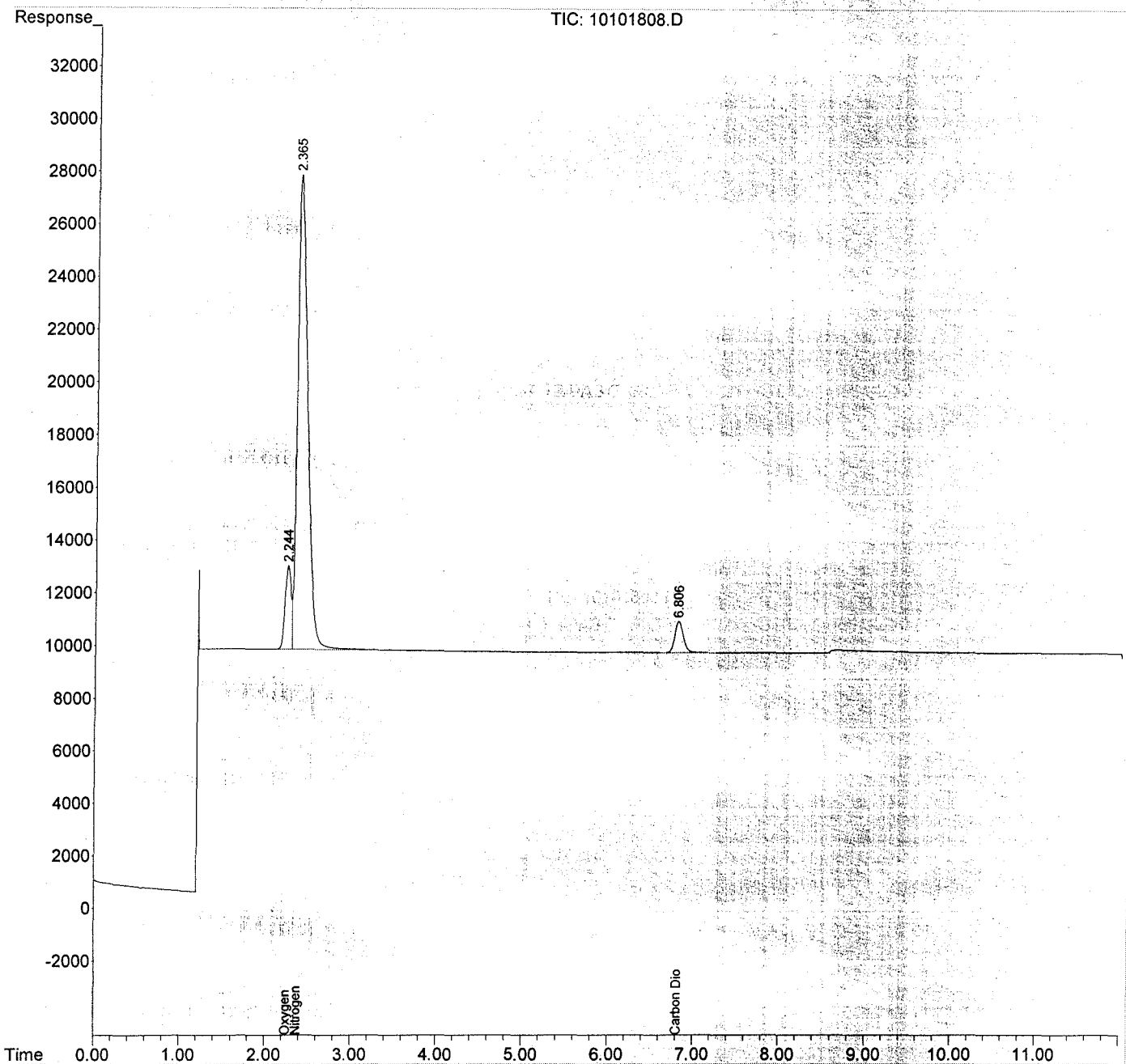
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC01\DATA\FXG\2018_10\10\
Data File : 10101808.D
Signal(s) : TCD1A.CH
Acq On : 10 Oct 2018 10:01 am
Operator : GG
Sample : P1805236-001
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Oct 12 07:17:51 2018
Quant Method : J:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 17:15:32 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Data Path : J:\GC01\DATA\FXG\2018_10\10\
 Data File : 10101809.D
 Signal(s) : TCD1A.CH
 Acq On : 10 Oct 2018 10:34 am
 Operator : GG
 Sample : P1805236-002
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Oct 12 07:20:02 2018
 Quant Method : J:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 17:15:32 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.000	0	N.D. ppm
2) Oxygen	2.259	152895	100039.452 ppm
3) Nitrogen	2.380	1491837	839221.898 ppm
4) Carbon Monoxide	0.000	0	N.D. ppm
5) Methane	0.000	0	N.D. ppm
6) Carbon Dioxide	6.812	84325	41426.618 ppm

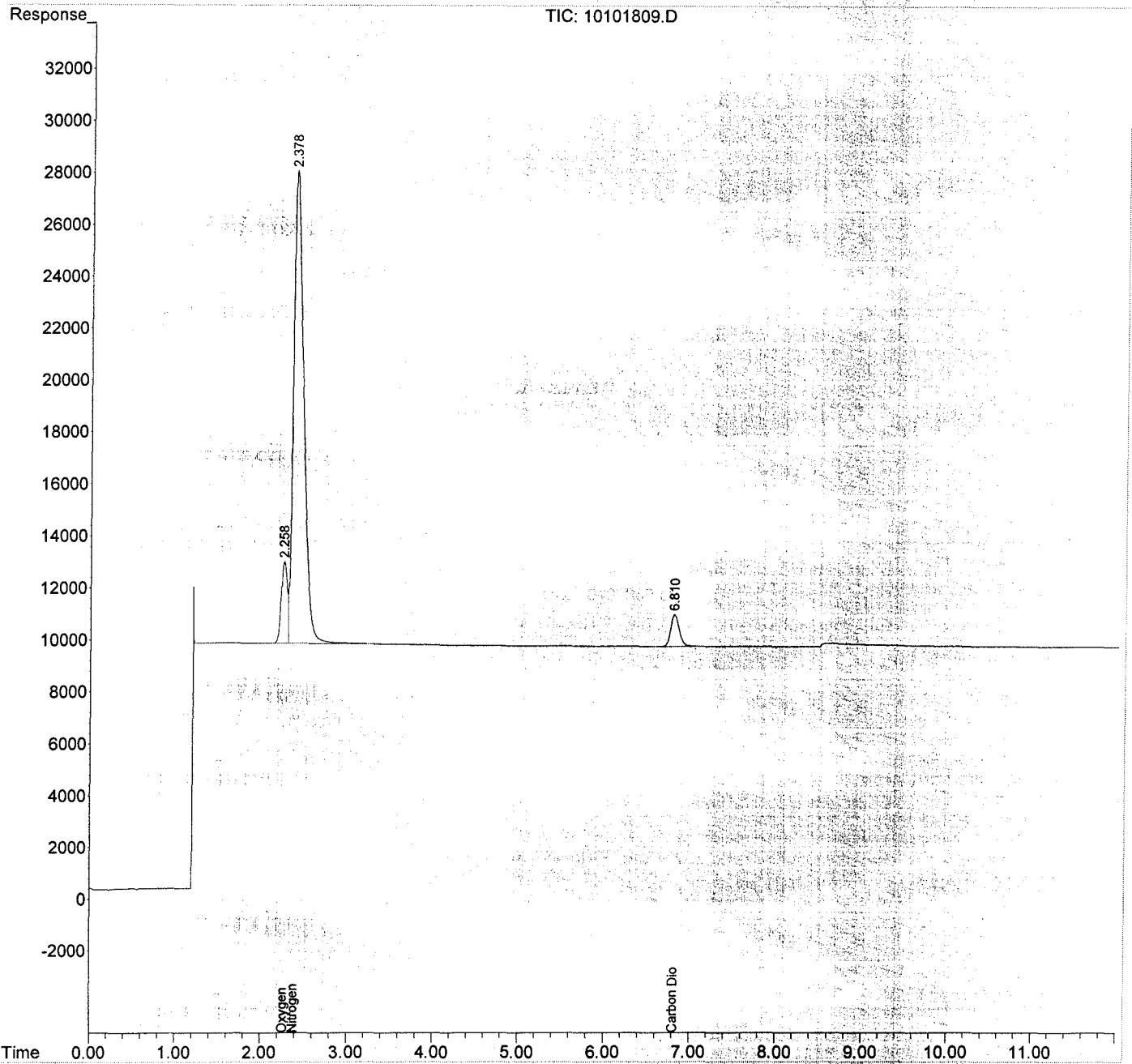
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC01\DATA\FXG\2018_10\10\
Data File : 10101809.D
Signal(s) : TCD1A.CH
Acq On : 10 Oct 2018 10:34 am
Operator : GG
Sample : P1805236-002
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Oct 12 07:20:02 2018
Quant Method : J:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 17:15:32 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Data Path : J:\GC01\DATA\FXG\2018_10\10\
 Data File : 10101810.D
 Signal(s) : TCD1A.CH
 Acq On : 10 Oct 2018 10:51 am
 Operator : GG
 Sample : P1805236-003
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Oct 12 07:20:24 2018
 Quant Method : J:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 17:15:32 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.000	0	N.D. ppm
2) Oxygen	2.251	205758	134627.462 ppm
3) Nitrogen	2.377	1467426	825489.677 ppm
4) Carbon Monoxide	0.000	0	N.D. ppm
5) Methane	0.000	0	N.D. ppm
6) Carbon Dioxide	6.809	55622	27325.692 ppm

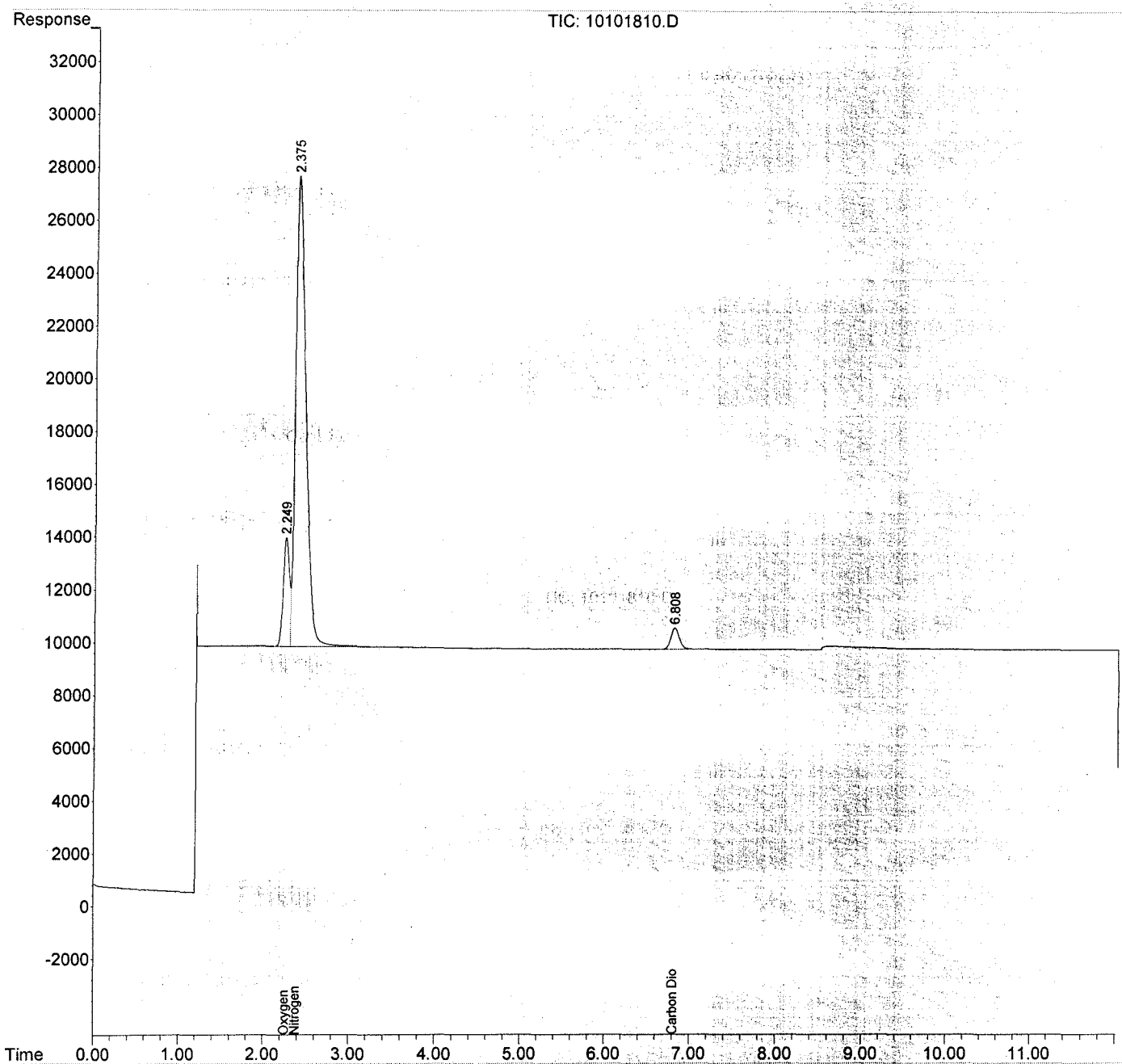
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC01\DATA\FXG\2018_10\10\
Data File : 10101810.D
Signal(s) : TCD1A.CH
Acq On : 10 Oct 2018 10:51 am
Operator : GG
Sample : P1805236-003
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Oct 12 07:20:24 2018
Quant Method : J:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 17:15:32 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Data Path : J:\GC01\DATA\FXG\2018_10\10\
 Data File : 10101811.D
 Signal(s) : TCD1A.CH
 Acq On : 10 Oct 2018 11:13 am
 Operator : GG
 Sample : P1805236-004
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Oct 12 07:20:44 2018
 Quant Method : J:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 17:15:32 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.000	0	N.D. ppm
2) Oxygen	2.258	152994	100104.366 ppm
3) Nitrogen	2.379	1494017	840448.510 ppm
4) Carbon Monoxide	0.000	0	N.D. ppm
5) Methane	0.000	0	N.D. ppm
6) Carbon Dioxide	6.810	83950	41242.432 ppm

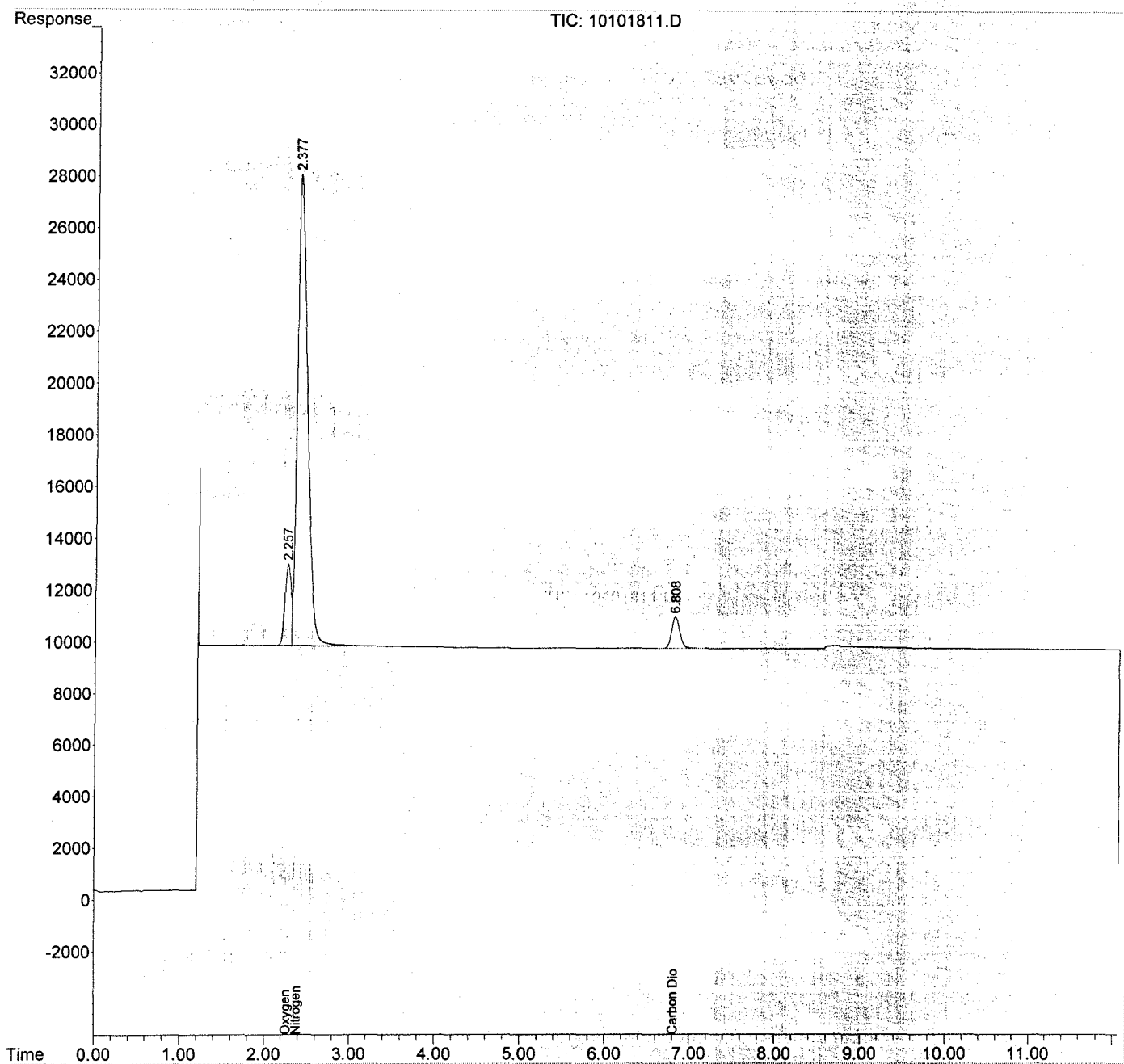
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC01\DATA\FXG\2018_10\10\
 Data File : 10101811.D
 Signal(s) : TCD1A.CH
 Acq On : 10 Oct 2018 11:13 am
 Operator : GG
 Sample : P1805236-004
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Oct 12 07:20:44 2018
 Quant Method : J:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 17:15:32 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :



Data Path : J:\GC01\DATA\FXG\2018_10\10\
 Data File : 10101812.D
 Signal(s) : TCD1A.CH
 Acq On : 10 Oct 2018 11:33 am
 Operator : GG
 Sample : P1805236-005
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Oct 12 07:21:03 2018
 Quant Method : J:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 17:15:32 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.000	0	N.D. ppm
2) Oxygen	2.257	91066	59584.493 ppm
3) Nitrogen	2.368	1634825	919658.683 ppm
4) Carbon Monoxide	0.000	0	N.D. ppm
5) Methane	0.000	0	N.D. ppm
6) Carbon Dioxide	0.000	0	N.D. ppm

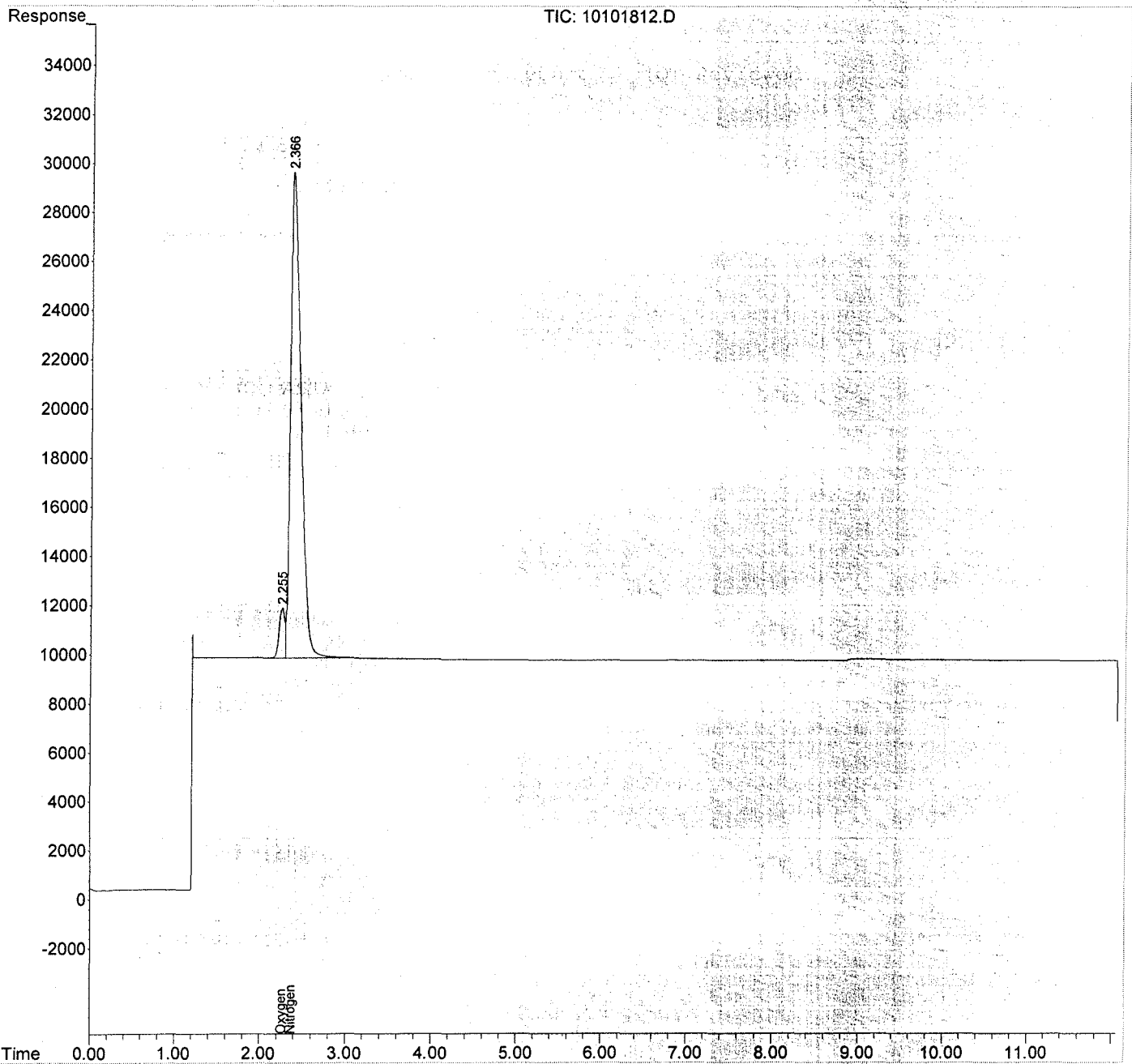
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC01\DATA\FXG\2018_10\10\
Data File : 10101812.D
Signal(s) : TCD1A.CH
Acq On : 10 Oct 2018 11:33 am
Operator : GG
Sample : P1805236-005
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Oct 12 07:21:03 2018
Quant Method : J:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 17:15:32 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Data Path : J:\GC01\DATA\FXG\2018_10\10\
 Data File : 10101813.D
 Signal(s) : TCD1A.CH
 Acq On : 10 Oct 2018 12:13 pm
 Operator : GG
 Sample : P1805236-006
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Oct 12 07:21:58 2018
 Quant Method : J:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 17:15:32 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.000	0	N.D. ppm
2) Oxygen	2.254	159340	104256.259 ppm
3) Nitrogen	2.373	1574950	885976.251 ppm
4) Carbon Monoxide	0.000	0	N.D. ppm
5) Methane	0.000	0	N.D. ppm
6) Carbon Dioxide	0.000	0	N.D. ppm

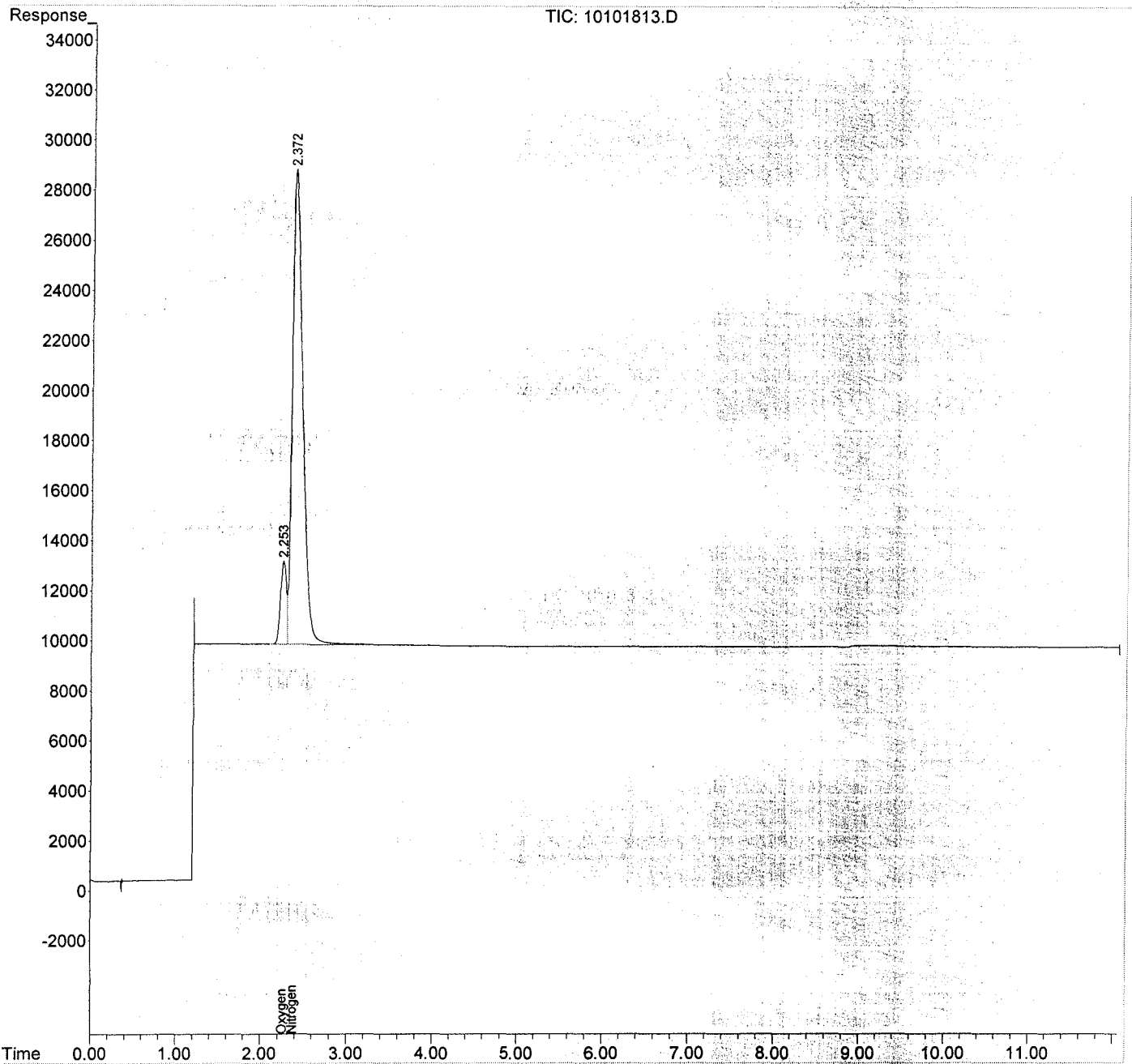
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC01\DATA\FXG\2018_10\10\
Data File : 10101813.D
Signal(s) : TCD1A.CH
Acq On : 10 Oct 2018 12:13 pm
Operator : GG
Sample : P1805236-006
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Oct 12 07:21:58 2018
Quant Method : J:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 17:15:32 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Data Path : J:\GC01\DATA\FXG\2018_10\10\
 Data File : 10101802.D
 Signal(s) : TCD1A.CH
 Acq On : 10 Oct 2018 7:54 am
 Operator : GG
 Sample : MB
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Oct 10 14:36:09 2018
 Quant Method : J:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 17:15:32 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :

Compound	R.T.	Response	Conc	Units

Target Compounds				
1) Hydrogen	0.000	0	N.D.	ppm
2) Oxygen	0.000	0	N.D.	ppm
3) Nitrogen	0.000	0	N.D.	ppm
4) Carbon Monoxide	0.000	0	N.D.	ppm
5) Methane	0.000	0	N.D.	ppm
6) Carbon Dioxide	0.000	0	N.D.	ppm

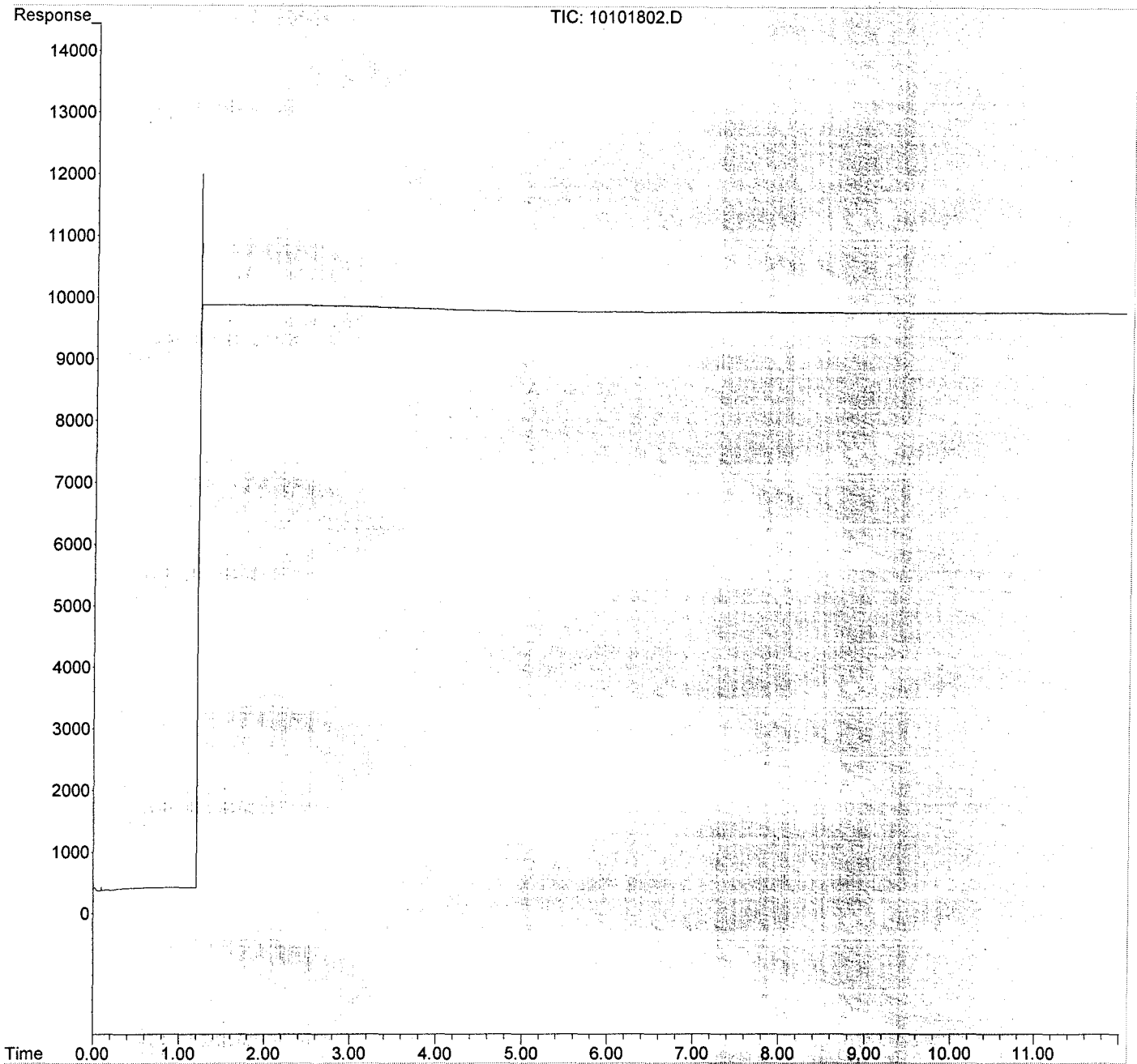
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC01\DATA\FXG\2018_10\10\
Data File : 10101802.D
Signal(s) : TCD1A.CH
Acq On : 10 Oct 2018 7:54 am
Operator : GG
Sample : MB
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Oct 10 14:36:09 2018
Quant Method : J:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 17:15:32 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Data Path : J:\GC01\DATA\FXG\2018_10\10\
 Data File : 10101804.D
 Signal(s) : TCD1A.CH
 Acq On : 10 Oct 2018 8:37 am
 Operator : GG
 Sample : LCS S32-10081801
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Oct 10 14:36:50 2018
 Quant Method : J:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 17:15:32 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.735	57055	42057.167 ppm
2) Oxygen	2.301	63200	41351.565 ppm
3) Nitrogen	2.478	90173	50725.938 ppm
4) Carbon Monoxide	3.166	89951	52459.289 ppm
5) Methane	5.154	53302	41713.046 ppm
6) Carbon Dioxide	6.811	99737	48998.467 ppm

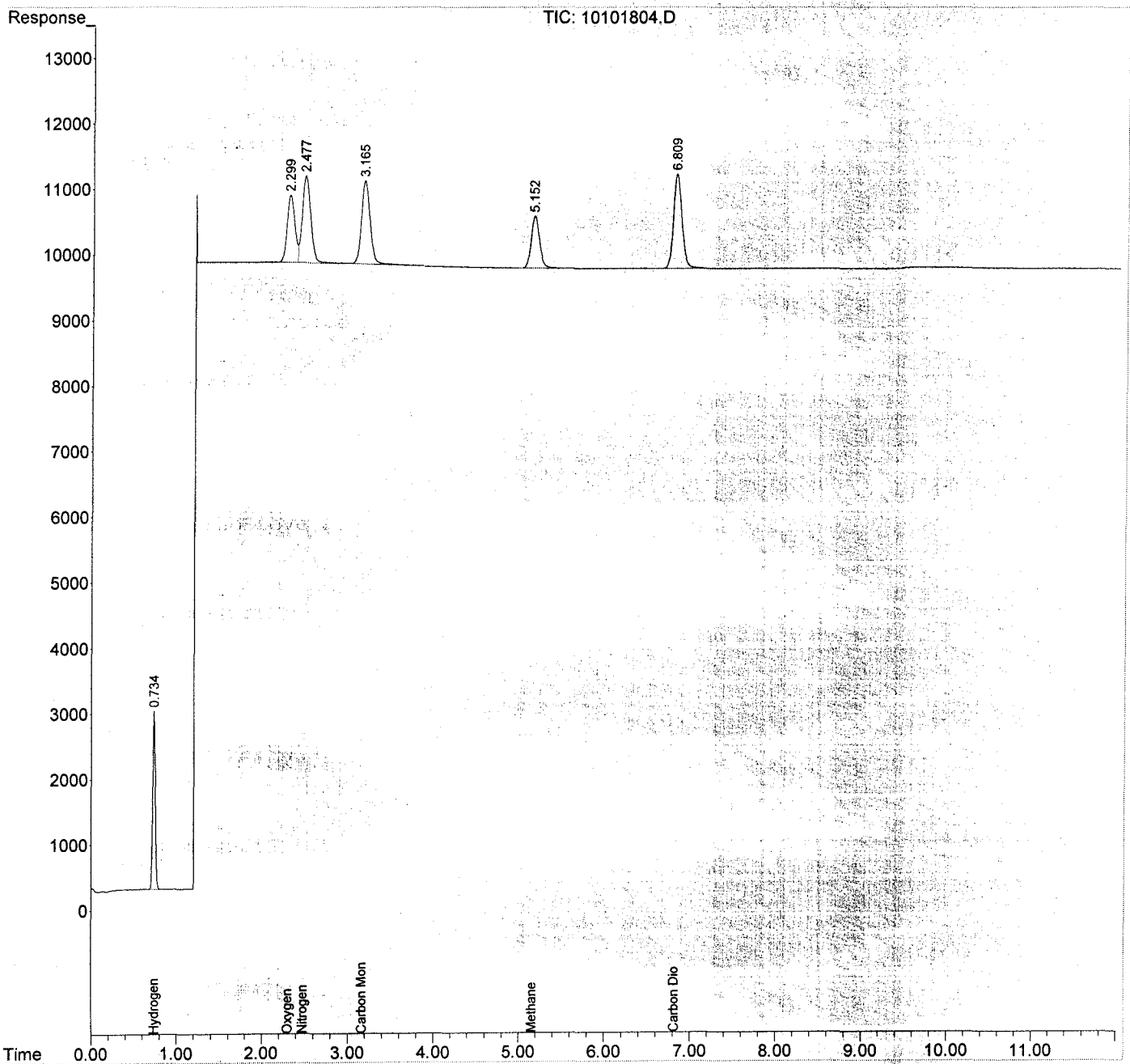
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC01\DATA\FXG\2018_10\10\
Data File : 10101804.D
Signal(s) : TCD1A.CH
Acq On : 10 Oct 2018 8:37 am
Operator : GG
Sample : LCS S32-10081801
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Oct 10 14:36:50 2018
Quant Method : J:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 17:15:32 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



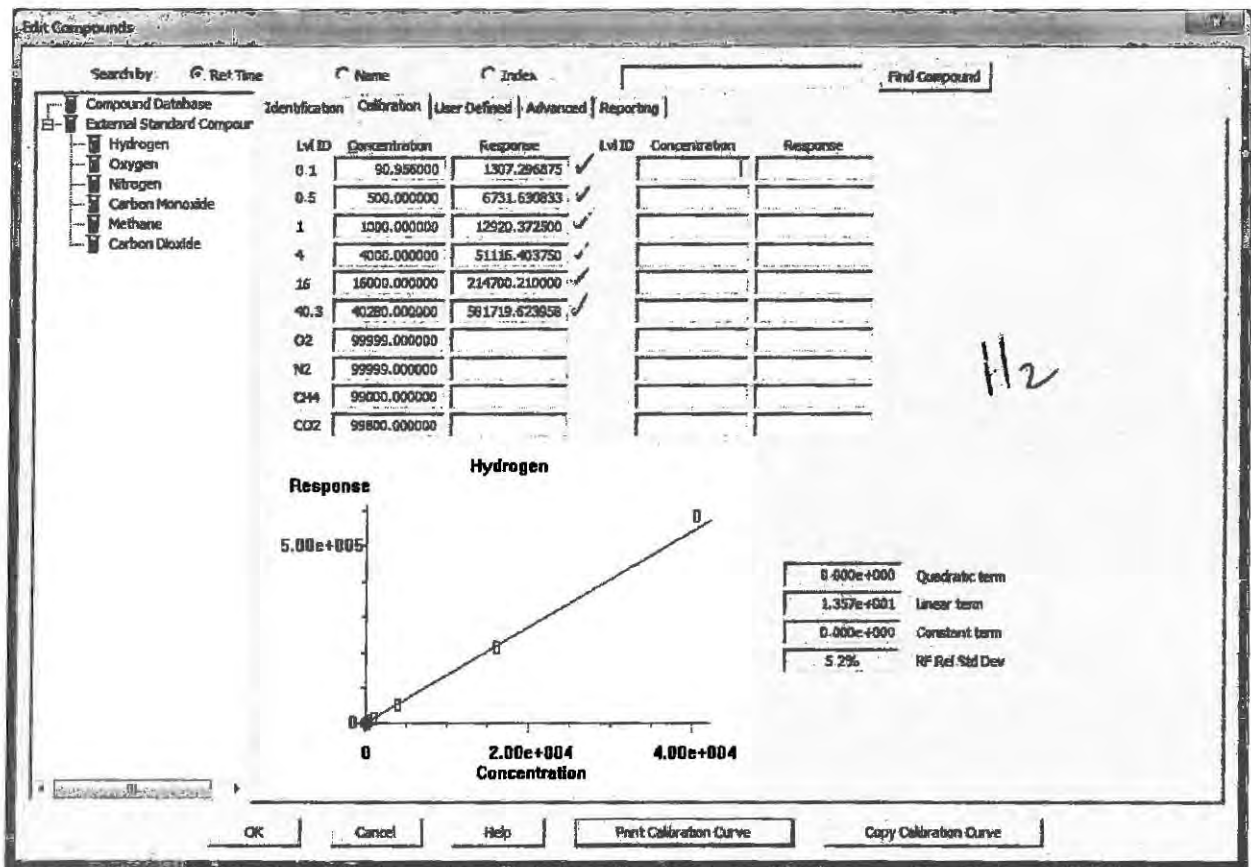
Method Path : I:\GC01\METHODS\
 Method File : 3C012417.M
 Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 Last Update : Tue Jan 24 17:15:32 2017
 Response Via : Initial Calibration

Calibration Files

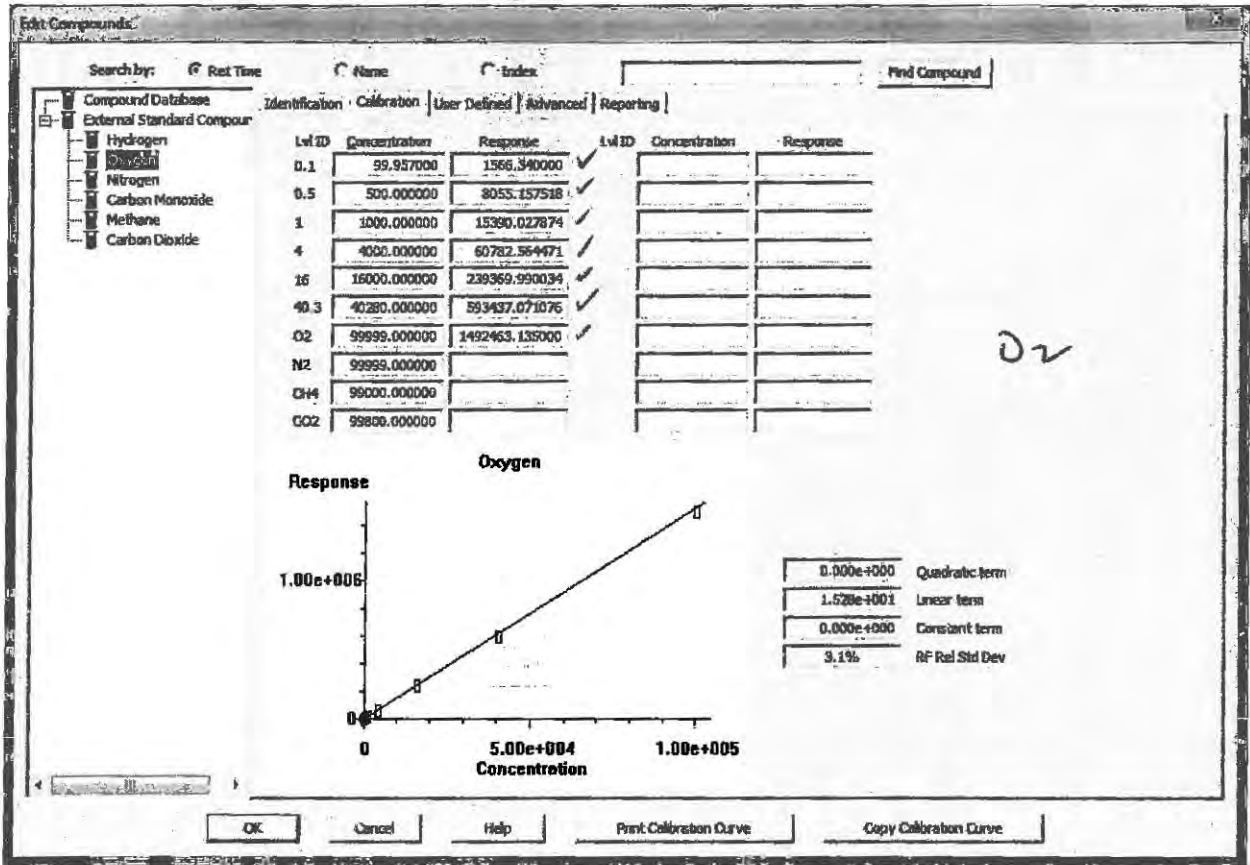
0.1 =01241708.D 0.5 =01241710.D 1 =01241711.D
 4 =01241712.D 16 =01241713.D 40.3 =01241727.D

Compound	0.1	0.5	1	4	16	40.3	Avg		%RSD
1) Hydrogen	1.437	1.346	1.292	1.278	1.342	1.444	1.357	E1	5.20
2) Oxygen	1.567	1.611	1.539	1.520	1.496	1.473	1.528	E1	3.15
3) Nitrogen	1.858	1.875	1.740	1.695	1.671	1.668	1.778	E1	6.22
4) Carbon Monoxide	1.736	1.818	1.718	1.684	1.670	1.662	1.715	E1	3.39
5) Methane	1.322	1.367	1.266	1.252	1.241	1.228	1.278	E1	3.87
6) Carbon Dioxide	2.083	2.165	2.077	2.020	2.008	1.978	2.036	E1	3.97

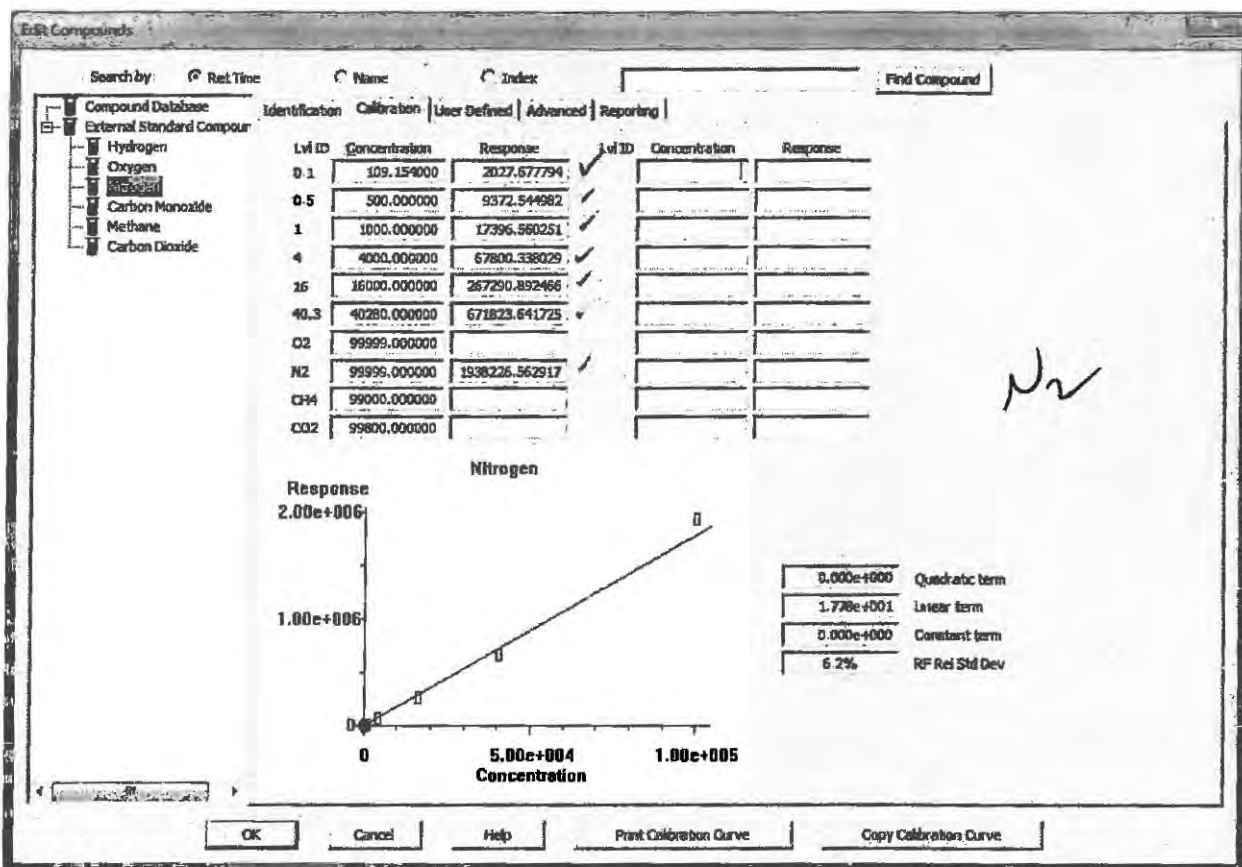
(#) = Out of Range ### Number of calibration levels exceeded format ###



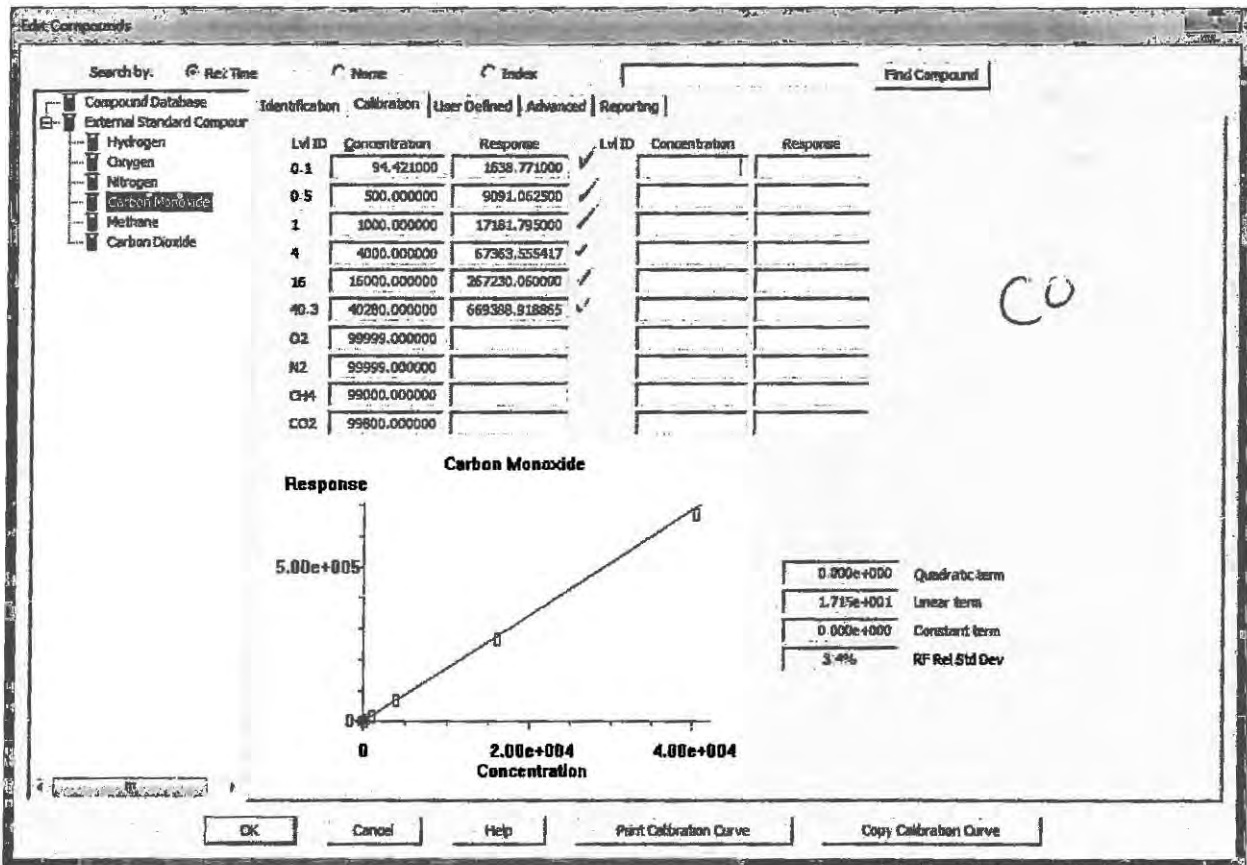
W 1/20/17



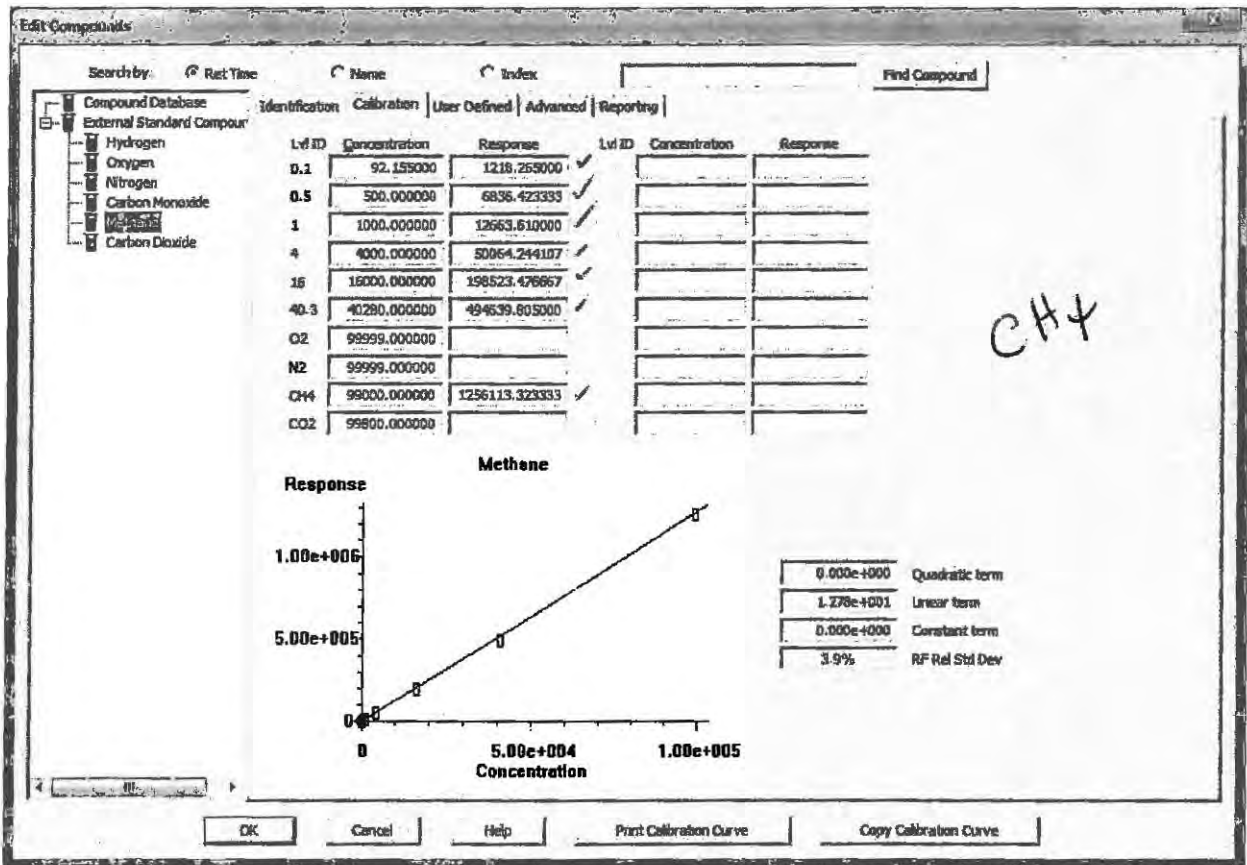
WJ 1/26/12



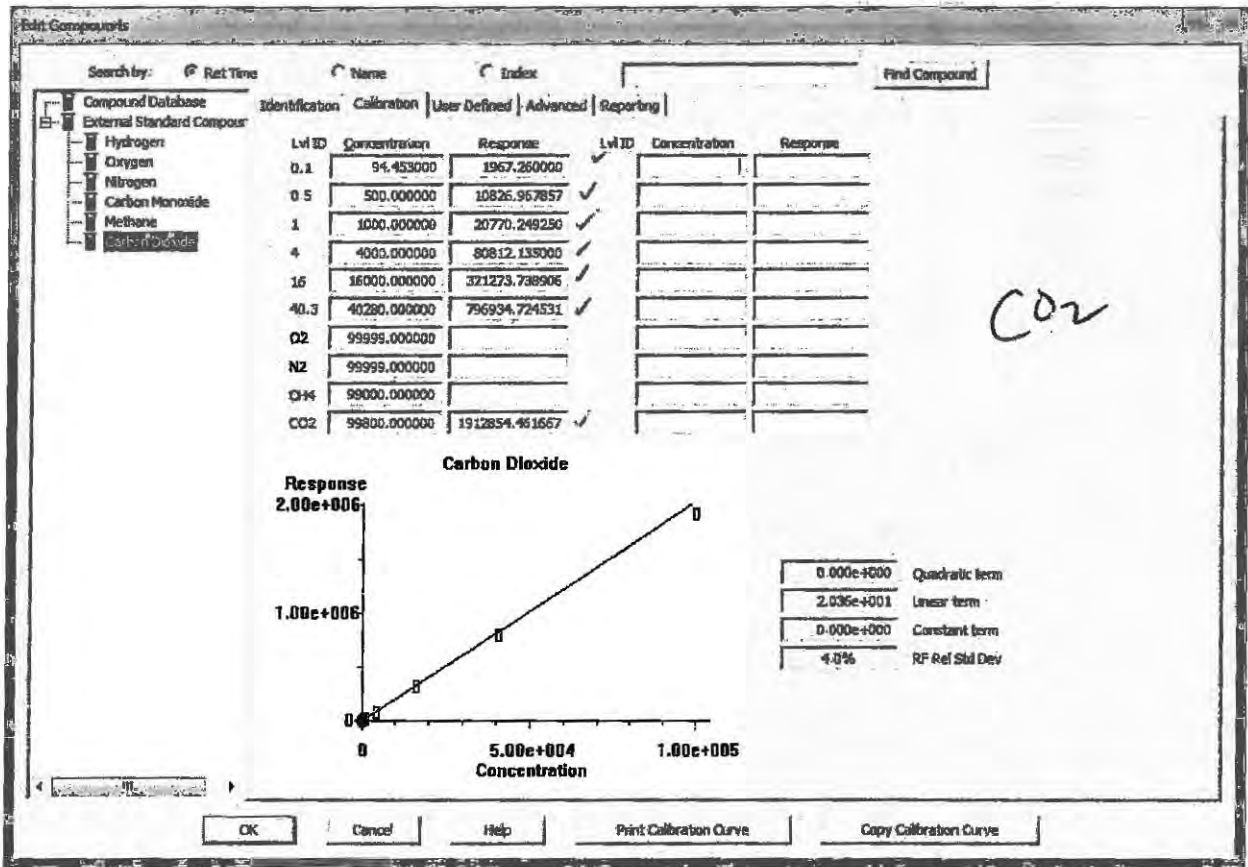
Ww 1/26/17



1/26/17



1/26/12



Mr Huber

Method Path : I:\GC01\METHODS\
 Method File : 3C012417.M
 Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 Last Update : Tue Jan 24 17:15:32 2017
 Response Via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
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2	0.5	500	0	I:\GC01\DATA\FXG\2017_01\24\01241710.D
3	1	1000	0	I:\GC01\DATA\FXG\2017_01\24\01241711.D
4	4	4000	0	I:\GC01\DATA\FXG\2017_01\24\01241712.D
5	16	16000	0	I:\GC01\DATA\FXG\2017_01\24\01241713.D
6	40.3	40280	0	I:\GC01\DATA\FXG\2017_01\24\01241726.D
7	O2	99999	0	I:\GC01\DATA\FXG\2017_01\24\01241714.D
8	N2	99999	0	I:\GC01\DATA\FXG\2017_01\24\01241724.D
9	CH4	99000	0	I:\GC01\DATA\FXG\2017_01\24\01241716.D
10	CO2	99800	0	I:\GC01\DATA\FXG\2017_01\24\01241728.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.1	Jan 24 17:11 2017	Jan 24 17:11 2017	24 Jan 2017 9:54 am
2	0.5	Jan 24 17:09 2017	Jan 24 17:07 2017	24 Jan 2017 10:28 am
3	1	Jan 24 16:02 2017	Jan 24 11:06 2017	24 Jan 2017 10:46 am
4	4	Jan 24 16:02 2017	Jan 24 11:29 2017	24 Jan 2017 11:04 am
5	16	Jan 24 16:02 2017	Jan 24 11:44 2017	24 Jan 2017 11:28 am
6	40.3	Jan 24 16:58 2017	Jan 24 16:13 2017	24 Jan 2017 3:39 pm
7	O2	Jan 24 16:47 2017	Jan 24 12:03 2017	24 Jan 2017 11:45 am
8	N2	Jan 24 16:50 2017	Jan 24 15:54 2017	24 Jan 2017 3:08 pm
9	CH4	Jan 24 16:49 2017	Jan 24 15:50 2017	24 Jan 2017 12:21 pm
10	CO2	Jan 24 17:15 2017	Jan 24 17:14 2017	24 Jan 2017 4:51 pm

3C012417.M Thu Jan 26 10:32:03 2017

Data Path : I:\GC01\DATA\FXG\2017_01\24\
Data File : 01241708.D
Signal(s) : TCD1A.CH
Acq On : 24 Jan 2017 9:54 am
Operator : MC
Sample : std s30-12301601 0.1%
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 24 17:11:21 2017
Quant Method : I:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 16:58:22 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

Ww 1/26/17

Compound	R.T.	Response	Conc	Units

Target Compounds				
1) Hydrogen	0.699	1307	963.654	ppm
2) Oxygen	2.202	1566	1022.329	ppm m
3) Nitrogen	2.368	2028	1155.333	ppm m
4) Carbon Monoxide	3.071	1639	955.727	ppm
5) Methane	5.052	1218	953.387	ppm
6) Carbon Dioxide	6.719	1967	957.152	ppm

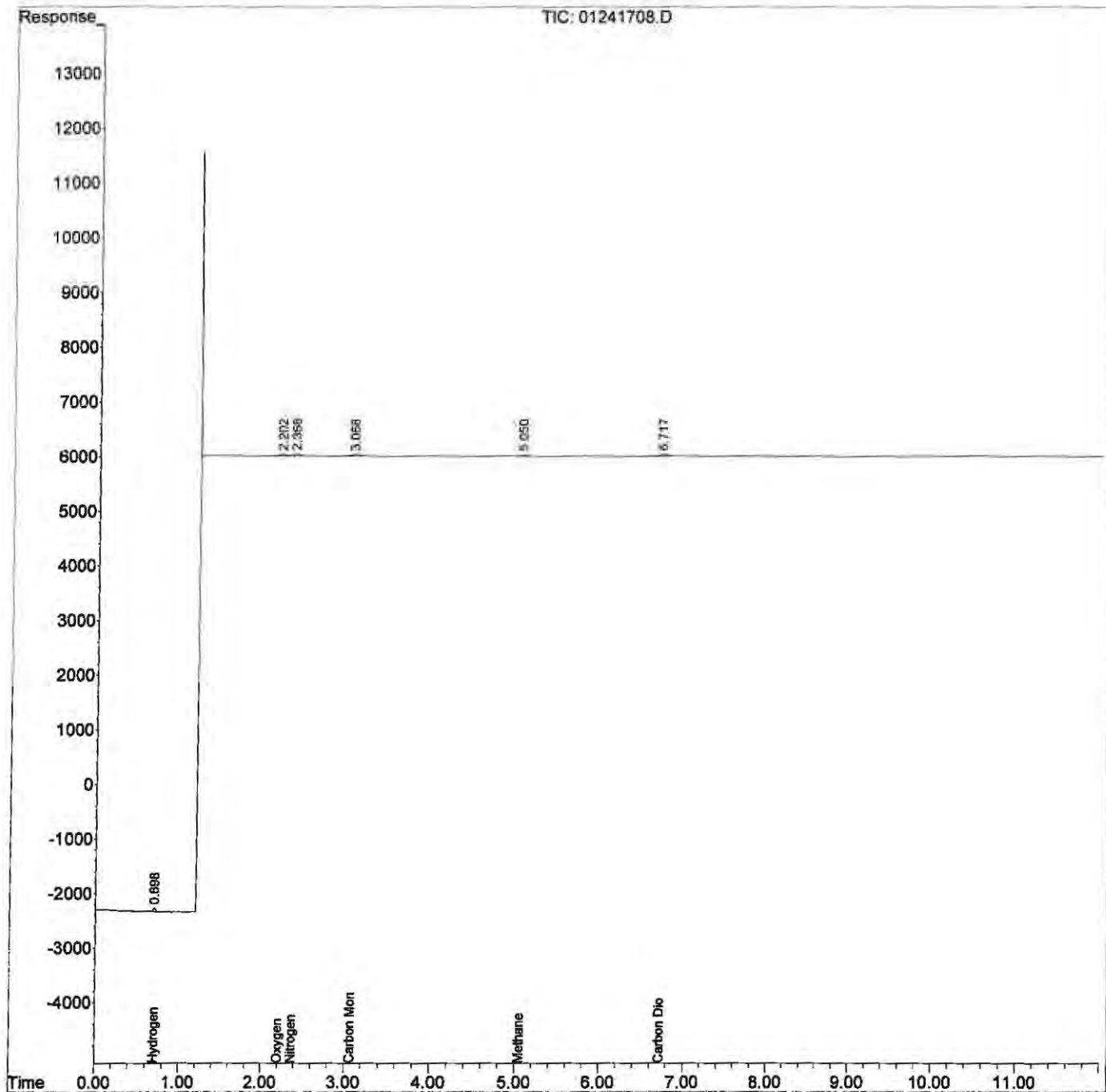
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : I:\GC01\DATA\FXG\2017_01\24\
Data File : 01241708.D
Signal(s) : TCD1A.CH
Acq On : 24 Jan 2017 9:54 am
Operator : MC
Sample : std s30-12301601 0.1%
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 24 17:11:21 2017
Quant Method : I:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 16:58:22 2017
Response via : Initial Calibration
Integrator: ChemStation

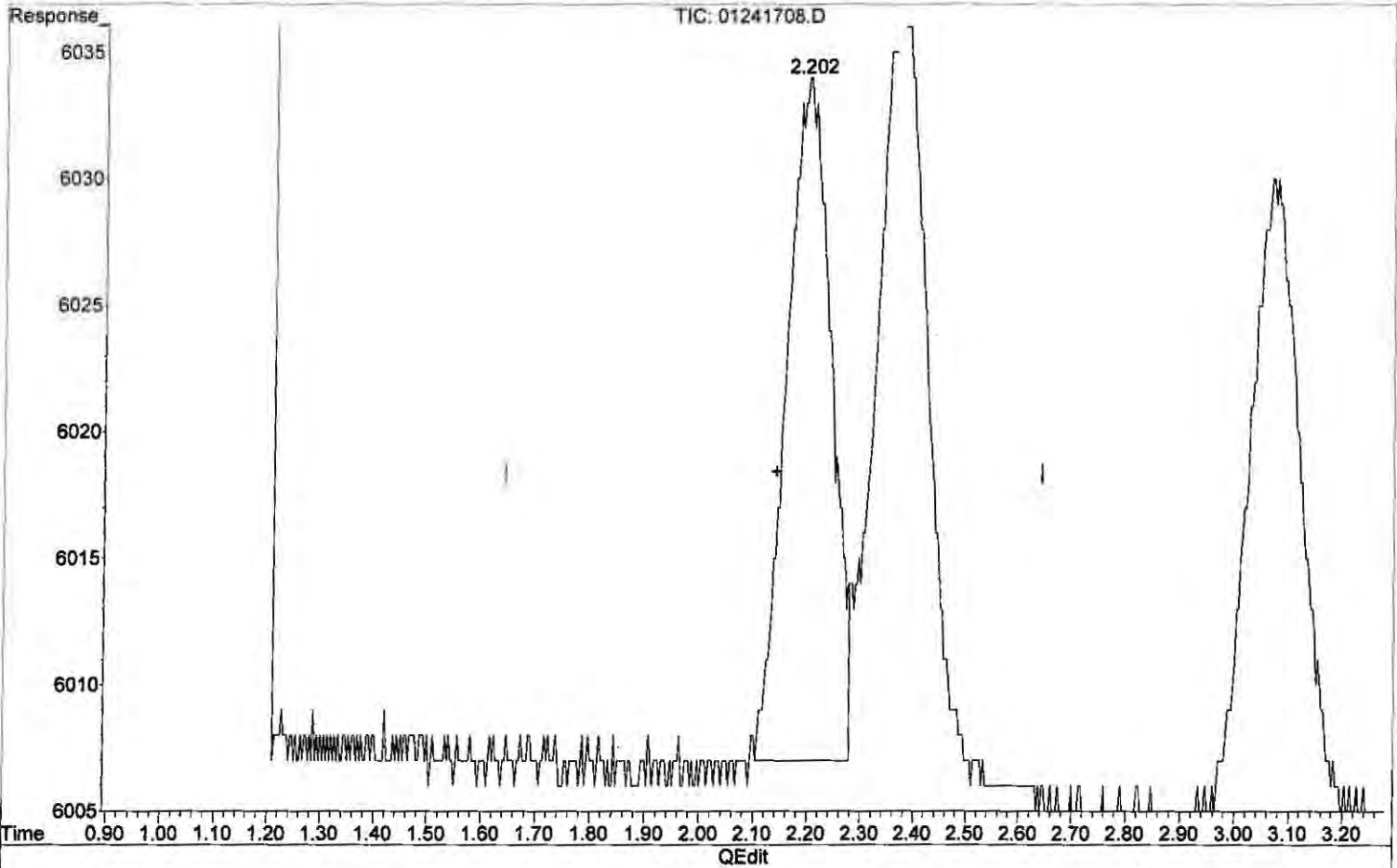
Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Data Path : I:\GC01\DATA\FXG\2017_01\24\
Data File : 01241708.D
Signal(s) : TCD1A.CH
Acq On : 24 Jan 2017 9:54 am
Operator : MC
Sample : std s30-12301601 0.1%
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 24 17:11:21 2017
Quant Method : I:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 16:58:22 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



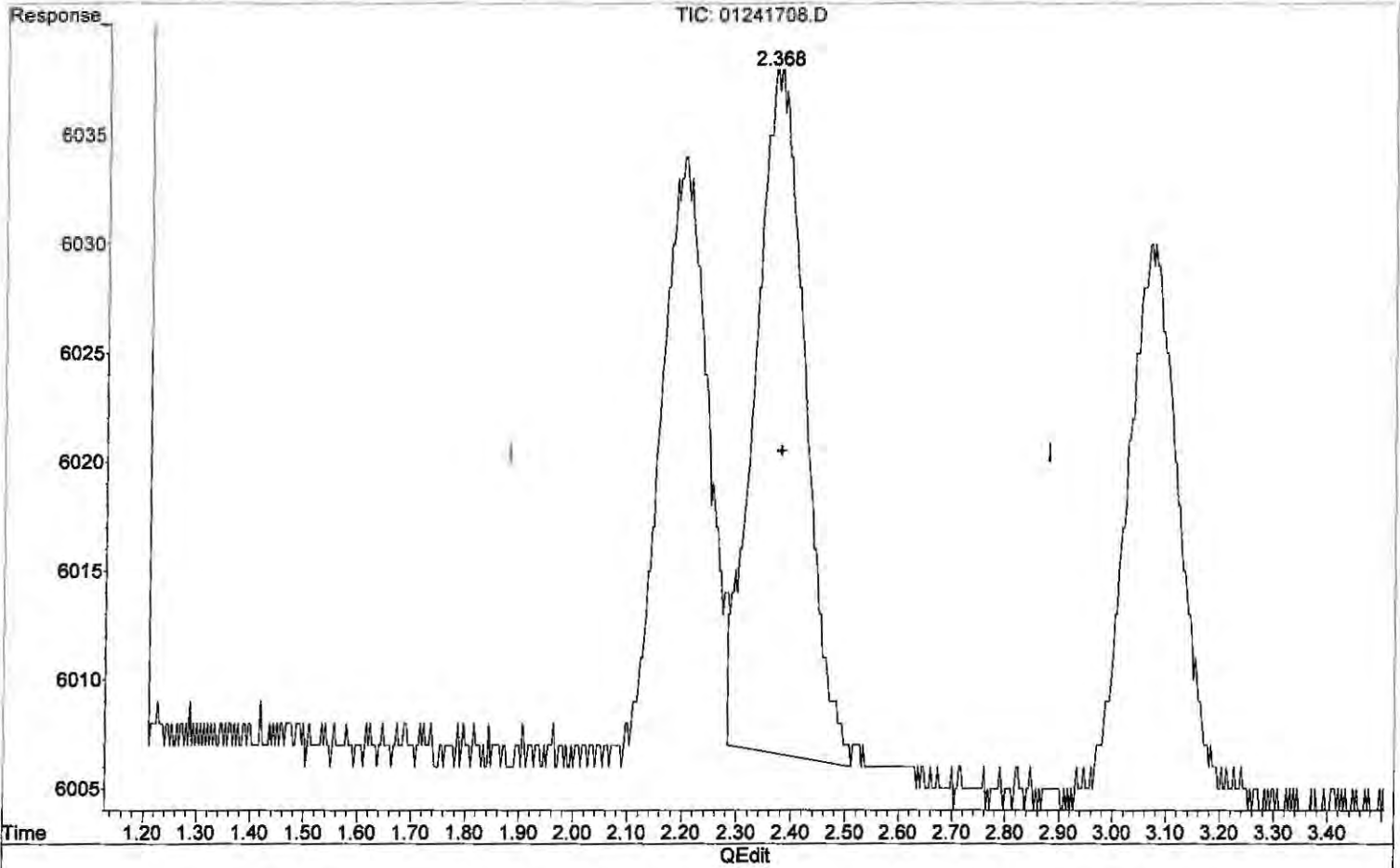
(2) Oxygen
2.202min 1022.329 ppm m
response 1566

Handwritten notes:
1/26/17
no previous
BLC
1/22/17

Data Path : I:\GC01\DATA\FXG\2017_01\24\
Data File : 01241708.D
Signal(s) : TCD1A.CH
Acq On : 24 Jan 2017 9:54 am
Operator : MC
Sample : std s30-12301601 0.1%
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 24 17:11:21 2017
Quant Method : I:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 16:58:22 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



(3) Nitrogen
2.368min 1155.333 ppm m
response 2028

MC
1/26/17

LC
1/26/17
no previous
BLC

Data Path : I:\GC01\DATA\FXG\2017_01\24\
Data File : 01241710.D
Signal(s) : TCD1A.CH
Acq On : 24 Jan 2017 10:28 am
Operator : MC
Sample : std s30-1231702 0.5%
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 24 17:07:30 2017
Quant Method : I:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 16:58:22 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.702	6732	4962.119 ppm
2) Oxygen	2.204	8055	5257.492 ppm
3) Nitrogen	2.380	9373	5340.301 ppm
4) Carbon Monoxide	3.070	9091	5301.886 ppm
5) Methane	5.056	6836	5350.030 ppm
6) Carbon Dioxide	6.719	10827	5267.759 ppm

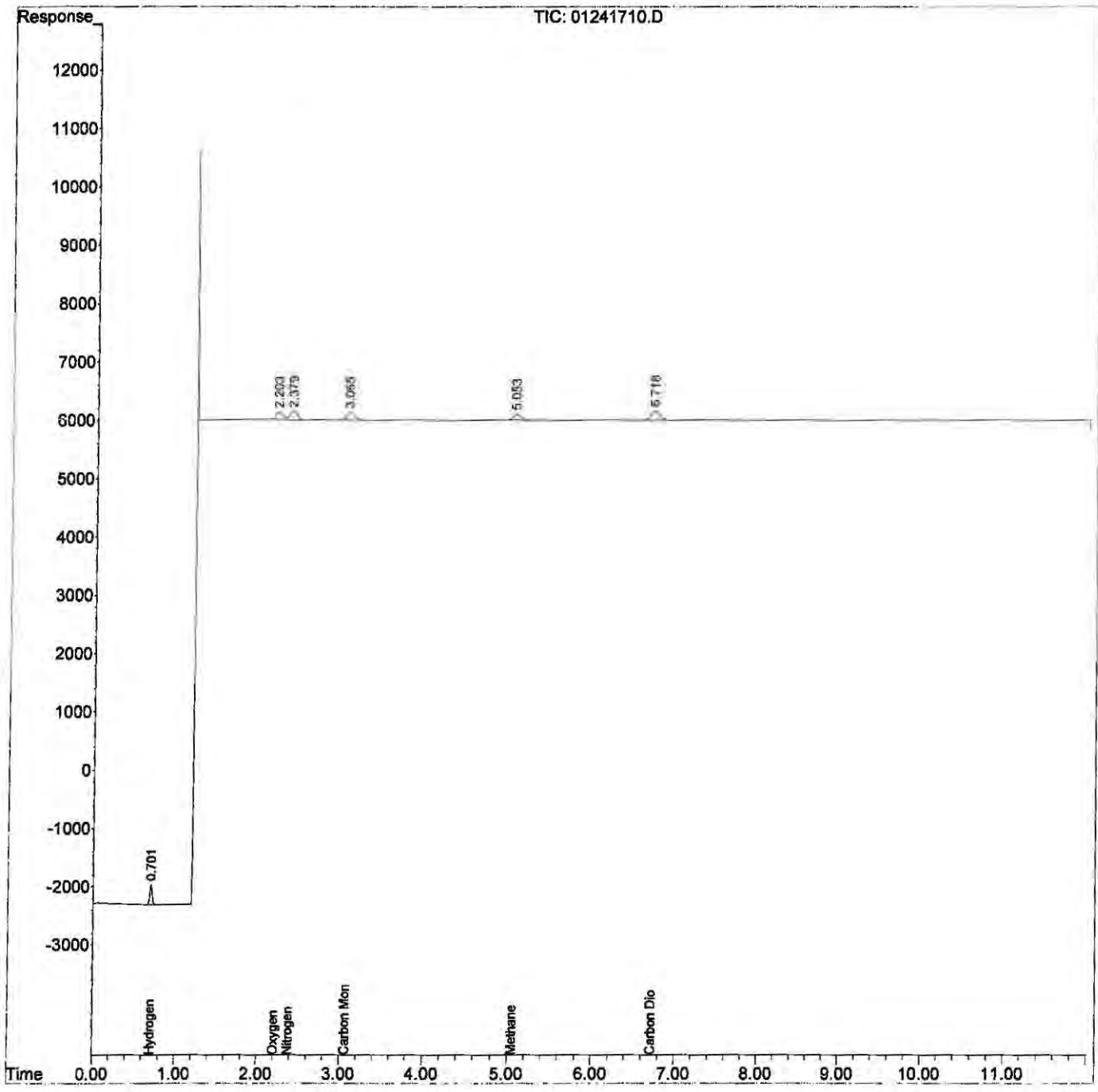
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : I:\GC01\DATA\FXG\2017_01\24\
Data File : 01241710.D
Signal(s) : TCD1A.CH
Acq On : 24 Jan 2017 10:28 am
Operator : MC
Sample : std s30-1231702 0.5%
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 24 17:07:30 2017
Quant Method : I:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 16:58:22 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Data Path : I:\GC01\DATA\FXG\2017_01\24\
 Data File : 01241711.D
 Signal(s) : TCD1A.CH
 Acq On : 24 Jan 2017 10:46 am
 Operator : MC
 Sample : std s30-01231701 1%
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Jan 24 11:06:38 2017
 Quant Method : I:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 11:05:53 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.703	12920	9749.462 ppm
2) Oxygen	2.207	15390	10022.255 ppm
3) Nitrogen	2.381	17397	10088.258 ppm
4) Carbon Monoxide	3.070	17182	10123.136 ppm
5) Methane	5.056	12664	10035.134 ppm
6) Carbon Dioxide	6.720	20770	10324.389 ppm

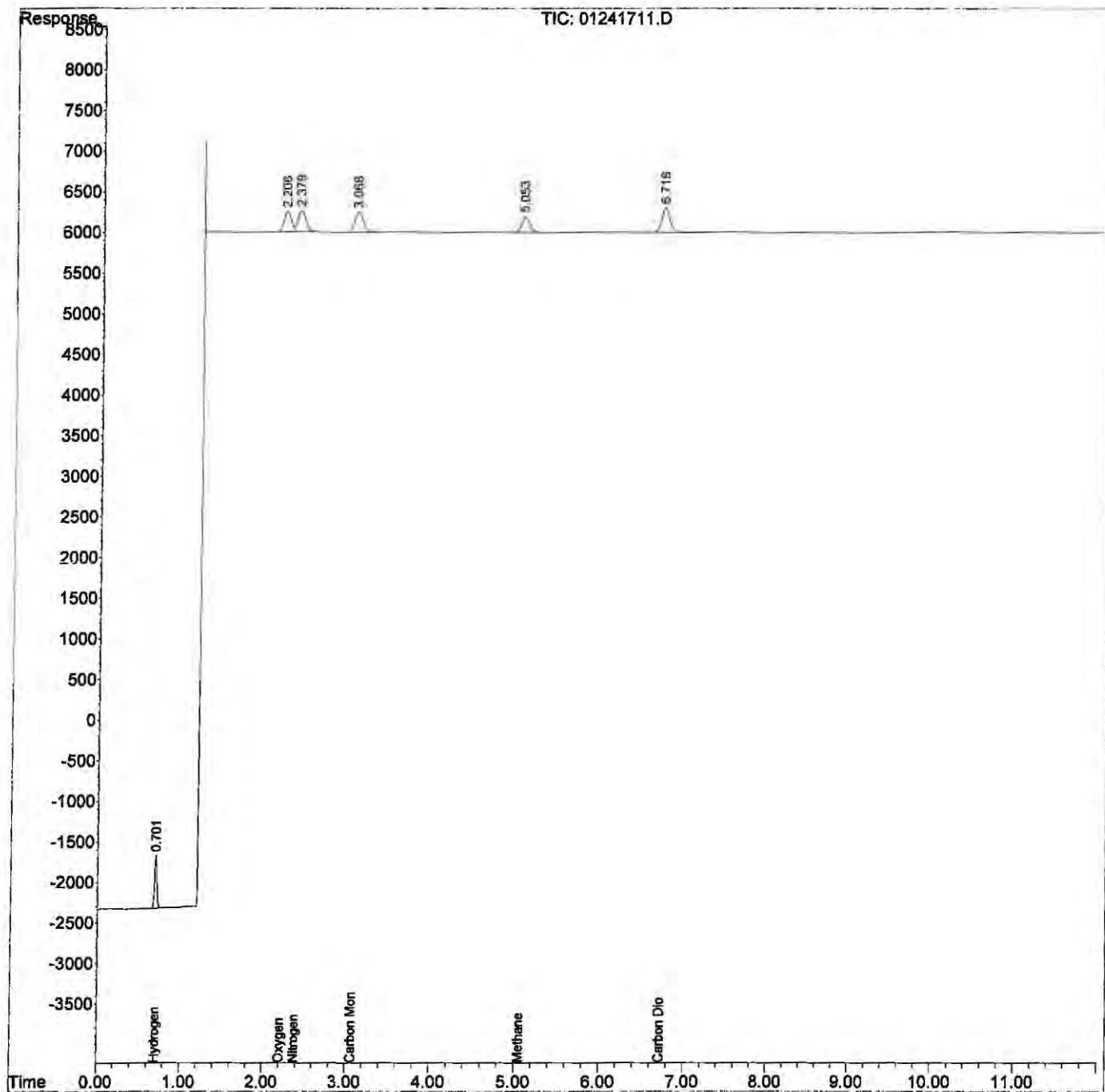
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : I:\GC01\DATA\FXG\2017_01\24\
Data File : 01241711.D
Signal(s) : TCD1A.CH
Acq On : 24 Jan 2017 10:46 am
Operator : MC
Sample : std s30-01231701 1%
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 24 11:06:38 2017
Quant Method : I:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 11:05:53 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Data Path : I:\GC01\DATA\FXG\2017_01\24\
Data File : 01241712.D
Signal(s) : TCD1A.CH
Acq On : 24 Jan 2017 11:04 am
Operator : MC
Sample : std s30-12191601 4%
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 24 11:29:02 2017
Quant Method : I:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 11:06:54 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.701	51116	38471.422 ppm
2) Oxygen	2.202	60783	39655.182 ppm
3) Nitrogen	2.378	67800	39325.034 ppm
4) Carbon Monoxide	3.065	67364	39718.927 ppm
5) Methane	5.054	50064	39812.023 ppm
6) Carbon Dioxide	6.716	80812	40218.015 ppm

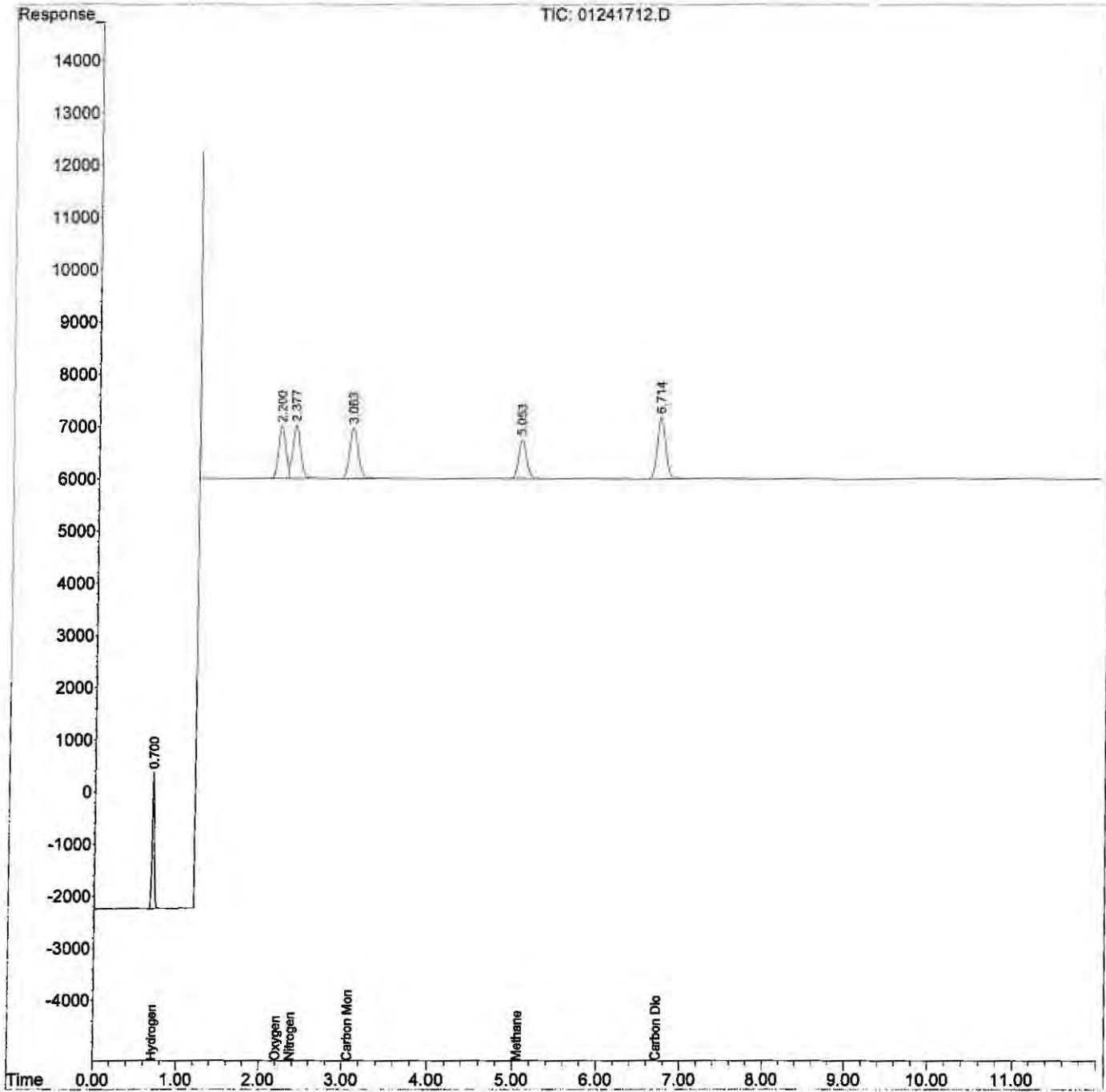
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : I:\GC01\DATA\FXG\2017_01\24\
Data File : 01241712.D
Signal(s) : TCD1A.CH
Acq On : 24 Jan 2017 11:04 am
Operator : MC
Sample : std s30-12191601 4%
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 24 11:29:02 2017
Quant Method : I:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 11:06:54 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Data Path : I:\GC01\DATA\FXG\2017_01\24\
 Data File : 01241713.D
 Signal(s) : TCD1A.CH
 Acq On : 24 Jan 2017 11:28 am
 Operator : MC
 Sample : std s30-01231703 16%
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Jan 24 11:44:36 2017
 Quant Method : I:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 11:30:32 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.695	214700	160970.040 ppm
2) Oxygen	2.182	239370	156211.792 ppm
3) Nitrogen	2.360	267291	155149.115 ppm
4) Carbon Monoxide	3.048	267230	157650.776 ppm
5) Methane	5.043	198523	158115.703 ppm
6) Carbon Dioxide	6.703	321274	160126.033 ppm

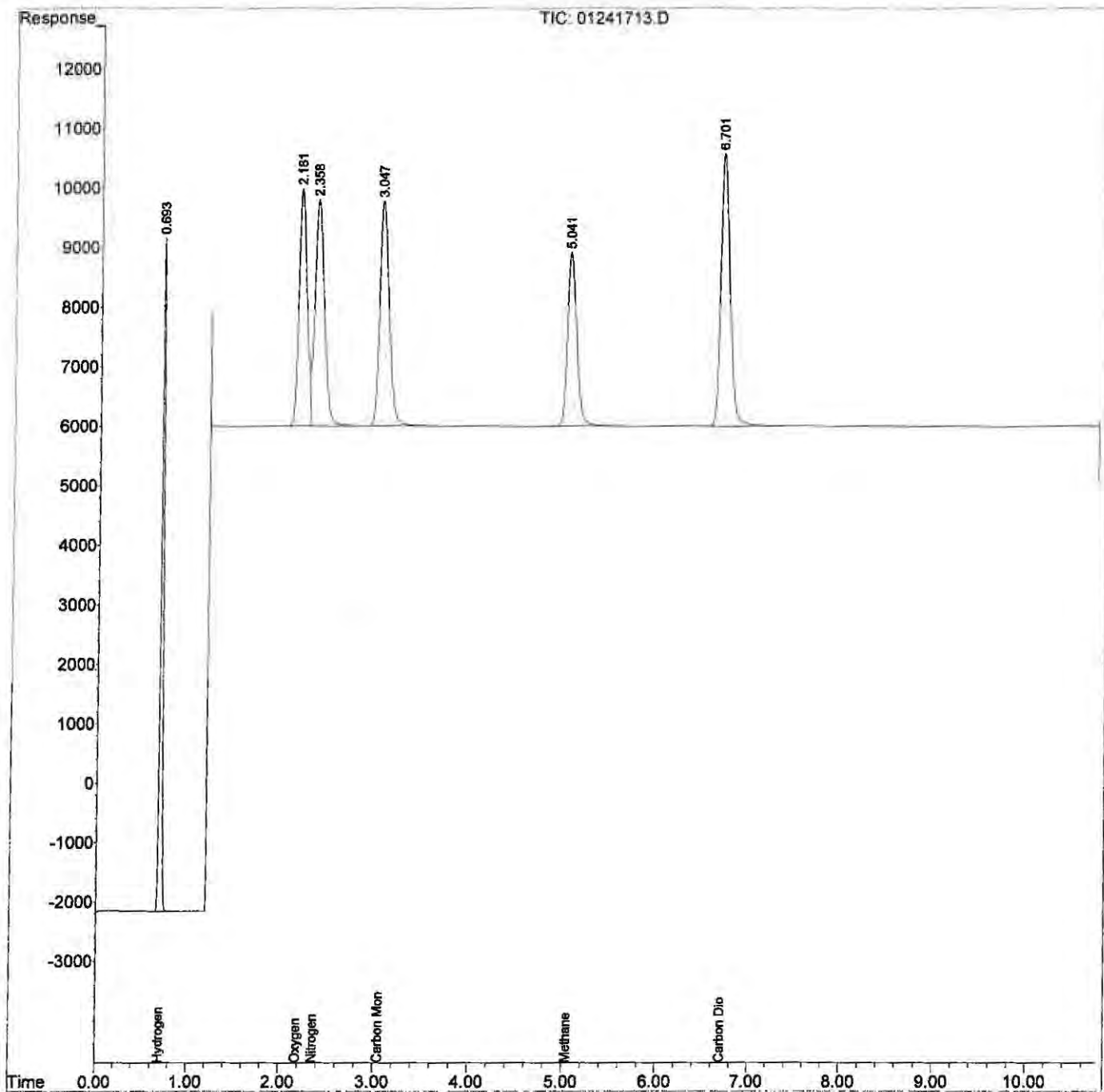
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : I:\GC01\DATA\FXG\2017_01\24\
 Data File : 01241713.D
 Signal(s) : TCD1A.CH
 Acq On : 24 Jan 2017 11:28 am
 Operator : MC
 Sample : std s30-01231703 16%
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Jan 24 11:44:36 2017
 Quant Method : I:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 11:30:32 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :



Data Path : I:\GC01\DATA\FXG\2017_01\24\
 Data File : 01241714.D
 Signal(s) : TCD1A.CH
 Acq On : 24 Jan 2017 11:45 am
 Operator : MC
 Sample : s11-12021503 O2
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Jan 24 12:03:07 2017
 Quant Method : I:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 11:45:03 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.000	0	N.D. ppm
2) Oxygen	2.102	1492463	975822.655 ppm
3) Nitrogen	0.000	0	N.D. ppm
4) Carbon Monoxide	0.000	0	N.D. ppm
5) Methane	0.000	0	N.D. ppm
6) Carbon Dioxide	0.000	0	N.D. ppm

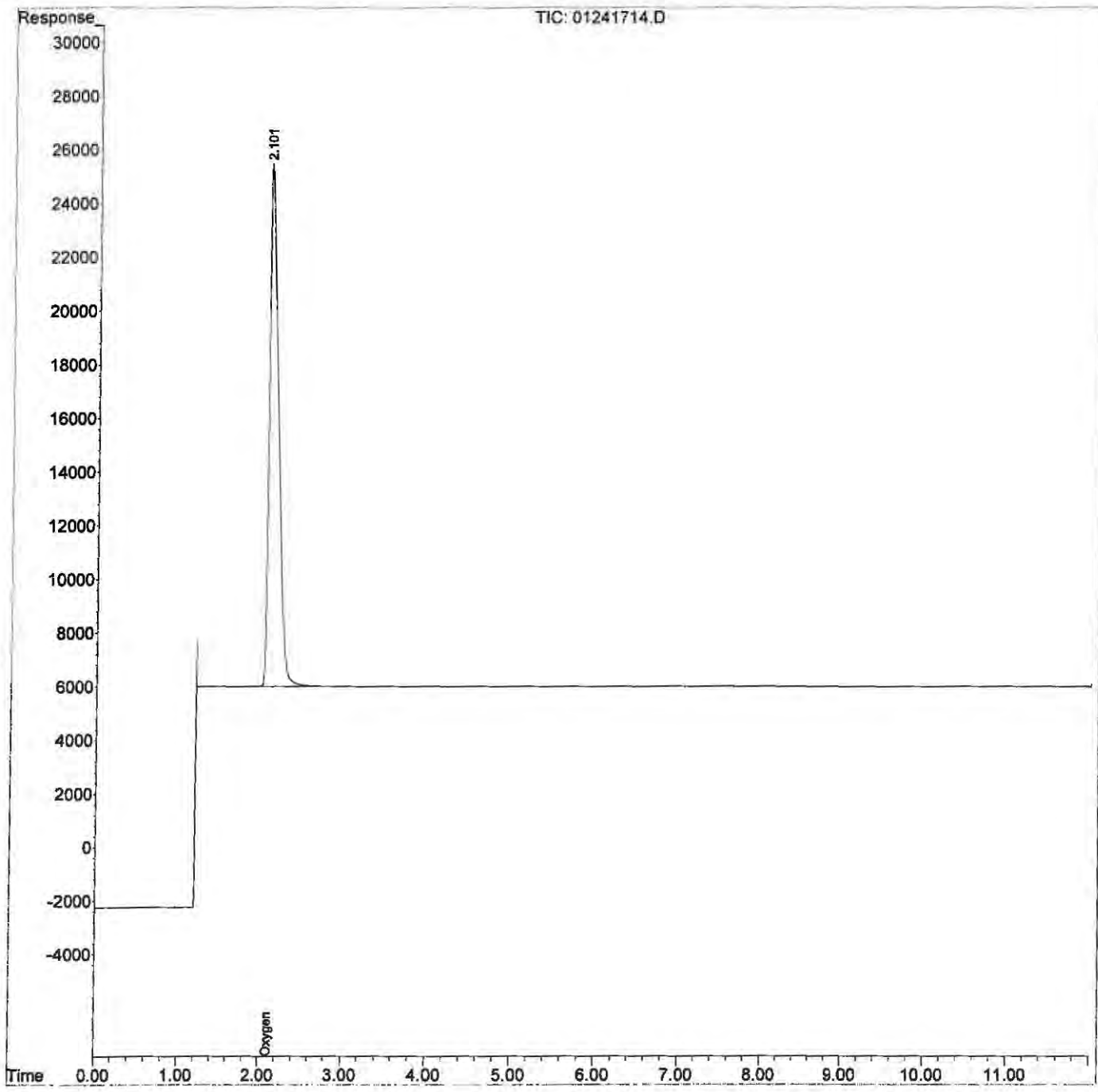
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : I:\GC01\DATA\FXG\2017_01\24\
Data File : 01241714.D
Signal(s) : TCD1A.CH
Acq On : 24 Jan 2017 11:45 am
Operator : MC
Sample : s11-12021503 O2
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 24 12:03:07 2017
Quant Method : I:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 11:45:03 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Data Path : I:\GC01\DATA\FXG\2017_01\24\
 Data File : 01241716.D
 Signal(s) : TCD1A.CH
 Acq On : 24 Jan 2017 12:21 pm
 Operator : MC
 Sample : s30-01241701 CH4
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Jan 24 15:50:33 2017
 Quant Method : I:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 12:21:02 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :

Compound	R.T.	Response	Conc	Units

Target Compounds				
1) Hydrogen	0.000	0	N.D.	ppm
2) Oxygen	0.000	0	N.D.	ppm d
3) Nitrogen	0.000	0	N.D.	ppm d
4) Carbon Monoxide	0.000	0	N.D.	ppm
5) Methane	4.953	1256113	1001419.959	ppm
6) Carbon Dioxide	0.000	0	N.D.	ppm

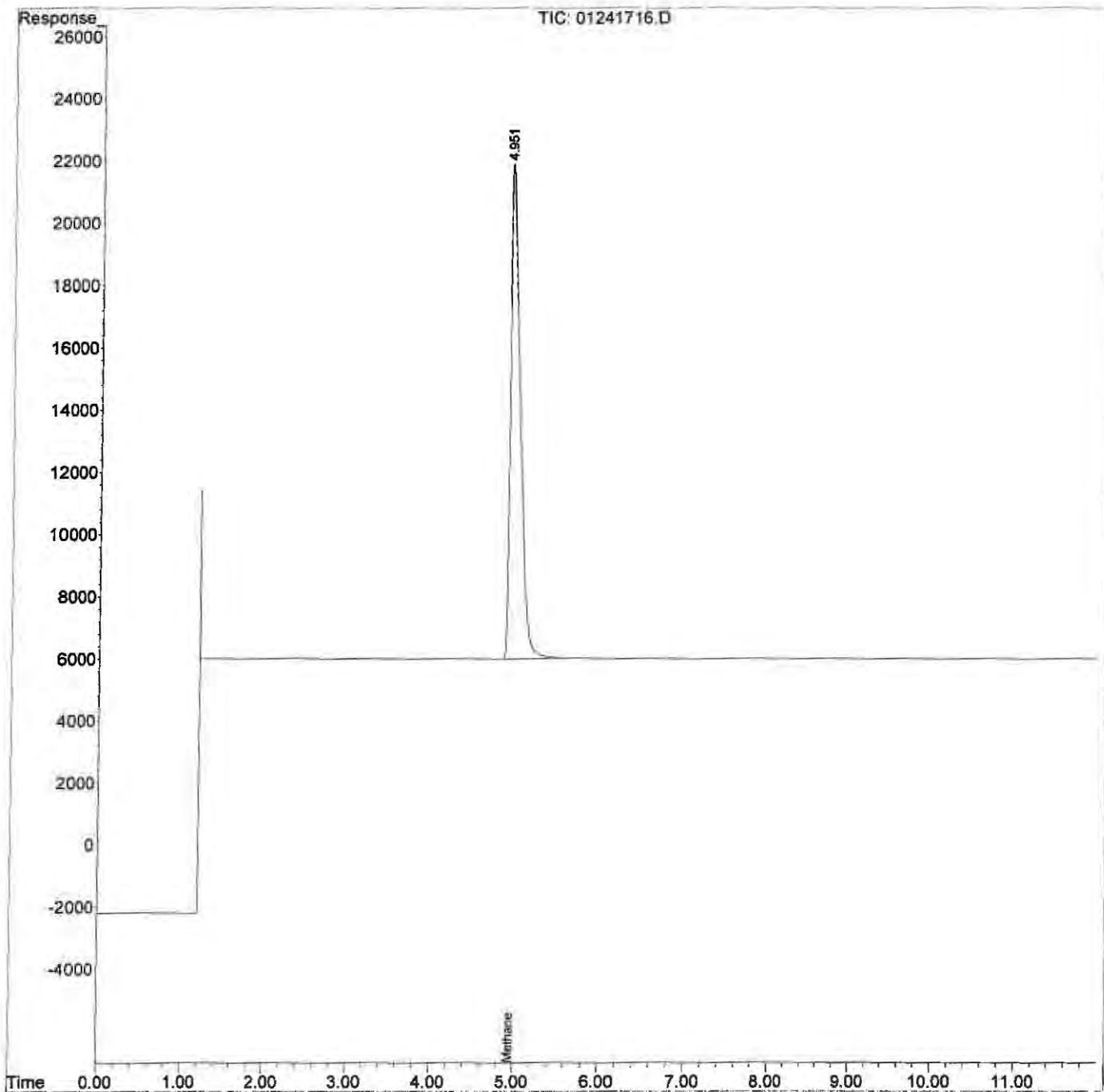
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : I:\GC01\DATA\FXG\2017_01\24\
 Data File : 01241716.D
 Signal(s) : TCD1A.CH
 Acq On : 24 Jan 2017 12:21 pm
 Operator : MC
 Sample : s30-01241701 CH4
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Jan 24 15:50:33 2017
 Quant Method : I:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 12:21:02 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :



Data Path : I:\GC01\DATA\FXG\2017_01\24\
 Data File : 01241724.D
 Signal(s) : TCD1A.CH
 Acq On : 24 Jan 2017 3:08 pm
 Operator : MC
 Sample : s11-12021502 N2
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Jan 24 15:54:48 2017
 Quant Method : I:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 13:54:15 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.000	0	N.D. ppm
2) Oxygen	0.000	0	N.D. ppm d
3) Nitrogen	2.258	1938227	1101353.052 ppm
4) Carbon Monoxide	0.000	0	N.D. ppm
5) Methane	0.000	0	N.D. ppm
6) Carbon Dioxide	0.000	0	N.D. ppm

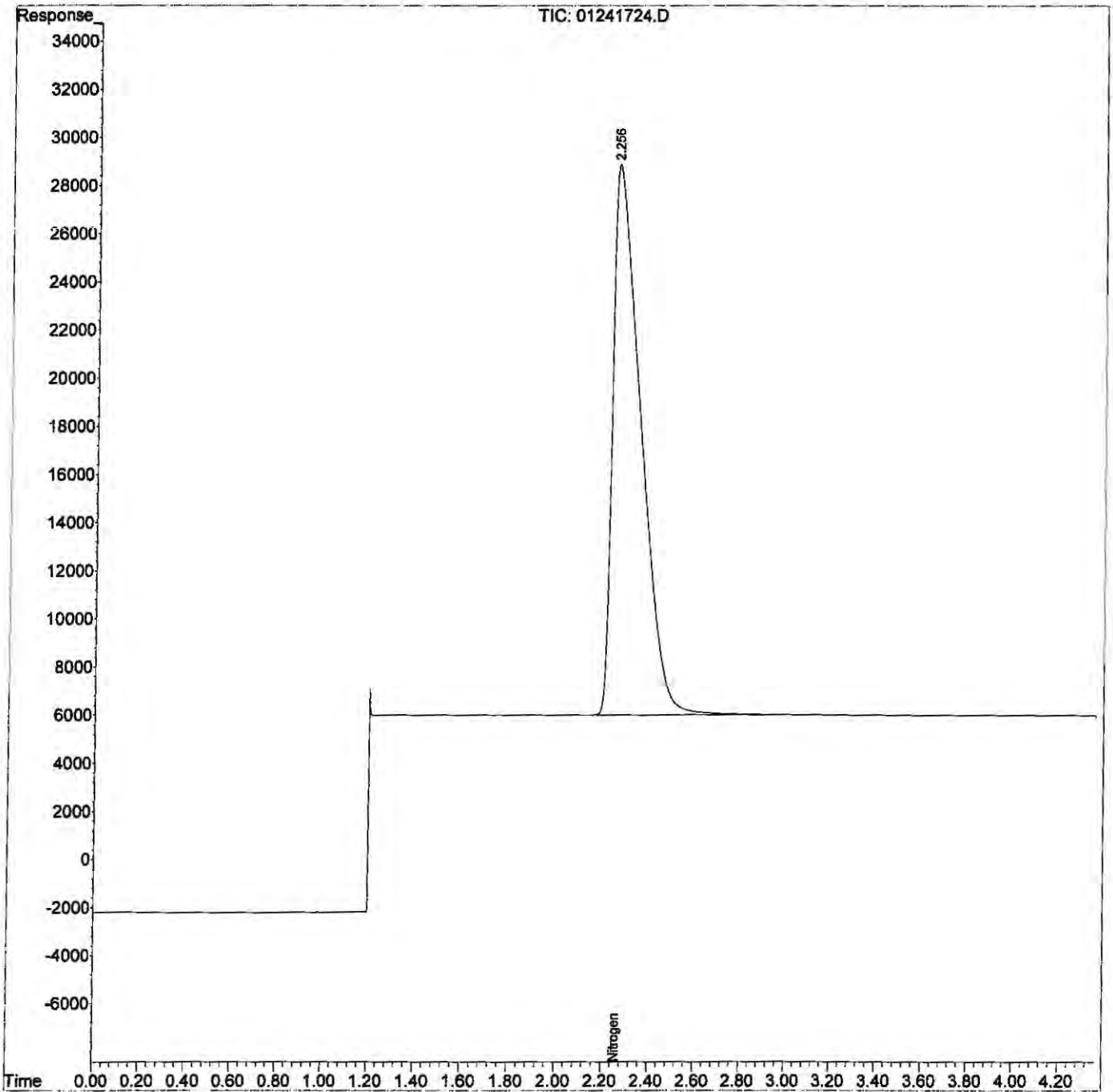
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : I:\GC01\DATA\FXG\2017_01\24\
Data File : 01241724.D
Signal(s) : TCD1A.CH
Acq On : 24 Jan 2017 3:08 pm
Operator : MC
Sample : s11-12021502 N2
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 24 15:54:48 2017
Quant Method : I:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 13:54:15 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Data Path : I:\GC01\DATA\FXG\2017_01\24\
Data File : 01241727.D
Signal(s) : TCD1A.CH
Acq On : 24 Jan 2017 4:13 pm
Operator : MC
Sample : lg loop S30-12191601 40.28%
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 24 16:40:16 2017
Quant Method : I:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 16:07:39 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.759	581720	434415.125 ppm
2) Oxygen	2.218	593437	384865.128 ppm
3) Nitrogen	2.397	671824	379650.320 ppm
4) Carbon Monoxide	3.075	669389	387994.466 ppm
5) Methane	5.042	494640	384594.565 ppm
6) Carbon Dioxide	6.690	796935	384863.394 ppm

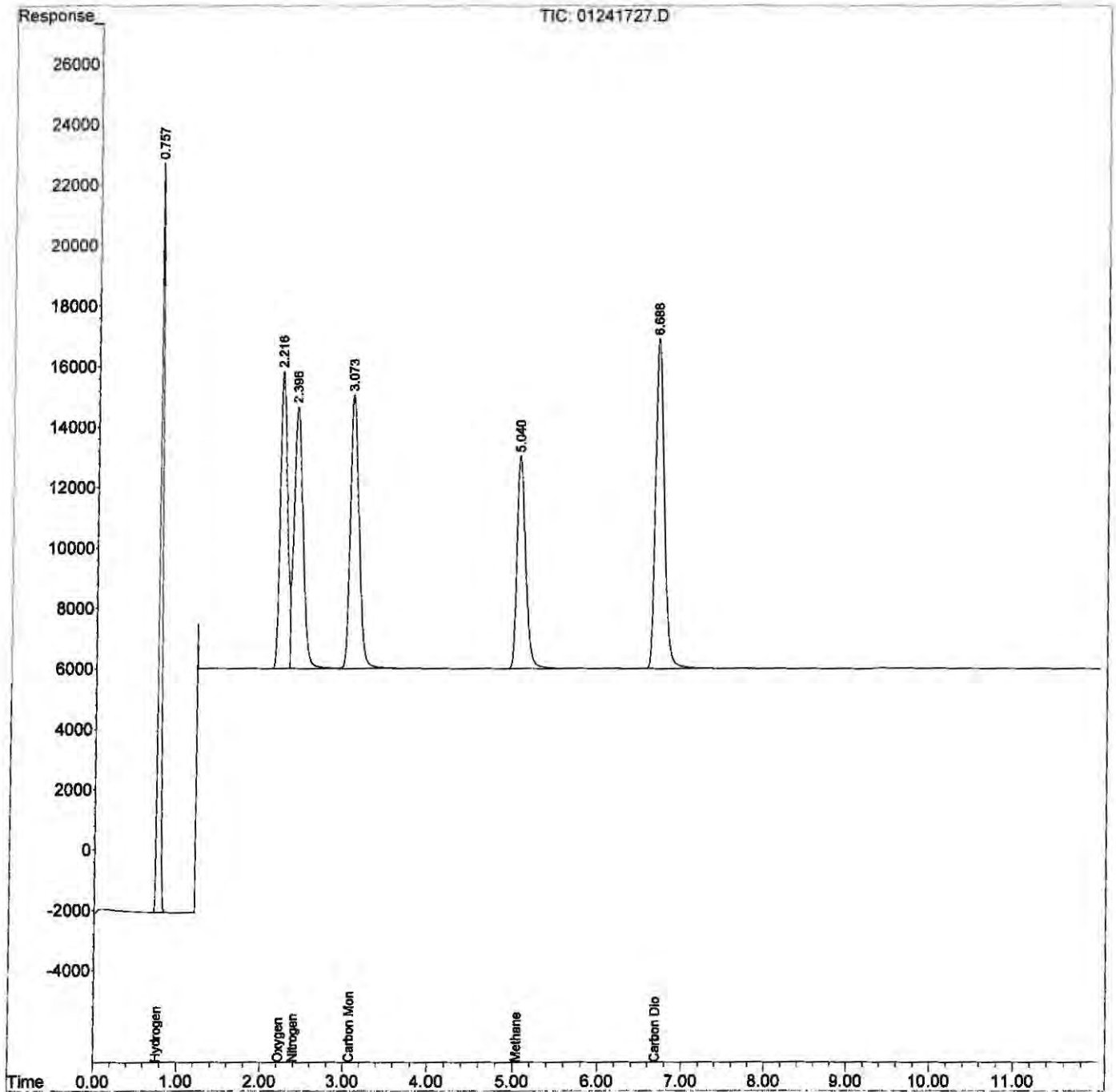
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : I:\GC01\DATA\FXG\2017_01\24\
 Data File : 01241727.D
 Signal(s) : TCD1A.CH
 Acq On : 24 Jan 2017 4:13 pm
 Operator : MC
 Sample : lg loop S30-12191601 40.28%
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Jan 24 16:40:16 2017
 Quant Method : I:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 16:07:39 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :



Data Path : I:\GC01\DATA\FXG\2017_01\24\
 Data File : 01241728.D
 Signal(s) : TCD1A.CH
 Acq On : 24 Jan 2017 4:51 pm
 Operator : MC
 Sample : S30-01241702 CO2
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Jan 24 17:14:40 2017
 Quant Method : I:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 17:11:31 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :

Compound	R.T.	Response	Conc	Units

Target Compounds				
1) Hydrogen	0.000	0	N.D.	ppm
2) Oxygen	0.000	0	N.D.	ppm
3) Nitrogen	0.000	0	N.D.	ppm d
4) Carbon Monoxide	0.000	0	N.D.	ppm
5) Methane	0.000	0	N.D.	ppm
6) Carbon Dioxide	6.625	1912854	930681.280	ppm

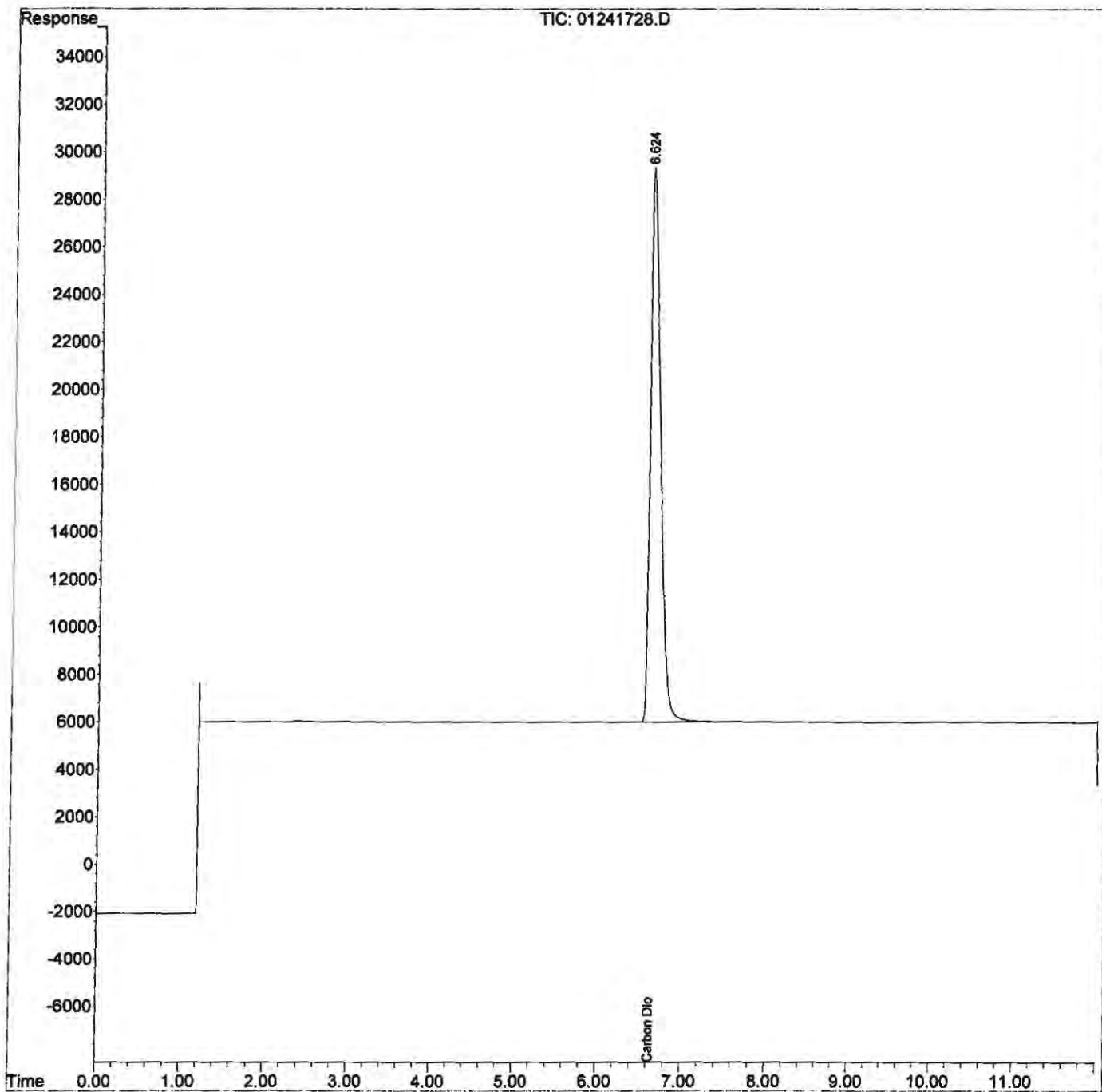
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : I:\GC01\DATA\FXG\2017_01\24\
Data File : 01241728.D
Signal(s) : TCD1A.CH
Acq On : 24 Jan 2017 4:51 pm
Operator : MC
Sample : S30-01241702 CO2
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 24 17:14:40 2017
Quant Method : I:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 17:11:31 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Data Path : I:\GC01\DATA\FXG\2017_01\24\
Data File : 01241729.D
Signal(s) : TCD1A.CH
Acq On : 24 Jan 2017 5:13 pm
Operator : MC
Sample : icv S30-12091603
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 26 11:43:57 2017
Quant Method : I:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 17:15:32 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.704	52203	38480.504 ppm
2) Oxygen	2.211	60261	39428.995 ppm
3) Nitrogen	2.386	85544	48121.904 ppm
4) Carbon Monoxide	3.073	84807	49459.452 ppm
5) Methane	5.064	50827	39776.144 ppm
6) Carbon Dioxide	6.724	97748	48020.992 ppm

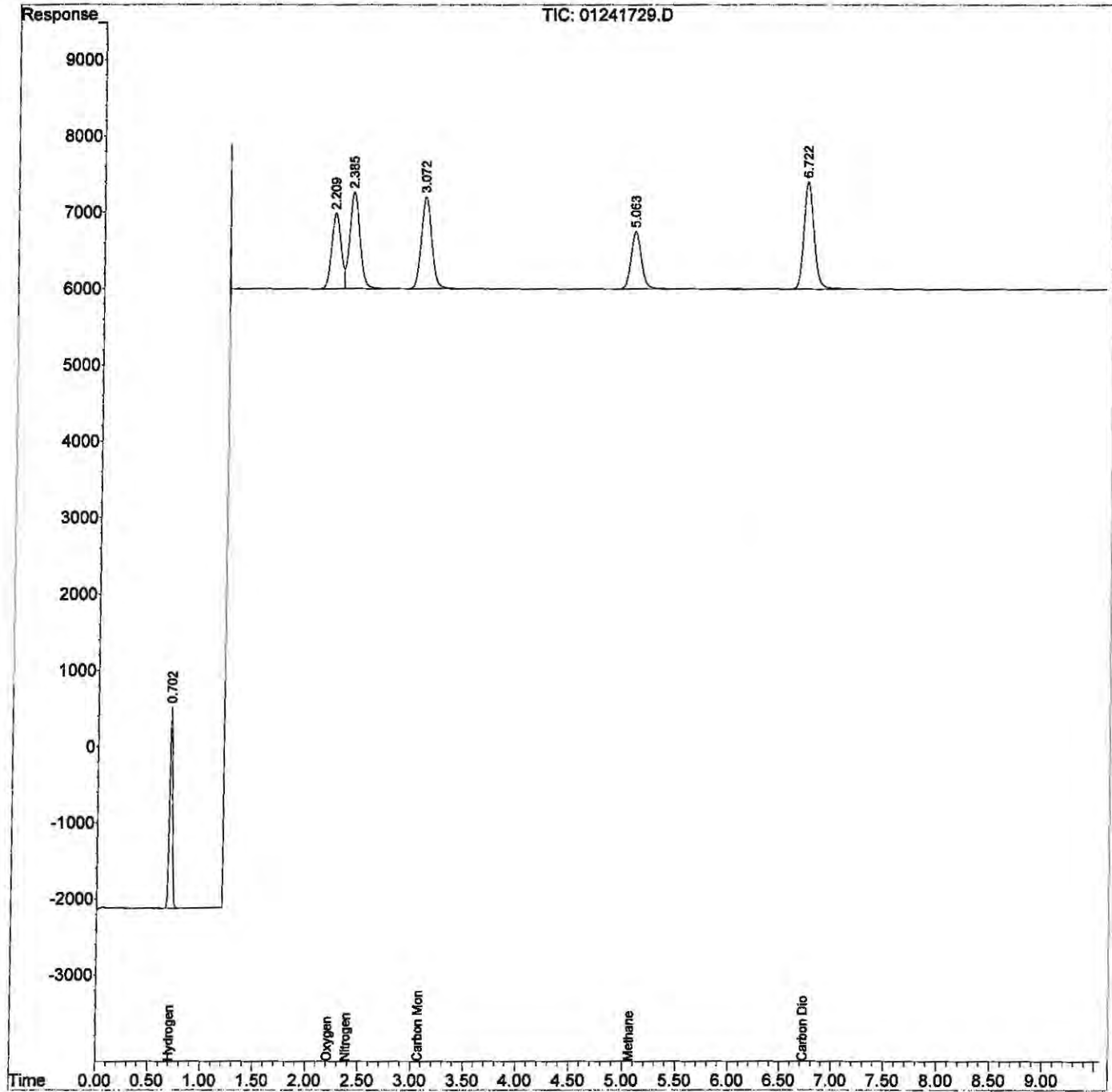
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : I:\GC01\DATA\FXG\2017_01\24\
Data File : 01241729.D
Signal(s) : TCD1A.CH
Acq On : 24 Jan 2017 5:13 pm
Operator : MC
Sample : icv S30-12091603
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Jan 26 11:43:57 2017
Quant Method : I:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 17:15:32 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Modified EPA Method 3C Daily QC Summary

Client : Leidos
 Analyst : GG
 Method Name : EPA 3C, ASTM D 1946-90, VOA-EPA3C

Instrument : GC01
 Date Analyzed : 10/10/2018

RT Summaries and QC Check (minutes)

Sample ID	Hydrogen	Oxygen	Nitrogen	Carbon Monoxide	Methane	Carbon Dioxide	File ID	Time
ICAL Mean RT	0.708	2.188	2.368	3.076	5.045	6.707		
RT Windows (+/- min)	0.072	0.133	0.146	0.034	0.130	0.145		
STD S32-08311801	0.738	2.308	2.485	3.172	5.160	6.816	10101801.D	07:29
+/- 0.33min of ICAL Mean RT	Pass	Pass	Pass	Pass	Pass	Pass		
MB								
Lab air		2.248 Pass	2.388 Pass			6.819 Pass	10101802.D	07:54
LCS S32-10081801	0.735 Pass	2.301 Pass	2.478 Pass	3.166 Pass	5.154 Pass	6.811 Pass	10101803.D	08:16
LCSD S32-10081801	0.735 Pass	2.302 Pass	2.479 Pass	3.167 Pass	5.155 Pass	6.811 Pass	10101804.D	08:37
P1805236-001		2.246 Pass	2.367 Pass			6.807 Pass	10101805.D	08:59
P1805236-002		2.259 Pass	2.380 Pass			6.812 Pass	10101806.D	10:01
P1805236-003		2.251 Pass	2.377 Pass			6.809 Pass	10101807.D	10:34
P1805236-004		2.258 Pass	2.379 Pass			6.810 Pass	10101808.D	10:51
P1805236-005		2.257 Pass	2.368 Pass				10101810.D	11:13
P1805236-006		2.254 Pass	2.373 Pass				10101811.D	11:33
STD S32-08311801	0.735 Pass	2.301 Pass	2.476 Pass	3.163 Pass	5.152 Pass	6.808 Pass	10101812.D	12:13
							10101813.D	13:26

Continuing Calibration Standards Summary (ppm)

Sample ID	Hydrogen	Oxygen	Nitrogen	Carbon Monoxide	Methane	Carbon Dioxide	File ID	Time
ACTUAL	40120.0	25570.0	50140.0	50110.0	40010.0	50380.0		
CCV Criteria (+/- %D)	15.0%	10.0%	10.0%	10.0%	10.0%	10.0%		
STD S32-08311801	41409.2 3.2%	25804.2 0.9%	49909.1 0.5%	51444.2 2.7%	41259.9 3.1%	50344.3 0.1%	10101801.D	07:29
STD S32-08311801	41726.8 4.0%	25957.3 1.5%	50574.7 0.9%	52174.7 4.1%	41449.1 3.6%	50251.1 0.3%	10101816.D	13:26
	###	###	###	###	###	###		
	###	###	###	###	###	###		

Lab Dup Summary (ppm, without DF correction and normalization)

Sample ID	Hydrogen	Oxygen	Nitrogen	Carbon Monoxide	Methane	Carbon Dioxide	File ID	Time


LCS / LCS Dup Summary (ppm, without DF correction)

Sample ID	Hydrogen	Oxygen	Nitrogen	Carbon Monoxide	Methane	Carbon Dioxide	File ID	Time
LCS Actual Conc. (ppm)	40000.0	40000.0	50000.0	50000.0	40000.0	50000.0		
LCS Criteria (% Range)	94%-107%	98%-109%	94%-105%	98%-109%	98%-110%	95%-108%		
LCS S32-10081801	42057.2	41351.6	50725.9	52459.3	41713.0	48998.5	10101804.D	08:37
LCS % Recovery	105% Pass	103% Pass	101% Pass	105% Pass	104% Pass	98% Pass		
LCSD S32-10081801	41829.2	40676.7	49945.1	51226.0	41309.3	49454.6	10101805.D	08:59
LCS % Recovery	105% Pass	102% Pass	100% Pass	102% Pass	103% Pass	99% Pass		
Duplicate % RPD	0.5%	1.6%	1.6%	2.4%	1.0%	0.9%		
Duplicate Criteria % RPD	3% Pass	10% Pass	8% Pass	2% Fail	8% Pass	5% Pass		

Lab Air QC Summary

Sample ID	Hydrogen	Oxygen	Nitrogen	Carbon Monoxid	Methane	Carbon Dioxide	Lab Air Criteria Total (90%-110%)
Lab air		216922.8	768321.1			392.0	98.6% Pass
Lab Air Normalized (%)		22.01%	77.94%			0.04%	100.0%

Data Path : J:\GC01\DATA\FXG\2018_10\10\
 Data File : 10101801.D
 Signal(s) : TCD1A.CH
 Acq On : 10 Oct 2018 7:29 am
 Operator : GG
 Sample : STD S32-08311801
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

10/12/18


Integration File: autoint1.e
 Quant Time: Oct 10 14:35:47 2018
 Quant Method : J:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 17:15:32 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.738	56176	41409.191 ppm
2) Oxygen	2.308	39438	25804.208 ppm
3) Nitrogen	2.485	88721	49909.067 ppm
4) Carbon Monoxide	3.172	88211	51444.179 ppm
5) Methane	5.160	52723	41259.947 ppm
6) Carbon Dioxide	6.816	102477	50344.300 ppm

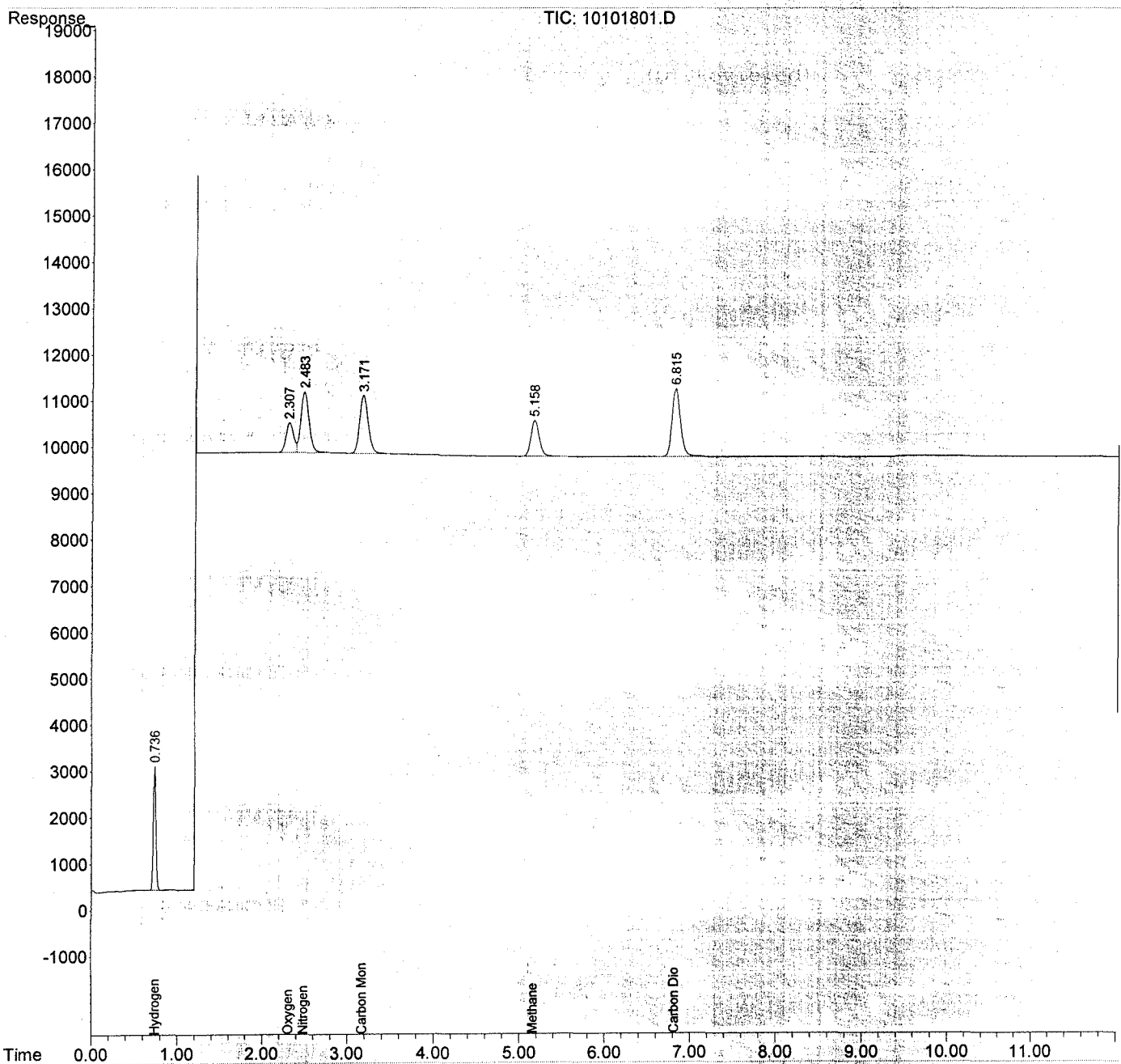
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC01\DATA\FXG\2018_10\10\
Data File : 10101801.D
Signal(s) : TCD1A.CH
Acq On : 10 Oct 2018 7:29 am
Operator : GG
Sample : STD S32-08311801
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Oct 10 14:35:47 2018
Quant Method : J:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 17:15:32 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Data Path : J:\GC01\DATA\FXG\2018_10\10\
 Data File : 10101816.D
 Signal(s) : TCD1A.CH
 Acq On : 10 Oct 2018 1:26 pm
 Operator : GG
 Sample : STD S32-08311801
 Misc :
 ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
 Quant Time: Oct 10 14:38:07 2018
 Quant Method : J:\GC01\METHODS\3C012417.M
 Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
 QLast Update : Tue Jan 24 17:15:32 2017
 Response via : Initial Calibration
 Integrator: ChemStation

Volume Inj. : 100ul
 Signal Phase : CarboSieve Packed Column
 Signal Info :

Compound	R.T.	Response	Conc Units

Target Compounds			
1) Hydrogen	0.735	56607	41726.793 ppm
2) Oxygen	2.301	39672	25957.300 ppm
3) Nitrogen	2.476	89904	50574.740 ppm
4) Carbon Monoxide	3.163	89463	52174.730 ppm
5) Methane	5.152	52965	41449.142 ppm
6) Carbon Dioxide	6.808	102287	50251.107 ppm

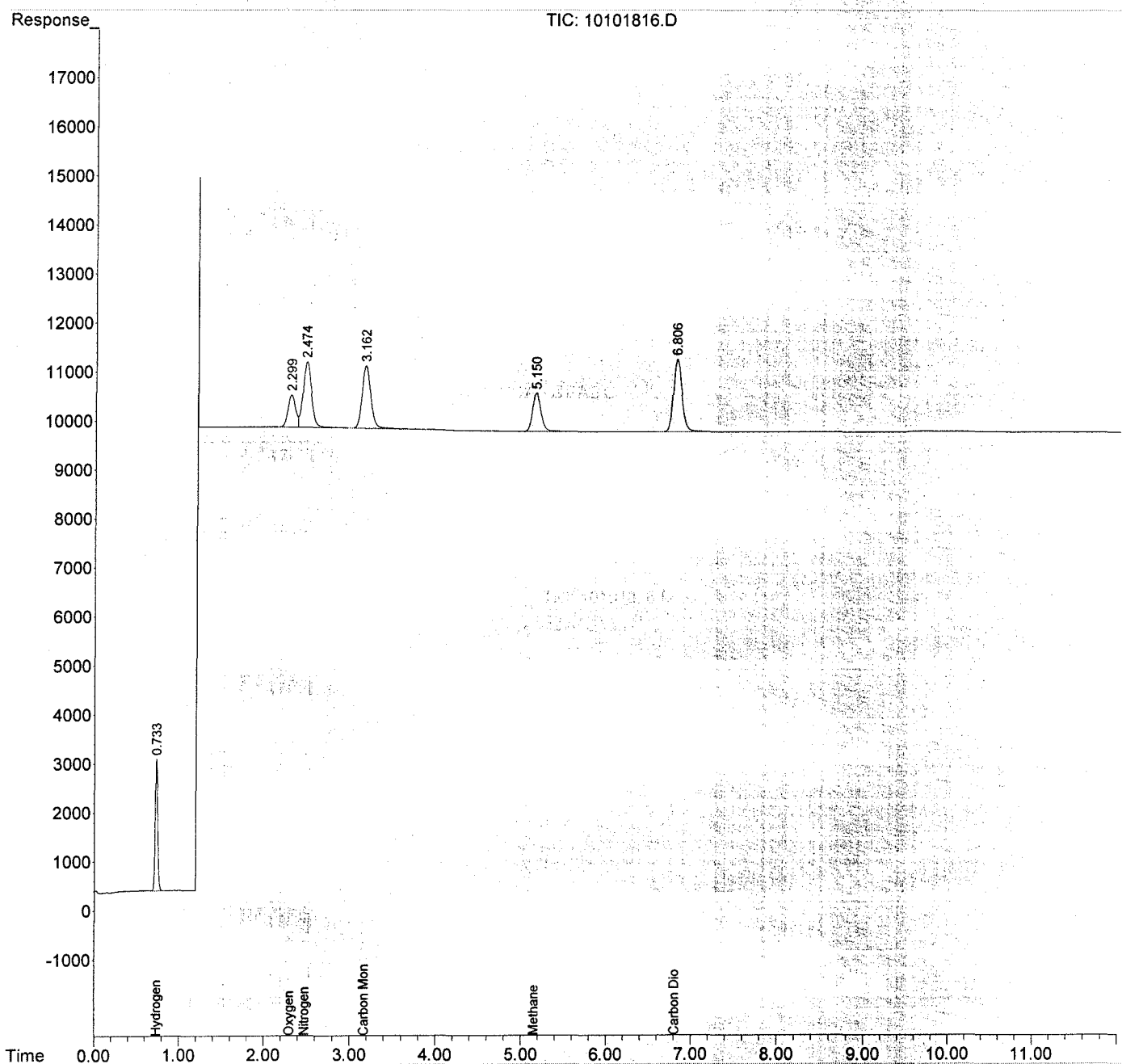
(f)=RT Delta > 1/2 Window

(m)=manual int.

Data Path : J:\GC01\DATA\FXG\2018_10\10\
Data File : 10101816.D
Signal(s) : TCD1A.CH
Acq On : 10 Oct 2018 1:26 pm
Operator : GG
Sample : STD S32-08311801
Misc :
ALS Vial : 1 Sample Multiplier: 10

Integration File: autoint1.e
Quant Time: Oct 10 14:38:07 2018
Quant Method : J:\GC01\METHODS\3C012417.M
Quant Title : EPA 3C, ASTM D 1946-90, VOA-EPA3C
QLast Update : Tue Jan 24 17:15:32 2017
Response via : Initial Calibration
Integrator: ChemStation

Volume Inj. : 100ul
Signal Phase : CarboSieve Packed Column
Signal Info :



Data File : I:\MS19\DATA\2018_10\12\10121809.D
 Acq On : 12 Oct 2018 13:19
 Sample : P1805236-001 (400mL)
 Misc : S31-09241806

Vial: 1
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 10:34:49 2018

Quant Method : I:\MS19\METHODS\S19100118.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Tue Oct 02 06:45:50 2018

Response via : Initial Calibration

~~WA~~ 10/15/18

DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	18723	1000.000	pg	-0.03
25) 1,4-Difluorobenzene (IS2)	11.58	114	85533	1000.000	pg	-0.02
38) Chlorobenzene-d5 (IS3)	15.92	54	12091	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	22214	991.147	pg	-0.03
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	99.11%
33) Toluene-d8 (SS2)	14.02	98	92599	1049.807	pg	-0.01
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	104.98%
45) Bromofluorobenzene (SS3)	17.44	174	35509	1039.327	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	103.93%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.32	85	32431	812.927	pg	100
3) Chloromethane	4.53	52	563	60.353	pg	97
4) 1,2-Dichloro,1,1,2,2-t...	4.70	85	829	28.827	pg	98
5) Vinyl Chloride	0.00	62	0	N.D.		
6) 1,3-Butadiene	5.01	54	138	N.D.		
7) Bromomethane	5.33	94	4621	253.910	pg	100
8) Chloroethane	5.55	64	274	20.215	pg	100
9) Acrolein	6.12	56	5099	465.372	pg	100
10) Acetone	6.26	58	67366	4849.644	pg	100
11) Trichlorofluoromethane	6.48	101	30489	977.229	pg	100
12) 1,1-Dichloroethene	7.20	96	146	N.D.		
13) Methylene Chloride	7.33	84	1125	48.641	pg	97
14) Trichlorotrifluoroethane	7.67	151	2428	111.037	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.58	63	117	N.D.		
17) Methyl tert-Butyl Ether	0.00	73	0	N.D.	d	
18) cis-1,2-Dichloroethene	9.46	96	93	N.D.		
19) Chloroform	9.76	83	22055	570.218	pg	100
21) 1,2-Dichloroethane	10.51	62	87	N.D.		
22) 1,1,1-Trichloroethane	10.78	97	9973	303.994	pg	100
23) Benzene	11.23	78	12662	130.309	pg	98
24) Carbon Tetrachloride	11.39	117	707	23.610	pg	98
26) 1,2-Dichloropropane	12.04	63	93	N.D.		
27) Bromodichloromethane	0.00	83	0	N.D.	d	
28) Trichloroethene	12.28	130	2271	84.974	pg	97
29) 1,4-Dioxane	12.26	88	641	35.057	pg	94
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.	d	
32) 1,1,2-Trichloroethane	0.00	83	0	N.D.	d	
34) Toluene	14.11	91	50119	513.189	pg	100
35) Dibromochloromethane	14.52	129	64	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.27	166	1652041	57484.130	pg	99
39) Chlorobenzene	0.00	112	0	N.D.	d	
40) Ethylbenzene	16.36	91	3936	35.310	pg	99
41) m,p-Xylene	16.52	91	8594	100.833	pg	100
42) Styrene	16.89	104	1621	23.945	pg	95
43) o-Xylene	16.99	106	4397	97.037	pg	98
44) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	d	
46) 1,3,5-Trimethylbenzene	18.27	105	2982	31.290	pg	99
47) 1,2,4-Trimethylbenzene	18.66	105	8481	89.206	pg	88
48) 1,3-Dichlorobenzene	18.81	146	303	N.D.		
49) 1,4-Dichlorobenzene	18.87	146	858	13.756	pg	98
50) 1,2-Dichlorobenzene	19.20	146	146	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	20.82	182	219	N.D.		
53) Naphthalene	20.94	128	7396	66.509	pg	99

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Data File : I:\MS19\DATA\2018_10\12\10121809.D
 Acq On : 12 Oct 2018 13:19
 Sample : P1805236-001 (400mL)
 Misc : S31-09241806

Vial: 1
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 10:34:49 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

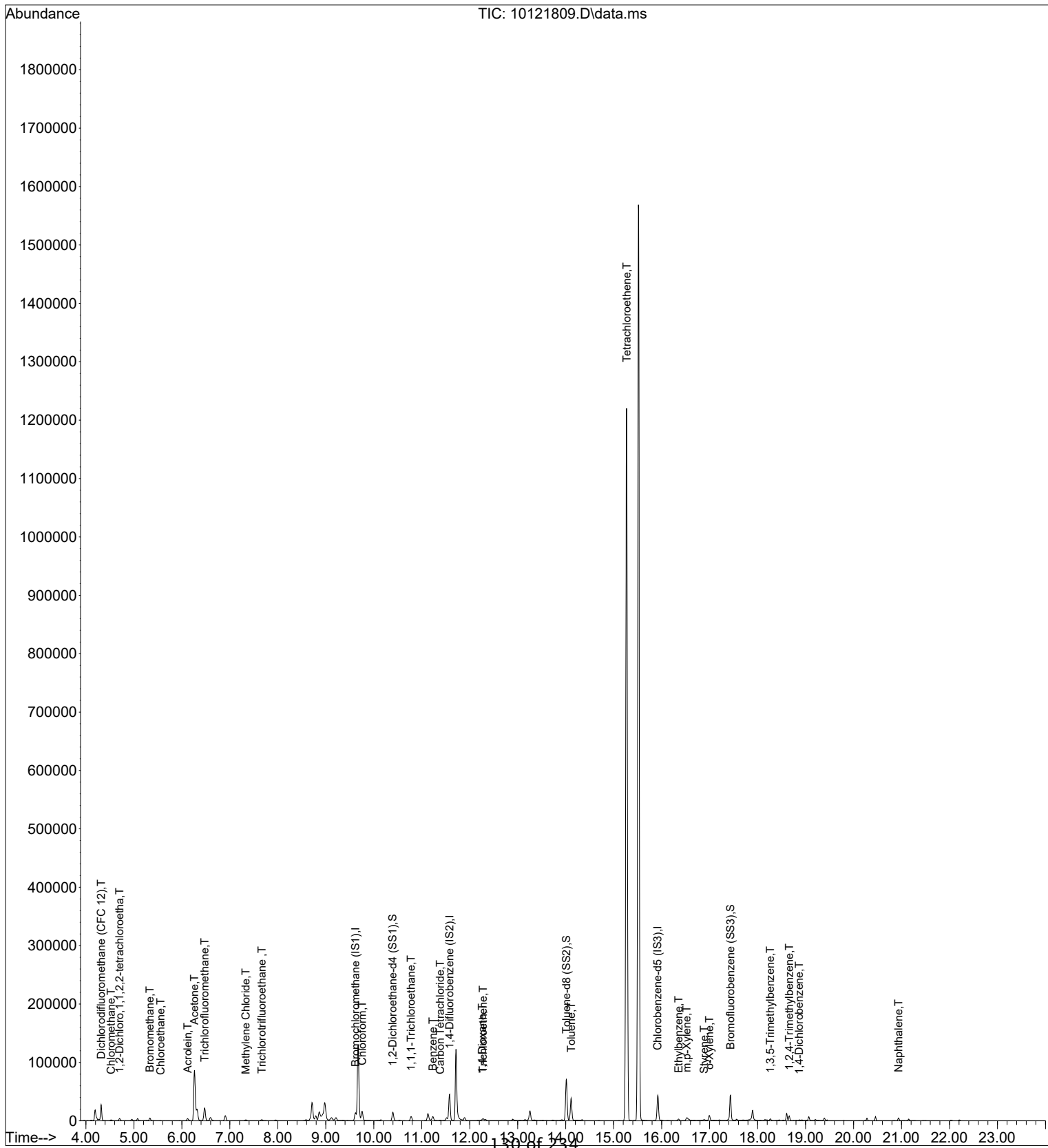
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\12\10121809.D
 Acq On : 12 Oct 2018 13:19
 Sample : P1805236-001 (400mL)
 Misc : S31-09241806

Vial: 1
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 10:34:49 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

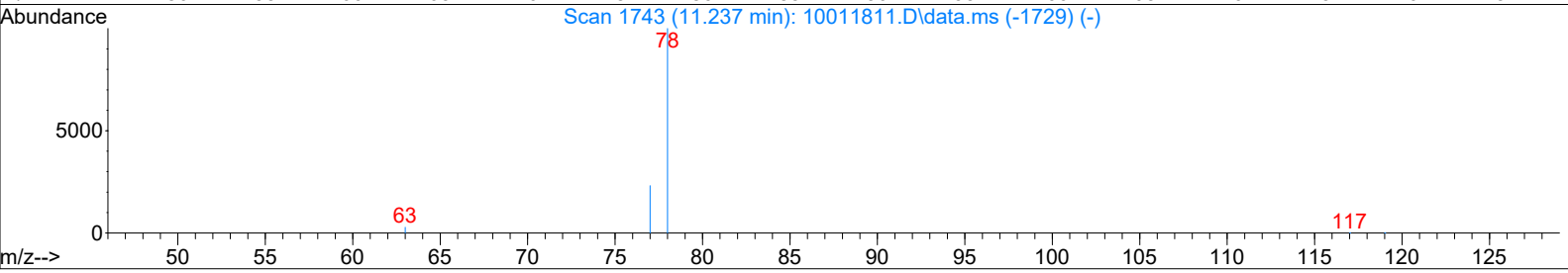
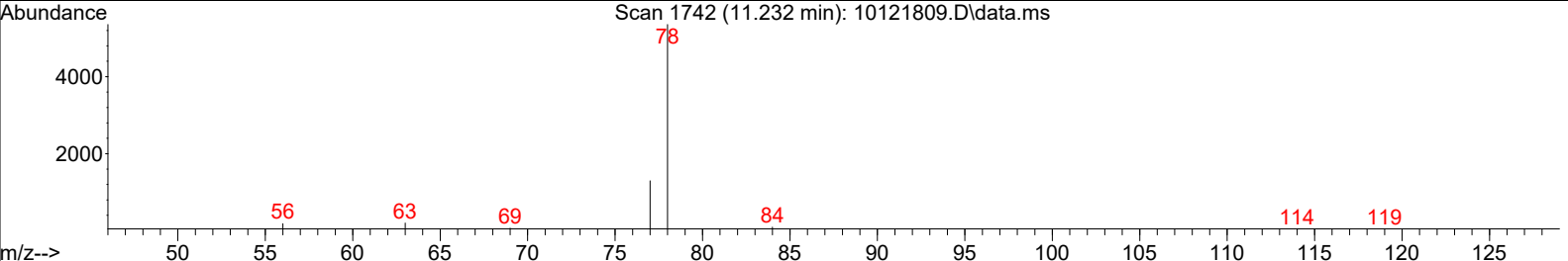
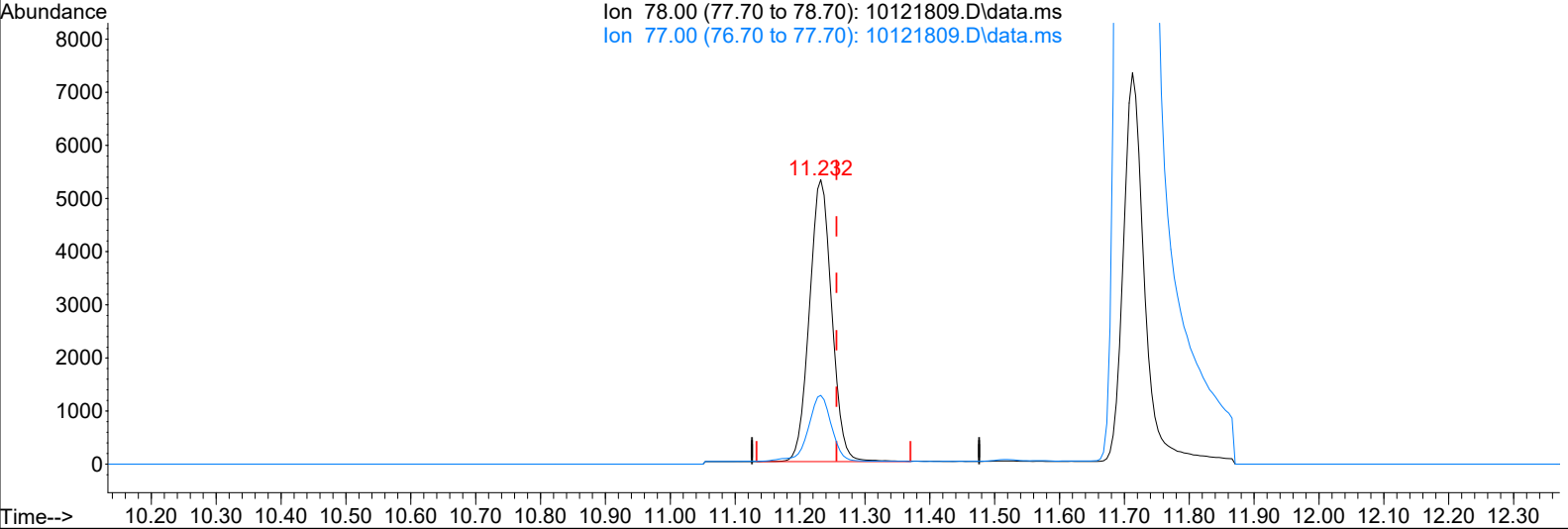


130 of 234

Data File : I:\MS19\DATA\2018_10\12\10121809.D
 Acq On : 12 Oct 2018 13:19
 Sample : P1805236-001 (400mL)
 Misc : S31-09241806

Vial: 1
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:58:53 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121809.D\data.ms

(23) Benzene (T)

11.232min (-0.024) 130.31pg

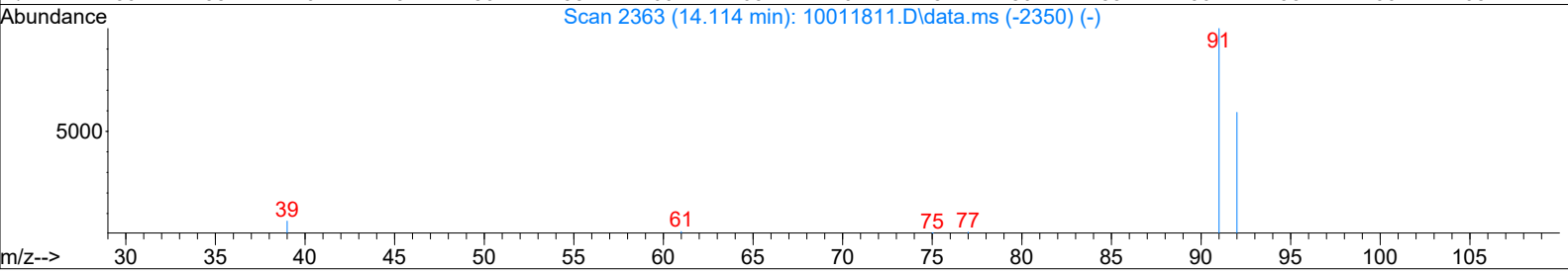
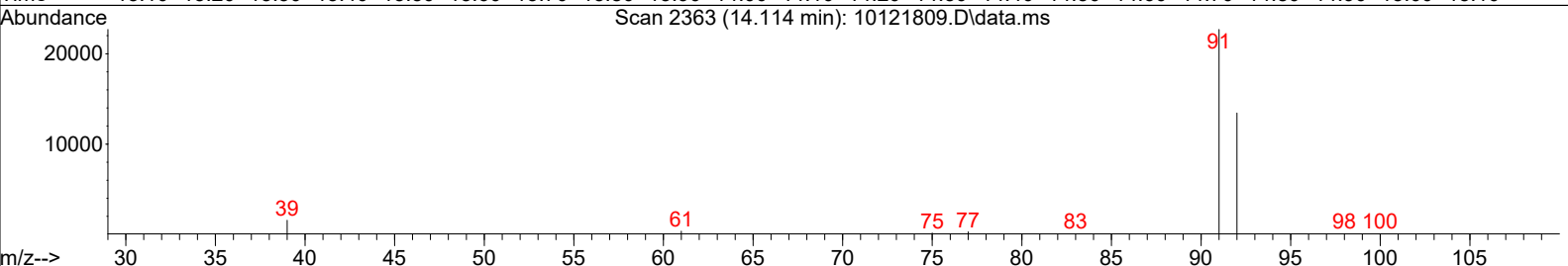
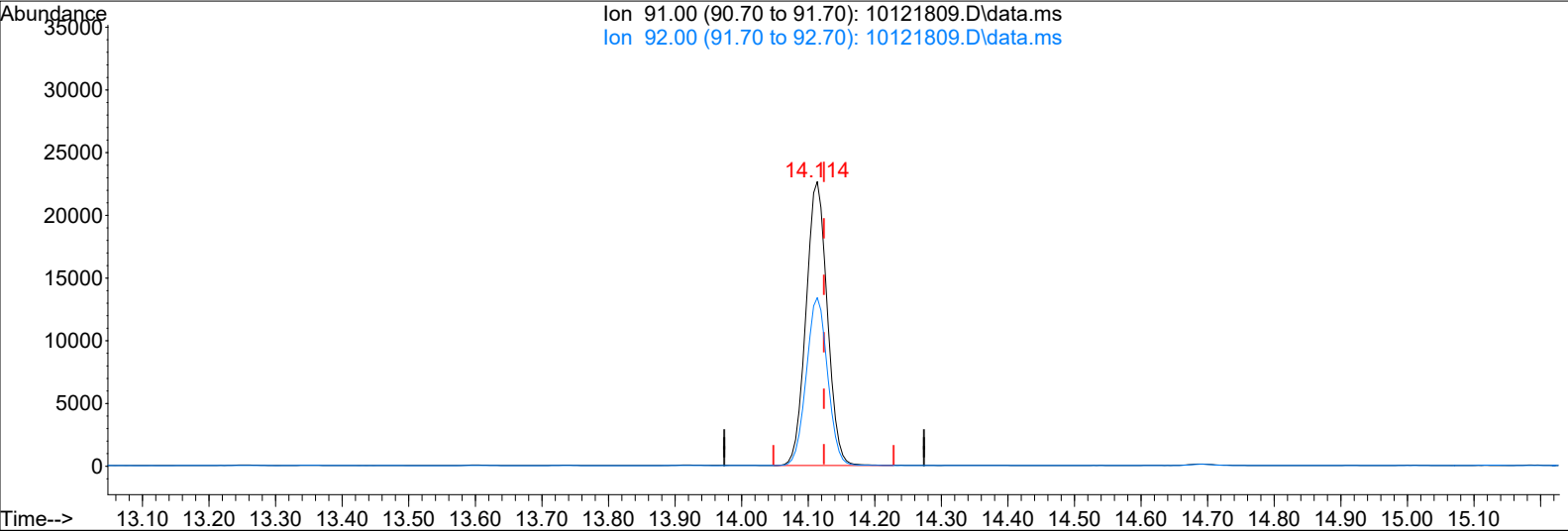
response 12662

Ion	Exp%	Act%
78.00	100	100
77.00	23.30	24.17
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121809.D
 Acq On : 12 Oct 2018 13:19
 Sample : P1805236-001 (400mL)
 Misc : S31-09241806

Vial: 1
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:58:53 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121809.D\data.ms

(34) Toluene (T)

14.114min (-0.010) 513.19pg

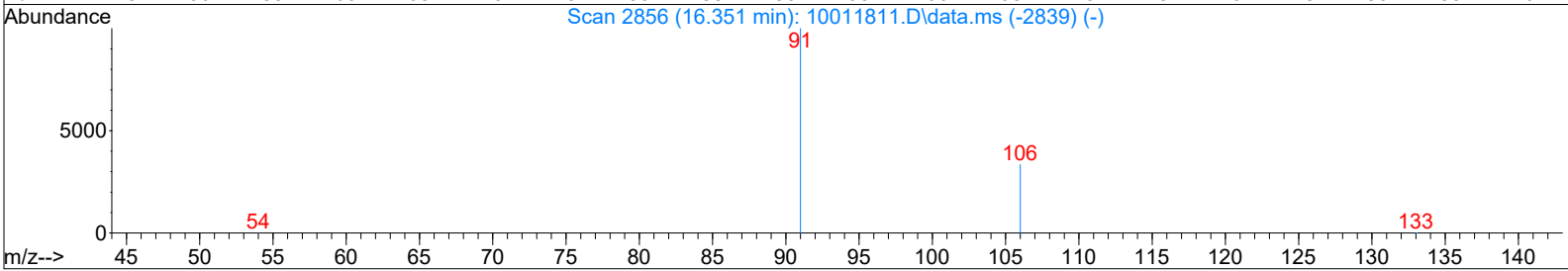
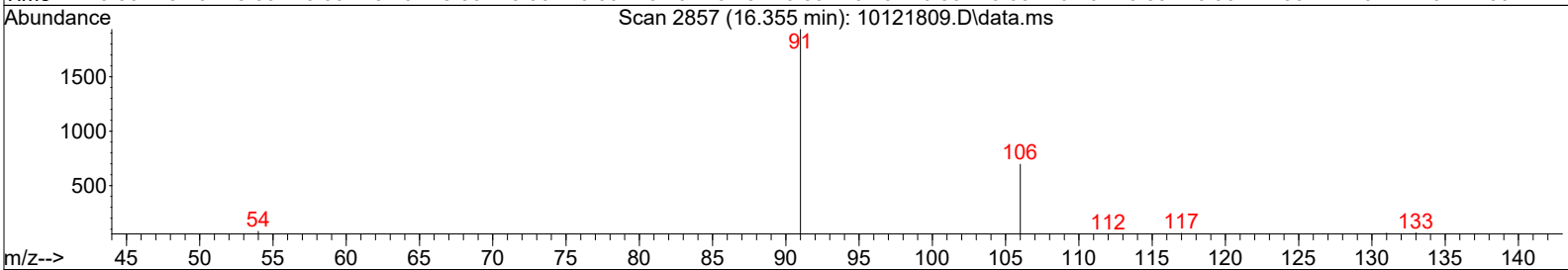
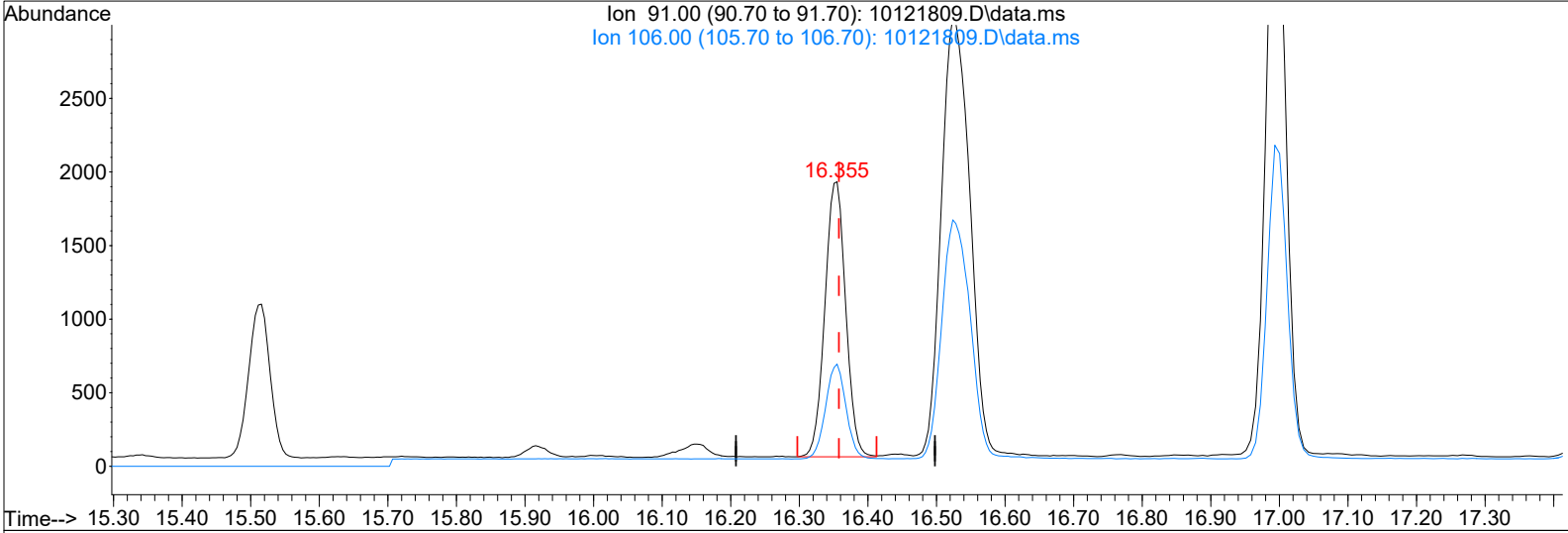
response 50119

Ion	Exp%	Act%
91.00	100	100
92.00	59.20	59.26
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121809.D
 Acq On : 12 Oct 2018 13:19
 Sample : P1805236-001 (400mL)
 Misc : S31-09241806

Vial: 1
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:58:53 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121809.D\data.ms

(40) Ethylbenzene (T)

16.355min (-0.003) 35.31pg

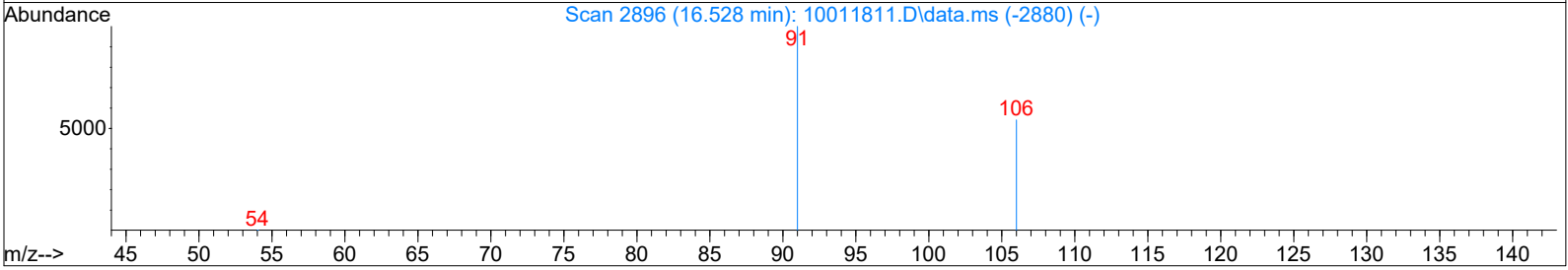
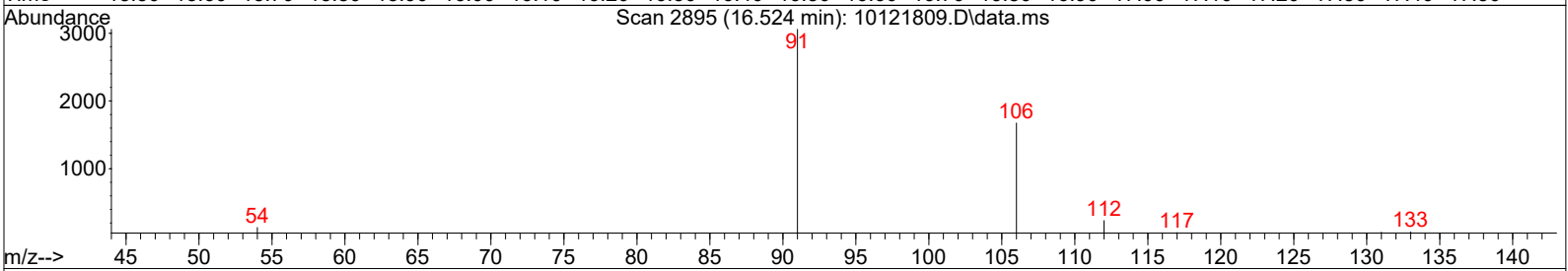
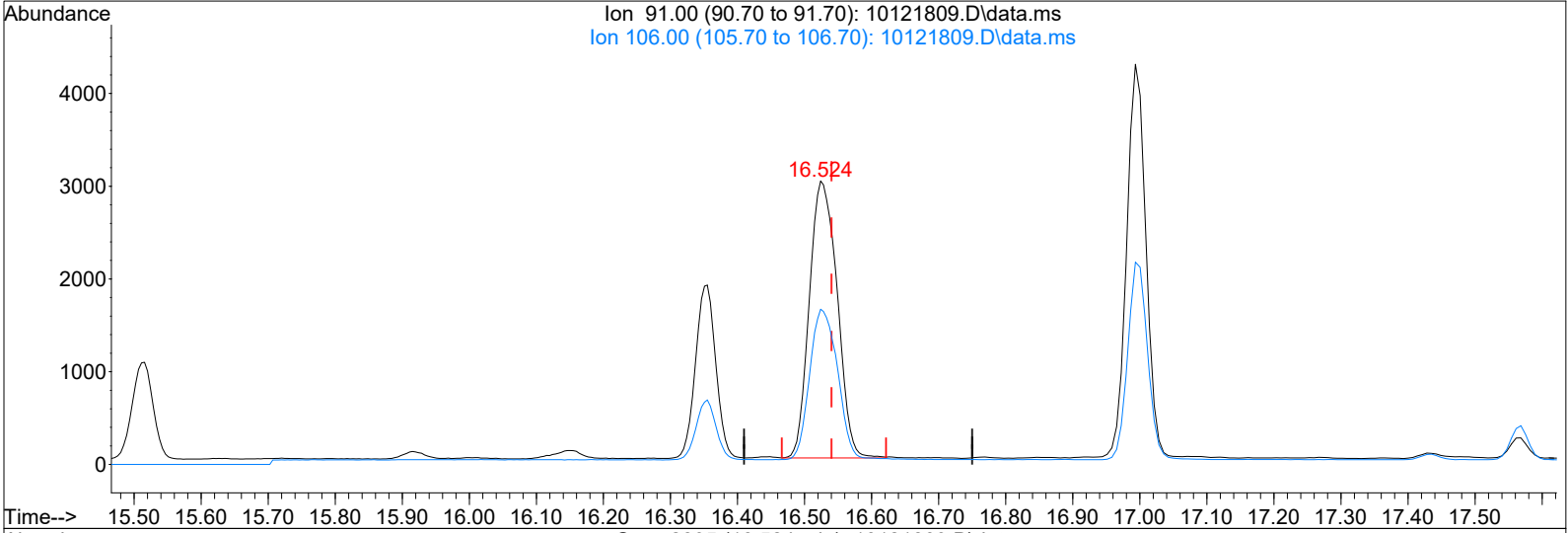
response 3936

Ion	Exp%	Act%
91.00	100	100
106.00	33.70	34.20
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121809.D
 Acq On : 12 Oct 2018 13:19
 Sample : P1805236-001 (400mL)
 Misc : S31-09241806

Vial: 1
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:58:53 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121809.D\data.ms

(41) m,p-Xylene (T)

16.524min (-0.016) 100.83pg

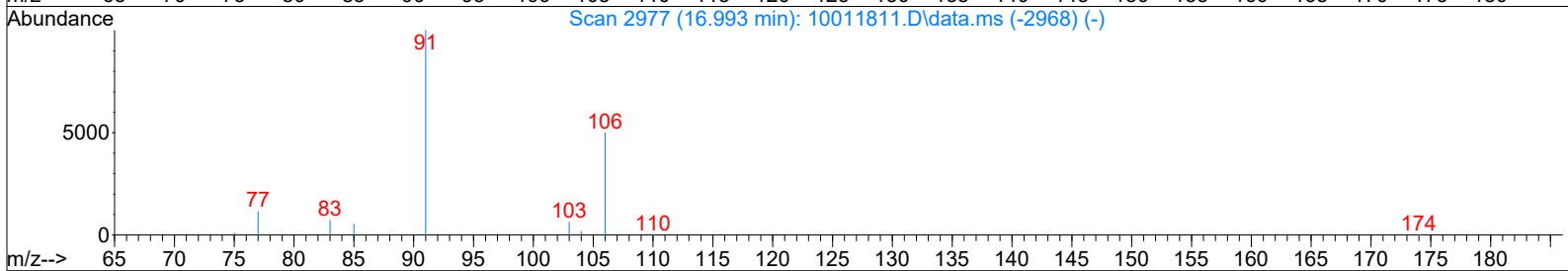
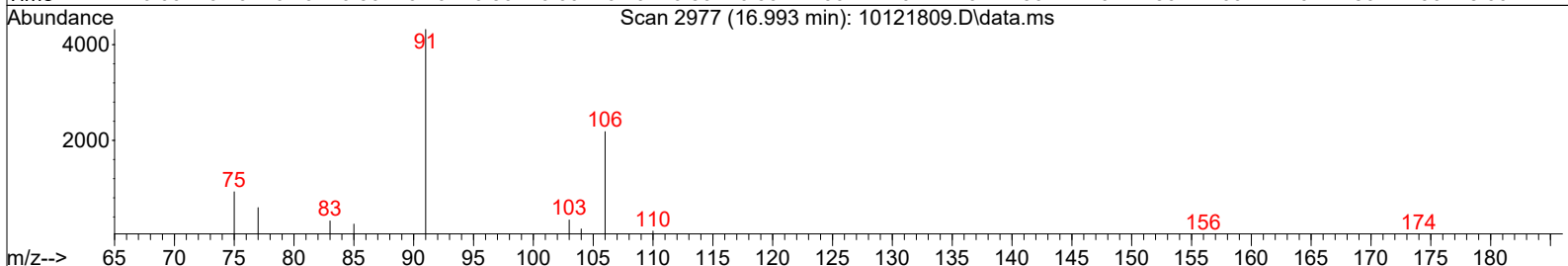
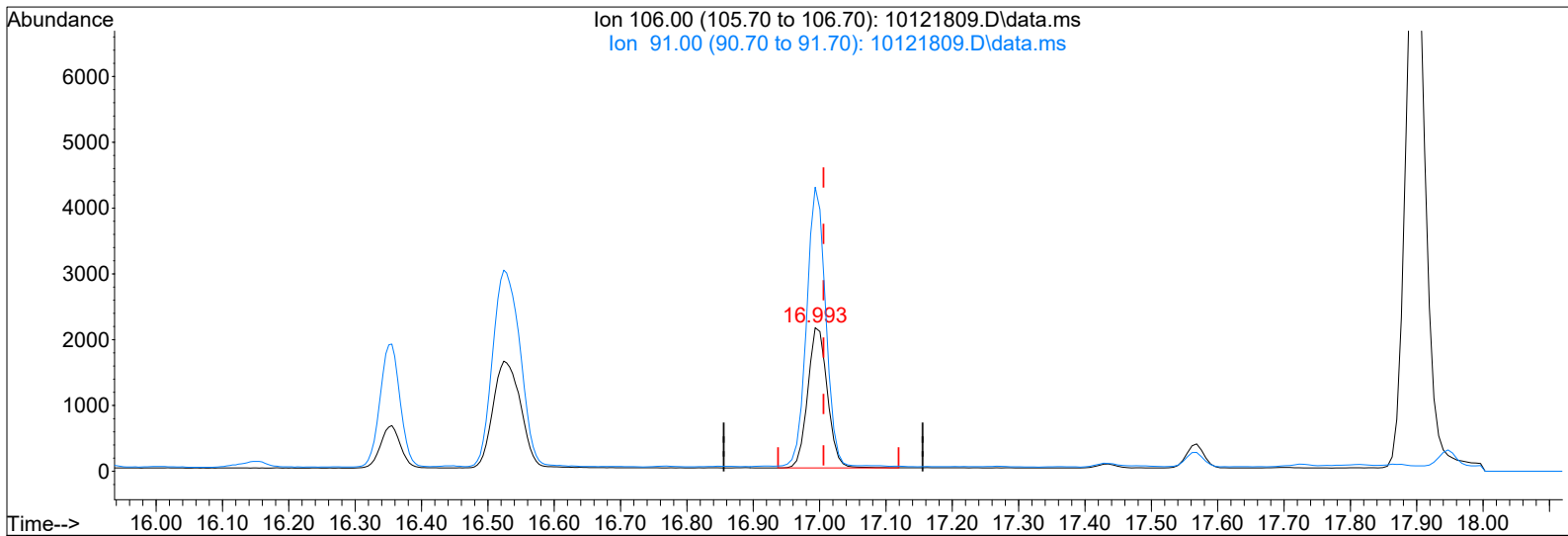
response 8594

Ion	Exp%	Act%
91.00	100	100
106.00	54.30	54.58
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121809.D
 Acq On : 12 Oct 2018 13:19
 Sample : P1805236-001 (400mL)
 Misc : S31-09241806

Vial: 1
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:58:53 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121809.D\data.ms

(43) o-Xylene (T)

16.993min (-0.012) 97.04pg

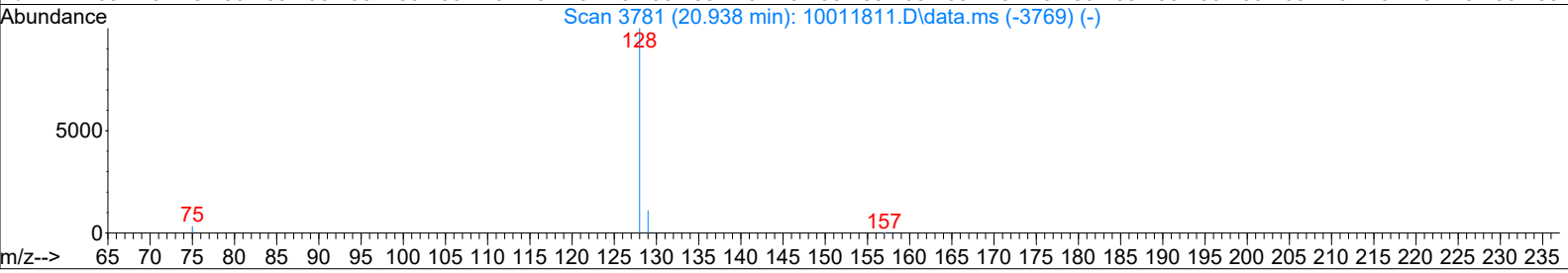
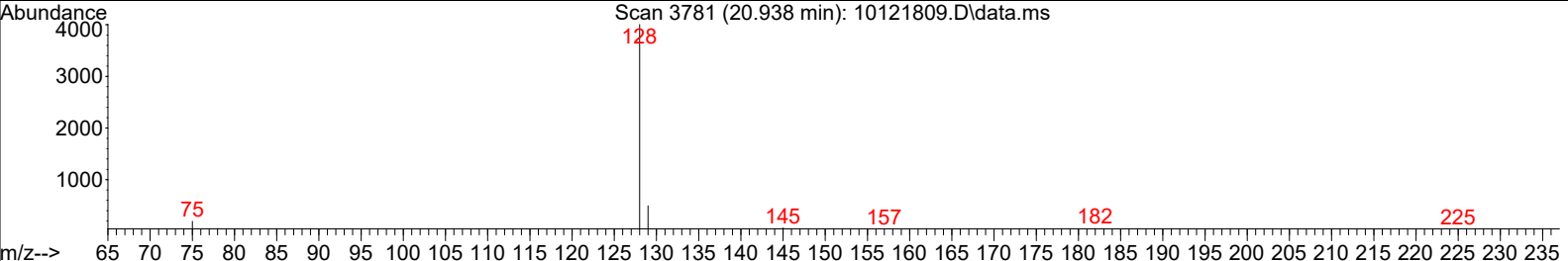
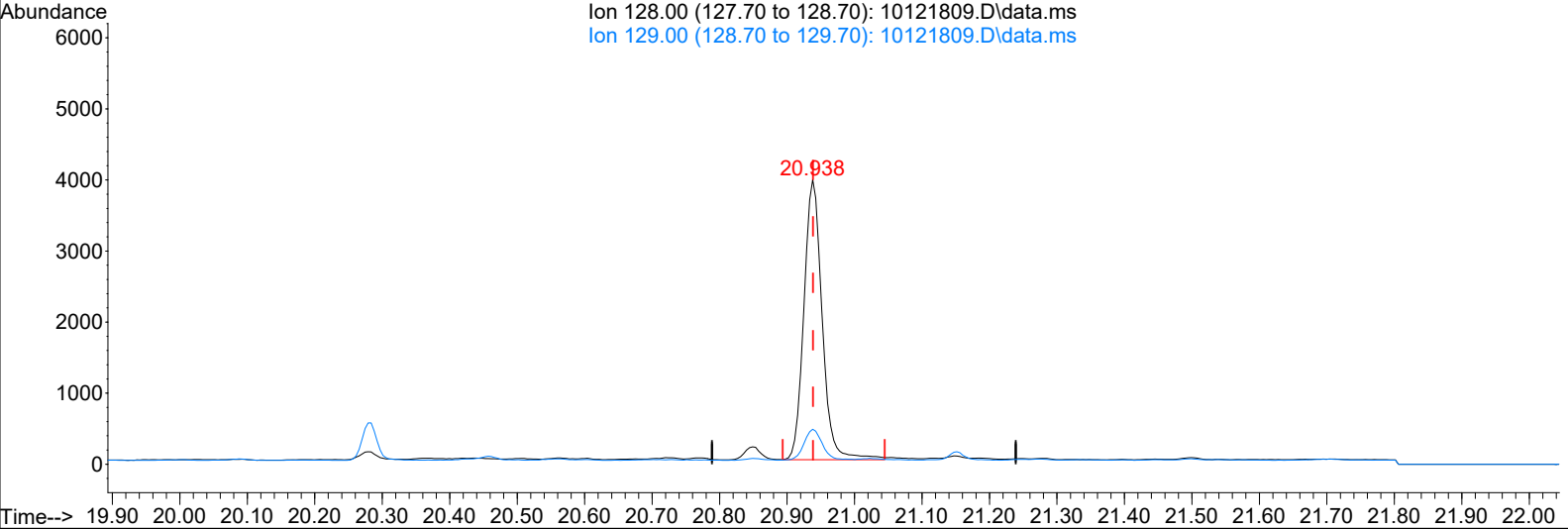
response 4397

Ion	Exp%	Act%
106.00	100	100
91.00	195.60	192.49
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121809.D
 Acq On : 12 Oct 2018 13:19
 Sample : P1805236-001 (400mL)
 Misc : S31-09241806

Vial: 1
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:58:53 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121809.D\data.ms

(53) Naphthalene (T)

20.938min (-0.001) 66.51pg

response 7396

Ion	Exp%	Act%
128.00	100	100
129.00	10.80	11.11
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121810.D
 Acq On : 12 Oct 2018 13:51
 Sample : P1805236-002 (400mL)
 Misc : S31-09241806

Vial: 3
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 11:35:52 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

10/15/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	18649	1000.000	pg	-0.03
25) 1,4-Difluorobenzene (IS2)	11.58	114	84471	1000.000	pg	-0.02
38) Chlorobenzene-d5 (IS3)	15.92	54	11705	1000.000	pg	0.00

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	Dev(Min)
20) 1,2-Dichloroethane-d4 ...	10.40	65	22112	990.510	pg	-0.03
Spiked Amount 1000.000	Range 70	- 130	Recovery =	99.05%		
33) Toluene-d8 (SS2)	14.01	98	91340	1048.553	pg	-0.01
Spiked Amount 1000.000	Range 70	- 130	Recovery =	104.85%		
45) Bromofluorobenzene (SS3)	17.43	174	34213	1034.417	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	103.44%		

Target Compounds	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.32	85	27898	702.076	pg	100
3) Chloromethane	4.53	52	597	64.252	pg	92
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	887	30.966	pg	99
5) Vinyl Chloride	4.82	62	60	N.D.		
6) 1,3-Butadiene	5.01	54	110	N.D.		
7) Bromomethane	5.33	94	417	23.004	pg	100
8) Chloroethane	5.55	64	594	43.997	pg	99
9) Acrolein	6.12	56	2191	200.760	pg	100
10) Acetone	6.26	58	72923	5270.520	pg	# 77
11) Trichlorofluoromethane	6.47	101	17326	557.534	pg	100
12) 1,1-Dichloroethene	7.19	96	1113	50.610	pg	97
13) Methylene Chloride	7.33	84	274	11.894	pg	99
14) Trichlorotrifluoroethane	7.67	151	2940	134.985	pg	100
15) trans-1,2-Dichloroethene	8.37	96	123	N.D.		
16) 1,1-Dichloroethane	8.58	63	501	14.030	pg	100
17) Methyl tert-Butyl Ether	8.59	73	482	N.D.		
18) cis-1,2-Dichloroethene	9.46	96	9703	398.437	pg	100
19) Chloroform	9.75	83	62809	1630.330	pg	99
21) 1,2-Dichloroethane	10.53	62	63	N.D.		
22) 1,1,1-Trichloroethane	10.78	97	973	29.776	pg	99
23) Benzene	11.23	78	7343	75.869	pg	99
24) Carbon Tetrachloride	11.39	117	520	17.434	pg	99
26) 1,2-Dichloropropane	0.00	63	0	N.D.		
27) Bromodichloromethane	0.00	83	0	N.D. d		
28) Trichloroethene	12.28	130	68995	2614.049	pg	99
29) 1,4-Dioxane	12.26	88	803	44.469	pg	95
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D. d		
32) 1,1,2-Trichloroethane	13.81	83	110	N.D.		
34) Toluene	14.11	91	7388	76.600	pg	100
35) Dibromochloromethane	14.52	129	111	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.27	166	334563	11787.756	pg	100
39) Chlorobenzene	0.00	112	0	N.D. d		
40) Ethylbenzene	16.35	91	3078	28.523	pg	99
41) m,p-Xylene	16.52	91	3657	44.322	pg	98
42) Styrene	16.89	104	112	N.D.		
43) o-Xylene	17.00	106	1083	24.689	pg	96
44) 1,1,2,2-Tetrachloroethane	16.99	83	228	N.D.		
46) 1,3,5-Trimethylbenzene	18.27	105	1076	11.663	pg	96
47) 1,2,4-Trimethylbenzene	18.66	105	1439	15.635	pg	# 72
48) 1,3-Dichlorobenzene	18.88	146	73	N.D.		
49) 1,4-Dichlorobenzene	18.88	146	73	N.D.		
50) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	20.95	128	137 of 234	N.D.		

Data File : I:\MS19\DATA\2018_10\12\10121810.D
 Acq On : 12 Oct 2018 13:51
 Sample : P1805236-002 (400mL)
 Misc : S31-09241806

Vial: 3
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 11:35:52 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

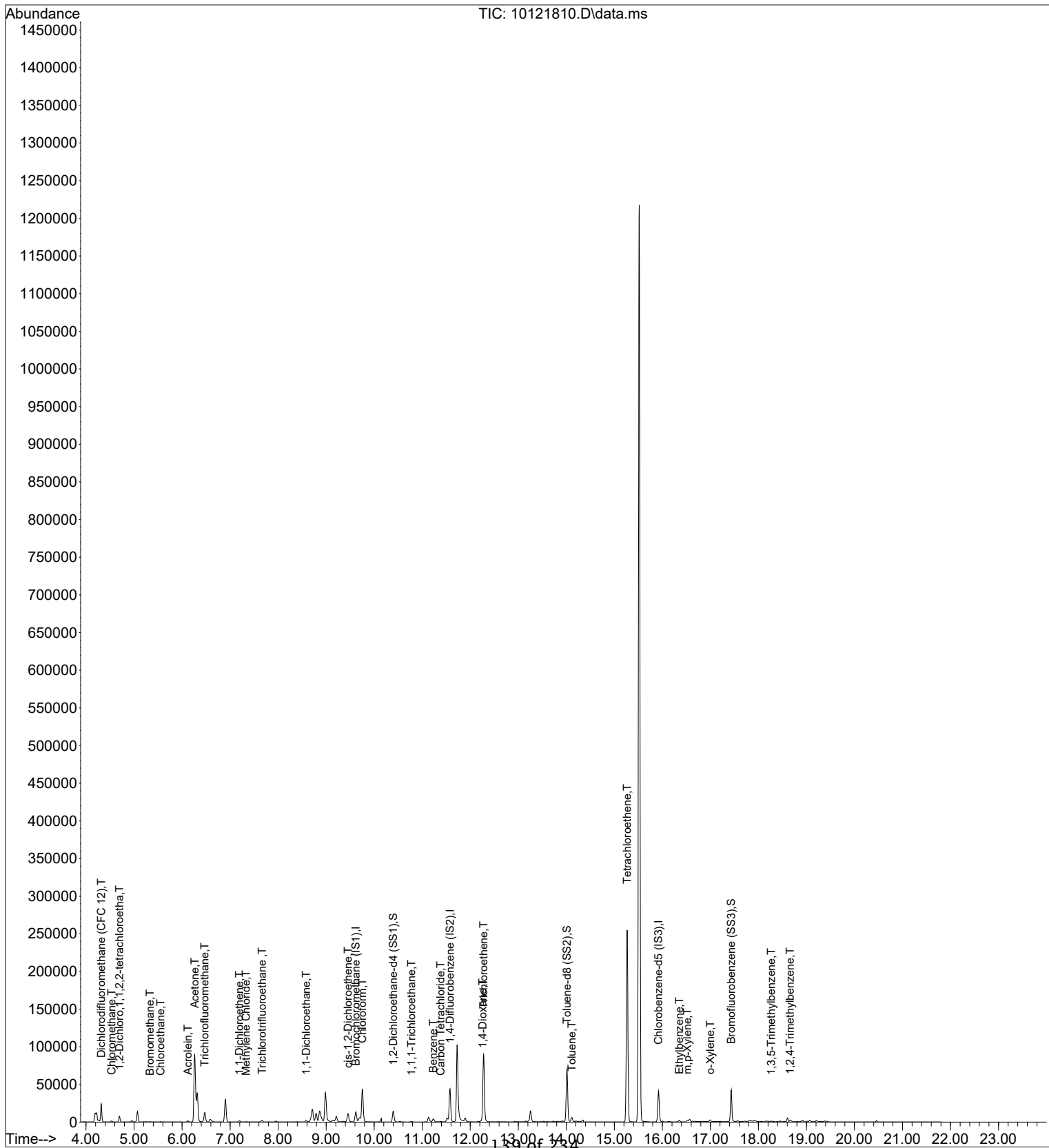
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\12\10121810.D
 Acq On : 12 Oct 2018 13:51
 Sample : P1805236-002 (400mL)
 Misc : S31-09241806

Vial: 3
 Operator: WA
 Inst : MS19

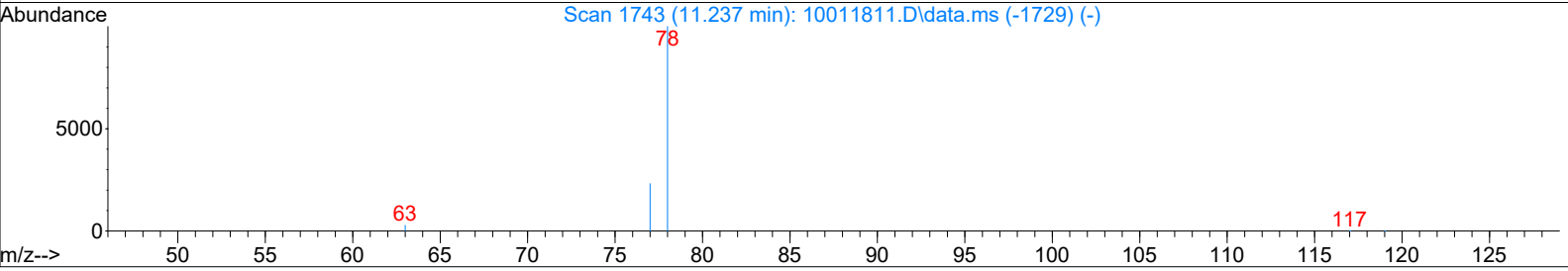
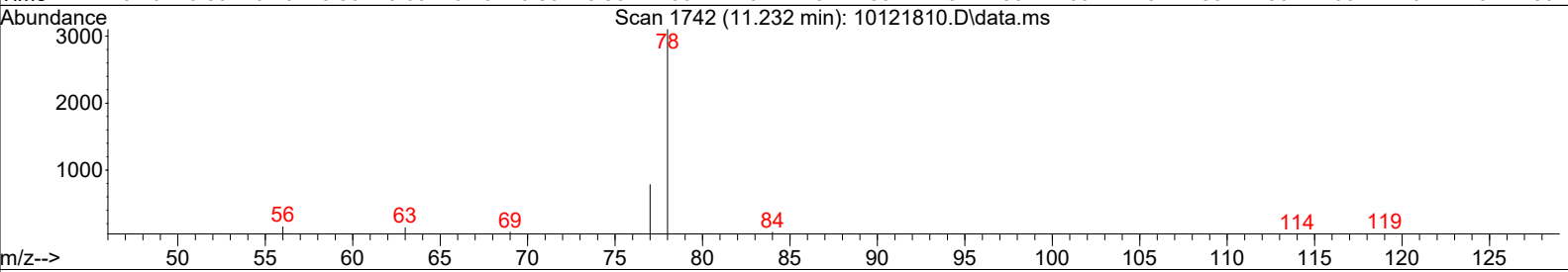
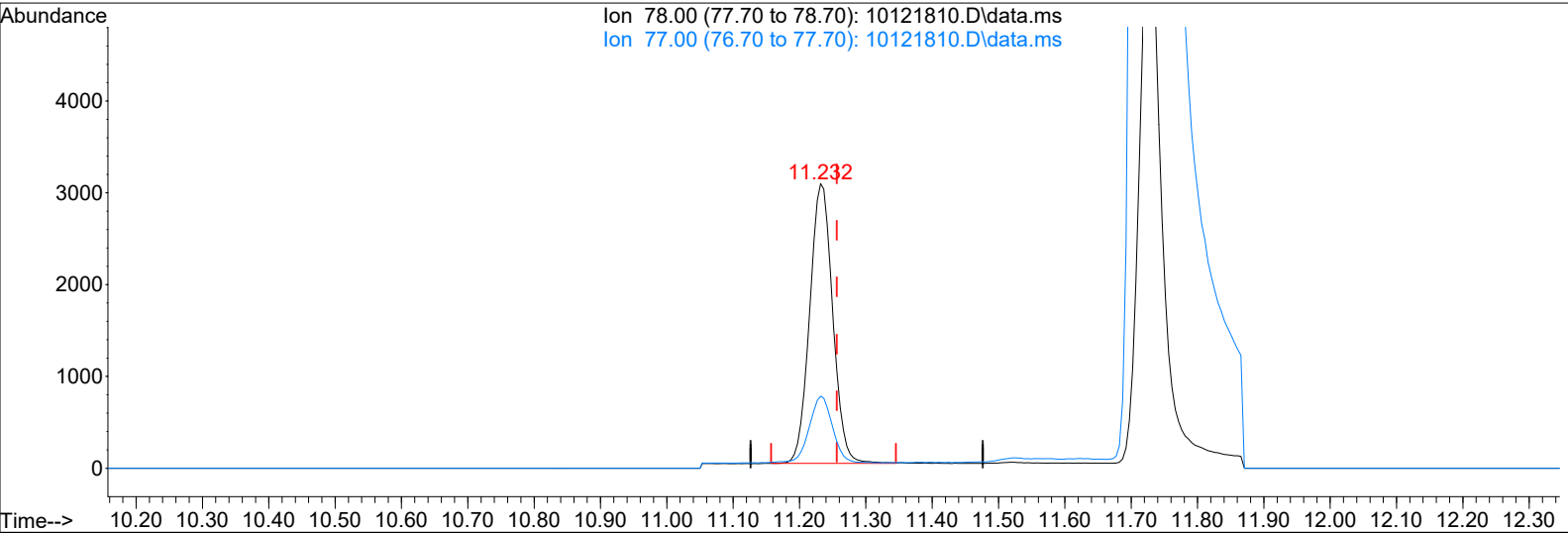
Quant Time: Oct 15 11:35:52 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2018_10\12\10121810.D
 Acq On : 12 Oct 2018 13:51
 Sample : P1805236-002 (400mL)
 Misc : S31-09241806

Vial: 3
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:11 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121810.D\data.ms

(23) Benzene (T)

11.232min (-0.025) 75.87pg

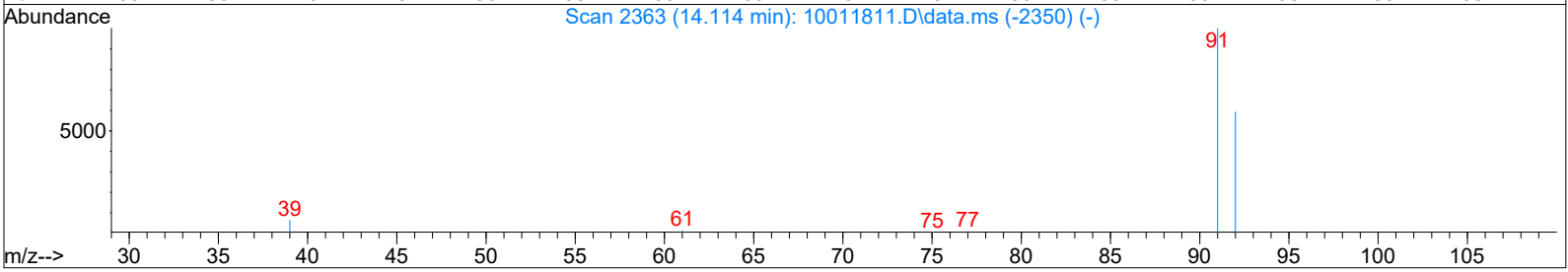
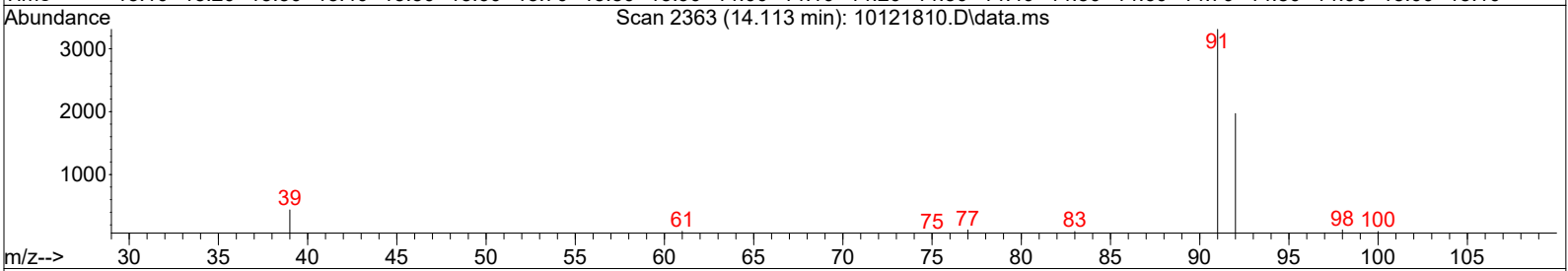
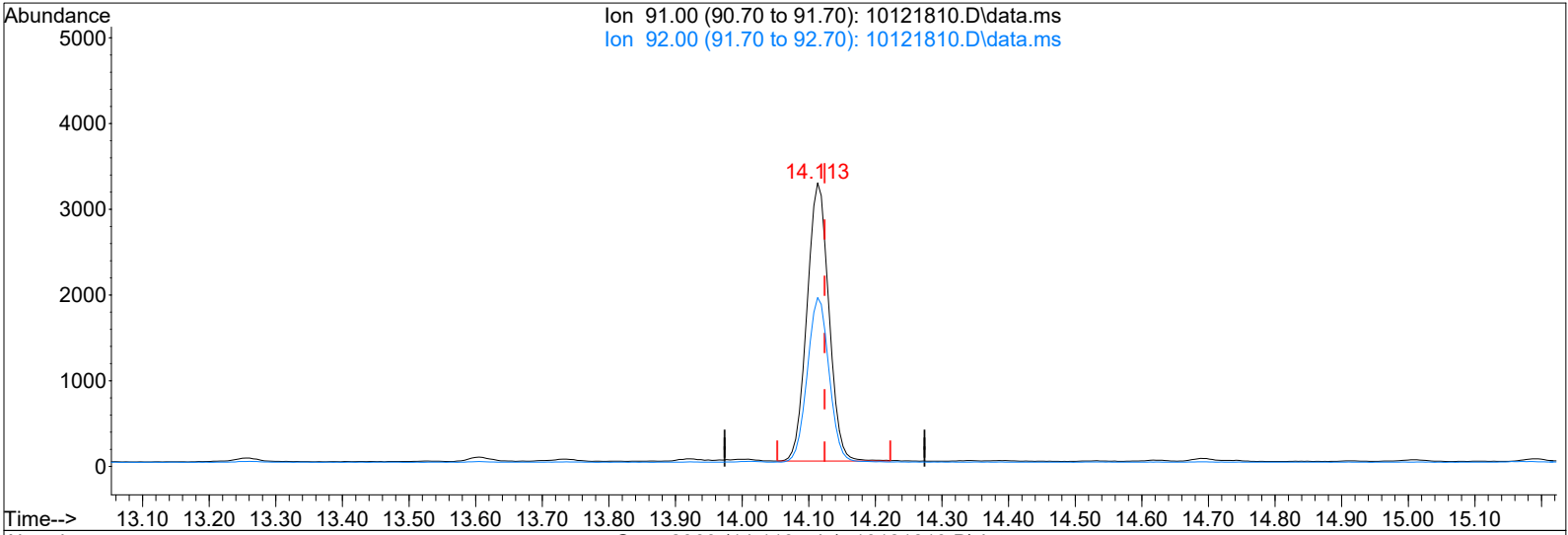
response 7343

Ion	Exp%	Act%
78.00	100	100
77.00	23.30	23.82
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121810.D
 Acq On : 12 Oct 2018 13:51
 Sample : P1805236-002 (400mL)
 Misc : S31-09241806

Vial: 3
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:11 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121810.D\data.ms

(34) Toluene (T)

14.113min (-0.011) 76.60pg

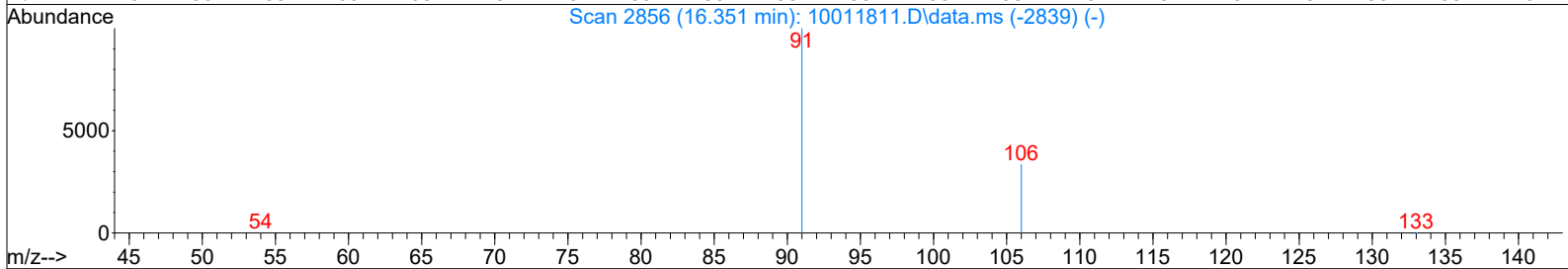
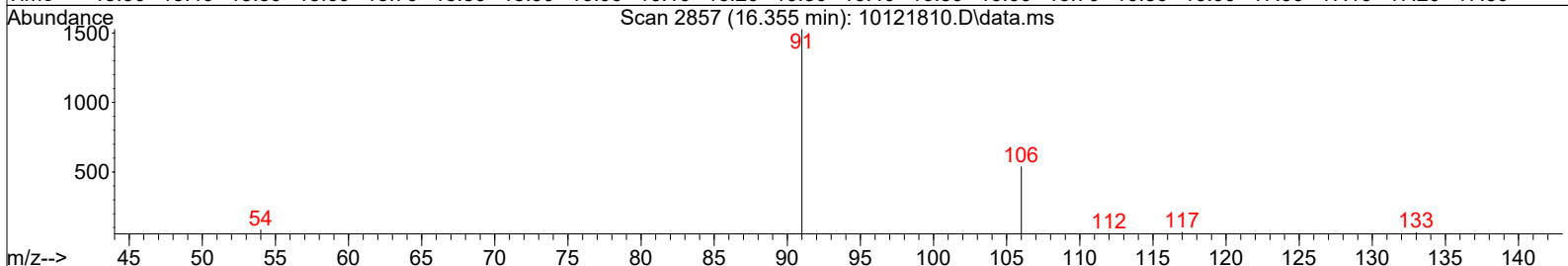
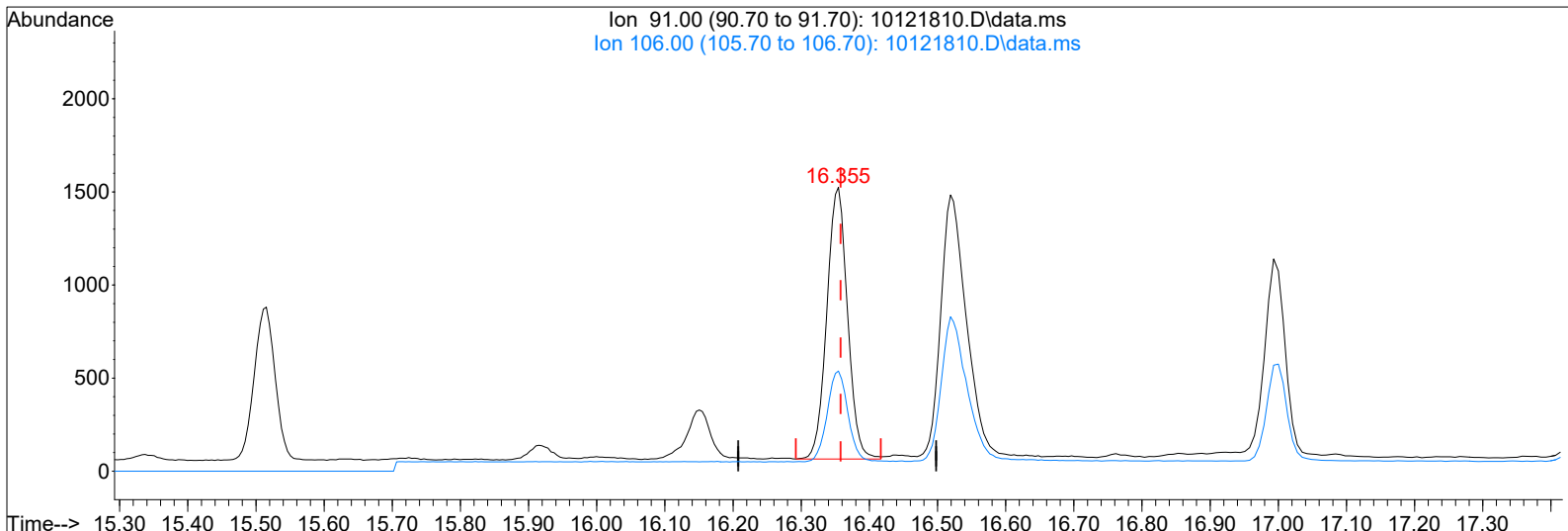
response 7388

Ion	Exp%	Act%
91.00	100	100
92.00	59.20	59.19
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121810.D
 Acq On : 12 Oct 2018 13:51
 Sample : P1805236-002 (400mL)
 Misc : S31-09241806

Vial: 3
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:11 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121810.D\data.ms

(40) Ethylbenzene (T)

16.355min (-0.003) 28.52pg

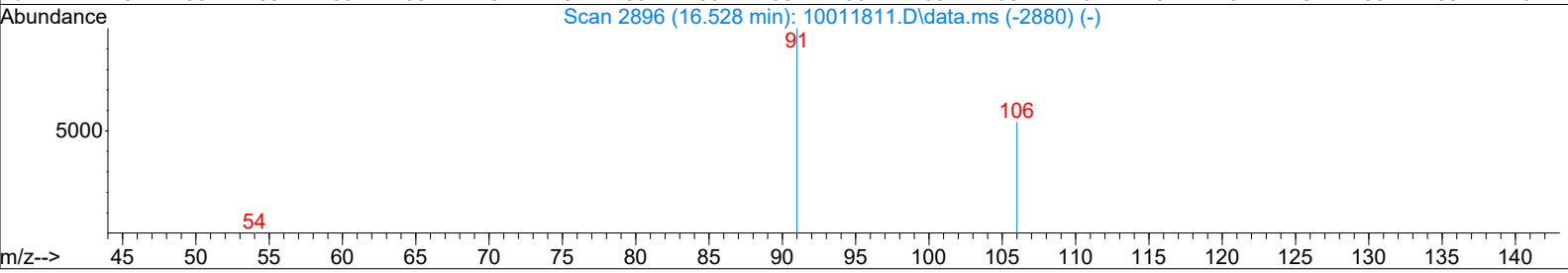
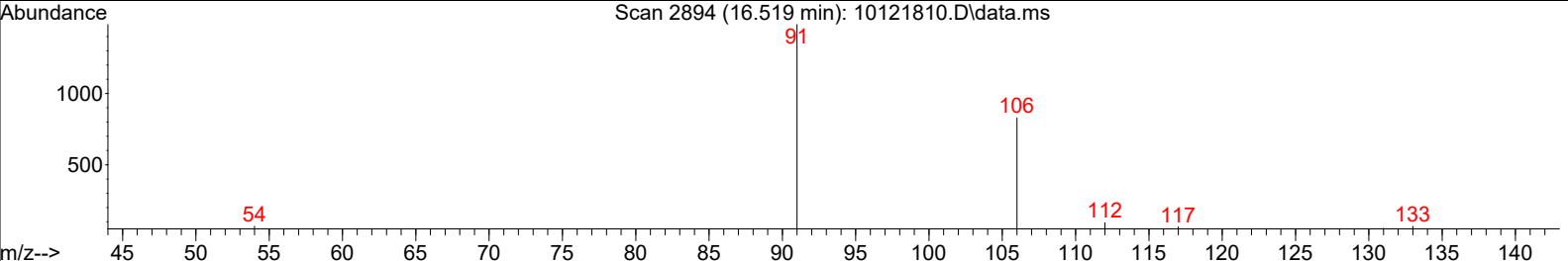
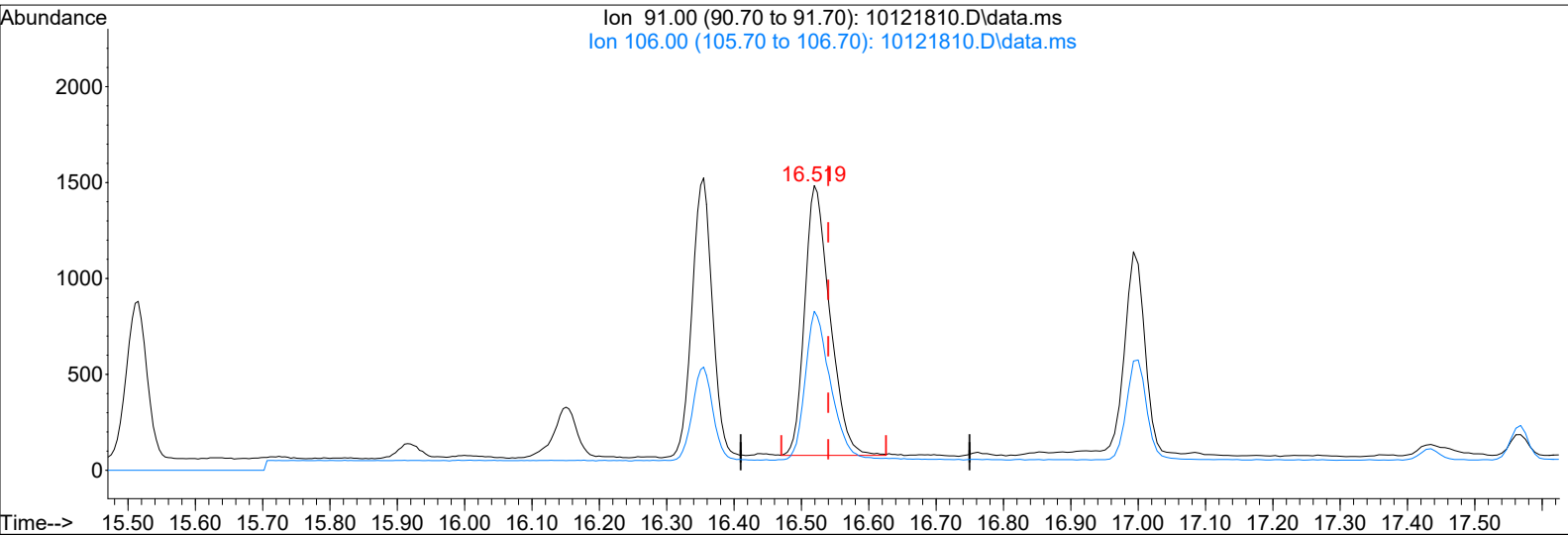
response 3078

Ion	Exp%	Act%
91.00	100	100
106.00	33.70	33.33
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121810.D
 Acq On : 12 Oct 2018 13:51
 Sample : P1805236-002 (400mL)
 Misc : S31-09241806

Vial: 3
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:11 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121810.D\data.ms

(41) m,p-Xylene (T)

16.519min (-0.021) 44.32pg

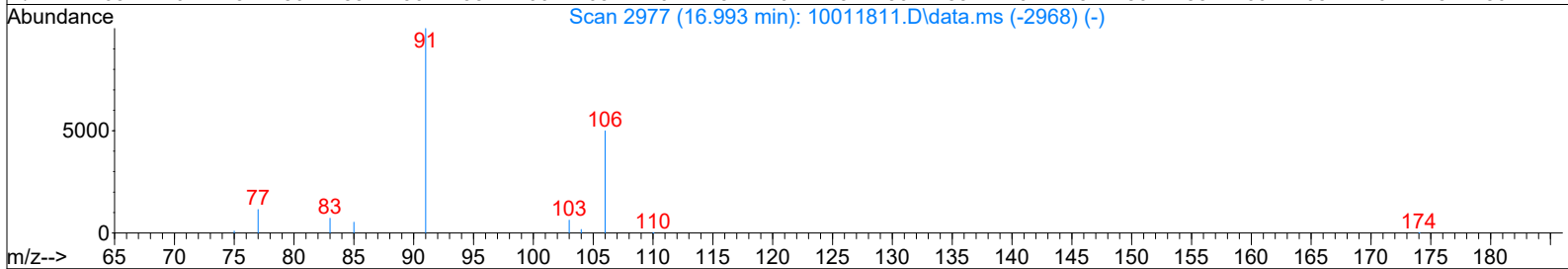
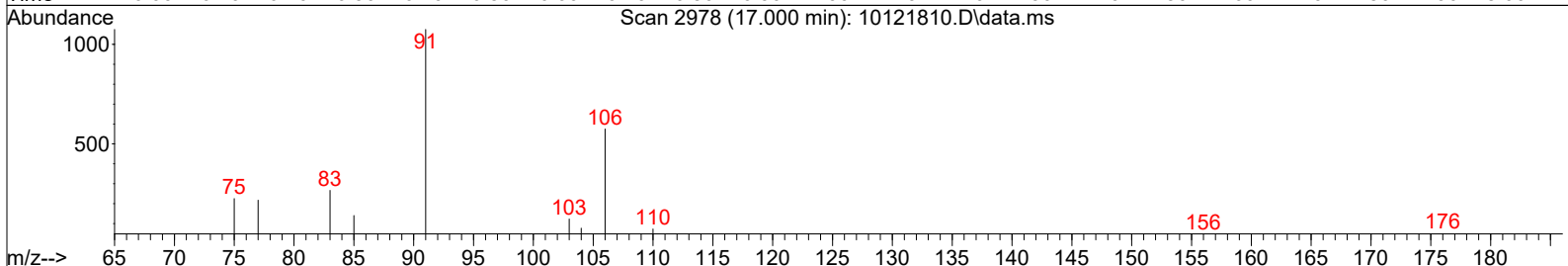
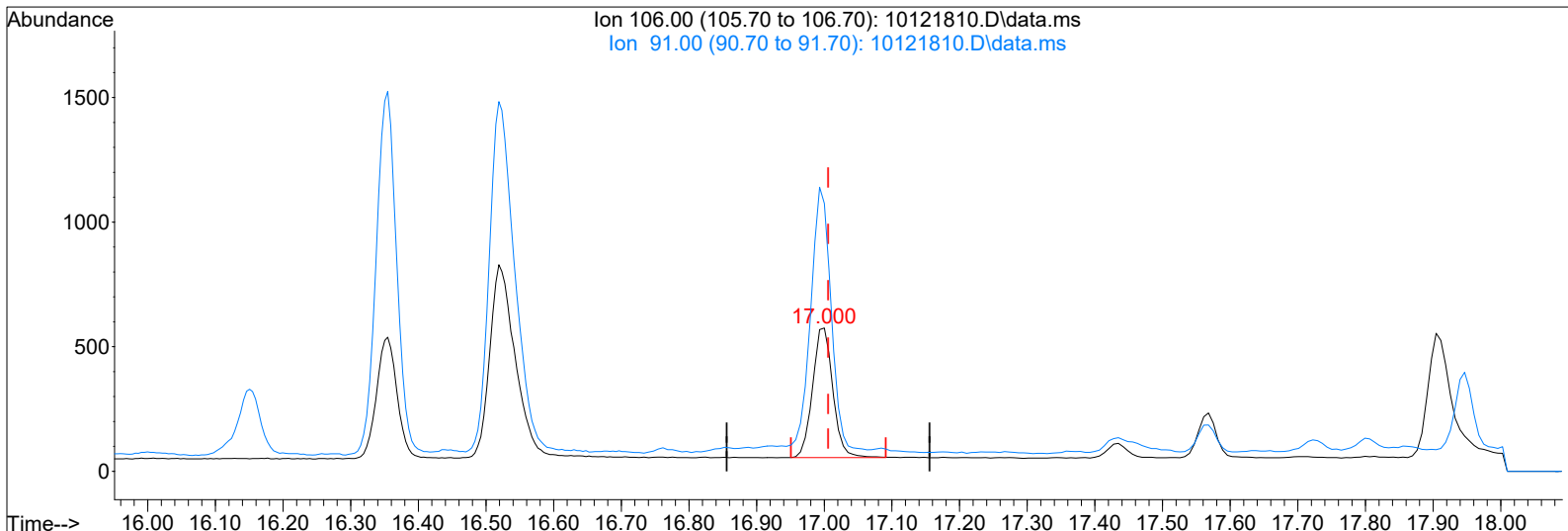
response 3657

Ion	Exp%	Act%
91.00	100	100
106.00	54.30	55.43
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121810.D
 Acq On : 12 Oct 2018 13:51
 Sample : P1805236-002 (400mL)
 Misc : S31-09241806

Vial: 3
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:11 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121810.D\data.ms

(43) o-Xylene (T)

17.000min (-0.006) 24.69pg

response 1083

Ion	Exp%	Act%
106.00	100	100
91.00	195.60	201.75
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121811.D
 Acq On : 12 Oct 2018 14:22
 Sample : P1805236-003 (400mL)
 Misc : S31-09241806

Vial: 4
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 11:37:00 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

~~10/15/18~~ 10/15/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	18364	1000.000	pg	-0.03
25) 1,4-Difluorobenzene (IS2)	11.58	114	83356	1000.000	pg	-0.02
38) Chlorobenzene-d5 (IS3)	15.92	54	12234	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	21735	988.733	pg	-0.03
Spiked Amount	1000.000	Range 70 - 130	Recovery =	98.87%		
33) Toluene-d8 (SS2)	14.02	98	91979	1070.012	pg	-0.01
Spiked Amount	1000.000	Range 70 - 130	Recovery =	107.00%		
45) Bromofluorobenzene (SS3)	17.44	174	34454	996.660	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	99.67%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.32	85	27148	693.804	pg	100
3) Chloromethane	4.53	52	186	20.329	pg	99
4) 1,2-Dichloro,1,1,2,2-t...	4.70	85	828	29.355	pg	98
5) Vinyl Chloride	0.00	62	0	N.D.		
6) 1,3-Butadiene	5.01	54	75	N.D.		
7) Bromomethane	0.00	94	0	N.D.		
8) Chloroethane	5.56	64	52	N.D.		
9) Acrolein	6.13	56	851	79.187	pg	100
10) Acetone	6.27	58	21743	1595.867	pg	# 84
11) Trichlorofluoromethane	6.48	101	10623	347.143	pg	100
12) 1,1-Dichloroethene	7.20	96	82	N.D.		
13) Methylene Chloride	7.34	84	615	27.110	pg	96
14) Trichlorotrifluoroethane	7.67	151	2733	127.429	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	0.00	63	0	N.D.		
17) Methyl tert-Butyl Ether	8.59	73	198	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.76	83	11412	300.818	pg	99
21) 1,2-Dichloroethane	10.54	62	126	N.D.		
22) 1,1,1-Trichloroethane	10.78	97	6246	194.111	pg	100
23) Benzene	11.23	78	5218	54.750	pg	99
24) Carbon Tetrachloride	11.39	117	264	8.989	pg	95
26) 1,2-Dichloropropane	12.04	63	114	N.D.		
27) Bromodichloromethane	0.00	83	0	N.D.	d	
28) Trichloroethene	12.29	130	297	11.403	pg	95
29) 1,4-Dioxane	12.27	88	129	N.D.		
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	13.61	75	217	N.D.		
32) 1,1,2-Trichloroethane	0.00	83	0	N.D.		
34) Toluene	14.11	91	49064	515.508	pg	100
35) Dibromochloromethane	14.52	129	58	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.27	166	1477247	52744.490	pg	99
39) Chlorobenzene	0.00	112	0	N.D.	d	
40) Ethylbenzene	16.36	91	10293	91.259	pg	99
41) m,p-Xylene	16.52	91	17372	201.442	pg	100
42) Styrene	16.89	104	3102	45.286	pg	97
43) o-Xylene	17.00	106	6512	142.033	pg	100
44) 1,1,2,2-Tetrachloroethane	17.00	83	166	N.D.		
46) 1,3,5-Trimethylbenzene	18.27	105	1516	15.721	pg	96
47) 1,2,4-Trimethylbenzene	18.66	105	5095	52.964	pg	88
48) 1,3-Dichlorobenzene	18.81	146	1008	16.039	pg	99
49) 1,4-Dichlorobenzene	18.87	146	4151	65.772	pg	100
50) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	20.94	128	48276	429.047	pg	99

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Data File : I:\MS19\DATA\2018_10\12\10121811.D
 Acq On : 12 Oct 2018 14:22
 Sample : P1805236-003 (400mL)
 Misc : S31-09241806

Vial: 4
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 11:37:00 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

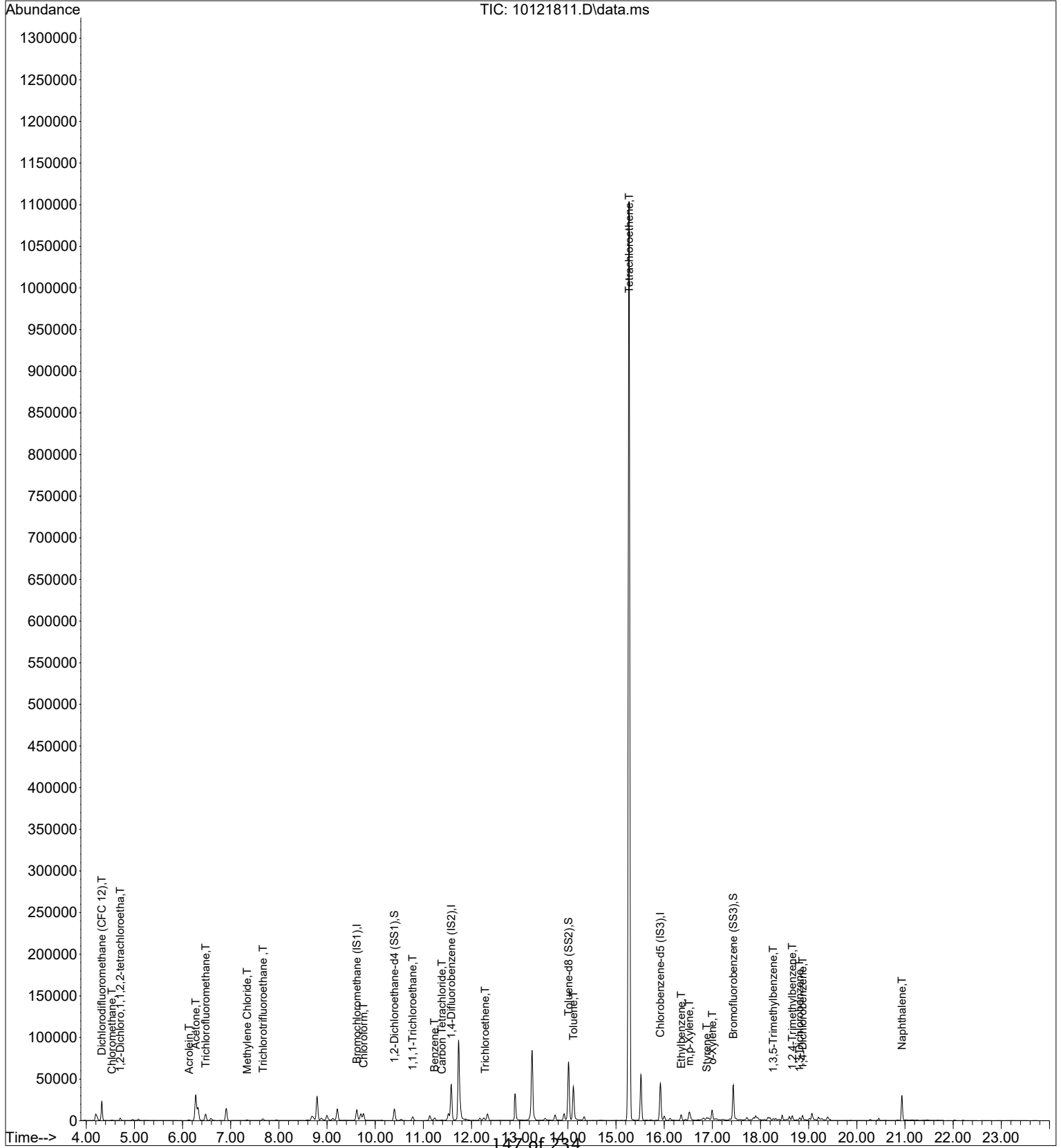
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\12\10121811.D
Acq On : 12 Oct 2018 14:22
Sample : P1805236-003 (400mL)
Misc : S31-09241806

Vial: 4
Operator: WA
Inst : MS19

Quant Time: Oct 15 11:37:00 2018
Quant Method : I:\MS19\METHODS\S19100118.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Oct 02 06:45:50 2018
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

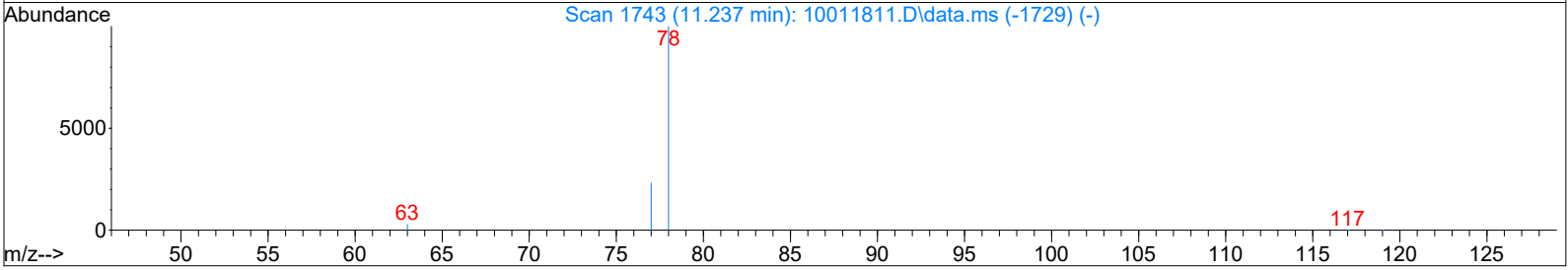
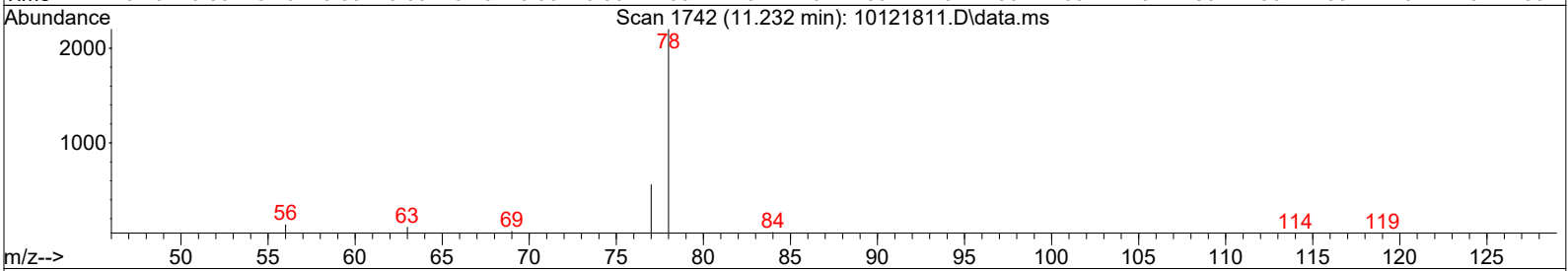
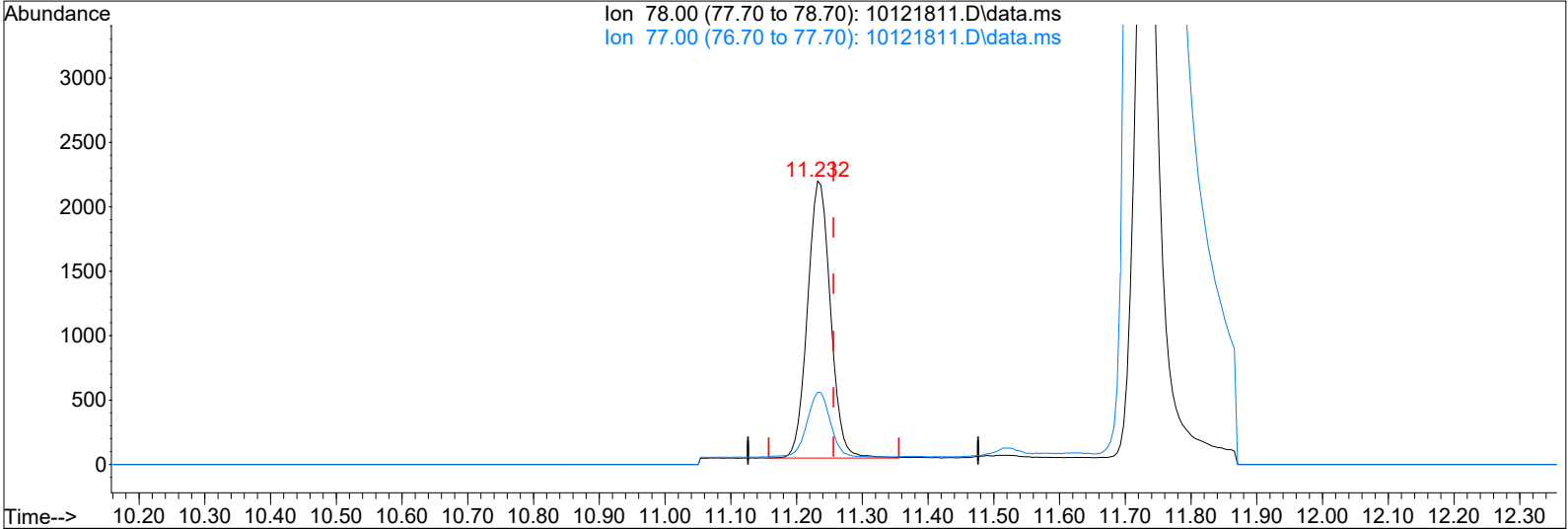


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Data File : I:\MS19\DATA\2018_10\12\10121811.D
 Acq On : 12 Oct 2018 14:22
 Sample : P1805236-003 (400mL)
 Misc : S31-09241806

Vial: 4
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:12 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121811.D\data.ms

(23) Benzene (T)

11.232min (-0.024) 54.75pg

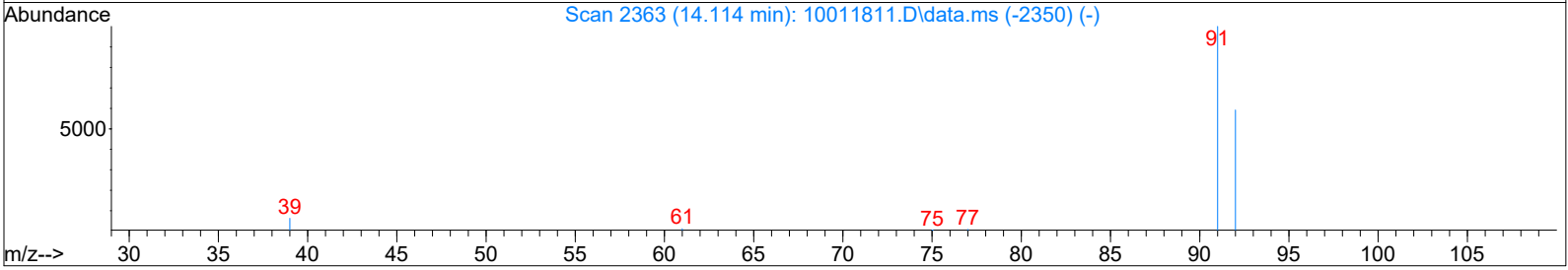
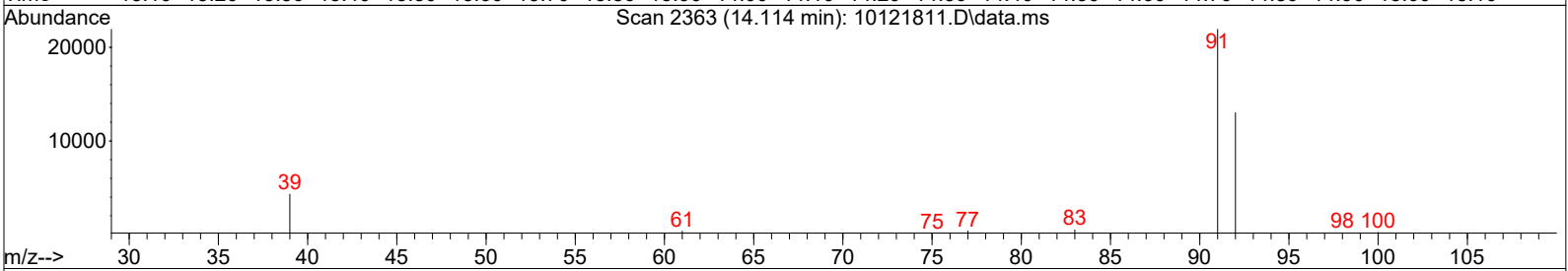
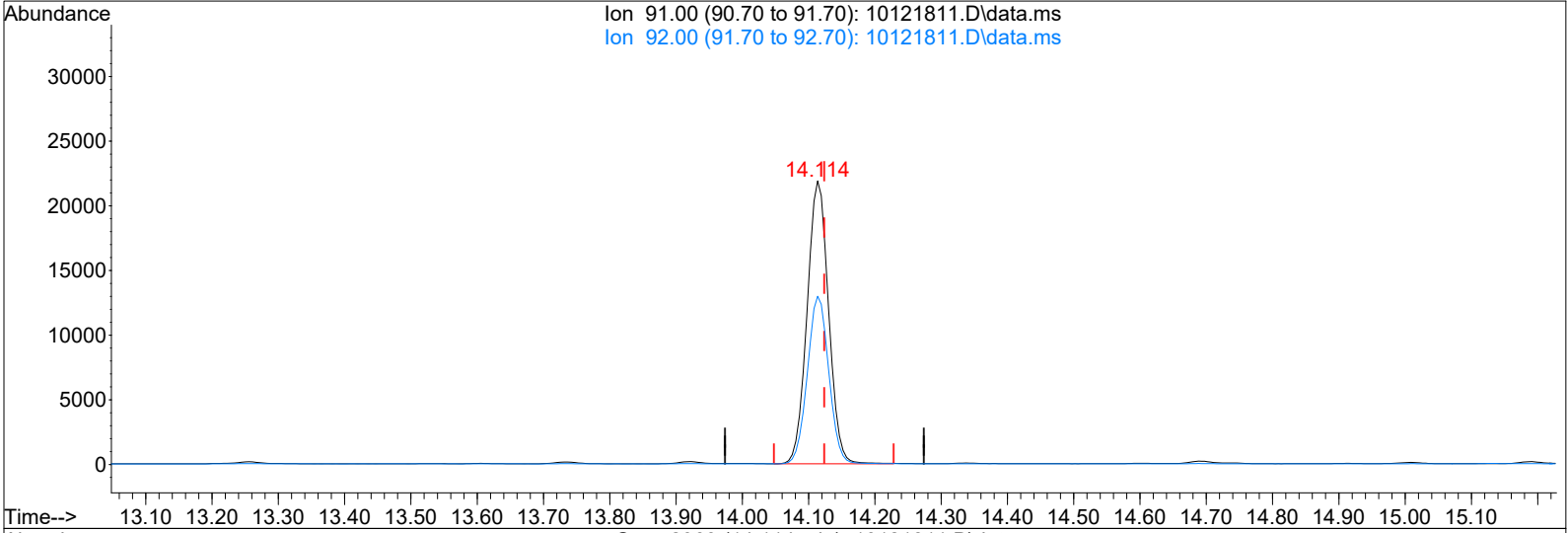
response 5218

Ion	Exp%	Act%
78.00	100	100
77.00	23.30	23.94
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121811.D
 Acq On : 12 Oct 2018 14:22
 Sample : P1805236-003 (400mL)
 Misc : S31-09241806

Vial: 4
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:12 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121811.D\data.ms

(34) Toluene (T)

14.114min (-0.010) 515.51pg

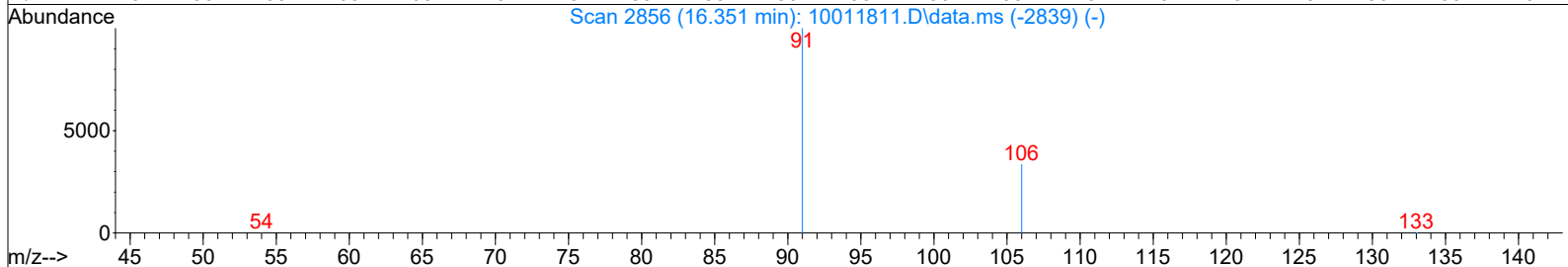
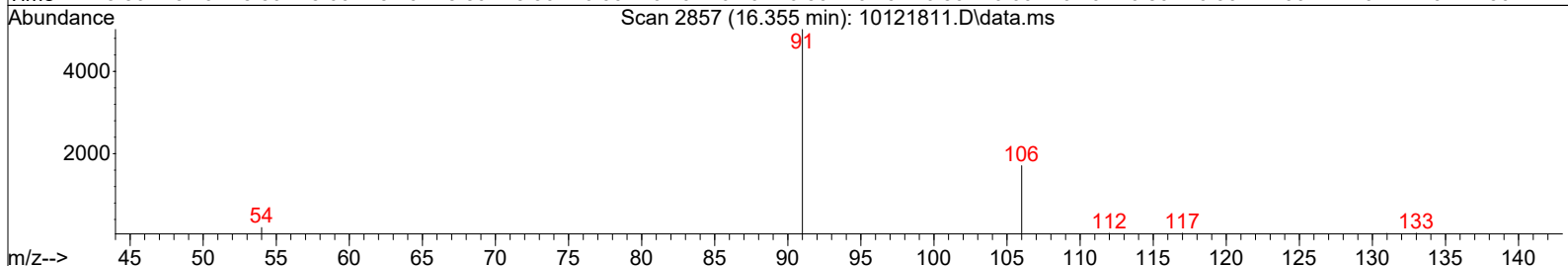
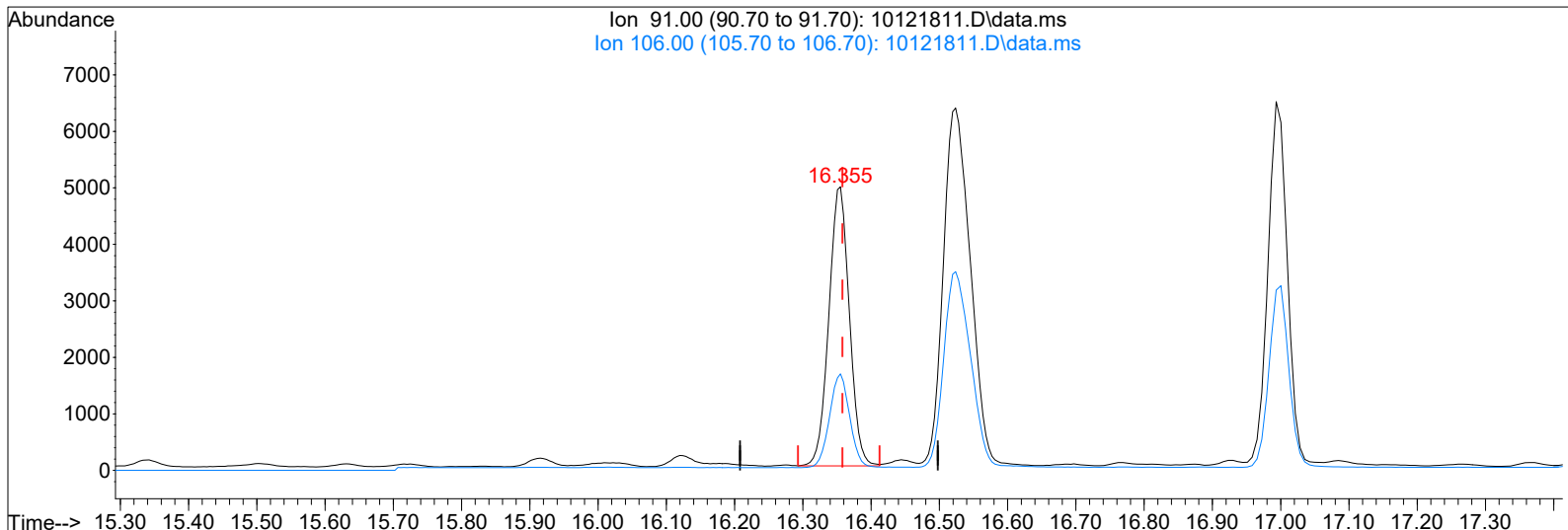
response 49064

Ion	Exp%	Act%
91.00	100	100
92.00	59.20	59.23
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121811.D
 Acq On : 12 Oct 2018 14:22
 Sample : P1805236-003 (400mL)
 Misc : S31-09241806

Vial: 4
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:12 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121811.D\data.ms

(40) Ethylbenzene (T)

16.355min (-0.003) 91.26pg

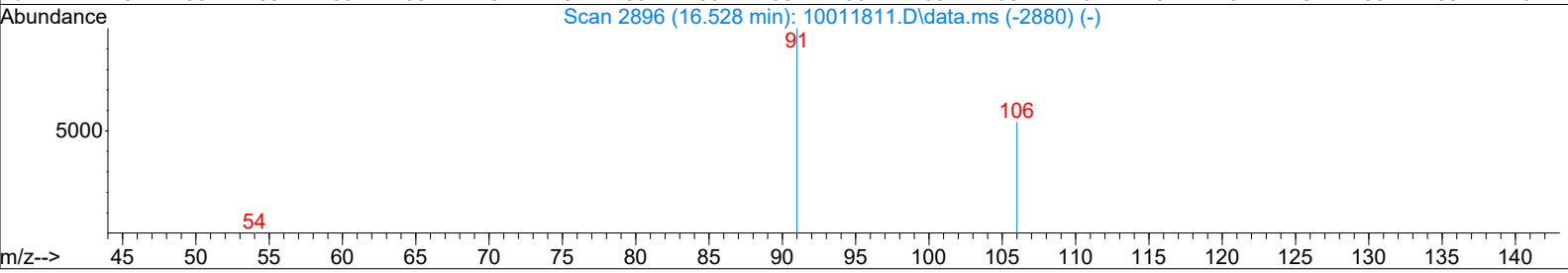
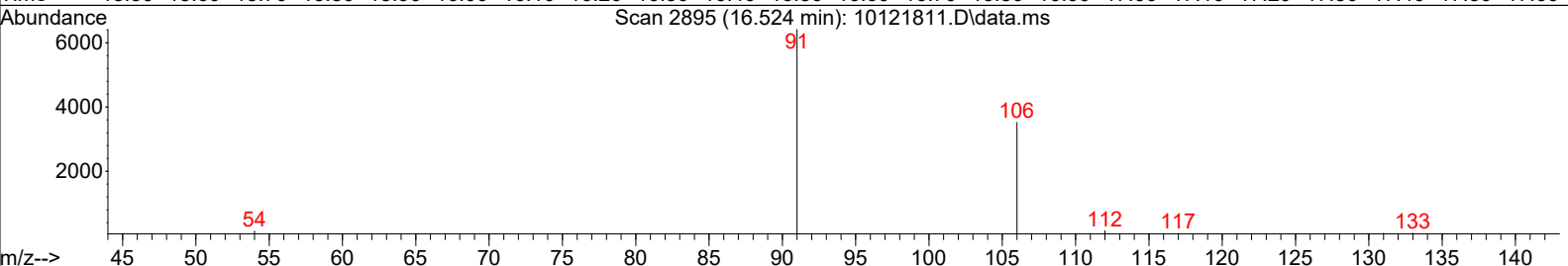
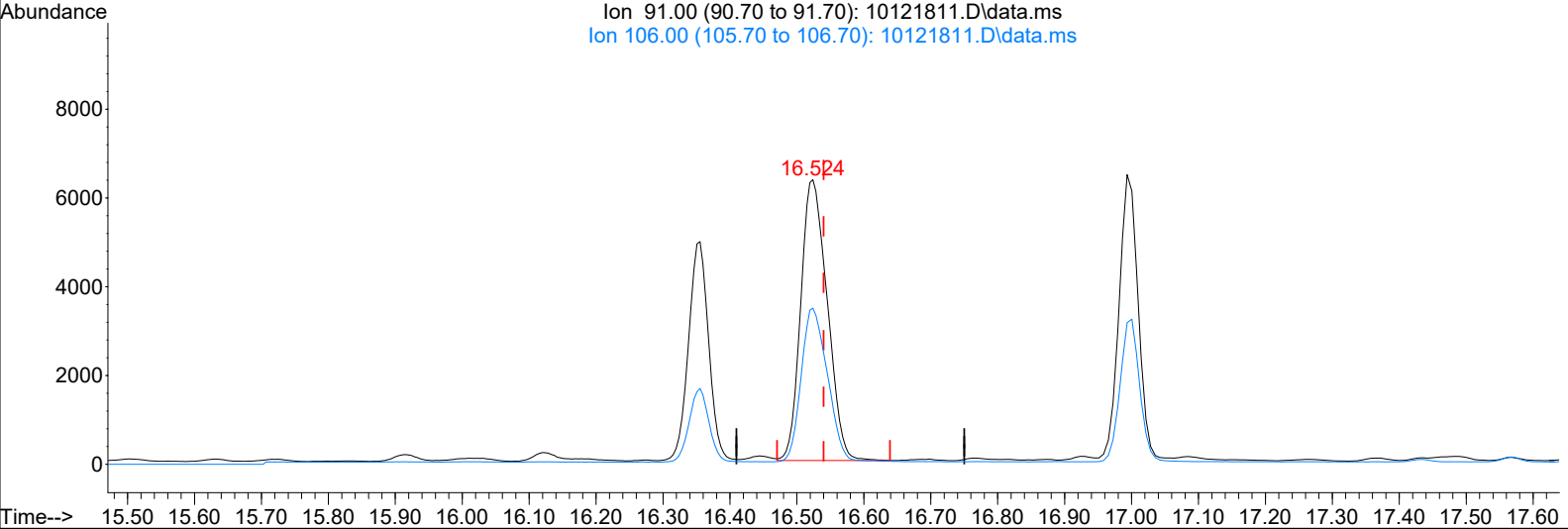
response 10293

Ion	Exp%	Act%
91.00	100	100
106.00	33.70	33.01
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121811.D
 Acq On : 12 Oct 2018 14:22
 Sample : P1805236-003 (400mL)
 Misc : S31-09241806

Vial: 4
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:12 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121811.D\data.ms

(41) m,p-Xylene (T)

16.524min (-0.016) 201.44pg

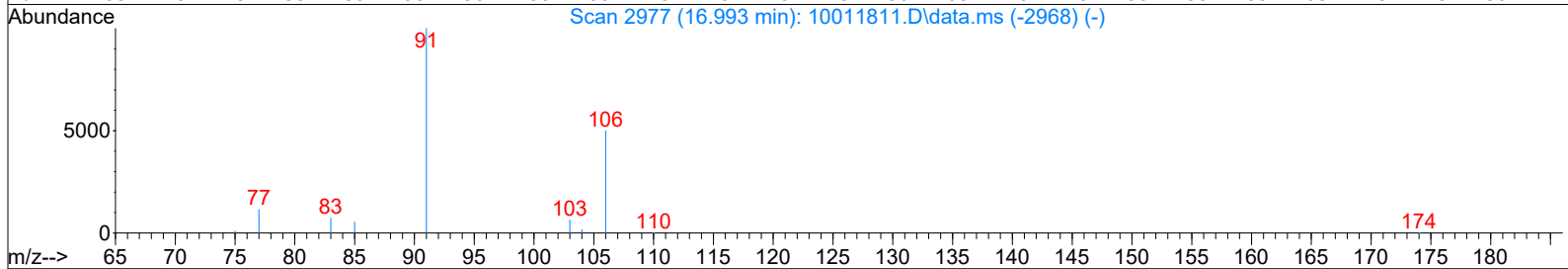
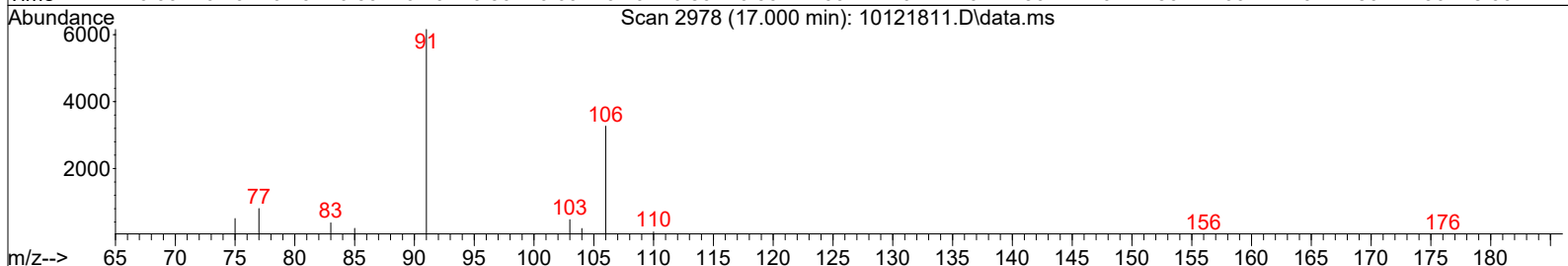
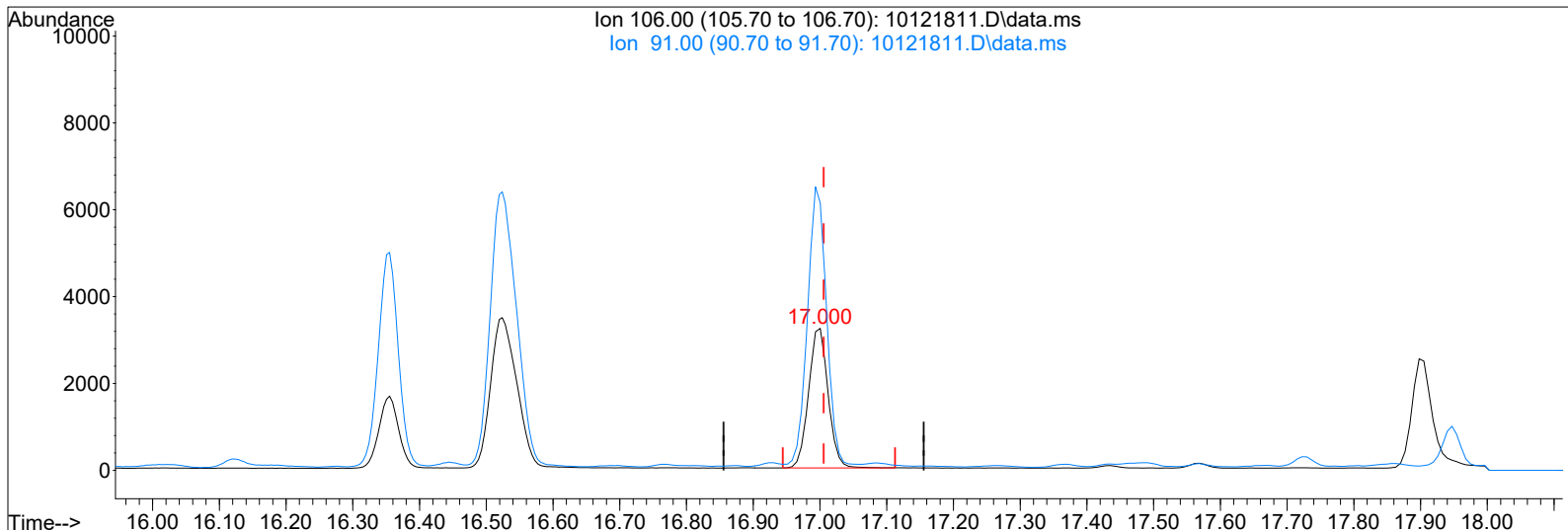
response 17372

Ion	Exp%	Act%
91.00	100	100
106.00	54.30	54.33
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121811.D
 Acq On : 12 Oct 2018 14:22
 Sample : P1805236-003 (400mL)
 Misc : S31-09241806

Vial: 4
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:12 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121811.D\data.ms

(43) o-Xylene (T)

17.000min (-0.005) 142.03pg

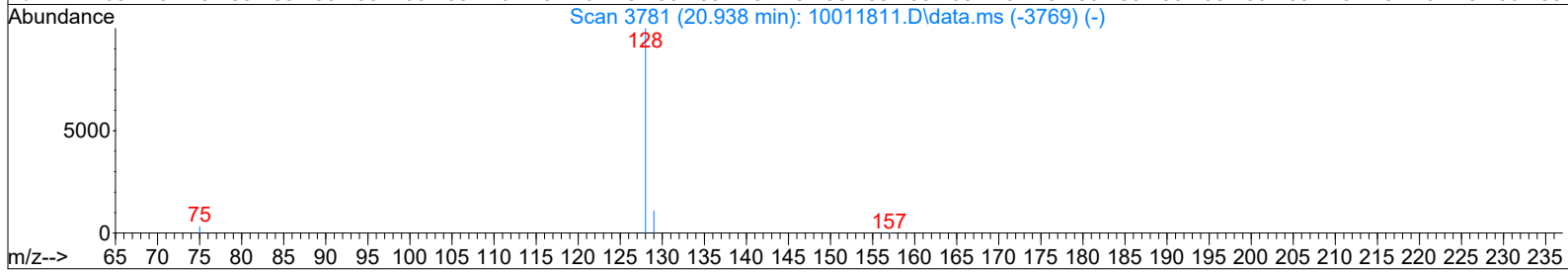
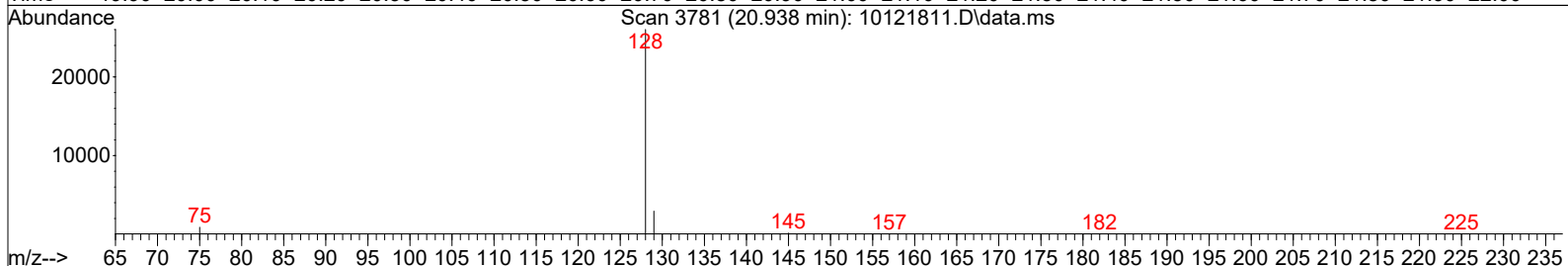
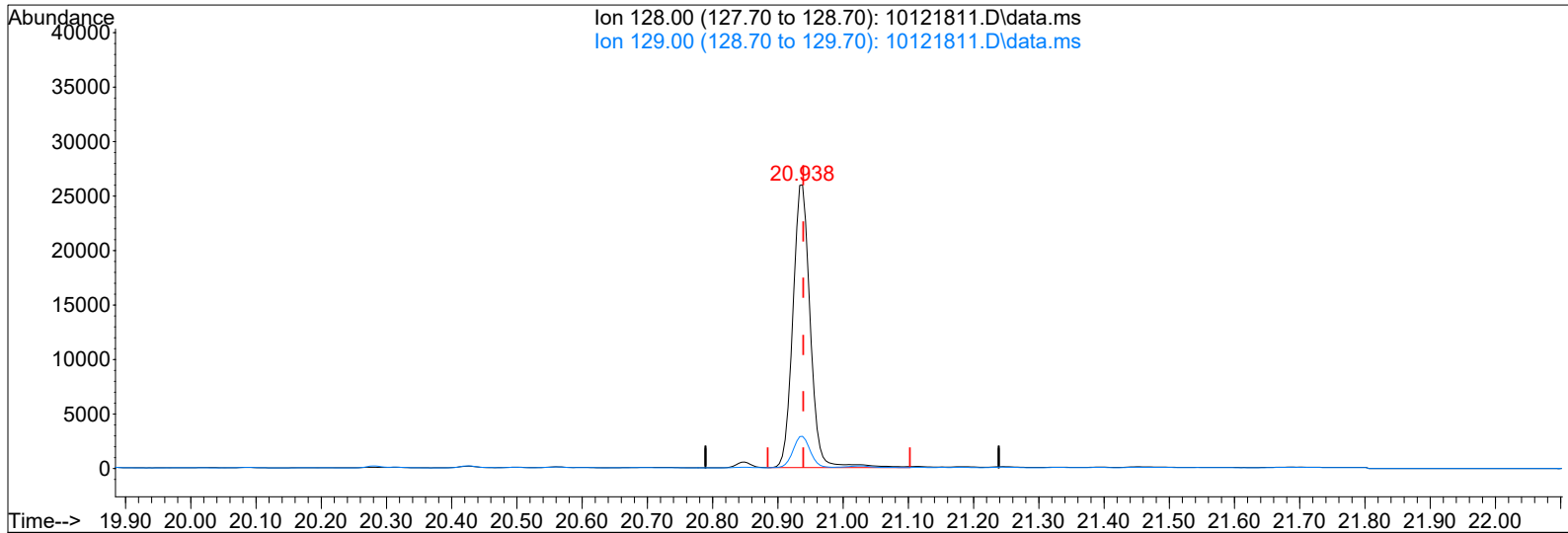
response 6512

Ion	Exp%	Act%
106.00	100	100
91.00	195.60	196.25
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121811.D
 Acq On : 12 Oct 2018 14:22
 Sample : P1805236-003 (400mL)
 Misc : S31-09241806

Vial: 4
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:12 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121811.D\data.ms

(53) Naphthalene (T)

20.938min (-0.001) 429.05pg

response 48276

Ion	Exp%	Act%
128.00	100	100
129.00	10.80	11.03
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121812.D
 Acq On : 12 Oct 2018 14:53
 Sample : P1805236-004 (400mL)
 Misc : S31-09241806

Vial: 5
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 11:38:40 2018

Quant Method : I:\MS19\METHODS\S19100118.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Tue Oct 02 06:45:50 2018

~~DA~~ 10/15/18

Response via : Initial Calibration

DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	18966	1000.000	pg	-0.03
25) 1,4-Difluorobenzene (IS2)	11.58	114	87158	1000.000	pg	-0.01
38) Chlorobenzene-d5 (IS3)	15.92	54	12021	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.41	65	22289	981.751	pg	-0.02
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	98.17%	
33) Toluene-d8 (SS2)	14.01	98	93418	1039.346	pg	-0.01
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	103.94%	
45) Bromofluorobenzene (SS3)	17.43	174	35877	1056.213	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	105.62%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.32	85	27704	685.541	pg	100
3) Chloromethane	4.53	52	810	85.718	pg	95
4) 1,2-Dichloro,1,1,2,2-t...	4.70	85	877	30.106	pg	99
5) Vinyl Chloride	0.00	62	0	N.D.		
6) 1,3-Butadiene	5.01	54	533	26.868	pg	85
7) Bromomethane	5.34	94	231	12.530	pg	92
8) Chloroethane	5.55	64	356	25.928	pg	99
9) Acrolein	6.12	56	9065	816.738	pg	100
10) Acetone	6.26	58	123816	8799.248	pg	# 84
11) Trichlorofluoromethane	6.48	101	17296	547.266	pg	100
12) 1,1-Dichloroethene	7.20	96	53	N.D.		
13) Methylene Chloride	7.34	84	333	14.213	pg	97
14) Trichlorotrifluoroethane	7.67	151	2921	131.872	pg	100
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.58	63	156	N.D.		
17) Methyl tert-Butyl Ether	0.00	73	0	N.D.	d	
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.77	83	65716	1677.276	pg	100
21) 1,2-Dichloroethane	10.53	62	76	N.D.		
22) 1,1,1-Trichloroethane	10.78	97	959	28.857	pg	99
23) Benzene	11.24	78	17054	173.260	pg	98
24) Carbon Tetrachloride	11.39	117	540	17.802	pg	100
26) 1,2-Dichloropropane	12.05	63	12520	576.730	pg	99
27) Bromodichloromethane	0.00	83	0	N.D.	d	
28) Trichloroethene	12.28	130	293	10.759	pg	96
29) 1,4-Dioxane	12.25	88	9535	511.760	pg	99
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.	d	
32) 1,1,2-Trichloroethane	0.00	83	0	N.D.	d	
34) Toluene	14.11	91	23634	237.487	pg	100
35) Dibromochloromethane	14.53	129	132	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.27	166	395383	13501.176	pg	100
39) Chlorobenzene	15.97	112	6800	93.435	pg	90
40) Ethylbenzene	16.35	91	8679	78.313	pg	100
41) m,p-Xylene	16.52	91	17586	207.537	pg	99
42) Styrene	16.89	104	1320	19.612	pg	# 1
43) o-Xylene	17.00	106	6884	152.807	pg	96
44) 1,1,2,2-Tetrachloroethane	16.99	83	262	N.D.		
46) 1,3,5-Trimethylbenzene	18.27	105	6193	65.361	pg	100
47) 1,2,4-Trimethylbenzene	18.66	105	18128	191.786	pg	93
48) 1,3-Dichlorobenzene	18.81	146	924	14.963	pg	100
49) 1,4-Dichlorobenzene	18.87	146	2159	34.815	pg	97
50) 1,2-Dichlorobenzene	19.20	146	1558	26.291	pg	98
51) 1,2-Dibromo-3-chloropr...	19.61	157	12334	603.620	pg	97
52) 1,2,4-Trichlorobenzene	20.82	182	135	N.D.		
53) Naphthalene	20.94	128	5154	46.617	pg	82

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Data File : I:\MS19\DATA\2018_10\12\10121812.D
 Acq On : 12 Oct 2018 14:53
 Sample : P1805236-004 (400mL)
 Misc : S31-09241806

Vial: 5
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 11:38:40 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

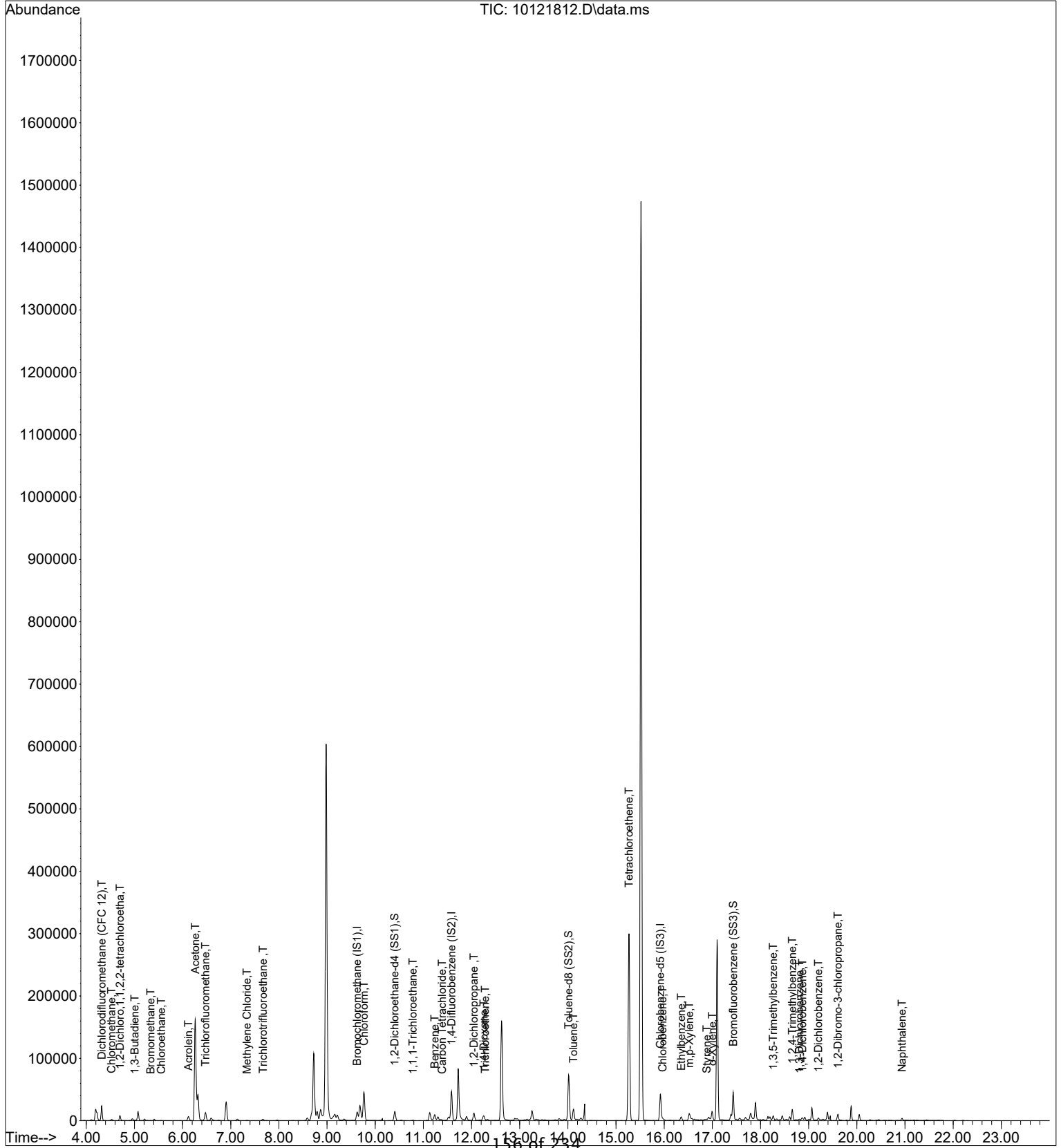
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\12\10121812.D
 Acq On : 12 Oct 2018 14:53
 Sample : P1805236-004 (400mL)
 Misc : S31-09241806

Vial: 5
 Operator: WA
 Inst : MS19

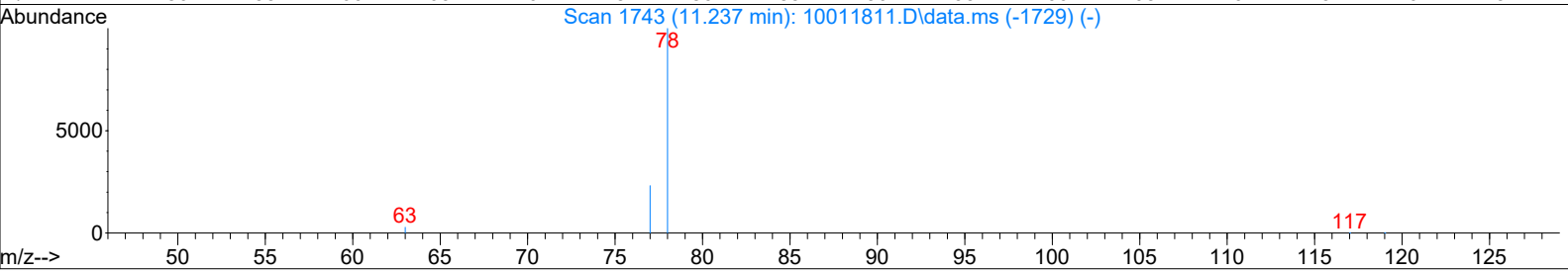
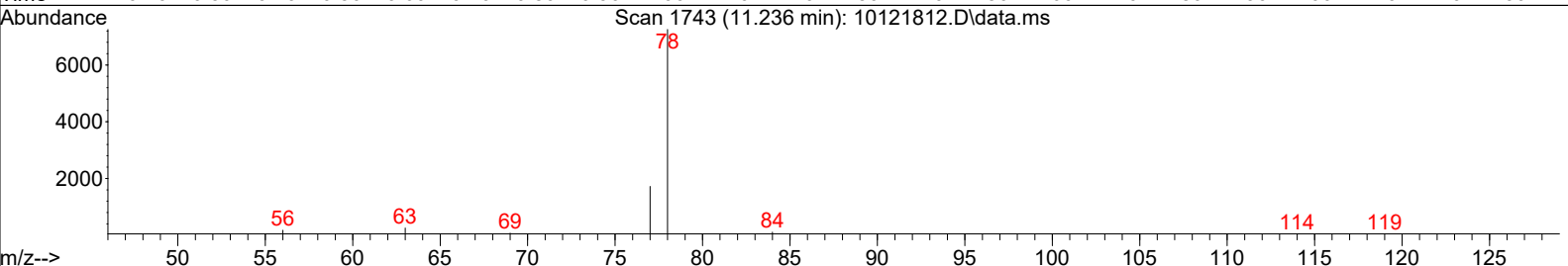
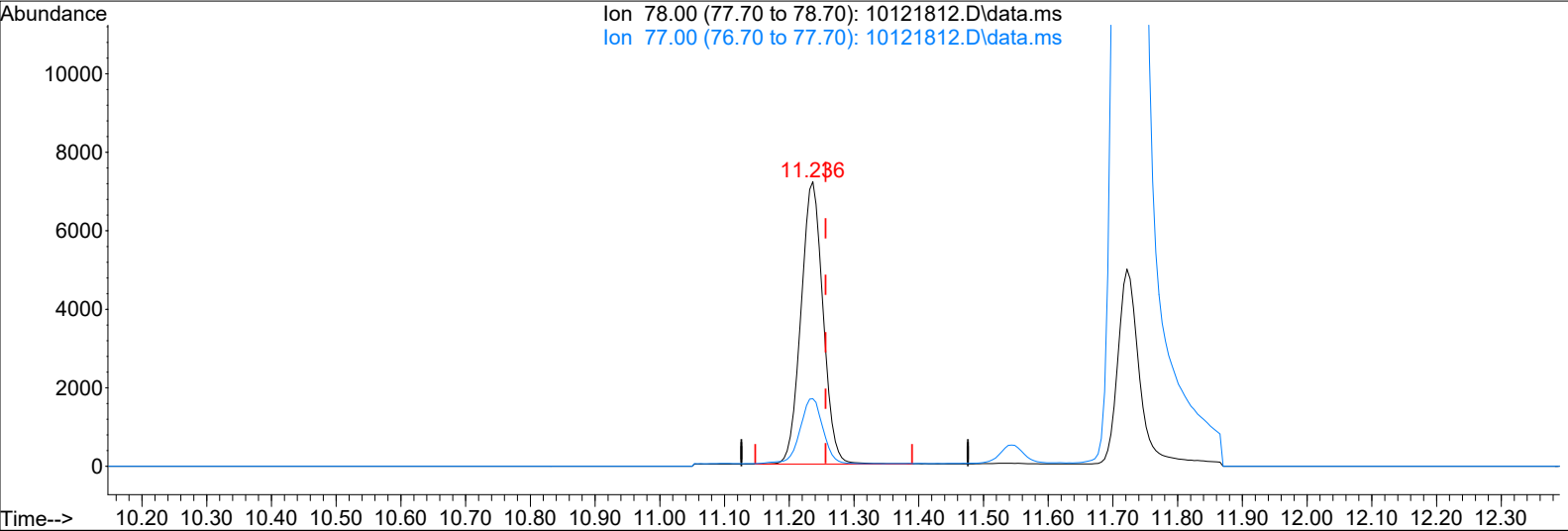
Quant Time: Oct 15 11:38:40 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2018_10\12\10121812.D
 Acq On : 12 Oct 2018 14:53
 Sample : P1805236-004 (400mL)
 Misc : S31-09241806

Vial: 5
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:13 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121812.D\data.ms

(23) Benzene (T)

11.236min (-0.020) 173.26pg

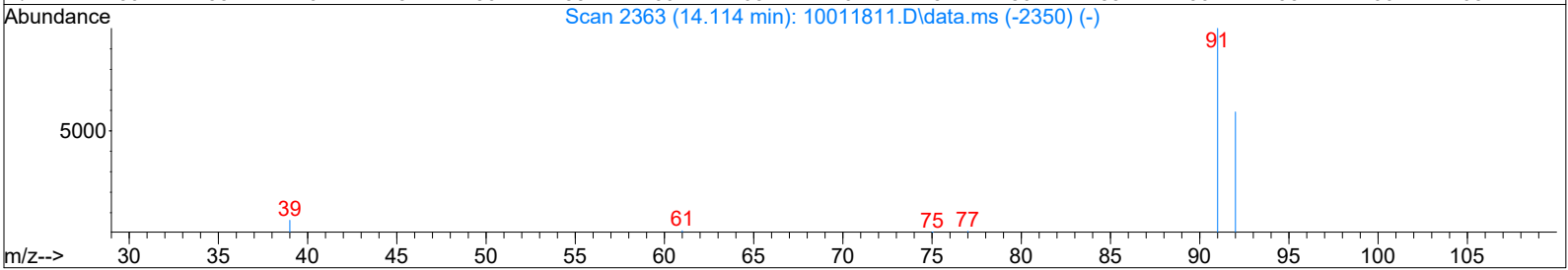
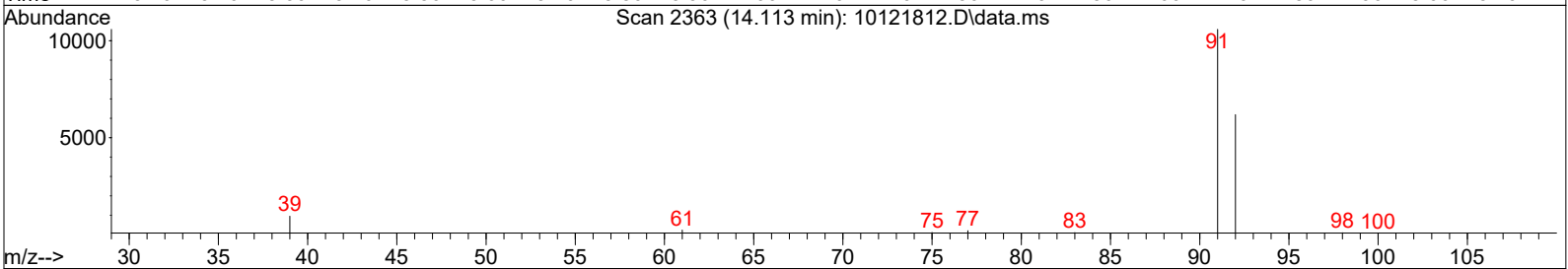
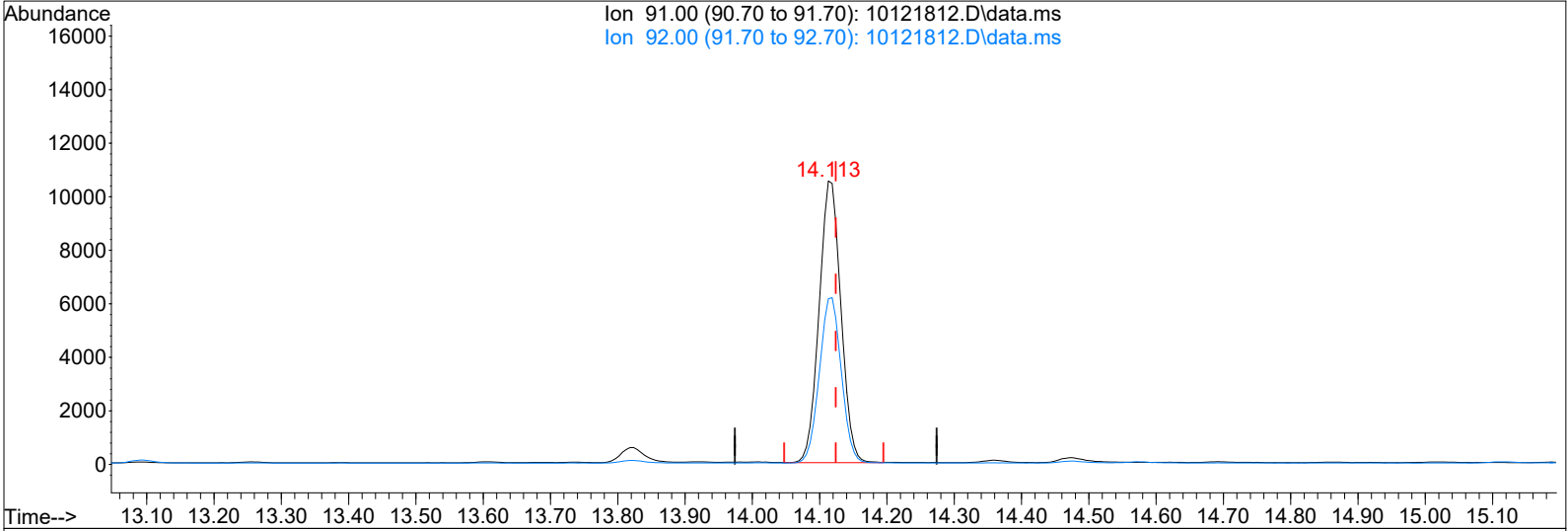
response 17054

Ion	Exp%	Act%
78.00	100	100
77.00	23.30	24.05
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121812.D
 Acq On : 12 Oct 2018 14:53
 Sample : P1805236-004 (400mL)
 Misc : S31-09241806

Vial: 5
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:13 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121812.D\data.ms

(34) Toluene (T)

14.113min (-0.011) 237.49pg

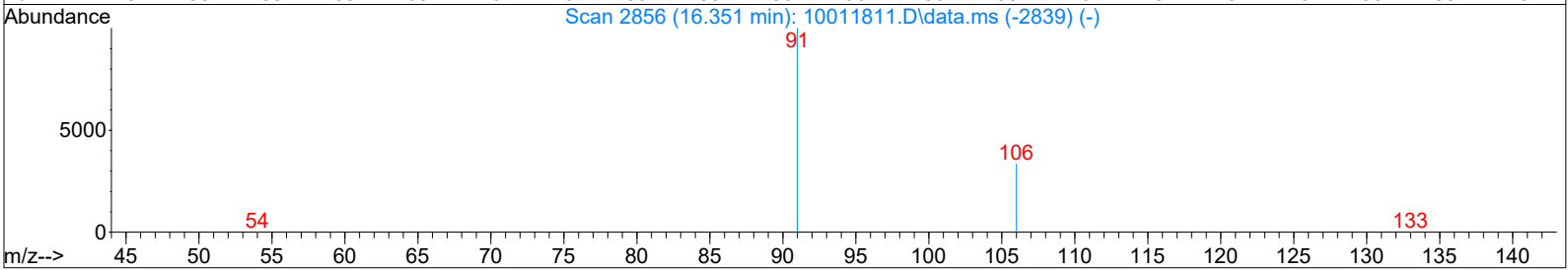
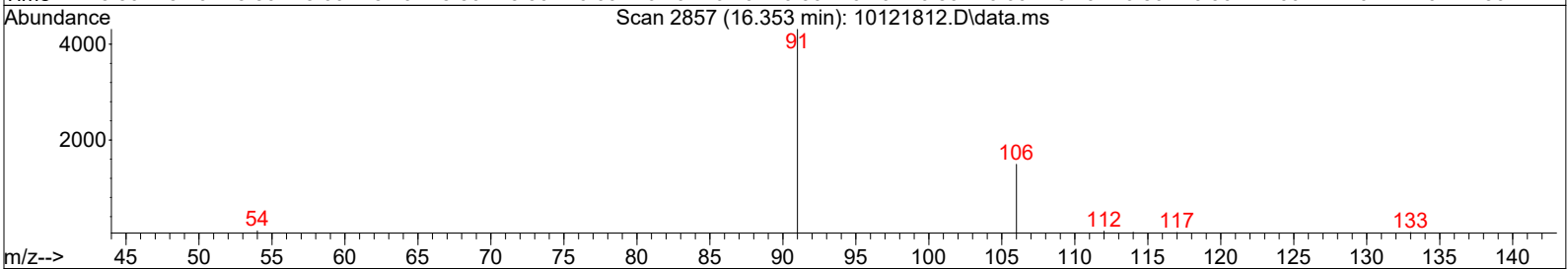
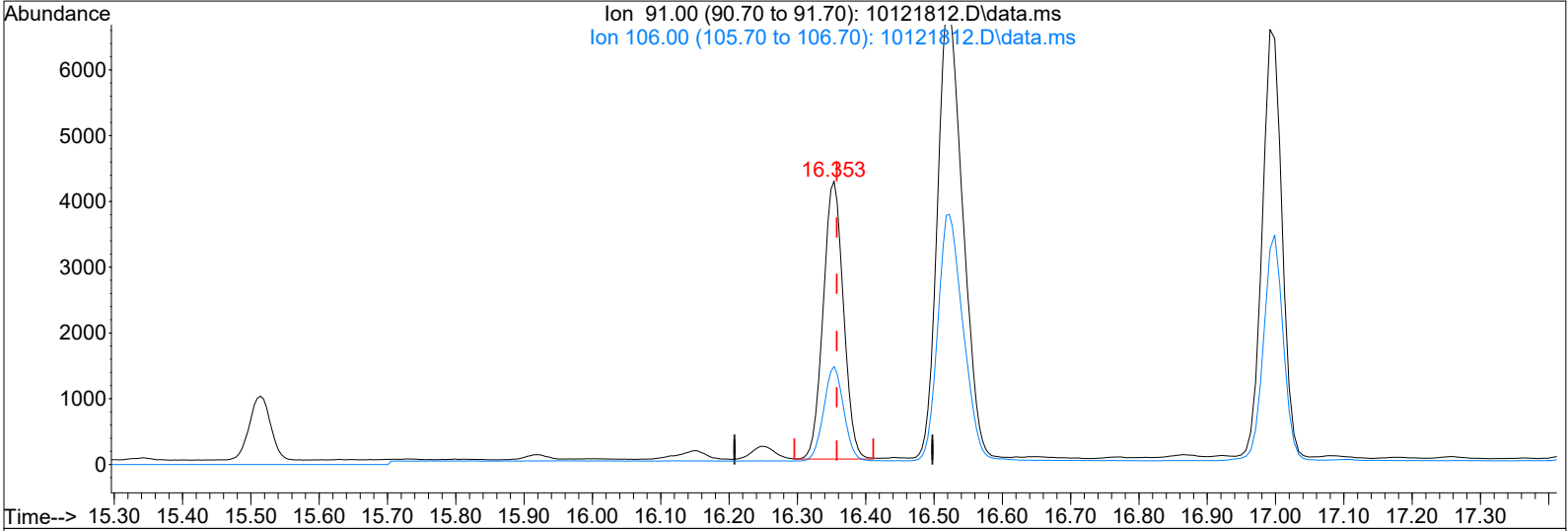
response 23634

Ion	Exp%	Act%
91.00	100	100
92.00	59.20	59.22
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121812.D
 Acq On : 12 Oct 2018 14:53
 Sample : P1805236-004 (400mL)
 Misc : S31-09241806

Vial: 5
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:13 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121812.D\data.ms

(40) Ethylbenzene (T)

16.353min (-0.004) 78.31pg

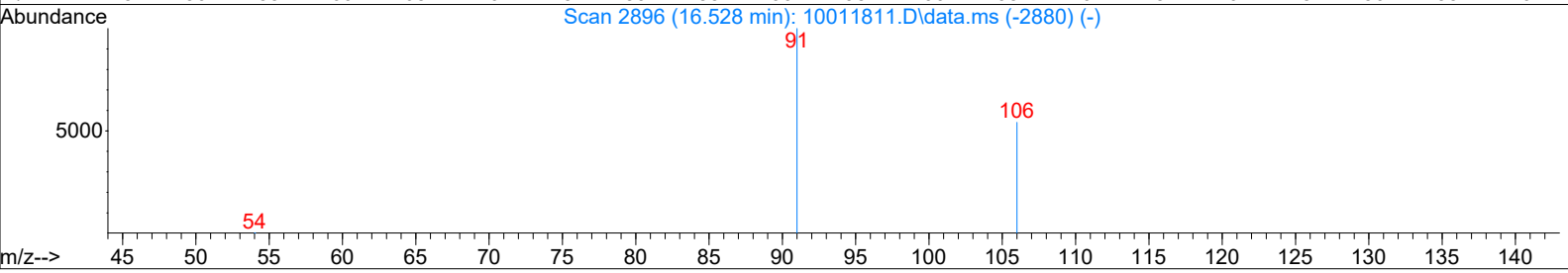
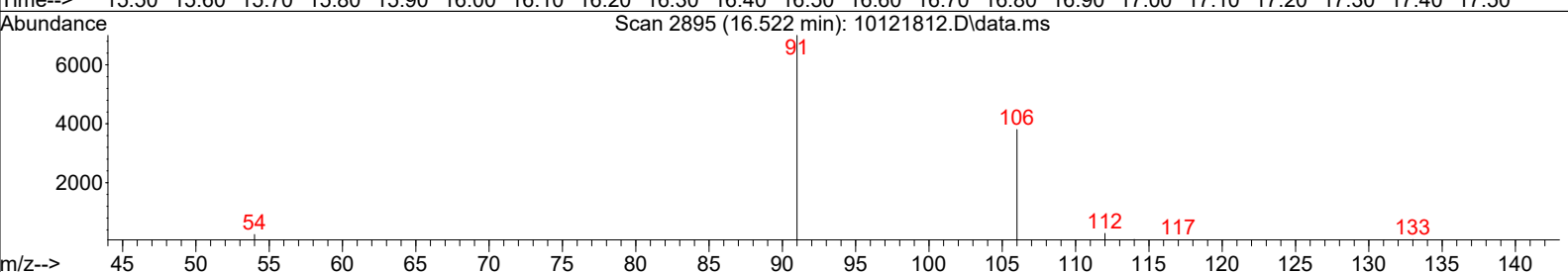
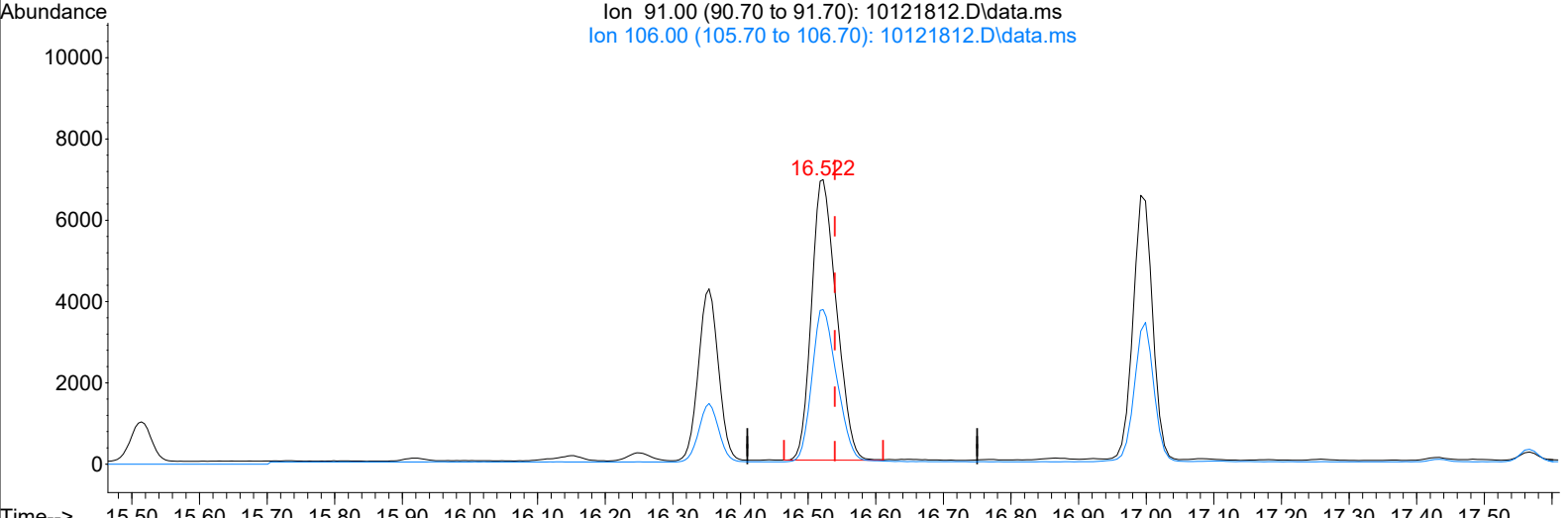
response 8679

Ion	Exp%	Act%
91.00	100	100
106.00	33.70	33.62
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121812.D
 Acq On : 12 Oct 2018 14:53
 Sample : P1805236-004 (400mL)
 Misc : S31-09241806

Vial: 5
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:13 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121812.D\data.ms

(41) m,p-Xylene (T)

16.522min (-0.018) 207.54pg

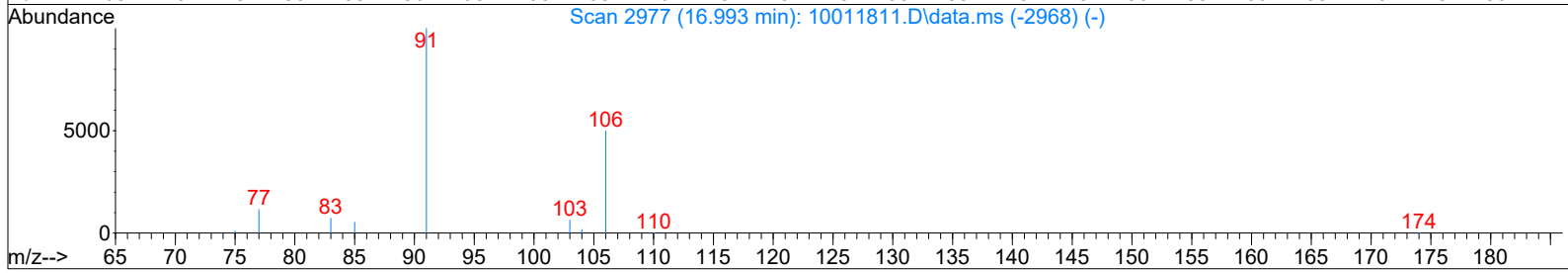
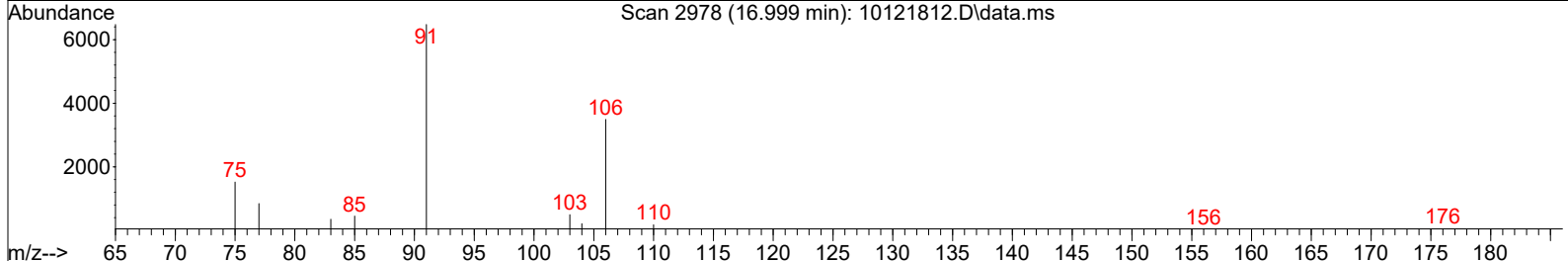
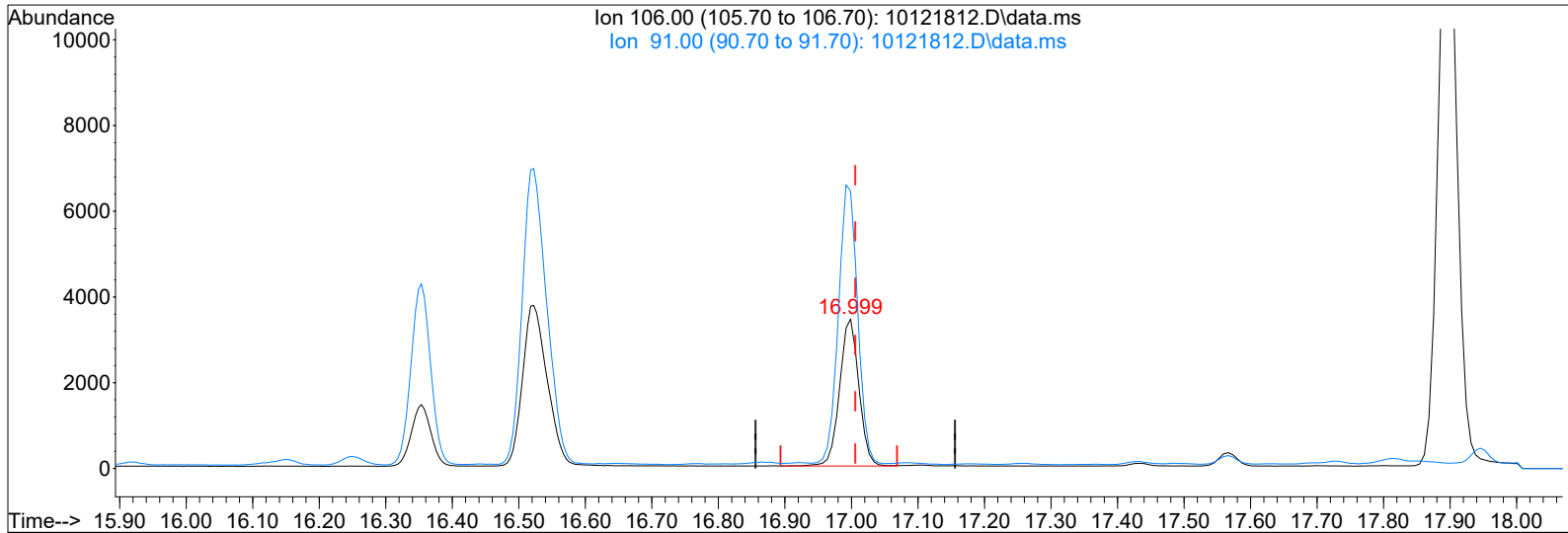
response 17586

Ion	Exp%	Act%
91.00	100	100
106.00	54.30	54.86
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121812.D
 Acq On : 12 Oct 2018 14:53
 Sample : P1805236-004 (400mL)
 Misc : S31-09241806

Vial: 5
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:13 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121812.D\data.ms

(43) o-Xylene (T)

16.999min (-0.007) 152.81pg

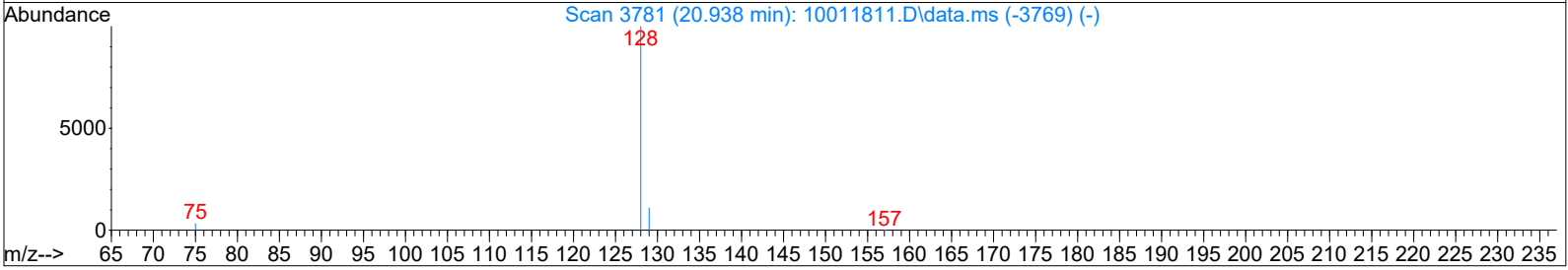
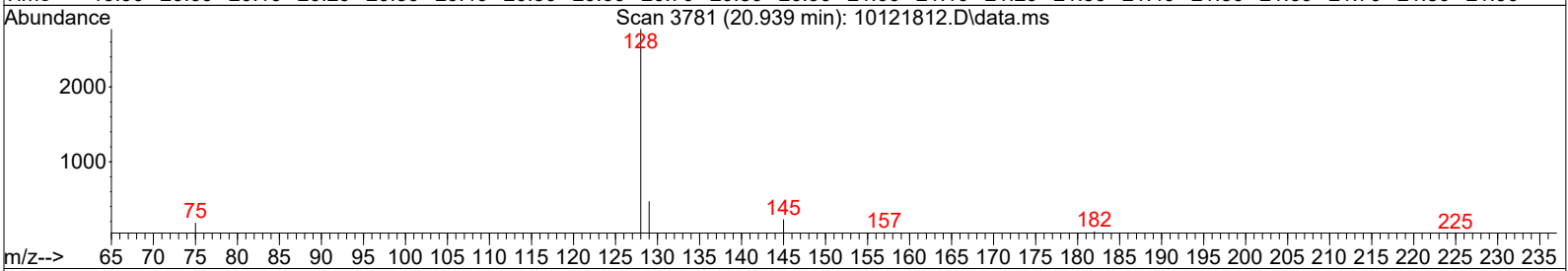
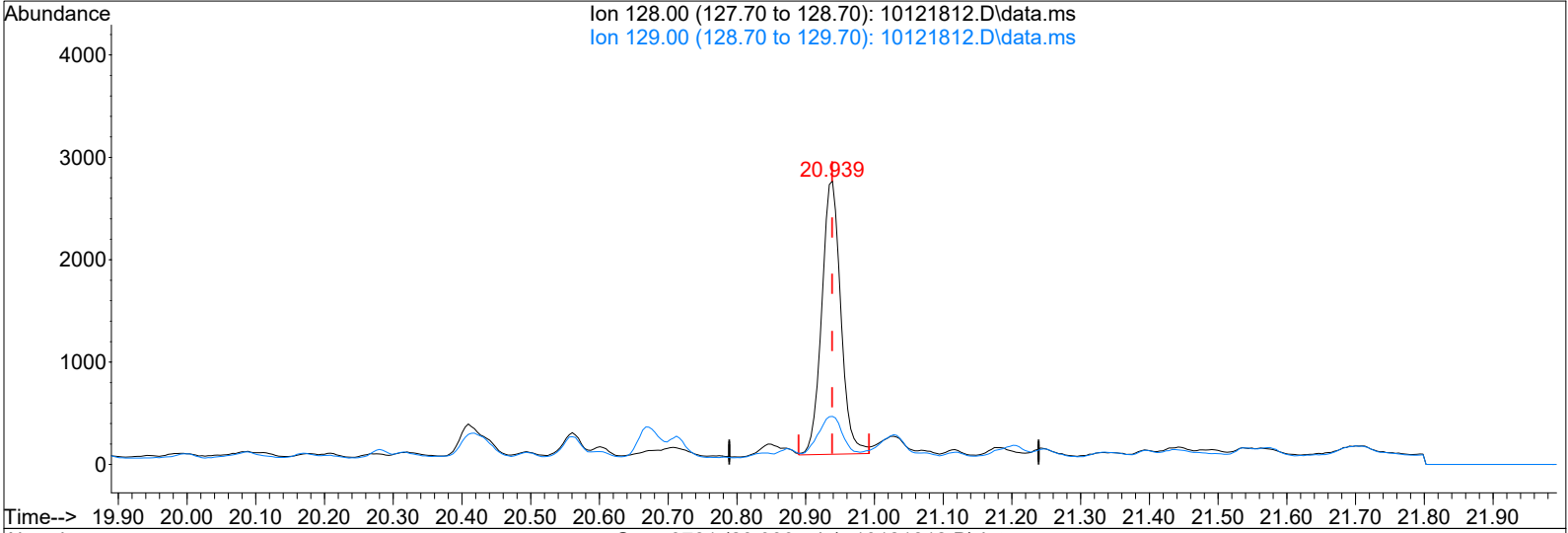
response 6884

Ion	Exp%	Act%
106.00	100	100
91.00	195.60	189.09
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121812.D
 Acq On : 12 Oct 2018 14:53
 Sample : P1805236-004 (400mL)
 Misc : S31-09241806

Vial: 5
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 08:00:13 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121812.D\data.ms

(53) Naphthalene (T)

20.939min (-0.000) 46.62pg

response 5154

Ion	Exp%	Act%
128.00	100	100
129.00	10.80	17.73
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121807.D
 Acq On : 12 Oct 2018 11:45
 Sample : P1805236-005 (400mL)
 Misc : S31-09241806

Vial: 7
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 11:40:36 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

~~WA~~ 10/15/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	18247	1000.000	pg	-0.03
25) 1,4-Difluorobenzene (IS2)	11.58	114	82106	1000.000	pg	-0.02
38) Chlorobenzene-d5 (IS3)	15.92	54	10610	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	21454	982.208	pg	-0.03
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	98.22%
33) Toluene-d8 (SS2)	14.01	98	87392	1032.128	pg	-0.02
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	103.21%
45) Bromofluorobenzene (SS3)	17.43	174	31755	1059.187	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	105.92%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.31	85	5748	147.840	pg	100
3) Chloromethane	4.52	52	536	58.957	pg	97
4) 1,2-Dichloro,1,1,2,2-t...	4.70	85	148	N.D.		
5) Vinyl Chloride	0.00	62	0	N.D.		
6) 1,3-Butadiene	5.01	54	178	9.326	pg	# 88
7) Bromomethane	5.33	94	99	N.D.		
8) Chloroethane	5.56	64	165	12.491	pg	100
9) Acrolein	6.12	56	3836	359.235	pg	100
10) Acetone	6.26	58	78777	5819.055	pg	91
11) Trichlorofluoromethane	6.48	101	21706	713.866	pg	100
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	7.33	84	3562	158.027	pg	99
14) Trichlorotrifluoroethane	7.67	151	444	20.835	pg	97
15) trans-1,2-Dichloroethene	8.37	96	141	N.D.		
16) 1,1-Dichloroethane	8.59	63	73	N.D.		
17) Methyl tert-Butyl Ether	8.61	73	450	N.D.		
18) cis-1,2-Dichloroethene	9.46	96	716	30.049	pg	99
19) Chloroform	9.75	83	2491	66.083	pg	100
21) 1,2-Dichloroethane	10.51	62	255	10.937	pg	99
22) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
23) Benzene	11.23	78	7015	74.077	pg	99
24) Carbon Tetrachloride	11.39	117	890	30.497	pg	81
26) 1,2-Dichloropropane	12.05	63	297	14.523	pg	100
27) Bromodichloromethane	0.00	83	0	N.D.	d	
28) Trichloroethene	12.28	130	9599	374.158	pg	99
29) 1,4-Dioxane	0.00	88	0	N.D.	d	
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	0.00	83	0	N.D.	d	
34) Toluene	14.11	91	103679	1105.923	pg	100
35) Dibromochloromethane	0.00	129	0	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.27	166	2434	88.228	pg	100
39) Chlorobenzene	0.00	112	0	N.D.	d	
40) Ethylbenzene	16.35	91	8764	89.597	pg	100
41) m,p-Xylene	16.52	91	21656	289.555	pg	100
42) Styrene	16.89	104	1791	30.149	pg	99
43) o-Xylene	16.99	106	2545	64.005	pg	99
44) 1,1,2,2-Tetrachloroethane	16.99	83	157	N.D.		
46) 1,3,5-Trimethylbenzene	18.27	105	515	N.D.		
47) 1,2,4-Trimethylbenzene	18.66	105	1759	21.084	pg	88
48) 1,3-Dichlorobenzene	18.81	146	389	N.D.		
49) 1,4-Dichlorobenzene	18.87	146	1677	30.639	pg	99
50) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	20.94	128	771	N.D.		

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Data File : I:\MS19\DATA\2018_10\12\10121807.D
 Acq On : 12 Oct 2018 11:45
 Sample : P1805236-005 (400mL)
 Misc : S31-09241806

Vial: 7
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 11:40:36 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

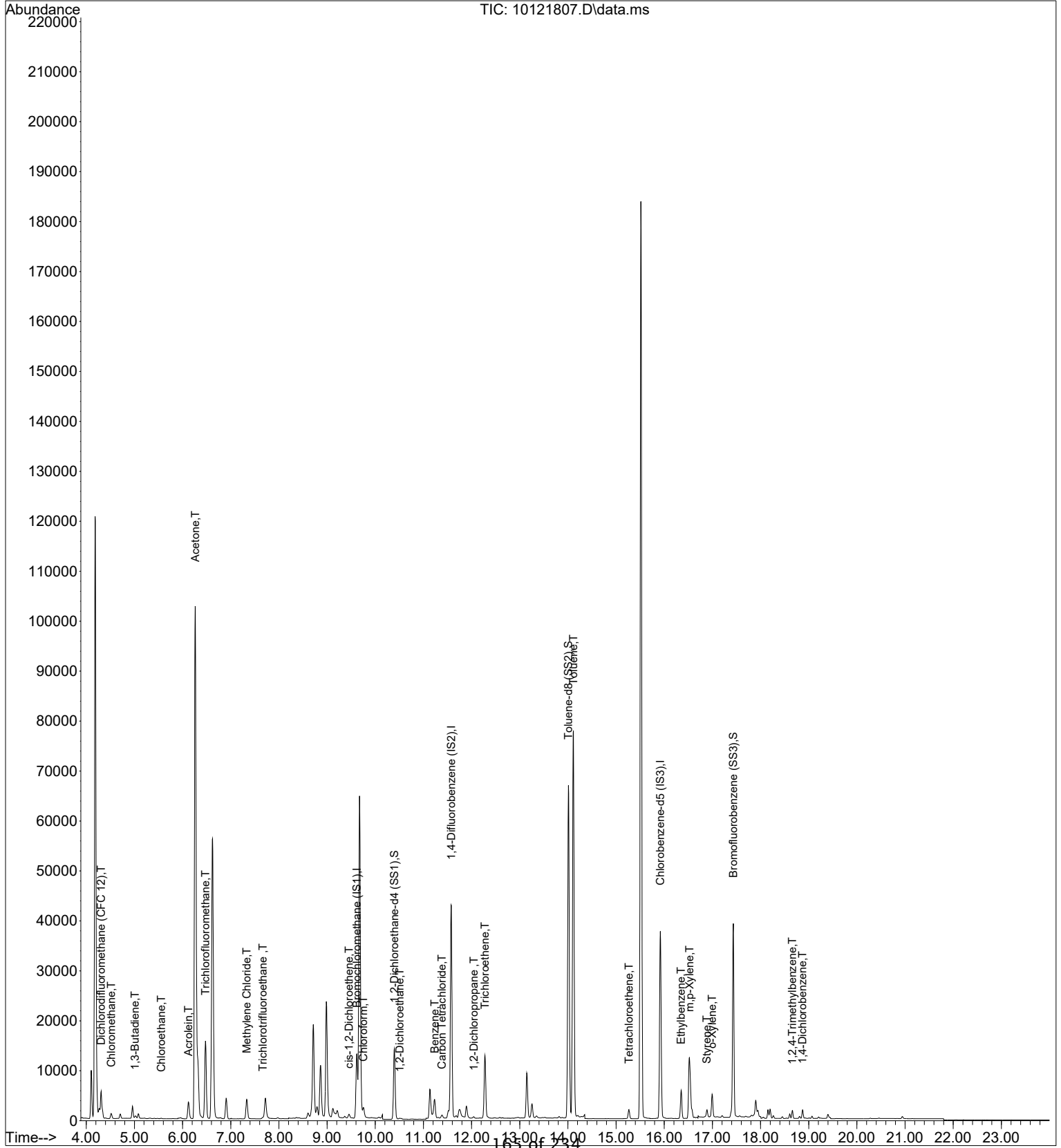
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\12\10121807.D
Acq On : 12 Oct 2018 11:45
Sample : P1805236-005 (400mL)
Misc : S31-09241806

Vial: 7
Operator: WA
Inst : MS19

Quant Time: Oct 15 11:40:36 2018
Quant Method : I:\MS19\METHODS\S19100118.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Oct 02 06:45:50 2018
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

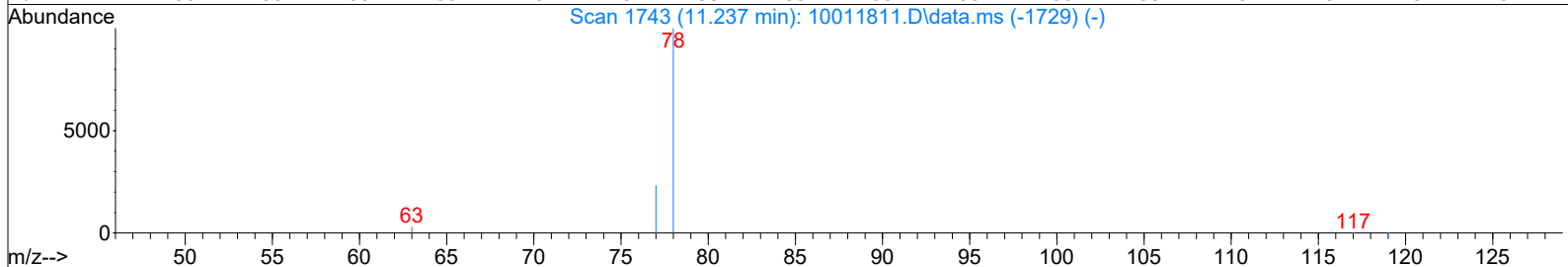
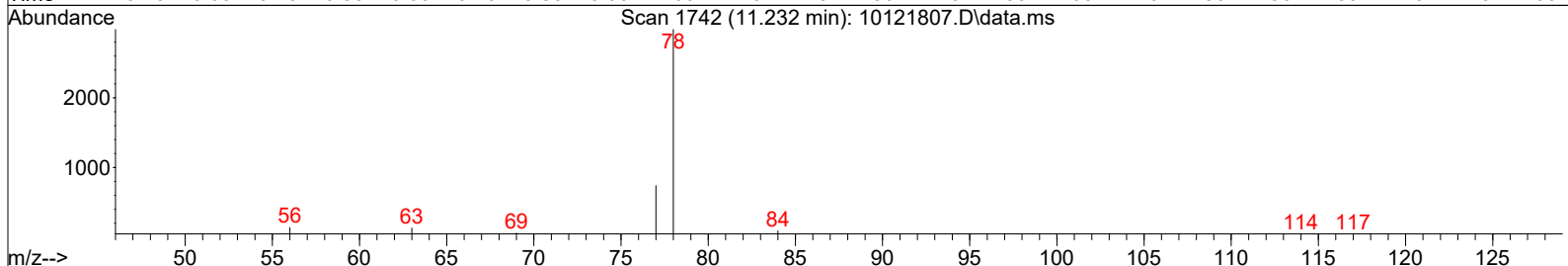
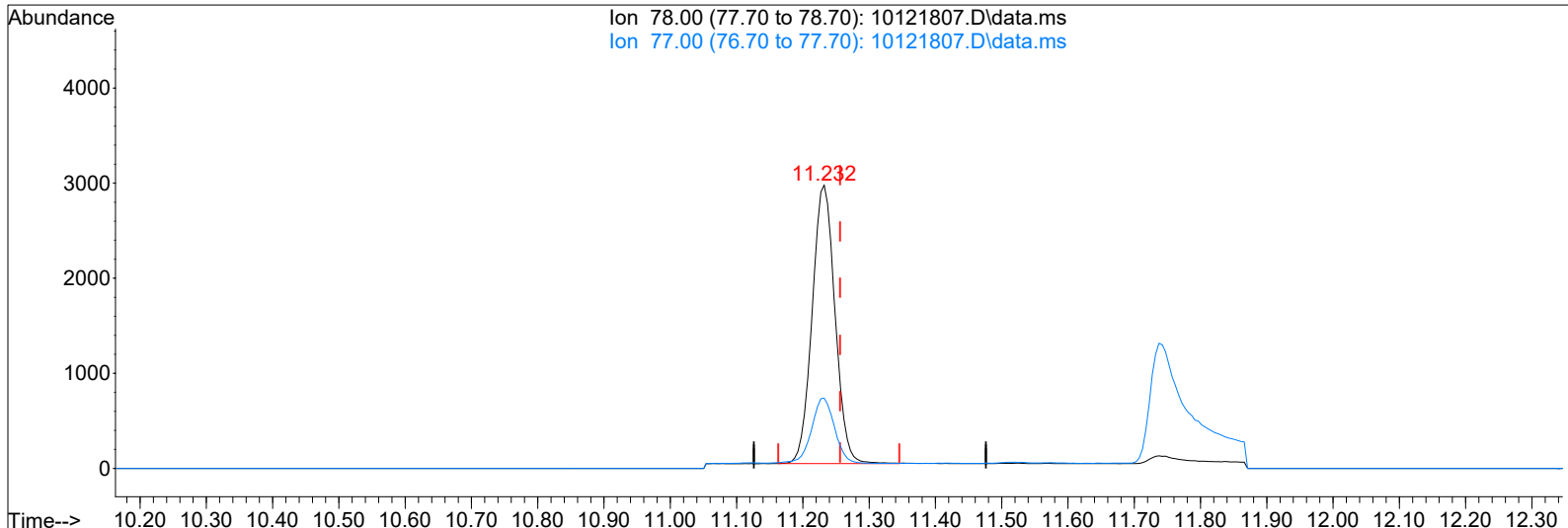


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Data File : I:\MS19\DATA\2018_10\12\10121807.D
 Acq On : 12 Oct 2018 11:45
 Sample : P1805236-005 (400mL)
 Misc : S31-09241806

Vial: 7
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:06:27 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121807.D\data.ms

(23) Benzene (T)

11.232min (-0.024) 74.08pg

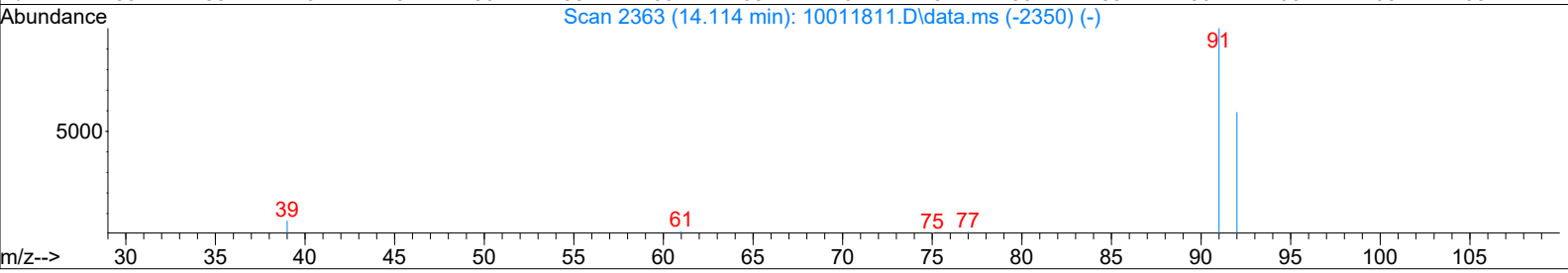
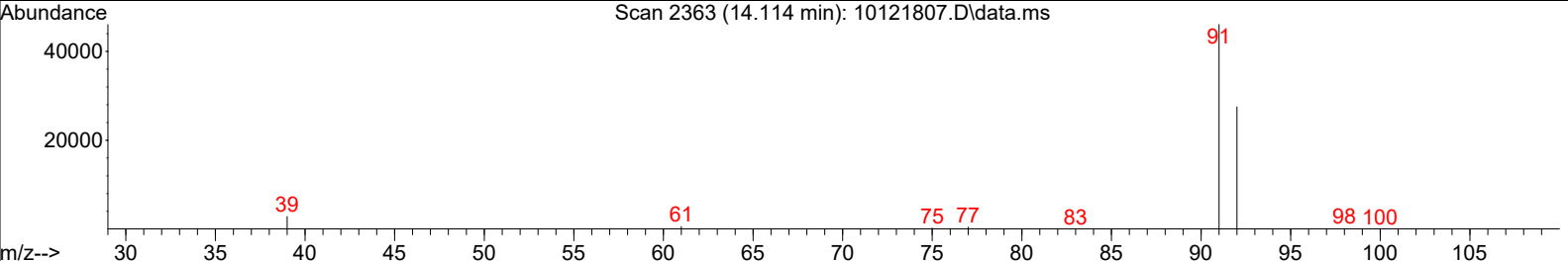
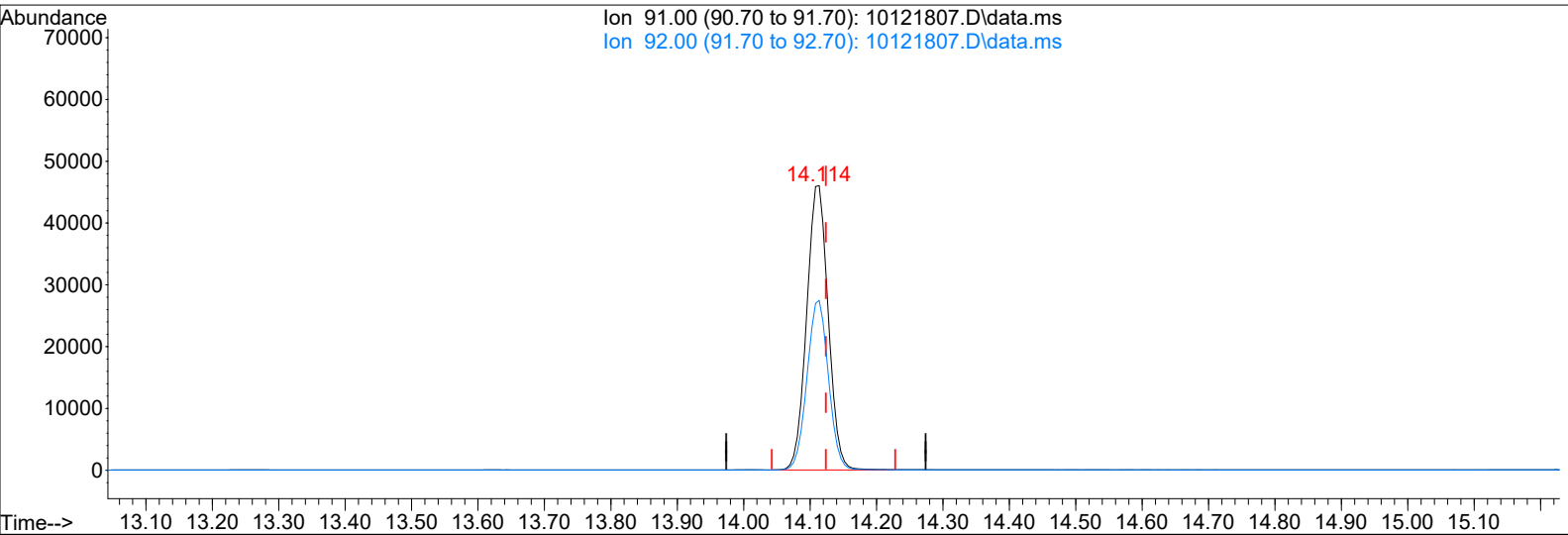
response 7015

Ion	Exp%	Act%
78.00	100	100
77.00	23.30	23.69
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121807.D
 Acq On : 12 Oct 2018 11:45
 Sample : P1805236-005 (400mL)
 Misc : S31-09241806

Vial: 7
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:06:27 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121807.D\data.ms

(34) Toluene (T)

14.114min (-0.010) 1105.92pg

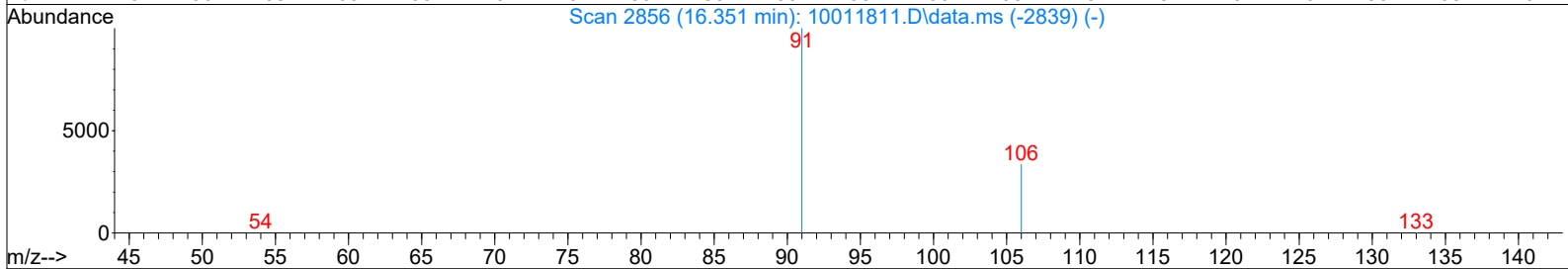
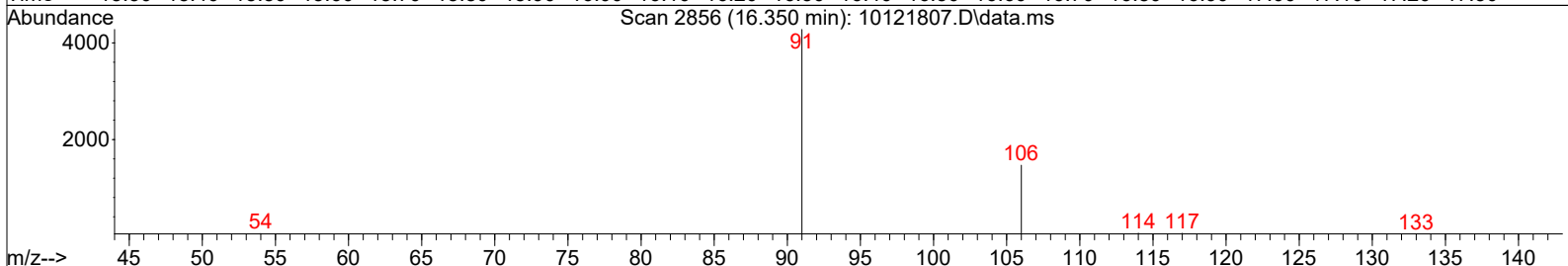
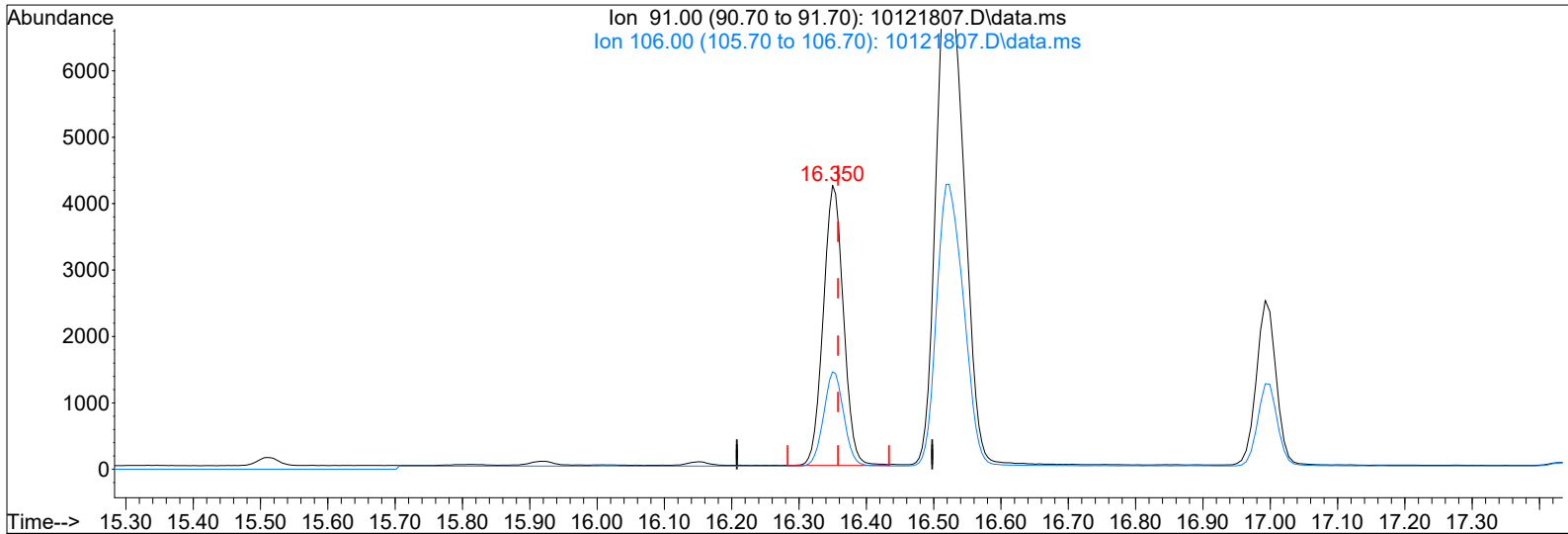
response 103679

Ion	Exp%	Act%
91.00	100	100
92.00	59.20	59.28
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121807.D
 Acq On : 12 Oct 2018 11:45
 Sample : P1805236-005 (400mL)
 Misc : S31-09241806

Vial: 7
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:06:27 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121807.D\data.ms

(40) Ethylbenzene (T)

16.350min (-0.008) 89.60pg

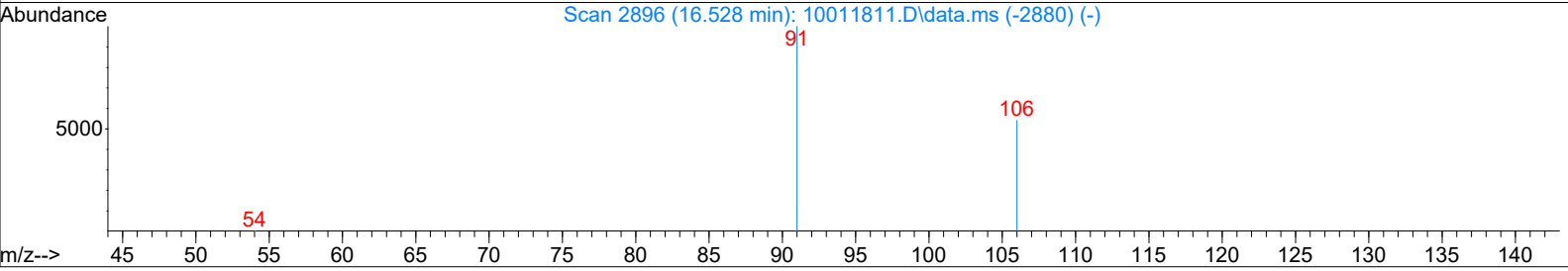
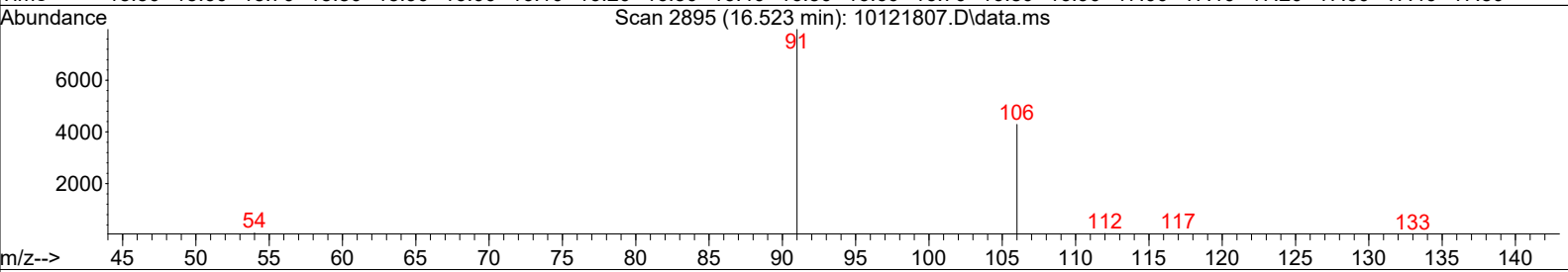
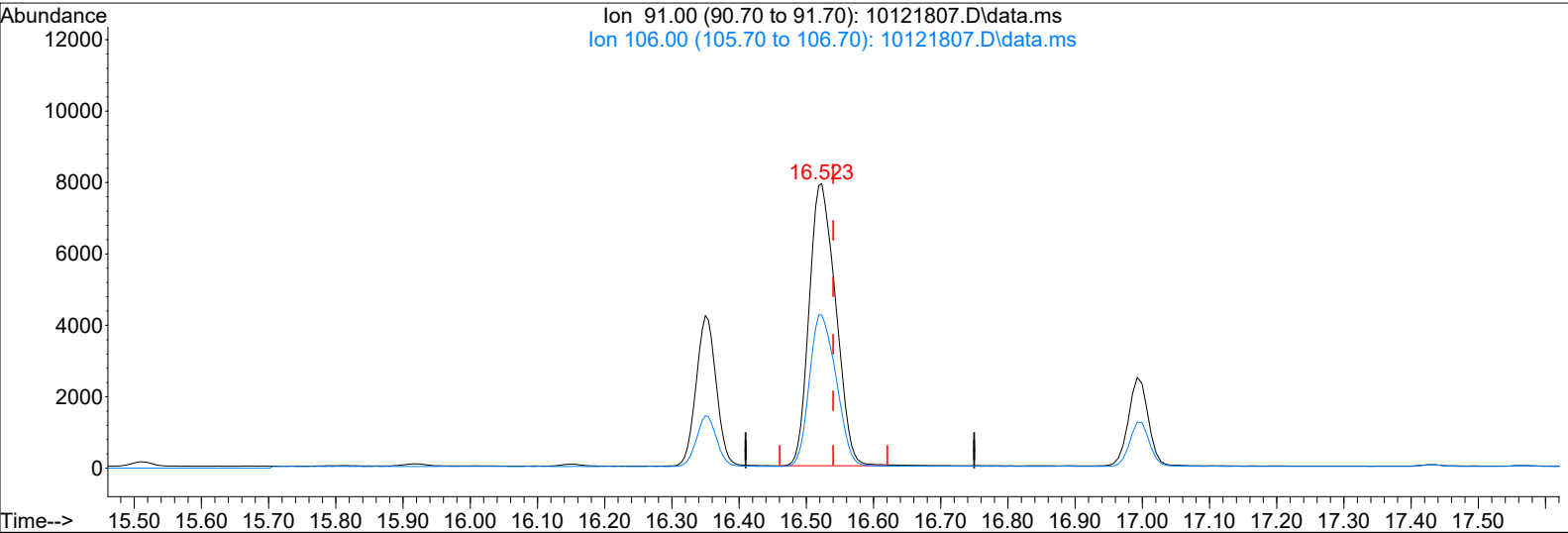
response 8764

Ion	Exp%	Act%
91.00	100	100
106.00	33.70	33.60
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121807.D
 Acq On : 12 Oct 2018 11:45
 Sample : P1805236-005 (400mL)
 Misc : S31-09241806

Vial: 7
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:06:27 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121807.D\data.ms

(41) m,p-Xylene (T)

16.523min (-0.017) 289.56pg

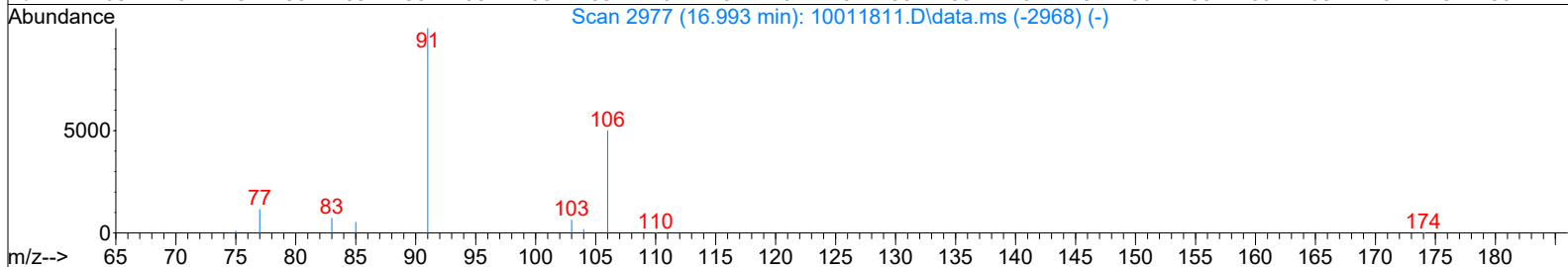
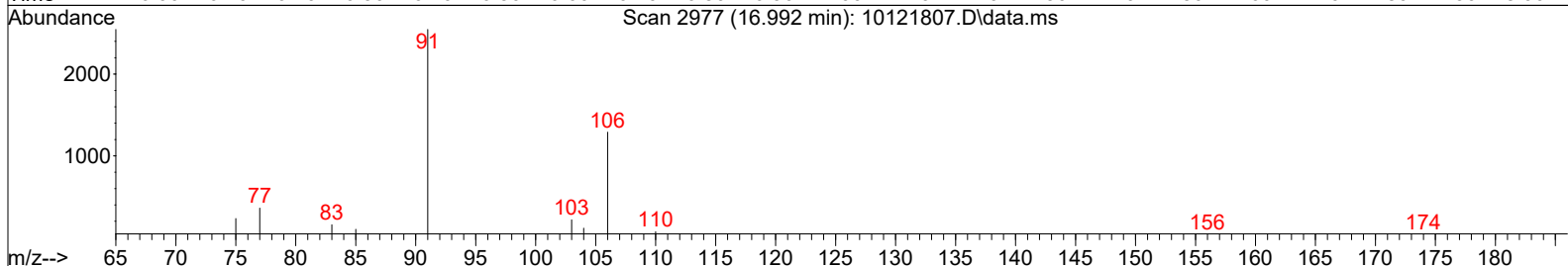
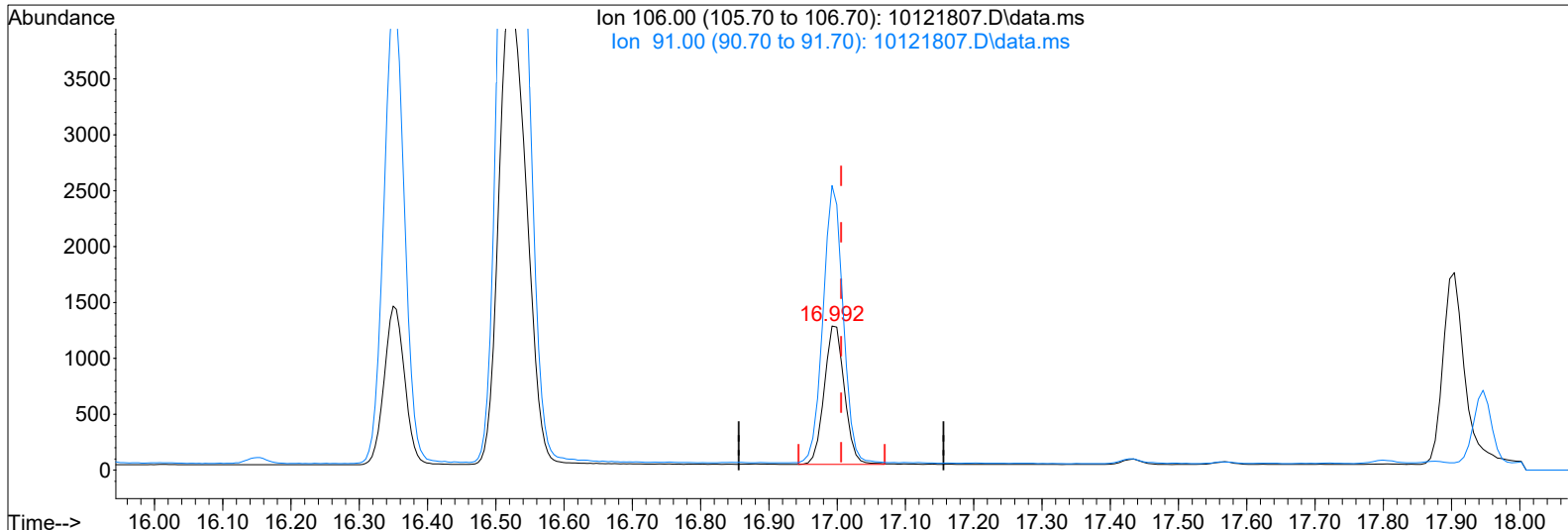
response 21656

Ion	Exp%	Act%
91.00	100	100
106.00	54.30	54.34
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121807.D
 Acq On : 12 Oct 2018 11:45
 Sample : P1805236-005 (400mL)
 Misc : S31-09241806

Vial: 7
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:06:27 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121807.D\data.ms

(43) o-Xylene (T)

16.992min (-0.013) 64.01pg

response 2545

Ion	Exp%	Act%
106.00	100	100
91.00	195.60	197.80
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121808.D
 Acq On : 12 Oct 2018 12:17
 Sample : P1805236-006 (400mL)
 Misc : S31-09241806

Vial: 8
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 11:41:57 2018

Quant Method : I:\MS19\METHODS\S19100118.M

Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

QLast Update : Tue Oct 02 06:45:50 2018

Response via : Initial Calibration

~~10/15/18~~ 10/15/18

DataAcq Meth:TO15SIM.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.61	130	18689	1000.000	pg	-0.04
25) 1,4-Difluorobenzene (IS2)	11.58	114	83171	1000.000	pg	-0.02
38) Chlorobenzene-d5 (IS3)	15.92	54	10888	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	22187	991.743	pg	-0.03
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	99.17%
33) Toluene-d8 (SS2)	14.01	98	88262	1029.055	pg	-0.02
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	102.91%
45) Bromofluorobenzene (SS3)	17.43	174	32351	1051.515	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	105.15%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.30	85	4736	118.930	pg	100
3) Chloromethane	4.52	52	442	47.468	pg	93
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	92	N.D.		
5) Vinyl Chloride	0.00	62	0	N.D.		
6) 1,3-Butadiene	5.01	54	127	N.D.		
7) Bromomethane	5.34	94	58	N.D.		
8) Chloroethane	5.56	64	88	N.D.		
9) Acrolein	6.12	56	463	42.334	pg	93
10) Acetone	6.26	58	54505	3930.925	pg	# 84
11) Trichlorofluoromethane	6.47	101	11596	372.349	pg	100
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	7.33	84	1625	70.387	pg	89
14) Trichlorotrifluoroethane	7.67	151	206	9.438	pg	98
15) trans-1,2-Dichloroethene	8.37	96	66	N.D.		
16) 1,1-Dichloroethane	0.00	63	0	N.D.		
17) Methyl tert-Butyl Ether	8.60	73	305	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.75	83	1263	32.713	pg	98
21) 1,2-Dichloroethane	10.51	62	285	11.935	pg	86
22) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
23) Benzene	11.23	78	7330	75.573	pg	99
24) Carbon Tetrachloride	11.40	117	590	19.739	pg	# 60
26) 1,2-Dichloropropane	12.04	63	1546	74.630	pg	99
27) Bromodichloromethane	12.25	83	128	N.D.		
28) Trichloroethene	12.28	130	712	27.398	pg	99
29) 1,4-Dioxane	12.27	88	525	29.528	pg	90
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	0.00	83	0	N.D.	d	
34) Toluene	14.11	91	282070	2970.257	pg	100
35) Dibromochloromethane	0.00	129	0	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.27	166	3455	123.634	pg	100
39) Chlorobenzene	0.00	112	0	N.D.	d	
40) Ethylbenzene	16.35	91	12289	122.426	pg	100
41) m,p-Xylene	16.52	91	33459	435.947	pg	100
42) Styrene	16.89	104	4976	81.624	pg	99
43) o-Xylene	17.00	106	4061	99.524	pg	98
44) 1,1,2,2-Tetrachloroethane	17.00	83	147	N.D.		
46) 1,3,5-Trimethylbenzene	18.27	105	1579	18.399	pg	99
47) 1,2,4-Trimethylbenzene	18.66	105	6930	80.945	pg	87
48) 1,3-Dichlorobenzene	18.81	146	1067	19.077	pg	98
49) 1,4-Dichlorobenzene	18.87	146	4717	83.980	pg	99
50) 1,2-Dichlorobenzene	19.20	146	50	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	20.94	128	22838	228.062	pg	98

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Data File : I:\MS19\DATA\2018_10\12\10121808.D
 Acq On : 12 Oct 2018 12:17
 Sample : P1805236-006 (400mL)
 Misc : S31-09241806

Vial: 8
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 11:41:57 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

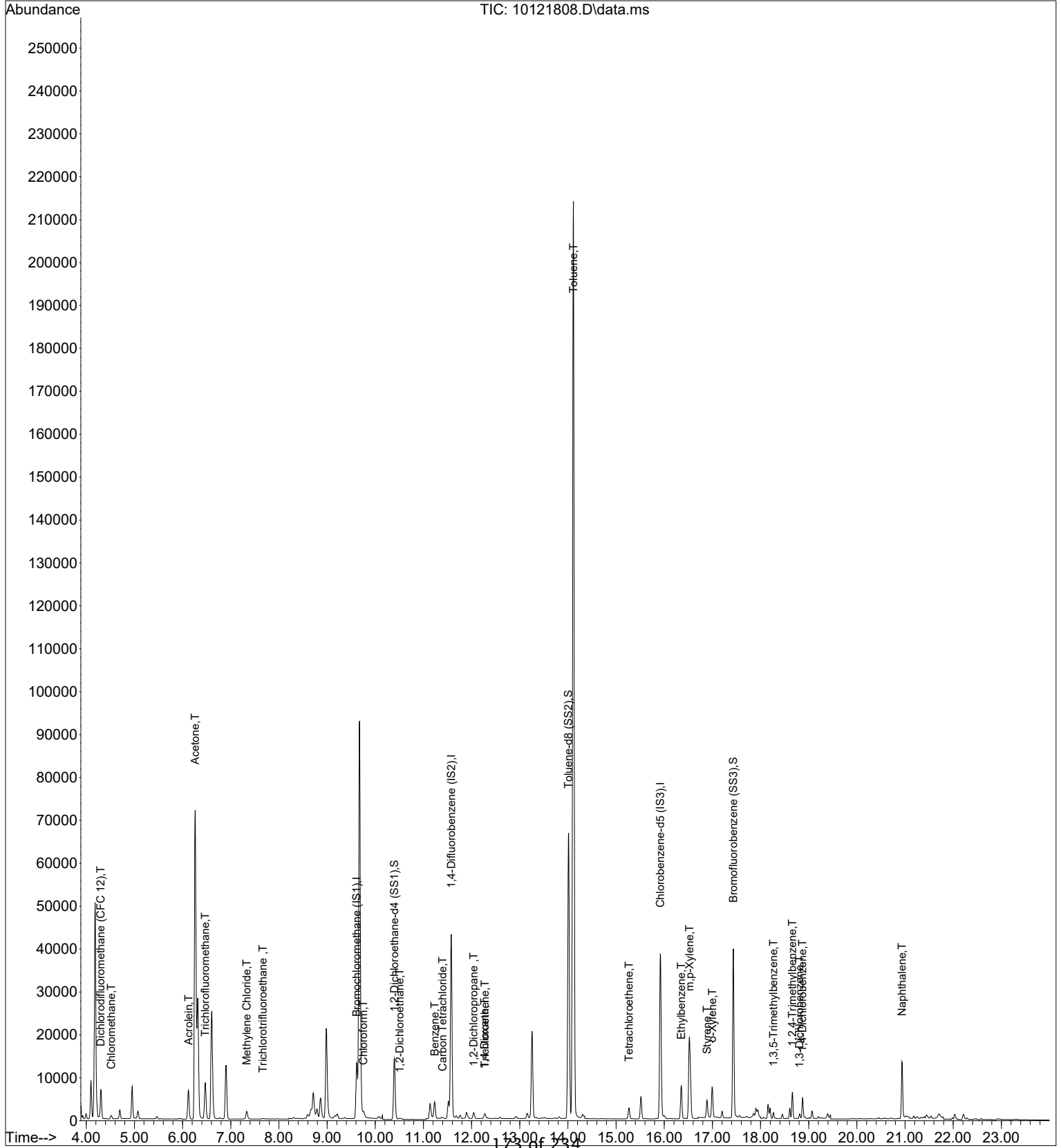
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\12\10121808.D
 Acq On : 12 Oct 2018 12:17
 Sample : P1805236-006 (400mL)
 Misc : S31-09241806

Vial: 8
 Operator: WA
 Inst : MS19

Quant Time: Oct 15 11:41:57 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

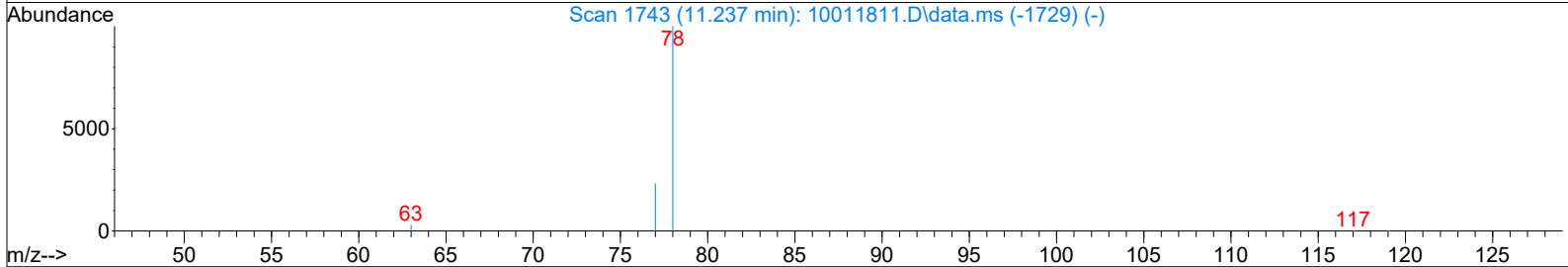
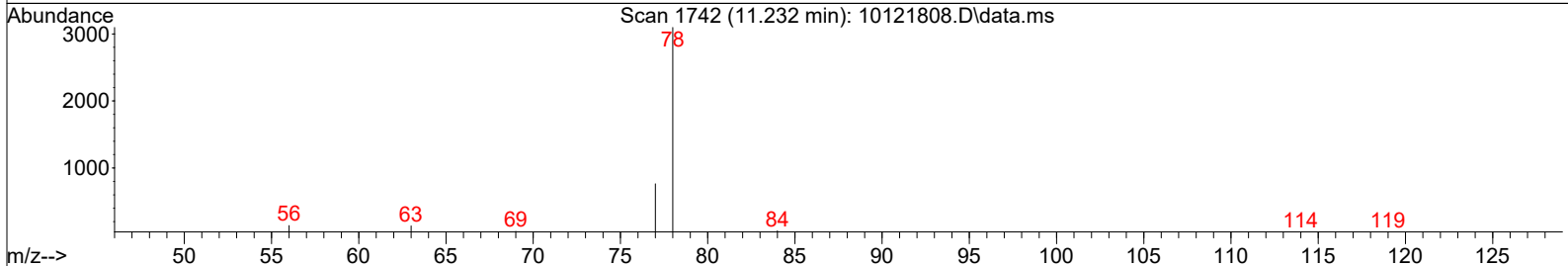
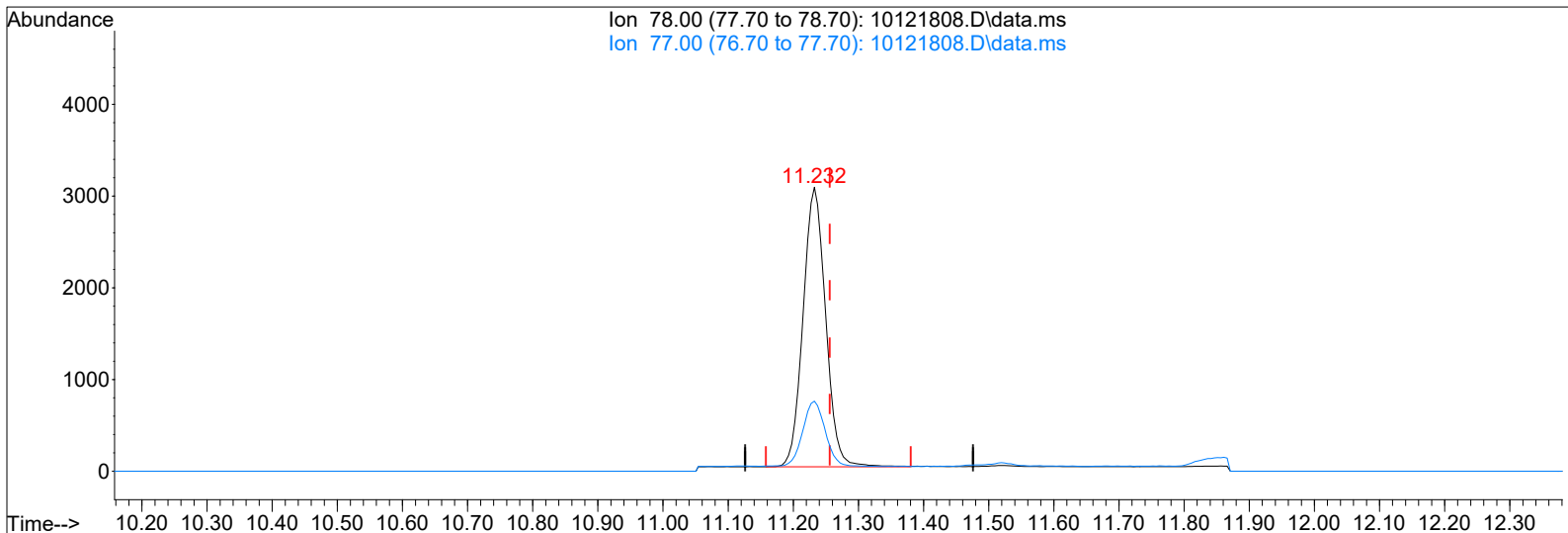


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Data File : I:\MS19\DATA\2018_10\12\10121808.D
 Acq On : 12 Oct 2018 12:17
 Sample : P1805236-006 (400mL)
 Misc : S31-09241806

Vial: 8
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:06:39 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121808.D\data.ms

(23) Benzene (T)

11.232min (-0.024) 75.57pg

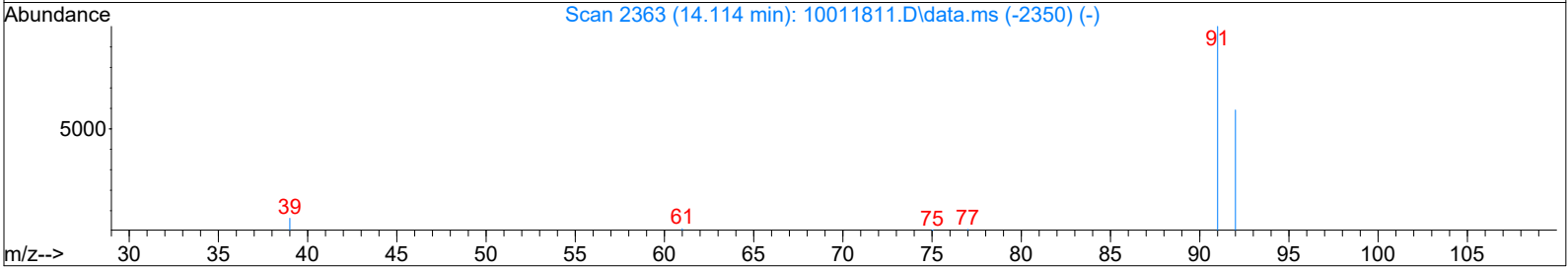
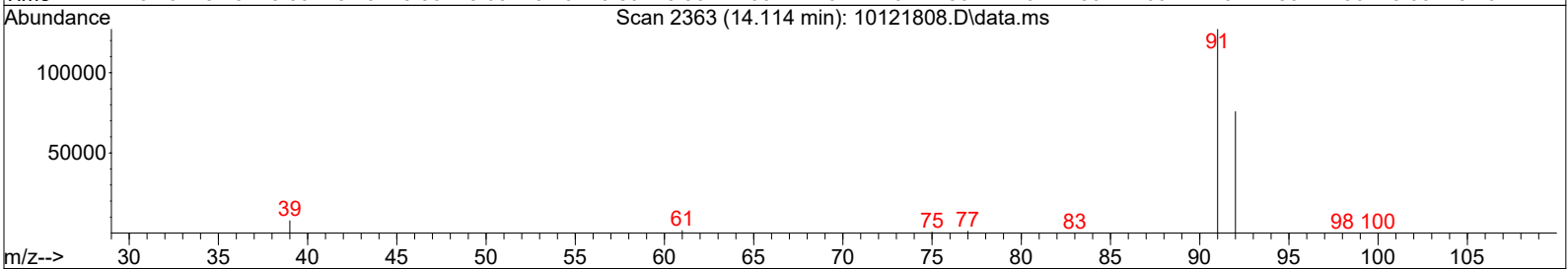
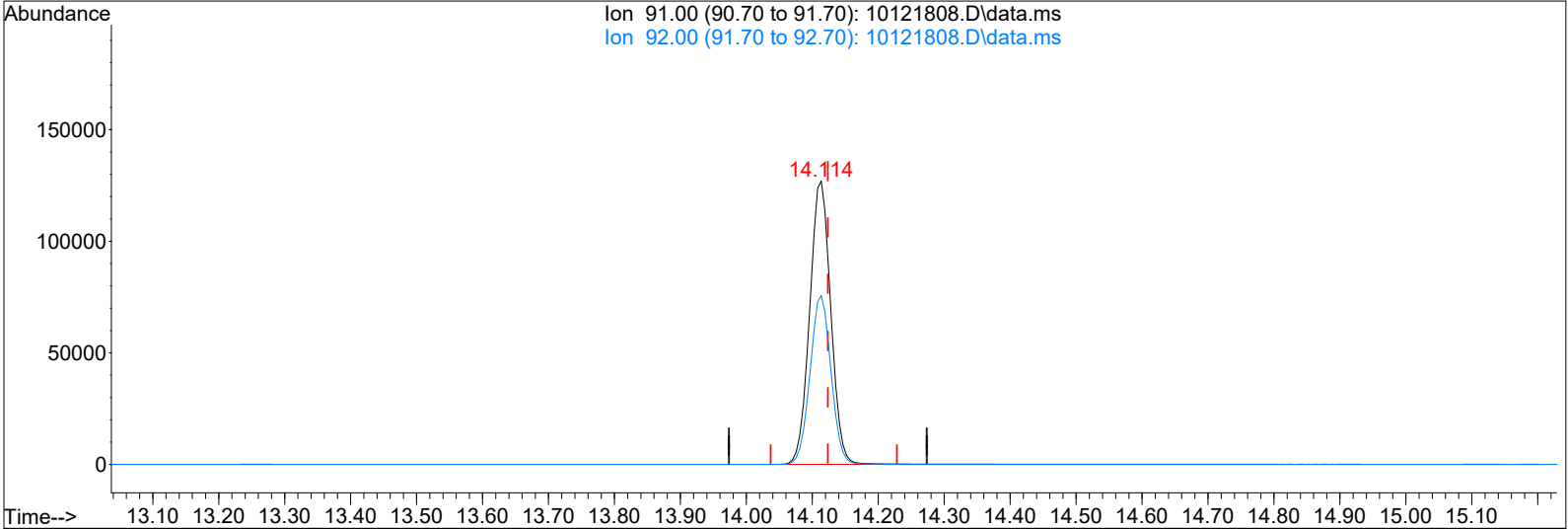
response 7330

Ion	Exp%	Act%
78.00	100	100
77.00	23.30	23.03
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121808.D
 Acq On : 12 Oct 2018 12:17
 Sample : P1805236-006 (400mL)
 Misc : S31-09241806

Vial: 8
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:06:39 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121808.D\data.ms

(34) Toluene (T)

14.114min (-0.010) 2970.26pg

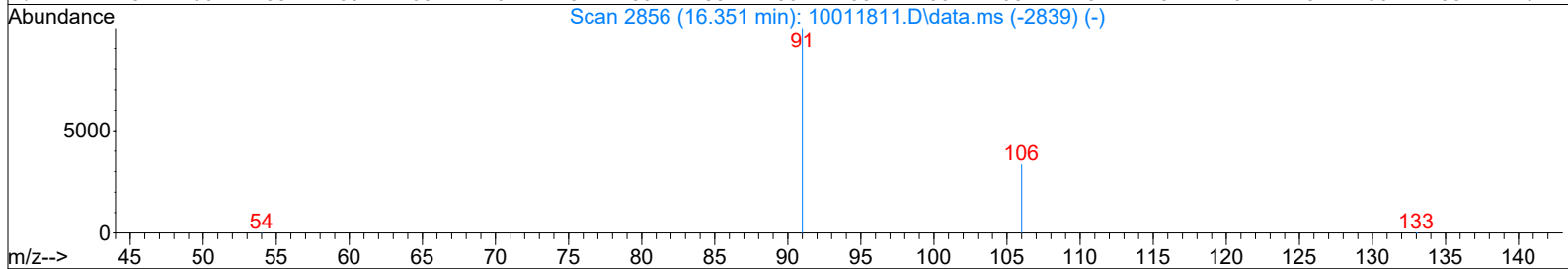
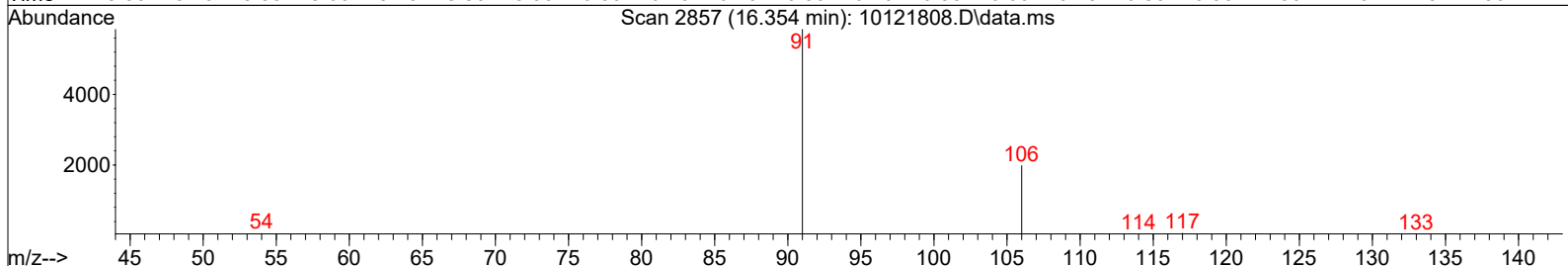
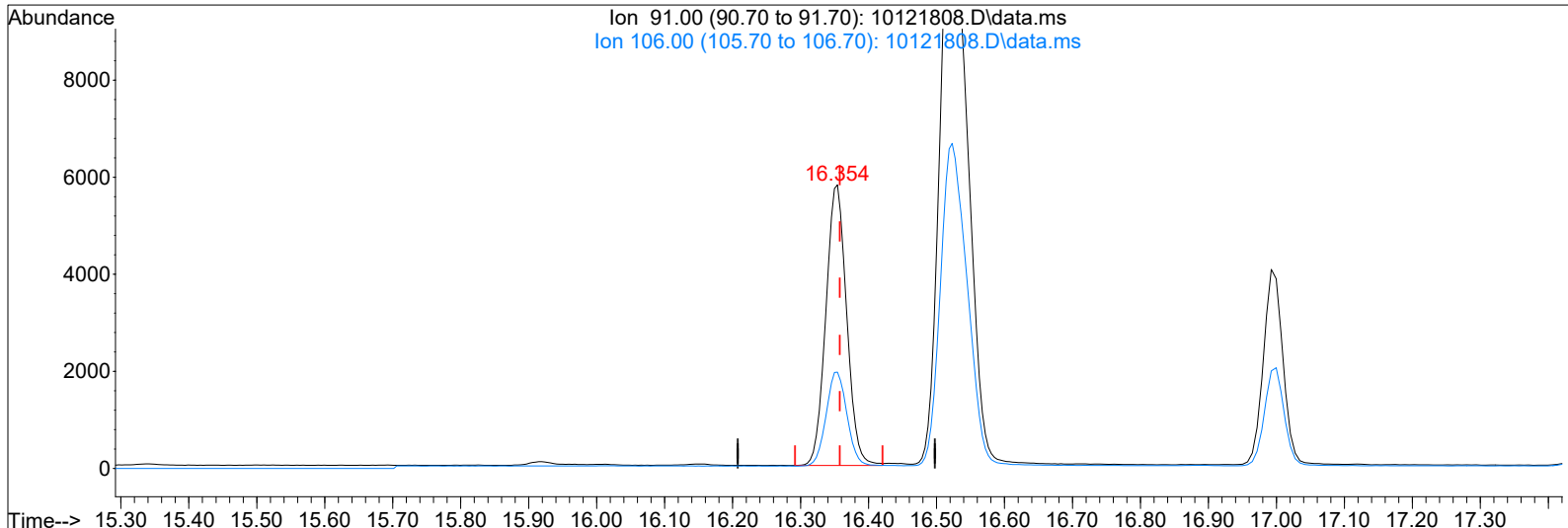
response 282070

Ion	Exp%	Act%
91.00	100	100
92.00	59.20	59.33
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121808.D
 Acq On : 12 Oct 2018 12:17
 Sample : P1805236-006 (400mL)
 Misc : S31-09241806

Vial: 8
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:06:39 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121808.D\data.ms

(40) Ethylbenzene (T)

16.354min (-0.004) 122.43pg

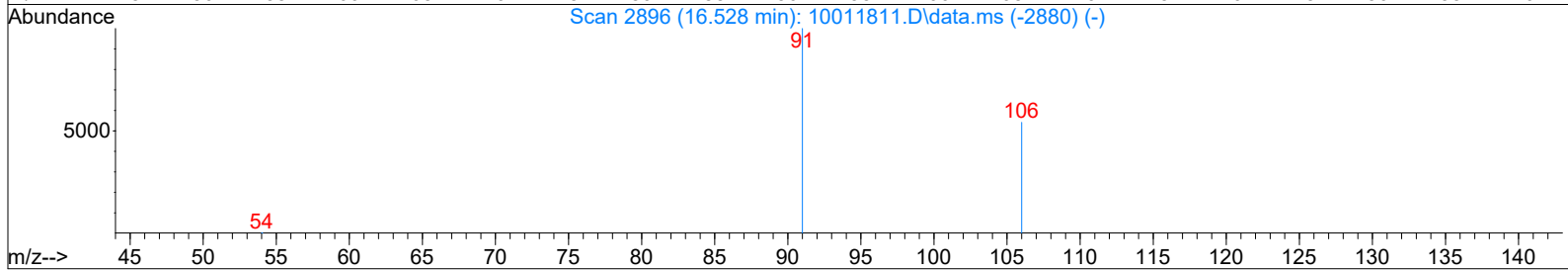
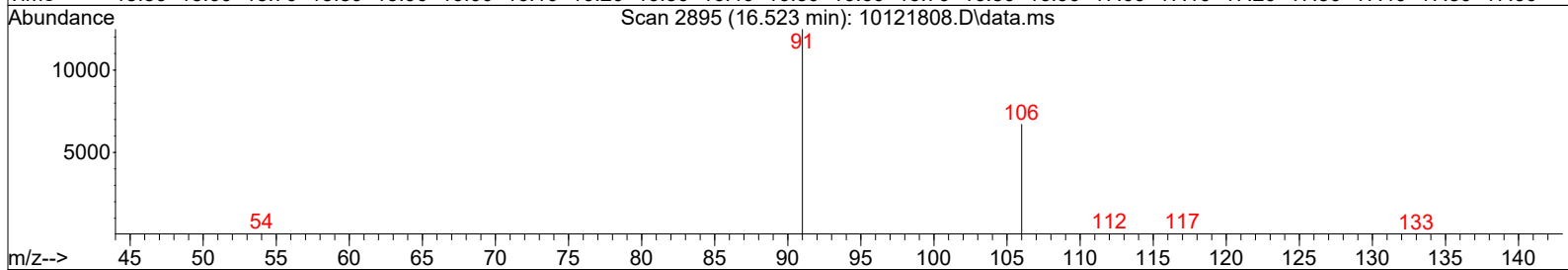
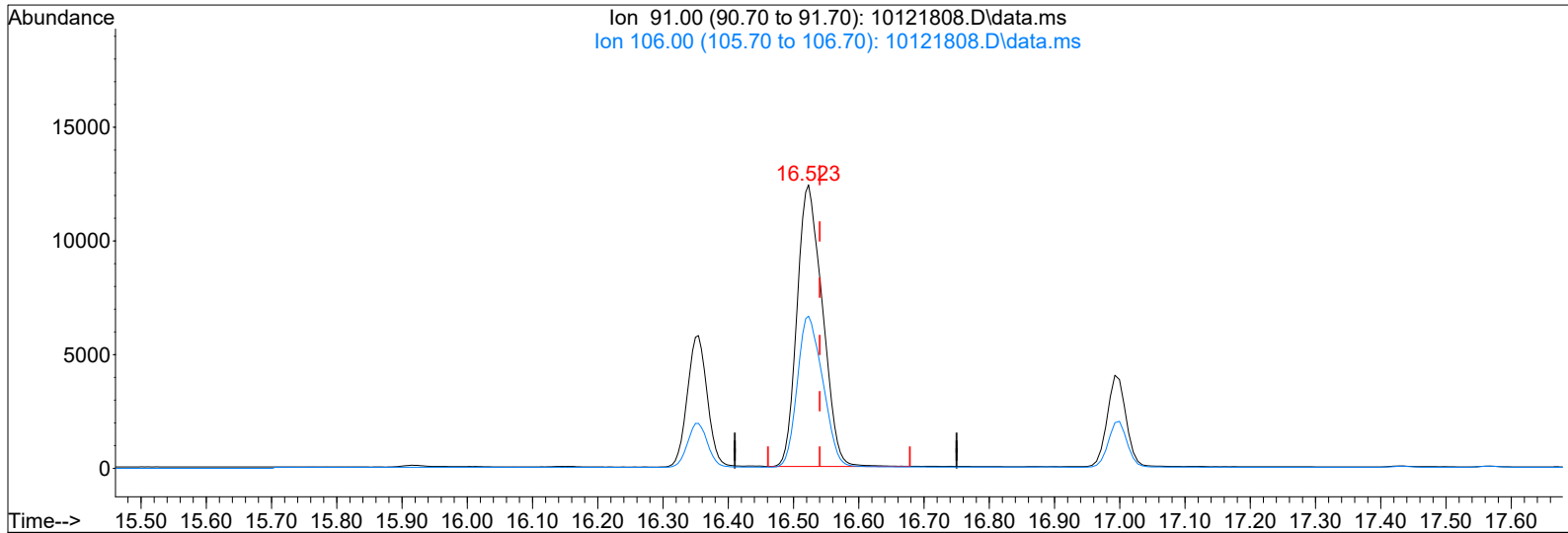
response 12289

Ion	Exp%	Act%
91.00	100	100
106.00	33.70	33.97
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121808.D
 Acq On : 12 Oct 2018 12:17
 Sample : P1805236-006 (400mL)
 Misc : S31-09241806

Vial: 8
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:06:39 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121808.D\data.ms

(41) m,p-Xylene (T)

16.523min (-0.017) 435.95pg

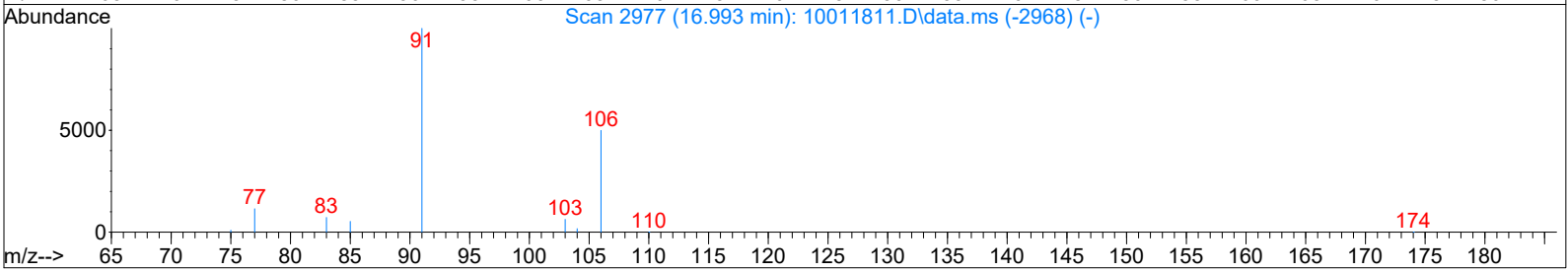
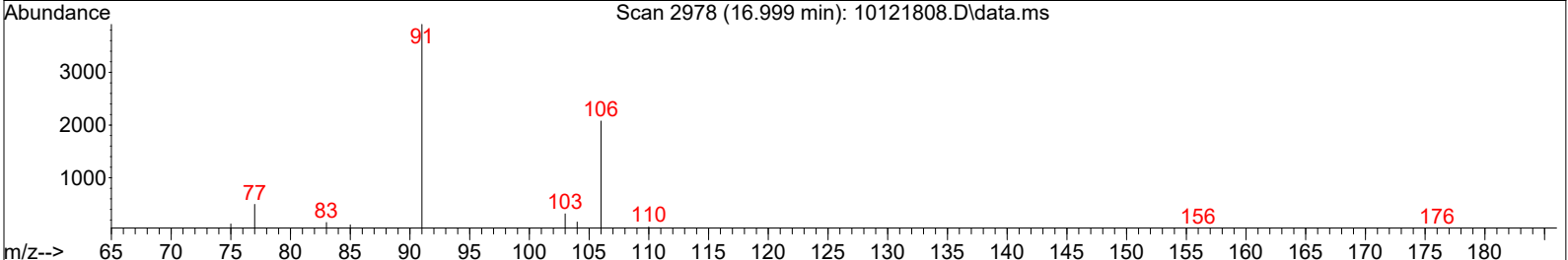
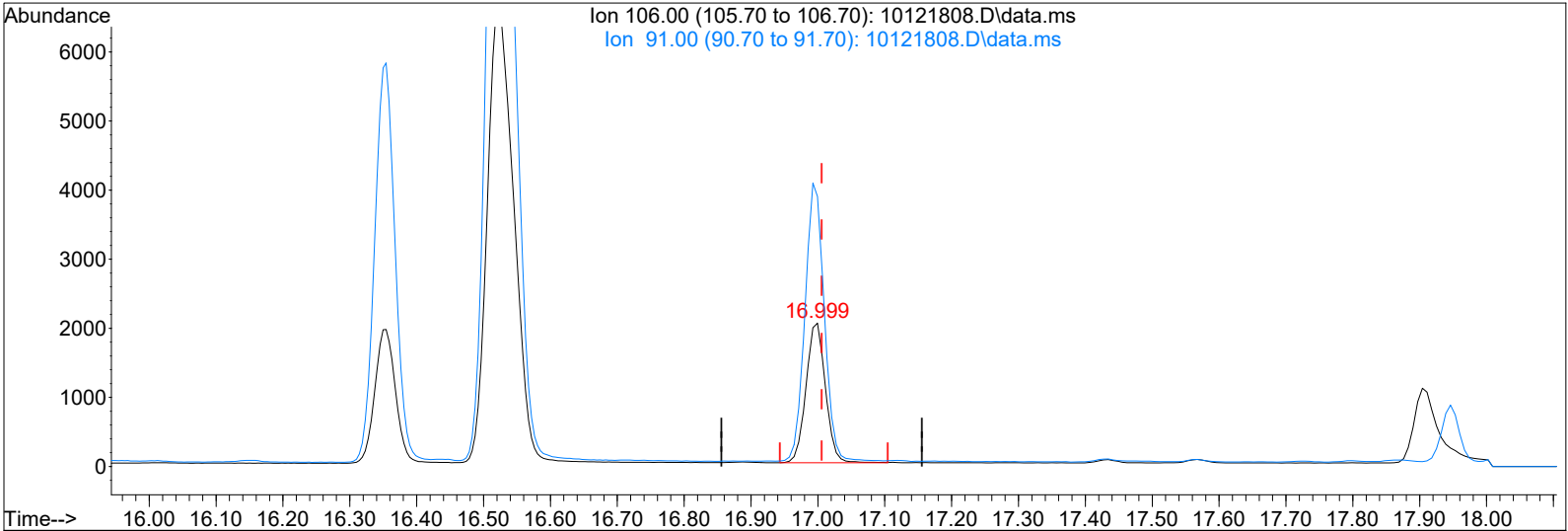
response 33459

Ion	Exp%	Act%
91.00	100	100
106.00	54.30	54.29
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121808.D
 Acq On : 12 Oct 2018 12:17
 Sample : P1805236-006 (400mL)
 Misc : S31-09241806

Vial: 8
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:06:39 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121808.D\data.ms

(43) o-Xylene (T)

16.999min (-0.006) 99.52pg

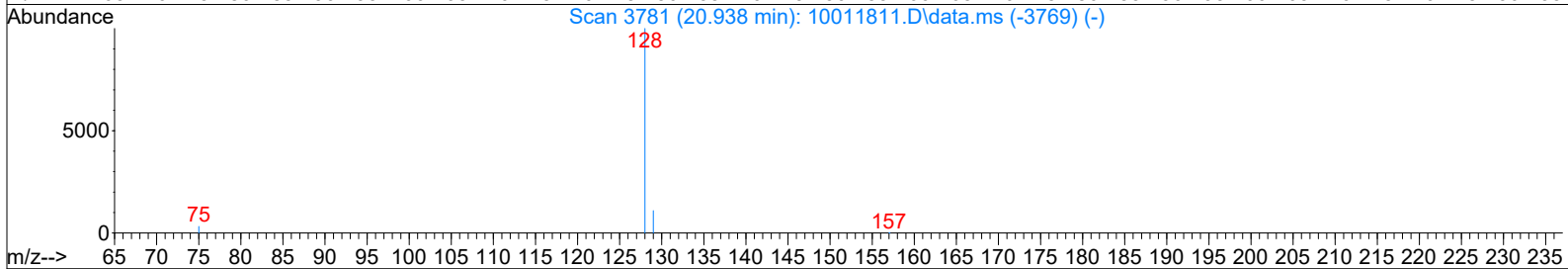
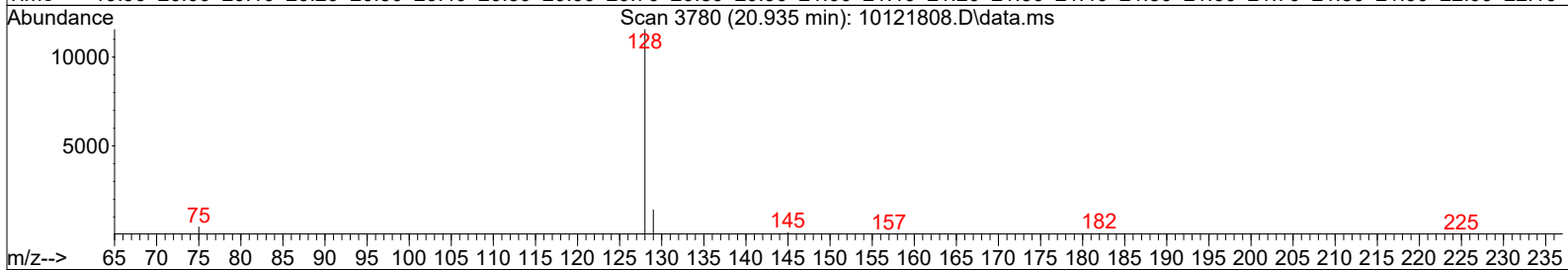
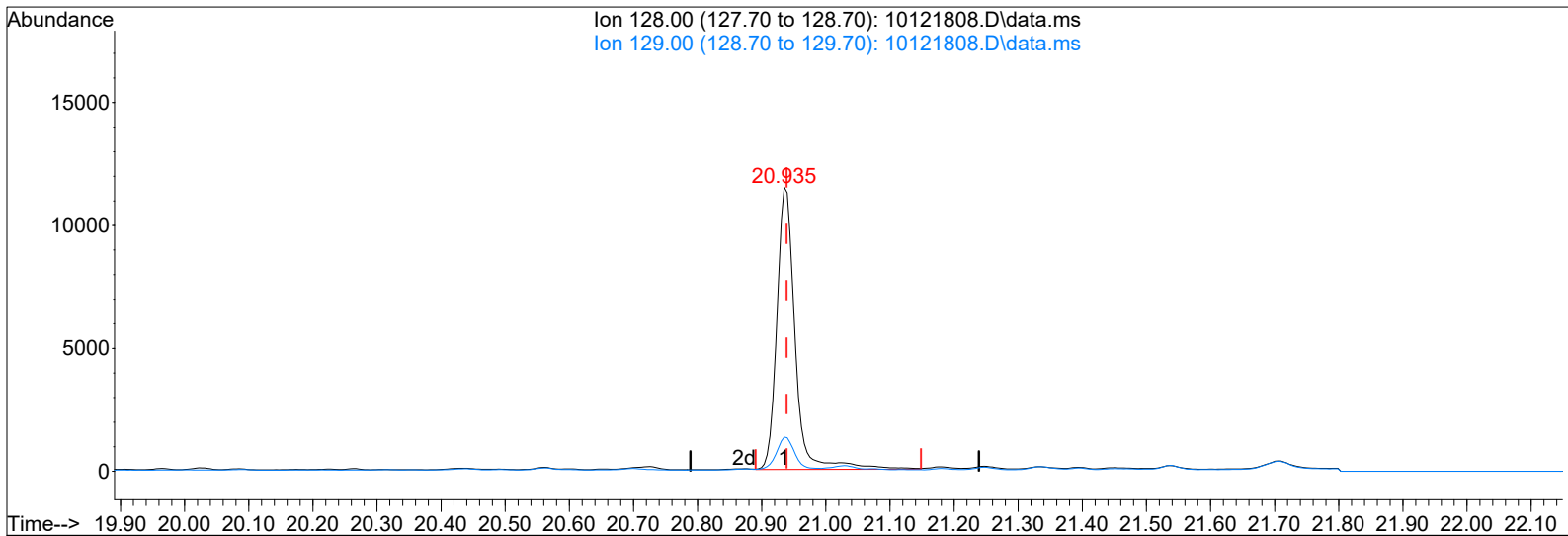
response 4061

Ion	Exp%	Act%
106.00	100	100
91.00	195.60	197.86
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121808.D
 Acq On : 12 Oct 2018 12:17
 Sample : P1805236-006 (400mL)
 Misc : S31-09241806

Vial: 8
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 13:06:39 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



TIC: 10121808.D\data.ms

(53) Naphthalene (T)

20.935min (-0.004) 228.06pg

response 22838

Ion	Exp%	Act%
128.00	100	100
129.00	10.80	11.38
0.00	0.00	0.00
0.00	0.00	0.00

Data File : I:\MS19\DATA\2018_10\12\10121804.D
 Acq On : 12 Oct 2018 4:49
 Sample : MB S19101218_1000mL
 Misc : S31-09241806_AS01329

Vial: 2
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 09:03:17 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

10/12/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	18092	1000.000	pg	-0.03
25) 1,4-Difluorobenzene (IS2)	11.58	114	77381	1000.000	pg	-0.02
38) Chlorobenzene-d5 (IS3)	15.92	54	10109	1000.000	pg	0.00

System Monitoring Compounds	R.T.	QIon	Response	Conc	Units	Dev(Min)
20) 1,2-Dichloroethane-d4 ...	10.40	65	21387	987.529	pg	-0.03
Spiked Amount 1000.000	Range 70	- 130	Recovery =	98.75%		
33) Toluene-d8 (SS2)	14.02	98	83222	1042.895	pg	-0.01
Spiked Amount 1000.000	Range 70	- 130	Recovery =	104.29%		
45) Bromofluorobenzene (SS3)	17.44	174	29303	1025.840	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	102.58%		

Target Compounds	R.T.	QIon	Response	Conc	Units	Dev(Min)	Qvalue
2) Dichlorodifluoromethan...	0.00	85	0	N.D.			
3) Chloromethane	0.00	52	0	N.D.			
4) 1,2-Dichloro,1,1,2,2-t...	0.00	85	0	N.D.			
5) Vinyl Chloride	0.00	62	0	N.D.			
6) 1,3-Butadiene	0.00	54	0	N.D.			
7) Bromomethane	5.36	94	84	4.777	pg		99
8) Chloroethane	0.00	64	0	N.D.			
9) Acrolein	6.15	56	205	19.362	pg		97
10) Acetone	6.30	58	3495	260.379	pg		99
11) Trichlorofluoromethane	0.00	101	0	N.D.			
12) 1,1-Dichloroethene	0.00	96	0	N.D.			
13) Methylene Chloride	0.00	84	0	N.D.			
14) Trichlorotrifluoroethane	0.00	151	0	N.D.			
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.			
16) 1,1-Dichloroethane	0.00	63	0	N.D.			
17) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.			
19) Chloroform	9.76	83	301	8.054	pg		100
21) 1,2-Dichloroethane	0.00	62	0	N.D.			
22) 1,1,1-Trichloroethane	0.00	97	0	N.D.			
23) Benzene	11.24	78	1025	10.917	pg		99
24) Carbon Tetrachloride	0.00	117	0	N.D.			
26) 1,2-Dichloropropane	0.00	63	0	N.D.			
27) Bromodichloromethane	0.00	83	0	N.D.			
28) Trichloroethene	0.00	130	0	N.D.			
29) 1,4-Dioxane	0.00	88	0	N.D.			
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.			
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.			
32) 1,1,2-Trichloroethane	0.00	83	0	N.D.			
34) Toluene	14.11	91	347	3.927	pg		98
35) Dibromochloromethane	0.00	129	0	N.D.			
36) 1,2-Dibromoethane	0.00	107	0	N.D.			
37) Tetrachloroethene	0.00	166	0	N.D.			
39) Chlorobenzene	0.00	112	0	N.D.			
40) Ethylbenzene	16.36	91	85	0.912	pg	#	41
41) m,p-Xylene	16.53	91	171	2.400	pg	#	93
42) Styrene	16.90	104	75	1.325	pg	#	30
43) o-Xylene	0.00	106	0	N.D.			
44) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.			
46) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.			
47) 1,2,4-Trimethylbenzene	18.66	105	61	0.767	pg	#	21
48) 1,3-Dichlorobenzene	18.81	146	62	1.194	pg	#	18
49) 1,4-Dichlorobenzene	18.88	146	82	1.572	pg	#	18
50) 1,2-Dichlorobenzene	19.20	146	52	1.043	pg	#	18
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.			
52) 1,2,4-Trichlorobenzene	20.83	182	110	3.729	pg	#	46
53) Naphthalene	20.95	128	421	4.528	pg	#	71

Data File : I:\MS19\DATA\2018_10\12\10121804.D
 Acq On : 12 Oct 2018 4:49
 Sample : MB S19101218_1000mL
 Misc : S31-09241806_AS01329

Vial: 2
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 09:03:17 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

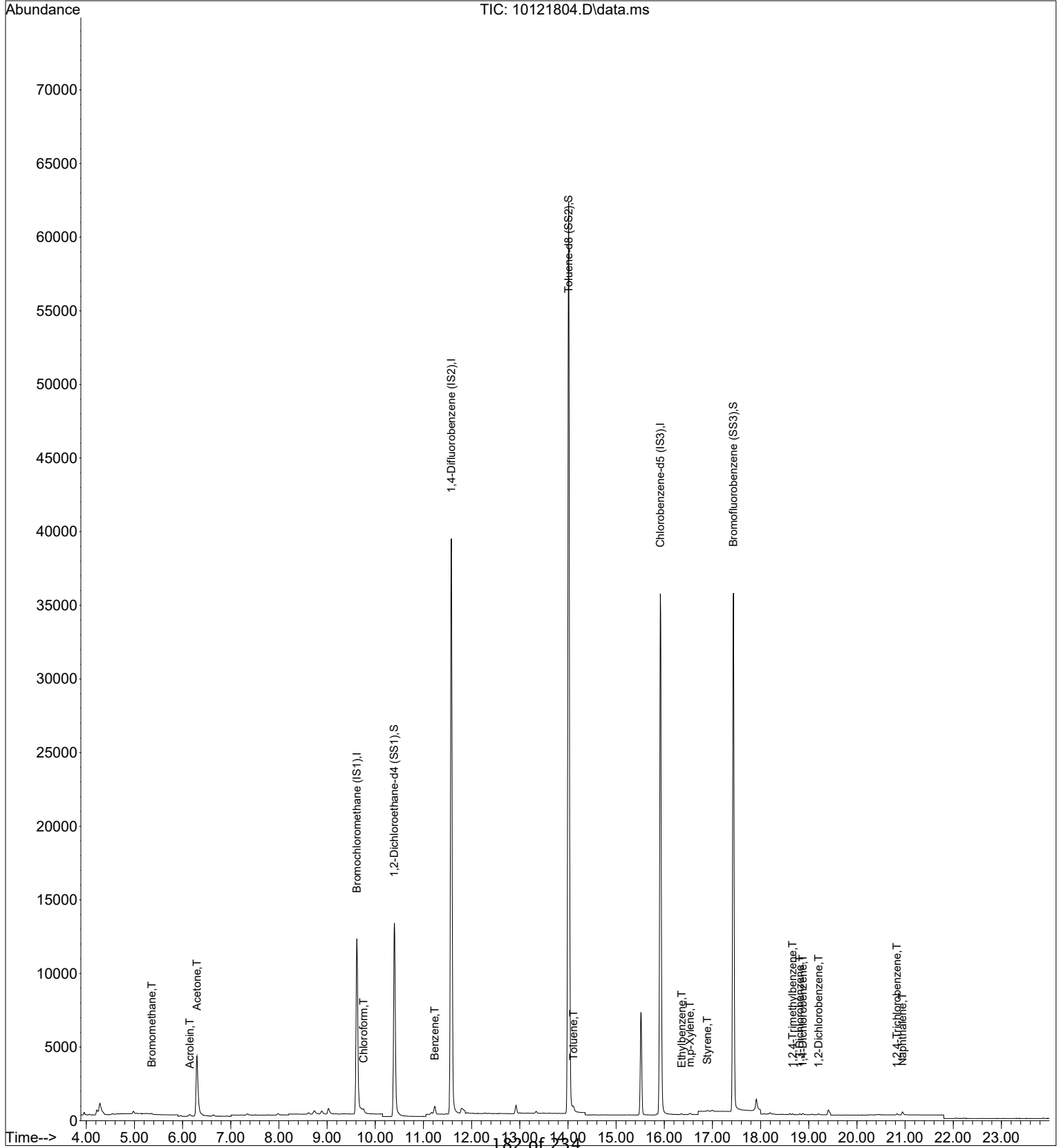
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\12\10121804.D
 Acq On : 12 Oct 2018 4:49
 Sample : MB S19101218_1000mL
 Misc : S31-09241806_AS01329

Vial: 2
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 09:03:17 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2018_10\12\10121805.D
 Acq On : 12 Oct 2018 5:20
 Sample : LCS S19101218_1000pg
 Misc : S31-09241806/S31-10021801 (11/1)

Vial: 2
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 09:03:18 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

10/12/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	18769	1000.000	pg	-0.03
25) 1,4-Difluorobenzene (IS2)	11.58	114	86003	1000.000	pg	-0.02
38) Chlorobenzene-d5 (IS3)	15.92	54	10717	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	21854	972.694	pg	-0.03
Spiked Amount	1000.000	Range 70 - 130	Recovery =	97.27%		
33) Toluene-d8 (SS2)	14.02	98	88576	998.710	pg	-0.01
Spiked Amount	1000.000	Range 70 - 130	Recovery =	99.87%		
45) Bromofluorobenzene (SS3)	17.43	174	33317	1100.192	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery =	110.02%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.31	85	40375	1009.573	pg	100
3) Chloromethane	4.52	52	9142	977.608	pg	99
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	26677	925.376	pg	100
5) Vinyl Chloride	4.81	62	25960	999.644	pg	100
6) 1,3-Butadiene	5.00	54	17852	909.342	pg	98
7) Bromomethane	5.32	94	17714	970.945	pg	100
8) Chloroethane	5.55	64	13293	978.310	pg	100
9) Acrolein	6.11	56	10135	922.728	pg	100
10) Acetone	6.26	58	65719	4719.482	pg	100
11) Trichlorofluoromethane	6.48	101	31105	994.529	pg	100
12) 1,1-Dichloroethene	7.20	96	22297	1007.400	pg	99
13) Methylene Chloride	7.33	84	23234	1002.099	pg	99
14) Trichlorotrifluoroethane	7.66	151	23168	1056.921	pg	100
15) trans-1,2-Dichloroethene	8.36	96	23556	1022.948	pg	99
16) 1,1-Dichloroethane	8.58	63	36103	1004.533	pg	100
17) Methyl tert-Butyl Ether	8.65	73	62384	1025.062	pg	100
18) cis-1,2-Dichloroethene	9.46	96	24999	1019.977	pg	100
19) Chloroform	9.75	83	37522	967.730	pg	100
21) 1,2-Dichloroethane	10.51	62	24246	1011.013	pg	99
22) 1,1,1-Trichloroethane	10.78	97	33406	1015.777	pg	100
23) Benzene	11.23	78	95411	979.499	pg	100
24) Carbon Tetrachloride	11.39	117	30821	1026.737	pg	100
26) 1,2-Dichloropropane	12.05	63	21794	1017.417	pg	100
27) Bromodichloromethane	12.22	83	29320	1031.149	pg	100
28) Trichloroethene	12.28	130	28178	1048.577	pg	100
29) 1,4-Dioxane	12.25	88	19537	1062.668	pg	99
30) cis-1,3-Dichloropropene	13.12	75	34154	1021.392	pg	100
31) trans-1,3-Dichloropropene	13.63	75	29045	1031.913	pg	100
32) 1,1,2-Trichloroethane	13.81	83	19346	1035.871	pg	100
34) Toluene	14.11	91	98968	1007.837	pg	100
35) Dibromochloromethane	14.53	129	27236	1035.330	pg	100
36) 1,2-Dibromoethane	14.78	107	26198	1039.595	pg	100
37) Tetrachloroethene	15.27	166	30108	1041.907	pg	99
39) Chlorobenzene	15.97	112	68811	1060.542	pg	100
40) Ethylbenzene	16.35	91	105849	1071.316	pg	100
41) m,p-Xylene	16.53	91	167893	2222.429	pg	100
42) Styrene	16.89	104	67340	1122.240	pg	100
43) o-Xylene	17.00	106	44609	1110.691	pg	100
44) 1,1,2,2-Tetrachloroethane	16.97	83	40214	1043.477	pg	100
46) 1,3,5-Trimethylbenzene	18.27	105	96110	1137.764	pg	100
47) 1,2,4-Trimethylbenzene	18.66	105	96524	1145.432	pg	100
48) 1,3-Dichlorobenzene	18.81	146	60005	1089.955	pg	100
49) 1,4-Dichlorobenzene	18.87	146	58926	1065.841	pg	100
50) 1,2-Dichlorobenzene	19.19	146	58550	1108.248	pg	100
51) 1,2-Dibromo-3-chloropr...	19.61	157	20221	1110.017	pg	99
52) 1,2,4-Trichlorobenzene	20.82	182	34643	1107.673	pg	100
53) Naphthalene	20.93	128	106311	1078.568	pg	100

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Data File : I:\MS19\DATA\2018_10\12\10121805.D
 Acq On : 12 Oct 2018 5:20
 Sample : LCS S19101218_1000pg
 Misc : S31-09241806/S31-10021801 (11/1)

Vial: 2
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 09:03:18 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

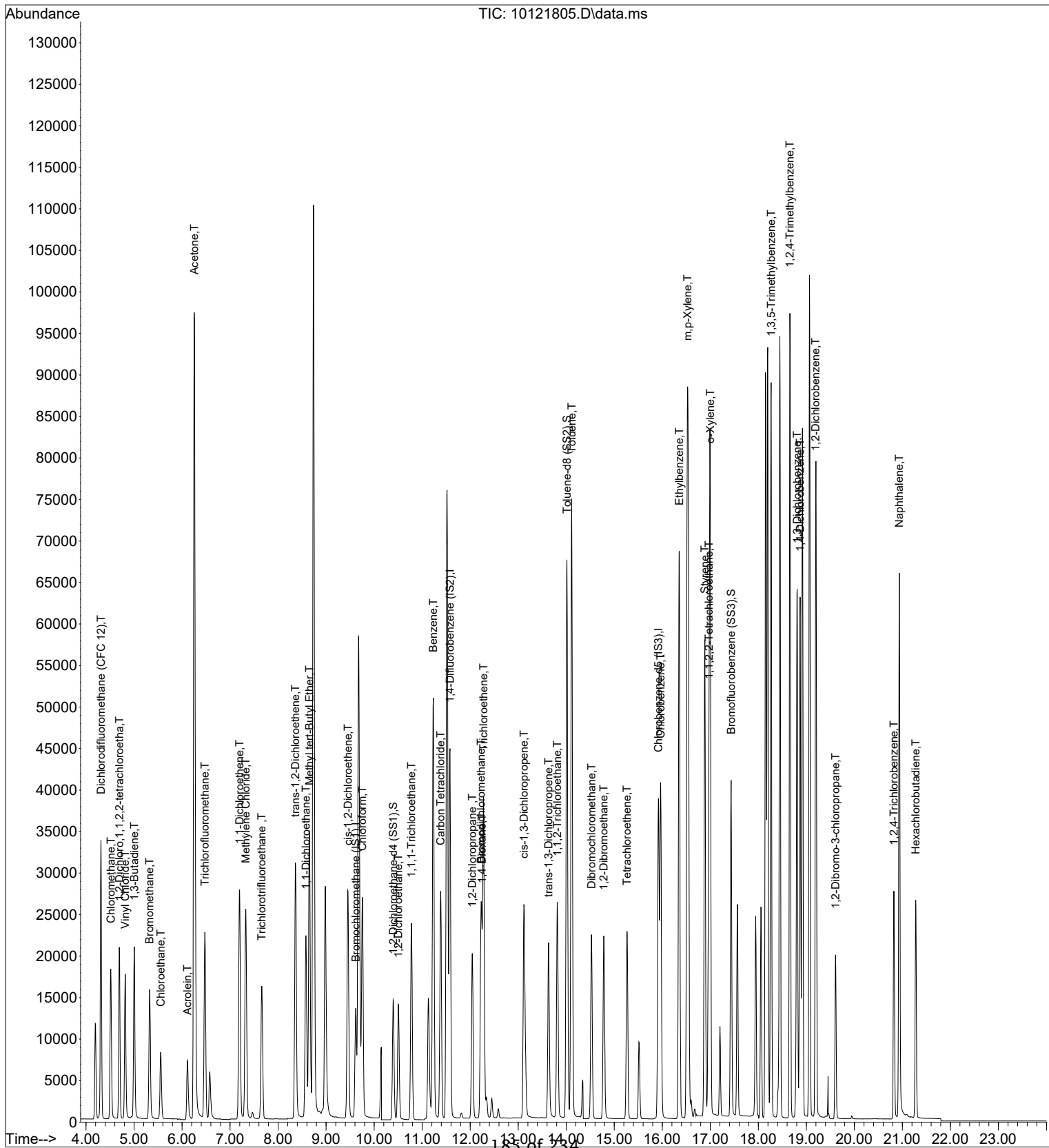
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.28	225	25220	1097.342	pg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\12\10121805.D
 Acq On : 12 Oct 2018 5:20
 Sample : LCS S19101218_1000pg
 Misc : S31-09241806/S31-10021801 (11/1)

Vial: 2
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 09:03:18 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Method Path : I:\MS19\METHODS\
Method File : S19100118.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Oct 02 06:45:50 2018
Response Via : Initial Calibration

Calibration Files

20 =10011807.D 50 =10011808.D 100 =10011809.D 500 =10011810.D 1000 =10011811.D 2000 =10011812.D 5000 =10011813.D
10K =10011814.D 25K =10011815.D 50K =10011816.D

Compound	20	50	100	500	1000	2000	5000	10K	25K	50K	AVG	%RSD
-----ISTD-----												
1) I Bromochloromethane...	2.473	2.247	2.130	2.080	2.439	2.198	1.952	1.896	2.033	1.858	2.131	9.94
2) T Dichlorodifluo...	0.600	0.542	0.492	0.397	0.562	0.507	0.452	0.440	0.514	0.477	0.498	12.16
3) T Chloromethane	1.777	1.607	1.518	1.477	1.732	1.565	1.396	1.355	1.486	1.446	1.536	8.92
4) T 1,2-Dichloro,1...	1.557	1.431	1.353	1.333	1.559	1.420	1.266	1.248	1.379	1.289	1.384	7.95
5) T Vinyl Chloride	1.161	0.966	0.920	0.864	1.240	1.071	0.924	0.899	1.240	1.175	1.046	14.18
6) T 1,3-Butadiene	1.243	1.026	0.948	0.882	1.073	0.971	0.874	0.852	0.949	0.903	0.972	12.11
7) T Bromomethane	0.828	0.740	0.705	0.688	0.809	0.735	0.663	0.653	0.728	0.689	0.724	7.99
8) T Chloroethane	0.784	0.634	0.563	0.570	0.609	0.572	0.520	0.511	0.558	0.531	0.585	13.57
9) T Acrolein	0.943	0.764	0.764	0.807	0.732	0.659	0.637	0.650	0.742	0.650	0.742	14.74
10) T Acetone	1.912	1.712	1.618	1.580	1.869	1.697	1.559	1.525	1.659	1.532	1.666	8.10
11) T Trichlorofluor...	1.295	1.147	1.099	1.105	1.323	1.233	1.125	1.110	1.222	1.132	1.179	7.04
12) T 1,1-Dichloroet...	1.438	1.256	1.188	1.166	1.372	1.259	1.150	1.133	1.240	1.151	1.235	8.23
13) T Methylene Chlo...	1.358	1.251	1.095	0.981	1.364	1.244	1.079	1.007	1.195	1.106	1.168	11.63
14) T Trichlorotrifl...	1.316	1.183	1.150	1.153	1.373	1.273	1.176	1.170	1.283	1.191	1.227	6.37
15) T trans-1,2-Dich...	2.134	1.927	1.818	1.770	2.172	1.989	1.801	1.782	1.960	1.796	1.915	7.72
16) T 1,1-Dichloroet...	3.208	2.921	2.818	2.989	3.716	3.469	3.234	3.222	3.560	3.288	3.243	8.77
17) T Methyl tert-Bu...	1.367	1.246	1.206	1.230	1.479	1.372	1.271	1.255	1.369	1.263	1.306	6.60
18) T cis-1,2-Dichlo...	2.744	2.130	1.901	2.238	2.051	1.862	1.830	1.998	1.838	2.066	14.06	
19) T Chloroform	1.189	1.195	1.209	1.219	1.187	1.196	1.195	1.203	1.188	1.190	1.197	0.86
20) S 1,2-Dichloroet...	1.355	1.255	1.218	1.231	1.455	1.342	1.226	1.205	1.299	1.192	1.278	6.57
21) T 1,2-Dichloroet...	1.924	1.750	1.667	1.669	1.987	1.814	1.659	1.635	1.780	1.638	1.752	7.10
22) T 1,1,1-Trichlor...	7.432	5.606	4.900	4.761	5.550	5.114	4.625	4.523	4.896	4.490	5.190	16.92
23) T Benzene	1.750	1.595	1.497	1.498	1.808	1.663	1.521	1.499	1.645	1.518	1.599	7.10
24) T Carbon Tetrach...	-----ISTD-----											
25) I 1,4-Difluorobenzen...	0.287	0.253	0.240	0.231	0.281	0.257	0.236	0.230	0.248	0.227	0.249	8.45
26) T 1,2-Dichloropr...	0.370	0.337	0.316	0.305	0.371	0.342	0.315	0.307	0.335	0.307	0.331	7.54
27) T Bromodichlorom...	0.355	0.314	0.297	0.290	0.353	0.324	0.296	0.287	0.316	0.293	0.312	7.99
28) T Trichloroethene	0.224	0.199	0.191	0.196	0.247	0.229	0.213	0.207	0.223	0.210	0.214	7.97
29) T 1,4-Dioxane	0.399	0.355	0.344	0.357	0.440	0.414	0.391	0.385	0.418	0.384	0.389	7.82
30) T cis-1,3-Dichlo...	0.295	0.282	0.271	0.301	0.370	0.354	0.340	0.339	0.373	0.347	0.327	11.31
31) T trans-1,3-Dich...	0.242	0.221	0.209	0.203	0.246	0.226	0.206	0.200	0.218	0.201	0.217	7.70
32) T 1,1,2-Trichlor...	1.055	1.042	1.035	1.031	1.020	1.019	1.025	1.029	1.027	1.030	1.031	1.03
33) S Toluene-d8 (SS2)	1.377	1.171	1.091	1.064	1.272	1.170	1.077	1.044	1.129	1.024	1.142	9.69
34) T Toluene	0.338	0.299	0.284	0.281	0.343	0.320	0.296	0.289	0.317	0.293	0.306	7.26
35) T Dibromochlorom...	0.317	0.285	0.273	0.275	0.329	0.307	0.283	0.278	0.302	0.280	0.293	6.65
36) T 1,2-Dibromoethane	0.389	0.352	0.329	0.316	0.377	0.345	0.313	0.303	0.330	0.304	0.336	8.87
37) T Tetrachloroethene	-----ISTD-----											
38) I Chlorobenzene-d5 (...)	7.143	6.485	6.096	5.893	7.105	6.497	5.856	5.507	5.484	4.475	6.054	13.33
39) T Chlorobenzene	0.961	0.874	0.833	0.892	1.114	1.045	0.963	0.909	0.902	0.726	0.922	E1 11.72
40) T Ethylbenzene	7.148	6.339	6.157	6.958	8.758	8.115	7.393	6.946	6.863	5.815	7.049	12.57
41) T m,p-Xylene	-----ISTD-----											

10/2/18

Method Path : I:\MS19\METHODS\
 Method File : S19100118.M

Title	: EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)											
42) T Styrene	4.809	4.551	4.583	5.588	6.858	6.566	6.164	5.868	6.074	4.930	5.599	14.99
43) T o-Xylene	3.672	3.480	3.417	3.747	4.661	4.297	3.905	3.659	3.662	2.977	3.748	12.44
44) T 1,1,2,2-Tetrac...	4.035	3.702	3.522	3.523	4.327	3.981	3.583	3.359	3.279	2.650	3.596	12.94
45) S Bromofluoroben...	2.852	2.867	2.904	3.004	3.011	2.992	2.971	2.843	2.557	2.255	2.826	8.51
46) T 1,3,5-Trimethy...	0.712	0.699	0.706	0.792	1.008	0.922	0.839	0.788	0.787	0.629	0.788	E1 14.32
47) T 1,2,4-Trimethy...	0.694	0.691	0.704	0.800	1.015	0.937	0.847	0.791	0.776	0.608	0.786	E1 15.58
48) T 1,3-Dichlorobe...	5.469	5.156	4.996	5.127	6.210	5.722	5.138	4.806	4.807	3.938	5.137	11.75
49) T 1,4-Dichlorobe...	5.534	5.296	5.083	5.118	6.178	5.636	5.106	4.803	4.823	4.010	5.159	11.18
50) T 1,2-Dichlorobe...	5.355	4.983	4.834	4.861	5.998	5.503	4.940	4.614	4.511	3.698	4.930	12.58
51) T 1,2-Dibromo-3-...	1.549	1.547	1.549	1.680	2.055	1.980	1.829	1.731	1.674	1.406	1.700	12.06
52) T 1,2,4-Trichlor...	2.814	2.746	2.593	2.776	3.010	3.435	3.187	3.017	3.007	2.597	2.918	9.10
53) T Naphthalene	0.792	0.780	0.748	0.863	0.930	1.119	1.032	0.973	1.068	0.892	0.920	E1 13.87
54) T Hexachlorobuta...	2.386	2.325	2.218	2.163	1.879	2.460	2.217	2.084	1.999	1.714	2.145	10.79

(#) = Out of Range

10/4/18

Primary Source Standards Concentrations (Working & Initial Calibration)

Compounds	Source Std. mg/m ³	Dilution Factors:					Primary Working Standards					Working STD Conc.(ng/L)	Injection (L)	ICAL Points:	
		200ng/L	50	250	1000	5000	20ng/L	4ng/L	1ng/L	0.2ng/L	0.05ng/L				
Propene	1.031	206.2	20.62	4.124	1.031	0.2062									
Dichlorodifluoromethane	1.045	209.0	20.90	4.180	1.045	0.2090									
Chloromethane	1.008	201.6	20.16	4.032	1.008	0.2016									
Freon-114	1.028	205.6	20.56	4.112	1.028	0.2056									
Vinyl Chloride	1.051	210.2	21.02	4.204	1.051	0.2102									
1,3-Butadiene	1.049	209.8	20.98	4.196	1.049	0.2098									
Bromomethane	1.009	201.8	20.18	4.036	1.009	0.2018									
Chloroethane	1.022	204.4	20.44	4.088	1.022	0.2044									
Ethanol	5.140	1028.0	102.80	20.560	5.140	1.0280									
Acetonitrile	1.033	206.6	20.66	4.132	1.033	0.2066									
Acrolein	1.028	205.6	20.56	4.112	1.028	0.2056									
Acetone	5.370	1074.0	107.40	21.480	5.370	1.0740									
Trichlorofluoromethane	1.060	212.0	21.20	4.240	1.060	0.2120									
Isopropanol	2.063	412.6	41.26	8.252	2.063	0.4126									
Acrylonitrile	1.034	206.8	20.68	4.136	1.034	0.2068									
1,1-Dichloroethene	1.074	214.8	21.48	4.296	1.074	0.2148									
tert-Butanol	2.144	428.8	42.88	8.576	2.144	0.4288									
Methylene Chloride	1.070	214.0	21.40	4.280	1.070	0.2140									
Allyl Chloride	1.067	213.4	21.34	4.268	1.067	0.2134									
Trichlorotrifluoroethane	1.065	213.0	21.30	4.260	1.065	0.2130									
Carbon Disulfide	1.075	215.0	21.50	4.300	1.075	0.2150									
trans-1,2-Dichloroethene	1.062	212.4	21.24	4.248	1.062	0.2124									
1,1-Dichloroethane	1.030	206.0	20.60	4.120	1.030	0.2060									
Methyl tert-Butyl Ether	1.089	217.8	21.78	4.356	1.089	0.2178									
Vinyl Acetate	5.252	1050.4	105.04	21.008	5.252	1.0504									
2-Butanone	1.027	205.4	20.54	4.108	1.027	0.2054									
cis-1,2-Dichloroethene	1.054	210.8	21.08	4.216	1.054	0.2108									
Diisopropyl Ether	1.081	216.2	21.62	4.324	1.081	0.2162									
Ethyl Acetate	2.166	433.2	43.32	8.664	2.166	0.4332									
n-Hexane	1.082	216.4	21.64	4.328	1.082	0.2164									
Chloroform	1.077	215.4	21.54	4.308	1.077	0.2154									
Tetrahydrofuran	1.068	213.6	21.36	4.272	1.068	0.2136									
Ethyl tert-Butyl Ether	1.060	212.0	21.20	4.240	1.060	0.2120									
1,2-Dichloroethane	1.061	212.2	21.22	4.244	1.061	0.2122									
1,1,1-Trichloroethane	1.081	216.2	21.62	4.324	1.081	0.2162									
Isopropyl Acetate	2.066	413.2	41.32	8.264	2.066	0.4132									
1-Butanol	2.067	413.4	41.34	8.268	2.067	0.4134									
Benzene	1.033	206.6	20.66	4.132	1.033	0.2066									
Carbon Tetrachloride	1.036	207.2	20.72	4.144	1.036	0.2072									
Cyclohexane	2.087	417.4	41.74	8.348	2.087	0.4174									
tert-Amyl Methyl Ether	1.074	214.8	21.48	4.296	1.074	0.2148									
1,2-Dichloropropane	1.073	214.6	21.46	4.292	1.073	0.2146									
Bromodichloromethane	1.068	213.6	21.36	4.272	1.068	0.2136									
Trichloroethene	1.062	212.4	21.24	4.248	1.062	0.2124									
1,4-Dioxane	1.064	212.8	21.28	4.256	1.064	0.2128									
Isocyclohexane	1.061	212.2	21.22	4.244	1.061	0.2122									
Methyl Methacrylate	2.135	427.0	42.70	8.540	2.135	0.4270									
n-Heptane	1.076	215.2	21.52	4.304	1.076	0.2152									
cis-1,3-Dichloropropene	1.120	224.0	22.40	4.480	1.120	0.2240									

Primary Source Standards Concentrations (Working & Initial Calibration)

Compounds	Dilution Factors:					Primary Working Standards					Working STD Conc.(ng/L): Injection (L): ICAL Points:	NA	1	0.020	0.050	0.100	0.250	20	0.050	0.100	0.250	20	0.500	200	0.125	250	500
	Source Std. mg/m ³	200ng/L	50ng/L	250ng/L	1000ng/L	5000ng/L	20ng/L	4ng/L	1ng/L	0.2ng/L																	
4-Methyl-2-pentanone	1.060	212.0	21.20	4.240	1.060	0.2120																					
trans-1,3-Dichloropropene	1.055	211.0	21.10	4.220	1.055	0.2110																					
1,1,2-Trichloroethane	1.076	215.2	21.52	4.304	1.076	0.2152																					
Toluene	1.062	210.4	21.04	4.208	1.062	0.2104																					
2-Hexanone	1.074	214.8	21.48	4.296	1.074	0.2148																					
Dibromochloromethane	1.075	215.0	21.50	4.300	1.075	0.2150																					
1,2-Dibromoethane	1.076	215.2	21.52	4.304	1.076	0.2152																					
n-Butyl Acetate	1.085	217.0	21.70	4.340	1.085	0.2170																					
n-Octane	1.076	215.2	21.52	4.304	1.076	0.2152																					
Tetrachloroethene	1.058	211.6	21.16	4.232	1.058	0.2116																					
Chlorobenzene	1.066	213.2	21.32	4.264	1.066	0.2132																					
Ethylbenzene	1.033	206.6	20.66	4.132	1.033	0.2066																					
m- <i>p</i> -Xylene	2.123	424.6	42.46	8.492	2.123	0.4246																					
Bromoforn	1.063	212.6	21.26	4.252	1.063	0.2126																					
Styrene	1.060	212.0	21.20	4.240	1.060	0.2120																					
o-Xylene	1.062	212.4	21.24	4.248	1.062	0.2124																					
n-Nonane	1.071	214.2	21.42	4.284	1.071	0.2142																					
1,1,2,2-Tetrachloroethane	1.064	212.8	21.28	4.256	1.064	0.2128																					
Cumene	1.057	211.4	21.14	4.228	1.057	0.2114																					
alpha-Pinene	1.035	207.0	20.70	4.140	1.035	0.2070																					
n-Propylbenzene	1.076	215.2	21.52	4.304	1.076	0.2152																					
3-Ethyltoluene	1.062	212.4	21.24	4.248	1.062	0.2124																					
4-Ethyltoluene	1.061	212.2	21.22	4.244	1.061	0.2122																					
1,3,5-Trimethylbenzene	1.057	211.4	21.14	4.228	1.057	0.2114																					
alpha-Methylstyrene	1.058	211.6	21.16	4.232	1.058	0.2116																					
2-Ethyltoluene	1.072	214.4	21.44	4.288	1.072	0.2144																					
1,2,4-Trimethylbenzene	1.068	213.6	21.36	4.272	1.068	0.2136																					
n-Decane	1.076	215.2	21.52	4.304	1.076	0.2152																					
Benzyl Chloride	1.051	210.2	21.02	4.204	1.051	0.2102																					
1,3-Dichlorobenzene	1.080	216.0	21.60	4.320	1.080	0.2160																					
1,4-Dichlorobenzene	1.081	216.2	21.62	4.324	1.081	0.2162																					
sec-Butylbenzene	1.063	212.6	21.26	4.252	1.063	0.2126																					
p-Isopropyltoluene	1.042	208.4	20.84	4.168	1.042	0.2084																					
1,2,3-Trimethylbenzene	1.042	208.4	20.84	4.168	1.042	0.2084																					
1,2-Dichlorobenzene	1.089	217.8	21.78	4.356	1.089	0.2178																					
d-Limonene	1.010	202.0	20.20	4.040	1.010	0.2020																					
1,2-Dibromo-3-chloropropane	1.042	208.4	20.84	4.168	1.042	0.2084																					
n-Undecane	1.057	211.4	21.14	4.228	1.057	0.2114																					
1,2,4-Trichlorobenzene	1.064	212.8	21.28	4.256	1.064	0.2128																					
Naphthalene	1.025	205.0	20.50	4.100	1.025	0.2050																					
n-Dodecane	1.031	206.2	20.62	4.124	1.031	0.2062																					
Hexachloro-1,3-butadiene	1.053	210.6	21.06	4.212	1.053	0.2106																					
Methacrylonitrile	1.041	208.2	20.82	4.164	1.041	0.2082																					
Cyclohexanone	0.982	196.4	19.64	3.928	0.982	0.1964																					
tert-Butylbenzene	1.067	213.4	21.34	4.268	1.067	0.2134																					
n-Butylbenzene	1.064	212.8	21.28	4.256	1.064	0.2128																					

Method : I:\MS19\METHODS\S19100118.M (RTE Integrator)
 Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 Last Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration

#	ID	Conc	ISTD Conc	Path\File
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3	50	1000	1000	I:\MS19\DATA\2018_10\01\10011808.D
4	100	1000	1000	I:\MS19\DATA\2018_10\01\10011809.D
5	500	1000	1000	I:\MS19\DATA\2018_10\01\10011810.D
6	1000	1000	1000	I:\MS19\DATA\2018_10\01\10011811.D
7	2000	1000	1000	I:\MS19\DATA\2018_10\01\10011812.D
8	5000	1000	1000	I:\MS19\DATA\2018_10\01\10011813.D
9	10K	1000	1000	I:\MS19\DATA\2018_10\01\10011814.D
10	25K	1000	1000	I:\MS19\DATA\2018_10\01\10011815.D
11	50K	1000	1000	I:\MS19\DATA\2018_10\01\10011816.D

~~DA~~ 10/2/18

#	ID	Update Time	Quant Time	Acquisition Time
2	20	Oct 02 06:44 2018	Oct 01 15:35 2018	1 Oct 2018 12:11
3	50	Oct 02 06:44 2018	Oct 01 15:35 2018	1 Oct 2018 13:09
4	100	Oct 02 06:44 2018	Oct 01 15:35 2018	1 Oct 2018 13:44
5	500	Oct 02 06:44 2018	Oct 01 15:35 2018	1 Oct 2018 14:21
6	1000	Oct 02 06:44 2018	Oct 01 15:35 2018	1 Oct 2018 14:52
7	2000	Oct 02 06:45 2018	Oct 02 06:40 2018	1 Oct 2018 15:36
8	5000	Oct 02 06:45 2018	Oct 02 06:40 2018	1 Oct 2018 16:08
9	10K	Oct 02 06:45 2018	Oct 02 06:40 2018	1 Oct 2018 16:39
10	25K	Oct 02 06:45 2018	Oct 02 06:40 2018	1 Oct 2018 17:11
11	50K	Oct 02 06:45 2018	Oct 02 06:40 2018	1 Oct 2018 17:43

S19100118.M

Tue Oct 02 09:00:05 2018

Data File : I:\MS19\DATA\2018_10\01\10011807.D
 Acq On : 1 Oct 2018 12:11
 Sample : 20pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271803 (10/26)

Vial: 13
 Operator: WA
 Inst : MS19

Quant Time: Oct 01 15:35:06 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

~~10/1~~ 10/2/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	20699	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.58	114	88774	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.92	54	11242	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	24610	924.137	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	92.41%
33) Toluene-d8 (SS2)	14.02	98	93636	989.835	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	98.98%
45) Bromofluorobenzene (SS3)	17.43	174	32067	1038.075	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	103.81%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.34	85	1073	25.626	pg	100
3) Chloromethane	4.55	52	250	24.961	pg	97
4) 1,2-Dichloro,1,1,2,2-t...	4.73	85	751	24.924	pg	99
5) Vinyl Chloride	4.85	62	665	23.916	pg	94
6) 1,3-Butadiene	5.04	54	509	25.518	pg	# 72
7) Bromomethane	5.36	94	511	27.857	pg	100
8) Chloroethane	5.59	64	347	24.289	pg	98
9) Acrolein	6.15	56	342	32.266	pg	98
10) Acetone	6.30	58	4028	262.547	pg	96
11) Trichlorofluoromethane	6.50	101	832	25.754	pg	98
12) 1,1-Dichloroethene	7.22	96	569	25.301	pg	98
13) Methylene Chloride	7.34	84	630	26.254	pg	98
14) Trichlorotrifluoroethane	7.67	151	592	27.300	pg	100
15) trans-1,2-Dichloroethene	8.38	96	589	25.118	pg	99
16) 1,1-Dichloroethane	8.58	63	903	23.963	pg	99
17) Methyl tert-Butyl Ether	8.69	73	1421	23.047	pg	99
18) cis-1,2-Dichloroethene	9.46	96	604	24.436	pg	98
19) Chloroform	9.76	83	1443	36.144	pg	99
21) 1,2-Dichloroethane	10.51	62	592	23.286	pg	98
22) 1,1,1-Trichloroethane	10.78	97	858	25.546	pg	100
23) Benzene	11.24	78	3252	33.579	pg	100
24) Carbon Tetrachloride	11.39	117	768	27.434	pg	100
26) 1,2-Dichloropropane	12.05	63	544	26.450	pg	98
27) Bromodichloromethane	12.23	83	701	26.064	pg	97
28) Trichloroethene	12.28	130	668	27.141	pg	99
29) 1,4-Dioxane	12.27	88	422	24.440	pg	98
30) cis-1,3-Dichloropropene	13.13	75	793	25.244	pg	99
31) trans-1,3-Dichloropropene	13.64	75	559	21.205	pg	95
32) 1,1,2-Trichloroethane	13.82	83	458	25.914	pg	97
34) Toluene	14.11	91	2576	28.067	pg	98
35) Dibromochloromethane	14.53	129	637	26.654	pg	98
36) 1,2-Dibromoethane	14.79	107	599	25.485	pg	99
37) Tetrachloroethene	15.27	166	735	27.998	pg	99
39) Chlorobenzene	15.97	112	1712	31.025	pg	99
40) Ethylbenzene	16.35	91	2274	27.046	pg	99
41) m,p-Xylene	16.53	91	3412	52.899	pg	98
42) Styrene	16.89	104	1144	24.398	pg	100
43) o-Xylene	17.00	106	871	25.815	pg	90
44) 1,1,2,2-Tetrachloroethane	16.97	83	959	29.198	pg	98
46) 1,3,5-Trimethylbenzene	18.27	105	1680	24.039	pg	100
47) 1,2,4-Trimethylbenzene	18.66	105	1639	23.610	pg	99
48) 1,3-Dichlorobenzene	18.81	146	1317	28.883	pg	100
49) 1,4-Dichlorobenzene	18.87	146	1324	28.951	pg	97
50) 1,2-Dichlorobenzene	19.20	146	1304	29.943	pg	100
51) 1,2-Dibromo-3-chloropr...	19.61	157	366	25.182	pg	88
52) 1,2,4-Trichlorobenzene	20.83	182	694	26.181	pg	95
53) Naphthalene	20.94	128	1881	20.946	pg	97

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Data File : I:\MS19\DATA\2018_10\01\10011807.D
 Acq On : 1 Oct 2018 12:11
 Sample : 20pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271803 (10/26)

Vial: 13
 Operator: WA
 Inst : MS19

Quant Time: Oct 01 15:35:06 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

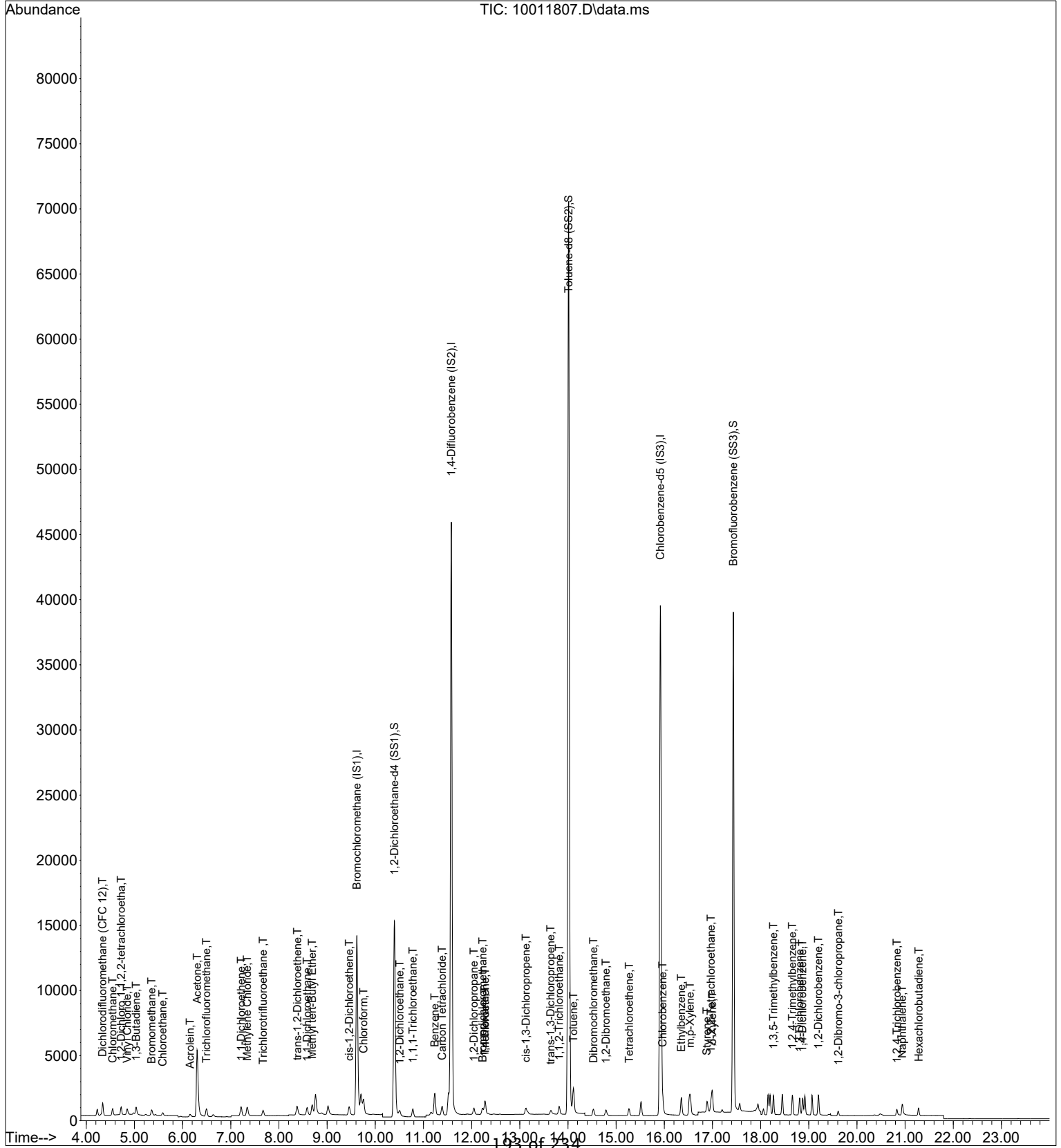
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.28	225	567	28.841	pg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\01\10011807.D
 Acq On : 1 Oct 2018 12:11
 Sample : 20pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271803 (10/26)

Vial: 13
 Operator: WA
 Inst : MS19

Quant Time: Oct 01 15:35:06 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2018_10\01\10011808.D
 Acq On : 1 Oct 2018 13:09
 Sample : 50pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271803 (10/26)

Vial: 13
 Operator: WA
 Inst : MS19

Quant Time: Oct 01 15:35:09 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

WA 10/2/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	20108	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.58	114	87937	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.92	54	10970	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	24026	928.724	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	92.87%		
33) Toluene-d8 (SS2)	14.02	98	91636	977.913	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	97.79%		
45) Bromofluorobenzene (SS3)	17.43	174	31447	1043.246	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	104.33%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.34	85	2368	58.216	pg	99
3) Chloromethane	4.55	52	548	56.322	pg	99
4) 1,2-Dichloro,1,1,2,2-t...	4.73	85	1650	56.370	pg	100
5) Vinyl Chloride	4.85	62	1485	54.976	pg	99
6) 1,3-Butadiene	5.04	54	1028	53.051	pg	97
7) Bromomethane	5.36	94	1024	57.464	pg	99
8) Chloroethane	5.59	64	753	54.258	pg	98
9) Acrolein	6.15	56	672	65.263	pg	97
10) Acetone	6.30	58	6468	433.978	pg	96
11) Trichlorofluoromethane	6.50	101	1809	57.642	pg	100
12) 1,1-Dichloroethene	7.22	96	1224	56.027	pg	99
13) Methylene Chloride	7.35	84	1336	57.311	pg	98
14) Trichlorotrifluoroethane	7.67	151	1324	62.851	pg	100
15) trans-1,2-Dichloroethene	8.38	96	1286	56.453	pg	99
16) 1,1-Dichloroethane	8.58	63	1980	54.088	pg	100
17) Methyl tert-Butyl Ether	8.69	73	3142	52.457	pg	99
18) cis-1,2-Dichloroethene	9.46	96	1337	55.681	pg	100
19) Chloroform	9.76	83	2927	75.470	pg	99
21) 1,2-Dichloroethane	10.51	62	1331	53.892	pg	99
22) 1,1,1-Trichloroethane	10.78	97	1895	58.079	pg	99
23) Benzene	11.24	78	5958	63.329	pg	100
24) Carbon Tetrachloride	11.39	117	1700	62.511	pg	100
26) 1,2-Dichloropropane	12.05	63	1184	58.117	pg	98
27) Bromodichloromethane	12.23	83	1582	59.381	pg	98
28) Trichloroethene	12.28	130	1465	60.089	pg	99
29) 1,4-Dioxane	12.26	88	932	54.490	pg	98
30) cis-1,3-Dichloropropene	13.12	75	1750	56.240	pg	99
31) trans-1,3-Dichloropropene	13.64	75	1321	50.589	pg	100
32) 1,1,2-Trichloroethane	13.82	83	1036	59.175	pg	98
34) Toluene	14.11	91	5429	59.716	pg	100
35) Dibromochloromethane	14.53	129	1394	58.885	pg	99
36) 1,2-Dibromoethane	14.79	107	1335	57.340	pg	99
37) Tetrachloroethene	15.27	166	1647	63.337	pg	99
39) Chlorobenzene	15.97	112	3792	70.423	pg	100
40) Ethylbenzene	16.35	91	5045	61.491	pg	100
41) m,p-Xylene	16.53	91	7381	117.271	pg	100
42) Styrene	16.89	104	2641	57.720	pg	100
43) o-Xylene	17.00	106	2014	61.172	pg	96
44) 1,1,2,2-Tetrachloroethane	16.97	83	2146	66.958	pg	99
46) 1,3,5-Trimethylbenzene	18.27	105	4024	59.007	pg	99
47) 1,2,4-Trimethylbenzene	18.66	105	3986	58.842	pg	99
48) 1,3-Dichlorobenzene	18.81	146	3029	68.076	pg	99
49) 1,4-Dichlorobenzene	18.87	146	3091	69.263	pg	98
50) 1,2-Dichlorobenzene	19.20	146	2960	69.655	pg	100
51) 1,2-Dibromo-3-chloropr...	19.61	157	892	62.895	pg	96
52) 1,2,4-Trichlorobenzene	20.83	182	1652	63.866	pg	98
53) Naphthalene	20.94	128	4520	51.580	pg	99

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Data File : I:\MS19\DATA\2018_10\01\10011808.D
 Acq On : 1 Oct 2018 13:09
 Sample : 50pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271803 (10/26)

Vial: 13
 Operator: WA
 Inst : MS19

Quant Time: Oct 01 15:35:09 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

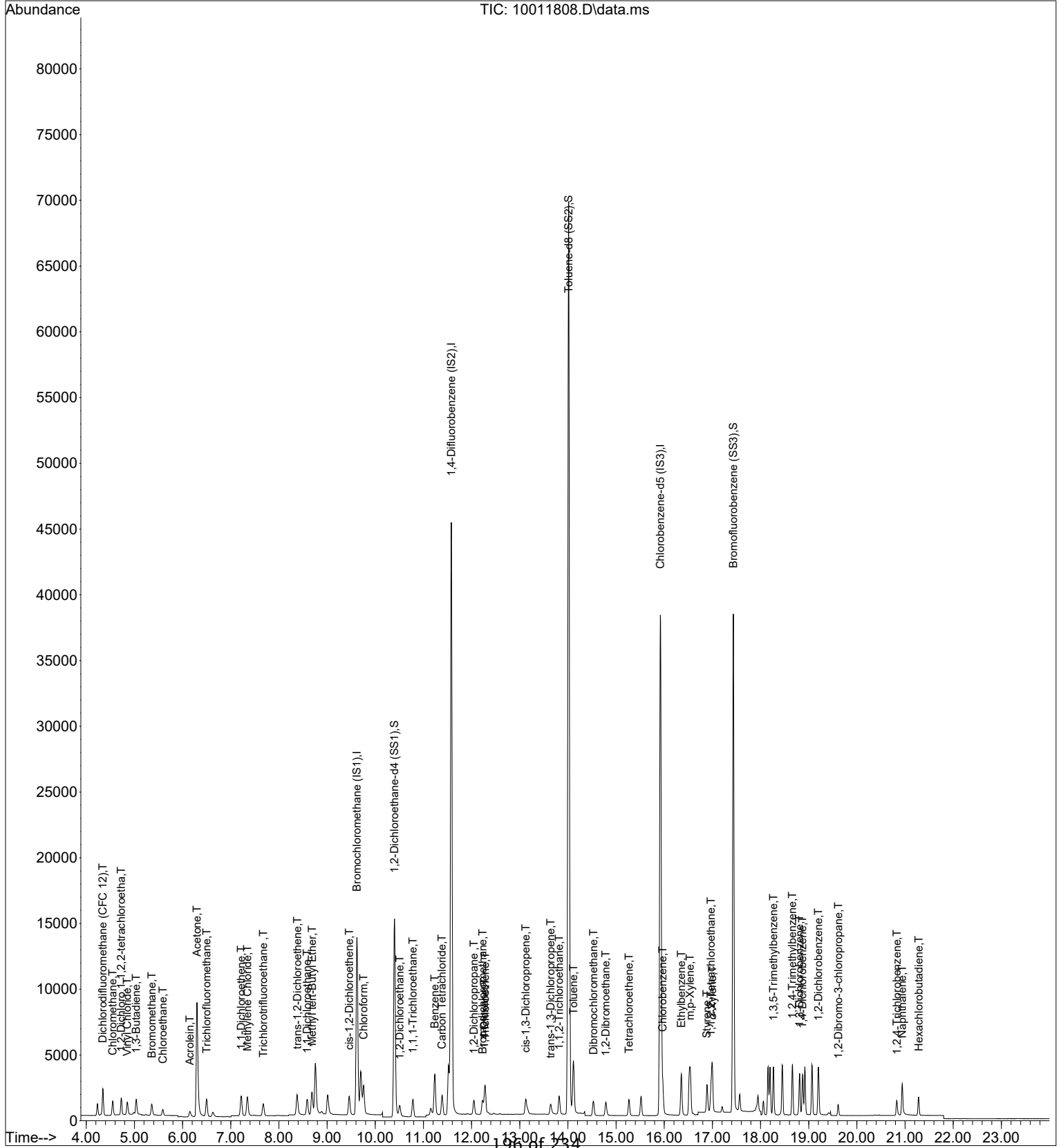
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.28	225	1348	70.267	pg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\01\10011808.D
Acq On : 1 Oct 2018 13:09
Sample : 50pg S19100118 ICAL Std
Misc : S31-09241806/S31-09271803 (10/26)

Vial: 13
Operator: WA
Inst : MS19

Quant Time: Oct 01 15:35:09 2018
Quant Method : I:\MS19\METHODS\S19100118.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Oct 01 15:34:24 2018
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



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Data File : I:\MS19\DATA\2018_10\01\10011809.D
 Acq On : 1 Oct 2018 13:44
 Sample : 100pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271803 (10/26)

Vial: 13
 Operator: WA
 Inst : MS19

Quant Time: Oct 01 15:35:11 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

~~10/18~~ 10/2/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	20065	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.58	114	89360	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.92	54	11139	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	24256	939.624	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	93.96%		
33) Toluene-d8 (SS2)	14.02	98	92480	971.204	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	97.12%		
45) Bromofluorobenzene (SS3)	17.43	174	32346	1056.789	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery =	105.68%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.33	85	4479	110.349	pg	100
3) Chloromethane	4.54	52	994	102.379	pg	99
4) 1,2-Dichloro,1,1,2,2-t...	4.72	85	3109	106.442	pg	100
5) Vinyl Chloride	4.84	62	2802	103.955	pg	100
6) 1,3-Butadiene	5.03	54	1955	101.107	pg	95
7) Bromomethane	5.35	94	1888	106.176	pg	100
8) Chloroethane	5.58	64	1432	103.405	pg	100
9) Acrolein	6.14	56	1190	115.818	pg	98
10) Acetone	6.29	58	10075	677.442	pg	97
11) Trichlorofluoromethane	6.49	101	3413	108.985	pg	100
12) 1,1-Dichloroethene	7.21	96	2339	107.293	pg	99
13) Methylene Chloride	7.34	84	2522	108.418	pg	99
14) Trichlorotrifluoroethane	7.67	151	2313	110.035	pg	100
15) trans-1,2-Dichloroethene	8.38	96	2495	109.760	pg	100
16) 1,1-Dichloroethane	8.58	63	3728	102.057	pg	100
17) Methyl tert-Butyl Ether	8.68	73	6051	101.240	pg	100
18) cis-1,2-Dichloroethene	9.46	96	2583	107.802	pg	100
19) Chloroform	9.76	83	4534	117.155	pg	100
21) 1,2-Dichloroethane	10.51	62	2578	104.607	pg	98
22) 1,1,1-Trichloroethane	10.78	97	3602	110.632	pg	100
23) Benzene	11.23	78	10392	110.696	pg	100
24) Carbon Tetrachloride	11.39	117	3183	117.293	pg	100
26) 1,2-Dichloropropane	12.05	63	2290	110.615	pg	99
27) Bromodichloromethane	12.22	83	3016	111.404	pg	100
28) Trichloroethene	12.28	130	2813	113.542	pg	99
29) 1,4-Dioxane	12.26	88	1815	104.425	pg	99
30) cis-1,3-Dichloropropene	13.12	75	3447	109.012	pg	99
31) trans-1,3-Dichloropropene	13.64	75	2587	97.493	pg	100
32) 1,1,2-Trichloroethane	13.82	83	1984	111.519	pg	98
34) Toluene	14.11	91	10272	111.187	pg	100
35) Dibromochloromethane	14.53	129	2690	111.821	pg	100
36) 1,2-Dibromoethane	14.79	107	2600	109.896	pg	99
37) Tetrachloroethene	15.27	166	3128	118.374	pg	100
39) Chlorobenzene	15.97	112	7239	132.398	pg	100
40) Ethylbenzene	16.35	91	9765	117.215	pg	100
41) m,p-Xylene	16.53	91	14559	227.808	pg	100
42) Styrene	16.89	104	5401	116.250	pg	100
43) o-Xylene	17.00	106	4016	120.129	pg	98
44) 1,1,2,2-Tetrachloroethane	16.97	83	4147	127.428	pg	99
46) 1,3,5-Trimethylbenzene	18.27	105	8246	119.084	pg	100
47) 1,2,4-Trimethylbenzene	18.66	105	8236	119.737	pg	100
48) 1,3-Dichlorobenzene	18.81	146	5960	131.918	pg	100
49) 1,4-Dichlorobenzene	18.87	146	6024	132.938	pg	100
50) 1,2-Dichlorobenzene	19.20	146	5831	135.133	pg	99
51) 1,2-Dibromo-3-chloropr...	19.61	157	1813	125.895	pg	97
52) 1,2,4-Trichlorobenzene	20.83	182	3169	120.654	pg	100
53) Naphthalene	20.94	128	8799	98.886	pg	98

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Data File : I:\MS19\DATA\2018_10\01\10011809.D
 Acq On : 1 Oct 2018 13:44
 Sample : 100pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271803 (10/26)

Vial: 13
 Operator: WA
 Inst : MS19

Quant Time: Oct 01 15:35:11 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

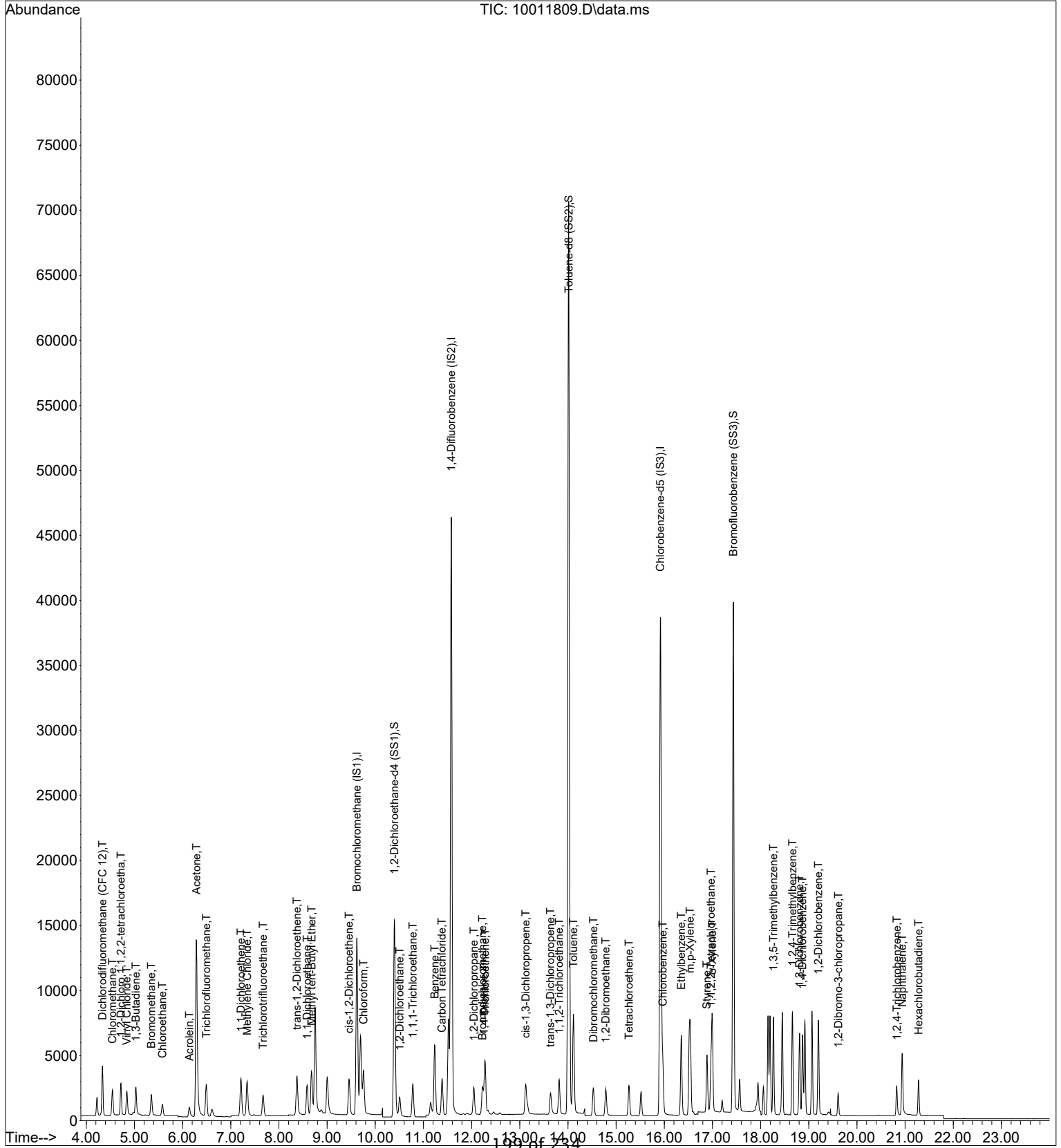
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.28	225	2611	134.039	pg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\01\10011809.D
 Acq On : 1 Oct 2018 13:44
 Sample : 100pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271803 (10/26)

Vial: 13
 Operator: WA
 Inst : MS19

Quant Time: Oct 01 15:35:11 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2018_10\01\10011810.D
 Acq On : 1 Oct 2018 14:21
 Sample : 500pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271803 (10/26)

Vial: 13
 Operator: WA
 Inst : MS19

Quant Time: Oct 01 15:35:13 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

~~DATA~~ 10/2/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	19931	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.58	114	93855	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.92	54	11642	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	24294	947.423	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	94.74%
33) Toluene-d8 (SS2)	14.01	98	96719	967.075	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	96.71%
45) Bromofluorobenzene (SS3)	17.43	174	34970	1093.156	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	109.32%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.33	85	21723	538.789	pg	100
3) Chloromethane	4.53	52	3976	412.271	pg	99
4) 1,2-Dichloro,1,1,2,2-t...	4.71	85	15025	517.865	pg	100
5) Vinyl Chloride	4.83	62	13708	511.990	pg	99
6) 1,3-Butadiene	5.02	54	9118	474.726	pg	100
7) Bromomethane	5.34	94	8729	494.195	pg	99
8) Chloroethane	5.57	64	6937	504.288	pg	100
9) Acrolein	6.12	56	5986	586.513	pg	99
10) Acetone	6.27	58	40532	2743.691	pg	99
11) Trichlorofluoromethane	6.49	101	16551	532.066	pg	100
12) 1,1-Dichloroethene	7.20	96	11682	539.472	pg	100
13) Methylene Chloride	7.33	84	12292	531.975	pg	100
14) Trichlorotrifluoroethane	7.67	151	10290	492.813	pg	100
15) trans-1,2-Dichloroethene	8.37	96	12419	550.012	pg	100
16) 1,1-Dichloroethane	8.58	63	18032	496.958	pg	100
17) Methyl tert-Butyl Ether	8.66	73	31874	536.873	pg	100
18) cis-1,2-Dichloroethene	9.45	96	13074	549.314	pg	100
19) Chloroform	9.76	83	20096	522.758	pg	100
21) 1,2-Dichloroethane	10.50	62	12940	528.592	pg	99
22) 1,1,1-Trichloroethane	10.78	97	17911	553.819	pg	100
23) Benzene	11.23	78	50147	537.760	pg	100
24) Carbon Tetrachloride	11.39	117	15823	586.996	pg	100
26) 1,2-Dichloropropane	12.05	63	11546	531.000	pg	100
27) Bromodichloromethane	12.22	83	15278	537.307	pg	100
28) Trichloroethene	12.28	130	14464	555.855	pg	100
29) 1,4-Dioxane	12.25	88	9760	534.641	pg	99
30) cis-1,3-Dichloropropene	13.12	75	18781	565.506	pg	99
31) trans-1,3-Dichloropropene	13.63	75	15064	540.511	pg	100
32) 1,1,2-Trichloroethane	13.81	83	10121	541.649	pg	99
34) Toluene	14.11	91	52607	542.162	pg	100
35) Dibromochloromethane	14.53	129	13978	553.226	pg	100
36) 1,2-Dibromoethane	14.78	107	13734	552.700	pg	99
37) Tetrachloroethene	15.27	166	15788	568.855	pg	100
39) Chlorobenzene	15.97	112	36568	639.917	pg	100
40) Ethylbenzene	16.35	91	54645	627.594	pg	100
41) m,p-Xylene	16.53	91	85981	1287.237	pg	100
42) Styrene	16.89	104	34415	708.740	pg	100
43) o-Xylene	16.99	106	23010	658.554	pg	100
44) 1,1,2,2-Tetrachloroethane	16.97	83	21679	637.365	pg	100
46) 1,3,5-Trimethylbenzene	18.27	105	48377	668.446	pg	100
47) 1,2,4-Trimethylbenzene	18.66	105	48925	680.550	pg	100
48) 1,3-Dichlorobenzene	18.81	146	31963	676.897	pg	100
49) 1,4-Dichlorobenzene	18.87	146	31699	669.314	pg	100
50) 1,2-Dichlorobenzene	19.20	146	30647	679.555	pg	100
51) 1,2-Dibromo-3-chloropr...	19.61	157	10276	682.738	pg	99
52) 1,2,4-Trichlorobenzene	20.82	182	17728	645.799	pg	100
53) Naphthalene	20.94	128	53038	570.305	pg	100

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Data File : I:\MS19\DATA\2018_10\01\10011810.D
 Acq On : 1 Oct 2018 14:21
 Sample : 500pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271803 (10/26)

Vial: 13
 Operator: WA
 Inst : MS19

Quant Time: Oct 01 15:35:13 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

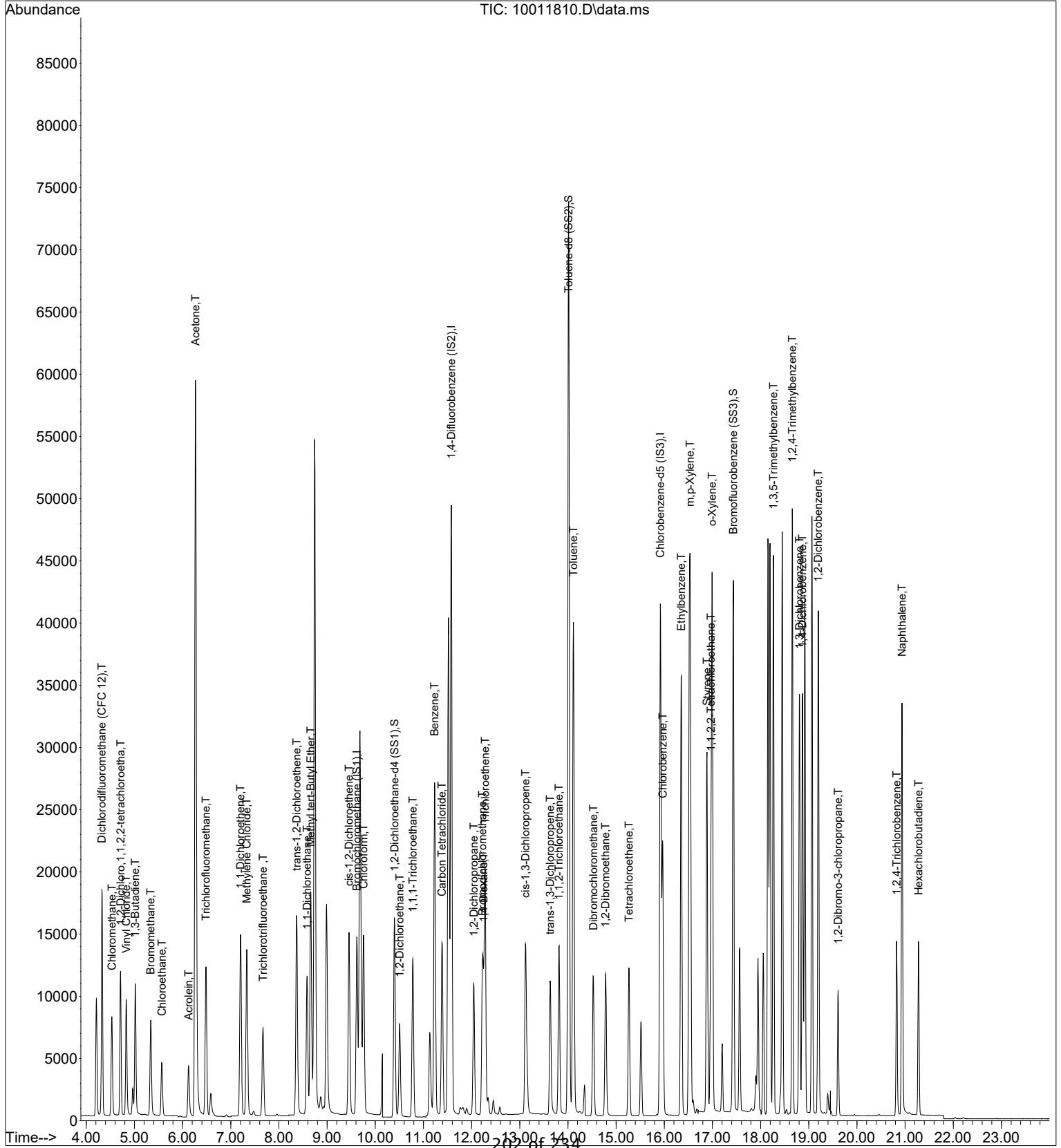
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.28	225	13306	653.567	pg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\01\10011810.D
 Acq On : 1 Oct 2018 14:21
 Sample : 500pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271803 (10/26)

Vial: 13
 Operator: WA
 Inst : MS19

Quant Time: Oct 01 15:35:13 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2018_10\01\10011811.D
 Acq On : 1 Oct 2018 14:52
 Sample : 1000pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271802 (10/26)

Vial: 14
 Operator: WA
 Inst : MS19

Quant Time: Oct 01 15:35:15 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

10/2/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	21343	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.58	114	98418	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.92	54	12041	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	25337	922.728	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	92.27%		
33) Toluene-d8 (SS2)	14.02	98	100388	957.223	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	95.72%		
45) Bromofluorobenzene (SS3)	17.44	174	36261	1095.951	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	109.60%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.32	85	54556	1263.616	pg	100
3) Chloromethane	4.53	52	12060	1167.770	pg	100
4) 1,2-Dichloro,1,1,2,2-t...	4.70	85	37736	1214.595	pg	100
5) Vinyl Chloride	4.82	62	34347	1197.981	pg	100
6) 1,3-Butadiene	5.01	54	28024	1362.534	pg	100
7) Bromomethane	5.33	94	22751	1202.841	pg	100
8) Chloroethane	5.56	64	17484	1186.920	pg	100
9) Acrolein	6.12	56	13705	1253.988	pg	100
10) Acetone	6.26	58	91676	5795.174	pg	100
11) Trichlorofluoromethane	6.48	101	41922	1258.511	pg	100
12) 1,1-Dichloroethene	7.20	96	29967	1292.317	pg	100
13) Methylene Chloride	7.34	84	30981	1252.095	pg	100
14) Trichlorotrifluoroethane	7.67	151	30655	1371.014	pg	100
15) trans-1,2-Dichloroethene	8.37	96	31674	1309.971	pg	100
16) 1,1-Dichloroethane	8.58	63	47368	1219.087	pg	100
17) Methyl tert-Butyl Ether	8.65	73	84859	1334.771	pg	100
18) cis-1,2-Dichloroethene	9.46	96	33680	1321.473	pg	100
19) Chloroform	9.76	83	50690	1231.365	pg	100
21) 1,2-Dichloroethane	10.51	62	32755	1249.503	pg	100
22) 1,1,1-Trichloroethane	10.78	97	45673	1318.808	pg	100
23) Benzene	11.24	78	125214	1253.920	pg	100
24) Carbon Tetrachloride	11.39	117	40898	1416.844	pg	100
26) 1,2-Dichloropropane	12.05	63	29449	1291.565	pg	100
27) Bromodichloromethane	12.22	83	38980	1307.316	pg	100
28) Trichloroethene	12.28	130	36846	1350.350	pg	100
29) 1,4-Dioxane	12.25	88	25793	1347.402	pg	100
30) cis-1,3-Dichloropropene	13.12	75	48452	1391.275	pg	100
31) trans-1,3-Dichloropropene	13.63	75	38882	1330.442	pg	100
32) 1,1,2-Trichloroethane	13.82	83	25733	1313.312	pg	100
34) Toluene	14.11	91	131899	1296.313	pg	100
35) Dibromochloromethane	14.53	129	35806	1351.439	pg	100
36) 1,2-Dibromoethane	14.78	107	34480	1323.252	pg	100
37) Tetrachloroethene	15.27	166	39481	1356.581	pg	100
39) Chlorobenzene	15.96	112	91204	1543.127	pg	100
40) Ethylbenzene	16.35	91	141081	1566.614	pg	100
41) m,p-Xylene	16.53	91	223870	3240.536	pg	100
42) Styrene	16.89	104	87370	1739.669	pg	100
43) o-Xylene	16.99	106	59205	1638.317	pg	100
44) 1,1,2,2-Tetrachloroethane	16.97	83	55068	1565.356	pg	100
46) 1,3,5-Trimethylbenzene	18.27	105	127264	1700.191	pg	100
47) 1,2,4-Trimethylbenzene	18.66	105	128493	1728.119	pg	100
48) 1,3-Dichlorobenzene	18.81	146	80086	1639.823	pg	100
49) 1,4-Dichlorobenzene	18.87	146	79145	1615.745	pg	100
50) 1,2-Dichlorobenzene	19.20	146	78221	1676.970	pg	100
51) 1,2-Dibromo-3-chloropr...	19.61	157	26006	1670.586	pg	100
52) 1,2,4-Trichlorobenzene	20.82	182	39764	1400.531	pg	100
53) Naphthalene	20.94	128	118266	1229.547	pg	100

Data File : I:\MS19\DATA\2018_10\01\10011811.D
 Acq On : 1 Oct 2018 14:52
 Sample : 1000pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271802 (10/26)

Vial: 14
 Operator: WA
 Inst : MS19

Quant Time: Oct 01 15:35:15 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

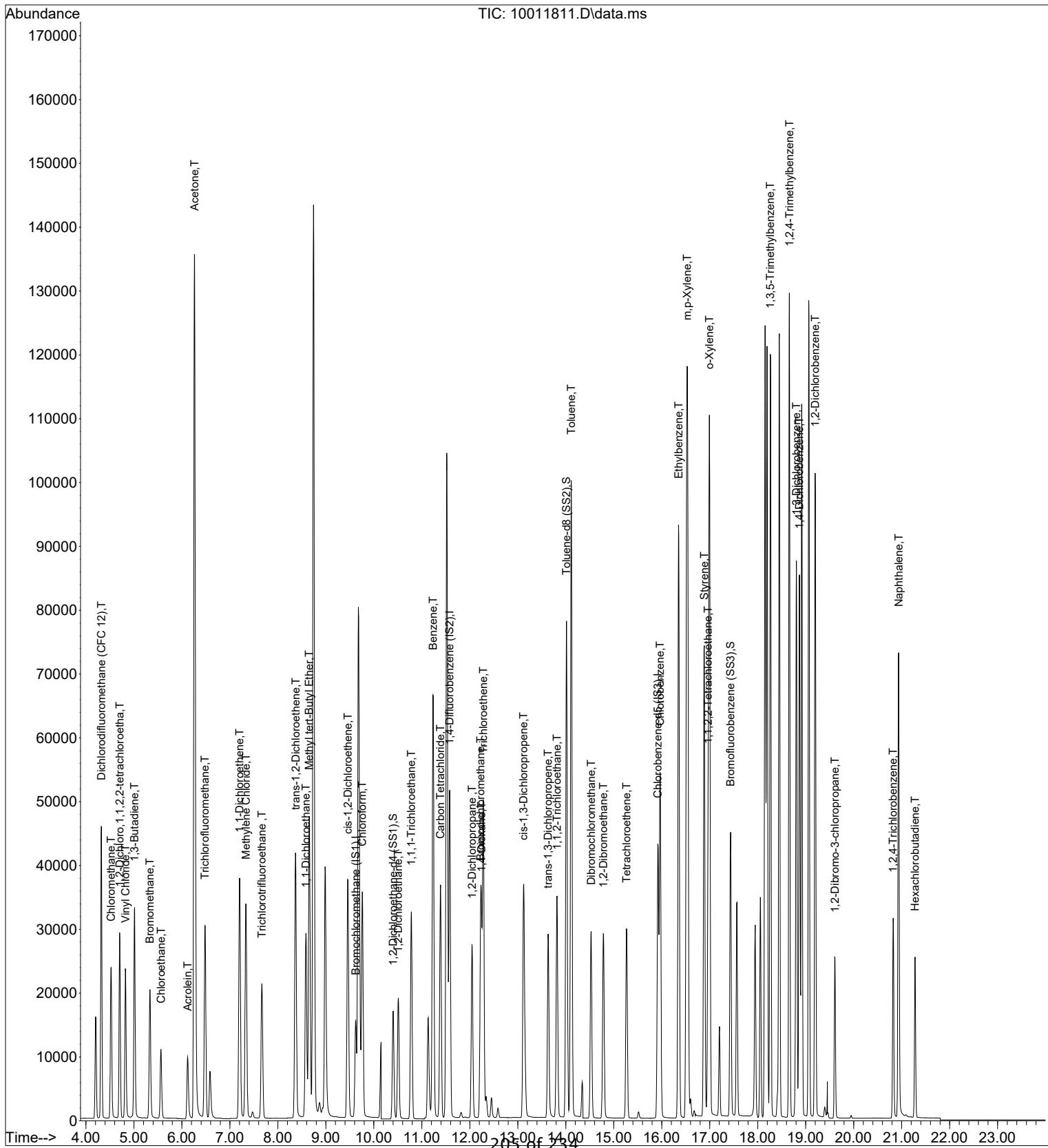
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.28	225	23913	1135.643	pg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\01\10011811.D
Acq On : 1 Oct 2018 14:52
Sample : 1000pg S19100118 ICAL Std
Misc : S31-09241806/S31-09271802 (10/26)

Vial: 14
Operator: WA
Inst : MS19

Quant Time: Oct 01 15:35:15 2018
Quant Method : I:\MS19\METHODS\S19100118.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Oct 01 15:34:24 2018
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2018_10\01\10011812.D
 Acq On : 1 Oct 2018 15:36
 Sample : 2000pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271802 (10/26)

Vial: 14
 Operator: WA
 Inst : MS19

Quant Time: Oct 02 06:40:07 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

~~WA~~ 10/2/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	21158	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.58	114	98346	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.92	54	12046	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	25304	929.584	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	92.96%		
33) Toluene-d8 (SS2)	14.01	98	100255	956.655	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	95.67%		
45) Bromofluorobenzene (SS3)	17.43	174	36038	1088.759	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	108.88%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.31	85	97482	2277.603	pg	100
3) Chloromethane	4.52	52	21596	2109.425	pg	100
4) 1,2-Dichloro,1,1,2,2-t...	4.70	85	67634	2195.945	pg	100
5) Vinyl Chloride	4.82	62	62023	2182.201	pg	100
6) 1,3-Butadiene	5.00	54	48011	2354.718	pg	100
7) Bromomethane	5.33	94	40799	2175.895	pg	100
8) Chloroethane	5.55	64	31468	2154.917	pg	100
9) Acrolein	6.12	56	25502	2353.799	pg	100
10) Acetone	6.26	58	164950	10518.262	pg	99
11) Trichlorofluoromethane	6.48	101	75472	2285.502	pg	100
12) 1,1-Dichloroethene	7.20	96	55361	2408.300	pg	100
13) Methylene Chloride	7.34	84	56375	2298.314	pg	100
14) Trichlorotrifluoroethane	7.66	151	55413	2499.960	pg	100
15) trans-1,2-Dichloroethene	8.37	96	58249	2430.122	pg	100
16) 1,1-Dichloroethane	8.58	63	86003	2232.771	pg	100
17) Methyl tert-Butyl Ether	8.65	73	157062	2492.074	pg	100
18) cis-1,2-Dichloroethene	9.46	96	61935	2451.337	pg	100
19) Chloroform	9.76	83	92106	2257.008	pg	100
21) 1,2-Dichloroethane	10.51	62	59913	2305.481	pg	100
22) 1,1,1-Trichloroethane	10.78	97	82673	2408.056	pg	100
23) Benzene	11.24	78	228757	2310.852	pg	100
24) Carbon Tetrachloride	11.39	117	74610	2607.341	pg	100
26) 1,2-Dichloropropane	12.05	63	53939	2367.371	pg	100
27) Bromodichloromethane	12.23	83	71772	2408.860	pg	100
28) Trichloroethene	12.28	130	67683	2482.294	pg	100
29) 1,4-Dioxane	12.25	88	47932	2505.756	pg	100
30) cis-1,3-Dichloropropene	13.12	75	91226	2621.426	pg	100
31) trans-1,3-Dichloropropene	13.63	75	74271	2543.223	pg	100
32) 1,1,2-Trichloroethane	13.82	83	47300	2415.775	pg	100
34) Toluene	14.11	91	242532	2385.367	pg	100
35) Dibromochloromethane	14.53	129	66689	2518.909	pg	100
36) 1,2-Dibromoethane	14.78	107	64147	2463.596	pg	100
37) Tetrachloroethene	15.27	166	72061	2477.854	pg	100
39) Chlorobenzene	15.97	112	166856	2821.949	pg	100
40) Ethylbenzene	16.35	91	264742	2938.571	pg	100
41) m,p-Xylene	16.53	91	415079	6005.807	pg	100
42) Styrene	16.88	104	167353	3330.868	pg	100
43) o-Xylene	17.00	106	109222	3021.130	pg	100
44) 1,1,2,2-Tetrachloroethane	16.97	83	101378	2880.563	pg	100
46) 1,3,5-Trimethylbenzene	18.26	105	233124	3113.142	pg	100
47) 1,2,4-Trimethylbenzene	18.66	105	237136	3187.948	pg	100
48) 1,3-Dichlorobenzene	18.81	146	147647	3021.932	pg	100
49) 1,4-Dichlorobenzene	18.87	146	144480	2948.335	pg	100
50) 1,2-Dichlorobenzene	19.20	146	143580	3076.915	pg	100
51) 1,2-Dibromo-3-chloropr...	19.61	157	50123	3218.489	pg	100
52) 1,2,4-Trichlorobenzene	20.83	182	90778	3195.972	pg	100
53) Naphthalene	20.94	128	284738	2959.037	pg	100

Data File : I:\MS19\DATA\2018_10\01\10011812.D
 Acq On : 1 Oct 2018 15:36
 Sample : 2000pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271802 (10/26)

Vial: 14
 Operator: WA
 Inst : MS19

Quant Time: Oct 02 06:40:07 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

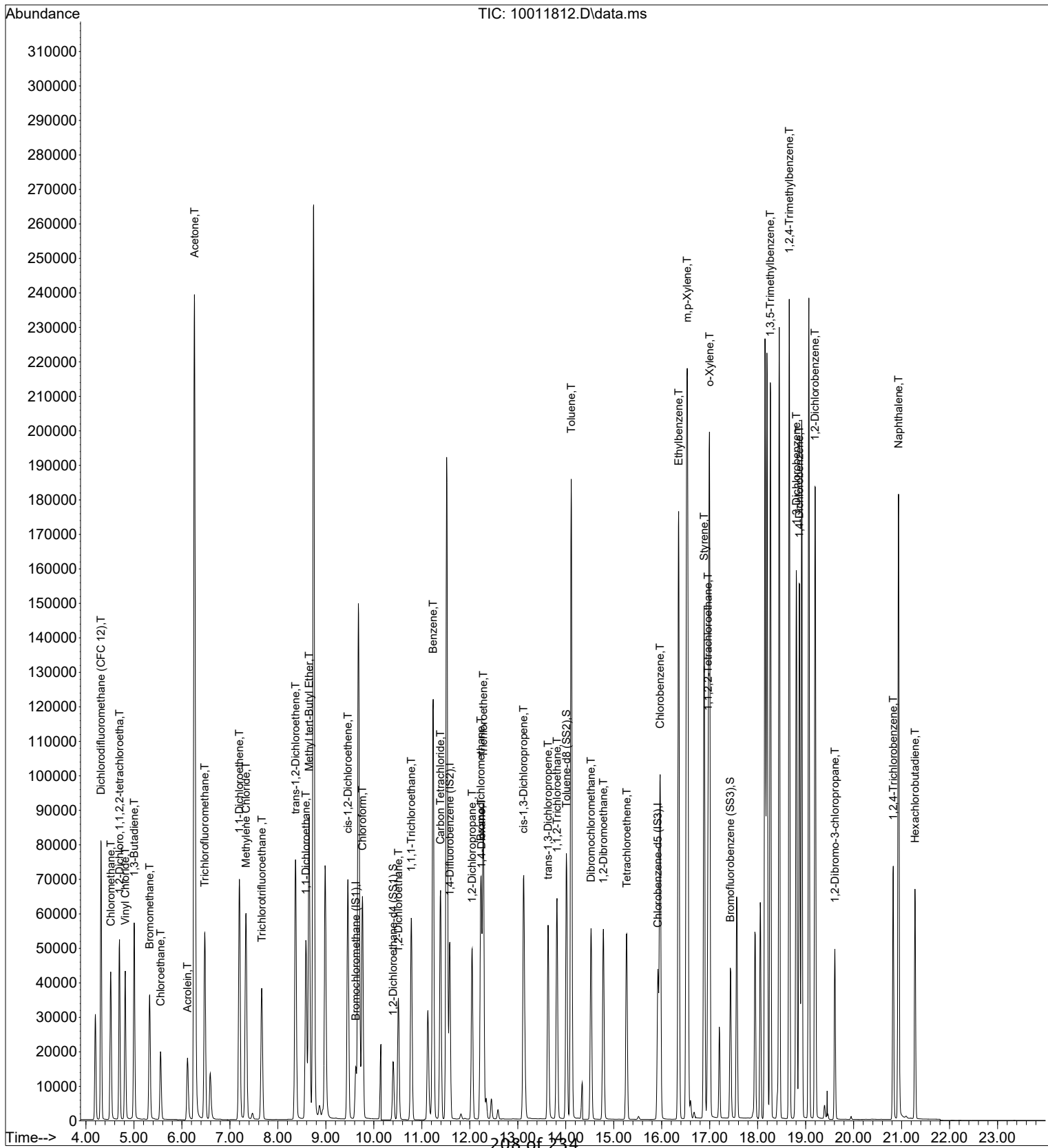
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.28	225	62652	2974.146	pg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\01\10011812.D
 Acq On : 1 Oct 2018 15:36
 Sample : 2000pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271802 (10/26)

Vial: 14
 Operator: WA
 Inst : MS19

Quant Time: Oct 02 06:40:07 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2018_10\01\10011813.D
 Acq On : 1 Oct 2018 16:08
 Sample : 5000pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271802 (10/26)

Vial: 14
 Operator: WA
 Inst : MS19

Quant Time: Oct 02 06:40:18 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

10/2/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.63	130	21979	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.58	114	101793	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	15.92	54	12673	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.41	65	26270	929.023	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	92.90%		
33) Toluene-d8 (SS2)	14.02	98	104343	961.947	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	96.20%		
45) Bromofluorobenzene (SS3)	17.43	174	37651	1081.213	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	108.12%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.30	85	224861	5057.482	pg	100
3) Chloromethane	4.50	52	49965	4698.112	pg	100
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	156657	4896.355	pg	100
5) Vinyl Chloride	4.81	62	143597	4863.558	pg	99
6) 1,3-Butadiene	5.00	54	107512	5076.002	pg	98
7) Bromomethane	5.32	94	95338	4894.644	pg	100
8) Chloroethane	5.55	64	73709	4859.018	pg	100
9) Acrolein	6.12	56	60234	5351.844	pg	100
10) Acetone	6.26	58	385336	23653.636	pg	99
11) Trichlorofluoromethane	6.47	101	180051	5248.775	pg	100
12) 1,1-Dichloroethene	7.19	96	131183	5493.521	pg	99
13) Methylene Chloride	7.34	84	133745	5248.884	pg	99
14) Trichlorotrifluoroethane	7.66	151	124815	5420.693	pg	100
15) trans-1,2-Dichloroethene	8.37	96	139761	5612.965	pg	100
16) 1,1-Dichloroethane	8.59	63	202292	5055.638	pg	100
17) Methyl tert-Butyl Ether	8.65	73	380286	5808.537	pg	100
18) cis-1,2-Dichloroethene	9.47	96	149090	5680.442	pg	100
19) Chloroform	9.77	83	217099	5121.176	pg	100
21) 1,2-Dichloroethane	10.52	62	142125	5264.749	pg	100
22) 1,1,1-Trichloroethane	10.78	97	196324	5504.817	pg	100
23) Benzene	11.24	78	537276	5224.707	pg	100
24) Carbon Tetrachloride	11.39	117	177152	5959.552	pg	100
26) 1,2-Dichloropropane	12.05	63	128300	5440.375	pg	100
27) Bromodichloromethane	12.23	83	171061	5546.848	pg	100
28) Trichloroethene	12.29	130	159704	5658.851	pg	100
29) 1,4-Dioxane	12.25	88	114979	5807.251	pg	99
30) cis-1,3-Dichloropropene	13.12	75	223011	6191.332	pg	100
31) trans-1,3-Dichloropropene	13.63	75	184690	6110.085	pg	100
32) 1,1,2-Trichloroethane	13.82	83	111483	5501.015	pg	100
34) Toluene	14.11	91	577593	5488.414	pg	100
35) Dibromochloromethane	14.53	129	159683	5827.145	pg	100
36) 1,2-Dibromoethane	14.79	107	153521	5696.390	pg	100
37) Tetrachloroethene	15.27	166	169392	5627.391	pg	100
39) Chlorobenzene	15.97	112	395561	6358.933	pg	100
40) Ethylbenzene	16.35	91	641860	6772.001	pg	100
41) m,p-Xylene	16.53	91	994468	13677.127	pg	100
42) Styrene	16.89	104	413208	7817.287	pg	100
43) o-Xylene	17.00	106	261034	6863.091	pg	99
44) 1,1,2,2-Tetrachloroethane	16.96	83	239946	6480.531	pg	100
46) 1,3,5-Trimethylbenzene	18.27	105	558005	7082.938	pg	100
47) 1,2,4-Trimethylbenzene	18.66	105	564297	7210.825	pg	100
48) 1,3-Dichlorobenzene	18.81	146	348686	6783.565	pg	100
49) 1,4-Dichlorobenzene	18.87	146	344250	6677.386	pg	100
50) 1,2-Dichlorobenzene	19.20	146	338979	6904.907	pg	100
51) 1,2-Dibromo-3-chloropr...	19.61	157	121782	7432.956	pg	98
52) 1,2,4-Trichlorobenzene	20.82	182	221549	7414.051	pg	100
53) Naphthalene	20.94	128	690675	6822.477	pg	100

Data File : I:\MS19\DATA\2018_10\01\10011813.D
 Acq On : 1 Oct 2018 16:08
 Sample : 5000pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271802 (10/26)

Vial: 14
 Operator: WA
 Inst : MS19

Quant Time: Oct 02 06:40:18 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

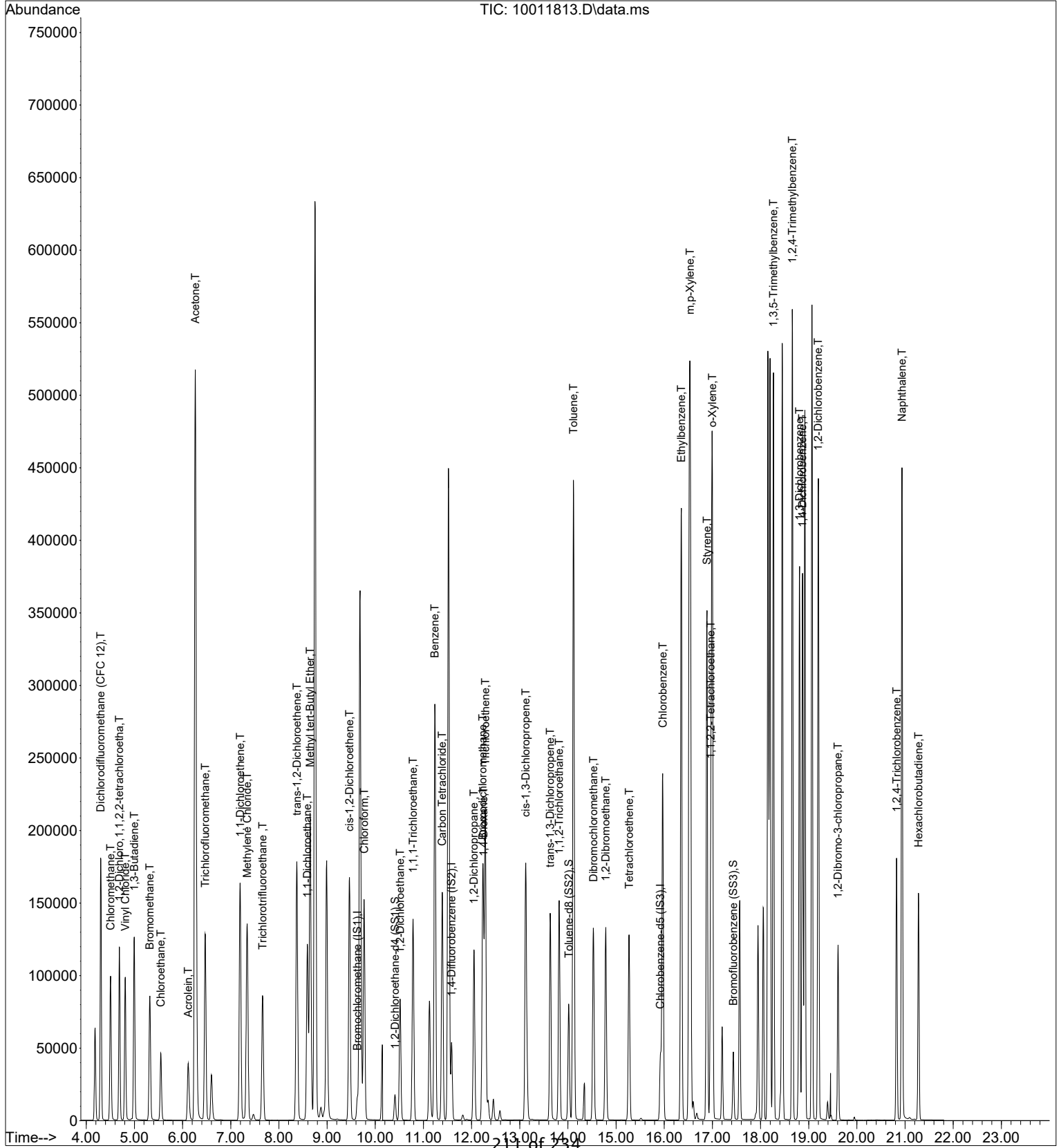
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.28	225	148497	6700.519	pg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\01\10011813.D
Acq On : 1 Oct 2018 16:08
Sample : 5000pg S19100118 ICAL Std
Misc : S31-09241806/S31-09271802 (10/26)

Vial: 14
Operator: WA
Inst : MS19

Quant Time: Oct 02 06:40:18 2018
Quant Method : I:\MS19\METHODS\S19100118.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Oct 01 15:34:24 2018
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



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Data File : I:\MS19\DATA\2018_10\01\10011814.D
 Acq On : 1 Oct 2018 16:39
 Sample : 10000pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271802 (10/26)

Vial: 14
 Operator: WA
 Inst : MS19

Quant Time: Oct 02 06:40:25 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

10/2/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.64	130	21839	1000.000	pg	0.01
25) 1,4-Difluorobenzene (IS2)	11.59	114	102402	1000.000	pg	0.01
38) Chlorobenzene-d5 (IS3)	15.92	54	13188	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.42	65	26267	934.871	pg	0.01
Spiked Amount 1000.000	Range 70	- 130	Recovery =	93.49%		
33) Toluene-d8 (SS2)	14.02	98	105337	965.336	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	96.53%		
45) Bromofluorobenzene (SS3)	17.43	174	37497	1034.741	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	103.47%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.30	85	433912	9821.935	pg	100
3) Chloromethane	4.51	52	96612	9142.474	pg	100
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	302197	9505.794	pg	100
5) Vinyl Chloride	4.81	62	281319	9589.213	pg	99
6) 1,3-Butadiene	5.00	54	207819	9874.732	pg	98
7) Bromomethane	5.32	94	184794	9548.126	pg	100
8) Chloroethane	5.56	64	144421	9581.501	pg	100
9) Acrolein	6.13	56	117735	10527.918	pg	100
10) Acetone	6.28	58	740502	45746.698	pg	99
11) Trichlorofluoromethane	6.48	101	350111	10271.725	pg	100
12) 1,1-Dichloroethene	7.20	96	257291	10843.589	pg	99
13) Methylene Chloride	7.35	84	261754	10338.510	pg	98
14) Trichlorotrifluoroethane	7.67	151	231594	10122.563	pg	100
15) trans-1,2-Dichloroethene	8.38	96	276102	11159.663	pg	100
16) 1,1-Dichloroethane	8.60	63	397667	10002.119	pg	100
17) Methyl tert-Butyl Ether	8.65	73	752976	11574.781	pg	100
18) cis-1,2-Dichloroethene	9.47	96	292496	11215.760	pg	100
19) Chloroform	9.78	83	424086	10067.949	pg	99
21) 1,2-Dichloroethane	10.52	62	277683	10352.177	pg	100
22) 1,1,1-Trichloroethane	10.79	97	384459	10849.125	pg	100
23) Benzene	11.24	78	1044137	10218.735	pg	100
24) Carbon Tetrachloride	11.40	117	347002	11748.291	pg	100
26) 1,2-Dichloropropane	12.05	63	250769	10570.256	pg	99
27) Bromodichloromethane	12.23	83	335620	10818.140	pg	100
28) Trichloroethene	12.29	130	311721	10979.638	pg	100
29) 1,4-Dioxane	12.25	88	225390	11316.085	pg	99
30) cis-1,3-Dichloropropene	13.12	75	441642	12188.146	pg	100
31) trans-1,3-Dichloropropene	13.64	75	370381	12180.414	pg	100
32) 1,1,2-Trichloroethane	13.82	83	218143	10700.028	pg	100
34) Toluene	14.12	91	1127023	10645.528	pg	99
35) Dibromochloromethane	14.53	129	314167	11396.386	pg	100
36) 1,2-Dibromoethane	14.79	107	302923	11173.099	pg	100
37) Tetrachloroethene	15.27	166	330033	10898.859	pg	100
39) Chlorobenzene	15.97	112	774148	11959.012	pg	100
40) Ethylbenzene	16.35	91	1261319	12787.985	pg	100
41) m,p-Xylene	16.53	91	1944860	25703.538	pg	100
42) Styrene	16.89	104	818745	14884.577	pg	100
43) o-Xylene	17.00	106	509044	12861.112	pg	99
44) 1,1,2,2-Tetrachloroethane	16.97	83	468194	12151.318	pg	100
46) 1,3,5-Trimethylbenzene	18.27	105	1089463	13288.879	pg	99
47) 1,2,4-Trimethylbenzene	18.66	105	1096552	13465.017	pg	100
48) 1,3-Dichlorobenzene	18.81	146	678792	12689.972	pg	100
49) 1,4-Dichlorobenzene	18.87	146	673906	12561.236	pg	100
50) 1,2-Dichlorobenzene	19.20	146	659009	12899.618	pg	100
51) 1,2-Dibromo-3-chloropr...	19.61	157	239958	14073.891	pg	98
52) 1,2,4-Trichlorobenzene	20.82	182	436487	14036.459	pg	100
53) Naphthalene	20.94	128	1354459	12856.854	pg	99

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Data File : I:\MS19\DATA\2018_10\01\10011814.D
 Acq On : 1 Oct 2018 16:39
 Sample : 10000pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271802 (10/26)

Vial: 14
 Operator: WA
 Inst : MS19

Quant Time: Oct 02 06:40:25 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

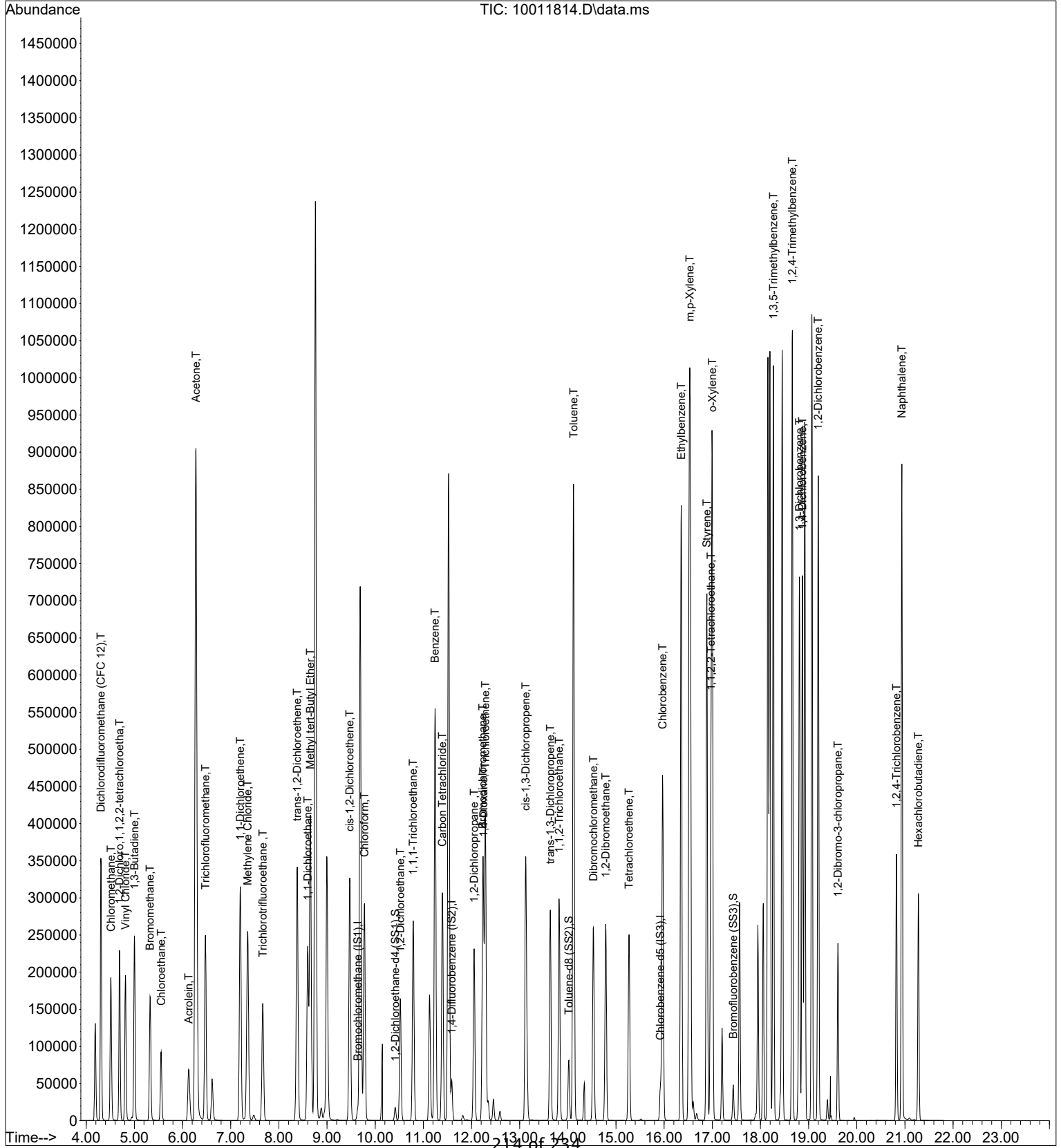
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.28	225	290485	12595.487	pg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\01\10011814.D
 Acq On : 1 Oct 2018 16:39
 Sample : 10000pg S19100118 ICAL Std
 Misc : S31-09241806/S31-09271802 (10/26)

Vial: 14
 Operator: WA
 Inst : MS19

Quant Time: Oct 02 06:40:25 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2018_10\01\10011815.D
 Acq On : 1 Oct 2018 17:11
 Sample : 25000pg S19100118 ICAL Std
 Misc : S31-09241806/S31-08171802

Vial: 15
 Operator: WA
 Inst : MS19

Quant Time: Oct 02 06:40:32 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

10/2/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.65	130	22065	1000.000	pg	0.02
25) 1,4-Difluorobenzene (IS2)	11.59	114	103137	1000.000	pg	0.01
38) Chlorobenzene-d5 (IS3)	15.92	54	14496	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.42	65	26208	923.218	pg	0.02
Spiked Amount 1000.000	Range 70	- 130	Recovery =	92.32%		
33) Toluene-d8 (SS2)	14.02	98	105918	963.743	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	96.37%		
45) Bromofluorobenzene (SS3)	17.43	174	37072	930.705	pg	0.00
Spiked Amount 1000.000	Range 70	- 130	Recovery =	93.07%		

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.30	85	1175449	26334.679	pg	100
3) Chloromethane	4.52	52	285120	26704.790	pg	100
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	837060	26060.555	pg	100
5) Vinyl Chloride	4.82	62	785255	26492.529	pg	99
6) 1,3-Butadiene	5.00	54	724653	34079.952	pg	100
7) Bromomethane	5.33	94	519739	26579.353	pg	100
8) Chloroethane	5.56	64	406431	26688.172	pg	100
9) Acrolein	6.14	56	324675	28735.223	pg	100
10) Acetone	6.29	58	1908854	116717.249	pg	97
11) Trichlorofluoromethane	6.48	101	961848	27930.127	pg	100
12) 1,1-Dichloroethene	7.20	96	715370	29840.630	pg	99
13) Methylene Chloride	7.36	84	723597	28287.216	pg	99
14) Trichlorotrifluoroethane	7.66	151	694310	30036.229	pg	100
15) trans-1,2-Dichloroethene	8.39	96	765357	30617.830	pg	100
16) 1,1-Dichloroethane	8.61	63	1104862	27504.851	pg	100
17) Methyl tert-Butyl Ether	8.66	73	2101384	31971.710	pg	100
18) cis-1,2-Dichloroethene	9.48	96	805588	30573.883	pg	100
19) Chloroform	9.79	83	1169368	27476.859	pg	100
21) 1,2-Dichloroethane	10.53	62	755703	27884.467	pg	100
22) 1,1,1-Trichloroethane	10.79	97	1057295	29530.422	pg	100
23) Benzene	11.25	78	2854604	27651.222	pg	100
24) Carbon Tetrachloride	11.40	117	961856	32231.581	pg	100
26) 1,2-Dichloropropane	12.06	63	682689	28571.203	pg	99
27) Bromodichloromethane	12.24	83	921769	29499.918	pg	100
28) Trichloroethene	12.29	130	864600	30236.473	pg	100
29) 1,4-Dioxane	12.25	88	611449	30480.055	pg	99
30) cis-1,3-Dichloropropene	13.13	75	1208471	33112.919	pg	100
31) trans-1,3-Dichloropropene	13.64	75	1026925	33530.964	pg	100
32) 1,1,2-Trichloroethane	13.82	83	596957	29072.383	pg	99
34) Toluene	14.12	91	3069160	28783.785	pg	99
35) Dibromochloromethane	14.53	129	867155	31231.818	pg	100
36) 1,2-Dibromoethane	14.79	107	828968	30357.996	pg	99
37) Tetrachloroethene	15.27	166	904671	29662.536	pg	100
39) Chlorobenzene	15.97	112	2118495	29773.474	pg	99
40) Ethylbenzene	16.35	91	3438163	31712.787	pg	99
41) m,p-Xylene	16.54	91	5280531	63491.109	pg	98
42) Styrene	16.89	104	2328920	38518.836	pg	100
43) o-Xylene	17.00	106	1400023	32180.229	pg	98
44) 1,1,2,2-Tetrachloroethane	16.97	83	1255875	29653.416	pg	99
46) 1,3,5-Trimethylbenzene	18.27	105	2991368	33195.290	pg	98
47) 1,2,4-Trimethylbenzene	18.66	105	2955963	33022.309	pg	99
48) 1,3-Dichlorobenzene	18.81	146	1865896	31735.267	pg	99
49) 1,4-Dichlorobenzene	18.87	146	1859677	31535.616	pg	99
50) 1,2-Dichlorobenzene	19.20	146	1770377	31526.955	pg	99
51) 1,2-Dibromo-3-chloropr...	19.61	157	637450	34013.852	pg	97
52) 1,2,4-Trichlorobenzene	20.82	182	1195622	34979.283	pg	100
53) Naphthalene	20.93	128	4087226	35296.226	pg	99

Data File : I:\MS19\DATA\2018_10\01\10011815.D
 Acq On : 1 Oct 2018 17:11
 Sample : 25000pg S19100118 ICAL Std
 Misc : S31-09241806/S31-08171802

Vial: 15
 Operator: WA
 Inst : MS19

Quant Time: Oct 02 06:40:32 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

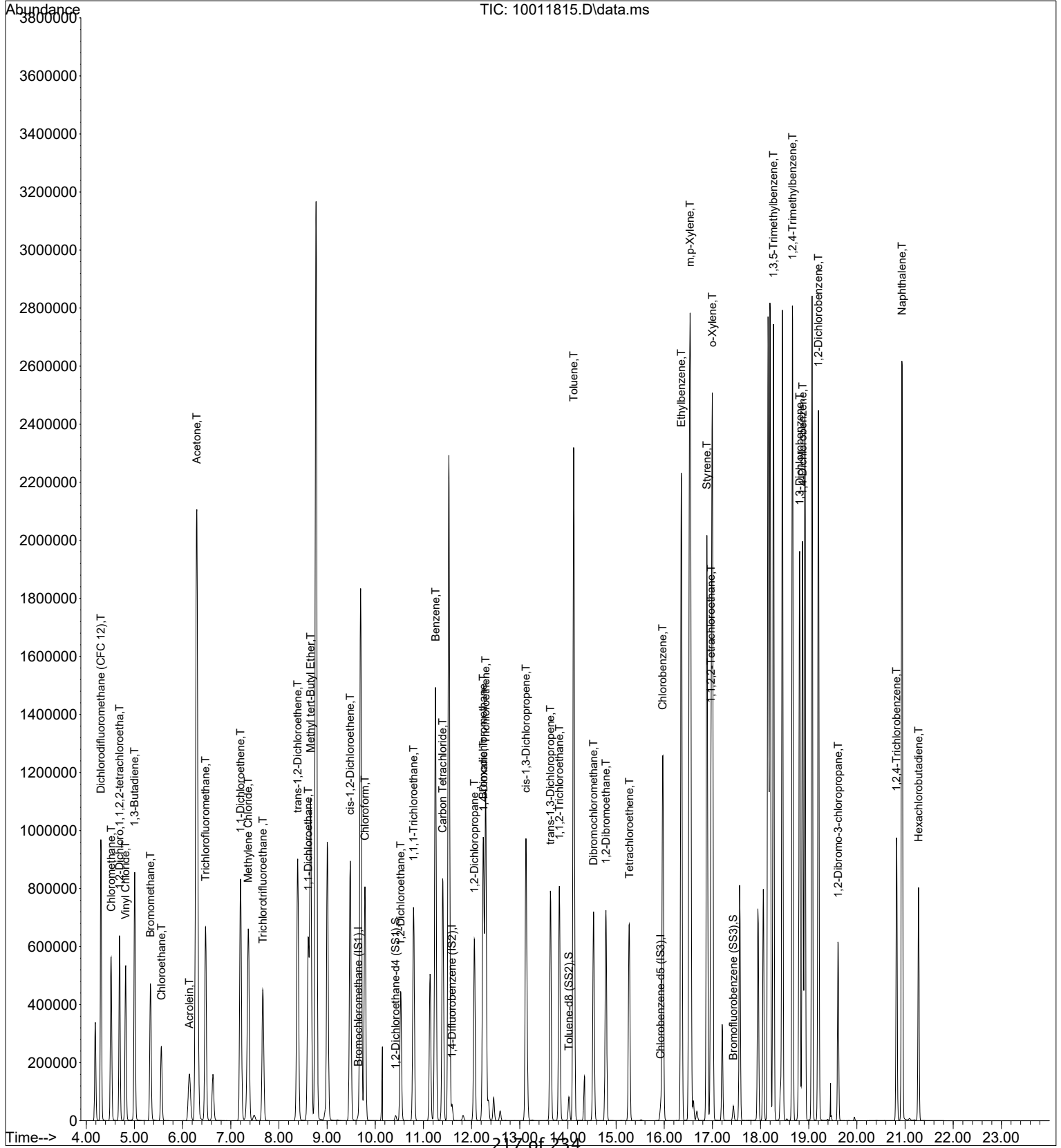
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.28	225	765922	30213.883	pg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\01\10011815.D
Acq On : 1 Oct 2018 17:11
Sample : 25000pg S19100118 ICAL Std
Misc : S31-09241806/S31-08171802

Vial: 15
Operator: WA
Inst : MS19

Quant Time: Oct 02 06:40:32 2018
Quant Method : I:\MS19\METHODS\S19100118.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Oct 01 15:34:24 2018
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



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Data File : I:\MS19\DATA\2018_10\01\10011816.D
 Acq On : 1 Oct 2018 17:43
 Sample : 50000pg S19100118 ICAL Std
 Misc : S31-09241806/S31-08171802

Vial: 15
 Operator: WA
 Inst : MS19

Quant Time: Oct 02 06:40:38 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

~~10/1~~ 10/2/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.65	130	21786	1000.000	pg	0.03
25) 1,4-Difluorobenzene (IS2)	11.60	114	102151	1000.000	pg	0.02
38) Chlorobenzene-d5 (IS3)	15.92	54	16136	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.43	65	25928	925.051	pg	0.03
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	92.50%
33) Toluene-d8 (SS2)	14.03	98	105227	966.697	pg	0.01
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	96.67%
45) Bromofluorobenzene (SS3)	17.43	174	36393	820.797	pg	0.00
Spiked Amount	1000.000	Range	70 - 130	Recovery	=	82.08%

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.30	85	2121230	48132.501	pg	99
3) Chloromethane	4.52	52	522445	49559.680	pg	99
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	1608435	50717.405	pg	99
5) Vinyl Chloride	4.82	62	1449049	49513.339	pg	100
6) 1,3-Butadiene	5.01	54	1355430	64561.321	pg	100
7) Bromomethane	5.34	94	976601	50582.780	pg	100
8) Chloroethane	5.56	64	760043	50547.141	pg	100
9) Acrolein	6.15	56	609177	54605.407	pg	100
10) Acetone	6.31	58	3436847	212837.898	pg	95
11) Trichlorofluoromethane	6.48	101	1753519	51570.740	pg	100
12) 1,1-Dichloroethene	7.21	96	1308137	55265.859	pg	99
13) Methylene Chloride	7.38	84	1326001	52500.536	pg	99
14) Trichlorotrifluoroethane	7.67	151	1269075	55603.959	pg	100
15) trans-1,2-Dichloroethene	8.40	96	1402081	56808.051	pg	100
16) 1,1-Dichloroethane	8.62	63	1999424	50411.845	pg	100
17) Methyl tert-Butyl Ether	8.66	73	3831900	59047.436	pg	100
18) cis-1,2-Dichloroethene	9.49	96	1467538	56409.649	pg	100
19) Chloroform	9.80	83	2124196	50551.832	pg	100
21) 1,2-Dichloroethane	10.54	62	1370000	51198.613	pg	100
22) 1,1,1-Trichloroethane	10.80	97	1921689	54360.447	pg	99
23) Benzene	11.26	78	5170027	50720.988	pg	100
24) Carbon Tetrachloride	11.40	117	1752780	59487.455	pg	100
26) 1,2-Dichloropropane	12.06	63	1235662	52212.824	pg	100
27) Bromodichloromethane	12.24	83	1673814	54085.118	pg	100
28) Trichloroethene	12.30	130	1587270	56045.220	pg	100
29) 1,4-Dioxane	12.26	88	1137524	57251.641	pg	98
30) cis-1,3-Dichloropropene	13.13	75	2195223	60731.185	pg	99
31) trans-1,3-Dichloropropene	13.64	75	1893529	62423.935	pg	99
32) 1,1,2-Trichloroethane	13.82	83	1091659	53678.017	pg	99
34) Toluene	14.12	91	5513325	52205.209	pg	98
35) Dibromochloromethane	14.54	129	1588204	57753.550	pg	100
36) 1,2-Dibromoethane	14.79	107	1520188	56208.824	pg	99
37) Tetrachloroethene	15.27	166	1650507	54639.518	pg	99
39) Chlorobenzene	15.97	112	3848880	48594.681	pg	99
40) Ethylbenzene	16.36	91	6159455	51039.044	pg	97
41) m,p-Xylene	16.54	91	9382796	101349.097	pg	96
42) Styrene	16.89	104	4208085	62525.242	pg	100
43) o-Xylene	17.01	106	2533620	52317.591	pg	96
44) 1,1,2,2-Tetrachloroethane	16.97	83	2260027	47939.581	pg	99
46) 1,3,5-Trimethylbenzene	18.27	105	5320337	53039.334	pg	97
47) 1,2,4-Trimethylbenzene	18.67	105	5158974	51775.474	pg	98
48) 1,3-Dichlorobenzene	18.81	146	3402479	51987.923	pg	99
49) 1,4-Dichlorobenzene	18.87	146	3442390	52441.629	pg	99
50) 1,2-Dichlorobenzene	19.20	146	3230938	51688.888	pg	99
51) 1,2-Dibromo-3-chloropr...	19.61	157	1191870	57133.507	pg	97
52) 1,2,4-Trichlorobenzene	20.83	182	2298722	60416.526	pg	100
53) Naphthalene	20.94	128	7596985	58937.700	pg	98

Data File : I:\MS19\DATA\2018_10\01\10011816.D
 Acq On : 1 Oct 2018 17:43
 Sample : 50000pg S19100118 ICAL Std
 Misc : S31-09241806/S31-08171802

Vial: 15
 Operator: WA
 Inst : MS19

Quant Time: Oct 02 06:40:38 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Mon Oct 01 15:34:24 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

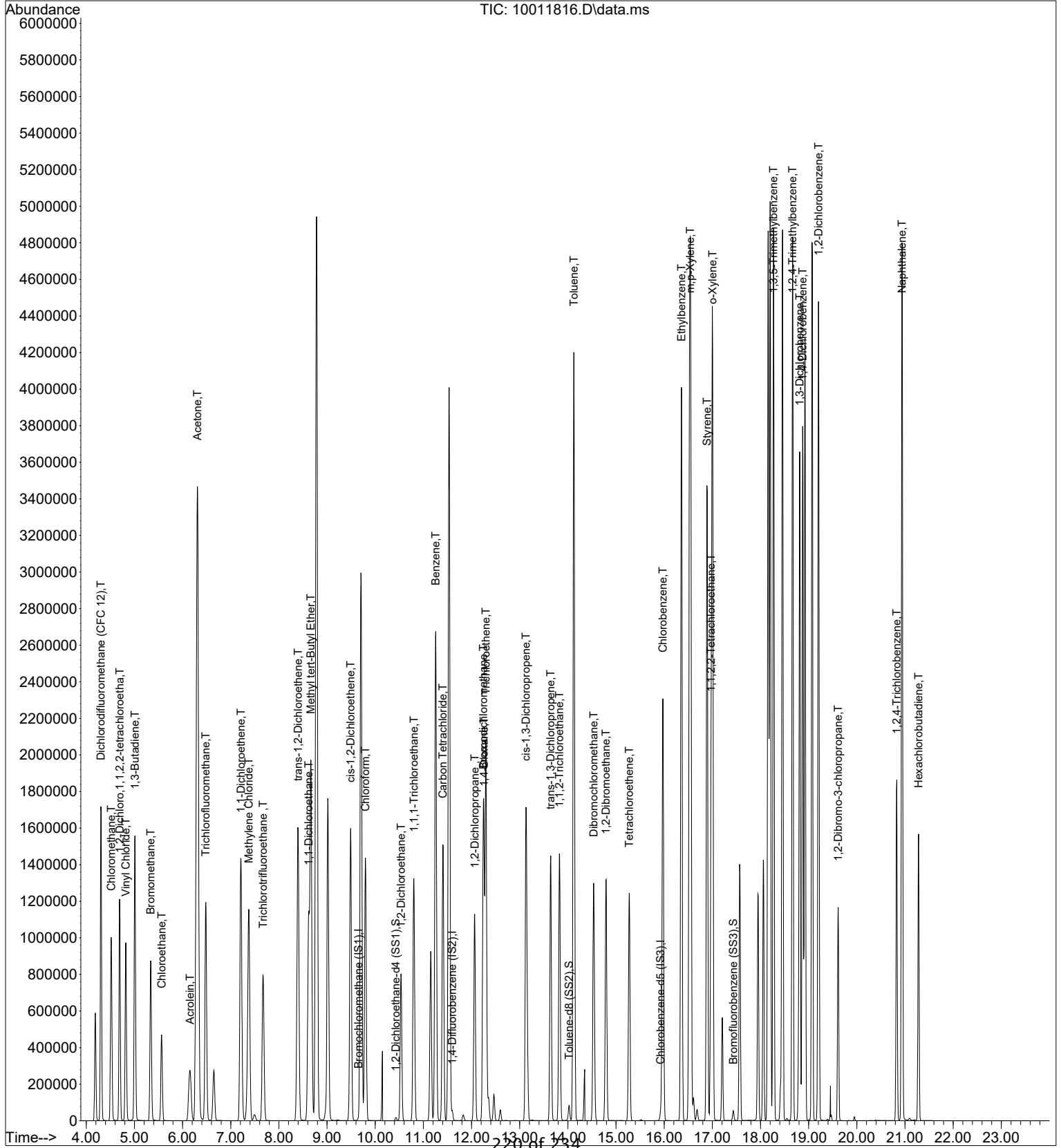
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.28	225	1462036	51812.239	pg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\01\10011816.D
Acq On : 1 Oct 2018 17:43
Sample : 50000pg S19100118 ICAL Std
Misc : S31-09241806/S31-08171802

Vial: 15
Operator: WA
Inst : MS19

Quant Time: Oct 02 06:40:38 2018
Quant Method : I:\MS19\METHODS\S19100118.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Mon Oct 01 15:34:24 2018
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Data File : I:\MS19\DATA\2018_10\01\10011819.D
 Acq On : 1 Oct 2018 19:18
 Sample : 1000pg S19100118 ICV Std
 Misc : S31-09241806/S31-09271801 (10/26)

Vial: 9
 Operator: WA
 Inst : MS19

Quant Time: Oct 02 06:50:02 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

10/2/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	19284	1000.000	pg	-0.03
25) 1,4-Difluorobenzene (IS2)	11.58	114	90340	1000.000	pg	-0.02
38) Chlorobenzene-d5 (IS3)	15.92	54	11755	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	23710	1027.119	pg	-0.03
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	102.71%	
33) Toluene-d8 (SS2)	14.01	98	94591	1015.329	pg	-0.01
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	101.53%	
45) Bromofluorobenzene (SS3)	17.43	174	33942	1021.858	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	102.19%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.31	85	46083	1121.528	pg	100
3) Chloromethane	4.51	52	10852	1129.477	pg	99
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	30940	1044.589	pg	100
5) Vinyl Chloride	4.81	62	30208	1132.157	pg	99
6) 1,3-Butadiene	5.00	54	21243	1053.174	pg	99
7) Bromomethane	5.32	94	19977	1065.743	pg	100
8) Chloroethane	5.55	64	15635	1119.941	pg	100
9) Acrolein	6.11	56	12939	1146.554	pg	100
10) Acetone	6.26	58	88055	6154.623	pg	98
11) Trichlorofluoromethane	6.47	101	35243	1096.742	pg	100
12) 1,1-Dichloroethene	7.19	96	25399	1116.905	pg	98
13) Methylene Chloride	7.33	84	26395	1108.033	pg	97
14) Trichlorotrifluoroethane	7.66	151	23781	1055.913	pg	100
15) trans-1,2-Dichloroethene	8.37	96	27072	1144.238	pg	100
16) 1,1-Dichloroethane	8.58	63	41751	1130.659	pg	100
17) Methyl tert-Butyl Ether	8.65	73	74261	1187.632	pg	100
18) cis-1,2-Dichloroethene	9.45	96	28325	1124.817	pg	100
19) Chloroform	9.76	83	43586	1094.105	pg	100
21) 1,2-Dichloroethane	10.51	62	28072	1139.290	pg	100
22) 1,1,1-Trichloroethane	10.78	97	37540	1110.996	pg	100
23) Benzene	11.23	78	108739	1086.513	pg	100
24) Carbon Tetrachloride	11.39	117	33790	1095.581	pg	100
26) 1,2-Dichloropropane	12.05	63	25221	1120.876	pg	99
27) Bromodichloromethane	12.23	83	32895	1101.339	pg	100
28) Trichloroethene	12.28	130	30568	1082.906	pg	100
29) 1,4-Dioxane	12.24	88	21765	1127.020	pg	99
30) cis-1,3-Dichloropropene	13.12	75	39716	1130.707	pg	100
31) trans-1,3-Dichloropropene	13.63	75	34545	1168.397	pg	100
32) 1,1,2-Trichloroethane	13.82	83	21609	1101.495	pg	99
34) Toluene	14.11	91	112377	1089.448	pg	100
35) Dibromochloromethane	14.53	129	28858	1044.324	pg	100
36) 1,2-Dibromoethane	14.78	107	29006	1095.765	pg	100
37) Tetrachloroethene	15.27	166	32294	1063.904	pg	100
39) Chlorobenzene	15.97	112	76186	1070.522	pg	100
40) Ethylbenzene	16.35	91	121902	1124.844	pg	99
41) m,p-Xylene	16.53	91	189199	2283.309	pg	99
42) Styrene	16.89	104	74123	1126.202	pg	100
43) o-Xylene	17.00	106	49274	1118.508	pg	99
44) 1,1,2,2-Tetrachloroethane	16.97	83	44182	1045.205	pg	100
46) 1,3,5-Trimethylbenzene	18.27	105	104660	1129.574	pg	99
47) 1,2,4-Trimethylbenzene	18.66	105	105037	1136.389	pg	100
48) 1,3-Dichlorobenzene	18.81	146	62869	1041.138	pg	100
49) 1,4-Dichlorobenzene	18.87	146	62994	1038.808	pg	100
50) 1,2-Dichlorobenzene	19.20	146	60465	1043.433	pg	100
51) 1,2-Dibromo-3-chloropr...	19.61	157	19998	1000.839	pg	98
52) 1,2,4-Trichlorobenzene	20.83	182	35513	1035.223	pg	100
53) Naphthalene	20.94	128	108646	1004.925	pg	100

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Data File : I:\MS19\DATA\2018_10\01\10011819.D
 Acq On : 1 Oct 2018 19:18
 Sample : 1000pg S19100118 ICV Std
 Misc : S31-09241806/S31-09271801 (10/26)

Vial: 9
 Operator: WA
 Inst : MS19

Quant Time: Oct 02 06:50:02 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

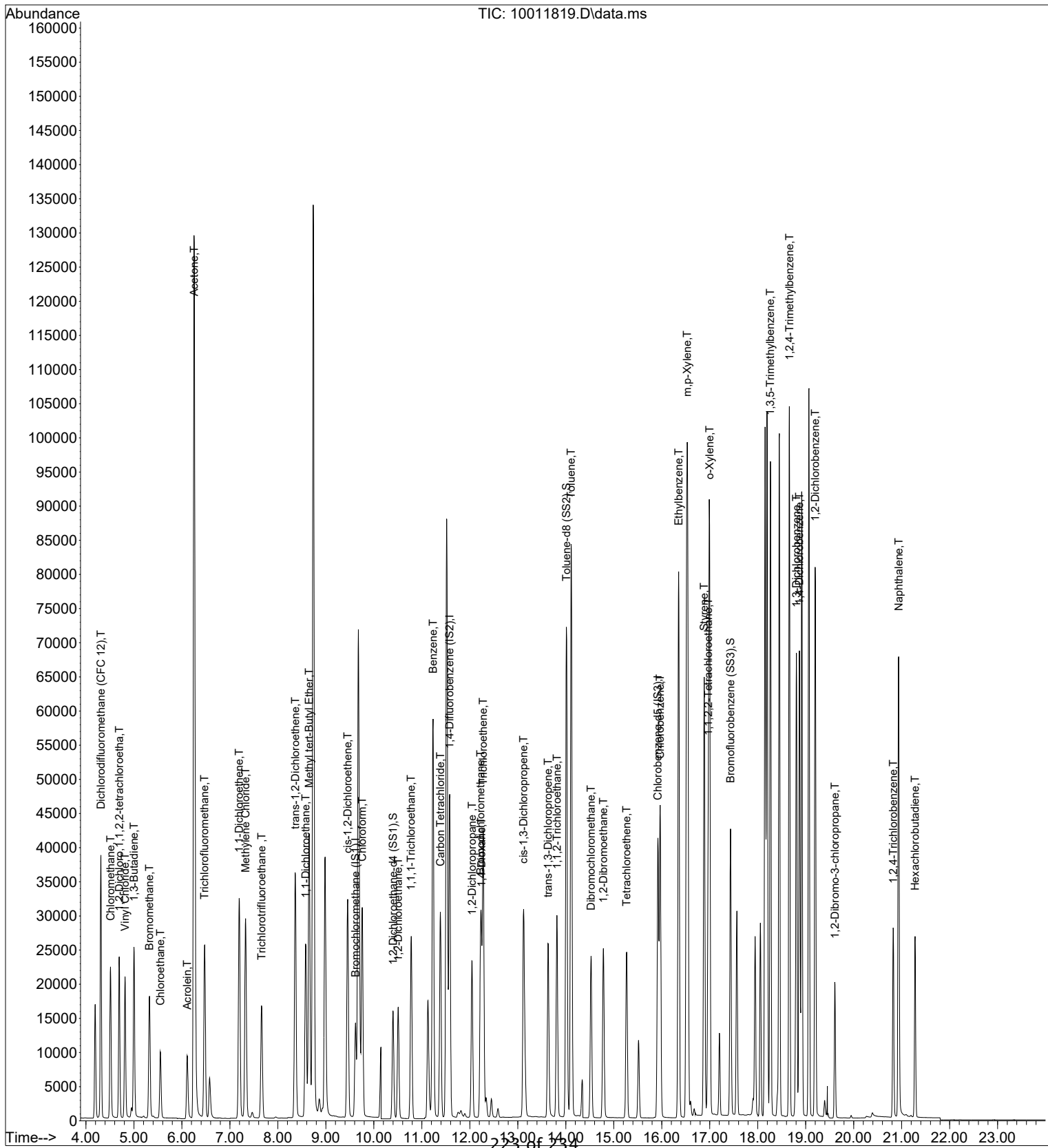
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.28	225	25301	1003.657	pg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\01\10011819.D
 Acq On : 1 Oct 2018 19:18
 Sample : 1000pg S19100118 ICV Std
 Misc : S31-09241806/S31-09271801 (10/26)

Vial: 9
 Operator: WA
 Inst : MS19

Quant Time: Oct 02 06:50:02 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Laboratory Control Sample Recovery Check Sheet - MS19

Data File Name: 10011819.D
 Data File Path: I:\MS19\DATA\2018_10\01\
 Operator: WA
 Instrument Name: MS19
 Sample Name: 1000pg S19100118 ICV Std
 Misc Info: S31-09241806/S31-09271801 (10/26)
 Date Acquired: 10/1/18 19:18
 Acq. Method File: TO15SIM.M

10/2/18

#	Compound Name	Ret. Time	Amount Spiked (pg)	Amount Found (pg)	Percent Recovery	Lower Limit	Upper Limit	Flag	70-130% Method
2)	Dichlorodifluoromethane (CFC 12)	4.31	1052.0	1121.5	107	80	130	*	*
3)	Chloromethane	4.51	1055.0	1129.5	107	54	144	*	*
4)	1,2-Dichloro,1,1,2,2-tetrachloroetha *	4.69	1055.0	1044.6	99	65	125	*	*
5)	Vinyl Chloride	4.81	1069.0	1132.2	106	65	136	*	*
6)	1,3-Butadiene *	5.00	1051.0	1053.2	100	27	154	*	*
7)	Bromomethane	5.32	1059.0	1065.7	101	71	126	*	*
8)	Chloroethane	5.55	1070.0	1119.9	105	71	129	*	*
9)	Acrolein *	6.11	1025.0	1146.6	112	49	117	*	*
10)	Acetone	6.26	5293.0	6154.6	116	62	158	*	*
11)	Trichlorofluoromethane	6.47	1056.0	1096.7	104	82	122	*	*
12)	1,1-Dichloroethene	7.19	1089.0	1116.9	103	76	120	*	*
13)	Methylene Chloride	7.33	1083.0	1108.0	102	76	120	*	*
14)	Trichlorotrifluoroethane	7.66	1078.0	1055.9	98	77	118	*	*
15)	trans-1,2-Dichloroethene	8.37	1069.0	1144.2	107	73	124	*	*
16)	1,1-Dichloroethane	8.58	1078.0	1130.7	105	71	126	*	*
17)	Methyl tert-Butyl Ether	8.65	1072.0	1187.6	111	69	125	*	*
18)	cis-1,2-Dichloroethene	9.45	1054.0	1124.8	107	76	121	*	*
19)	Chloroform	9.76	1083.0	1094.1	101	80	121	*	*
21)	1,2-Dichloroethane	10.51	1074.0	1139.3	106	68	126	*	*
22)	1,1,1-Trichloroethane	10.78	1076.0	1111.0	103	75	121	*	*
25)	Benzene	11.23	1055.0	1086.5	103	76	126	*	*
24)	Carbon Tetrachloride	11.39	1058.0	1095.6	104	78	117	*	*
26)	1,2-Dichloropropane	12.05	1079.0	1120.9	104	65	126	*	*
27)	Bromodichloromethane	12.23	1073.0	1101.3	103	72	119	*	*
28)	Trichloroethene	12.28	1067.0	1082.9	101	73	121	*	*
29)	1,4-Dioxane	12.24	1069.0	1127.0	105	66	119	*	*
30)	cis-1,3-Dichloropropene	13.12	1071.0	1130.7	106	60	122	*	*
31)	trans-1,3-Dichloropropene	13.63	1064.0	1168.4	110	58	122	*	*
32)	1,1,2-Trichloroethane	13.82	1074.0	1101.5	103	68	124	*	*
34)	Toluene	14.01	1060.0	1089.4	103	69	122	*	*
35)	Dibromochloromethane *	14.53	1064.0	1044.3	98	71	114	*	*
36)	1,2-Dibromoethane	14.78	1081.0	1095.8	101	71	119	*	*
37)	Tetrachloroethene	15.27	1064.0	1063.9	100	72	118	*	*
39)	Chlorobenzene	15.97	1073.0	1070.5	100	76	123	*	*
40)	Ethylbenzene	16.35	1061.0	1124.8	106	76	122	*	*
41)	m,p-Xylene	16.53	2131.0	2283.3	107	73	126	*	*
42)	Styrene *	16.89	1060.0	1126.2	106	53	129	*	*
43)	o-Xylene	17.00	1070.0	1118.5	105	70	129	*	*
44)	1,1,2,2-Tetrachloroethane	16.97	1072.0	1045.2	98	73	123	*	*
46)	1,3,5-Trimethylbenzene *	18.27	1069.0	1129.6	106	63	132	*	*
47)	1,2,4-Trimethylbenzene *	18.66	1076.0	1136.4	106	57	134	*	*
48)	1,3-Dichlorobenzene	18.81	1079.0	1041.1	96	59	133	*	*
49)	1,4-Dichlorobenzene	18.87	1080.0	1038.8	96	59	125	*	*
50)	1,2-Dichlorobenzene	19.20	1078.0	1043.4	97	60	127	*	*
51)	1,2-Dibromo-3-chloropropane *	19.61	1046.0	1000.8	96	48	132	*	*
52)	1,2,4-Trichlorobenzene	20.83	1071.0	1035.2	97	36	136	*	*
53)	Naphthalene	19.20	1015.0	1004.9	99	26	143	*	*
54)	Hexachlorobutadiene	21.28	1045.0	1003.7	96	41	144	*	*

* **Compounds with 70 - 130 as advisory limits**

Data File : I:\MS19\DATA\2018_10\12\10121802.D
 Acq On : 12 Oct 2018 3:46
 Sample : CCV S19101218_1000pg
 Misc : S31-09241806/S31-09271802 (10/26)

Vial: 16
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 09:03:14 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

~~WA~~ 10/12/18

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
 Max. RRF Dev : 30% Max. Rel. Area : 200%

	Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1 I	Bromochloromethane (IS1)	1.000	1.000	0.0	92	-0.03
2 T	Dichlorodifluoromethane (CF	2.131	1.908	10.5	80	0.00
3 T	Chloromethane	0.498	0.438	12.0	80	0.00
4 T	1,2-Dichloro,1,1,2,2-tetrac	1.536	1.365	11.1	80	0.00
5 T	Vinyl Chloride	1.384	1.233	10.9	80	0.00
6 T	1,3-Butadiene	1.046	0.972	7.1	84	0.00
7 T	Bromomethane	0.972	0.845	13.1	80	-0.01
8 T	Chloroethane	0.724	0.634	12.4	80	0.00
9 T	Acrolein	0.585	0.490	16.2	79	-0.04
10 T	Acetone	0.742	0.652	12.1	82	-0.05
11 T	Trichlorofluoromethane	1.666	1.479	11.2	80	0.00
12 T	1,1-Dichloroethene	1.179	1.069	9.3	80	-0.01
13 T	Methylene Chloride	1.235	1.103	10.7	81	-0.04
14 T	Trichlorotrifluoroethane	1.168	1.079	7.6	80	0.00
15 T	trans-1,2-Dichloroethene	1.227	1.126	8.2	82	-0.03
16 T	1,1-Dichloroethane	1.915	1.728	9.8	80	-0.03
17 T	Methyl tert-Butyl Ether	3.243	3.044	6.1	81	0.00
18 T	cis-1,2-Dichloroethene	1.306	1.215	7.0	82	-0.03
19 T	Chloroform	2.066	1.784	13.6	80	-0.03
20 S	1,2-Dichloroethane-d4 (SS1)	1.197	1.164	2.8	90	-0.03
21 T	1,2-Dichloroethane	1.278	1.162	9.1	80	-0.03
22 T	1,1,1-Trichloroethane	1.752	1.593	9.1	81	-0.02
23 T	Benzene	5.190	4.439	14.5	80	-0.02
24 T	Carbon Tetrachloride	1.599	1.459	8.8	81	-0.02
25 I	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	91	-0.02
26 T	1,2-Dichloropropane	0.249	0.227	8.8	80	-0.02
27 T	Bromodichloromethane	0.331	0.302	8.8	80	-0.02
28 T	Trichloroethene	0.312	0.290	7.1	81	-0.02
29 T	1,4-Dioxane	0.214	0.198	7.5	79	-0.01
30 T	cis-1,3-Dichloropropene	0.389	0.367	5.7	81	-0.01
31 T	trans-1,3-Dichloropropene	0.327	0.315	3.7	81	-0.01
32 T	1,1,2-Trichloroethane	0.217	0.199	8.3	80	-0.01
33 S	Toluene-d8 (SS2)	1.031	1.030	0.1	92	-0.01
34 T	Toluene	1.142	1.037	9.2	81	-0.01
35 T	Dibromochloromethane	0.306	0.284	7.2	81	0.00
36 T	1,2-Dibromoethane	0.293	0.272	7.2	81	0.00
37 T	Tetrachloroethene	0.336	0.307	8.6	81	0.00
38 I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	92	0.00
39 T	Chlorobenzene	6.054	5.676	6.2	81	0.00
40 T	Ethylbenzene	9.219	9.117	1.1	81	0.00
41 T	m,p-Xylene	7.049	7.082	-0.5	81	0.00
42 T	Styrene	5.599	5.353	4.4	75	0.00
43 T	o-Xylene	3.748	3.749	-0.0	81	-0.01
44 T	1,1,2,2-Tetrachloroethane	3.596	3.466	3.6	80	0.00
45 S	Bromofluorobenzene (SS3)	2.826	3.119	-10.4	96	0.00
46 T	1,3,5-Trimethylbenzene	7.882	7.937	-0.7	80	0.00
47 T	1,2,4-Trimethylbenzene	7.863	8.043	-2.3	79	0.00
48 T	1,3-Dichlorobenzene	5.137	4.944	3.8	80	0.00
49 T	1,4-Dichlorobenzene	5.159	4.857	5.9	80	0.00
50 T	1,2-Dichlorobenzene	4.930	4.786	2.9	80	0.00
51 T	1,2-Dibromo-3-chloropropane	1.700	1.741	-2.4	81	0.00
52 T	1,2,4-Trichlorobenzene	2.918	2.942	-0.8	79	0.00
53 T	Naphthalene	9.197	8.693	5.5	72	0.00
54 T	Hexachlorobutadiene	2.145	2.182	-1.7	82	0.00

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Data File : I:\MS19\DATA\2018_10\12\10121802.D
 Acq On : 12 Oct 2018 3:46
 Sample : CCV S19101218_1000pg
 Misc : S31-09241806/S31-09271802 (10/26)

Vial: 16
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 09:03:14 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
 Max. RRF Dev : 30% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev Area%	Dev(min)
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(#) = Out of Range

SPCC's out = 0 CCC's out = 0

Data File : I:\MS19\DATA\2018_10\12\10121802.D
 Acq On : 12 Oct 2018 3:46
 Sample : CCV S19101218_1000pg
 Misc : S31-09241806/S31-09271802 (10/26)

Vial: 16
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 09:03:14 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

~~10/12/18~~ 10/12/18

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.62	130	19534	1000.000	pg	-0.03
25) 1,4-Difluorobenzene (IS2)	11.58	114	89611	1000.000	pg	-0.02
38) Chlorobenzene-d5 (IS3)	15.92	54	11132	1000.000	pg	0.00

System Monitoring Compounds

20) 1,2-Dichloroethane-d4 ...	10.40	65	22734	972.235	pg	-0.03
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	97.22%	
33) Toluene-d8 (SS2)	14.01	98	92292	998.711	pg	-0.01
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	99.87%	
45) Bromofluorobenzene (SS3)	17.43	174	34722	1103.843	pg	0.00
Spiked Amount	1000.000	Range 70 - 130	Recovery	=	110.38%	

Target Compounds

	R.T.	QIon	Response	Conc	Units	Qvalue
2) Dichlorodifluoromethan...	4.31	85	78123	1876.957	pg	100
3) Chloromethane	4.51	52	17199	1767.163	pg	99
4) 1,2-Dichloro,1,1,2,2-t...	4.69	85	54435	1814.301	pg	100
5) Vinyl Chloride	4.81	62	49693	1838.595	pg	100
6) 1,3-Butadiene	5.00	54	40210	1967.997	pg	100
7) Bromomethane	5.32	94	32763	1725.487	pg	100
8) Chloroethane	5.55	64	25083	1773.711	pg	100
9) Acrolein	6.11	56	20183	1765.572	pg	99
10) Acetone	6.26	58	135599	9356.423	pg	97
11) Trichlorofluoromethane	6.48	101	60733	1865.787	pg	100
12) 1,1-Dichloroethene	7.20	96	44324	1924.175	pg	99
13) Methylene Chloride	7.33	84	45586	1889.158	pg	99
14) Trichlorotrifluoroethane	7.66	151	44397	1946.067	pg	100
15) trans-1,2-Dichloroethene	8.37	96	47551	1984.090	pg	100
16) 1,1-Dichloroethane	8.58	63	69004	1844.782	pg	100
17) Methyl tert-Butyl Ether	8.65	73	127249	2009.006	pg	100
18) cis-1,2-Dichloroethene	9.45	96	50643	1985.351	pg	100
19) Chloroform	9.76	83	73964	1832.899	pg	100
21) 1,2-Dichloroethane	10.51	62	47885	1918.519	pg	100
22) 1,1,1-Trichloroethane	10.78	97	67046	1958.830	pg	100
23) Benzene	11.24	78	183299	1808.072	pg	100
24) Carbon Tetrachloride	11.39	117	60431	1934.292	pg	100
26) 1,2-Dichloropropane	12.05	63	43276	1938.926	pg	100
27) Bromodichloromethane	12.22	83	57690	1947.199	pg	100
28) Trichloroethene	12.28	130	55078	1967.074	pg	100
29) 1,4-Dioxane	12.25	88	37784	1972.422	pg	99
30) cis-1,3-Dichloropropene	13.12	75	73749	2116.701	pg	100
31) trans-1,3-Dichloropropene	13.63	75	60173	2051.755	pg	100
32) 1,1,2-Trichloroethane	13.81	83	38010	1953.280	pg	99
34) Toluene	14.11	91	195838	1914.012	pg	100
35) Dibromochloromethane	14.53	129	54026	1971.018	pg	100
36) 1,2-Dibromoethane	14.78	107	51902	1976.663	pg	100
37) Tetrachloroethene	15.27	166	58537	1944.151	pg	100
39) Chlorobenzene	15.96	112	134713	1998.847	pg	100
40) Ethylbenzene	16.35	91	213545	2080.752	pg	100
41) m,p-Xylene	16.53	91	334749	4265.939	pg	99
42) Styrene	16.89	104	126091	2023.005	pg	100
43) o-Xylene	16.99	106	88058	2110.764	pg	100
44) 1,1,2,2-Tetrachloroethane	16.96	83	81573	2037.756	pg	100
46) 1,3,5-Trimethylbenzene	18.26	105	185376	2112.696	pg	100
47) 1,2,4-Trimethylbenzene	18.66	105	188211	2150.201	pg	100
48) 1,3-Dichlorobenzene	18.80	146	117894	2061.640	pg	100
49) 1,4-Dichlorobenzene	18.87	146	115064	2003.664	pg	100
50) 1,2-Dichlorobenzene	19.20	146	115406	2102.996	pg	100
51) 1,2-Dibromo-3-chloropr...	19.61	157	40737	2152.862	pg	98
52) 1,2,4-Trichlorobenzene	20.82	182	71858	2211.929	pg	100
53) Naphthalene	20.94	128	204388	1996.295	pg	100

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Data File : I:\MS19\DATA\2018_10\12\10121802.D
 Acq On : 12 Oct 2018 3:46
 Sample : CCV S19101218_1000pg
 Misc : S31-09241806/S31-09271802 (10/26)

Vial: 16
 Operator: WA
 Inst : MS19

Quant Time: Oct 12 09:03:14 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M

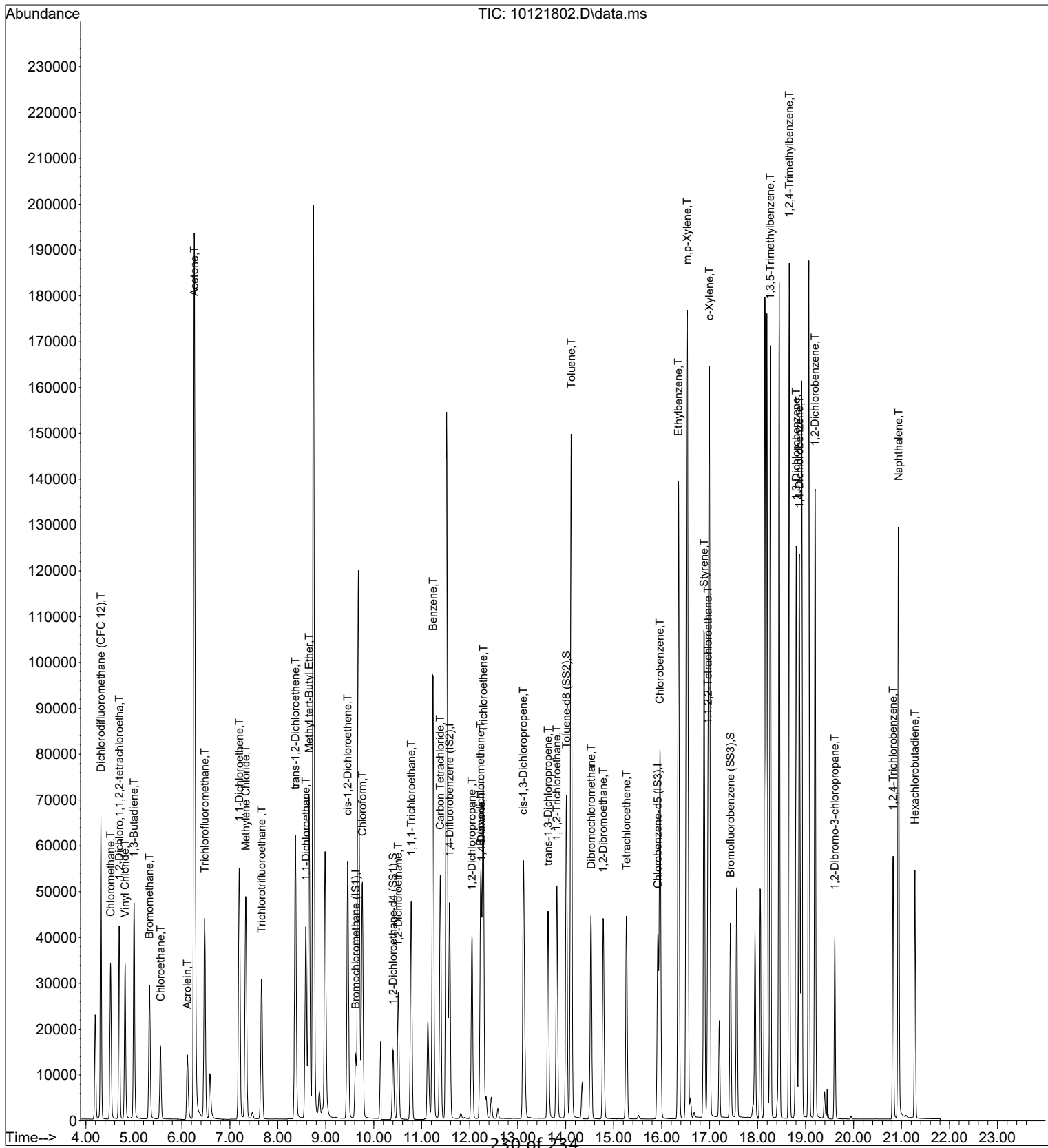
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.28	225	51345	2150.776	pg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Data File : I:\MS19\DATA\2018_10\12\10121802.D
 Acq On : 12 Oct 2018 3:46
 Sample : CCV S19101218_1000pg
 Misc : S31-09241806/S31-09271802 (10/26)

Vial: 16
 Operator: WA
 Inst : MS19

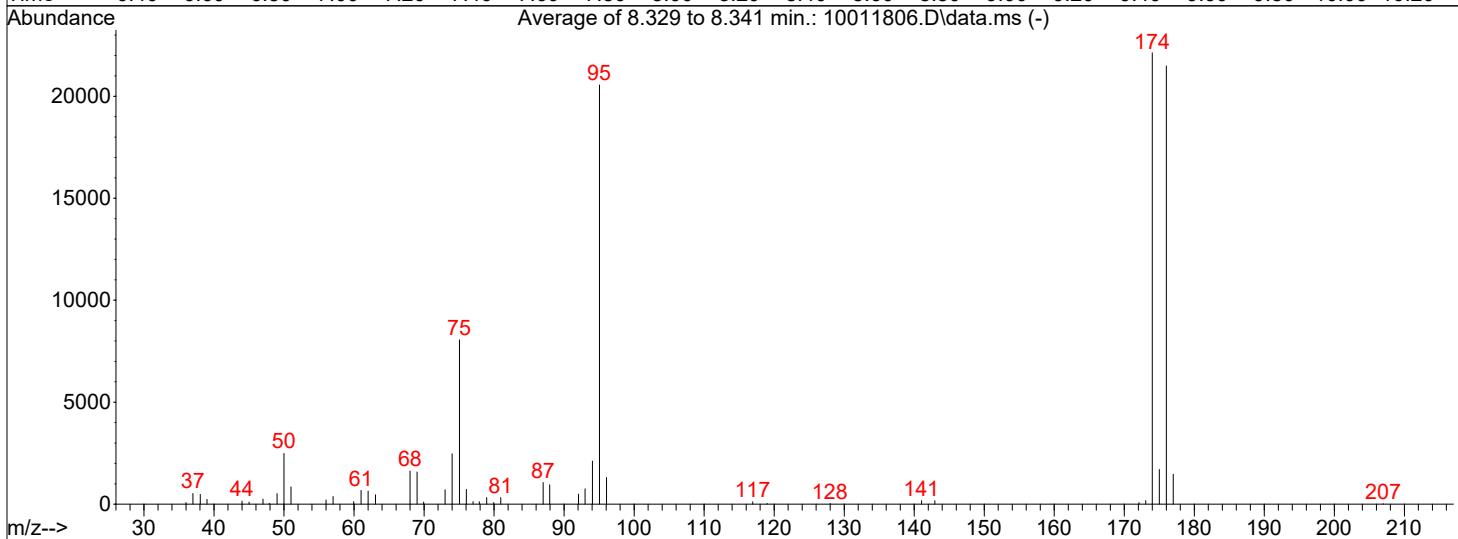
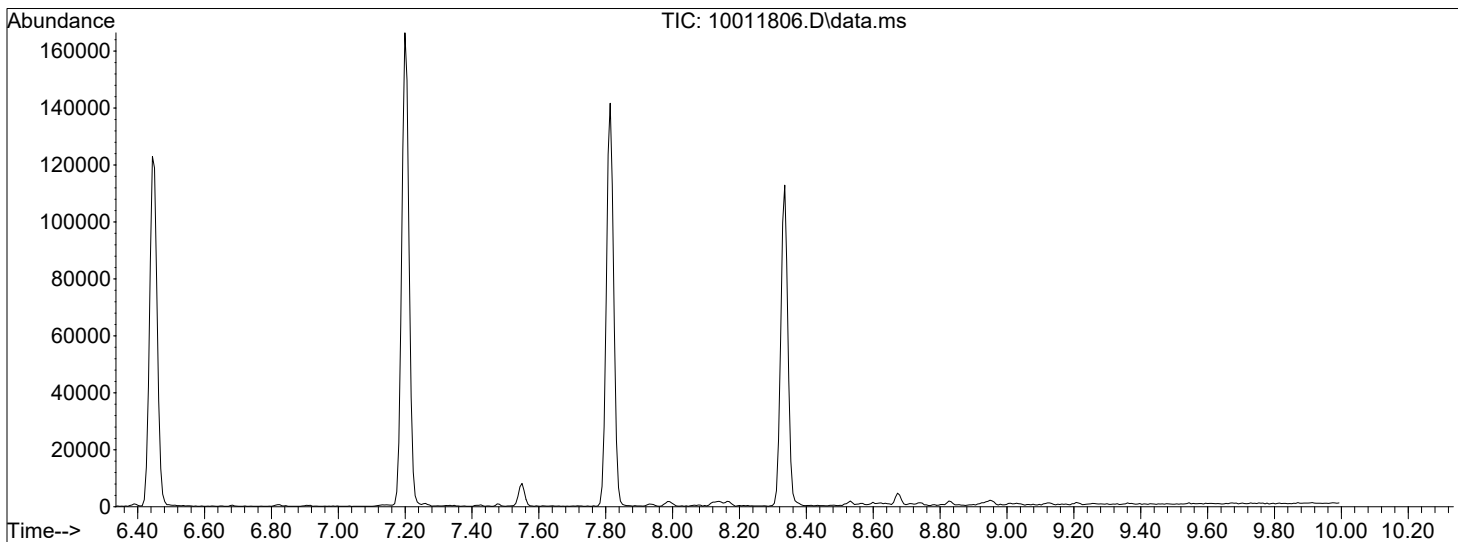
Quant Time: Oct 12 09:03:14 2018
 Quant Method : I:\MS19\METHODS\S19100118.M
 Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 QLast Update : Tue Oct 02 06:45:50 2018
 Response via : Initial Calibration
 DataAcq Meth:TO15SIM.M



Data Path : I:\MS19\DATA\2018_10\01\
 Data File : 10011806.D
 Acq On : 1 Oct 2018 11:45
 Operator : WA
 Sample : BFB_S19100118
 Misc : S31-09241806
 ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : I:\MS19\METHODS\S19082418A.M
 Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 Last Update : Wed Sep 05 06:48:06 2018



AutoFind: Scans 691, 692, 693; Background Corrected with Scan 685

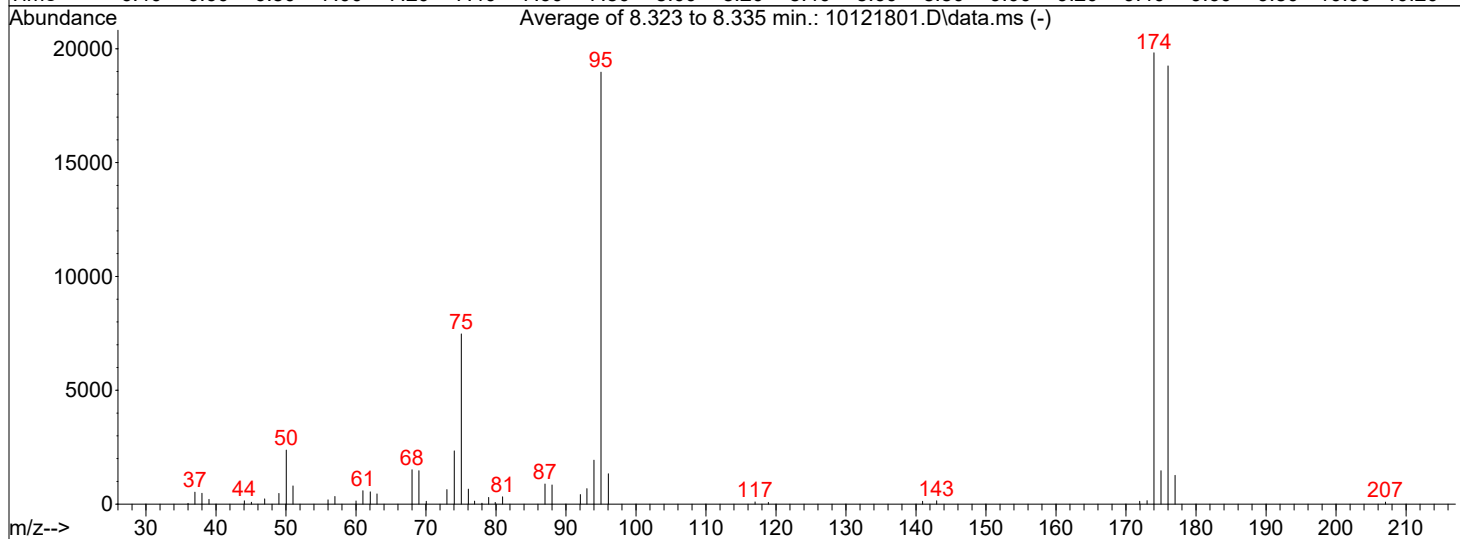
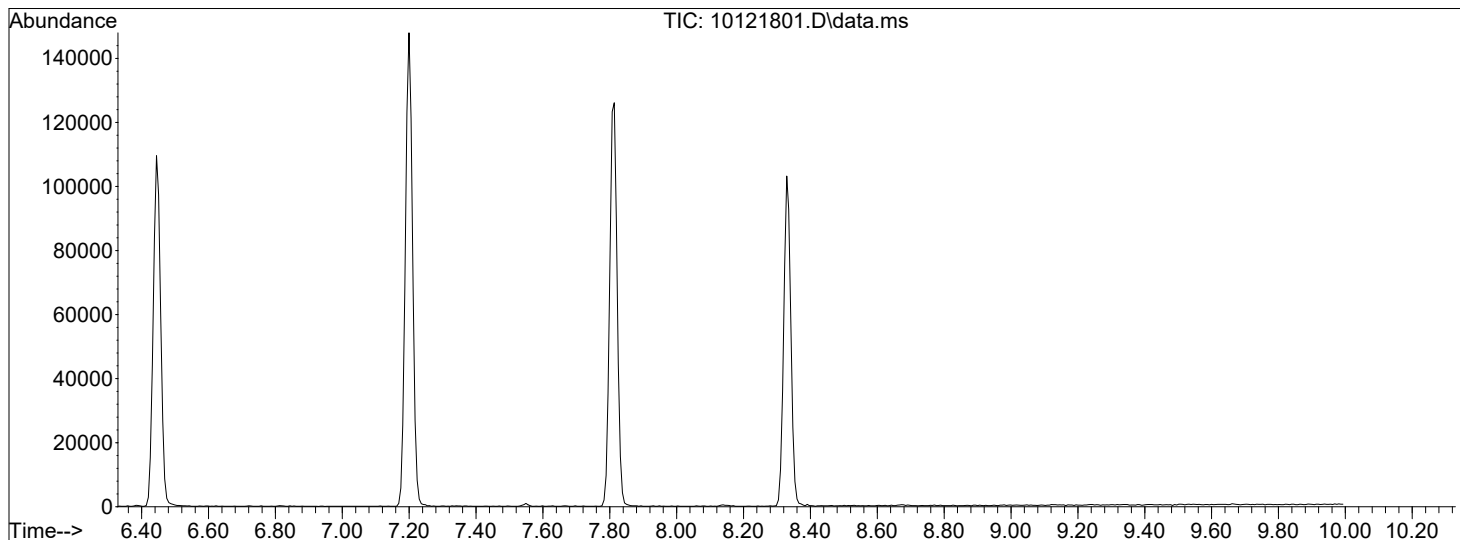
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	12.1	2491	PASS
75	95	30	66	39.2	8057	PASS
95	95	100	100	100.0	20557	PASS
96	95	5	9	6.4	1310	PASS
173	174	0.00	2	0.8	171	PASS
174	95	50	120	107.7	22131	PASS
175	174	4	9	7.7	1702	PASS
176	174	93	101	97.1	21488	PASS
177	176	5	9	6.8	1469	PASS

~~WA~~ 10/1/18

Data Path : I:\MS19\DATA\2018_10\12\
 Data File : 10121801.D
 Acq On : 12 Oct 2018 3:26
 Operator : WA
 Sample : BFB_S19101218
 Misc : S31-09241806
 ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : I:\MS19\METHODS\S19100118.M
 Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
 Last Update : Tue Oct 02 06:45:50 2018



AutoFind: Scans 690, 691, 692; Background Corrected with Scan 684

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	12.5	2375	PASS
75	95	30	66	39.4	7475	PASS
95	95	100	100	100.0	18973	PASS
96	95	5	9	7.0	1333	PASS
173	174	0.00	2	0.8	156	PASS
174	95	50	120	104.5	19821	PASS
175	174	4	9	7.4	1467	PASS
176	174	93	101	97.1	19247	PASS
177	176	5	9	6.6	1265	PASS

10/12/18

Injection Log

Directory: J:\MS19\DATA\2018_10\01\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	10/1/18 8:15	10011801.D	Blank	S31-09241806	WA	2	
2	10/1/18 8:46	10011802.D	Blank	S31-09241806	WA	2	
3	10/1/18 9:17	10011803.D	BFB_S19100118	S31-07311807	WA	2	
4	10/1/18 9:37	10011804.D	Std check_1000pg	S31-07311807/S31-09181802 (10/16)	WA	16	
5	10/1/18 10:14	10011805.D	Std check_1000pg	S31-07311807/S31-09181808 (10/16)	WA	14	
6	10/1/18 11:45	10011806.D	BFB_S19100118	S31-09241806	WA	2	<i>passed</i>
7	10/1/18 12:11	10011807.D	20pg S19100118 ICAL Std	S31-09241806/S31-09271803 (10/26)	WA	13	<i>S19100118.M</i>
8	10/1/18 13:09	10011808.D	50pg S19100118 ICAL Std	S31-09241806/S31-09271803 (10/26)	WA	13	
9	10/1/18 13:44	10011809.D	100pg S19100118 ICAL Std	S31-09241806/S31-09271803 (10/26)	WA	13	
10	10/1/18 14:21	10011810.D	500pg S19100118 ICAL Std	S31-09241806/S31-09271803 (10/26)	WA	13	
11	10/1/18 14:52	10011811.D	1000pg S19100118 ICAL Std	S31-09241806/S31-09271802 (10/26)	WA	14	
12	10/1/18 15:36	10011812.D	2000pg S19100118 ICAL Std	S31-09241806/S31-09271802 (10/26)	WA	14	
13	10/1/18 16:39	10011814.D	10000pg S19100118 ICAL Std	S31-09241806/S31-09271802 (10/26)	WA	14	
14	10/1/18 17:11	10011815.D	25000pg S19100118 ICAL Std	S31-09241806/S31-08171802	WA	15	
15	10/1/18 17:43	10011816.D	50000pg S19100118 ICAL Std	S31-09241806/S31-08171802	WA	15	
16	10/1/18 18:14	10011817.D	Blank	S31-09241806/S31-08171802	WA	2	
17	10/1/18 18:46	10011818.D	1000pg S19100118 ICV Std	S31-09241806/S31-09171808 (10/16)	WA	2	<i>not used</i>
18	10/1/18 19:18	10011819.D	1000pg S19100118 ICV Std	S31-09241806/S31-09271801 (10/26)	WA	9	<i>passed</i>
<i>S19100118.M: ranges from 20pg ---> 50K pg, except: Acetone 500pg --> 125K pg and chloroform : 50pg ---> 50K pg</i>							
						<i>WA</i> 10/4/18	

Injection Log

Directory: I:\MS19\DATA\2018_10\12\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	10/12/18 3:26	10121801.D	BFB S19101218	S31-09241806	WA	2	Passed
2	10/12/18 3:46	10121802.D	CCV S19101218_1000pg	S31-09241806/S31-09271802 (10/26)	WA	16	Passed
3	10/12/18 4:17	10121803.D	Blank	S31-09241806	WA	2	Passed
4	10/12/18 4:49	10121804.D	MB S19101218_1000mL	S31-09241806_AS01329	WA	2	Passed
5	10/12/18 5:20	10121805.D	LCS S19101218_1000pg	S31-09241806/S31-10021801 (11/1)	WA	2	Passed
6	10/12/18 5:52	10121806.D	LCSD S19101218_1000pg	S31-09241806/S31-10021801 (11/1)	WA	2	Passed
7	10/12/18 11:45	10121807.D	P1805236-005 (400mL)	S31-09241806	WA	7	
8	10/12/18 12:17	10121808.D	P1805236-006 (400mL)	S31-09241806	WA	8	
9	10/12/18 13:19	10121809.D	P1805236-001 (400mL)	S31-09241806	WA	1	
10	10/12/18 13:51	10121810.D	P1805236-002 (400mL)	S31-09241806	WA	3	
11	10/12/18 14:22	10121811.D	P1805236-003 (400mL)	S31-09241806	WA	4	
12	10/12/18 14:53	10121812.D	P1805236-004 (400mL)	S31-09241806	WA	5	
13	10/12/18 16:17	10121813.D	P1805376-007 (1000mL)	S31-09241806	WA	8	
14	10/12/18 16:49	10121814.D	Br-BNZ _ 200pg	S31-09241806/S31-10121802	WA	14	
15	10/12/18 17:21	10121815.D	P1805376-001 (1000mL)	S31-09241806	WA	1	
16	10/12/18 17:52	10121816.D	P1805376-001dup (1000mL)	S31-09241806	WA	1	Passed
17	10/12/18 18:23	10121817.D	P1805376-002 (1000mL)	S31-09241806	WA	3	
18	10/12/18 18:55	10121818.D	P1805376-003 (1000mL)	S31-09241806	WA	4	
19	10/12/18 19:26	10121819.D	P1805376-004 (1000mL)	S31-09241806	WA	5	
20	10/12/18 19:57	10121820.D	P1805376-005 (1000mL)	S31-09241806	WA	6	
21	10/12/18 20:29	10121821.D	CCV T19101218_1000pg	S31-09241806/S31-10041805	WA	2	Passed
22	10/12/18 21:00	10121822.D	IDOC1 T19101218_200pg	S31-09241806/S31-10121802	WA	15	
23	10/12/18 21:32	10121823.D	IDOC2 T19101218_200pg	S31-09241806/S31-10121802	WA	15	
24	10/12/18 22:04	10121824.D	P1805376-006 (1000mL)	S31-09241806	WA	7	
25	10/12/18 22:36	10121826.D	P1805376-008 (1000mL)	S31-09241806	WA	9	
26	10/12/18 23:08	10121827.D	P1805376-009 (1000mL)	S31-09241806	WA	10	
27	10/12/18 23:39	10121828.D	IDOC3 T19101218_200pg	S31-09241806/S31-10121802	WA	15	
28	10/13/18 0:11	10121829.D	IDOC4 T19101218_200pg	S31-09241806/S31-10121802	WA	15	
29	10/13/18 0:42	10121830.D	P1805324-001 (400mL)	S31-09241806	WA	11	
30	10/13/18 1:13	10121831.D	P1805324-002 (400mL)	S31-09241806	WA	12	
31	10/13/18 1:45	10121832.D	P1805324-006 (400mL)	S31-09241806	WA	13	
32	10/13/18 2:16	10121833.D	Blank	S31-09241806	WA	2	
							WA 10/15/18



2655 Park Center Drive, Suite A
 Simi Valley, California 93065
 Phone (805) 526-7161
 Fax (805) 526-7270

Air - Chain of Custody Record & Analytical Service Request

ALS quote # 44579

Requested Turnaround Time in Business Days (Surcharges) please circle
 1 Day (100%) 2 Day (75%) 3 Day (50%) 4 Day (35%) 5 Day (25%) 10-Day-Standard

ALS Project No: F180523L

Company Name & Address (Reporting Information) <u>Leidos</u> <u>18939 120th Ave NE, Suite 112</u> <u>Bothell, WA 98011</u>				Project Name <u>Newman's Chevron</u>				ALS Contact:			
Project Manager <u>Russ Shropshire</u>				Project Number <u>204117</u>				Analysis Method			
Phone <u>425-482-3323</u>		Fax		P.O. # / Billing Information <u>PO 10215233</u>				BTEX, MTBE, Naphthalene by TO-15 Modified H ₂ , CO, CO ₂ , Ne, CH ₄ , O ₂ by ASTM 2156 Helium using GC w/ TCD Modified-3L Mod			
Email Address for Result Reporting <u>shropshirer@leidos.com</u>				Sampler (Print & Sign) <u>Russell Shropshire</u>							
Client Sample ID	Laboratory ID Number	Date Collected	Time Collected	Canister ID (Bar code # - AC, SC, etc.)	Flow Controller ID (Bar code # - FC #)	Canister Start Pressure "Hg	Canister End Pressure "Hg/psig	Sample Volume			
<u>1</u> SVP-1-092718	<u>15C00712</u>	<u>9/27/18</u>	<u>10:10</u>	<u>15C00712</u>	<u>5M00082</u>	<u>29.96</u>	<u>-1</u>	<u>1L</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>2</u> SVP-2-092718	<u>15C00522</u>		<u>11:16</u>	<u>15C00522</u>	<u>5M00109</u>	<u>-30.07</u>	<u>-1.75</u>	<u>1L</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>3</u> SVP-3-092718	<u>15C01378</u>		<u>11:59</u>	<u>15C01378</u>	<u>5M00118</u>	<u>-30.02</u>	<u>-1</u>	<u>1L</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>4</u> DUP-1-092718	<u>15C00702</u>			<u>15C00702</u>		<u>-30.08</u>		<u>1L</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>5</u> EB-1-092618		<u>9/26/18</u>	<u>14:20</u>	<u>15C00703</u>	<u>5M00076</u>	<u>-30.24</u>	<u>-10.49</u>	<u>1L</u>	<u>X</u>	<u>X</u>	<u>X</u>
<u>6</u> EB-1-092818		<u>9/28/18</u>	<u>11:26</u>	<u>15500042</u>	<u>5M00119</u>	<u>29.87</u> <u>-10-255</u>	<u>-9.33</u>	<u>1L</u>	<u>X</u>	<u>X</u>	<u>X</u>
Report Tier Levels - please select Tier I - Results (Default in not specified) _____ Tier II (Results + QC Summaries) _____ Tier III (Results + QC & Calibration Summaries) _____ Tier IV (Date Validation Package) 10% Surcharge <u>X</u>											
Relinquished by: (Signature) <u>R. Shropshire</u>				Date: <u>9/28/18</u>		Time: <u>11:40</u>		Received by: (Signature) <u>[Signature]</u>		Date: <u>10-2-18</u>	
Relinquished by: (Signature)				Date:		Time:		Received by: (Signature)		Time: <u>0830</u>	
Project Requirements (MRLs, QAPP)										Cooler / Blank Temperature _____ °C	



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Chevron c/o Leidos, Inc.
6310 Allentown Blvd.
Suite 110
Harrisburg PA 17112

Report Date: August 13, 2019 18:25

Project: 204117

Account #: 13271
Group Number: 2056399
SDG: LDC06
PO Number: P010215249
Release Number: HETRICK
State of Sample Origin: WA

Electronic Copy To Leidos
Electronic Copy To EcoChem

Attn: Russ Shropshire
Attn: Christine Ransom

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

To view our laboratory's current scopes of accreditation please go to <https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/> . Historical copies may be requested through your project manager.



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
SB-13-S-12.0-190724 Grab Soil	07/24/2019 15:50	1114243
SB-13-S-16.0-190724 Grab Soil	07/24/2019 15:40	1114244
SB-13-S-27.5-190724 Grab Soil	07/24/2019 15:30	1114245
QA-T-190724 Water	07/24/2019 15:20	1114246
SB-14-S-12.0-190724 Grab Soil	07/24/2019 17:40	1114247

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: SB-13-S-12.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114243
ELLE Group #: 2056399
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 15:50
SDG#: LDC06-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.022	39.37
11995	Ethylbenzene	100-41-4	N.D.	0.018	39.37
11995	Toluene	108-88-3	N.D.	0.027	39.37
11995	Xylene (Total)	1330-20-7	N.D.	0.044	39.37
Reporting limits were raised due to interference from the sample matrix.					
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	460	8.4	808.48
GC Petroleum Hydrocarbons					
		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.5	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Target analytes were detected in the method blank associated with the samples as noted on the QC summary. The reported detection in the sample DUP matches the pattern in the method blank.					
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	N.D.	0.544	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	11.1	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	V192193AA	08/07/2019 17:10	Stephen C Nolte	39.37
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921454376	07/24/2019 15:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921454376	07/24/2019 15:50	Client Supplied	1

Sample Description: SB-13-S-12.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114243
ELLE Group #: 2056399
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 15:50
SDG#: LDC06-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	3	201921454376	07/24/2019 15:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	4	201921454376	07/24/2019 15:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921454376	07/24/2019 15:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	2	201921454376	07/24/2019 15:50	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19214SLI026	08/10/2019 02:15	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19214SLI026	08/05/2019 02:00	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31B	08/05/2019 21:15	Jeremy C Giffin	808.48
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921454376	07/24/2019 15:50	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140026A	08/06/2019 01:41	Nicholas R Rossi	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140026A	08/04/2019 14:55	Karen L Beyer	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404902	08/07/2019 13:17	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404902	08/02/2019 06:49	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19214820004A	08/05/2019 10:57	William C Schwebel	1

Sample Description: SB-13-S-16.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114244
ELLE Group #: 2056399
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 15:40
SDG#: LDC06-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.84
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.84
11995	Toluene	108-88-3	N.D.	0.0005	0.84
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.84
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.4	38.49
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.79	0.558	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	7.3	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192193AA	08/07/2019 16:56	Linda C Pape	0.84
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921454376	07/24/2019 15:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921454376	07/24/2019 15:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921454376	07/24/2019 15:40	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19214SLI026	08/10/2019 02:40	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19214SLI026	08/05/2019 02:00	Sherry L Morrow	1

Sample Description: SB-13-S-16.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114244
ELLE Group #: 2056399
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 15:40
SDG#: LDC06-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31A	08/04/2019 17:00	Jeremy C Giffin	38.49
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921454376	07/24/2019 15:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140026A	08/06/2019 02:46	Nicholas R Rossi	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140026A	08/04/2019 14:55	Karen L Beyer	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/07/2019 22:08	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19214820004A	08/05/2019 10:57	William C Schwebel	1

Sample Description: SB-13-S-27.5-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114245
ELLE Group #: 2056399
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 15:30
SDG#: LDC06-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.82
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.82
11995	Toluene	108-88-3	N.D.	0.0005	0.82
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.82
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	23.96
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.1	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	10	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.78	0.521	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	4.9	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192193AA	08/07/2019 17:18	Linda C Pape	0.82
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921454376	07/24/2019 15:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921454376	07/24/2019 15:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921454376	07/24/2019 15:30	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19214SLI026	08/10/2019 03:05	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19214SLI026	08/05/2019 02:00	Sherry L Morrow	1

Sample Description: SB-13-S-27.5-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114245
ELLE Group #: 2056399
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 15:30
SDG#: LDC06-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31A	08/04/2019 17:36	Jeremy C Giffin	23.96
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921454376	07/24/2019 15:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140026A	08/06/2019 03:08	Nicholas R Rossi	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140026A	08/04/2019 14:55	Karen L Beyer	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/07/2019 21:29	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19214820004A	08/05/2019 10:57	William C Schwebel	1

Sample Description: QA-T-190724 Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1114246
ELLE Group #: 2056399
Matrix: Water

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 15:20
SDG#: LDC06-04TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z192192AA	08/07/2019 14:44	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z192192AA	08/07/2019 14:43	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	19213B20A	08/02/2019 19:58	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	19213B20A	08/02/2019 19:57	Marie D Beamenderfer	1

Sample Description: SB-14-S-12.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114247
ELLE Group #: 2056399
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 17:40
SDG#: LDC06-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.71
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.71
11995	Toluene	108-88-3	N.D.	0.0005	0.71
11995	Xylene (Total)	1330-20-7	N.D.	0.0008	0.71
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	0.051	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	21.65
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.03	0.491	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	8.2	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192193AA	08/07/2019 17:41	Linda C Pape	0.71
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921454376	07/24/2019 17:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921454376	07/24/2019 17:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921454376	07/24/2019 17:40	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19214SLI026	08/10/2019 03:31	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19214SLI026	08/05/2019 02:00	Sherry L Morrow	1

Sample Description: SB-14-S-12.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114247
ELLE Group #: 2056399
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 17:40
SDG#: LDC06-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216B31A	08/05/2019 09:48	Jeremy C Giffin	21.65
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921454376	07/24/2019 17:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140026A	08/06/2019 03:29	Nicholas R Rossi	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140026A	08/04/2019 14:55	Karen L Beyer	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/07/2019 22:01	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19214820004A	08/05/2019 10:57	William C Schwebel	1

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 18:25

Group Number: 2056399

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL
	mg/kg	mg/kg
Batch number: A192193AA	Sample number(s): 1114244-1114245,1114247	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: V192193AA	Sample number(s): 1114243	
Benzene	N.D.	0.025
Ethylbenzene	N.D.	0.020
Toluene	N.D.	0.030
Xylene (Total)	N.D.	0.050
	ug/l	ug/l
Batch number: Z192192AA	Sample number(s): 1114246	
Benzene	N.D.	0.2
Ethylbenzene	N.D.	0.4
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
	mg/kg	mg/kg
Batch number: 19214SLI026	Sample number(s): 1114243-1114245,1114247	
Naphthalene	N.D.	0.007
Batch number: 19216A31A	Sample number(s): 1114244-1114245	
NWTPH-GX Soil C7-C12	N.D.	0.2
Batch number: 19216A31B	Sample number(s): 1114243	
NWTPH-GX Soil C7-C12	N.D.	0.2
Batch number: 19216B31A	Sample number(s): 1114247	
NWTPH-GX Soil C7-C12	N.D.	0.2
	ug/l	ug/l
Batch number: 19213B20A	Sample number(s): 1114246	
NWTPH-Gx water C7-C12	N.D.	19
	mg/kg	mg/kg
Batch number: 192140026A	Sample number(s): 1114243-1114245,1114247	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	28	10
Batch number: 192141404902	Sample number(s): 1114243	
Lead	N.D.	0.600

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 18:25

Group Number: 2056399

Method Blank (continued)

Analysis Name	Result mg/kg	MDL mg/kg
Batch number: 192141404903		Sample number(s): 1114244-1114245,1114247
Lead	N.D.	0.600

LCS/LCSD

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: A192193AA	Sample number(s): 1114244-1114245,1114247								
Benzene	0.0200	0.0198	0.0200	0.0201	99	100	80-120	1	30
Ethylbenzene	0.0200	0.0203	0.0200	0.0205	102	102	78-120	1	30
Toluene	0.0200	0.0202	0.0200	0.0207	101	103	80-120	2	30
Xylene (Total)	0.0600	0.0612	0.0600	0.0619	102	103	75-120	1	30
Batch number: V192193AA	Sample number(s): 1114243								
Benzene	1.00	1.06	1.00	1.06	106	106	80-120	0	30
Ethylbenzene	1.00	1.04	1.00	1.03	104	103	78-120	0	30
Toluene	1.00	1.03	1.00	1.03	103	103	80-120	0	30
Xylene (Total)	3.00	3.11	3.00	3.11	104	104	75-120	0	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: Z192192AA	Sample number(s): 1114246								
Benzene	20	20.87			104		80-120		
Ethylbenzene	20	20.37			102		80-120		
Toluene	20	21.09			105		80-120		
Xylene (Total)	60	64.7			108		80-120		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19214SLI026	Sample number(s): 1114243-1114245,1114247								
Naphthalene	1.67	1.20			72		46-99		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19216A31A	Sample number(s): 1114244-1114245								
NWTPH-GX Soil C7-C12	11	11.46	11	11.37	104	103	55-145	1	30
Batch number: 19216A31B	Sample number(s): 1114243								
NWTPH-GX Soil C7-C12	11	11.46	11	11.37	104	103	55-145	1	30
Batch number: 19216B31A	Sample number(s): 1114247								
NWTPH-GX Soil C7-C12	11	11.25	11	11.5	102	105	55-145	2	30
	ug/l	ug/l	ug/l	ug/l					

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 18:25

Group Number: 2056399

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 19213B20A NWTPH-Gx water C7-C12	Sample number(s): 1114246 1100	1134.39	1100	1121.55	103	102	64-131	1	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192140026A Diesel Range Organics C12-C24	Sample number(s): 1114243-1114245,1114247 133.4	101.47			76		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192141404902 Lead	Sample number(s): 1114243 15	15.79			105		90-115		
Batch number: 192141404903 Lead	Sample number(s): 1114244-1114245,1114247 15	14.59			97		90-115		
	%	%	%	%					
Batch number: 19214820004A Moisture	Sample number(s): 1114243-1114245,1114247 89.5	89.46			100		99-101		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 192140026A Diesel Range Organics C12-C24	Sample number(s): 1114243-1114245,1114247 UNSPK: 1114243 N.D.	132.87	96.56			73		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192141404903 Lead	Sample number(s): 1114244-1114245,1114247 UNSPK: 1114245 1.69	13.04	13.53	10.95	11.2	91	87	75-125	19	20

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 192140026A	Sample number(s): 1114243-1114245,1114247 BKG: 1114243			

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 18:25

Group Number: 2056399

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Diesel Range Organics C12-C24	N.D.	N.D.	0 (1)	20
Heavy Range Organics C24-C40	N.D.	34.18	200* (1)	20
	mg/kg	mg/kg		
Batch number: 192141404903	Sample number(s): 1114244-1114245,1114247 BKG: 1114245			
Lead	1.69	1.99	16 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: A192193AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114244	105	104	92	96
1114245	106	107	95	91
1114247	100	101	97	92
Blank	103	97	95	92
LCS	98	102	101	103
LCSD	98	96	101	102
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260 Soil
Batch number: V192193AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114243	88	91	93	108
Blank	96	101	95	95
LCS	102	103	98	98
LCSD	103	103	97	98
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260C
Batch number: Z192192AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114246	95	100	98	95
Blank	95	101	96	94
LCS	94	100	97	96

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 18:25

Group Number: 2056399

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260C
Batch number: Z192192AA

Limits: 80-120 80-120 80-120 80-120

Analysis Name: Naphthalene 8270D
Batch number: 19214SLI026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1114243	78	77	76
1114244	83	82	87
1114245	89	87	97
1114247	73	72	81
Blank	83	83	95
LCS	74	75	91

Limits: 14-115 22-122 23-141

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 19213B20A

	Trifluorotoluene-F
1114246	67
Blank	81
LCS	100
LCSD	96

Limits: 50-150

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 19216A31A

	Trifluorotoluene-F
1114244	87
1114245	95
Blank	94
LCS	99
LCSD	98

Limits: 50-150

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 19216A31B

	Trifluorotoluene-F
1114243	86
Blank	94
LCS	99
LCSD	98

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 18:25

Group Number: 2056399

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 19216A31B

Limits: 50-150

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 19216B31A

Trifluorotoluene-F

1114247	75
Blank	92
LCS	95
LCSD	96

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 192140026A

Orthoterphenyl

1114243	102
1114244	104
1114245	103
1114247	106
Blank	106
DUP	105
LCS	111
MS	107

Limits: 50-150

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

Acct. # 13271 For Eurofins Lancaster Laboratories Environmental use only
 Group # 2056399 Sample # 1114243-47
Instructions on reverse side correspond with circled numbers.

1 Client Information			4 Matrix			5 Analyses Requested										SCR #: _____
Facility # <u>204117</u> WBS			<input type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> Ground <input type="checkbox"/> NPDES <input type="checkbox"/> Surface <input type="checkbox"/> Water <input type="checkbox"/> Air <input type="checkbox"/> Oil <input checked="" type="checkbox"/> Composite			Total Number of Containers BTEX + MTBE <input type="checkbox"/> 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphth 8260 full scan Oxygenates NWTPH-Gx NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/> NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/> WA VPH <input type="checkbox"/> WA EPH <input type="checkbox"/> Lead Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>COIAB</u> <u>Naphthalenes EPA 8270</u>										<input type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits
Site Address <u>2021 6th St Bremerton, WA</u>																
Chevron PM <u>Eric Hetrick</u> Lead Consultant																
Consultant/Office <u>Leidos-Bothell, WA</u>																
Consultant Project Mgr. <u>Russ Shapshire</u>																
Consultant Phone # <u>425-482-3323</u>																
Sampler <u>RAO/CMW</u>			3 Grab Composite			6 Remarks <u>Invoice to Leidos PO10229412</u>										
2 Sample Identification		Collected														
		Date														Time
<u>SB-13-12.0-S-072419</u>		<u>7/24/19</u>														<u>1550</u>
<u>SB-13-12.0-S-072419</u>		<u>7/24/19</u>														<u>1550</u>
<u>SB-13-16.0-S-072419</u>		<u>7/24/19</u>														<u>1540</u>
<u>SB-13-27.5-S-072419</u>		<u>7/24/19</u>														<u>1530</u>
<u>TB-4-072419</u>		<u>7/24/19</u>	<u>1530</u>													
<u>SB-14-12.0-S-072419</u>		<u>7/24/19</u>	<u>1740</u>													
7 Turnaround Time Requested (TAT) (please circle) Standard <u>5 day</u> 4 day 72 hour 48 hour 24 hour			Relinquished by <u>Ruth</u>			Date <u>7/29/19</u>		Time <u>1230</u>		Received by		Date		Time		
			8 Data Package (circle if required) Type I - Full <u>CVX-RTBU-FI_05 (default)</u> Type VI (Raw Data)			EDD (circle if required) Other:			Relinquished by Commercial Carrier: UPS <input checked="" type="checkbox"/> FedEx _____ Other _____ Temperature Upon Receipt <u>7.2</u> °C			Received by <u>[Signature]</u>		Date <u>7/30/19</u>		Time <u>1015</u>
						Custody Seals Intact? <u>(Yes)</u> No										



Client: Leidos

Delivery and Receipt Information

Delivery Method:	<u>UPS</u>	Arrival Timestamp:	<u>07/30/2019 10:15</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>WA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	4
Samples Chilled:	Yes	Trip Blank Type:	HCI
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Simon Nies (25 112) at 12:18 on 07/30/2019

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

<u>Cooler #</u>	<u>Thermometer ID</u>	<u>Corrected Temp</u>	<u>Therm. Type</u>	<u>Ice Type</u>	<u>Ice Present?</u>	<u>Ice Container</u>	<u>Elevated Temp?</u>
1	DT42-01	1.2	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Chevron c/o Leidos, Inc.
6310 Allentown Blvd.
Suite 110
Harrisburg PA 17112

Report Date: September 05, 2019 14:17

Project: 204117

Account #: 13271
Group Number: 2056401
SDG: LDC07
PO Number: P010229412
Release Number: HETRICK
State of Sample Origin: WA

Electronic Copy To Leidos
Electronic Copy To EcoChem

Attn: Russ Shropshire
Attn: Christine Ransom

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

To view our laboratory's current scopes of accreditation please go to <https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/> . Historical copies may be requested through your project manager.



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
SB-15-S-8.0-190723 Grab Soil	07/23/2019 16:15	1114252
SB-15-S-13.0-190723 Grab Soil	07/23/2019 16:10	1114253
SB-15-S-22.5-190723 Grab Soil	07/23/2019 16:00	1114254
SB-16-S-9.0-190723 Grab Soil	07/23/2019 13:35	1114255
SB-16-S-13.0-190723 Grab Soil	07/23/2019 14:25	1114256
SB-16-S-22.5-190723 Grab Soil	07/23/2019 14:10	1114257
QA-T-190724 Water	07/24/2019 14:00	1114258

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: SB-15-S-8.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114252
ELLE Group #: 2056401
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 16:15
SDG#: LDC07-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.85
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.85
11995	Toluene	108-88-3	0.001	0.0005	0.85
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.85
The recovery for the sample internal standard is outside the QC acceptance limits. The following action was taken: The sample was re-analyzed outside the method holding time and the QC is again outside of the acceptance limits, indicating a matrix effect. The data is reported from the initial trial.					
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	3.1	0.2	23.25
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	290	42	10
08272	Heavy Range Organics C24-C40	n.a.	N.D.	100	10
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.25	0.464	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	5.6	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192171AA	08/05/2019 18:44	Linda C Pape	0.85
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921454376	07/23/2019 16:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921454376	07/23/2019 16:15	Client Supplied	1

Sample Description: SB-15-S-8.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114252
ELLE Group #: 2056401
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 16:15
SDG#: LDC07-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921454376	07/23/2019 16:15	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19214SLI026	08/10/2019 03:56	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19214SLI026	08/05/2019 02:00	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31A	08/04/2019 18:12	Jeremy C Giffin	23.25
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921454376	07/23/2019 16:15	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140026A	08/08/2019 10:56	Nicholas R Rossi	10
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140026A	08/04/2019 14:55	Karen L Beyer	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/07/2019 21:49	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19214820004A	08/05/2019 10:57	William C Schwebel	1

Sample Description: SB-15-S-13.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114253
ELLE Group #: 2056401
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 16:10
SDG#: LDC07-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.73
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.73
11995	Toluene	108-88-3	0.0007	0.0005	0.73
11995	Xylene (Total)	1330-20-7	N.D.	0.0008	0.73
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	3.2	0.2	21.06
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	1,100	85	20
08272	Heavy Range Organics C24-C40	n.a.	N.D.	210	20
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	3.36	0.586	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	6.9	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192171AA	08/05/2019 19:07	Linda C Pape	0.73
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921454376	07/23/2019 16:10	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921454376	07/23/2019 16:10	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921454376	07/23/2019 16:10	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19214SLI026	08/10/2019 04:21	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19214SLI026	08/05/2019 02:00	Sherry L Morrow	1

Sample Description: SB-15-S-13.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114253
ELLE Group #: 2056401
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 16:10
SDG#: LDC07-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31A	08/04/2019 18:48	Jeremy C Giffin	21.06
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921454376	07/23/2019 16:10	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140026A	08/07/2019 02:50	Nicholas R Rossi	20
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140026A	08/04/2019 14:55	Karen L Beyer	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/07/2019 22:04	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19214820004A	08/05/2019 10:57	William C Schwebel	1

Sample Description: SB-15-S-22.5-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114254
ELLE Group #: 2056401
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 16:00
SDG#: LDC07-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.88
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.88
11995	Toluene	108-88-3	N.D.	0.0006	0.88
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.88
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	0.021	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	1.2	0.2	21.75
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	18	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	10	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.77	0.558	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	4.9	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192171AA	08/05/2019 19:29	Linda C Pape	0.88
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921454376	07/23/2019 16:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921454376	07/23/2019 16:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921454376	07/23/2019 16:00	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19214SLI026	08/10/2019 04:47	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19214SLI026	08/05/2019 02:00	Sherry L Morrow	1

Sample Description: SB-15-S-22.5-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114254
ELLE Group #: 2056401
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 16:00
SDG#: LDC07-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31A	08/04/2019 19:24	Jeremy C Giffin	21.75
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921454376	07/23/2019 16:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140026A	08/06/2019 04:34	Nicholas R Rossi	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140026A	08/04/2019 14:55	Karen L Beyer	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/07/2019 21:52	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19214820004A	08/05/2019 10:57	William C Schwebel	1

Sample Description: SB-16-S-9.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114255
ELLE Group #: 2056401
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 13:35
SDG#: LDC07-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.023	41.27
11995	Ethylbenzene	100-41-4	N.D.	0.019	41.27
11995	Toluene	108-88-3	N.D.	0.028	41.27
11995	Xylene (Total)	1330-20-7	N.D.	0.047	41.27
Reporting limits were raised due to interference from the sample matrix.					
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	1,500	18	1773.65
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	46	4.5	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.80	0.461	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	11.5	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	V192181AA	08/06/2019 19:24	Stephen C Nolte	41.27
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921454376	07/23/2019 13:35	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921454376	07/23/2019 13:35	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921454376	07/23/2019 13:35	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19214SLI026	08/10/2019 05:13	Brandon K Cordova	1

Sample Description: SB-16-S-9.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114255
ELLE Group #: 2056401
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 13:35
SDG#: LDC07-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19214SLI026	08/05/2019 02:00	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31B	08/05/2019 21:51	Jeremy C Giffin	1773.65
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921454376	07/23/2019 13:35	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140026A	08/06/2019 04:56	Nicholas R Rossi	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx	1	192140026A	08/04/2019 14:55	Karen L Beyer	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/07/2019 22:11	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19214820004A	08/05/2019 10:57	William C Schwebel	1

Sample Description: SB-16-S-13.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114256
ELLE Group #: 2056401
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 14:25
SDG#: LDC07-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.0005	0.0004	0.7
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.7
11995	Toluene	108-88-3	0.001	0.0005	0.7
11995	Xylene (Total)	1330-20-7	0.002	0.0008	0.7
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	78	1	95
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	760	44	10
08272	Heavy Range Organics C24-C40	n.a.	N.D.	110	10
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	11.7	0.497	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	8.6	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192171AA	08/05/2019 20:15	Linda C Pape	0.7
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921454376	07/23/2019 14:25	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921454376	07/23/2019 14:25	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921454376	07/23/2019 14:25	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19214SLI026	08/10/2019 05:38	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19214SLI026	08/05/2019 02:00	Sherry L Morrow	1

Sample Description: SB-16-S-13.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114256
ELLE Group #: 2056401
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 14:25
SDG#: LDC07-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31B	08/06/2019 00:23	Jeremy C Giffin	95
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921454376	07/23/2019 14:25	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140026A	08/07/2019 03:12	Nicholas R Rossi	10
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140026A	08/04/2019 14:55	Karen L Beyer	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/07/2019 22:14	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19214820004A	08/05/2019 10:57	William C Schwebel	1

Sample Description: SB-16-S-22.5-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114257
ELLE Group #: 2056401
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 14:10
SDG#: LDC07-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.8
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.8
11995	Toluene	108-88-3	N.D.	0.0005	0.8
11995	Xylene (Total)	1330-20-7	N.D.	0.0008	0.8
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	20.13
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	10	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.56	0.523	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	5.1	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192171AA	08/05/2019 19:52	Linda C Pape	0.8
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921454376	07/23/2019 14:10	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921454376	07/23/2019 14:10	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921454376	07/23/2019 14:10	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19214SLI026	08/10/2019 06:04	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19214SLI026	08/05/2019 02:00	Sherry L Morrow	1

Sample Description: SB-16-S-22.5-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114257
ELLE Group #: 2056401
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 14:10
SDG#: LDC07-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31A	08/04/2019 21:19	Jeremy C Giffin	20.13
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921454376	07/23/2019 14:10	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140026A	08/06/2019 05:39	Nicholas R Rossi	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140026A	08/04/2019 14:55	Karen L Beyer	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/07/2019 22:18	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19214820004A	08/05/2019 10:57	William C Schwebel	1

Sample Description: QA-T-190724 Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1114258
ELLE Group #: 2056401
Matrix: Water

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 14:00
SDG#: LDC07-07TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z192192AA	08/07/2019 15:09	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z192192AA	08/07/2019 15:08	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	19213B20A	08/02/2019 20:25	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	19213B20A	08/02/2019 20:24	Marie D Beamenderfer	1

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 09/05/2019 14:17

Group Number: 2056401

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL
	mg/kg	mg/kg
Batch number: A192171AA	Sample number(s): 1114252-1114254,1114256-1114257	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: V192181AA	Sample number(s): 1114255	
Benzene	N.D.	0.025
Ethylbenzene	N.D.	0.020
Toluene	N.D.	0.030
Xylene (Total)	N.D.	0.050
	ug/l	ug/l
Batch number: Z192192AA	Sample number(s): 1114258	
Benzene	N.D.	0.2
Ethylbenzene	N.D.	0.4
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
	mg/kg	mg/kg
Batch number: 19214SLI026	Sample number(s): 1114252-1114257	
Naphthalene	N.D.	0.007
Batch number: 19216A31A	Sample number(s): 1114252-1114254,1114257	
NWTPH-GX Soil C7-C12	N.D.	0.2
Batch number: 19216A31B	Sample number(s): 1114255-1114256	
NWTPH-GX Soil C7-C12	N.D.	0.2
	ug/l	ug/l
Batch number: 19213B20A	Sample number(s): 1114258	
NWTPH-Gx water C7-C12	N.D.	19
	mg/kg	mg/kg
Batch number: 192140026A	Sample number(s): 1114252-1114257	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	28	10
Batch number: 192141404903	Sample number(s): 1114252-1114257	
Lead	N.D.	0.600

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 09/05/2019 14:17

Group Number: 2056401

LCS/LCSD

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: A192171AA	Sample number(s): 1114252-1114254,1114256-1114257								
Benzene	0.0200	0.0196	0.0200	0.0197	98	99	80-120	1	30
Ethylbenzene	0.0200	0.0202	0.0200	0.0200	101	100	78-120	1	30
Toluene	0.0200	0.0202	0.0200	0.0201	101	101	80-120	0	30
Xylene (Total)	0.0600	0.0613	0.0600	0.0610	102	102	75-120	0	30
Batch number: V192181AA	Sample number(s): 1114255								
Benzene	1.00	1.00	1.00	1.05	100	105	80-120	5	30
Ethylbenzene	1.00	0.991	1.00	1.05	99	105	78-120	6	30
Toluene	1.00	0.988	1.00	1.04	99	104	80-120	5	30
Xylene (Total)	3.00	2.98	3.00	3.14	99	105	75-120	5	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: Z192192AA	Sample number(s): 1114258								
Benzene	20	20.87			104		80-120		
Ethylbenzene	20	20.37			102		80-120		
Toluene	20	21.09			105		80-120		
Xylene (Total)	60	64.7			108		80-120		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19214SLI026	Sample number(s): 1114252-1114257								
Naphthalene	1.67	1.20			72		46-99		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19216A31A	Sample number(s): 1114252-1114254,1114257								
NWTPH-GX Soil C7-C12	11	11.46	11	11.37	104	103	55-145	1	30
Batch number: 19216A31B	Sample number(s): 1114255-1114256								
NWTPH-GX Soil C7-C12	11	11.46	11	11.37	104	103	55-145	1	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 19213B20A	Sample number(s): 1114258								
NWTPH-Gx water C7-C12	1100	1134.39	1100	1121.55	103	102	64-131	1	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192140026A	Sample number(s): 1114252-1114257								
Diesel Range Organics C12-C24	133.4	101.47			76		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192141404903	Sample number(s): 1114252-1114257								
Lead	15	14.59			97		90-115		
	%	%	%	%					

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 09/05/2019 14:17

Group Number: 2056401

LCS/LCSD (continued)

Analysis Name	LCS Spike Added %	LCS Conc %	LCSD Spike Added %	LCSD Conc %	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 19214820004A	Sample number(s): 1114252-1114257								
Moisture	89.5	89.46			100		99-101		

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: A192171AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114252	131	135	92	55
1114253	103	106	102	76
1114254	103	103	97	87
1114256	100	101	94	99
1114257	101	105	95	95
Blank	100	100	96	92
LCS	97	100	100	102
LCSD	99	95	100	102
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260 Soil
Batch number: V192181AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114255	83	90	81	87
Blank	92	96	93	92
LCS	99	99	94	95
LCSD	104	103	99	100
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260C
Batch number: Z192192AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114258	95	99	98	94
Blank	95	101	96	94
LCS	94	100	97	96
Limits:	80-120	80-120	80-120	80-120

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 09/05/2019 14:17

Group Number: 2056401

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Naphthalene 8270D
Batch number: 19214SLI026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1114252	75	69	88
1114253	70	76	90
1114254	82	83	95
1114255	74	70	81
1114256	54	81	89
1114257	78	79	88
Blank	83	83	95
LCS	74	75	91
Limits:	14-115	22-122	23-141

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 19213B20A

	Trifluorotoluene-F
1114258	81
Blank	81
LCS	100
LCSD	96
Limits:	50-150

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 19216A31A

	Trifluorotoluene-F
1114252	90
1114253	89
1114254	75
1114257	66
Blank	94
LCS	99
LCSD	98
Limits:	50-150

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 19216A31B

	Trifluorotoluene-F
1114255	118
1114256	84
Blank	94
LCS	99
LCSD	98

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 09/05/2019 14:17

Group Number: 2056401

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 19216A31B

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 192140026A

	Orthoterphenyl
1114252	89
1114253	49*
1114254	106
1114255	99
1114256	60
1114257	95
Blank	106
LCS	111

Limits: 50-150

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody



**Lancaster Laboratories
Environmental**

Acct. # 13271

For Eurofins Lancaster Laboratories Environmental use only
Group # 2056401 Sample # 1114252-58
Instructions on reverse side correspond with circled numbers.

1 Client Information			4 Matrix			5 Analyses Requested										6 Remarks	
Facility # <u>WBS</u> <u>204117</u>			<input type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> Ground <input type="checkbox"/> NPDES <input type="checkbox"/> Surface <input type="checkbox"/> Oil <input type="checkbox"/> Air			<input type="checkbox"/> Naphth <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> 8260 full scan <input type="checkbox"/> 8021 <input type="checkbox"/> Oxygenates <input type="checkbox"/> NWTPH-Gx <input type="checkbox"/> NWTPH-Dx with Silica Gel Cleanup <input checked="" type="checkbox"/> NWTPH-Dx without Silica Gel Cleanup <input type="checkbox"/> WA VPH <input type="checkbox"/> WA EPH <input checked="" type="checkbox"/> Total <input type="checkbox"/> Diss. <input type="checkbox"/> Method <u>Naphthalenes EPA 8270</u>										SCR #: _____ <input type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits	
Site Address <u>2021 6th St, Bremerton, WA</u>			Lead Consultant <u>Leidos</u>			Total Number of Containers BTEX + MTBE 8260 full scan Oxygenates NWTPH-Gx NWTPH-Dx with Silica Gel Cleanup NWTPH-Dx without Silica Gel Cleanup WA VPH WA EPH Total Diss. Method <u>Naphthalenes EPA 8270</u>											
Chevron PM <u>Eric Hetrick</u>			Consultant/Office <u>Leidos - Bothell WA</u>			Consultant Project Mgr. <u>Russ Shropshire</u>											
Consultant Phone # <u>425-482-3323</u>			Sampler <u>RAJ/CMW</u>														
2 Sample Identification		3 Collected		Grab	Composite												
Date	Time																
<u>SB-15-8.0-S-072319</u>	<u>7/23/19</u>	<u>1615</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Submit Invoice to Leidos. P010229412
<u>SB-15-13.0-S-072319</u>	<u>7/23/19</u>	<u>1610</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<u>SB-15-22.5-S-072319</u>	<u>7/23/19</u>	<u>1600</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<u>SB-16-9.0-S-072319</u>	<u>7/23/19</u>	<u>1535</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<u>SB-16-13.0-S-072319</u>	<u>7/23/19</u>	<u>1425</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<u>SB-16-22.5-S-072319</u>	<u>7/23/19</u>	<u>1410</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<u>TB-5-072419</u>	<u>7/24/19</u>	<u>1400</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
<u>TB-5-072419</u>	<u>7/24/19</u>	<u>1400</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
7 Turnaround Time Requested (TAT) (please circle)			Relinquished by <u>Patt A</u> Date <u>7/29/19</u> Time <u>1230</u>			Received by _____ Date _____ Time _____			Relinquished by _____ Date _____ Time _____			Received by _____ Date _____ Time _____					
Standard 5 day 4 day 72 hour 48 hour 24 hour			Relinquished by Commercial Carrier:			Received by _____ Date <u>7/30/19</u> Time <u>1015</u>			Temperature Upon Receipt <u>0.7</u> °C			Custody Seals Intact? (Yes) No					
8 Data Package (circle if required)			EDD (circle if required)			UPS <input checked="" type="checkbox"/> FedEx _____ Other _____			Type I - Full Type VI (Raw Data)			CVX-RTBU-FI_05 (default) Other: _____					



Client: Leidos

Delivery and Receipt Information

Delivery Method: UPS Arrival Timestamp: 07/30/2019 10:15
 Number of Packages: 1 Number of Projects: 1
 State/Province of Origin: WA

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	4
Samples Chilled:	Yes	Trip Blank Type:	HCI
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Simon Nies (25 112) at 12:27 on 07/30/2019

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-01	0.7	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.

Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Chevron c/o Leidos, Inc.
6310 Allentown Blvd.
Suite 110
Harrisburg PA 17112

Report Date: August 13, 2019 11:22

Project: 204117

Account #: 13271
Group Number: 2056413
SDG: LDC08
PO Number: P010215249
Release Number: HETRICK
State of Sample Origin: WA

Electronic Copy To Leidos
Electronic Copy To EcoChem

Attn: Russ Shropshire
Attn: Christine Ransom

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

To view our laboratory's current scopes of accreditation please go to <https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/> . Historical copies may be requested through your project manager.



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
SB-18-S-8.0-190723 Grab Soil	07/23/2019 15:00	1114303
SB-18-S-18.0-190723 Grab Soil	07/23/2019 15:20	1114304
SB-18-S-22.5-190723 Grab Soil	07/23/2019 14:55	1114305
DUP-1-SD-190723 Grab Soil	07/23/2019 11:05	1114306
SB-19-S-8.0-190725 Grab Soil	07/25/2019 12:05	1114307
SB-19-S-14.0-190725 Grab Soil	07/25/2019 11:50	1114308
QA-T-190725 NA Water	07/25/2019 12:00	1114309

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: SB-18-S-8.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114303
ELLE Group #: 2056413
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 15:00
SDG#: LDC08-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.69
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.69
11995	Toluene	108-88-3	0.0008	0.0004	0.69
11995	Xylene (Total)	1330-20-7	N.D.	0.0007	0.69
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.3	0.2	22.07
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	85	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.91	0.603	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	7.0	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192181AA	08/06/2019 16:39	Linda C Pape	0.69
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554387	07/23/2019 15:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554387	07/23/2019 15:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554387	07/23/2019 15:00	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLA026	08/08/2019 15:07	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLA026	08/05/2019 16:20	Elizabeth E Donovan	1

Sample Description: SB-18-S-8.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114303
ELLE Group #: 2056413
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 15:00
SDG#: LDC08-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31A	08/04/2019 21:55	Jeremy C Giffin	22.07
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554387	07/23/2019 15:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140030A	08/06/2019 07:05	Nicholas R Rossi	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140030A	08/05/2019 07:00	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/07/2019 22:21	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820006A	08/06/2019 11:53	William C Schwebel	1

Sample Description: SB-18-S-18.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114304
ELLE Group #: 2056413
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 15:20
SDG#: LDC08-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.75
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.75
11995	Toluene	108-88-3	N.D.	0.0005	0.75
11995	Xylene (Total)	1330-20-7	N.D.	0.0008	0.75
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	21.89
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	8.1	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	41	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	4.32	0.469	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	5.3	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192181AA	08/06/2019 17:01	Linda C Pape	0.75
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554387	07/23/2019 15:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554387	07/23/2019 15:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554387	07/23/2019 15:20	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLA026	08/08/2019 15:30	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLA026	08/05/2019 16:20	Elizabeth E Donovan	1

Sample Description: SB-18-S-18.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114304
ELLE Group #: 2056413
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 15:20
SDG#: LDC08-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31A	08/04/2019 22:31	Jeremy C Giffin	21.89
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554387	07/23/2019 15:20	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140030A	08/06/2019 07:27	Nicholas R Rossi	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140030A	08/05/2019 07:00	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/07/2019 22:31	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820006A	08/06/2019 11:53	William C Schwebel	1

Sample Description: SB-18-S-22.5-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114305
ELLE Group #: 2056413
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 14:55
SDG#: LDC08-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.72
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.72
11995	Toluene	108-88-3	N.D.	0.0005	0.72
11995	Xylene (Total)	1330-20-7	N.D.	0.0008	0.72
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	24.33
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.4	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.09	0.477	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	10.1	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192181AA	08/06/2019 17:24	Linda C Pape	0.72
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554387	07/23/2019 14:55	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554387	07/23/2019 14:55	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554387	07/23/2019 14:55	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLA026	08/08/2019 15:52	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLA026	08/05/2019 16:20	Elizabeth E Donovan	1

Sample Description: SB-18-S-22.5-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114305
ELLE Group #: 2056413
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 14:55
SDG#: LDC08-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31A	08/04/2019 23:07	Jeremy C Giffin	24.33
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554387	07/23/2019 14:55	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140030A	08/06/2019 07:49	Nicholas R Rossi	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140030A	08/05/2019 07:00	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404904	08/07/2019 14:40	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404904	08/02/2019 07:09	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820006A	08/06/2019 11:53	William C Schwebel	1

Sample Description: DUP-1-SD-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114306
ELLE Group #: 2056413
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 11:05
SDG#: LDC08-04FD

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.024	43.83
11995	Ethylbenzene	100-41-4	N.D.	0.019	43.83
11995	Toluene	108-88-3	N.D.	0.029	43.83
11995	Xylene (Total)	1330-20-7	N.D.	0.048	43.83
Reporting limits were raised due to interference from the sample matrix.					
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	1,100	16	1592.57
GC Petroleum Hydrocarbons					
		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	730	44	10
08272	Heavy Range Organics C24-C40	n.a.	140	110	10
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	4.46	0.495	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	8.8	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	V192181AA	08/06/2019 19:46	Stephen C Nolte	43.83
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554387	07/23/2019 11:05	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554387	07/23/2019 11:05	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554387	07/23/2019 11:05	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLA026	08/08/2019 16:14	Linda M Hartenstine	1

Sample Description: DUP-1-SD-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114306
ELLE Group #: 2056413
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 11:05
SDG#: LDC08-04FD

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLA026	08/05/2019 16:20	Elizabeth E Donovan	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31B	08/05/2019 22:27	Jeremy C Giffin	1592.57
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554387	07/23/2019 11:05	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140030A	08/09/2019 16:36	Heather E Williams	10
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140030A	08/05/2019 07:00	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/08/2019 15:11	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820006A	08/06/2019 11:53	William C Schwebel	1

Sample Description: SB-19-S-8.0-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114307
ELLE Group #: 2056413
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 12:05
SDG#: LDC08-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.87
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.87
11995	Toluene	108-88-3	N.D.	0.0006	0.87
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.87
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	24.29
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.72	0.567	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	6.3	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192202AA	08/08/2019 17:04	Linda C Pape	0.87
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554387	07/25/2019 12:05	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554387	07/25/2019 12:05	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554387	07/25/2019 12:05	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLA026	08/08/2019 16:36	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLA026	08/05/2019 16:20	Elizabeth E Donovan	1

Sample Description: SB-19-S-8.0-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114307
ELLE Group #: 2056413
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 12:05
SDG#: LDC08-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 04:06	Jeremy C Giffin	24.29
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554387	07/25/2019 12:05	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140030A	08/06/2019 09:18	Nicholas R Rossi	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140030A	08/05/2019 07:00	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/07/2019 22:24	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820006A	08/06/2019 11:53	William C Schwebel	1

Sample Description: SB-19-S-14.0-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114308
ELLE Group #: 2056413
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 11:50
SDG#: LDC08-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.77
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.77
11995	Toluene	108-88-3	0.0005	0.0005	0.77
11995	Xylene (Total)	1330-20-7	N.D.	0.0008	0.77
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	22.96
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.37	0.526	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	8.7	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192202AA	08/08/2019 17:27	Linda C Pape	0.77
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554387	07/25/2019 11:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554387	07/25/2019 11:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554387	07/25/2019 11:50	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/07/2019 17:58	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1

Sample Description: SB-19-S-14.0-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114308
ELLE Group #: 2056413
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 11:50
SDG#: LDC08-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 04:42	Jeremy C Giffin	22.96
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554387	07/25/2019 11:50	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140030A	08/06/2019 09:40	Nicholas R Rossi	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140030A	08/05/2019 07:00	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/07/2019 22:27	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820006B	08/06/2019 11:53	William C Schwebel	1

Sample Description: QA-T-190725 NA Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1114309
ELLE Group #: 2056413
Matrix: Water

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 12:00
SDG#: LDC08-07TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z192202AA	08/08/2019 10:39	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z192202AA	08/08/2019 10:38	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	19213B20A	08/02/2019 20:52	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	19213B20A	08/02/2019 20:51	Marie D Beamenderfer	1

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 11:22

Group Number: 2056413

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL
	mg/kg	mg/kg
Batch number: A192181AA	Sample number(s): 1114303-1114305	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: V192181AA	Sample number(s): 1114306	
Benzene	N.D.	0.025
Ethylbenzene	N.D.	0.020
Toluene	N.D.	0.030
Xylene (Total)	N.D.	0.050
Batch number: X192202AA	Sample number(s): 1114307-1114308	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
	ug/l	ug/l
Batch number: Z192202AA	Sample number(s): 1114309	
Benzene	N.D.	0.2
Ethylbenzene	N.D.	0.4
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
	mg/kg	mg/kg
Batch number: 19217SLA026	Sample number(s): 1114303-1114307	
Naphthalene	N.D.	0.007
Batch number: 19217SLB026	Sample number(s): 1114308	
Naphthalene	N.D.	0.007
Batch number: 19216A31A	Sample number(s): 1114303-1114305	
NWTPH-GX Soil C7-C12	N.D.	0.2
Batch number: 19216A31B	Sample number(s): 1114306	
NWTPH-GX Soil C7-C12	N.D.	0.2
Batch number: 19216C31A	Sample number(s): 1114307-1114308	
NWTPH-GX Soil C7-C12	N.D.	0.2
	ug/l	ug/l
Batch number: 19213B20A	Sample number(s): 1114309	

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 11:22

Group Number: 2056413

Method Blank (continued)

Analysis Name	Result	MDL
	ug/l	ug/l
	mg/kg	mg/kg
NWTPH-Gx water C7-C12	N.D.	19
Batch number: 192140030A	Sample number(s): 1114303-1114308	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 192141404903	Sample number(s): 1114303-1114304,1114306-1114308	
Lead	N.D.	0.600
Batch number: 192141404904	Sample number(s): 1114305	
Lead	N.D.	0.600

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: A192181AA	Sample number(s): 1114303-1114305								
Benzene	0.0200	0.0204	0.0200	0.0205	102	103	80-120	1	30
Ethylbenzene	0.0200	0.0209	0.0200	0.0208	104	104	78-120	0	30
Toluene	0.0200	0.0208	0.0200	0.0210	104	105	80-120	1	30
Xylene (Total)	0.0600	0.0630	0.0600	0.0632	105	105	75-120	0	30
Batch number: V192181AA	Sample number(s): 1114306								
Benzene	1.00	1.00	1.00	1.05	100	105	80-120	5	30
Ethylbenzene	1.00	0.991	1.00	1.05	99	105	78-120	6	30
Toluene	1.00	0.988	1.00	1.04	99	104	80-120	5	30
Xylene (Total)	3.00	2.98	3.00	3.14	99	105	75-120	5	30
Batch number: X192202AA	Sample number(s): 1114307-1114308								
Benzene	0.0200	0.0204	0.0200	0.0211	102	105	80-120	3	30
Ethylbenzene	0.0200	0.0199	0.0200	0.0204	100	102	78-120	2	30
Toluene	0.0200	0.0201	0.0200	0.0208	101	104	80-120	3	30
Xylene (Total)	0.0600	0.0600	0.0600	0.0615	100	102	75-120	2	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: Z192202AA	Sample number(s): 1114309								
Benzene	20	20.91			105		80-120		
Ethylbenzene	20	20.29			101		80-120		
Toluene	20	20.81			104		80-120		
Xylene (Total)	60	64.46			107		80-120		
	mg/kg	mg/kg	mg/kg	mg/kg					

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 11:22

Group Number: 2056413

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 19217SLA026 Naphthalene	Sample number(s): 1114303-1114307				74		46-99		
Batch number: 19217SLB026 Naphthalene	Sample number(s): 1114308				79		46-99		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19216A31A NWTPH-GX Soil C7-C12	Sample number(s): 1114303-1114305				104	103	55-145	1	30
Batch number: 19216A31B NWTPH-GX Soil C7-C12	Sample number(s): 1114306				104	103	55-145	1	30
Batch number: 19216C31A NWTPH-GX Soil C7-C12	Sample number(s): 1114307-1114308				104	104	55-145	0	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 19213B20A NWTPH-Gx water C7-C12	Sample number(s): 1114309				103	102	64-131	1	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192140030A Diesel Range Organics C12-C24	Sample number(s): 1114303-1114308				76		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192141404903 Lead	Sample number(s): 1114303-1114304,1114306-1114308				97		90-115		
Batch number: 192141404904 Lead	Sample number(s): 1114305				102		90-115		
	%	%	%	%					
Batch number: 19217820006A Moisture	Sample number(s): 1114303-1114307				100		99-101		
Batch number: 19217820006B Moisture	Sample number(s): 1114308				100		99-101		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc	MS Spike Added	MS Conc	MSD Spike Added	MSD Conc	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
---------------	---------------	----------------	---------	-----------------	----------	---------	----------	---------------	-----	---------

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 11:22

Group Number: 2056413

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 192140030A Diesel Range Organics C12-C24	Sample number(s): 1114303-1114308 UNSPK: 1114306 662.85	133.4	2886.35			1667 (2)		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192141404904 Lead	Sample number(s): 1114305 UNSPK: 1114305 1.88	10.56	11.29	10.87	11.87	89	92	75-125	5	20

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 192140030A Diesel Range Organics C12-C24 Heavy Range Organics C24-C40	Sample number(s): 1114303-1114308 BKG: 1114306 662.85 124.03	3055.1 N.D.	129* 200* (1)	20 20
	mg/kg	mg/kg		
Batch number: 192141404904 Lead	Sample number(s): 1114305 BKG: 1114305 1.88	1.89	1 (1)	20
	%	%		
Batch number: 19217820006A Moisture	Sample number(s): 1114303-1114307 BKG: 1114307 6.26	5.46	14*	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: A192181AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114303	102	103	97	89
1114304	101	102	96	90
1114305	102	104	96	91
Blank	100	102	96	93

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 11:22

Group Number: 2056413

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: A192181AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
LCS	98	99	100	102
LCSD	97	96	101	101
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260 Soil
Batch number: V192181AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114306	81	85	81	89
Blank	92	96	93	92
LCS	99	99	94	95
LCSD	104	103	99	100
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260 Soil
Batch number: X192202AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114307	107	109	95	90
1114308	106	110	95	93
Blank	103	103	99	94
LCS	99	101	100	101
LCSD	99	99	100	101
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260C
Batch number: Z192202AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114309	96	100	97	94
Blank	96	99	98	95
LCS	94	100	98	96
Limits:	80-120	80-120	80-120	80-120

Analysis Name: Naphthalene 8270D
Batch number: 19217SLA026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1114303	53	58	58
1114304	35	81	94
1114305	61	71	76

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 11:22

Group Number: 2056413

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Naphthalene 8270D
Batch number: 19217SLA026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1114306	74	65	89
1114307	25	66	52
Blank	70	84	103
LCS	66	79	93
Limits:	14-115	22-122	23-141

Analysis Name: Naphthalene 8270D
Batch number: 19217SLB026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1114308	85	79	96
Blank	83	77	99
LCS	86	79	97
Limits:	14-115	22-122	23-141

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 19213B20A

	Trifluorotoluene-F
1114309	86
Blank	81
LCS	100
LCSD	96
Limits:	50-150

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 19216A31A

	Trifluorotoluene-F
1114303	64
1114304	74
1114305	79
Blank	94
LCS	99
LCSD	98
Limits:	50-150

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 19216A31B

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 11:22

Group Number: 2056413

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-GX Soil C7-C12

Batch number: 19216A31B

	Trifluorotoluene-F
1114306	103
Blank	94
LCS	99
LCSD	98

Limits: 50-150

Analysis Name: NWTPH-GX Soil C7-C12

Batch number: 19216C31A

	Trifluorotoluene-F
1114307	78
1114308	74
Blank	95
LCS	98
LCSD	99

Limits: 50-150

Analysis Name: NWTPH-Dx soil

Batch number: 192140030A

	Orthoterphenyl
1114303	91
1114304	101
1114305	94
1114306	133
1114307	96
1114308	101
Blank	107
DUP	153*
LCS	104
MS	149

Limits: 50-150

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

Acct. # 13271

For Eurofins Lancaster Laboratories Environmental use only
 Group # 2056413 Sample # 1114303-09
Instructions on reverse side correspond with circled numbers.

1 Client Information			4 Matrix			5 Analyses Requested										6 Remarks																		
Facility # <u>204117</u> WBS			<input type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> Ground <input type="checkbox"/> NPDES <input type="checkbox"/> Surface <input type="checkbox"/> Water <input type="checkbox"/> Oil <input type="checkbox"/> Air			Total Number of Containers BTEX MTBE <input checked="" type="checkbox"/> Naphth <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> 8260 full scan Oxygenates NWTPH-Gx NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/> NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/> WA VPH <input type="checkbox"/> WA EPH <input type="checkbox"/> Lead Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>GC/MS</u> Naphthalenes <u>EPA 8270</u>										SCR #: _____																		
Site Address <u>2021 6th St, Bremerton, WA</u>																																		
Chevron PM <u>Eric Hetrick</u> Lead Consultant <u>Leidos</u>																																		
Consultant/Office <u>Leidos - Bethell, WA</u>																																		
Consultant Project Mgr. <u>Russ Shropshire</u>																																		
Consultant Phone # <u>425-482-3323</u>																																		
Sampler <u>RAO/CMW</u>			3 Composite <input checked="" type="checkbox"/> Soil <input type="checkbox"/> Water <input type="checkbox"/> Oil <input type="checkbox"/>			8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits <input type="checkbox"/>										Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits <input type="checkbox"/>																		
2 Sample Identification		Collected																3 Grab																
Date	Time	Grab																Composite	Soil	Water	Oil	Total Number of Containers	BTEX MTBE	8260	8260 full scan	Oxygenates	NWTPH-Gx	NWTPH-Dx with Silica Gel Cleanup	NWTPH-Dx without Silica Gel Cleanup	WA VPH	WA EPH	Lead Total	Diss.	Method
<u>SB-18-8.0-S-072319</u>	<u>7/23/19</u>	<u>1500</u>																<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>GC/MS</u>
<u>SB-18-18.0-S-072319</u>	<u>7/23/19</u>	<u>1520</u>																<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>GC/MS</u>
<u>SB-18-22.5-S-072319</u>	<u>7/23/19</u>	<u>1455</u>																<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>GC/MS</u>
<u>DUP-1-072319</u>	<u>7/23/19</u>	<u>1105</u>																<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>GC/MS</u>
<u>SB-19-8.0-S-072519</u>	<u>7/25/19</u>	<u>1205</u>																<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>GC/MS</u>
<u>SB-19-14.0-S-072519</u>	<u>7/25/19</u>	<u>1150</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>GC/MS</u>															
<u>EB-6-072319</u>	<u>7/23/19</u>	<u>RD</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>GC/MS</u>															
<u>TB-6-072519</u>	<u>7/25/19</u>	<u>1200</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>4</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>GC/MS</u>															
7 Turnaround Time Requested (TAT) (please circle)			Relinquished by <u>[Signature]</u>			Date <u>7/27/19</u>		Time <u>1350</u>		Received by _____			Date _____		Time _____		9																	
Standard <input checked="" type="radio"/> 5 day 4 day 72 hour 48 hour 24 hour			Relinquished by _____			Date _____		Time _____		Received by _____			Date _____		Time _____																			
8 Data Package (circle if required)			Relinquished by Commercial Carrier:			Temperature Upon Receipt <u>0.6</u> °C			Custody Seals Intact? <input checked="" type="checkbox"/> (Yes) <input type="checkbox"/> No			Date <u>7/30/19</u>		Time <u>1015</u>																				
Type I - Full <input checked="" type="radio"/> Type VI (Raw Data)			EDD (circle if required) CVX-RTBU-FI_05 (default) Other: _____			UPS <input checked="" type="checkbox"/> FedEx _____ Other _____																												



Client: Leidos

Delivery and Receipt Information

Delivery Method:	<u>UPS</u>	Arrival Timestamp:	<u>07/30/2019 10:15</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>WA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	No
Custody Seal Intact:	Yes	Total Trip Blank Qty:	4
Samples Chilled:	Yes	Trip Blank Type:	HCI
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Simon Nies (25 112) at 12:43 on 07/30/2019

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-01	0.6	DT	Wet	Y	Bagged	N

Sample Date/Time Discrepancy Details

<u>Sample ID on COC</u>	<u>Date/Time on Label</u>	<u>Comments</u>
SB-19-8.0-S-072519	7/25/2019 12:15	

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Chevron c/o Leidos, Inc.
6310 Allentown Blvd.
Suite 110
Harrisburg PA 17112

Report Date: August 20, 2019 11:38

Project: 204117

Account #: 13271
Group Number: 2056414
SDG: LDC09
PO Number: P010229412
Release Number: HETRICK
State of Sample Origin: WA

Electronic Copy To Leidos
Electronic Copy To EcoChem

Attn: Russ Shropshire
Attn: Christine Ransom

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

To view our laboratory's current scopes of accreditation please go to <https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/> . Historical copies may be requested through your project manager.



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
SB-19-S-22.5-190725 Grab Soil	07/25/2019 11:45	1114310
SB-19-S-27.5-190725 Grab Soil	07/25/2019 11:40	1114311
DUP-2-SD-190725 Grab Soil	07/25/2019 12:15	1114312
SB-20-S-8.0-190725 Grab Soil	07/25/2019 13:40	1114313
SB-20-S-14.0-190725 Grab Soil	07/25/2019 13:30	1114314
SB-20-S-22.5-190725 Grab Soil	07/25/2019 13:20	1114315
QA-T-190725 NA Water	07/25/2019 11:00	1114316

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: SB-19-S-22.5-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114310
ELLE Group #: 2056414
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 11:45
SDG#: LDC09-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0007	1.15
11995	Ethylbenzene	100-41-4	N.D.	0.0005	1.15
11995	Toluene	108-88-3	N.D.	0.0008	1.15
11995	Xylene (Total)	1330-20-7	N.D.	0.001	1.15
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.4	35.72
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	120	4.5	1
08272	Heavy Range Organics C24-C40	n.a.	20	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	N.D.	0.539	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	11.6	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192202AA	08/08/2019 17:51	Linda C Pape	1.15
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554388	07/25/2019 11:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554388	07/25/2019 11:45	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554388	07/25/2019 11:45	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/07/2019 18:24	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1

Sample Description: SB-19-S-22.5-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114310
ELLE Group #: 2056414
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 11:45
SDG#: LDC09-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 05:25	Jeremy C Giffin	35.72
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554388	07/25/2019 11:45	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140030A	08/06/2019 10:02	Nicholas R Rossi	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140030A	08/05/2019 07:00	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404902	08/07/2019 13:30	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404902	08/02/2019 06:49	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820006B	08/06/2019 11:53	William C Schwebel	1

Sample Description: SB-19-S-27.5-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114311
ELLE Group #: 2056414
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 11:40
SDG#: LDC09-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.8
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.8
11995	Toluene	108-88-3	0.001	0.0005	0.8
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.8
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	2.4	242.92
Reporting limits were raised due to sample foaming.					
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	340	4.4	1
08272	Heavy Range Organics C24-C40	n.a.	35	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	N.D.	0.542	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	8.5	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192202AA	08/08/2019 18:14	Linda C Pape	0.8
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554388	07/25/2019 11:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554388	07/25/2019 11:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554388	07/25/2019 11:40	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/07/2019 18:49	Edward C Monborne	1

Sample Description: SB-19-S-27.5-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114311
ELLE Group #: 2056414
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 11:40
SDG#: LDC09-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 20:06	Jeremy C Giffin	242.92
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554388	07/25/2019 11:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140030A	08/06/2019 10:23	Nicholas R Rossi	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140030A	08/05/2019 07:00	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404902	08/07/2019 12:56	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404902	08/02/2019 06:49	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820006B	08/06/2019 11:53	William C Schwebel	1

Sample Description: DUP-2-SD-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114312
ELLE Group #: 2056414
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 12:15
SDG#: LDC09-03FD

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.82
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.82
11995	Toluene	108-88-3	0.0009	0.0005	0.82
11995	Xylene (Total)	1330-20-7	N.D.	0.0008	0.82
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	25.43
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	11	4.1	1
08272	Heavy Range Organics C24-C40	n.a.	43	10	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	3.89	2.26	5
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	2.5	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192202AA	08/08/2019 18:37	Linda C Pape	0.82
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554388	07/25/2019 12:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554388	07/25/2019 12:15	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554388	07/25/2019 12:15	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/07/2019 19:15	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1

Sample Description: DUP-2-SD-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114312
ELLE Group #: 2056414
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 12:15
SDG#: LDC09-03FD

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 18:54	Jeremy C Giffin	25.43
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554388	07/25/2019 12:15	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140030A	08/06/2019 10:45	Nicholas R Rossi	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140030A	08/05/2019 07:00	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/08/2019 16:01	Cindy M Gehman	5
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820006B	08/06/2019 11:53	William C Schwebel	1

Sample Description: SB-20-S-8.0-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114313
ELLE Group #: 2056414
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:40
SDG#: LDC09-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.001	0.0005	0.99
11995	Ethylbenzene	100-41-4	0.005	0.0004	0.99
11995	Toluene	108-88-3	0.007	0.0006	0.99
11995	Xylene (Total)	1330-20-7	0.037	0.001	0.99
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	46	1.2	115.98
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	10.2	0.580	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	8.4	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192202AA	08/08/2019 19:00	Linda C Pape	0.99
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554388	07/25/2019 13:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554388	07/25/2019 13:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554388	07/25/2019 13:40	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/07/2019 19:40	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1

Sample Description: SB-20-S-8.0-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114313
ELLE Group #: 2056414
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:40
SDG#: LDC09-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 19:30	Jeremy C Giffin	115.98
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554388	07/25/2019 13:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192140030A	08/06/2019 11:07	Nicholas R Rossi	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192140030A	08/05/2019 07:00	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/08/2019 15:21	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820006B	08/06/2019 11:53	William C Schwebel	1

Sample Description: SB-20-S-14.0-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114314
ELLE Group #: 2056414
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:30
SDG#: LDC09-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles SW-846 8260C mg/kg mg/kg					
11995	Benzene	71-43-2	N.D.	0.034	63.13
11995	Ethylbenzene	100-41-4	N.D.	0.027	63.13
11995	Toluene	108-88-3	N.D.	0.041	63.13
11995	Xylene (Total)	1330-20-7	N.D.	0.068	63.13
Reporting limits were raised to meet method hold time.					
GC/MS Semivolatiles SW-846 8270D mg/kg mg/kg					
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles ECY 97-602 NWT PH-Gx mg/kg mg/kg					
02005	NWT PH-GX Soil C7-C12	n.a.	170	2.4	243.19
GC Petroleum Hydrocarbons ECY 97-602 NWT PH-Dx modified mg/kg mg/kg					
08272	Diesel Range Organics C12-C24	n.a.	23	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	53	11	1
Metals SW-846 6010D Rev.4, July 2014 mg/kg mg/kg					
06955	Lead	7439-92-1	8.23	0.486	1
Wet Chemistry SM 2540 G-2011 %Moisture Calc % %					
00111	Moisture	n.a.	7.8	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	Q192201AA	08/08/2019 14:43	Stephen C Nolte	63.13
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554388	07/25/2019 13:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554388	07/25/2019 13:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554388	07/25/2019 13:30	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/07/2019 16:42	Edward C Monborne	1

Sample Description: SB-20-S-14.0-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114314
ELLE Group #: 2056414
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:30
SDG#: LDC09-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 20:42	Jeremy C Giffin	243.19
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554388	07/25/2019 13:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192190015A	08/09/2019 04:32	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192190015A	08/07/2019 22:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404902	08/07/2019 13:20	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404902	08/02/2019 06:49	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820006B	08/06/2019 11:53	William C Schwebel	1

Sample Description: SB-20-S-22.5-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114315
ELLE Group #: 2056414
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:20
SDG#: LDC09-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.88
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.88
11995	Toluene	108-88-3	0.0007	0.0006	0.88
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.88
Sample collection requirement for volatiles was not met. The VOA soil weight is outside the acceptable weight range. See the VOA Prep Summary Sheet for the affected sample(s).					
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	25.41
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.1	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	10	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	3.98	0.514	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	5.1	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192202AA	08/08/2019 19:23	Linda C Pape	0.88
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554388	07/25/2019 13:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554388	07/25/2019 13:20	Client Supplied	1

Sample Description: SB-20-S-22.5-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114315
ELLE Group #: 2056414
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:20
SDG#: LDC09-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554388	07/25/2019 13:20	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/07/2019 20:05	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 07:13	Jeremy C Giffin	25.41
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554388	07/25/2019 13:20	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192190015A	08/09/2019 04:54	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192190015A	08/07/2019 22:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/08/2019 15:17	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820006B	08/06/2019 11:53	William C Schwebel	1

Sample Description: QA-T-190725 NA Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1114316
ELLE Group #: 2056414
Matrix: Water

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 11:00
SDG#: LDC09-07TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z192202AA	08/08/2019 11:03	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z192202AA	08/08/2019 11:02	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	19213B20A	08/02/2019 21:20	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	19213B20A	08/02/2019 21:19	Marie D Beamenderfer	1

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:38

Group Number: 2056414

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result mg/kg	MDL mg/kg
Batch number: Q192201AA	Sample number(s): 1114314	
Benzene	N.D.	0.025
Ethylbenzene	N.D.	0.020
Toluene	N.D.	0.030
Xylene (Total)	N.D.	0.050
Batch number: X192202AA	Sample number(s): 1114310-1114313,1114315	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
	ug/l	ug/l
Batch number: Z192202AA	Sample number(s): 1114316	
Benzene	N.D.	0.2
Ethylbenzene	N.D.	0.4
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
	mg/kg	mg/kg
Batch number: 19217SLB026	Sample number(s): 1114310-1114315	
Naphthalene	N.D.	0.007
Batch number: 19216C31A	Sample number(s): 1114310-1114315	
NWTPH-GX Soil C7-C12	N.D.	0.2
	ug/l	ug/l
Batch number: 19213B20A	Sample number(s): 1114316	
NWTPH-Gx water C7-C12	N.D.	19
	mg/kg	mg/kg
Batch number: 192140030A	Sample number(s): 1114310-1114313	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 192190015A	Sample number(s): 1114314-1114315	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 192141404902	Sample number(s): 1114310-1114311,1114314	
Lead	N.D.	0.600
Batch number: 192141404903	Sample number(s): 1114312-1114313,1114315	

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:38

Group Number: 2056414

Method Blank (continued)

Analysis Name	Result mg/kg	MDL mg/kg
Lead	N.D.	0.600

LCS/LCSD

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: Q192201AA	Sample number(s): 1114314								
Benzene	1.00	0.980	1.00	1.01	98	101	80-120	3	30
Ethylbenzene	1.00	1.00	1.00	0.998	100	100	78-120	0	30
Toluene	1.00	0.992	1.00	1.00	99	100	80-120	1	30
Xylene (Total)	3.00	3.03	3.00	3.04	101	101	75-120	0	30
Batch number: X192202AA	Sample number(s): 1114310-1114313,1114315								
Benzene	0.0200	0.0204	0.0200	0.0211	102	105	80-120	3	30
Ethylbenzene	0.0200	0.0199	0.0200	0.0204	100	102	78-120	2	30
Toluene	0.0200	0.0201	0.0200	0.0208	101	104	80-120	3	30
Xylene (Total)	0.0600	0.0600	0.0600	0.0615	100	102	75-120	2	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: Z192202AA	Sample number(s): 1114316								
Benzene	20	20.91			105		80-120		
Ethylbenzene	20	20.29			101		80-120		
Toluene	20	20.81			104		80-120		
Xylene (Total)	60	64.46			107		80-120		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19217SLB026	Sample number(s): 1114310-1114315								
Naphthalene	1.67	1.32			79		46-99		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19216C31A	Sample number(s): 1114310-1114315								
NWTPH-GX Soil C7-C12	11	11.49	11	11.46	104	104	55-145	0	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 19213B20A	Sample number(s): 1114316								
NWTPH-Gx water C7-C12	1100	1134.39	1100	1121.55	103	102	64-131	1	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192140030A	Sample number(s): 1114310-1114313								
Diesel Range Organics C12-C24	133.4	101.08			76		61-115		

*- Outside of specification

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- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:38

Group Number: 2056414

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 192190015A Diesel Range Organics C12-C24	Sample number(s): 1114314-1114315								
	133.4	105.63			79		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192141404902 Lead	Sample number(s): 1114310-1114311,1114314								
	15	15.79			105		90-115		
Batch number: 192141404903 Lead	Sample number(s): 1114312-1114313,1114315								
	15	14.59			97		90-115		
	%	%	%	%					
Batch number: 19217820006B Moisture	Sample number(s): 1114310-1114315								
	89.5	89.43			100		99-101		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 19217SLB026 Naphthalene	Sample number(s): 1114310-1114315 UNSPK: 1114314									
	N.D.	1.66	1.29	1.66	1.35	78	81	46-99	4	30
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192141404902 Lead	Sample number(s): 1114310-1114311,1114314 UNSPK: 1114311									
	N.D.	14.15	13.12	12.61	11.46	93	91	75-125	13	20

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 192141404902 Lead	Sample number(s): 1114310-1114311,1114314 BKG: 1114311			
	N.D.	N.D.	0 (1)	20

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:38

Group Number: 2056414

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: Q192201AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114314	84	88	85	90
Blank	93	99	94	94
LCS	90	95	89	91
LCSD	92	95	91	92
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260 Soil
Batch number: X192202AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114310	104	105	94	94
1114311	104	104	97	88
1114312	105	109	94	92
1114313	96	99	99	106
1114315	103	108	94	94
Blank	103	103	99	94
LCS	99	101	100	101
LCSD	99	99	100	101
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260C
Batch number: Z192202AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114316	95	101	98	95
Blank	96	99	98	95
LCS	94	100	98	96
Limits:	80-120	80-120	80-120	80-120

Analysis Name: Naphthalene 8270D
Batch number: 19217SLB026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1114310	88	84	93
1114311	77	79	90
1114312	90	88	95
1114313	74	75	92
1114314	83	81	96
1114315	90	85	101
Blank	83	77	99

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:38

Group Number: 2056414

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Naphthalene 8270D
Batch number: 19217SLB026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
LCS	86	79	97
MS	82	77	91
MSD	85	82	95
Limits:	14-115	22-122	23-141

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 19213B20A

	Trifluorotoluene-F
1114316	68
Blank	81
LCS	100
LCSD	96
Limits:	50-150

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 19216C31A

	Trifluorotoluene-F
1114310	89
1114311	87
1114312	106
1114313	103
1114314	97
1114315	84
Blank	95
LCS	98
LCSD	99
Limits:	50-150

Analysis Name: NWTPH-Dx soil
Batch number: 192140030A

	Orthoterphenyl
1114310	91
1114311	87
1114312	104
1114313	103
Blank	107
LCS	104

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:38

Group Number: 2056414

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Dx soil
Batch number: 192140030A

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 192190015A

	Orthoterphenyl
1114314	102
1114315	104
Blank	102
LCS	109

Limits: 50-150

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

Acct. # 13271 For Eurofins Lancaster Laboratories Environmental use only
 Group # 2086414 Sample # 1114310-16
 Instructions on reverse side correspond with circled numbers.

1 Client Information				4 Matrix				5 Analyses Requested										6 Remarks																																																																																																																											
Facility # <u>204117</u>		WBS		Sediment <input type="checkbox"/>		Ground <input type="checkbox"/>		Surface <input type="checkbox"/>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">Total Number of Containers</td> <td colspan="2">BTEX + MTBE</td> <td colspan="2">8021</td> <td colspan="2">8260</td> <td colspan="2">Naphth</td> <td colspan="2">Oxygenates</td> <td colspan="2">NWTPH-Gx</td> <td colspan="2">NWTPH-Dx with Silica Gel Cleanup</td> <td colspan="2">NWTPH-Dx without Silica Gel Cleanup</td> <td colspan="2">WA VPH</td> <td colspan="2">WA EPH</td> <td colspan="2">Lead</td> <td colspan="2">Total</td> <td colspan="2">Diss.</td> <td colspan="2">Method</td> </tr> <tr> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> </table>										Total Number of Containers		BTEX + MTBE		8021		8260		Naphth		Oxygenates		NWTPH-Gx		NWTPH-Dx with Silica Gel Cleanup		NWTPH-Dx without Silica Gel Cleanup		WA VPH		WA EPH		Lead		Total		Diss.		Method																																																																																												SCR #: _____	
Total Number of Containers		BTEX + MTBE		8021		8260		Naphth												Oxygenates		NWTPH-Gx		NWTPH-Dx with Silica Gel Cleanup		NWTPH-Dx without Silica Gel Cleanup		WA VPH		WA EPH		Lead		Total		Diss.		Method																																																																																																							
Site Address <u>2021 6th St, Bremerton, WA</u>		Chevron PM <u>Eric Hetrick</u>		Lead Consultant <u>Leidos</u>		Consultant/Office <u>Leidos - Bothell, WA</u>		Consultant Project Mgr. <u>Russ Shropshire</u>		Consultant Phone # <u>425-482-3323</u>		Sampler <u>RAO/CMW</u>		Soil <input checked="" type="checkbox"/>		Water <input type="checkbox"/>		Oil <input type="checkbox"/>		Air <input type="checkbox"/>		Potable <input type="checkbox"/>		NPDES <input type="checkbox"/>		8260 full scan		8260		8021		Naphth		Oxygenates		NWTPH-Gx		NWTPH-Dx with Silica Gel Cleanup		NWTPH-Dx without Silica Gel Cleanup		WA VPH		WA EPH		Lead		Total		Diss.		Method																																																																																									
Sample Identification		Collected		Grab		Composite		Soil		Water		Oil		Air		Potable		NPDES		8260 full scan		8260		8021		Naphth		Oxygenates		NWTPH-Gx		NWTPH-Dx with Silica Gel Cleanup		NWTPH-Dx without Silica Gel Cleanup		WA VPH		WA EPH		Lead		Total		Diss.		Method																																																																																															
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<u>SB-19-27.5-S-072519</u>		<u>7/25/19</u>		<u>1140</u>																																																																																																																																									
<u>SB-19-DUP-2-072519</u>		<u>7/25/19</u>		<u>1215</u>																																																																																																																																									
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<u>SB-20-14.0-S-072519</u>		<u>7/25/19</u>		<u>1330</u>																																																																																																																																									
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7 Turnaround Time Requested (TAT) (please circle)				Relinquished by				Date		Time		Received by				Date		Time																																																																																																																											
Standard 5 day 4 day				<u>Ruth Aba</u>				<u>7/29/19</u>		<u>1430</u>		<u>[Signature]</u>																																																																																																																																	
72 hour 48 hour 24 hour																																																																																																																																													
8 Data Package (circle if required)				Relinquished by Commercial Carrier:				Date		Time		Received by				Date		Time																																																																																																																											
Type I - Full				UPS <input checked="" type="checkbox"/> FedEx _____ Other _____				<u>7/30/19</u>		<u>1005</u>		<u>[Signature]</u>																																																																																																																																	
Type VI (Raw Data)				Temperature Upon Receipt <u>0.8</u> °C								Custody Seals Intact? <u>(Yes)</u>																																																																																																																																	
EDD (circle if required)				CVX-RTBU-FI_05 (default)																																																																																																																																									
Other: _____																																																																																																																																													



Client: Leidos

Delivery and Receipt Information

Delivery Method:	<u>UPS</u>	Arrival Timestamp:	<u>07/30/2019 10:15</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>WA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	4
Samples Chilled:	Yes	Trip Blank Type:	HCl
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Simon Nies (25 112) at 12:54 on 07/30/2019

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-01	0.8	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Chevron c/o Leidos, Inc.
6310 Allentown Blvd.
Suite 110
Harrisburg PA 17112

Report Date: August 20, 2019 11:35

Project: 204117

Account #: 13271
Group Number: 2056415
SDG: LDC10
PO Number: P010229412
Release Number: HETRICK
State of Sample Origin: WA

Electronic Copy To Leidos
Electronic Copy To EcoChem

Attn: Russ Shropshire
Attn: Christine Ransom

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

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SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
SB-11-S-6.0-190723 Grab Soil	07/23/2019 08:25	1114317
SB-11-S-10.0-190724 Grab Soil	07/24/2019 09:20	1114318
SB-11-S-14.0-190724 Grab Soil	07/24/2019 09:30	1114319
SB-11-S-20.0-190724 Grab Soil	07/24/2019 09:40	1114320
SB-11-S-27.5-190724 Grab Soil	07/24/2019 09:50	1114321
QA-T-190724 NA Water	07/24/2019 09:00	1114322

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: SB-11-S-6.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114317
ELLE Group #: 2056415
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 08:25
SDG#: LDC10-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
	SW-846 8260C		mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0006	0.97
11995	Ethylbenzene	100-41-4	N.D.	0.0005	0.97
11995	Toluene	108-88-3	N.D.	0.0007	0.97
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.97
GC/MS Semivolatiles					
	SW-846 8270D		mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.008	1
GC Volatiles					
	ECY 97-602 NWTPH-Gx		mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.3	28.82
GC Petroleum Hydrocarbons					
	ECY 97-602 NWTPH-Dx modified		mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.9	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	12	1
Metals					
	SW-846 6010D Rev.4, July 2014		mg/kg	mg/kg	
06955	Lead	7439-92-1	8.75	3.31	5
Wet Chemistry					
	SM 2540 G-2011 %Moisture Calc		%	%	
00111	Moisture	n.a.	19.0	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192181AA	08/06/2019 17:46	Linda C Pape	0.97
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554389	07/23/2019 08:25	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554389	07/23/2019 08:25	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554389	07/23/2019 08:25	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/07/2019 20:31	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1

Sample Description: SB-11-S-6.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114317
ELLE Group #: 2056415
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 08:25
SDG#: LDC10-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31A	08/05/2019 00:26	Jeremy C Giffin	28.82
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554389	07/23/2019 08:25	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192180010A	08/08/2019 23:06	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192180010A	08/06/2019 20:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/08/2019 16:04	Cindy M Gehman	5
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19214820004A	08/05/2019 10:57	William C Schwebel	1

Sample Description: SB-11-S-10.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114318
ELLE Group #: 2056415
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:20
SDG#: LDC10-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.79
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.79
11995	Toluene	108-88-3	N.D.	0.0006	0.79
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.79
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.009	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	1.0	0.3	26.78
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	5.1	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	7.28	0.690	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	22.4	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192193AA	08/07/2019 18:03	Linda C Pape	0.79
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554389	07/24/2019 09:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554389	07/24/2019 09:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554389	07/24/2019 09:20	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/07/2019 20:56	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1

Sample Description: SB-11-S-10.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114318
ELLE Group #: 2056415
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:20
SDG#: LDC10-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216B31A	08/05/2019 10:25	Jeremy C Giffin	26.78
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554389	07/24/2019 09:20	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192180010A	08/08/2019 23:28	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192180010A	08/06/2019 20:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/08/2019 15:27	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19214820004A	08/05/2019 10:57	William C Schwebel	1

Sample Description: SB-11-S-14.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114319
ELLE Group #: 2056415
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:30
SDG#: LDC10-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.73
11995	Ethylbenzene	100-41-4	0.001	0.0004	0.73
11995	Toluene	108-88-3	N.D.	0.0006	0.73
11995	Xylene (Total)	1330-20-7	0.011	0.0009	0.73
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.008	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	1.5	0.3	25.75
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	5.1	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	11.2	2.58	5
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	22.6	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192193AA	08/07/2019 18:26	Linda C Pape	0.73
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554389	07/24/2019 09:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554389	07/24/2019 09:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554389	07/24/2019 09:30	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/07/2019 21:21	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1

Sample Description: SB-11-S-14.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114319
ELLE Group #: 2056415
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:30
SDG#: LDC10-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216B31A	08/05/2019 11:01	Jeremy C Giffin	25.75
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554389	07/24/2019 09:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192180010A	08/08/2019 23:50	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192180010A	08/06/2019 20:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404903	08/08/2019 16:22	Cindy M Gehman	5
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404903	08/02/2019 06:59	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19214820004A	08/05/2019 10:57	William C Schwebel	1

Sample Description: SB-11-S-20.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114320
ELLE Group #: 2056415
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:40
SDG#: LDC10-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.047	86.5
11995	Ethylbenzene	100-41-4	12	0.038	86.5
11995	Toluene	108-88-3	0.58	0.056	86.5
11995	Xylene (Total)	1330-20-7	100	0.94	865.04
The holding time was not met. The client was notified and the data reported.					
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	11	0.036	5
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	3,200	85	8469.13
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	55	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	24	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.36	0.497	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	7.8	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	Q192201AA	08/08/2019 20:24	Stephen C Nolte	86.5
11995	BTEX 8260 Soil	SW-846 8260C	1	Q192211AA	08/09/2019 13:47	Jennifer K Howe	865.04
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554389	07/24/2019 09:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554389	07/24/2019 09:40	Client Supplied	1

Sample Description: SB-11-S-20.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114320
ELLE Group #: 2056415
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:40
SDG#: LDC10-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554389	07/24/2019 09:40	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/08/2019 17:03	Edward C Monborne	5
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216B31A	08/05/2019 12:20	Jeremy C Giffin	8469.13
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554389	07/24/2019 09:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192180010A	08/09/2019 00:11	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192180010A	08/06/2019 20:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404904	08/07/2019 15:00	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404904	08/02/2019 07:09	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19214820004A	08/05/2019 10:57	William C Schwebel	1

Sample Description: SB-11-S-27.5-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114321
ELLE Group #: 2056415
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:50
SDG#: LDC10-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			mg/kg	mg/kg	
	SW-846 8260C				
11995	Benzene	71-43-2	0.0005	0.0004	0.81
11995	Ethylbenzene	100-41-4	0.001	0.0003	0.81
11995	Toluene	108-88-3	0.004	0.0005	0.81
11995	Xylene (Total)	1330-20-7	0.009	0.0009	0.81

The recovery for the internal standard t-butyl alcohol-d10 is outside the QC acceptance limits high in the associated CCV. No compounds in this analysis are quantitated using that internal standard.

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary.

The following action was taken: The client was contacted and the data reported.

GC/MS Semivolatiles			mg/kg	mg/kg	
	SW-846 8270D				
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles			mg/kg	mg/kg	
	ECY 97-602 NWTPH-Gx				
02005	NWTPH-GX Soil C7-C12	n.a.	0.6	0.2	20.29
GC Petroleum Hydrocarbons			mg/kg	mg/kg	
	ECY 97-602 NWTPH-Dx modified				
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1

Metals			mg/kg	mg/kg	
	SW-846 6010D Rev.4, July 2014				
06955	Lead	7439-92-1	2.06	0.445	1

Wet Chemistry			%	%	
	SM 2540 G-2011 %Moisture Calc				
00111	Moisture	n.a.	7.0	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
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Sample Description: SB-11-S-27.5-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114321
ELLE Group #: 2056415
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:50
SDG#: LDC10-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192191AA	08/07/2019 17:05	Linda C Pape	0.81
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554389	07/24/2019 09:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554389	07/24/2019 09:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554389	07/24/2019 09:50	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/07/2019 22:12	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216B31A	08/05/2019 11:37	Jeremy C Giffin	20.29
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554389	07/24/2019 09:50	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192190015A	08/09/2019 05:16	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192190015A	08/07/2019 22:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404904	08/07/2019 15:03	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404904	08/02/2019 07:09	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19214820004A	08/05/2019 10:57	William C Schwebel	1

Sample Description: QA-T-190724 NA Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1114322
ELLE Group #: 2056415
Matrix: Water

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:00
SDG#: LDC10-06TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z192192AA	08/07/2019 15:33	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z192192AA	08/07/2019 15:32	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	19213B20A	08/02/2019 21:48	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	19213B20A	08/02/2019 21:47	Marie D Beamenderfer	1

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:35

Group Number: 2056415

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL
	mg/kg	mg/kg
Batch number: A192181AA	Sample number(s): 1114317	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: A192193AA	Sample number(s): 1114318-1114319	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: Q192201AA	Sample number(s): 1114320	
Benzene	N.D.	0.025
Ethylbenzene	N.D.	0.020
Toluene	N.D.	0.030
Batch number: Q192211AA	Sample number(s): 1114320	
Xylene (Total)	N.D.	0.050
Batch number: X192191AA	Sample number(s): 1114321	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	0.002	0.0006
Xylene (Total)	N.D.	0.001
	ug/l	ug/l
Batch number: Z192192AA	Sample number(s): 1114322	
Benzene	N.D.	0.2
Ethylbenzene	N.D.	0.4
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
	mg/kg	mg/kg
Batch number: 19217SLB026	Sample number(s): 1114317-1114321	
Naphthalene	N.D.	0.007
Batch number: 19216A31A	Sample number(s): 1114317	
NWTPH-GX Soil C7-C12	N.D.	0.2
Batch number: 19216B31A	Sample number(s): 1114318-1114321	
NWTPH-GX Soil C7-C12	N.D.	0.2

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:35

Group Number: 2056415

Method Blank (continued)

Analysis Name	Result	MDL
	ug/l	ug/l
Batch number: 19213B20A NWTPH-Gx water C7-C12	Sample number(s): 1114322 N.D.	19
	mg/kg	mg/kg
Batch number: 192180010A Diesel Range Organics C12-C24 Heavy Range Organics C24-C40	Sample number(s): 1114317-1114320 N.D. N.D.	4.0 10
Batch number: 192190015A Diesel Range Organics C12-C24 Heavy Range Organics C24-C40	Sample number(s): 1114321 N.D. N.D.	4.0 10
Batch number: 192141404903 Lead	Sample number(s): 1114317-1114319 N.D.	0.600
Batch number: 192141404904 Lead	Sample number(s): 1114320-1114321 N.D.	0.600

LCS/LCSD

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: A192181AA	Sample number(s): 1114317								
Benzene	0.0200	0.0204	0.0200	0.0205	102	103	80-120	1	30
Ethylbenzene	0.0200	0.0209	0.0200	0.0208	104	104	78-120	0	30
Toluene	0.0200	0.0208	0.0200	0.0210	104	105	80-120	1	30
Xylene (Total)	0.0600	0.0630	0.0600	0.0632	105	105	75-120	0	30
Batch number: A192193AA	Sample number(s): 1114318-1114319								
Benzene	0.0200	0.0198	0.0200	0.0201	99	100	80-120	1	30
Ethylbenzene	0.0200	0.0203	0.0200	0.0205	102	102	78-120	1	30
Toluene	0.0200	0.0202	0.0200	0.0207	101	103	80-120	2	30
Xylene (Total)	0.0600	0.0612	0.0600	0.0619	102	103	75-120	1	30
Batch number: Q192201AA	Sample number(s): 1114320								
Benzene	1.00	0.980	1.00	1.01	98	101	80-120	3	30
Ethylbenzene	1.00	1.00	1.00	0.998	100	100	78-120	0	30
Toluene	1.00	0.992	1.00	1.00	99	100	80-120	1	30
Batch number: Q192211AA	Sample number(s): 1114320								
Xylene (Total)	3.00	3.36	3.00	2.96	112	99	75-120	13	30
Batch number: X192191AA	Sample number(s): 1114321								
Benzene	0.0200	0.0234	0.0200	0.0200	117	100	80-120	16	30

*- Outside of specification

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- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:35

Group Number: 2056415

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Ethylbenzene	0.0200	0.0226	0.0200	0.0189	113	95	78-120	18	30
Toluene	0.0200	0.0242	0.0200	0.0205	121*	103	80-120	16	30
Xylene (Total)	0.0600	0.0669	0.0600	0.0557	112	93	75-120	18	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: Z192192AA	Sample number(s): 1114322								
Benzene	20	20.87			104		80-120		
Ethylbenzene	20	20.37			102		80-120		
Toluene	20	21.09			105		80-120		
Xylene (Total)	60	64.7			108		80-120		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19217SLB026	Sample number(s): 1114317-1114321								
Naphthalene	1.67	1.32			79		46-99		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19216A31A	Sample number(s): 1114317								
NWTPH-GX Soil C7-C12	11	11.46	11	11.37	104	103	55-145	1	30
Batch number: 19216B31A	Sample number(s): 1114318-1114321								
NWTPH-GX Soil C7-C12	11	11.25	11	11.5	102	105	55-145	2	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 19213B20A	Sample number(s): 1114322								
NWTPH-Gx water C7-C12	1100	1134.39	1100	1121.55	103	102	64-131	1	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192180010A	Sample number(s): 1114317-1114320								
Diesel Range Organics C12-C24	133.4	108.3			81		61-115		
Batch number: 192190015A	Sample number(s): 1114321								
Diesel Range Organics C12-C24	133.4	105.63			79		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192141404903	Sample number(s): 1114317-1114319								
Lead	15	14.59			97		90-115		
Batch number: 192141404904	Sample number(s): 1114320-1114321								
Lead	15	15.24			102		90-115		
	%	%	%	%					
Batch number: 19214820004A	Sample number(s): 1114317-1114321								
Moisture	89.5	89.46			100		99-101		

*- Outside of specification

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- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:35

Group Number: 2056415

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 192180010A Diesel Range Organics C12-C24	50.95	132.03	171.24			91		61-115		
Sample number(s): 1114317-1114320 UNSPK: 1114320										

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 192180010A Diesel Range Organics C12-C24 Heavy Range Organics C24-C40	50.95 21.9	97.51 N.D.	63* 200* (1)	20 20
Sample number(s): 1114317-1114320 BKG: 1114320				

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: A192181AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114317	103	103	93	88
Blank	100	102	96	93
LCS	98	99	100	102
LCSD	97	96	101	101
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260 Soil
Batch number: A192193AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114318	101	100	93	112
1114319	102	104	94	98
Blank	103	97	95	92
LCS	98	102	101	103
LCSD	98	96	101	102

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:35

Group Number: 2056415

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: A192193AA

Limits: 50-141 54-135 52-141 50-131

Analysis Name: BTEX 8260 Soil
Batch number: Q192201AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114320	62	66	80	95
Blank	93	99	94	94
LCS	90	95	89	91
LCSD	92	95	91	92
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260 Soil
Batch number: X192191AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114321	96	107	99	102
Blank	95	103	100	101
LCS	95	98	102	103
LCSD	96	99	102	104
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260C
Batch number: Z192192AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114322	96	101	97	94
Blank	95	101	96	94
LCS	94	100	97	96
Limits:	80-120	80-120	80-120	80-120

Analysis Name: Naphthalene 8270D
Batch number: 19217SLB026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1114317	76	75	91
1114318	87	80	94
1114319	76	74	93
1114320	100	90	100
1114321	90	85	97
Blank	83	77	99
LCS	86	79	97

*- Outside of specification

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- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:35

Group Number: 2056415

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Naphthalene 8270D
Batch number: 19217SLB026

Limits: 14-115 22-122 23-141

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 19213B20A

Trifluorotoluene-F

1114322	81
Blank	81
LCS	100
LCSD	96

Limits: 50-150

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 19216A31A

Trifluorotoluene-F

1114317	68
Blank	94
LCS	99
LCSD	98

Limits: 50-150

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 19216B31A

Trifluorotoluene-F

1114318	65
1114319	65
1114320	186*
1114321	77
Blank	92
LCS	95
LCSD	96

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 192180010A

Orthoterphenyl

1114317	101
1114318	102
1114319	102
1114320	106

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:35

Group Number: 2056415

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Dx soil
Batch number: 192180010A

Orthoterphenyl

Blank	104
DUP	112
LCS	111
MS	113

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 192190015A

Orthoterphenyl

1114321	103
Blank	102
LCS	109

Limits: 50-150

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

Acct. # 13271

For Eurofins Lancaster Laboratories Environmental use only

Group # 2056415 Sample # 1114317-22

Instructions on reverse side correspond with circled numbers.

1 Client Information				4 Matrix				5 Analyses Requested										6 Remarks															
Facility # <u>204177</u>		WBS		Sediment <input type="checkbox"/>		Ground <input type="checkbox"/>		Surface <input type="checkbox"/>		Oil <input type="checkbox"/>		Air <input type="checkbox"/>		Total Number of Containers		BTEX <input checked="" type="checkbox"/> MTBE <input type="checkbox"/> 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphth		8260 full scan		Oxygenates		NWTPH-Gx		NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/>		NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/>		WA VPH <input type="checkbox"/> WA EPH <input type="checkbox"/>		Lead <input type="checkbox"/> Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>CO10B</u>		SCR #: _____	
Site Address <u>2021 6th St Bremerton, WA</u>				Chevron PM <u>Eric Hetrick</u>				Lead Consultant <u>Leidos</u>				Consultant/Office <u>Leidos - Bothell, WA</u>				Consultant Project Mgr. <u>Russ Shropshire</u>				Consultant Phone # <u>425-482-3323</u>				Sampler <u>RA0/CMW</u>									
2 Sample Identification		3 Collected		Grab	Composite	Soil	Water	Oil	Total Number of Containers	BTEX	8260	NWTPH-Gx	NWTPH-Dx with Silica Gel Cleanup	NWTPH-Dx without Silica Gel Cleanup	WA VPH	Lead	Total	Diss.	Method	6 Remarks													
		Date	Time																														
<u>SB-11-6.0-S-072319</u>		<u>7/23/19</u>	<u>0835</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Submit Invoice to Leidos PO10229412													
<u>SB-11-10.0-S-072419</u>		<u>7/23/19</u>	<u>0920</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>														
<u>SB-11-14.0-S-072419</u>		<u>7/24/19</u>	<u>0930</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>														
<u>SB-11-20.0-S-072419</u>		<u>7/23/19</u>	<u>0940</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>														
<u>SB-11-27.5-S-072419</u>		<u>7/24/19</u>	<u>0950</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>														
<u>FB-3-072419</u>		<u>7/23/19</u>	<u>0900</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>4</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>														
<u>FB-3-072419</u>		<u>7/24/19</u>	<u>0900</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>4</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>														
7 Turnaround Time Requested (TAT) (please circle) Standard <input checked="" type="checkbox"/> 5 day 4 day 72 hour 48 hour 24 hour				Relinquished by <u>[Signature]</u>		Date <u>7/27/19</u>		Time <u>1440</u>		Received by		Date		Time		9																	
				Relinquished by		Date		Time		Received by		Date		Time																			
8 Data Package (circle if required) Type I - Full <input checked="" type="checkbox"/> Type VI (Raw Data)				Relinquished by Commercial Carrier: UPS <input checked="" type="checkbox"/> FedEx _____ Other _____		Temperature Upon Receipt <u>1.0</u> °C		Custody Seals Intact? <input checked="" type="checkbox"/> (Yes) <input type="checkbox"/> No		Received by <u>[Signature]</u>		Date <u>7/30/19</u>		Time <u>1015</u>																			
				EDD (circle if required) CVX-RTBU-FI_05 (default) Other: _____																													



Client: Leidos

Delivery and Receipt Information

Delivery Method:	<u>UPS</u>	Arrival Timestamp:	<u>07/30/2019 10:15</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>WA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	4
Samples Chilled:	Yes	Trip Blank Type:	HCI
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Simon Nies (25 112) at 13:01 on 07/30/2019

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-01	1.0	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.

Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Chevron c/o Leidos, Inc.
6310 Allentown Blvd.
Suite 110
Harrisburg PA 17112

Report Date: August 20, 2019 11:34

Project: 204117

Account #: 13271
Group Number: 2056416
SDG: LDC11
PO Number: P010229412
Release Number: HETRICK
State of Sample Origin: WA

Electronic Copy To Leidos
Electronic Copy To EcoChem

Attn: Russ Shropshire
Attn: Christine Ransom

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

To view our laboratory's current scopes of accreditation please go to <https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/> . Historical copies may be requested through your project manager.



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
SB-20-S-27.5-190725 Grab Soil	07/25/2019 13:10	1114323
SB-14-S-20.0-190724 Grab Soil	07/24/2019 17:30	1114324
SB-14-S-27.5-190724 Grab Soil	07/24/2019 17:25	1114325
SB-12-S-6.0-190723 Grab Soil	07/23/2019 09:00	1114326
SB-12-S-14.5-190724 Grab Soil	07/24/2019 14:10	1114327
SB-12-S-20.0-190724 Grab Soil	07/24/2019 14:00	1114328
QA-T-190725 NA Water	07/25/2019 13:00	1114329

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: SB-20-S-27.5-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114323
ELLE Group #: 2056416
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:10
SDG#: LDC11-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.81
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.81
11995	Toluene	108-88-3	0.0007	0.0005	0.81
11995	Xylene (Total)	1330-20-7	N.D.	0.0008	0.81
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	2.4	252.98
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	210	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	32	10	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.56	0.472	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	4.5	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192202AA	08/08/2019 19:46	Linda C Pape	0.81
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554390	07/25/2019 13:10	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554390	07/25/2019 13:10	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/07/2019 22:38	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 21:18	Jeremy C Giffin	252.98

Sample Description: SB-20-S-27.5-190725 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114323
ELLE Group #: 2056416
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:10
SDG#: LDC11-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554390	07/25/2019 13:10	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192190015A	08/09/2019 05:37	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192190015A	08/07/2019 22:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404904	08/07/2019 15:13	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404904	08/02/2019 07:09	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820001A	08/06/2019 08:31	William C Schwebel	1

Sample Description: SB-14-S-20.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114324
ELLE Group #: 2056416
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 17:30
SDG#: LDC11-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260C	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.82
11995	Ethylbenzene	100-41-4	0.0005	0.0003	0.82
11995	Toluene	108-88-3	0.001	0.0005	0.82
11995	Xylene (Total)	1330-20-7	0.003	0.0009	0.82

The recovery for the internal standard t-butyl alcohol-d10 is outside the QC acceptance limits high in the associated CCV. No compounds in this analysis are quantitated using that internal standard.

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary.

The following action was taken: The client was contacted and the data reported.

GC/MS Semivolatiles			SW-846 8270D	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles			ECY 97-602 NWT PH-Gx	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	29	2.1	210.1
Reporting limits were raised due to sample foaming.					

GC Petroleum Hydrocarbons			ECY 97-602 NWT PH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	130	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	120	11	1

Metals			SW-846 6010D Rev.4, July 2014	mg/kg	
06955	Lead	7439-92-1	6.65	0.501	1

Wet Chemistry			SM 2540 G-2011 %Moisture Calc	%	
00111	Moisture	n.a.	6.4	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
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Sample Description: SB-14-S-20.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114324
ELLE Group #: 2056416
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 17:30
SDG#: LDC11-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192191AA	08/07/2019 20:56	Linda C Pape	0.82
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554390	07/24/2019 17:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554390	07/24/2019 17:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554390	07/24/2019 17:30	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/07/2019 23:03	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 07:49	Jeremy C Giffin	210.1
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554390	07/24/2019 17:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192190015A	08/09/2019 07:48	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192190015A	08/07/2019 22:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404904	08/07/2019 15:16	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404904	08/02/2019 07:09	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820001A	08/06/2019 08:31	William C Schwebel	1

Sample Description: SB-14-S-27.5-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114325
ELLE Group #: 2056416
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 17:25
SDG#: LDC11-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260C	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.89
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.89
11995	Toluene	108-88-3	0.002	0.0006	0.89
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.89

The recovery for the internal standard t-butyl alcohol-d10 is outside the QC acceptance limits high in the associated CCV. No compounds in this analysis are quantitated using that internal standard.

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary.

The following action was taken: The client was contacted and the data reported.

GC/MS Semivolatiles			SW-846 8270D	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles			ECY 97-602 NWT PH-Gx	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.2	25.65
GC Petroleum Hydrocarbons			ECY 97-602 NWT PH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	10	1

Metals			SW-846 6010D Rev.4, July 2014	mg/kg	
06955	Lead	7439-92-1	1.74	0.458	1

Wet Chemistry			SM 2540 G-2011 %Moisture Calc	%	
00111	Moisture	n.a.	5.1	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
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Sample Description: SB-14-S-27.5-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114325
ELLE Group #: 2056416
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 17:25
SDG#: LDC11-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192191AA	08/07/2019 17:28	Linda C Pape	0.89
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554390	07/24/2019 17:25	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554390	07/24/2019 17:25	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554390	07/24/2019 17:25	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/07/2019 23:29	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 09:08	Jeremy C Giffin	25.65
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554390	07/24/2019 17:25	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192190015A	08/09/2019 05:59	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192190015A	08/07/2019 22:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404904	08/07/2019 15:20	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404904	08/02/2019 07:09	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820001A	08/06/2019 08:31	William C Schwebel	1

Sample Description: SB-12-S-6.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114326
ELLE Group #: 2056416
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 09:00
SDG#: LDC11-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.75
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.75
11995	Toluene	108-88-3	N.D.	0.0006	0.75
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.75
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.009	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.3	25.14
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	5.1	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	16.9	3.21	5
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	22.2	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192181AA	08/06/2019 18:09	Linda C Pape	0.75
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554390	07/23/2019 09:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554390	07/23/2019 09:00	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/07/2019 23:54	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31A	08/05/2019 01:03	Jeremy C Giffin	25.14

Sample Description: SB-12-S-6.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114326
ELLE Group #: 2056416
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 09:00
SDG#: LDC11-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554390	07/23/2019 09:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192180010A	08/09/2019 01:16	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192180010A	08/06/2019 20:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404904	08/09/2019 11:25	Patrick J Engle	5
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404904	08/02/2019 07:09	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820001A	08/06/2019 08:31	William C Schwebel	1

Sample Description: SB-12-S-14.5-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114327
ELLE Group #: 2056416
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 14:10
SDG#: LDC11-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260C	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.8
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.8
11995	Toluene	108-88-3	0.002	0.0006	0.8
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.8

The recovery for the internal standard t-butyl alcohol-d10 is outside the QC acceptance limits high in the associated CCV. No compounds in this analysis are quantitated using that internal standard.

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary.

The following action was taken: The client was contacted and the data reported.

GC/MS Semivolatiles			SW-846 8270D	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.008	1
GC Volatiles			ECY 97-602 NWT PH-Gx	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.3	26.57
GC Petroleum Hydrocarbons			ECY 97-602 NWT PH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	5.1	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1

Metals			SW-846 6010D Rev.4, July 2014	mg/kg	
06955	Lead	7439-92-1	18.8	0.693	1

Wet Chemistry			SM 2540 G-2011 %Moisture Calc	%	
00111	Moisture	n.a.	22.0	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
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Sample Description: SB-12-S-14.5-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114327
ELLE Group #: 2056416
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 14:10
SDG#: LDC11-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192191AA	08/07/2019 17:51	Linda C Pape	0.8
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554390	07/24/2019 14:10	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554390	07/24/2019 14:10	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554390	07/24/2019 14:10	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLC026	08/09/2019 03:15	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLC026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 09:44	Jeremy C Giffin	26.57
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554390	07/24/2019 14:10	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192190015A	08/09/2019 06:21	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192190015A	08/07/2019 22:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404904	08/07/2019 15:26	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404904	08/02/2019 07:09	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820001A	08/06/2019 08:31	William C Schwebel	1

Sample Description: SB-12-S-20.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114328
ELLE Group #: 2056416
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 14:00
SDG#: LDC11-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260C	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.76
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.76
11995	Toluene	108-88-3	0.001	0.0005	0.76
11995	Xylene (Total)	1330-20-7	N.D.	0.0008	0.76

The recovery for the internal standard t-butyl alcohol-d10 is outside the QC acceptance limits high in the associated CCV. No compounds in this analysis are quantitated using that internal standard.

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary.

The following action was taken: The client was contacted and the data reported.

GC/MS Semivolatiles			SW-846 8270D	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles			ECY 97-602 NWT PH-Gx	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.2	22.43
GC Petroleum Hydrocarbons			ECY 97-602 NWT PH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1

Metals			SW-846 6010D Rev.4, July 2014	mg/kg	
06955	Lead	7439-92-1	2.42	0.555	1

Wet Chemistry			SM 2540 G-2011 %Moisture Calc	%	
00111	Moisture	n.a.	7.6	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
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Sample Description: SB-12-S-20.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114328
ELLE Group #: 2056416
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 14:00
SDG#: LDC11-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192191AA	08/07/2019 18:14	Linda C Pape	0.76
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554390	07/24/2019 14:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554390	07/24/2019 14:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554390	07/24/2019 14:00	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLC026	08/09/2019 03:40	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLC026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 10:20	Jeremy C Giffin	22.43
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554390	07/24/2019 14:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192190015A	08/09/2019 06:42	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192190015A	08/07/2019 22:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404904	08/07/2019 15:29	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404904	08/02/2019 07:09	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820001A	08/06/2019 08:31	William C Schwebel	1

Sample Description: QA-T-190725 NA Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1114329
ELLE Group #: 2056416
Matrix: Water

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:00
SDG#: LDC11-07TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z192202AA	08/08/2019 11:28	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z192202AA	08/08/2019 11:27	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	19213B20A	08/02/2019 22:15	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	19213B20A	08/02/2019 22:14	Marie D Beamenderfer	1

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:34

Group Number: 2056416

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL
Batch number: A192181AA	Sample number(s): 1114326	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: X192191AA	Sample number(s): 1114324-1114325,1114327-1114328	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	0.002	0.0006
Xylene (Total)	N.D.	0.001
Batch number: X192202AA	Sample number(s): 1114323	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
	ug/l	ug/l
Batch number: Z192202AA	Sample number(s): 1114329	
Benzene	N.D.	0.2
Ethylbenzene	N.D.	0.4
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
	mg/kg	mg/kg
Batch number: 19217SLB026	Sample number(s): 1114323-1114326	
Naphthalene	N.D.	0.007
Batch number: 19217SLC026	Sample number(s): 1114327-1114328	
Naphthalene	N.D.	0.007
Batch number: 19216A31A NWTPH-GX Soil C7-C12	Sample number(s): 1114326	
	N.D.	0.2
Batch number: 19216C31A NWTPH-GX Soil C7-C12	Sample number(s): 1114323-1114325,1114327-1114328	
	N.D.	0.2
	ug/l	ug/l
Batch number: 19213B20A NWTPH-Gx water C7-C12	Sample number(s): 1114329	
	N.D.	19
	mg/kg	mg/kg

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:34

Group Number: 2056416

Method Blank (continued)

Analysis Name	Result mg/kg	MDL mg/kg
Batch number: 192180010A	Sample number(s): 1114326	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 192190015A	Sample number(s): 1114323-1114325,1114327-1114328	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 192141404904	Sample number(s): 1114323-1114328	
Lead	N.D.	0.600

LCS/LCSD

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: A192181AA	Sample number(s): 1114326								
Benzene	0.0200	0.0204	0.0200	0.0205	102	103	80-120	1	30
Ethylbenzene	0.0200	0.0209	0.0200	0.0208	104	104	78-120	0	30
Toluene	0.0200	0.0208	0.0200	0.0210	104	105	80-120	1	30
Xylene (Total)	0.0600	0.0630	0.0600	0.0632	105	105	75-120	0	30
Batch number: X192191AA	Sample number(s): 1114324-1114325,1114327-1114328								
Benzene	0.0200	0.0234	0.0200	0.0200	117	100	80-120	16	30
Ethylbenzene	0.0200	0.0226	0.0200	0.0189	113	95	78-120	18	30
Toluene	0.0200	0.0242	0.0200	0.0205	121*	103	80-120	16	30
Xylene (Total)	0.0600	0.0669	0.0600	0.0557	112	93	75-120	18	30
Batch number: X192202AA	Sample number(s): 1114323								
Benzene	0.0200	0.0204	0.0200	0.0211	102	105	80-120	3	30
Ethylbenzene	0.0200	0.0199	0.0200	0.0204	100	102	78-120	2	30
Toluene	0.0200	0.0201	0.0200	0.0208	101	104	80-120	3	30
Xylene (Total)	0.0600	0.0600	0.0600	0.0615	100	102	75-120	2	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: Z192202AA	Sample number(s): 1114329								
Benzene	20	20.91			105		80-120		
Ethylbenzene	20	20.29			101		80-120		
Toluene	20	20.81			104		80-120		
Xylene (Total)	60	64.46			107		80-120		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19217SLB026	Sample number(s): 1114323-1114326								
Naphthalene	1.67	1.32			79		46-99		

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:34

Group Number: 2056416

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 19217SLC026 Naphthalene	1.67	1.42			85		46-99		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19216A31A NWTPH-GX Soil C7-C12	11	11.46	11	11.37	104	103	55-145	1	30
Batch number: 19216C31A NWTPH-GX Soil C7-C12	11	11.49	11	11.46	104	104	55-145	0	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 19213B20A NWTPH-Gx water C7-C12	1100	1134.39	1100	1121.55	103	102	64-131	1	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192180010A Diesel Range Organics C12-C24	133.4	108.3			81		61-115		
Batch number: 192190015A Diesel Range Organics C12-C24	133.4	105.63			79		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192141404904 Lead	15	15.24			102		90-115		
	%	%	%	%					
Batch number: 19217820001A Moisture	89.5	89.41			100		99-101		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 192190015A Diesel Range Organics C12-C24	117.11	131.73	166.46			37*		61-115		

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:34

Group Number: 2056416

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 192190015A	Sample number(s): 1114323-1114325,1114327-1114328 BKG: 1114324			
Diesel Range Organics C12-C24	117.11	127.69	9	20
Heavy Range Organics C24-C40	115.75	148.72	25* (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: A192181AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114326	100	106	95	92
Blank	100	102	96	93
LCS	98	99	100	102
LCSD	97	96	101	101
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260 Soil
Batch number: X192191AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114324	100	106	105	92
1114325	96	106	100	99
1114327	96	102	100	99
1114328	96	105	100	101
Blank	95	103	100	101
LCS	95	98	102	103
LCSD	96	99	102	104
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260 Soil
Batch number: X192202AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114323	102	104	95	94
Blank	103	103	99	94
LCS	99	101	100	101
LCSD	99	99	100	101

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:34

Group Number: 2056416

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: X192202AA

Limits: 50-141 54-135 52-141 50-131

Analysis Name: BTEX 8260C
Batch number: Z192202AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114329	97	101	97	93
Blank	96	99	98	95
LCS	94	100	98	96
Limits:	80-120	80-120	80-120	80-120

Analysis Name: Naphthalene 8270D
Batch number: 19217SLB026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1114323	88	83	96
1114324	83	83	94
1114325	90	86	100
1114326	82	76	86
Blank	83	77	99
LCS	86	79	97
Limits:	14-115	22-122	23-141

Analysis Name: Naphthalene 8270D
Batch number: 19217SLC026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1114327	77	73	81
1114328	93	87	97
Blank	95	89	103
LCS	89	85	92
Limits:	14-115	22-122	23-141

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 19213B20A

	Trifluorotoluene-F
1114329	87
Blank	81
LCS	100
LCSD	96

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:34

Group Number: 2056416

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 19213B20A

Limits: 50-150

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 19216A31A

Trifluorotoluene-F

1114326	66
Blank	94
LCS	99
LCSD	98

Limits: 50-150

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 19216C31A

Trifluorotoluene-F

1114323	100
1114324	83
1114325	70
1114327	54
1114328	75
Blank	95
LCS	98
LCSD	99

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 192180010A

Orthoterphenyl

1114326	100
Blank	104
LCS	111

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 192190015A

Orthoterphenyl

1114323	101
1114324	106
1114325	103
1114327	100

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:34

Group Number: 2056416

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Dx soil
Batch number: 192190015A

	Orthoterphenyl
1114328	105
Blank	102
DUP	108
LCS	109
MS	113
Limits:	50-150

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories

Acct. # 13271

For Lancaster Laboratories use only
 Group # 2056416 Sample # 1114323-29
 Instructions on reverse side correspond with circled numbers.

1 Client Information				4 Matrix			5 Analyses Requested										6 Remarks										
Facility # <u>204117</u> WBS Site Address <u>2021 6th St, Bremerton, WA</u> Chevron PM <u>Eric Hetrick</u> Lead Consultant <u>Leidas</u> Consultant/Office <u>Leidas - Bothell, WA</u> Consultant Project Mgr. <u>Russ Shropshire</u> Consultant Phone # <u>425-482-3323</u> Sampler <u>Ro/cw</u>				<input type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Oil <input type="checkbox"/> Ground <input type="checkbox"/> Air			Total Number of Containers BTEX MTBE <input type="checkbox"/> 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphth 8260 full scan Oxygenates NWTPH GX NWTPH DX <input checked="" type="checkbox"/> Silica Gel Cleanup <input type="checkbox"/> Lead Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>CO105</u> WAWPH <input type="checkbox"/> WAEPH <input type="checkbox"/> <u>Naphthalenes EPA 8270</u>										SCR #: _____ <input type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits										
2 Sample Identification		3 Collected		Grab	Composite	Soil	Water	Oil	Total Number of Containers	BTEX MTBE	8021	8260	Naphth	8260 full scan	Oxygenates	NWTPH GX	NWTPH DX	Silica Gel Cleanup	Lead Total	Diss.	Method	CO105	WAWPH	WAEPH	Naphthalenes EPA 8270		
Date	Time																										
SB-20-27.5-S-072519	7/25/19	1318	/	/	/	/	/	/	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
SB-14-20.0-S-072519	7/24/19	1730	/	/	/	/	/	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
SB-14-27.5-S-072419	7/24/19	1725	/	/	/	/	/	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
SB-12-6.0-S-072319	7/23/19	0100	/	/	/	/	/	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
SB-12-17.5-S-072419	7/24/19	1410	/	/	/	/	/	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
SB-12-20.0-S-072419	7/24/19	1400	/	/	/	/	/	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
TB-8-072519	7/25/19	1300	/	/	/	/	/	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
7 Turnaround Time Requested (TAT) (please circle) <input checked="" type="radio"/> Standard 5 day 4 day 72 hour 48 hour 24 hour				Relinquished by <u>[Signature]</u> Date <u>7/29/19</u> Time <u>1450</u>		Relinquished by _____ Date _____ Time _____		Received by _____ Date _____ Time _____		Received by _____ Date _____ Time _____		Received by _____ Date _____ Time _____		Received by _____ Date _____ Time _____													
8 Data Package Options (please circle if required) <input checked="" type="radio"/> Type I - Full Type VI (Raw Data)				Relinquished by Commercial Carrier: UPS <input checked="" type="checkbox"/> FedEx _____ Other _____		Temperature Upon Receipt <u>0.9</u> °C		Received by <u>[Signature]</u> Date <u>7/30/19</u> Time <u>1005</u>		Custody Seals Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Received by _____ Date _____ Time _____		Received by _____ Date _____ Time _____													



Client: Leidos

Delivery and Receipt Information

Delivery Method:	<u>UPS</u>	Arrival Timestamp:	<u>07/30/2019 10:15</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>WA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	4
Samples Chilled:	Yes	Trip Blank Type:	HCI
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Simon Nies (25 112) at 13:10 on 07/30/2019

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-01	0.9	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Chevron c/o Leidos, Inc.
6310 Allentown Blvd.
Suite 110
Harrisburg PA 17112

Report Date: August 20, 2019 11:32

Project: 204117

Account #: 13271
Group Number: 2056417
SDG: LDC12
PO Number: P010229412
Release Number: HETRICK
State of Sample Origin: WA

Electronic Copy To Leidos
Electronic Copy To EcoChem

Attn: Russ Shropshire
Attn: Christine Ransom

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

To view our laboratory's current scopes of accreditation please go to <https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/> . Historical copies may be requested through your project manager.



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
SB-10-S-27.5-190724 Grab Soil	07/24/2019 11:55	1114330
SB-10-S-20.0-190724 Grab Soil	07/24/2019 12:00	1114331
SB-10-S-14.0-190724 Grab Soil	07/24/2019 12:10	1114332
SB-10-S-8.0-190724 Grab Soil	07/24/2019 12:20	1114333
QA-T-190724 NA Water	07/24/2019 11:00	1114334

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: SB-10-S-27.5-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114330
ELLE Group #: 2056417
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 11:55
SDG#: LDC12-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			mg/kg	mg/kg	
	SW-846 8260C				
11995	Benzene	71-43-2	N.D.	0.0005	0.88
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.88
11995	Toluene	108-88-3	0.002	0.0006	0.88
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.88

The recovery for the internal standard t-butyl alcohol-d10 is outside the QC acceptance limits high in the associated CCV. No compounds in this analysis are quantitated using that internal standard.

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary.

The following action was taken: The client was contacted and the data reported.

GC/MS Semivolatiles			mg/kg	mg/kg	
	SW-846 8270D				
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles			mg/kg	mg/kg	
	ECY 97-602 NWTPH-Gx				
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.3	33.08
GC Petroleum Hydrocarbons			mg/kg	mg/kg	
	ECY 97-602 NWTPH-Dx modified				
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.4	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1

Metals			mg/kg	mg/kg	
	SW-846 6010D Rev.4, July 2014				
06955	Lead	7439-92-1	N.D.	0.614	1

Wet Chemistry			%	%	
	SM 2540 G-2011 %Moisture Calc				
00111	Moisture	n.a.	9.5	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
---------	---------------	--------	--------	--------	------------------------	---------	-----------------

Sample Description: SB-10-S-27.5-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114330
ELLE Group #: 2056417
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 11:55
SDG#: LDC12-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192191AA	08/07/2019 18:37	Linda C Pape	0.88
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554391	07/24/2019 11:55	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554391	07/24/2019 11:55	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554391	07/24/2019 11:55	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLC026	08/09/2019 04:06	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLC026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 10:56	Jeremy C Giffin	33.08
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554391	07/24/2019 11:55	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192190015A	08/09/2019 07:04	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192190015A	08/07/2019 22:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404902	08/07/2019 13:34	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404902	08/02/2019 06:49	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820006B	08/06/2019 11:53	William C Schwebel	1

Sample Description: SB-10-S-20.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114331
ELLE Group #: 2056417
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 12:00
SDG#: LDC12-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260C	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.82
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.82
11995	Toluene	108-88-3	0.001	0.0005	0.82
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.82

The recovery for the internal standard t-butyl alcohol-d10 is outside the QC acceptance limits high in the associated CCV. No compounds in this analysis are quantitated using that internal standard.

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary.

The following action was taken: The client was contacted and the data reported.

GC/MS Semivolatiles			SW-846 8270D	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles			ECY 97-602 NWT PH-Gx	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.3	25.17
GC Petroleum Hydrocarbons			ECY 97-602 NWT PH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1

Metals			SW-846 6010D Rev.4, July 2014	mg/kg	
06955	Lead	7439-92-1	1.83	0.589	1

Wet Chemistry			SM 2540 G-2011 %Moisture Calc	%	
00111	Moisture	n.a.	7.4	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
---------	---------------	--------	--------	--------	------------------------	---------	-----------------

Sample Description: SB-10-S-20.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114331
ELLE Group #: 2056417
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 12:00
SDG#: LDC12-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192191AA	08/07/2019 19:01	Linda C Pape	0.82
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554391	07/24/2019 12:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554391	07/24/2019 12:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554391	07/24/2019 12:00	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLC026	08/09/2019 05:22	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLC026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 11:39	Jeremy C Giffin	25.17
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554391	07/24/2019 12:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192190015A	08/09/2019 07:26	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192190015A	08/07/2019 22:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404902	08/07/2019 13:38	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404902	08/02/2019 06:49	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820006B	08/06/2019 11:53	William C Schwebel	1

Sample Description: SB-10-S-14.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114332
ELLE Group #: 2056417
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 12:10
SDG#: LDC12-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260C	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.78
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.78
11995	Toluene	108-88-3	0.001	0.0006	0.78
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.78

The recovery for the internal standard t-butyl alcohol-d10 is outside the QC acceptance limits high in the associated CCV. No compounds in this analysis are quantitated using that internal standard.

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary.

The following action was taken: The client was contacted and the data reported.

GC/MS Semivolatiles			SW-846 8270D	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.008	1
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.3	25.7
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.7	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	12	1

Metals			SW-846 6010D Rev.4, July 2014	mg/kg	
06955	Lead	7439-92-1	4.05	0.518	1

Wet Chemistry			SM 2540 G-2011 %Moisture Calc	%	
00111	Moisture	n.a.	16.7	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
---------	---------------	--------	--------	--------	------------------------	---------	-----------------

Sample Description: SB-10-S-14.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114332
ELLE Group #: 2056417
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 12:10
SDG#: LDC12-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192191AA	08/07/2019 19:24	Linda C Pape	0.78
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554391	07/24/2019 12:10	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554391	07/24/2019 12:10	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554391	07/24/2019 12:10	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLC026	08/09/2019 05:48	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLC026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 12:15	Jeremy C Giffin	25.7
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554391	07/24/2019 12:10	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192190016A	08/09/2019 11:05	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192190016A	08/07/2019 22:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404902	08/07/2019 14:31	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404902	08/02/2019 06:49	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820006B	08/06/2019 11:53	William C Schwebel	1

Sample Description: SB-10-S-8.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114333
ELLE Group #: 2056417
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 12:20
SDG#: LDC12-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260C	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.74
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.74
11995	Toluene	108-88-3	0.001	0.0006	0.74
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.74

The recovery for the internal standard t-butyl alcohol-d10 is outside the QC acceptance limits high in the associated CCV. No compounds in this analysis are quantitated using that internal standard.

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary.

The following action was taken: The client was contacted and the data reported.

GC/MS Semivolatiles			SW-846 8270D	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.009	1
GC Volatiles			ECY 97-602 NWT PH-Gx	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.3	26.28
GC Petroleum Hydrocarbons			ECY 97-602 NWT PH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	5.2	1
08272	Heavy Range Organics C24-C40	n.a.	21	13	1

Metals			SW-846 6010D Rev.4, July 2014	mg/kg	
06955	Lead	7439-92-1	1.95	0.559	1

Wet Chemistry			SM 2540 G-2011 %Moisture Calc	%	
00111	Moisture	n.a.	23.4	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
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Sample Description: SB-10-S-8.0-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114333
ELLE Group #: 2056417
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 12:20
SDG#: LDC12-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192191AA	08/07/2019 19:47	Linda C Pape	0.74
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554391	07/24/2019 12:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554391	07/24/2019 12:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554391	07/24/2019 12:20	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLC026	08/09/2019 06:13	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLC026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 12:51	Jeremy C Giffin	26.28
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554391	07/24/2019 12:20	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192190016A	08/09/2019 11:27	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192190016A	08/07/2019 22:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404902	08/07/2019 13:41	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404902	08/02/2019 06:49	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820006B	08/06/2019 11:53	William C Schwebel	1

Sample Description: QA-T-190724 NA Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1114334
ELLE Group #: 2056417
Matrix: Water

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 11:00
SDG#: LDC12-05TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
The requirement for no headspace at the time of analysis was not met. The container used for the testing had headspace at the time of analysis.					
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z192192AA	08/07/2019 15:58	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z192192AA	08/07/2019 15:57	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	19213B20A	08/02/2019 22:43	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	19213B20A	08/02/2019 22:42	Marie D Beamenderfer	1

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:32

Group Number: 2056417

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL
	mg/kg	mg/kg
Batch number: X192191AA	Sample number(s): 1114330-1114333	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	0.002	0.0006
Xylene (Total)	N.D.	0.001
	ug/l	ug/l
Batch number: Z192192AA	Sample number(s): 1114334	
Benzene	N.D.	0.2
Ethylbenzene	N.D.	0.4
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
	mg/kg	mg/kg
Batch number: 19217SLC026	Sample number(s): 1114330-1114333	
Naphthalene	N.D.	0.007
Batch number: 19216C31A	Sample number(s): 1114330-1114333	
NWTPH-GX Soil C7-C12	N.D.	0.2
	ug/l	ug/l
Batch number: 19213B20A	Sample number(s): 1114334	
NWTPH-Gx water C7-C12	N.D.	19
	mg/kg	mg/kg
Batch number: 192190015A	Sample number(s): 1114330-1114331	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 192190016A	Sample number(s): 1114332-1114333	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 192141404902	Sample number(s): 1114330-1114333	
Lead	N.D.	0.600

LCS/LCSD

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:32

Group Number: 2056417

LCS/LCSD

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: X192191AA	Sample number(s): 1114330-1114333								
Benzene	0.0200	0.0234	0.0200	0.0200	117	100	80-120	16	30
Ethylbenzene	0.0200	0.0226	0.0200	0.0189	113	95	78-120	18	30
Toluene	0.0200	0.0242	0.0200	0.0205	121*	103	80-120	16	30
Xylene (Total)	0.0600	0.0669	0.0600	0.0557	112	93	75-120	18	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: Z192192AA	Sample number(s): 1114334								
Benzene	20	20.87			104		80-120		
Ethylbenzene	20	20.37			102		80-120		
Toluene	20	21.09			105		80-120		
Xylene (Total)	60	64.7			108		80-120		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19217SLC026	Sample number(s): 1114330-1114333								
Naphthalene	1.67	1.42			85		46-99		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19216C31A	Sample number(s): 1114330-1114333								
NWTPH-GX Soil C7-C12	11	11.49	11	11.46	104	104	55-145	0	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 19213B20A	Sample number(s): 1114334								
NWTPH-Gx water C7-C12	1100	1134.39	1100	1121.55	103	102	64-131	1	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192190015A	Sample number(s): 1114330-1114331								
Diesel Range Organics C12-C24	133.4	105.63			79		61-115		
Batch number: 192190016A	Sample number(s): 1114332-1114333								
Diesel Range Organics C12-C24	133.4	104.44			78		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192141404902	Sample number(s): 1114330-1114333								
Lead	15	15.79			105		90-115		
	%	%	%	%					
Batch number: 19217820006B	Sample number(s): 1114330-1114333								
Moisture	89.5	89.43			100		99-101		

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:32

Group Number: 2056417

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 19217SLC026 Naphthalene	Sample number(s): 1114330-1114333 UNSPK: 1114330 N.D.	1.65	1.23	1.66	1.21	75	73	46-99	2	30

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc %	DUP Conc %	DUP RPD	DUP RPD Max
Batch number: 19217820006B Moisture	Sample number(s): 1114330-1114333 BKG: 1114332 16.73	17.18	3	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: X192191AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114330	96	106	99	102
1114331	97	105	99	100
1114332	97	106	99	102
1114333	98	108	98	102
Blank	95	103	100	101
LCS	95	98	102	103
LCSD	96	99	102	104
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260C
Batch number: Z192192AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114334	94	98	98	94
Blank	95	101	96	94
LCS	94	100	97	96

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:32

Group Number: 2056417

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260C
Batch number: Z192192AA

Limits: 80-120 80-120 80-120 80-120

Analysis Name: Naphthalene 8270D
Batch number: 19217SLC026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1114330	92	85	101
1114331	84	83	93
1114332	71	67	67
1114333	56	54	54
Blank	95	89	103
LCS	89	85	92
MS	79	76	87
MSD	78	77	91

Limits: 14-115 22-122 23-141

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 19213B20A

	Trifluorotoluene-F
1114334	78
Blank	81
LCS	100
LCSD	96

Limits: 50-150

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 19216C31A

	Trifluorotoluene-F
1114330	84
1114331	84
1114332	80
1114333	53
Blank	95
LCS	98
LCSD	99

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 192190015A

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 11:32

Group Number: 2056417

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Dx soil
Batch number: 192190015A

	Orthoterphenyl
1114330	101
1114331	101
Blank	102
LCS	109

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 192190016A

	Orthoterphenyl
1114332	96
1114333	102
Blank	103
LCS	110

Limits: 50-150

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

Acct. # 13271

For Eurofins Lancaster Laboratories Environmental use only

Group # 2056417 Sample # 1114330-34

Instructions on reverse side correspond with circled numbers.

1 Client Information				4 Matrix				5 Analyses Requested										6 Remarks																																																					
Facility # <u>204117</u>		WBS		Sediment <input type="checkbox"/>		Ground <input type="checkbox"/>		Surface <input type="checkbox"/>		Potable <input type="checkbox"/>		NPDES <input type="checkbox"/>		Air <input type="checkbox"/>		Oil <input type="checkbox"/>		Total Number of Containers		BTEX + WPE <input type="checkbox"/>		8021 <input type="checkbox"/>		8260 <input type="checkbox"/>		Naphth <input type="checkbox"/>		8260 full scan		Oxygenates		NWTPH-Gx		NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/>		NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/>		WA VPH <input type="checkbox"/>		WA EPH <input type="checkbox"/>		Lead <input type="checkbox"/>		Diss. <input type="checkbox"/>		Method <u>6010B</u>		Naphthalenes EPA <u>8270</u>		SCR #: _____																					
Site Address <u>2021 6th St, Bremerton, WA</u>				Chevron PM <u>Eric Hetrick</u>				Lead Consultant <u>Leidos</u>				Consultant/Office <u>Leidos- Bothell, WA</u>				Consultant Project Mgr. <u>Russ Shropshire</u>				Consultant Phone # <u>425-482-3323</u>				Sampler <u>RAO/CW</u>				3 Grab		Composite		Soil		Water		Oil		Total Number of Containers		BTEX + WPE		8021		8260		Naphth		8260 full scan		Oxygenates		NWTPH-Gx		NWTPH-Dx with Silica Gel Cleanup		NWTPH-Dx without Silica Gel Cleanup		WA VPH		WA EPH		Lead		Diss.		Method		Naphthalenes EPA		SCR #: _____	
2 Sample Identification		Collected		3 Grab		Composite		Soil		Water		Oil		Total Number of Containers		BTEX + WPE		8021		8260		Naphth		8260 full scan		Oxygenates		NWTPH-Gx		NWTPH-Dx with Silica Gel Cleanup		NWTPH-Dx without Silica Gel Cleanup		WA VPH		WA EPH		Lead		Diss.		Method		Naphthalenes EPA		SCR #: _____																									
		Date	Time																																																																				
<u>SB-10-27.5-S-072419</u>		<u>7/24/19</u>	<u>1155</u>	<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<u>7</u>		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>																							
<u>SB-10-20.0-S-072419</u>		<u>7/24/19</u>	<u>1200</u>	<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<u>7</u>		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>																									
<u>SB-10-17.0-S-072419</u>		<u>7/24/19</u>	<u>1210</u>	<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<u>7</u>		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>																									
<u>SB-8-SB-10-8.0-S-072419</u>		<u>7/24/19</u>	<u>1220</u>	<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<u>7</u>		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>																											
<u>TB-2-072419</u>		<u>7/24/19</u>	<u>1100</u>	<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<u>4</u>		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>																											
7 Turnaround Time Requested (TAT) (please circle)				Relinquished by				Date		Time		Received by				Date		Time		9																																																			
Standard <input checked="" type="checkbox"/> 5 day 4 day				<u>WTA</u>				<u>7/29/19</u>		<u>1430</u>		<u>[Signature]</u>																																																											
72 hour 48 hour 24 hour																																																																							
8 Data Package (circle if required)				EDD (circle if required)				Relinquished by Commercial Carrier:				Received by				Date		Time																																																					
Type I - Full <input checked="" type="checkbox"/>				CVX-RTBU-FL_05 (default)				UPS <input checked="" type="checkbox"/> FedEx _____ Other _____				<u>[Signature]</u>				<u>7/30/19</u>		<u>1015</u>																																																					
Type VI (Raw Data)				Other: _____				Temperature Upon Receipt <u>0.9</u> °C				Custody Seals Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																																																											



Client: Leidos

Delivery and Receipt Information

Delivery Method: UPS Arrival Timestamp: 07/30/2019 10:15
 Number of Packages: 1 Number of Projects: 1
 State/Province of Origin: WA

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	4
Samples Chilled:	Yes	Trip Blank Type:	HCI
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Simon Nies (25 112) at 13:23 on 07/30/2019

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp)* All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-01	0.9	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
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Lancaster, PA 17601

Prepared for:

Chevron c/o Leidos, Inc.
6310 Allentown Blvd.
Suite 110
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Report Date: August 13, 2019 11:22

Project: 204117

Account #: 13271
Group Number: 2056418
SDG: LDC13
PO Number: P010215249
Release Number: HETRICK
State of Sample Origin: WA

Electronic Copy To EcoChem
Electronic Copy To Leidos

Attn: Christine Ransom
Attn: Russ Shropshire

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

To view our laboratory's current scopes of accreditation please go to <https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/> . Historical copies may be requested through your project manager.



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
SB-17-S-8.0-190723 Grab Soil	07/23/2019 10:05	1114335
SB-17-S-14.5-190723 Grab Soil	07/23/2019 10:30	1114336
SB-17-S-19.5-190723 Grab Soil	07/23/2019 11:05	1114337
QA-T-190723 NA Water	07/23/2019 08:20	1114338
SB-17-S-24.0-190723 Grab Soil	07/23/2019 11:55	1114339
SB-17-S-29.5-190723 Grab Soil	07/23/2019 11:45	1114340

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: SB-17-S-8.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114335
ELLE Group #: 2056418
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 10:05
SDG#: LDC13-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.7
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.7
11995	Toluene	108-88-3	N.D.	0.0005	0.7
11995	Xylene (Total)	1330-20-7	N.D.	0.0008	0.7
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.2	22.56
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.4	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.18	0.508	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	9.8	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192181AA	08/06/2019 18:32	Linda C Pape	0.7
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554392	07/23/2019 10:05	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554392	07/23/2019 10:05	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554392	07/23/2019 10:05	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/08/2019 15:22	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1

Sample Description: SB-17-S-8.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114335
ELLE Group #: 2056418
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 10:05
SDG#: LDC13-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31A	08/05/2019 01:39	Jeremy C Giffin	22.56
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554392	07/23/2019 10:05	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192180010A	08/09/2019 01:38	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192180010A	08/06/2019 20:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404904	08/07/2019 15:33	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404904	08/02/2019 07:09	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820001A	08/06/2019 08:31	William C Schwebel	1

Sample Description: SB-17-S-14.5-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114336
ELLE Group #: 2056418
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 10:30
SDG#: LDC13-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.024	44.52
11995	1,2-Dibromoethane	106-93-4	N.D.	0.019	44.52
11995	1,2-Dichloroethane	107-06-2	N.D.	0.028	44.52
11995	Ethylbenzene	100-41-4	N.D.	0.019	44.52
11995	n-Hexane	110-54-3	N.D.	0.024	44.52
11995	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.024	44.52
11995	Toluene	108-88-3	N.D.	0.028	44.52
11995	Xylene (Total)	1330-20-7	N.D.	0.047	44.52
Reporting limits were raised due to interference from the sample matrix.					
GC/MS Semivolatiles					
		SW-846 8270D SIM	mg/kg	mg/kg	
12969	Benzo(a)anthracene	56-55-3	N.D.	0.0007	1
12969	Benzo(a)pyrene	50-32-8	N.D.	0.0007	1
12969	Benzo(b)fluoranthene	205-99-2	N.D.	0.0007	1
12969	Benzo(k)fluoranthene	207-08-9	N.D.	0.0007	1
12969	Chrysene	218-01-9	N.D.	0.0004	1
12969	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0007	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0007	1
12969	Naphthalene	91-20-3	0.003	0.001	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	210	2.6	261
PCBs					
		SW-846 8082A Feb 2007 Rev 1	mg/kg	mg/kg	
10885	PCB-1016	12674-11-2	N.D. D1	0.0038	1
10885	PCB-1221	11104-28-2	N.D. D1	0.0049	1
10885	PCB-1232	11141-16-5	N.D. D1	0.0085	1
10885	PCB-1242	53469-21-9	N.D. D1	0.0035	1
10885	PCB-1248	12672-29-6	N.D. D1	0.0035	1
10885	PCB-1254	11097-69-1	N.D. D1	0.0035	1
10885	PCB-1260	11096-82-5	N.D. D1	0.0052	1
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	610	8.5	2
08272	Heavy Range Organics C24-C40	n.a.	25	21	2
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	6.76	2.66	5
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	6.0	0.50	1

Sample Description: SB-17-S-14.5-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114336
ELLE Group #: 2056418
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 10:30
SDG#: LDC13-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
	Wet Chemistry	SM 2540 G-2011	%	%	
		%Moisture Calc			
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX/MTBE/EDB/EDC/n-hexane	SW-846 8260C	1	V192181AA	08/06/2019 14:37	Stephen C Nolte	44.52
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554392	07/23/2019 10:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554392	07/23/2019 10:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	3	201921554392	07/23/2019 10:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	4	201921554392	07/23/2019 10:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554392	07/23/2019 10:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	2	201921554392	07/23/2019 10:30	Client Supplied	1
12969	SIM SVOAs 8270D (microwave)	SW-846 8270D SIM	1	19214SLL026	08/04/2019 20:48	William H Saadeh	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	19214SLL026	08/03/2019 09:30	Joseph Underdonk	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31B	08/05/2019 20:39	Jeremy C Giffin	261
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554392	07/23/2019 10:30	Client Supplied	n.a.
10885	PCBs 8082A/3546	SW-846 8082A Feb 2007 Rev 1	1	192170012A	08/06/2019 20:38	Covenant Mutuku	1
10497	PCB Microwave Soil Extraction	SW-846 3546	1	192170012A	08/06/2019 07:00	Joshua S Ruth	1
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192180010A	08/09/2019 02:00	Heather E Williams	2
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192180010A	08/06/2019 20:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404904	08/09/2019 11:28	Patrick J Engle	5
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404904	08/02/2019 07:09	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820001A	08/06/2019 08:31	William C Schwebel	1

Sample Description: SB-17-S-19.5-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114337
ELLE Group #: 2056418
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 11:05
SDG#: LDC13-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.023	42.06
11995	Ethylbenzene	100-41-4	N.D.	0.018	42.06
11995	Toluene	108-88-3	N.D.	0.027	42.06
11995	Xylene (Total)	1330-20-7	N.D.	0.046	42.06
Reporting limits were raised due to interference from the sample matrix.					
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	1,400	19	1872.07
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	3,500	43	10
08272	Heavy Range Organics C24-C40	n.a.	N.D.	110	10
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	5.06	0.470	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	8.1	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	V192181AA	08/06/2019 20:08	Stephen C Nolte	42.06
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554392	07/23/2019 11:05	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554392	07/23/2019 11:05	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554392	07/23/2019 11:05	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/08/2019 15:47	Edward C Monborne	1

Sample Description: SB-17-S-19.5-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114337
ELLE Group #: 2056418
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 11:05
SDG#: LDC13-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31B	08/05/2019 23:10	Jeremy C Giffin	1872.07
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554392	07/23/2019 11:05	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192180010A	08/09/2019 02:21	Heather E Williams	10
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192180010A	08/06/2019 20:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404904	08/07/2019 15:39	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404904	08/02/2019 07:09	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820001A	08/06/2019 08:31	William C Schwebel	1

Sample Description: QA-T-190723 NA Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1114338
ELLE Group #: 2056418
Matrix: Water

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 08:20
SDG#: LDC13-04TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z192182AA	08/06/2019 10:52	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z192182AA	08/06/2019 10:51	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	19213B20A	08/02/2019 23:10	Marie D Beamenderfer	1
01146	GC VOA Water Prep	SW-846 5030C	1	19213B20A	08/02/2019 23:09	Marie D Beamenderfer	1

Sample Description: SB-17-S-24.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114339
ELLE Group #: 2056418
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 11:55
SDG#: LDC13-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.025	47.27
11995	Ethylbenzene	100-41-4	N.D.	0.020	47.27
11995	Toluene	108-88-3	N.D.	0.030	47.27
11995	Xylene (Total)	1330-20-7	N.D.	0.050	47.27
Reporting limits were raised due to interference from the sample matrix.					
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	140	2.5	254.11
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	2,800	41	10
08272	Heavy Range Organics C24-C40	n.a.	110	100	10
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.19	0.444	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	4.9	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	V192181AA	08/06/2019 14:59	Stephen C Nolte	47.27
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554392	07/23/2019 11:55	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554392	07/23/2019 11:55	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554392	07/23/2019 11:55	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/08/2019 16:13	Edward C Monborne	1

Sample Description: SB-17-S-24.0-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114339
ELLE Group #: 2056418
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 11:55
SDG#: LDC13-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31B	08/06/2019 00:59	Jeremy C Giffin	254.11
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554392	07/23/2019 11:55	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192180010A	08/09/2019 02:43	Heather E Williams	10
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192180010A	08/06/2019 20:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404904	08/07/2019 15:43	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404904	08/02/2019 07:09	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820001A	08/06/2019 08:31	William C Schwebel	1

Sample Description: SB-17-S-29.5-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114340
ELLE Group #: 2056418
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 11:45
SDG#: LDC13-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.84
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.84
11995	Toluene	108-88-3	N.D.	0.0005	0.84
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.84
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.2	0.2	21.77
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.1	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	10	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.92	0.429	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	4.2	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A192181AA	08/06/2019 18:54	Linda C Pape	0.84
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921554392	07/23/2019 11:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921554392	07/23/2019 11:45	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921554392	07/23/2019 11:45	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLB026	08/08/2019 16:38	Edward C Monborne	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLB026	08/06/2019 01:15	Sherry L Morrow	1

Sample Description: SB-17-S-29.5-190723 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114340
ELLE Group #: 2056418
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 11:45
SDG#: LDC13-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216A31A	08/05/2019 04:10	Jeremy C Giffin	21.77
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921554392	07/23/2019 11:45	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192180010A	08/09/2019 03:05	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192180010A	08/06/2019 20:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404904	08/07/2019 15:52	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404904	08/02/2019 07:09	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19217820001A	08/06/2019 08:31	William C Schwebel	1

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 11:22

Group Number: 2056418

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL
	mg/kg	mg/kg
Batch number: A192181AA	Sample number(s): 1114335,1114340	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: V192181AA	Sample number(s): 1114336-1114337,1114339	
Benzene	N.D.	0.025
1,2-Dibromoethane	N.D.	0.020
1,2-Dichloroethane	N.D.	0.030
Ethylbenzene	N.D.	0.020
n-Hexane	N.D.	0.025
Methyl Tertiary Butyl Ether	N.D.	0.025
Toluene	N.D.	0.030
Xylene (Total)	N.D.	0.050
	ug/l	ug/l
Batch number: Z192182AA	Sample number(s): 1114338	
Benzene	N.D.	0.2
Ethylbenzene	N.D.	0.4
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
	mg/kg	mg/kg
Batch number: 19214SLL026	Sample number(s): 1114336	
Benzo(a)anthracene	N.D.	0.0007
Benzo(a)pyrene	N.D.	0.0007
Benzo(b)fluoranthene	N.D.	0.0007
Benzo(k)fluoranthene	N.D.	0.0007
Chrysene	N.D.	0.0003
Dibenz(a,h)anthracene	N.D.	0.0007
Indeno(1,2,3-cd)pyrene	N.D.	0.0007
Naphthalene	N.D.	0.001
Batch number: 19217SLB026	Sample number(s): 1114335,1114337,1114339-1114340	
Naphthalene	N.D.	0.007
Batch number: 19216A31A	Sample number(s): 1114335,1114340	
NWTPH-GX Soil C7-C12	N.D.	0.2
Batch number: 19216A31B	Sample number(s): 1114336-1114337,1114339	
NWTPH-GX Soil C7-C12	N.D.	0.2

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 11:22

Group Number: 2056418

Method Blank (continued)

Analysis Name	Result mg/kg	MDL mg/kg
Batch number: 19213B20A NWTPH-Gx water C7-C12	ug/l	ug/l
	Sample number(s): 1114338	
	N.D.	19
Batch number: 192170012A	mg/kg	mg/kg
	Sample number(s): 1114336	
PCB-1016	N.D.	0.0036
PCB-1221	N.D.	0.0046
PCB-1232	N.D.	0.0080
PCB-1242	N.D.	0.0033
PCB-1248	N.D.	0.0033
PCB-1254	N.D.	0.0033
PCB-1260	N.D.	0.0049
Batch number: 192180010A	Sample number(s): 1114335-1114337,1114339-1114340	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 192141404904	Sample number(s): 1114335-1114337,1114339-1114340	
Lead	N.D.	0.600

LCS/LCSD

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: A192181AA	Sample number(s): 1114335,1114340								
Benzene	0.0200	0.0204	0.0200	0.0205	102	103	80-120	1	30
Ethylbenzene	0.0200	0.0209	0.0200	0.0208	104	104	78-120	0	30
Toluene	0.0200	0.0208	0.0200	0.0210	104	105	80-120	1	30
Xylene (Total)	0.0600	0.0630	0.0600	0.0632	105	105	75-120	0	30
Batch number: V192181AA	Sample number(s): 1114336-1114337,1114339								
Benzene	1.00	1.00	1.00	1.05	100	105	80-120	5	30
1,2-Dibromoethane	1.00	0.995	1.00	0.998	99	100	76-120	0	30
1,2-Dichloroethane	1.00	1.10	1.00	1.15	110	115	71-128	4	30
Ethylbenzene	1.00	0.991	1.00	1.05	99	105	78-120	6	30
n-Hexane	1.00	0.867	1.00	0.918	87	92	50-132	6	30
Methyl Tertiary Butyl Ether	1.00	0.985	1.00	1.01	99	101	72-120	2	30
Toluene	1.00	0.988	1.00	1.04	99	104	80-120	5	30
Xylene (Total)	3.00	2.98	3.00	3.14	99	105	75-120	5	30
	ug/l	ug/l	ug/l	ug/l					

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 11:22

Group Number: 2056418

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: Z192182AA	Sample number(s): 1114338								
Benzene	20	21.8			109		80-120		
Ethylbenzene	20	21.39			107		80-120		
Toluene	20	21.93			110		80-120		
Xylene (Total)	60	67.82			113		80-120		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19214SLL026	Sample number(s): 1114336								
Benzo(a)anthracene	0.0333	0.0297			89		61-116		
Benzo(a)pyrene	0.0333	0.0340			102		67-124		
Benzo(b)fluoranthene	0.0333	0.0366			110		68-128		
Benzo(k)fluoranthene	0.0333	0.0317			95		61-119		
Chrysene	0.0333	0.0301			90		63-105		
Dibenz(a,h)anthracene	0.0333	0.0333			100		49-143		
Indeno(1,2,3-cd)pyrene	0.0333	0.0342			103		53-144		
Naphthalene	0.0333	0.0308			92		42-101		
Batch number: 19217SLB026	Sample number(s): 1114335,1114337,1114339-1114340								
Naphthalene	1.67	1.32			79		46-99		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19216A31A	Sample number(s): 1114335,1114340								
NWTPH-GX Soil C7-C12	11	11.46	11	11.37	104	103	55-145	1	30
Batch number: 19216A31B	Sample number(s): 1114336-1114337,1114339								
NWTPH-GX Soil C7-C12	11	11.46	11	11.37	104	103	55-145	1	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 19213B20A	Sample number(s): 1114338								
NWTPH-Gx water C7-C12	1100	1134.39	1100	1121.55	103	102	64-131	1	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192170012A	Sample number(s): 1114336								
PCB-1016	0.167	0.156			93		76-121		
PCB-1260	0.168	0.169			101		79-130		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192180010A	Sample number(s): 1114335-1114337,1114339-1114340								
Diesel Range Organics C12-C24	133.4	108.3			81		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192141404904	Sample number(s): 1114335-1114337,1114339-1114340								
Lead	15	15.24			102		90-115		

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 11:22

Group Number: 2056418

LCS/LCSD (continued)

Analysis Name	LCS Spike Added %	LCS Conc %	LCSD Spike Added %	LCSD Conc %	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 19217820001A	Sample number(s): 1114335-1114337,1114339-1114340								
Moisture	89.5	89.41			100		99-101		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 19214SLL026	Sample number(s): 1114336 UNSPK: 1114336									
Benzo(a)anthracene	N.D.	0.0333	0.0293	0.0331	0.0297	88	90	61-116	1	30
Benzo(a)pyrene	N.D.	0.0333	0.0320	0.0331	0.0321	96	97	67-124	0	30
Benzo(b)fluoranthene	N.D.	0.0333	0.0314	0.0331	0.0321	94	97	68-128	2	30
Benzo(k)fluoranthene	N.D.	0.0333	0.0290	0.0331	0.0288	87	87	61-119	1	30
Chrysene	N.D.	0.0333	0.0293	0.0331	0.0296	88	89	63-105	1	30
Dibenz(a,h)anthracene	N.D.	0.0333	0.0327	0.0331	0.0328	98	99	49-143	0	30
Indeno(1,2,3-cd)pyrene	N.D.	0.0333	0.0330	0.0331	0.0332	99	100	53-144	0	30
Naphthalene	0.00282	0.0333	0.0359	0.0331	0.0341	100	95	42-101	5	30

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: A192181AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114335	102	104	95	91
1114340	102	103	95	90
Blank	100	102	96	93
LCS	98	99	100	102
LCSD	97	96	101	101
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260 Soil
Batch number: V192181AA

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 11:22

Group Number: 2056418

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: V192181AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114336	76	79	75	80
1114337	101	108	101	106
1114339	91	98	93	92
Blank	92	96	93	92
LCS	99	99	94	95
LCS D	104	103	99	100
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260C
Batch number: Z192182AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1114338	96	100	98	94
Blank	95	99	97	95
LCS	95	101	99	97
Limits:	80-120	80-120	80-120	80-120

Analysis Name: SIM SVOAs 8270D (microwave)
Batch number: 19214SLL026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
1114336	92	83	83
Blank	80	79	73
LCS	88	90	83
MS	91	86	99
MSD	91	88	99
Limits:	34-135	28-124	27-107

Analysis Name: Naphthalene 8270D
Batch number: 19217SLB026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1114335	85	85	99
1114337	94	73	103
1114339	81	71	91
1114340	96	89	100
Blank	83	77	99
LCS	86	79	97
Limits:	14-115	22-122	23-141

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 11:22

Group Number: 2056418

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Gx water C7-C12

Batch number: 19213B20A

	Trifluorotoluene-F
1114338	86
Blank	81
LCS	100
LCSD	96

Limits: 50-150

Analysis Name: NWTPH-GX Soil C7-C12

Batch number: 19216A31A

	Trifluorotoluene-F
1114335	72
1114340	69
Blank	94
LCS	99
LCSD	98

Limits: 50-150

Analysis Name: NWTPH-GX Soil C7-C12

Batch number: 19216A31B

	Trifluorotoluene-F
1114336	97
1114337	121
1114339	84
Blank	94
LCS	99
LCSD	98

Limits: 50-150

Analysis Name: PCBs 8082A/3546

Batch number: 192170012A

	Tetrachloro-m-xylene-D1	Decachlorobiphenyl-D1	Tetrachloro-m-xylene-D2	Decachlorobiphenyl-D2
1114336	70	87	69	85
Blank	104	105	96	114
LCS	94	103	89	105

Limits: 53-140 45-143 53-140 45-143

Analysis Name: NWTPH-Dx soil

Batch number: 192180010A

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/13/2019 11:22

Group Number: 2056418

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Dx soil
Batch number: 192180010A

	Orthoterphenyl
1114335	100
1114336	108
1114337	150
1114339	129
1114340	103
Blank	104
LCS	111

Limits: 50-150

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

Acct. # 13271

For Eurofins Lancaster Laboratories Environmental use only
 Group # 2056418 Sample # 1114335-40
Instructions on reverse side correspond with circled numbers.

1 Client Information			4 Matrix			5 Analyses Requested										6 Remarks																		
Facility # <u>204117</u> WBS			<input type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> Ground <input type="checkbox"/> NPDES <input type="checkbox"/> Surface <input type="checkbox"/> Water <input type="checkbox"/> Oil <input type="checkbox"/> Air <input checked="" type="checkbox"/> Composite <input type="checkbox"/> Soil			Total Number of Containers BTEX <input checked="" type="checkbox"/> MTBE <input type="checkbox"/> 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphthn 8260 full scan Oxygenates NWTPH-Gx NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/> NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/> WA VPH <input type="checkbox"/> WA EPH <input type="checkbox"/> Lead Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>COB8</u> Naphthalenes EPA 8270 MTBE, EDB, EPC, N-hexane 8260 CPAAs 8270 SIM PCBs EPA 8082*										SCR #: _____																		
Site Address <u>2021 6th St, Bremerton, WA</u>																Chevron PM <u>Eric Hetrick</u>		Lead Consultant <u>Leidos</u>		Consultant/Office <u>Leidos-Boothell, WA</u>		Consultant Project Mgr. <u>Russ Shropshire</u>		Consultant Phone # <u>425-482-3323</u>		<input type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits								
Sampler <u>RAO/CMW</u>																Grab		Composite		Soil		Water		Oil		Total Number of Containers		<input type="checkbox"/> BTEX <input checked="" type="checkbox"/> MTBE <input type="checkbox"/> 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphthn <input type="checkbox"/> 8260 full scan <input type="checkbox"/> Oxygenates <input type="checkbox"/> NWTPH-Gx <input type="checkbox"/> NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/> <input checked="" type="checkbox"/> NWTPH-Dx without Silica Gel Cleanup <input type="checkbox"/> <input type="checkbox"/> WA VPH <input type="checkbox"/> WA EPH <input type="checkbox"/> <input type="checkbox"/> Lead Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>COB8</u> Naphthalenes EPA 8270 MTBE, EDB, EPC, N-hexane 8260 CPAAs 8270 SIM PCBs EPA 8082*						
2 Sample Identification		Collected														Date Time Grab Composite Soil Water Oil		Total Number of Containers BTEX <input checked="" type="checkbox"/> MTBE <input type="checkbox"/> 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphthn 8260 full scan Oxygenates NWTPH-Gx NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/> NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/> WA VPH <input type="checkbox"/> WA EPH <input type="checkbox"/> Lead Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>COB8</u> Naphthalenes EPA 8270 MTBE, EDB, EPC, N-hexane 8260 CPAAs 8270 SIM PCBs EPA 8082*		Submit invoice to Leidos PO10229412														
SB-17-8.0-S-072319		7/23/19 1005																				7		7		7		7		7		7		
SB-17-14.5-S-072319		7/23/19 1130																				12		12		12		12		12		12		
SB-17-19.5-S-072319		7/23/19 1105		7		7		7		7		7		7																				
TB-1-072319		7/23/19 0820		4		4		4		4		4		4																				
SB-17-24.0-S-072319		7/23/19 1155		7		7		7		7		7		7																				
SB-17-29.5-S-072319		7/23/19 1145		7		7		7		7		7		7																				
7 Turnaround Time Requested (TAT) (please circle) Standard <input checked="" type="radio"/> 5 day 4 day 72 hour 48 hour 24 hour			Relinquished by <u>[Signature]</u> Date <u>7/29/19</u> Time <u>1334</u>			Received by _____ Date _____ Time _____			Relinquished by _____ Date _____ Time _____			Received by _____ Date _____ Time _____																						
8 Data Package (circle if required) Type I - Full <input checked="" type="radio"/> Type VI (Raw Data)			EDD (circle if required) CVX-RTBU-FL_05 (default) Other: _____			Relinquished by Commercial Carrier: UPS <input checked="" type="checkbox"/> FedEx _____ Other _____			Received by <u>[Signature]</u> Date <u>7/30/19</u> Time <u>1015</u>			Temperature Upon Receipt <u>1.8</u> °C Custody Seals Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No																						



Client: Leidos

Delivery and Receipt Information

Delivery Method:	<u>UPS</u>	Arrival Timestamp:	<u>07/30/2019 10:15</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>WA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	4
Samples Chilled:	Yes	Trip Blank Type:	HCI
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Simon Nies (25 112) at 12:34 on 07/30/2019

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-01	1.8	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Chevron c/o Leidos, Inc.
6310 Allentown Blvd.
Suite 110
Harrisburg PA 17112

Report Date: August 20, 2019 13:46

Project: 204117

Account #: 13271
Group Number: 2056642
SDG: LDC14
PO Number: P010229412
Release Number: HETRICK
State of Sample Origin: WA

Electronic Copy To EcoChem
Electronic Copy To Leidos

Attn: Christine Ransom
Attn: Russ Shropshire

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

To view our laboratory's current scopes of accreditation please go to <https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/> . Historical copies may be requested through your project manager.



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
USTSOUTH-CONTENTS-W-190725 Grab Water	07/25/2019 14:30	1115414
USTSOUTH-CONTENTS-W-190725 Grab Water	07/25/2019 14:30	1115415
USTSOUTH-CONTENTS-W-190725 Grab Water	07/25/2019 14:30	1115416
SB-12-S-27.5-190724 Grab Soil	07/24/2019 13:40	1115417
QA-T-190725 Water	07/25/2019 14:15	1115418
QA-2-O-190724 Grab Water	07/24/2019 12:30	1115419
QA-1-O-190723 Grab Water	07/23/2019 08:15	1115420

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: USTSOUTH-CONTENTS-W-190725 Grab Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1115414
ELLE Group #: 2056642
Matrix: Water

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 14:30
SDG#: LDC14-01

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	2	10
13130	1,2-Dichloroethane	107-06-2	N.D.	3	10
13130	Ethylbenzene	100-41-4	N.D.	4	10
13130	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	2	10
13130	Toluene	108-88-3	N.D.	2	10
13130	Xylene (Total)	1330-20-7	N.D.	10	10
The requirement for no headspace at the time of analysis was not met. The container used for the testing had headspace at the time of analysis. Reporting limits were raised due to sample foaming.					
GC/MS Semivolatiles					
		SW-846 8270D	ug/l	ug/l	
14242	Naphthalene	91-20-3	N.D.	0.1	1
The holding time was not met.					
GC/MS Semivolatiles					
		SW-846 8270D SIM	ug/l	ug/l	
14244	Benzo(a)anthracene	56-55-3	N.D.	0.01	1
14244	Benzo(a)pyrene	50-32-8	N.D.	0.01	1
14244	Benzo(b)fluoranthene	205-99-2	N.D.	0.01	1
14244	Benzo(k)fluoranthene	207-08-9	N.D.	0.01	1
14244	Chrysene	218-01-9	N.D.	0.01	1
14244	Dibenz(a,h)anthracene	53-70-3	N.D.	0.02	1
14244	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.01	1
The holding time was not met.					
GC Volatiles					
		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	84	19	1
PCBs					
		SW-846 8082A	ug/l	ug/l	
10591	PCB-1016	12674-11-2	N.D. D1	0.10	1
10591	PCB-1221	11104-28-2	N.D. D1	0.10	1
10591	PCB-1232	11141-16-5	N.D. D1	0.20	1
10591	PCB-1242	53469-21-9	N.D. D1	0.10	1
10591	PCB-1248	12672-29-6	N.D. D1	0.10	1
10591	PCB-1254	11097-69-1	N.D. D1	0.10	1
10591	PCB-1260	11096-82-5	N.D. D1	0.15	1
Volatiles by Extraction					
		SW-846 8011	ug/l	ug/l	
10398	Ethylene dibromide	106-93-4	N.D. D1	0.0095	1
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	ug/l	ug/l	
12899	DX DRO C12-C24	n.a.	1,400	45	1
12899	DX HRO C24-C40	n.a.	160	100	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/l	mg/l	
07035	Arsenic	7440-38-2	N.D.	0.0160	1

Sample Description: USTSOUTH-CONTENTS-W-190725 Grab Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1115414
ELLE Group #: 2056642
Matrix: Water

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 14:30
SDG#: LDC14-01

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
Metals		SW-846 6010D Rev.4, July 2014	mg/l	mg/l	
07046	Barium	7440-39-3	0.0654	0.0010	1
07049	Cadmium	7440-43-9	N.D.	0.0010	1
07051	Chromium	7440-47-3	N.D.	0.0053	1
07055	Lead	7439-92-1	N.D.	0.0071	1
07036	Selenium	7782-49-2	N.D.	0.0210	1
07066	Silver	7440-22-4	N.D.	0.0050	1
		SW-846 7470A	mg/l	mg/l	
00259	Mercury	7439-97-6	N.D.	0.000050	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX/MTBE/EDC 8260C	SW-846 8260C	1	Z192201AA	08/08/2019 12:04	Anita M Dale	10
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z192201AA	08/08/2019 12:03	Anita M Dale	10
14242	Naphthalene 8270D	SW-846 8270D	1	19214WAC026	08/03/2019 14:03	Linda M Hartenstine	1
14244	SIM SVOAs 8270D MINI	SW-846 8270D SIM	1	19214WAD026	08/06/2019 14:53	Kira N Beck	1
00813	BNA Water Extraction	SW-846 3510C	1	19214WAC026	08/02/2019 16:40	Christine E Gleim	1
10466	BNA Water Extraction SIM	SW-846 3510C	1	19214WAD026	08/02/2019 16:40	Christine E Gleim	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	19217D20A	08/05/2019 19:10	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	19217D20A	08/05/2019 19:09	Jeremy C Giffin	1
10591	PCBs in Water 8082A	SW-846 8082A	1	192140010A	08/03/2019 00:39	Jessica L Miller	1
10398	EDB by 8011	SW-846 8011	1	192140006A	08/05/2019 21:50	Rachel Umberger	1
11121	PCB Waters Update IV Ext	SW-846 3510C	1	192140010A	08/02/2019 16:40	Christine E Gleim	1
07786	EDB Extraction (8011)	SW-846 8011	1	192140006A	08/03/2019 05:30	Mathias Okpo	1
12899	NWTPH-Dx water	ECY 97-602 NWTPH-Dx modified	1	192180014A	08/07/2019 17:39	Nicholas R Rossi	1
12907	Mini-extraction DRO DX (water)	ECY 97-602 NWTPH-Dx 06/97	1	192180014A	08/07/2019 02:00	Mathias Okpo	1
07035	Arsenic	SW-846 6010D Rev.4, July 2014	1	192141404402	08/06/2019 19:57	Elaine F Stoltzfus	1
07046	Barium	SW-846 6010D Rev.4, July 2014	1	192141404402	08/07/2019 09:07	Lisa J Cooke	1
07049	Cadmium	SW-846 6010D Rev.4, July 2014	1	192141404402	08/06/2019 19:57	Elaine F Stoltzfus	1
07051	Chromium	SW-846 6010D Rev.4, July 2014	1	192141404402	08/06/2019 19:57	Elaine F Stoltzfus	1
07055	Lead	SW-846 6010D Rev.4, July 2014	1	192141404402	08/06/2019 19:57	Elaine F Stoltzfus	1

Sample Description: USTSOUTH-CONTENTS-W-190725 Grab Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1115414
ELLE Group #: 2056642
Matrix: Water

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 14:30
SDG#: LDC14-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07036	Selenium	SW-846 6010D Rev.4, July 2014	1	192141404402	08/06/2019 19:57	Elaine F Stoltzfus	1
07066	Silver	SW-846 6010D Rev.4, July 2014	1	192141404402	08/06/2019 19:57	Elaine F Stoltzfus	1
00259	Mercury	SW-846 7470A	1	192170571305	08/06/2019 09:22	Damary Valentin	1
14044	ICP-WW, 3005A (tot rec) - U345	SW-846 3005A	1	192141404402	08/05/2019 18:00	Barbara A Kane	1
05713	WW SW846 Hg Digest	SW-846 7470A	1	192170571305	08/06/2019 05:50	James L Mertz	1

Sample Description: USTSOUTH-CONTENTS-W-190725 Grab Water
Facility# 204117 TCLP NVE
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: TL 1115415
ELLE Group #: 2056642
Matrix: Water

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 14:30
SDG#: LDC14-02

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Semivolatiles		SW-846 8270D	mg/l	mg/l	
14252	1,4-Dichlorobenzene	106-46-7	N.D.	0.003	1
14252	2,4-Dinitrotoluene	121-14-2	N.D.	0.005	1
14252	Hexachlorobenzene	118-74-1	N.D.	0.0005	1
14252	Hexachlorobutadiene	87-68-3	N.D.	0.003	1
14252	Hexachloroethane	67-72-1	N.D.	0.005	1
14252	2-Methylphenol	95-48-7	N.D.	0.003	1
14252	4-Methylphenol	106-44-5	N.D.	0.003	1
3-Methylphenol and 4-methylphenol cannot be resolved under the chromatographic conditions used for sample analysis. The result reported for 4-methylphenol represents the combined total of both compounds.					
14252	Nitrobenzene	98-95-3	N.D.	0.003	1
14252	Pentachlorophenol	87-86-5	N.D.	0.005	1
14252	Pyridine	110-86-1	N.D.	0.010	1
14252	2,4,5-Trichlorophenol	95-95-4	N.D.	0.003	1
14252	2,4,6-Trichlorophenol	88-06-2	N.D.	0.003	1

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary. No further action was taken.

Sample Comments

State of Washington Lab Certification No. C457

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
14252	TCLP 8270D MINI	SW-846 8270D	1	19219WAW026	08/15/2019 13:47	Kira N Beck	1
04731	TCLP Leachate Extraction	SW-846 3510C	1	19219WAW026	08/08/2019 09:00	Logan M Brosemer	1
01339	Leachate Filtration	SW-846 1311	1	19218-9169-1339	08/06/2019 14:00	Craig S Pfautz	n.a.

Sample Description: USTSOUTH-CONTENTS-W-190725 Grab Water
Facility# 204117 TCLP ZHE
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: TL 1115416
ELLE Group #: 2056642
Matrix: Water

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 14:30
SDG#: LDC14-03

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/l	mg/l	
11997	Benzene	71-43-2	N.D.	0.004	20
11997	2-Butanone	78-93-3	N.D.	0.006	20
11997	Carbon Tetrachloride	56-23-5	N.D.	0.004	20
11997	Chlorobenzene	108-90-7	N.D.	0.004	20
11997	Chloroform	67-66-3	N.D.	0.004	20
11997	1,2-Dichloroethane	107-06-2	N.D.	0.006	20
11997	1,1-Dichloroethene	75-35-4	N.D.	0.004	20
11997	Tetrachloroethene	127-18-4	N.D.	0.004	20
11997	Trichloroethene	79-01-6	N.D.	0.004	20
11997	Vinyl Chloride	75-01-4	N.D.	0.004	20

Sample Comments

State of Washington Lab Certification No. C457

If the analysis is for determination of Hazardous Waste Characteristics, see Table 1 in EPA Code of Federal Regulations 40 CFR 261.24.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11997	TCLP VOCs 8260C	SW-846 8260C	1	5192311AA	08/19/2019 20:34	Don V Viray	20
01163	GC/MS VOA Water Prep	SW-846 5030C	1	5192311AA	08/19/2019 20:33	Don V Viray	20
01339	Leachate Filtration	SW-846 1311	1	19218-30841-1339	08/06/2019 08:00	Richard Lehr	n.a.

Sample Description: SB-12-S-27.5-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1115417
ELLE Group #: 2056642
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 13:40
SDG#: LDC14-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			mg/kg	mg/kg	
	SW-846 8260C				
11995	Benzene	71-43-2	N.D.	0.0005	0.87
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.87
11995	Toluene	108-88-3	0.001	0.0006	0.87
11995	Xylene (Total)	1330-20-7	N.D.	0.0009	0.87

The recovery for the internal standard t-butyl alcohol-d10 is outside the QC acceptance limits high in the associated CCV. No compounds in this analysis are quantitated using that internal standard.

The recovery for a target analyte(s) in the Laboratory Control Spike(s) is outside the QC acceptance limits as noted on the QC Summary.

The following action was taken: The client was contacted and the data reported.

GC/MS Semivolatiles			mg/kg	mg/kg	
	SW-846 8270D				
10726	Naphthalene	91-20-3	3.2	0.007	1
GC Volatiles			mg/kg	mg/kg	
	ECY 97-602 NWT PH-Gx				
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.2	21.38
GC Petroleum Hydrocarbons			mg/kg	mg/kg	
	ECY 97-602 NWT PH-Dx modified				
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1

Metals			mg/kg	mg/kg	
	SW-846 6010D Rev.4, July 2014				
06955	Lead	7439-92-1	2.58	0.644	1

Wet Chemistry			%	%	
	SM 2540 G-2011 %Moisture Calc				
00111	Moisture	n.a.	7.8	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	X192191AA	08/07/2019 20:33	Linda C Pape	0.87

Sample Description: SB-12-S-27.5-190724 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1115417
ELLE Group #: 2056642
Matrix: Soil

Project Name: 204117

Submission Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 13:40
SDG#: LDC14-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201921754400	07/24/2019 13:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201921754400	07/24/2019 13:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201921754400	07/24/2019 13:40	Client Supplied	1
10726	Naphthalene 8270D	SW-846 8270D	1	19217SLC026	08/09/2019 06:38	Brandon K Cordova	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	19217SLC026	08/06/2019 01:15	Sherry L Morrow	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	19216C31A	08/06/2019 13:27	Jeremy C Giffin	21.38
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201921754400	07/24/2019 13:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	192190016A	08/09/2019 11:49	Heather E Williams	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	192190016A	08/07/2019 22:30	Bradley W VanLeuven	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	192141404907	08/08/2019 12:43	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	192141404907	08/05/2019 14:25	JoElla L Rice	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	19214820001B	08/02/2019 11:50	William C Schwebel	1

Sample Description: QA-T-190725 Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1115418
ELLE Group #: 2056642
Matrix: Water

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 14:15
SDG#: LDC14-05TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z192202AA	08/08/2019 11:52	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z192202AA	08/08/2019 11:51	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	19217D20A	08/05/2019 18:48	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	19217D20A	08/05/2019 18:47	Jeremy C Giffin	1

Sample Description: QA-2-O-190724 Grab Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1115419
ELLE Group #: 2056642
Matrix: Water

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 12:30
SDG#: LDC14-06

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
The requirement for no headspace at the time of analysis was not met. The container used for the testing had headspace at the time of analysis.					
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z192192AA	08/07/2019 16:23	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z192192AA	08/07/2019 16:22	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	19217D20A	08/05/2019 19:32	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	19217D20A	08/05/2019 19:31	Jeremy C Giffin	1

Sample Description: QA-1-O-190723 Grab Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1115420
ELLE Group #: 2056642
Matrix: Water

Project Name: 204117

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 08:15
SDG#: LDC14-07

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	Z192182AA	08/06/2019 12:55	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	Z192182AA	08/06/2019 12:54	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	19217D20A	08/05/2019 19:54	Jeremy C Giffin	1
01146	GC VOA Water Prep	SW-846 5030C	1	19217D20A	08/05/2019 19:53	Jeremy C Giffin	1

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 13:46

Group Number: 2056642

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL
Batch number: X192191AA	Sample number(s): 1115417	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	0.002	0.0006
Xylene (Total)	N.D.	0.001
	mg/l	mg/l
Batch number: 5192311AA	Sample number(s): 1115416	
Benzene	N.D.	0.0002
2-Butanone	N.D.	0.0003
Carbon Tetrachloride	N.D.	0.0002
Chlorobenzene	N.D.	0.0002
Chloroform	N.D.	0.0002
1,2-Dichloroethane	N.D.	0.0003
1,1-Dichloroethene	N.D.	0.0002
Tetrachloroethene	N.D.	0.0002
Trichloroethene	N.D.	0.0002
Vinyl Chloride	N.D.	0.0002
	ug/l	ug/l
Batch number: Z192182AA	Sample number(s): 1115420	
Benzene	N.D.	0.2
Ethylbenzene	N.D.	0.4
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
Batch number: Z192192AA	Sample number(s): 1115419	
Benzene	N.D.	0.2
Ethylbenzene	N.D.	0.4
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
Batch number: Z192201AA	Sample number(s): 1115414	
Benzene	N.D.	0.2
1,2-Dichloroethane	N.D.	0.3
Ethylbenzene	N.D.	0.4
Methyl Tertiary Butyl Ether	N.D.	0.2
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
Batch number: Z192202AA	Sample number(s): 1115418	

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 13:46

Group Number: 2056642

Method Blank (continued)

Analysis Name	Result	MDL
	ug/l	ug/l
Benzene	N.D.	0.2
Ethylbenzene	N.D.	0.4
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
	mg/kg	mg/kg
Batch number: 19217SLC026	Sample number(s): 1115417	
Naphthalene	N.D.	0.007
	mg/l	mg/l
Batch number: 19219WAW026	Sample number(s): 1115415	
1,4-Dichlorobenzene	N.D.	0.003
2,4-Dinitrotoluene	N.D.	0.005
Hexachlorobenzene	N.D.	0.0005
Hexachlorobutadiene	N.D.	0.003
Hexachloroethane	N.D.	0.005
2-Methylphenol	N.D.	0.003
4-Methylphenol	N.D.	0.003
Nitrobenzene	N.D.	0.003
Pentachlorophenol	N.D.	0.005
Pyridine	N.D.	0.010
2,4,5-Trichlorophenol	N.D.	0.003
2,4,6-Trichlorophenol	N.D.	0.003
	ug/l	ug/l
Batch number: 19214WAC026	Sample number(s): 1115414	
Naphthalene	N.D.	0.1
Batch number: 19214WAD026	Sample number(s): 1115414	
Benzo(a)anthracene	N.D.	0.01
Benzo(a)pyrene	N.D.	0.01
Benzo(b)fluoranthene	N.D.	0.01
Benzo(k)fluoranthene	N.D.	0.01
Chrysene	N.D.	0.01
Dibenz(a,h)anthracene	N.D.	0.02
Indeno(1,2,3-cd)pyrene	N.D.	0.01
	mg/kg	mg/kg
Batch number: 19216C31A	Sample number(s): 1115417	
NWTPH-GX Soil C7-C12	N.D.	0.2
	ug/l	ug/l
Batch number: 19217D20A	Sample number(s): 1115414,1115418-1115420	
NWTPH-Gx water C7-C12	N.D.	19
Batch number: 192140010A	Sample number(s): 1115414	
PCB-1016	N.D.	0.10

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 13:46

Group Number: 2056642

Method Blank (continued)

Analysis Name	Result	MDL
	ug/l	ug/l
PCB-1221	N.D.	0.10
PCB-1232	N.D.	0.20
PCB-1242	N.D.	0.10
PCB-1248	N.D.	0.10
PCB-1254	N.D.	0.10
PCB-1260	N.D.	0.15
Batch number: 192140006A	Sample number(s): 1115414	
Ethylene dibromide	N.D.	0.010
	mg/kg	mg/kg
Batch number: 192190016A	Sample number(s): 1115417	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
	ug/l	ug/l
Batch number: 192180014A	Sample number(s): 1115414	
DX DRO C12-C24	N.D.	45
DX HRO C24-C40	N.D.	100
	mg/kg	mg/kg
Batch number: 192141404907	Sample number(s): 1115417	
Lead	N.D.	0.600
	mg/l	mg/l
Batch number: 192141404402	Sample number(s): 1115414	
Arsenic	N.D.	0.0160
Barium	N.D.	0.0010
Cadmium	N.D.	0.0010
Chromium	N.D.	0.0053
Lead	N.D.	0.0071
Selenium	N.D.	0.0210
Silver	N.D.	0.0050
Batch number: 192170571305	Sample number(s): 1115414	
Mercury	N.D.	0.000050

LCS/LCSD

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: X192191AA	Sample number(s): 1115417								
Benzene	0.0200	0.0234	0.0200	0.0200	117	100	80-120	16	30

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 13:46

Group Number: 2056642

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Ethylbenzene	0.0200	0.0226	0.0200	0.0189	113	95	78-120	18	30
Toluene	0.0200	0.0242	0.0200	0.0205	121*	103	80-120	16	30
Xylene (Total)	0.0600	0.0669	0.0600	0.0557	112	93	75-120	18	30
	mg/l	mg/l	mg/l	mg/l					
Batch number: 5192311AA	Sample number(s): 1115416								
Benzene	0.0200	0.0206			103		80-120		
2-Butanone	0.150	0.130			87		59-135		
Carbon Tetrachloride	0.0200	0.0209			105		64-134		
Chlorobenzene	0.0200	0.0210			105		80-120		
Chloroform	0.0200	0.0211			105		80-120		
1,2-Dichloroethane	0.0200	0.0212			106		73-124		
1,1-Dichloroethene	0.0200	0.0217			109		80-131		
Tetrachloroethene	0.0200	0.0210			105		80-120		
Trichloroethene	0.0200	0.0211			105		80-120		
Vinyl Chloride	0.0200	0.0184			92		56-120		
	ug/l	ug/l	ug/l	ug/l					
Batch number: Z192182AA	Sample number(s): 1115420								
Benzene	20	21.8			109		80-120		
Ethylbenzene	20	21.39			107		80-120		
Toluene	20	21.93			110		80-120		
Xylene (Total)	60	67.82			113		80-120		
Batch number: Z192192AA	Sample number(s): 1115419								
Benzene	20	20.87			104		80-120		
Ethylbenzene	20	20.37			102		80-120		
Toluene	20	21.09			105		80-120		
Xylene (Total)	60	64.7			108		80-120		
Batch number: Z192201AA	Sample number(s): 1115414								
Benzene	20	20.85			104		80-120		
1,2-Dichloroethane	20	18.84			94		73-124		
Ethylbenzene	20	20.12			101		80-120		
Methyl Tertiary Butyl Ether	20	18.1			90		69-122		
Toluene	20	20.91			105		80-120		
Xylene (Total)	60	63.76			106		80-120		
Batch number: Z192202AA	Sample number(s): 1115418								
Benzene	20	20.91			105		80-120		
Ethylbenzene	20	20.29			101		80-120		
Toluene	20	20.81			104		80-120		
Xylene (Total)	60	64.46			107		80-120		
	mg/kg	mg/kg	mg/kg	mg/kg					

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 13:46

Group Number: 2056642

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 19217SLC026 Naphthalene	Sample number(s): 1115417 1.67	1.42			85		46-99		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 19219WAW026	Sample number(s): 1115415								
1,4-Dichlorobenzene	0.250	0.106	0.250	0.186	43	74	34-97	54*	30
2,4-Dinitrotoluene	0.250	0.137	0.250	0.235	55*	94	64-112	53*	30
Hexachlorobenzene	0.250	0.161	0.250	0.217	64	87	60-117	30	30
Hexachlorobutadiene	0.250	0.119	0.250	0.206	48	82	20-108	53*	30
Hexachloroethane	0.250	0.0944	0.250	0.169	38	68	23-95	57*	30
2-Methylphenol	0.250	0.192	0.250	0.193	77	77	53-107	1	30
4-Methylphenol	0.250	0.178	0.250	0.177	71	71	49-108	1	30
Nitrobenzene	0.250	0.121	0.250	0.212	49	85	49-113	54*	30
Pentachlorophenol	0.250	0.195	0.250	0.207	78	83	54-131	6	30
Pyridine	0.250	0.0805	0.250	0.105	32	42	21-61	26	30
2,4,5-Trichlorophenol	0.250	0.241	0.250	0.242	97	97	66-118	0	30
2,4,6-Trichlorophenol	0.250	0.244	0.250	0.241	98	96	69-122	1	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 19214WAC026 Naphthalene	Sample number(s): 1115414 50	36.34	50	34.8	73	70	53-99	4	30
Batch number: 19214WAD026	Sample number(s): 1115414								
Benzo(a)anthracene	1.00	0.733	1.00	0.759	73	76	69-126	4	30
Benzo(a)pyrene	1.00	0.862	1.00	0.870	86	87	78-130	1	30
Benzo(b)fluoranthene	1.00	0.885	1.00	0.897	88	90	72-143	1	30
Benzo(k)fluoranthene	1.00	0.925	1.00	0.935	92	93	70-134	1	30
Chrysene	1.00	0.767	1.00	0.787	77	79	70-114	3	30
Dibenz(a,h)anthracene	1.00	0.775	1.00	0.886	77	89	72-138	13	30
Indeno(1,2,3-cd)pyrene	1.00	0.848	1.00	0.906	85	91	73-147	7	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19216C31A NWTPH-GX Soil C7-C12	Sample number(s): 1115417 11	11.49	11	11.46	104	104	55-145	0	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 19217D20A NWTPH-Gx water C7-C12	Sample number(s): 1115414,1115418-1115420 1100	1316.68	1100	1211.34	120	110	64-131	8	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 192140010A PCB-1016	Sample number(s): 1115414 5.02	3.59	5.02	3.97	71	79	60-117	10	30
PCB-1260	5.05	3.83	5.05	4.03	76	80	57-134	5	30

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 13:46

Group Number: 2056642

LCS/LCSD (continued)

Analysis Name	LCS Spike Added ug/l	LCS Conc ug/l	LCSD Spike Added ug/l	LCSD Conc ug/l	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 192140006A Ethylene dibromide	0.128	0.145			113		60-140		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192190016A Diesel Range Organics C12-C24	133.4	104.44			78		61-115		
	ug/l	ug/l	ug/l	ug/l					
Batch number: 192180014A DX DRO C12-C24	600.29	309.55	600.29	245.67	52	41	11-115	23*	20
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192141404907 Lead	15	14.58			97		90-115		
	mg/l	mg/l	mg/l	mg/l					
Batch number: 192141404402 Arsenic	0.150	0.160			107		86-120		
Barium	2.00	1.93			96		87-111		
Cadmium	0.0500	0.0510			102		90-111		
Chromium	0.200	0.195			97		87-110		
Lead	0.150	0.151			100		87-113		
Selenium	0.150	0.142			95		80-120		
Silver	0.0500	0.0480			96		80-120		
Batch number: 192170571305 Mercury	0.00100	0.000841			84		80-110		
	%	%	%	%					
Batch number: 19214820001B Moisture	89.5	89.45			100		99-101		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 192190016A Diesel Range Organics C12-C24	N.D.	132.47	105.31	UNSPK: 1115417		79		61-115		

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 13:46

Group Number: 2056642

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 192190016A	Sample number(s): 1115417 BKG: 1115417			
Diesel Range Organics C12-C24	N.D.	N.D.	0 (1)	20
Heavy Range Organics C24-C40	N.D.	N.D.	0 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: TCLP VOCs 8260C
Batch number: 5192311AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1115416	102	101	100	103
Blank	99	99	101	100
LCS	99	98	101	100
Limits:	80-120	80-120	80-120	80-120

Analysis Name: BTEX 8260 Soil
Batch number: X192191AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1115417	98	109	99	101
Blank	95	103	100	101
LCS	95	98	102	103
LCSD	96	99	102	104
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260C
Batch number: Z192182AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1115420	95	100	97	94
Blank	95	99	97	95
LCS	95	101	99	97
Limits:	80-120	80-120	80-120	80-120

Analysis Name: BTEX 8260C
Batch number: Z192192AA

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 13:46

Group Number: 2056642

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260C
Batch number: Z192192AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1115419	96	101	97	95
Blank	95	101	96	94
LCS	94	100	97	96
Limits:	80-120	80-120	80-120	80-120

Analysis Name: BTEX/MTBE/EDC 8260C
Batch number: Z192201AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1115414	96	101	97	93
Blank	95	100	97	93
LCS	94	99	97	95
Limits:	80-120	80-120	80-120	80-120

Analysis Name: BTEX 8260C
Batch number: Z192202AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1115418	97	101	98	93
Blank	96	99	98	95
LCS	94	100	98	96
Limits:	80-120	80-120	80-120	80-120

Analysis Name: Naphthalene 8270D
Batch number: 19214WAC026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1115414	57	61	77
Blank	63	61	79
LCS	68	70	79
LCSD	66	60	75
Limits:	35-107	44-102	33-126

Analysis Name: SIM SVOAs 8270D MINI
Batch number: 19214WAD026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
1115414	75	76	61
Blank	79	87	74
LCS	75	88	67
LCSD	76	86	71

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 13:46

Group Number: 2056642

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: SIM SVOAs 8270D MINI
Batch number: 19214WAD026

Limits: 48-128 18-129 30-114

Analysis Name: Naphthalene 8270D
Batch number: 19217SLC026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1115417	87	82	98
Blank	95	89	103
LCS	89	85	92
Limits:	14-115	22-122	23-141

Analysis Name: TCLP 8270D MINI
Batch number: 19219WAW026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14	Phenol-d6	2-Fluorophenol	2,4,6-Tribromophenol
1115415	75	71	78	33	47	73
Blank	85	86	103	36	53	99
LCS	45	46	76	38	54	93
LCSD	74	72	88	35	50	90
Limits:	33-113	44-102	39-125	10-67	10-84	23-135

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 19216C31A

	Trifluorotoluene-F
1115417	90
Blank	95
LCS	98
LCSD	99
Limits:	50-150

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 19217D20A

	Trifluorotoluene-F
1115414	93
1115418	118
1115419	108
1115420	106
Blank	87
LCS	106
LCSD	100

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 13:46

Group Number: 2056642

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 19217D20A

Limits: 50-150

Analysis Name: EDB by 8011
Batch number: 192140006A

	1,1,2,2-Tetrachloroethane-D1	1,1,2,2-Tetrachloroethane-D2
1115414	92	103
Blank	116	121
LCS	112	113

Limits: 46-136 46-136

Analysis Name: PCBs in Water 8082A
Batch number: 192140010A

	Tetrachloro-m-xylene-D1	Decachlorobiphenyl-D1	Tetrachloro-m-xylene-D2	Decachlorobiphenyl-D2
1115414	77	84	70	81
Blank	68	25	63	25
LCS	38	34	35	36
LCSD	48	46	43	47

Limits: 33-137 10-148 33-137 10-148

Analysis Name: NWTPH-Dx water
Batch number: 192180014A

	Orthoterphenyl
1115414	81
Blank	96
LCS	90
LCSD	84

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 192190016A

	Orthoterphenyl
1115417	105
Blank	103
DUP	102
LCS	110
MS	109

Limits: 50-150

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 08/20/2019 13:46

Group Number: 2056642

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

Acct. # 13271

For Eurofins Lancaster Laboratories Environmental use only
 Group # 2056642 Sample # 1115414-20
 Instructions on reverse side correspond with circled numbers.

1 Client Information				4 Matrix			5 Analyses Requested												SCR #: <u>246268</u> <input type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits																		
Facility # <u>204117</u> WBS Site Address <u>2021 6th St, Bremerton, WA</u> Chevron PM <u>Eric Hetrick</u> Lead Consultant <u>Leidos</u> Consultant/Office <u>Leidos-Bothell, WA</u> Consultant Project Mgr. <u>Russ Shakespeare</u> Consultant Phone # <u>425-482-3323</u> Sampler <u>RAO/cmw</u>				Sediment <input type="checkbox"/> Potable <input type="checkbox"/> Oil <input type="checkbox"/> Ground <input type="checkbox"/> NPDES <input type="checkbox"/> Air <input type="checkbox"/> Surface <input type="checkbox"/>			Total Number of Containers _____ BTEX + MTBE 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphth <input type="checkbox"/> MTBE <input type="checkbox"/> <u>8260 full scan</u> <u>CPAHS by 8270 SIM</u> <u>oxygenates PCBs by 808Z</u> NWTPH-Gx _____ NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/> BTEX <input type="checkbox"/> 8260 <input type="checkbox"/> NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/> WA-VPH <input type="checkbox"/> WA-EPH <input type="checkbox"/> <u>RCRA 8 Metals by 8010 and 9470</u> Lead Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>6010B</u> <u>Naphthalenes by 8270</u> <u>EDB by 8011</u> <u>TCLP Volatiles by 8260</u> <u>TCLP Semivolatiles by 8270</u>																														
2 Sample Identification		3 Collected		6 Remarks																																	
		Date	Time	Grab	Composite	Soil	Water	Oil	Total Number of Containers	BTEX + MTBE 8021	8260	Naphth	8260 full scan	CPAHS by 8270 SIM	oxygenates	PCBs by 808Z	NWTPH-Gx	NWTPH-Dx with Silica Gel Cleanup	BTEX	8260	NWTPH-Dx without Silica Gel Cleanup	WA-VPH	WA-EPH	RCRA 8 Metals by 8010 and 9470	Lead Total	Diss.	Method	6010B	Naphthalenes by 8270	EDB by 8011	TCLP Volatiles by 8260	TCLP Semivolatiles by 8270	BTEX, MTBE, and EDC by 8260 for <u>water sample</u> UST South - Contents - 072519 Submit invoice to Leidos PO1022941Z				
UST SOUTH - contents - 072519		7/25/19	1430	/		/	/		19	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X		
SB-12-273-S-072419		7/24/19	1340	/		/	/		7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			/		
TB-9-072519		7/25/19	1415	/		/	/		4	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			/		
ER-2-072419		7/24/19	1230	/		/	/		6	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/			/		
ER-1-072319		7/23/19	0815	/		/	/		6	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/				
		_____				_____		_____																													
7 Turnaround Time Requested (TAT) (please circle)				Relinquished by <u>_____</u>				Date <u>7/17/19</u>		Time <u>4:20</u>		Received by <u>_____</u>				Date _____		Time _____																			
Standard 5 day 4 day 72 hour 48 hour 24 hour				Relinquished by <u>_____</u>				Date <u>15307/29/19</u>		Time <u>1530</u>		Received by <u>_____</u>				Date _____		Time _____																			
8 Data Package (circle if required)				Relinquished by Commercial Carrier:				Date _____		Time _____		Received by <u>_____</u>				Date <u>7/30/19</u>		Time <u>1015</u>																			
Type I - Full				CVX-RTBU-FL_05 (default)				UPS <input checked="" type="checkbox"/> FedEx _____ Other _____		Temperature Upon Receipt <u>0.4</u> °C		Custody Seals Intact? <u>(Yes)</u>				No _____																					
Type VI (Raw Data)				Other: _____																																	



Client: Leidos

Delivery and Receipt Information

Delivery Method:	<u>UPS</u>	Arrival Timestamp:	<u>07/30/2019 10:15</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>WA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	4
Samples Chilled:	Yes	Trip Blank Type:	HCl
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	No		
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Simon Nies (25 112) at 13:35 on 07/30/2019

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT42-01	0.8	DT	Wet	Y	Bagged	N

Samples Not Intact Details

Sample ID on Label	Bottle Code	Bottle Quantity	Container Salvageable?	Comments
ER-2-072419	40 ml glass vial (GC/MS) - HCl	4	N	Received broken

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Chevron c/o Leidos, Inc.
6310 Allentown Blvd.
Suite 110
Harrisburg PA 17112

Report Date: March 12, 2020 17:02

Project: 204117

Account #: 13271
Group Number: 2090355
SDG: LDC15
PO Number: P010229412
Release Number: KIERNAN
State of Sample Origin: WA

Electronic Copy To EcoChem
Electronic Copy To Leidos

Attn: Christine Ransom
Attn: Russ Shropshire

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

To view our laboratory's current scopes of accreditation please go to <https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/> . Historical copies may be requested through your project manager.



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
SB-21-S-8-200224 Grab Soil	02/24/2020 14:10	1271114
SB-22-S-8-200224 Grab Soil	02/24/2020 15:50	1271115
SB-21-S-16-200225 Grab Soil	02/25/2020 09:00	1271116
SB-21-S-18-200225 Grab Soil	02/25/2020 09:15	1271117
SB-21-S-20.5-200225 Grab Soil	02/25/2020 09:30	1271118
SB-23-S-8-200225 Grab Soil	02/25/2020 09:45	1271119
SB-23-S-16-200225 Grab Soil	02/25/2020 10:30	1271120
SB-23-S-23-200225 Grab Soil	02/25/2020 11:20	1271121
SB-23-S-19.5-200225 Grab Soil	02/25/2020 10:50	1271122
SB-24-S-8-200225 Grab Soil	02/25/2020 12:15	1271123
SB-24-S-14-200225 Grab Soil	02/25/2020 12:45	1271124
SB-24-S-17.5-200225 Grab Soil	02/25/2020 13:10	1271125
SB-24-S-22-200225 Grab Soil	02/25/2020 13:30	1271126
SB-24-S-29-200225 Grab Soil	02/25/2020 14:15	1271127
SB-22-S-16-200226 Grab Soil	02/26/2020 09:00	1271128
SB-26-S-8-200226 Grab Soil	02/26/2020 09:30	1271129
SB-26-S-15.5-200226 Grab Soil	02/26/2020 11:00	1271130
SB-26-S-20-200226 Grab Soil	02/26/2020 11:30	1271131
SB-27-S-8-200226 Grab Soil	02/26/2020 12:00	1271132
SB-25-S-8.5-200226 Grab Soil	02/26/2020 13:20	1271133
SB-25-S-12-200226 Grab Soil	02/26/2020 13:40	1271134
SB-25-S-19-200226 Grab Soil	02/26/2020 14:00	1271135
SB-27-S-15.5-200226 Grab Soil	02/26/2020 15:30	1271136
SB-29-S-8-200226 Grab Soil	02/26/2020 16:00	1271137
SB-27-S-22-200226 Grab Soil	02/26/2020 16:40	1271138
SB-27-S-26-200226 Grab Soil	02/26/2020 16:45	1271139

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: SB-21-S-8-200224 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271114
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/24/2020 14:10
SDG#: LDC15-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.7
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.7
11995	Toluene	108-88-3	N.D.	0.0005	0.7
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.7
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	0.8	0.5	50.36
Reporting limits were raised due to limited sample volume.					
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.4	1
08272	Heavy Range Organics C24-C40	n.a.	12	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.03	0.639	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	10.6	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200644AA	03/04/2020 23:12	Laura Green	0.7
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/24/2020 14:10	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/24/2020 14:10	Client Supplied	1

Sample Description: SB-21-S-8-200224 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271114
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/24/2020 14:10
SDG#: LDC15-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/24/2020 14:10	Client Supplied	1
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/09/2020 16:44	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/05/2020 13:35	Jeremy C Giffin	50.36
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/24/2020 14:10	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640017A	03/06/2020 00:23	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640017A	03/05/2020 10:40	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404904	03/06/2020 10:31	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404904	03/05/2020 05:15	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005A	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-22-S-8-200224 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271115
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/24/2020 15:50
SDG#: LDC15-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.68
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.68
11995	Toluene	108-88-3	N.D.	0.0006	0.68
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.68
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.005	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.005	1
10726	Naphthalene	91-20-3	N.D.	0.009	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.3	27.04
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	5.4	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	6.02	0.639	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	26.6	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200644AA	03/04/2020 23:34	Laura Green	0.68
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/24/2020 15:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/24/2020 15:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/24/2020 15:50	Client Supplied	1

Sample Description: SB-22-S-8-200224 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271115
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/24/2020 15:50
SDG#: LDC15-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLB026	03/10/2020 01:29	Sylvester Williams	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLB026	03/04/2020 17:30	Osvaldo R Sanchez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/05/2020 14:13	Jeremy C Giffin	27.04
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/24/2020 15:50	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640017A	03/06/2020 00:45	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640017A	03/05/2020 10:40	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404904	03/06/2020 10:35	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404904	03/05/2020 05:15	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005A	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-21-S-16-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271116
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 09:00
SDG#: LDC15-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.025	44.59
11995	1,2-Dibromoethane	106-93-4	N.D.	0.020	44.59
11995	1,2-Dichloroethane	107-06-2	N.D.	0.030	44.59
11995	Ethylbenzene	100-41-4	N.D.	0.020	44.59
11995	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.025	44.59
11995	Toluene	108-88-3	N.D.	0.030	44.59
11995	Xylene (Total)	1330-20-7	N.D.	0.069	44.59

Reporting limits were raised due to interference from the sample matrix.

GC/MS Semivolatiles		SW-846 8270D SIM	mg/kg	mg/kg	
12969	Benzo(a)anthracene	56-55-3	N.D.	0.0007	1
12969	Benzo(a)pyrene	50-32-8	N.D.	0.0007	1
12969	Benzo(b)fluoranthene	205-99-2	N.D.	0.0007	1
12969	Benzo(k)fluoranthene	207-08-9	N.D.	0.0007	1
12969	Chrysene	218-01-9	0.0004	0.0004	1
12969	Dibenz(a,h)anthracene	53-70-3	N.D.	0.0007	1
12969	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.0007	1
12969	1-Methylnaphthalene	90-12-0	0.020	0.0007	1
12969	2-Methylnaphthalene	91-57-6	N.D.	0.001	1
12969	Naphthalene	91-20-3	N.D.	0.001	1

GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	150	4.3	420.16

GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	29	4.4	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1

Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.00	0.601	1

Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	10.1	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Sample Description: SB-21-S-16-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271116
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 09:00
SDG#: LDC15-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	VOCs- Solid by 8260C/D	SW-846 8260C	1	V200681AA	03/08/2020 17:16	Stephen C Nolte	44.59
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/25/2020 09:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/25/2020 09:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/25/2020 09:00	Client Supplied	1
12969	SIM SVOAs 8270D (microwave)	SW-846 8270D SIM	1	20064SLA026	03/05/2020 11:37	Joseph M Gambler	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	20064SLA026	03/04/2020 17:30	Osvaldo R Sanchez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A16A	03/06/2020 10:40	Jeremy C Giffin	420.16
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/25/2020 09:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640007A	03/05/2020 18:58	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640007A	03/04/2020 16:25	Scott Crawford	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 19:08	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005A	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-21-S-18-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271117
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 09:15
SDG#: LDC15-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0006	1.1
11995	Ethylbenzene	100-41-4	N.D.	0.0005	1.1
11995	Toluene	108-88-3	0.0008	0.0007	1.1
11995	Xylene (Total)	1330-20-7	N.D.	0.002	1.1
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	0.005	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	3.0	0.3	24.92
GC Petroleum Hydrocarbons					
		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	N.D.	2.37	5
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	8.8	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200644AA	03/04/2020 23:57	Laura Green	1.1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/25/2020 09:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/25/2020 09:15	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/25/2020 09:15	Client Supplied	1

Sample Description: SB-21-S-18-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271117
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 09:15
SDG#: LDC15-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLB026	03/08/2020 01:49	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLB026	03/04/2020 17:30	Osvaldo R Sanchez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/05/2020 14:51	Jeremy C Giffin	24.92
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/25/2020 09:15	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640007A	03/05/2020 19:20	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640007A	03/04/2020 16:25	Scott Crawford	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 20:22	Cindy M Gehman	5
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005A	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-21-S-20.5-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271118
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 09:30
SDG#: LDC15-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.0004	0.0004	0.68
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.68
11995	Toluene	108-88-3	N.D.	0.0004	0.68
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.68
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.018	5
10726	2-Methylnaphthalene	91-57-6	N.D.	0.018	5
10726	Naphthalene	91-20-3	N.D.	0.036	5
Reporting limits were raised due to interference from the sample matrix.					
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	5.3	0.2	19.66
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	82	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	160	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	6.53	2.44	5
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	8.3	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200644AA	03/05/2020 00:19	Laura Green	0.68
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/25/2020 09:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/25/2020 09:30	Client Supplied	1

Sample Description: SB-21-S-20.5-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271118
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 09:30
SDG#: LDC15-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/25/2020 09:30	Client Supplied	1
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLB026	03/08/2020 03:12	William H Saadeh	5
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLB026	03/04/2020 17:30	Osvaldo R Sanchez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/05/2020 15:29	Jeremy C Giffin	19.66
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/25/2020 09:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640017A	03/06/2020 03:17	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640017A	03/05/2020 10:40	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 20:25	Cindy M Gehman	5
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005A	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-23-S-8-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271119
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 09:45
SDG#: LDC15-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.68
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.68
11995	Toluene	108-88-3	N.D.	0.0005	0.68
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.68
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.2	22.17
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.5	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.59	0.633	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	12.3	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200644AA	03/05/2020 00:42	Laura Green	0.68
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/25/2020 09:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/25/2020 09:45	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/25/2020 09:45	Client Supplied	1

Sample Description: SB-23-S-8-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271119
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 09:45
SDG#: LDC15-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/09/2020 17:06	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/05/2020 16:08	Jeremy C Giffin	22.17
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/25/2020 09:45	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640007A	03/05/2020 19:42	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640007A	03/04/2020 16:25	Scott Crawford	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 19:19	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005A	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-23-S-16-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271120
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 10:30
SDG#: LDC15-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.0005	0.0004	0.73
11995	Ethylbenzene	100-41-4	0.0007	0.0003	0.73
11995	Toluene	108-88-3	0.002	0.0005	0.73
11995	Xylene (Total)	1330-20-7	0.004	0.001	0.73
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	6.7	0.2	19.21
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	110	22	5
08272	Heavy Range Organics C24-C40	n.a.	1,300	54	5
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.35	0.483	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	8.0	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200644AA	03/05/2020 01:05	Laura Green	0.73
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/25/2020 10:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/25/2020 10:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/25/2020 10:30	Client Supplied	1

Sample Description: SB-23-S-16-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271120
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 10:30
SDG#: LDC15-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/09/2020 17:29	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/05/2020 16:46	Jeremy C Giffin	19.21
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/25/2020 10:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640007A	03/06/2020 20:53	Bridget Kovacs	5
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640007A	03/04/2020 16:25	Scott Crawford	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 19:22	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005A	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-23-S-23-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271121
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 11:20
SDG#: LDC15-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.7
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.7
11995	Toluene	108-88-3	N.D.	0.0005	0.7
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.7
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	0.009	0.004	1
10726	2-Methylnaphthalene	91-57-6	0.011	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	0.4	0.2	19.67
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	4.6	4.4	1
08272	Heavy Range Organics C24-C40	n.a.	54	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.98	0.513	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	9.4	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200644AA	03/05/2020 01:27	Laura Green	0.7
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/25/2020 11:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/25/2020 11:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/25/2020 11:20	Client Supplied	1

Sample Description: SB-23-S-23-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271121
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 11:20
SDG#: LDC15-08

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/09/2020 17:52	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/05/2020 17:24	Jeremy C Giffin	19.67
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/25/2020 11:20	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640007A	03/05/2020 22:35	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640007A	03/04/2020 16:25	Scott Crawford	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 19:25	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005A	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-23-S-19.5-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271122
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 10:50
SDG#: LDC15-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.83
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.83
11995	Toluene	108-88-3	N.D.	0.0005	0.83
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.83
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	0.3	0.2	23.64
GC Petroleum Hydrocarbons					
		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.4	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.96	0.518	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	9.5	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200644AA	03/05/2020 01:50	Laura Green	0.83
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/25/2020 10:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/25/2020 10:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/25/2020 10:50	Client Supplied	1

Sample Description: SB-23-S-19.5-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271122
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 10:50
SDG#: LDC15-09

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/09/2020 18:14	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/05/2020 18:02	Jeremy C Giffin	23.64
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/25/2020 10:50	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640007A	03/05/2020 20:03	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640007A	03/04/2020 16:25	Scott Crawford	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 19:29	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005A	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-24-S-8-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271123
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 12:15
SDG#: LDC15-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.77
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.77
11995	Toluene	108-88-3	N.D.	0.0005	0.77
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.77
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.2	23.23
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	2,100	22	5
08272	Heavy Range Organics C24-C40	n.a.	75	56	5
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.81	2.45	5
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	11.2	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200644AA	03/05/2020 02:12	Laura Green	0.77
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/25/2020 12:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/25/2020 12:15	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/25/2020 12:15	Client Supplied	1

Sample Description: SB-24-S-8-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271123
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 12:15
SDG#: LDC15-10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/09/2020 18:37	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/05/2020 19:19	Jeremy C Giffin	23.23
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/25/2020 12:15	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640007A	03/06/2020 20:31	Bridget Kovacs	5
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640007A	03/04/2020 16:25	Scott Crawford	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 20:28	Cindy M Gehman	5
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005A	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-24-S-14-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271124
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 12:45
SDG#: LDC15-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.66
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.66
11995	Toluene	108-88-3	N.D.	0.0005	0.66
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.66
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.008	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.2	20.67
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.7	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	12	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.93	0.627	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	14.6	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200644AA	03/05/2020 02:35	Laura Green	0.66
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/25/2020 12:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/25/2020 12:45	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/25/2020 12:45	Client Supplied	1

Sample Description: SB-24-S-14-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271124
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 12:45
SDG#: LDC15-11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/09/2020 19:00	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/05/2020 19:58	Jeremy C Giffin	20.67
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/25/2020 12:45	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640007A	03/05/2020 21:30	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640007A	03/04/2020 16:25	Scott Crawford	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 19:35	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005B	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-24-S-17.5-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271125
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 13:10
SDG#: LDC15-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.023	41.54
11995	1,2-Dibromoethane	106-93-4	N.D.	0.018	41.54
11995	1,2-Dichloroethane	107-06-2	N.D.	0.028	41.54
11995	Ethylbenzene	100-41-4	N.D.	0.018	41.54
11995	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.023	41.54
11995	Toluene	108-88-3	N.D.	0.028	41.54
11995	Xylene (Total)	1330-20-7	N.D.	0.065	41.54

Reporting limits were raised due to interference from the sample matrix.

GC/MS Semivolatiles		SW-846 8270D SIM	mg/kg	mg/kg	
12969	Benzo(a)anthracene	56-55-3	N.D.	0.007	10
12969	Benzo(a)pyrene	50-32-8	N.D.	0.007	10
12969	Benzo(b)fluoranthene	205-99-2	N.D.	0.007	10
12969	Benzo(k)fluoranthene	207-08-9	N.D.	0.007	10
12969	Chrysene	218-01-9	0.019	0.004	10
12969	Dibenz(a,h)anthracene	53-70-3	N.D.	0.007	10
12969	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.007	10
12969	1-Methylnaphthalene	90-12-0	0.60	0.007	10
12969	2-Methylnaphthalene	91-57-6	N.D.	0.011	10
12969	Naphthalene	91-20-3	N.D.	0.015	10

Reporting limits were raised due to interference from the sample matrix.

GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	930	39	3854.02

GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	6.0	4.4	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1

Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.81	0.444	1

Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	9.9	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Sample Description: SB-24-S-17.5-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271125
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 13:10
SDG#: LDC15-12

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	VOCs- Solid by 8260C/D	SW-846 8260C	1	V200681AA	03/08/2020 15:48	Stephen C Nolte	41.54
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/25/2020 13:10	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/25/2020 13:10	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/25/2020 13:10	Client Supplied	1
12969	SIM SVOAs 8270D (microwave)	SW-846 8270D SIM	1	20064SLA026	03/05/2020 16:31	Joseph M Gambler	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	20064SLA026	03/04/2020 17:30	Osvaldo R Sanchez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A16A	03/06/2020 11:18	Jeremy C Giffin	3854.02
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/25/2020 13:10	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640007A	03/05/2020 21:51	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640007A	03/04/2020 16:25	Scott Crawford	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 19:39	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005B	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-24-S-22-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271126
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 13:30
SDG#: LDC15-13

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.75
11995	1,2-Dibromoethane	106-93-4	N.D.	0.0003	0.75
11995	1,2-Dichloroethane	107-06-2	N.D.	0.0005	0.75
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.75
11995	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0004	0.75
11995	Toluene	108-88-3	N.D.	0.0005	0.75
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.75
GC/MS Semivolatiles					
		SW-846 8270D SIM	mg/kg	mg/kg	
12969	Benzo(a)anthracene	56-55-3	N.D.	0.004	5
12969	Benzo(a)pyrene	50-32-8	N.D.	0.004	5
12969	Benzo(b)fluoranthene	205-99-2	N.D.	0.004	5
12969	Benzo(k)fluoranthene	207-08-9	N.D.	0.004	5
12969	Chrysene	218-01-9	0.005	0.002	5
12969	Dibenz(a,h)anthracene	53-70-3	N.D.	0.004	5
12969	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.004	5
12969	1-Methylnaphthalene	90-12-0	0.011	0.004	5
12969	2-Methylnaphthalene	91-57-6	0.01	0.006	5
12969	Naphthalene	91-20-3	N.D.	0.007	5
Reporting limits were raised due to interference from the sample matrix.					
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.3	25.46
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	430	4.4	1
08272	Heavy Range Organics C24-C40	n.a.	96	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	3.00	0.500	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	10.4	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Sample Description: SB-24-S-22-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271126
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 13:30
SDG#: LDC15-13

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	VOCs- Solid by 8260C/D	SW-846 8260C	1	A200661AA	03/06/2020 11:01	Jennifer K Howe	0.75
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/25/2020 13:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/25/2020 13:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/25/2020 13:30	Client Supplied	1
12969	SIM SVOAs 8270D (microwave)	SW-846 8270D SIM	1	20064SLA026	03/05/2020 12:41	Joseph M Gambler	5
10811	BNA Soil Microwave SIM	SW-846 3546	1	20064SLA026	03/04/2020 17:30	Osvaldo R Sanchez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/05/2020 20:36	Jeremy C Giffin	25.46
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/25/2020 13:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640007A	03/05/2020 22:13	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640007A	03/04/2020 16:25	Scott Crawford	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 19:48	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005B	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-24-S-29-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271127
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 14:15
SDG#: LDC15-14

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0006	1.06
11995	Ethylbenzene	100-41-4	N.D.	0.0004	1.06
11995	Toluene	108-88-3	N.D.	0.0007	1.06
11995	Xylene (Total)	1330-20-7	N.D.	0.002	1.06
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.3	25.89
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	10	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.79	0.492	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	5.5	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200644AA	03/05/2020 02:57	Laura Green	1.06
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/25/2020 14:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/25/2020 14:15	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/25/2020 14:15	Client Supplied	1

Sample Description: SB-24-S-29-200225 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271127
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/25/2020 14:15
SDG#: LDC15-14

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/09/2020 19:22	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/05/2020 21:14	Jeremy C Giffin	25.89
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/25/2020 14:15	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640008A	03/06/2020 03:38	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640008A	03/04/2020 16:25	Scott Crawford	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 19:51	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005B	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-22-S-16-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271128
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 09:00
SDG#: LDC15-15

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.68
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.68
11995	Toluene	108-88-3	N.D.	0.0005	0.68
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.68
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	0.018	0.004	1
10726	2-Methylnaphthalene	91-57-6	0.029	0.004	1
10726	Naphthalene	91-20-3	0.027	0.007	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	2.3	224.47
Reporting limits were raised due to sample foaming.					
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	180	4.4	1
08272	Heavy Range Organics C24-C40	n.a.	280	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	4.11	0.646	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	10.7	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200644AA	03/05/2020 03:20	Laura Green	0.68
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/26/2020 09:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/26/2020 09:00	Client Supplied	1

Sample Description: SB-22-S-16-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271128
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 09:00
SDG#: LDC15-15

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/26/2020 09:00	Client Supplied	1
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/09/2020 19:45	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/05/2020 21:53	Jeremy C Giffin	224.47
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/26/2020 09:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640008A	03/06/2020 05:48	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640008A	03/04/2020 16:25	Scott Crawford	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 19:54	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005B	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-26-S-8-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271129
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 09:30
SDG#: LDC15-16

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.74
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.74
11995	Toluene	108-88-3	N.D.	0.0005	0.74
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.74
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.008	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.3	23.85
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.6	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.23	0.609	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	12.8	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200644AA	03/05/2020 03:43	Laura Green	0.74
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/26/2020 09:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/26/2020 09:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/26/2020 09:30	Client Supplied	1

Sample Description: SB-26-S-8-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271129
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 09:30
SDG#: LDC15-16

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/09/2020 20:08	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/05/2020 22:31	Jeremy C Giffin	23.85
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/26/2020 09:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640008A	03/06/2020 04:00	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640008A	03/04/2020 16:25	Scott Crawford	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404901	03/04/2020 18:40	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404901	03/04/2020 05:55	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005B	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-26-S-15.5-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271130
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 11:00
SDG#: LDC15-17

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.76
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.76
11995	Toluene	108-88-3	N.D.	0.0005	0.76
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.76
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	0.012	0.004	1
10726	2-Methylnaphthalene	91-57-6	0.020	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.3	25.24
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.74	0.548	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	8.0	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200644AA	03/05/2020 04:05	Laura Green	0.76
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/26/2020 11:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/26/2020 11:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/26/2020 11:00	Client Supplied	1

Sample Description: SB-26-S-15.5-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271130
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 11:00
SDG#: LDC15-17

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/09/2020 20:30	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/05/2020 23:10	Jeremy C Giffin	25.24
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/26/2020 11:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640008A	03/06/2020 04:22	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640008A	03/04/2020 16:25	Scott Crawford	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404901	03/04/2020 18:43	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404901	03/04/2020 05:55	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005B	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-26-S-20-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271131
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 11:30
SDG#: LDC15-18

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.0005	0.0005	0.96
11995	Ethylbenzene	100-41-4	0.001	0.0004	0.96
11995	Toluene	108-88-3	0.003	0.0006	0.96
11995	Xylene (Total)	1330-20-7	0.010	0.001	0.96
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	0.24	0.018	5
10726	2-Methylnaphthalene	91-57-6	0.31	0.018	5
10726	Naphthalene	91-20-3	0.082	0.035	5
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	34	0.9	94.58
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	340	21	5
08272	Heavy Range Organics C24-C40	n.a.	760	53	5
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	14.2	0.626	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	6.9	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200651AA	03/05/2020 19:20	Stephen C Nolte	0.96
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/26/2020 11:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/26/2020 11:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/26/2020 11:30	Client Supplied	1

Sample Description: SB-26-S-20-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271131
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 11:30
SDG#: LDC15-18

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/10/2020 18:12	Linda M Hartenstine	5
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/06/2020 01:05	Jeremy C Giffin	94.58
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/26/2020 11:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640017A	03/10/2020 06:37	Bridget Kovacs	5
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640017A	03/05/2020 10:40	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404901	03/04/2020 18:53	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404901	03/04/2020 05:55	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005B	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-27-S-8-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271132
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 12:00
SDG#: LDC15-19

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.78
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.78
11995	Toluene	108-88-3	N.D.	0.0006	0.78
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.78
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.009	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.3	27.34
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	5.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	6.36	0.684	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	23.0	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200661AA	03/06/2020 11:24	Jennifer K Howe	0.78
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456359	02/26/2020 12:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456359	02/26/2020 12:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456359	02/26/2020 12:00	Client Supplied	1

Sample Description: SB-27-S-8-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271132
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 12:00
SDG#: LDC15-19

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/06/2020 18:43	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/05/2020 23:48	Jeremy C Giffin	27.34
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456359	02/26/2020 12:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640017A	03/06/2020 01:50	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640017A	03/05/2020 10:40	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 19:58	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005B	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-25-S-8.5-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271133
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 13:20
SDG#: LDC15-20

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.72
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.72
11995	Toluene	108-88-3	N.D.	0.0006	0.72
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.72
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.009	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.3	25.43
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	10	5.1	1
08272	Heavy Range Organics C24-C40	n.a.	43	13	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	18.5	0.684	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	22.4	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200661AA	03/06/2020 11:46	Jennifer K Howe	0.72
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456359	02/26/2020 13:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456359	02/26/2020 13:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456359	02/26/2020 13:20	Client Supplied	1

Sample Description: SB-25-S-8.5-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271133
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 13:20
SDG#: LDC15-20

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/10/2020 15:50	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20063E16A	03/06/2020 00:27	Jeremy C Giffin	25.43
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456359	02/26/2020 13:20	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640017A	03/06/2020 02:11	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640017A	03/05/2020 10:40	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 20:01	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820005B	03/05/2020 08:49	Larry E Bevins	1

Sample Description: SB-25-S-12-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271134
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 13:40
SDG#: LDC15-21

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.64
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.64
11995	Toluene	108-88-3	N.D.	0.0004	0.64
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.64
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	0.3	0.2	22.6
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.5	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	0.836	0.662	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	10.3	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200661AA	03/06/2020 12:09	Jennifer K Howe	0.64
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456359	02/26/2020 13:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456359	02/26/2020 13:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456359	02/26/2020 13:40	Client Supplied	1

Sample Description: SB-25-S-12-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271134
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 13:40
SDG#: LDC15-21

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/10/2020 16:14	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A16A	03/06/2020 08:07	Jeremy C Giffin	22.6
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456359	02/26/2020 13:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640017A	03/06/2020 02:33	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640017A	03/05/2020 10:40	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404901	03/04/2020 18:21	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404901	03/04/2020 05:55	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820002B	03/04/2020 12:58	Stephanie A Sanchez	1

Sample Description: SB-25-S-19-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271135
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 14:00
SDG#: LDC15-22

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.79
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.79
11995	Toluene	108-88-3	N.D.	0.0005	0.79
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.79
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.2	20.66
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.34	0.644	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	6.9	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200651AA	03/05/2020 12:33	Stephen C Nolte	0.79
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/26/2020 14:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/26/2020 14:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/26/2020 14:00	Client Supplied	1

Sample Description: SB-25-S-19-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271135
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 14:00
SDG#: LDC15-22

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/10/2020 16:38	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A16A	03/06/2020 08:46	Jeremy C Giffin	20.66
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/26/2020 14:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640017A	03/06/2020 02:55	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640017A	03/05/2020 10:40	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404901	03/04/2020 18:57	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404901	03/04/2020 05:55	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820002B	03/04/2020 12:58	Stephanie A Sanchez	1

Sample Description: SB-27-S-15.5-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271136
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 15:30
SDG#: LDC15-23

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.034	56.72
11995	1,2-Dibromoethane	106-93-4	N.D.	0.027	56.72
11995	1,2-Dichloroethane	107-06-2	N.D.	0.040	56.72
11995	Ethylbenzene	100-41-4	N.D.	0.027	56.72
11995	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.034	56.72
11995	Toluene	108-88-3	N.D.	0.040	56.72
11995	Xylene (Total)	1330-20-7	N.D.	0.094	56.72

Reporting limits were raised due to interference from the sample matrix.

GC/MS Semivolatiles		SW-846 8270D SIM	mg/kg	mg/kg	
12969	Benzo(a)anthracene	56-55-3	N.D.	0.016	20
12969	Benzo(a)pyrene	50-32-8	0.024	0.016	20
12969	Benzo(b)fluoranthene	205-99-2	N.D.	0.016	20
12969	Benzo(k)fluoranthene	207-08-9	N.D.	0.016	20
12969	Chrysene	218-01-9	0.047	0.008	20
12969	Dibenz(a,h)anthracene	53-70-3	N.D.	0.016	20
12969	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.016	20
12969	1-Methylnaphthalene	90-12-0	0.25	0.016	20
12969	2-Methylnaphthalene	91-57-6	0.32	0.023	20
12969	Naphthalene	91-20-3	N.D.	0.031	20

Reporting limits were raised due to interference from the sample matrix.

GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	96	2.1	189.43

GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	590	47	10
08272	Heavy Range Organics C24-C40	n.a.	2,000	120	10

Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	19.7	0.690	1

Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	15.6	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Sample Description: SB-27-S-15.5-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271136
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 15:30
SDG#: LDC15-23

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	VOCs- Solid by 8260C/D	SW-846 8260C	1	V200681AA	03/08/2020 16:10	Stephen C Nolte	56.72
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456359	02/26/2020 15:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456359	02/26/2020 15:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456359	02/26/2020 15:30	Client Supplied	1
12969	SIM SVOAs 8270D (microwave)	SW-846 8270D SIM	1	20064SLA026	03/05/2020 13:12	Joseph M Gambler	20
10811	BNA Soil Microwave SIM	SW-846 3546	1	20064SLA026	03/04/2020 17:30	Osvaldo R Sanchez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20070A16A	03/10/2020 13:48	Jeremy C Giffin	189.43
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456359	02/26/2020 15:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640017A	03/06/2020 21:36	Bridget Kovacs	10
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640017A	03/05/2020 10:40	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404901	03/04/2020 19:00	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404901	03/04/2020 05:55	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820002B	03/04/2020 12:58	Stephanie A Sanchez	1

Sample Description: SB-29-S-8-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271137
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 16:00
SDG#: LDC15-24

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.72
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.72
11995	Toluene	108-88-3	N.D.	0.0005	0.72
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.72
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.008	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.3	24.82
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.8	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	12	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	3.83	0.634	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	16.2	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200661AA	03/06/2020 12:32	Jennifer K Howe	0.72
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456359	02/26/2020 16:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456359	02/26/2020 16:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456359	02/26/2020 16:00	Client Supplied	1

Sample Description: SB-29-S-8-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271137
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 16:00
SDG#: LDC15-24

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/10/2020 17:01	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A16A	03/06/2020 09:24	Jeremy C Giffin	24.82
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456359	02/26/2020 16:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640008A	03/06/2020 04:44	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640008A	03/04/2020 16:25	Scott Crawford	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404901	03/04/2020 19:03	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404901	03/04/2020 05:55	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	2	20065820005A	03/06/2020 09:33	Larry E Bevins	1

Sample Description: SB-27-S-22-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271138
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 16:40
SDG#: LDC15-25

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.0009	0.0006	0.93
11995	Ethylbenzene	100-41-4	0.0009	0.0005	0.93
11995	Toluene	108-88-3	0.003	0.0007	0.93
11995	Xylene (Total)	1330-20-7	0.007	0.002	0.93
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.020	5
10726	2-Methylnaphthalene	91-57-6	0.14	0.020	5
10726	Naphthalene	91-20-3	0.048	0.040	5
Reporting limits were raised due to interference from the sample matrix.					
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	4.6	0.3	28.35
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	570	49	10
08272	Heavy Range Organics C24-C40	n.a.	1,000	120	10
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	16.1	0.696	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	18.7	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200661AA	03/06/2020 12:54	Jennifer K Howe	0.93
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456359	02/26/2020 16:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456359	02/26/2020 16:40	Client Supplied	1

Sample Description: SB-27-S-22-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271138
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 16:40
SDG#: LDC15-25

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456359	02/26/2020 16:40	Client Supplied	1
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/10/2020 17:25	Linda M Hartenstine	5
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A16A	03/06/2020 10:02	Jeremy C Giffin	28.35
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456359	02/26/2020 16:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640017A	03/06/2020 21:59	Bridget Kovacs	10
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640017A	03/05/2020 10:40	Joshua S Ruth	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404904	03/06/2020 10:45	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404904	03/05/2020 05:15	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820002B	03/04/2020 12:58	Stephanie A Sanchez	1

Sample Description: SB-27-S-26-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271139
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 16:45
SDG#: LDC15-26

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.033	52.5
11995	Ethylbenzene	100-41-4	N.D.	0.027	52.5
11995	Toluene	108-88-3	N.D.	0.040	52.5
11995	Xylene (Total)	1330-20-7	N.D.	0.094	52.5
Reporting limits were raised due to interference from the sample matrix.					
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	0.15	0.021	5
10726	2-Methylnaphthalene	91-57-6	0.26	0.021	5
10726	Naphthalene	91-20-3	0.077	0.042	5
GC Volatiles					
		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	210	6.0	512.88
GC Petroleum Hydrocarbons					
		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	210	5.1	1
08272	Heavy Range Organics C24-C40	n.a.	440	13	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	27.1	0.689	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	21.5	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	V200681AA	03/08/2020 16:32	Stephen C Nolte	52.5
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456359	02/26/2020 16:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456359	02/26/2020 16:45	Client Supplied	1

Sample Description: SB-27-S-26-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271139
ELLE Group #: 2090355
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 16:45
SDG#: LDC15-26

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456359	02/26/2020 16:45	Client Supplied	1
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLH026	03/10/2020 17:49	Linda M Hartenstine	5
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLH026	03/05/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20070A16A	03/10/2020 14:27	Jeremy C Giffin	512.88
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456359	02/26/2020 16:45	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640018A	03/07/2020 03:01	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640018A	03/06/2020 01:50	Sherry L Morrow	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404904	03/06/2020 10:48	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404904	03/05/2020 05:15	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820002B	03/04/2020 12:58	Stephanie A Sanchez	1

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090355

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result mg/kg	MDL mg/kg
Batch number: A200644AA	Sample number(s): 1271114-1271115,1271117-1271124,1271127-1271130	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: A200651AA	Sample number(s): 1271131,1271135	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: A200661AA	Sample number(s): 1271126,1271132-1271134,1271137-1271138	
Benzene	N.D.	0.0005
1,2-Dibromoethane	N.D.	0.0004
1,2-Dichloroethane	N.D.	0.0006
Ethylbenzene	N.D.	0.0004
Methyl Tertiary Butyl Ether	N.D.	0.0005
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: V200681AA	Sample number(s): 1271116,1271125,1271136,1271139	
Benzene	N.D.	0.025
1,2-Dibromoethane	N.D.	0.020
1,2-Dichloroethane	N.D.	0.030
Ethylbenzene	N.D.	0.020
Methyl Tertiary Butyl Ether	N.D.	0.025
Toluene	N.D.	0.030
Xylene (Total)	N.D.	0.070
Batch number: 20064SLA026	Sample number(s): 1271116,1271125-1271126,1271136	
Benzo(a)anthracene	N.D.	0.0007
Benzo(a)pyrene	N.D.	0.0007
Benzo(b)fluoranthene	N.D.	0.0007
Benzo(k)fluoranthene	N.D.	0.0007
Chrysene	N.D.	0.0003
Dibenz(a,h)anthracene	N.D.	0.0007
Indeno(1,2,3-cd)pyrene	N.D.	0.0007
1-Methylnaphthalene	N.D.	0.0007
2-Methylnaphthalene	N.D.	0.001
Naphthalene	0.002	0.001

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090355

Method Blank (continued)

Analysis Name	Result mg/kg	MDL mg/kg
Batch number: 20064SLB026	Sample number(s): 1271115,1271117-1271118	
1-Methylnaphthalene	N.D.	0.003
2-Methylnaphthalene	N.D.	0.003
Naphthalene	N.D.	0.007
Batch number: 20064SLH026	Sample number(s): 1271114,1271119-1271124,1271127-1271135,1271137-1271139	
1-Methylnaphthalene	N.D.	0.003
2-Methylnaphthalene	N.D.	0.003
Naphthalene	N.D.	0.007
Batch number: 20063E16A	Sample number(s): 1271114-1271115,1271117-1271124,1271126-1271133	
NWTPH-GX Soil C7-C12	N.D.	0.2
Batch number: 20065A16A	Sample number(s): 1271116,1271125,1271134-1271135,1271137-1271138	
NWTPH-GX Soil C7-C12	N.D.	0.2
Batch number: 20070A16A	Sample number(s): 1271136,1271139	
NWTPH-GX Soil C7-C12	N.D.	0.2
Batch number: 200640007A	Sample number(s): 1271116-1271117,1271119-1271126	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 200640008A	Sample number(s): 1271127-1271130,1271137	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 200640017A	Sample number(s): 1271114-1271115,1271118,1271131-1271136,1271138	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 200640018A	Sample number(s): 1271139	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 200641404901	Sample number(s): 1271129-1271131,1271134-1271137	
Lead	N.D.	0.600
Batch number: 200641404902	Sample number(s): 1271116-1271128,1271132-1271133	
Lead	N.D.	0.600
Batch number: 200641404904	Sample number(s): 1271114-1271115,1271138-1271139	
Lead	N.D.	0.600

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
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*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090355

LCS/LCSD

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: A200644AA	Sample number(s): 1271114-1271115,1271117-1271124,1271127-1271130								
Benzene	0.0200	0.0187	0.0200	0.0182	93	91	80-120	2	30
Ethylbenzene	0.0200	0.0198	0.0200	0.0193	99	97	78-120	2	30
Toluene	0.0200	0.0190	0.0200	0.0188	95	94	80-120	1	30
Xylene (Total)	0.0600	0.0600	0.0600	0.0591	100	99	75-120	1	30
Batch number: A200651AA	Sample number(s): 1271131,1271135								
Benzene	0.0200	0.0187	0.0200	0.0185	93	93	80-120	1	30
Ethylbenzene	0.0200	0.0199	0.0200	0.0195	99	97	78-120	2	30
Toluene	0.0200	0.0192	0.0200	0.0188	96	94	80-120	2	30
Xylene (Total)	0.0600	0.0596	0.0600	0.0587	99	98	75-120	2	30
Batch number: A200661AA	Sample number(s): 1271126,1271132-1271134,1271137-1271138								
Benzene	0.0200	0.0194	0.0200	0.0195	97	98	80-120	1	30
1,2-Dibromoethane	0.0200	0.0190	0.0200	0.0190	95	95	76-120	0	30
1,2-Dichloroethane	0.0200	0.0209	0.0200	0.0207	104	103	71-128	1	30
Ethylbenzene	0.0200	0.0206	0.0200	0.0203	103	101	78-120	2	30
Methyl Tertiary Butyl Ether	0.0200	0.0189	0.0200	0.0188	94	94	72-120	0	30
Toluene	0.0200	0.0198	0.0200	0.0196	99	98	80-120	1	30
Xylene (Total)	0.0600	0.0621	0.0600	0.0615	103	103	75-120	1	30
Batch number: V200681AA	Sample number(s): 1271116,1271125,1271136,1271139								
Benzene	1.00	0.998	1.00	0.995	100	100	80-120	0	30
1,2-Dibromoethane	1.00	1.01	1.00	1.02	101	102	76-120	0	30
1,2-Dichloroethane	1.00	1.03	1.00	1.03	103	103	71-128	0	30
Ethylbenzene	1.00	1.00	1.00	0.998	100	100	78-120	1	30
Methyl Tertiary Butyl Ether	1.00	1.01	1.00	1.01	101	101	72-120	0	30
Toluene	1.00	1.01	1.00	1.00	101	100	80-120	1	30
Xylene (Total)	3.00	3.00	3.00	3.00	100	100	75-120	0	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 20064SLA026	Sample number(s): 1271116,1271125-1271126,1271136								
Benzo(a)anthracene	0.0333	0.0336			101		66-114		
Benzo(a)pyrene	0.0333	0.0331			99		67-124		
Benzo(b)fluoranthene	0.0333	0.0348			104		74-126		
Benzo(k)fluoranthene	0.0333	0.0323			97		68-113		
Chrysene	0.0333	0.0301			90		65-113		
Dibenz(a,h)anthracene	0.0333	0.0320			96		66-119		
Indeno(1,2,3-cd)pyrene	0.0333	0.0330			99		69-123		
1-Methylnaphthalene	0.0333	0.0262			79		53-101		
2-Methylnaphthalene	0.0333	0.0281			84		55-109		
Naphthalene	0.0333	0.0254			76		50-106		
Batch number: 20064SLB026	Sample number(s): 1271115,1271117-1271118								
1-Methylnaphthalene	1.67	1.39			83		59-94		

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090355

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
2-Methylnaphthalene	1.67	1.53			92		52-104		
Naphthalene	1.67	1.39			83		49-104		
Batch number: 20064SLH026	Sample number(s): 1271114,1271119-1271124,1271127-1271135,1271137-1271139								
1-Methylnaphthalene	1.67	1.34			81		59-94		
2-Methylnaphthalene	1.67	1.41			85		52-104		
Naphthalene	1.67	1.35			81		49-104		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 20063E16A	Sample number(s): 1271114-1271115,1271117-1271124,1271126-1271133								
NWTPH-GX Soil C7-C12	11	11.52	11	11.81	105	107	55-145	2	30
Batch number: 20065A16A	Sample number(s): 1271116,1271125,1271134-1271135,1271137-1271138								
NWTPH-GX Soil C7-C12	11	11	11	11	100	100	55-145	0	30
Batch number: 20070A16A	Sample number(s): 1271136,1271139								
NWTPH-GX Soil C7-C12	11	11.86	11	11.93	108	108	55-145	1	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 200640007A	Sample number(s): 1271116-1271117,1271119-1271126								
Diesel Range Organics C12-C24	133.34	106.7			80		61-115		
Batch number: 200640008A	Sample number(s): 1271127-1271130,1271137								
Diesel Range Organics C12-C24	133.34	97.06			73		61-115		
Batch number: 200640017A	Sample number(s): 1271114-1271115,1271118,1271131-1271136,1271138								
Diesel Range Organics C12-C24	133.34	100.06			75		61-115		
Batch number: 200640018A	Sample number(s): 1271139								
Diesel Range Organics C12-C24	133.34	101.68			76		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 200641404901	Sample number(s): 1271129-1271131,1271134-1271137								
Lead	3.00	3.17			106		80-120		
Batch number: 200641404902	Sample number(s): 1271116-1271128,1271132-1271133								
Lead	3.00	3.42			114		80-120		
Batch number: 200641404904	Sample number(s): 1271114-1271115,1271138-1271139								
Lead	3.00	3.20			107		80-120		
	%	%	%	%					
Batch number: 20064820002B	Sample number(s): 1271134-1271136,1271138-1271139								
Moisture	89.5	89.38			100		99-101		
Batch number: 20064820005A	Sample number(s): 1271114-1271123								
Moisture	89.5	89.46			100		99-101		

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090355

LCS/LCSD (continued)

Analysis Name	LCS Spike Added %	LCS Conc %	LCSD Spike Added %	LCSD Conc %	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 20064820005B Moisture	Sample number(s): 1271124-1271133						99-101		
	89.5	89.46			100				
Batch number: 20065820005A Moisture	Sample number(s): 1271137						99-101		
	89.5	89.45			100				

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: A200644AA Benzene	Sample number(s): 1271114-1271115,1271117-1271124,1271127-1271130 UNSPK: 1271114									
	N.D.	0.0131	0.0140			107		80-120		
Ethylbenzene	N.D.	0.0131	0.0150			115		78-120		
Toluene	N.D.	0.0131	0.0147			112		80-120		
Xylene (Total)	N.D.	0.0392	0.0450			115		75-120		
Batch number: A200651AA Benzene	Sample number(s): 1271131,1271135 UNSPK: 1271135									
	N.D.	0.0152	0.0154			101		80-120		
Ethylbenzene	N.D.	0.0152	0.0148			98		78-120		
Toluene	N.D.	0.0152	0.0152			100		80-120		
Xylene (Total)	N.D.	0.0455	0.0444			98		75-120		
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 20064SLH026 1-Methylnaphthalene	Sample number(s): 1271114,1271119-1271124,1271127-1271135,1271137-1271139 UNSPK: 1271132									
	N.D.	1.64	1.19	1.66	1.11	72	67	59-94	7	30
2-Methylnaphthalene	N.D.	1.64	1.26	1.66	1.23	76	74	52-104	2	30
Naphthalene	N.D.	1.64	1.12	1.66	1.13	68	68	49-104	1	30
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 200640007A Diesel Range Organics C12-C24	Sample number(s): 1271116-1271117,1271119-1271126 UNSPK: 1271122									
	N.D.	132.95	102.74			77		61-115		
Batch number: 200640008A Diesel Range Organics C12-C24	Sample number(s): 1271127-1271130,1271137 UNSPK: 1271137									
	N.D.	133.21	82.91			62		61-115		
Batch number: 200640017A Diesel Range Organics C12-C24	Sample number(s): 1271114-1271115,1271118,1271131-1271136,1271138 UNSPK: 1271115									
	N.D.	132.9	83.07			63		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090355

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 200641404901 Lead	0.750	2.86	3.98	2.36	3.19	113	103	75-125	22*	20

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 200640007A Diesel Range Organics C12-C24 Heavy Range Organics C24-C40	N.D.	N.D.	0 (1)	20
Batch number: 200640008A Diesel Range Organics C12-C24 Heavy Range Organics C24-C40	N.D.	24.7	200* (1)	20
Batch number: 200640017A Diesel Range Organics C12-C24 Heavy Range Organics C24-C40	N.D.	N.D.	0 (1)	20
Batch number: 200641404901 Lead	0.750	1.17	44* (1)	20
Batch number: 20064820002B Moisture	9.53	11.65	20*	5
Batch number: 20064820005A Moisture	7.99	8.15	2	5
Batch number: 20064820005B Moisture	10.68	9.19	15*	5
Batch number: 20065820005A Moisture	16.24	16.47	1	5

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090355

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: A200644AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1271114	99	103	99	95
1271115	99	104	99	93
1271117	100	105	99	100
1271118	100	105	98	97
1271119	102	105	97	95
1271120	100	102	101	91
1271121	101	103	98	95
1271122	101	103	97	95
1271123	100	103	98	92
1271124	103	108	96	95
1271127	102	105	97	94
1271128	102	106	102	86
1271129	101	102	97	94
1271130	103	104	97	94
Blank	101	99	98	93
LCS	101	98	100	98
LCSD	100	99	101	99
MS	101	103	101	97
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260 Soil
Batch number: A200651AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1271131	103	102	99	91
1271135	102	103	97	93
Blank	102	100	96	94
LCS	100	102	100	98
LCSD	99	99	100	98
MS	102	107	99	98
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260 Soil
Batch number: A200661AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1271126	103	106	98	92
1271132	102	103	96	93
1271133	104	106	95	94
1271134	101	98	96	94
1271137	103	104	98	91
1271138	104	103	99	88

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090355

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: A200661AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
Blank	102	98	96	93
LCS	101	102	99	98
LCSD	103	100	100	99
Limits:	50-141	54-135	52-141	50-131

Analysis Name: VOCs- Solid by 8260C/D
Batch number: V200681AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1271116	109	114	117	123
1271125	107	116	111	114
1271136	93	98	94	97
1271139	91	94	94	97
Blank	99	105	102	102
LCS	99	102	102	101
LCSD	100	102	101	101
Limits:	50-141	54-135	52-141	50-131

Analysis Name: SIM SVOAs 8270D (microwave)
Batch number: 20064SLA026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
1271116	95	82	85
1271125	94	74	255*
1271126	97	85	92
1271136	99	74	179*
Blank	104	93	96
LCS	102	92	90
Limits:	21-120	17-112	27-107

Analysis Name: Naph, 1-MN, 2-MN
Batch number: 20064SLB026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1271115	79	85	96
1271117	81	81	94
1271118	41	47	58
Blank	78	69	98
LCS	84	80	100
Limits:	23-115	34-117	35-135

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090355

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Naph, 1-MN, 2-MN
Batch number: 20064SLH026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1271114	83	77	98
1271119	79	74	88
1271120	78	78	91
1271121	85	79	86
1271122	84	79	95
1271123	80	74	67
1271124	83	77	104
1271127	88	83	105
1271128	52	68	72
1271129	73	67	69
1271130	74	78	95
1271131	44	54	87
1271132	52	51	42
1271133	66	74	93
1271134	64	64	85
1271135	65	68	106
1271137	66	74	100
1271138	42	60	83
1271139	47	64	84
Blank	79	83	108
LCS	78	79	103
MS	62	69	81
MSD	75	66	83
Limits:	23-115	34-117	35-135

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 20063E16A

	Trifluorotoluene-F
1271114	109
1271115	66
1271117	96
1271118	95
1271119	76
1271120	76
1271121	79
1271122	106
1271123	70
1271124	112
1271126	84
1271127	107
1271128	124

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090355

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-GX Soil C7-C12

Batch number: 20063E16A

Trifluorotoluene-F	
1271129	116
1271130	121
1271131	138
1271132	71
1271133	83
Blank	95
LCS	104
LCSD	104

Limits: 50-150

Analysis Name: NWTPH-GX Soil C7-C12

Batch number: 20065A16A

Trifluorotoluene-F	
1271116	134
1271125	242*
1271134	91
1271135	90
1271137	96
1271138	110
Blank	97
LCS	98
LCSD	98

Limits: 50-150

Analysis Name: NWTPH-GX Soil C7-C12

Batch number: 20070A16A

Trifluorotoluene-F	
1271136	110
1271139	102
Blank	100
LCS	103
LCSD	103

Limits: 50-150

Analysis Name: NWTPH-Dx soil

Batch number: 200640007A

Orthoterphenyl	
1271116	100
1271117	102

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090355

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Dx soil
Batch number: 200640007A

	Orthoterphenyl
1271119	101
1271120	108
1271121	98
1271122	102
1271123	127
1271124	102
1271125	100
1271126	86
Blank	103
DUP	102
LCS	106
MS	103

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 200640008A

	Orthoterphenyl
1271127	97
1271128	97
1271129	97
1271130	99
1271137	100
Blank	101
DUP	102
LCS	103
MS	101

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 200640017A

	Orthoterphenyl
1271114	90
1271115	94
1271118	102
1271131	110
1271132	92
1271133	98
1271134	97
1271135	99
1271136	413*

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090355

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Dx soil
Batch number: 200640017A

	Orthoterphenyl
1271138	96
Blank	97
DUP	94
LCS	104
MS	102

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 200640018A

	Orthoterphenyl
1271139	101
Blank	107
LCS	105

Limits: 50-150

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories
Environmental

Acct. # 13271

For Eurofins Lancaster Laboratories Environmental use only
Group # 2090355 Sample # 1271114-39
Instructions on reverse side correspond with circled numbers.

Page 1 of 4

1 Client Information				4 Matrix				5 Analyses Requested										6 Remarks			
Facility # <u>204117</u>		WBS		<input type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> Ground <input type="checkbox"/> NPDES <input type="checkbox"/> Surface <input type="checkbox"/> Water <input type="checkbox"/> Oil <input type="checkbox"/> Air		Total Number of Containers 7		<input checked="" type="checkbox"/> BTEX+MTBE <input checked="" type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphth <input checked="" type="checkbox"/> 8260+MTBE+ 8260 MTBE + EPB + EDC		Oxygenates NWTPH-GX NWTPH-DX with Silica Gel Cleanup NWTPH-DX without Silica Gel Cleanup <input checked="" type="checkbox"/>		WA VPH <input type="checkbox"/> WA EPH <input type="checkbox"/>		Lead Total <input checked="" type="checkbox"/> Diss: <input type="checkbox"/> Method <u>6010B</u>		3 Naphthalenes (8270) carc, PAHs (8270-SIM)		SCR #: _____			
Site Address <u>2021 6th Street, Bremerton, WA</u>		Chevron PM <u>James Kiernan</u>																		Lead Consultant <u>Leidos</u>	
Consultant/Office <u>Leidos / Bothell, WA</u>		Consultant Project Mgr. <u>Russ Shropshire</u>																		Consultant Phone # <u>425-482-3323</u>	
Sampler <u>CMW/TED</u>		3 Grab																		Composite	
Sample Identification		Collected																		Soil	
		Date Time																			
<u>SB-21-8</u>		<u>2/24/20 1410</u>		<input checked="" type="checkbox"/>						<u>7</u>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
<u>SB-22-8</u>		<u>2/24 1550</u>		<input checked="" type="checkbox"/>						<u>7</u>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
<u>SB-21-16</u>		<u>2/25 0900</u>		<input checked="" type="checkbox"/>						<u>7</u>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
<u>SB-21-18</u>		<u>2/25 0915</u>		<input checked="" type="checkbox"/>						<u>7</u>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
<u>SB-21-20.5</u>		<u>2/25 0930</u>		<input checked="" type="checkbox"/>						<u>7</u>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
<u>SB-23-8</u>		<u>2/25 0945</u>		<input checked="" type="checkbox"/>						<u>7</u>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
<u>SB-23-16</u>		<u>2/25 1030</u>		<input checked="" type="checkbox"/>						<u>7</u>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
<u>SB-23-23</u>		<u>2/25 1120</u>		<input checked="" type="checkbox"/>						<u>7</u>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
<u>SB-23-19.5</u>		<u>2/25 1050</u>		<input checked="" type="checkbox"/>						<u>7</u>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
<u>SB-24-8</u>		<u>2/25 1215</u>		<input checked="" type="checkbox"/>						<u>7</u>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
<u>SB-24-14</u>		<u>2/25 1245</u>		<input checked="" type="checkbox"/>						<u>7</u>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
<u>SB-24-17.5</u>		<u>2/25 1310</u>		<input checked="" type="checkbox"/>						<u>7</u>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
<u>SB-24-22</u>		<u>2/25 1330</u>		<input checked="" type="checkbox"/>						<u>7</u>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					
7 Turnaround Time Requested (TAT) (please circle) Standard <input checked="" type="checkbox"/> 5 day 4 day 72 hour 48 hour 24 hour				Relinquished by <u>Thomas Duke</u> Date <u>3-2-20</u> Time <u>1515</u>				Relinquished by _____ Date _____ Time _____				Received by _____ Date _____ Time _____									
8 Data Package (circle if required) Type I - Full <input checked="" type="checkbox"/> Type VI (Raw Data) _____				EDD (circle if required) CVX-RTBU-FL_05 (default) Other: _____				Relinquished by Commercial Carrier: UPS <input checked="" type="checkbox"/> FedEx _____ Other _____				Received by <u>[Signature]</u> Date <u>3/2/20</u> Time <u>950</u>									
Temperature Upon Receipt <u>09/31</u> °C								Custody Seals Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No													

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories Environmental

Acct. # 13271 For Eurofins Lancaster Laboratories Environmental use only
 Group # 2090355 Sample # 12.7.1114-39
Instructions on reverse side correspond with circled numbers.

Page 2 of 4

1 Client Information				4 Matrix				5 Analyses Requested												6 Remarks															
Facility # <u>204117</u> WBS		Site Address <u>2021 6th Street, Bremerton, WA</u>		<input type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Oil <input type="checkbox"/> Air	<input type="checkbox"/> Ground <input type="checkbox"/> Surface	Total Number of Containers 8260 <input checked="" type="checkbox"/> MTBE 8260 <input checked="" type="checkbox"/> Naphth 8260 <input checked="" type="checkbox"/> MTBE + EPB + EDC	Oxygenates NWTPH-Gx NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/> NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/> WA VPH <input type="checkbox"/> WA EPH <input type="checkbox"/>	Lead <input checked="" type="checkbox"/> Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>6010 B</u>	3 Naphthalenes (8270) Carc. PAHs (8270)	SCR #: _____		<input type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits																							
Chevron PM <u>James Kiernan</u> Lead Consultant		Consultant/Office <u>Leidos / Bothell, WA</u>								Soil <input checked="" type="checkbox"/>		Water <input type="checkbox"/>		Oil <input type="checkbox"/>		Air <input type="checkbox"/>		Lead <input checked="" type="checkbox"/>		Total <input checked="" type="checkbox"/>		Diss. <input type="checkbox"/>		Method <u>6010 B</u>											
Consultant Project Mgr. <u>Russ Shropshire</u>		Consultant Phone # <u>425-482-3323</u>								Composite <input checked="" type="checkbox"/>		Grab <input type="checkbox"/>		Soil <input type="checkbox"/>		Water <input type="checkbox"/>		Oil <input type="checkbox"/>		Air <input type="checkbox"/>		Lead <input type="checkbox"/>		Total <input type="checkbox"/>		Diss. <input type="checkbox"/>		Method <u>6010 B</u>							
Sampler <u>CMW / AED</u>		Sample Identification								Collected		Date		Time		Grab		Composite		Soil		Water		Oil		Air		Lead		Total		Diss.		Method	
		SB-24-29								2/25		1415		X		X		X		X		X		X		X		X		X		X		X	
		SB-22-16		2/26		0900		X		X		X		X		X		X		X		X		X		X		X							
		SB-26-8		2/26		0930		X		X		X		X		X		X		X		X		X		X		X							
		SB-26-15.5		2/26		1100		X		X		X		X		X		X		X		X		X		X		X							
		SB-26-20		2/26		1130		X		X		X		X		X		X		X		X		X		X		X							
		SB-27-8		2/26		1200		X		X		X		X		X		X		X		X		X		X		X							
		SB-25-8.5		2/26		1320		X		X		X		X		X		X		X		X		X		X		X							
		SB-25-12		2/26		1340		X		X		X		X		X		X		X		X		X		X		X							
		SB-25-19		2/26		1400		X		X		X		X		X		X		X		X		X		X		X							
		SB-27-15.5		2/26		1530		X		X		X		X		X		X		X		X		X		X		X							
		SB-29-8		2/26		1600		X		X		X		X		X		X		X		X		X		X		X							
		SB-27-22		2/26		1640		X		X		X		X		X		X		X		X		X		X		X							
		SB-27-26		2/26		1645		X		X		X		X		X		X		X		X		X		X		X							
7 Turnaround Time Requested (TAT) (please circle)				Relinquished by <u>Thomas Duber</u>				Date <u>3-2-20</u>				Time <u>1515</u>				Received by _____				Date _____		Time _____													
Standard <input checked="" type="radio"/> 5 day 72 hour 4 day 48 hour 24 hour				Relinquished by _____				Date _____				Time _____				Received by _____				Date _____		Time _____													
8 Data Package (circle if required)				EDD (circle if required)				Relinquished by Commercial Carrier:				Received by _____				Date <u>3/2/20</u>		Time <u>9:50</u>																	
Type I - Full <input checked="" type="radio"/> Type VI (Raw Data)				CVX-RTBU-FI_05 (default)				UPS <input checked="" type="checkbox"/> FedEx _____ Other _____				Temperature Upon Receipt <u>09/3.1</u> °C				Custody Seals Intact? <input checked="" type="checkbox"/> Yes No																			



Client: CHEVRON NORTHWEST REGION

Delivery and Receipt Information

Delivery Method: UPS Arrival Date: 03/03/2020
 Number of Packages: 4 Number of Projects: 1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	Total Trip Blank Qty:	16
Samples Chilled:	Yes	Trip Blank Type:	HCI
Paperwork Enclosed:	Yes	Air Quality Samples Present:	No
Samples Intact:	Yes		
Missing Samples:	No		
Extra Samples:	Yes		
Discrepancy in Container Qty on COC:	No		

Unpacked by Jessenia Colon Martinez

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	1.1	DT	Wet	Y	Bagged	N
2	DT146	1.0	DT	Wet	Y	Bagged	N
3	DT146	0.9	DT	Wet	Y	Bagged	N
4	DT146	3.1	DT	Wet	Y	Bagged	N

Extra Sample Details

<u>Sample ID on Label</u>	<u>Number of Extra Containers</u>	<u>Date on Label</u>	<u>Comments</u>
SB30-11.5	7	3/25/2020 10:45	

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Chevron c/o Leidos, Inc.
6310 Allentown Blvd.
Suite 110
Harrisburg PA 17112

Report Date: March 12, 2020 17:02

Project: 204117

Account #: 13271
Group Number: 2090356
SDG: LDC16
PO Number: P010229412
Release Number: KIERNAN
State of Sample Origin: WA

Electronic Copy To EcoChem
Electronic Copy To Leidos

Attn: Christine Ransom
Attn: Russ Shropshire

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

To view our laboratory's current scopes of accreditation please go to <https://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/certifications-and-accreditations-eurofins-lancaster-laboratories-environmental/> . Historical copies may be requested through your project manager.



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
SB-27-S-29-200226 Grab Soil	02/26/2020 16:50	1271140
SB-29-S-16-200227 Grab Soil	02/27/2020 09:00	1271141
SB-29-S-18-200227 Grab Soil	02/27/2020 09:15	1271142
SB-28-S-8-200227 Grab Soil	02/27/2020 09:30	1271143
DUP-1-SD-200227 Grab Soil	02/27/2020 10:00	1271144
DUP-2-SD-200227 Grab Soil	02/27/2020 10:10	1271145
SB-29-S-22-200227 Grab Soil	02/27/2020 10:30	1271146
SVP-4-S-5-200227 Grab Soil	02/27/2020 11:00	1271147
SB-28-S-14-200227 Grab Soil	02/27/2020 13:40	1271148
SVP-5-S-5-200227 Grab Soil	02/27/2020 14:00	1271149
SB-28-S-19.5-200227 Grab Soil	02/27/2020 14:10	1271150
SB-28-S-24.5-200227 Grab Soil	02/27/2020 14:15	1271151
QA-1-O-200227 Grab Water	02/27/2020 15:10	1271152
QA-2-O-200227 Grab Water	02/27/2020 15:20	1271153
SB-30-S-8-200228 Grab Soil	02/28/2020 09:50	1271154
SVP-6-S-5-200228 Grab Soil	02/28/2020 11:30	1271155
SB-30-S-15.5-200228 Grab Soil	02/28/2020 11:40	1271156
QA-1-T-200224 Water	02/24/2020 12:00	1271157
QA-2-T-200224 Water	02/24/2020 13:00	1271158
QA-3-T-200224 Water	02/24/2020 14:00	1271159
QA-4-T-200224 Water	02/24/2020 15:00	1271160
SB-30-S-11.5-200228 Grab Soil	02/28/2020 10:45	1271161

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: SB-27-S-29-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271140
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 16:50
SDG#: LDC16-01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.72
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.72
11995	Toluene	108-88-3	N.D.	0.0005	0.72
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.72
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.003	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.003	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.3	27.66
GC Petroleum Hydrocarbons					
		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	10	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.64	0.496	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	4.7	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200661AA	03/06/2020 13:17	Jennifer K Howe	0.72
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456361	02/26/2020 16:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456361	02/26/2020 16:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456361	02/26/2020 16:50	Client Supplied	1

Sample Description: SB-27-S-29-200226 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271140
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/26/2020 16:50
SDG#: LDC16-01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20065SLA026	03/09/2020 12:57	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20065SLA026	03/05/2020 00:00	Laura Duquette	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A31A	03/05/2020 16:32	Jeremy C Giffin	27.66
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456361	02/26/2020 16:50	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640018A	03/06/2020 23:25	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640018A	03/06/2020 01:50	Sherry L Morrow	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404904	03/06/2020 10:51	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404904	03/05/2020 05:15	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820003A	03/05/2020 09:21	Larry E Bevins	1

Sample Description: SB-29-S-16-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271141
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 09:00
SDG#: LDC16-02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.67
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.67
11995	Toluene	108-88-3	N.D.	0.0004	0.67
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.67
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	0.037	0.004	1
10726	2-Methylnaphthalene	91-57-6	0.047	0.004	1
10726	Naphthalene	91-20-3	0.009	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	37	0.8	79.04
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	350	43	10
08272	Heavy Range Organics C24-C40	n.a.	700	110	10
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.59	0.516	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	7.0	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200661AA	03/06/2020 13:39	Jennifer K Howe	0.67
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456361	02/27/2020 09:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456361	02/27/2020 09:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456361	02/27/2020 09:00	Client Supplied	1

Sample Description: SB-29-S-16-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271141
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 09:00
SDG#: LDC16-02

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20065SLA026	03/09/2020 13:23	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20065SLA026	03/05/2020 00:00	Laura Duquette	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A31A	03/05/2020 22:11	Jeremy C Giffin	79.04
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456361	02/27/2020 09:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640018A	03/10/2020 06:59	Bridget Kovacs	10
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640018A	03/06/2020 01:50	Sherry L Morrow	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404904	03/06/2020 10:55	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404904	03/05/2020 05:15	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820003A	03/05/2020 09:21	Larry E Bevins	1

Sample Description: SB-29-S-18-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271142
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 09:15
SDG#: LDC16-03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.76
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.76
11995	Toluene	108-88-3	N.D.	0.0005	0.76
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.76
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	0.004	0.004	1
10726	2-Methylnaphthalene	91-57-6	0.009	0.004	1
10726	Naphthalene	91-20-3	0.014	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.3	28.92
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.5	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.68	0.557	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	10.2	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200681AA	03/08/2020 21:24	Laura Green	0.76
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456361	02/27/2020 09:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456361	02/27/2020 09:15	Client Supplied	1
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20065SLA026	03/09/2020 13:47	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20065SLA026	03/05/2020 00:00	Laura Duquette	1

Sample Description: SB-29-S-18-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271142
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 09:15
SDG#: LDC16-03

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A31A	03/05/2020 17:08	Jeremy C Giffin	28.92
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456361	02/27/2020 09:15	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640018A	03/07/2020 00:30	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640018A	03/06/2020 01:50	Sherry L Morrow	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404904	03/06/2020 10:59	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404904	03/05/2020 05:15	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820003A	03/05/2020 09:21	Larry E Bevins	1

Sample Description: SB-28-S-8-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271143
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 09:30
SDG#: LDC16-04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.72
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.72
11995	Toluene	108-88-3	N.D.	0.0006	0.72
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.72
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.009	1
GC Volatiles					
		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.3	27.7
GC Petroleum Hydrocarbons					
		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	5.4	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	5.63	0.597	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	25.6	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200661AA	03/06/2020 14:24	Jennifer K Howe	0.72
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456361	02/27/2020 09:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456361	02/27/2020 09:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456361	02/27/2020 09:30	Client Supplied	1

Sample Description: SB-28-S-8-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271143
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 09:30
SDG#: LDC16-04

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20065SLA026	03/09/2020 14:10	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20065SLA026	03/05/2020 00:00	Laura Duquette	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A31A	03/05/2020 17:44	Jeremy C Giffin	27.7
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456361	02/27/2020 09:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640018A	03/07/2020 00:51	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640018A	03/06/2020 01:50	Sherry L Morrow	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404904	03/06/2020 11:02	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404904	03/05/2020 05:15	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820003A	03/05/2020 09:21	Larry E Bevins	1

Sample Description: DUP-1-SD-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271144
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 10:00
SDG#: LDC16-05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.74
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.74
11995	Toluene	108-88-3	N.D.	0.0005	0.74
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.74
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.2	23.19
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.4	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.92	0.446	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	9.7	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200661AA	03/06/2020 14:47	Jennifer K Howe	0.74
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456361	02/27/2020 10:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456361	02/27/2020 10:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456361	02/27/2020 10:00	Client Supplied	1

Sample Description: DUP-1-SD-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271144
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 10:00
SDG#: LDC16-05

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20066SLB026	03/09/2020 16:12	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20066SLB026	03/06/2020 17:45	Laura Duquette	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A31A	03/05/2020 18:20	Jeremy C Giffin	23.19
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456361	02/27/2020 10:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640018A	03/07/2020 01:13	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640018A	03/06/2020 01:50	Sherry L Morrow	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404904	03/06/2020 11:06	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404904	03/05/2020 05:15	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820003A	03/05/2020 09:21	Larry E Bevins	1

Sample Description: DUP-2-SD-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271145
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 10:10
SDG#: LDC16-06

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.71
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.71
11995	Toluene	108-88-3	N.D.	0.0006	0.71
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.71
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.005	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.005	1
10726	Naphthalene	91-20-3	N.D.	0.01	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.4	29.65
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	5.7	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	14	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	5.73	0.868	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	30.9	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200661AA	03/06/2020 15:09	Jennifer K Howe	0.71
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456361	02/27/2020 10:10	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456361	02/27/2020 10:10	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456361	02/27/2020 10:10	Client Supplied	1

Sample Description: DUP-2-SD-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271145
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 10:10
SDG#: LDC16-06

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20071SLD026	03/11/2020 19:32	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	2	20071SLD026	03/11/2020 09:30	Carolin Mejia	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A31A	03/05/2020 19:03	Jeremy C Giffin	29.65
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456361	02/27/2020 10:10	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640018A	03/07/2020 01:34	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640018A	03/06/2020 01:50	Sherry L Morrow	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404904	03/06/2020 11:09	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404904	03/05/2020 05:15	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820003A	03/05/2020 09:21	Larry E Bevins	1

Sample Description: SB-29-S-22-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271146
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 10:30
SDG#: LDC16-07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.8
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.8
11995	Toluene	108-88-3	N.D.	0.0005	0.8
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.8
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	0.004	0.004	1
10726	2-Methylnaphthalene	91-57-6	0.006	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.3	26.44
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.03	0.486	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	6.4	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200661AA	03/06/2020 15:32	Jennifer K Howe	0.8
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456361	02/27/2020 10:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456361	02/27/2020 10:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456361	02/27/2020 10:30	Client Supplied	1

Sample Description: SB-29-S-22-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271146
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 10:30
SDG#: LDC16-07

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20066SLB026	03/09/2020 16:59	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20066SLB026	03/06/2020 17:45	Laura Duquette	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A31A	03/05/2020 19:39	Jeremy C Giffin	26.44
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456361	02/27/2020 10:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640018A	03/07/2020 01:56	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640018A	03/06/2020 01:50	Sherry L Morrow	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404904	03/06/2020 11:13	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404904	03/05/2020 05:15	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820003A	03/05/2020 09:21	Larry E Bevins	1

Sample Description: SVP-4-S-5-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271147
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 11:00
SDG#: LDC16-08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.74
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.74
11995	Toluene	108-88-3	N.D.	0.0006	0.74
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.74
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	0.004	0.004	1
10726	2-Methylnaphthalene	91-57-6	0.007	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.009	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.4	29.62
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	5.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	7.22	0.752	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	25.4	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200661AA	03/06/2020 15:55	Jennifer K Howe	0.74
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456361	02/27/2020 11:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456361	02/27/2020 11:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456361	02/27/2020 11:00	Client Supplied	1

Sample Description: SVP-4-S-5-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271147
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 11:00
SDG#: LDC16-08

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20066SLB026	03/09/2020 17:23	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20066SLB026	03/06/2020 17:45	Laura Duquette	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A31A	03/05/2020 20:15	Jeremy C Giffin	29.62
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456361	02/27/2020 11:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640018A	03/07/2020 02:17	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640018A	03/06/2020 01:50	Sherry L Morrow	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404904	03/06/2020 10:11	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404904	03/05/2020 05:15	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820003A	03/05/2020 09:21	Larry E Bevins	1

Sample Description: SB-28-S-14-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271148
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 13:40
SDG#: LDC16-09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.73
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.73
11995	Toluene	108-88-3	0.0007	0.0005	0.73
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.73
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	0.006	0.004	1
10726	Naphthalene	91-20-3	0.18	0.007	1
GC Volatiles					
		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	4.3	0.2	20.55
GC Petroleum Hydrocarbons					
		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	13	4.4	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.37	0.571	1
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	8.7	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200661AA	03/06/2020 16:17	Jennifer K Howe	0.73
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456361	02/27/2020 13:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456361	02/27/2020 13:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456361	02/27/2020 13:40	Client Supplied	1

Sample Description: SB-28-S-14-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271148
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 13:40
SDG#: LDC16-09

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20066SLB026	03/09/2020 17:47	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20066SLB026	03/06/2020 17:45	Laura Duquette	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A31A	03/05/2020 20:52	Jeremy C Giffin	20.55
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456361	02/27/2020 13:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200640018A	03/07/2020 02:39	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200640018A	03/06/2020 01:50	Sherry L Morrow	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404904	03/06/2020 11:16	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404904	03/05/2020 05:15	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820003A	03/05/2020 09:21	Larry E Bevins	1

Sample Description: SVP-5-S-5-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271149
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 14:00
SDG#: LDC16-10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0007	1
11995	Ethylbenzene	100-41-4	N.D.	0.0005	1
11995	Toluene	108-88-3	N.D.	0.0008	1
11995	Xylene (Total)	1330-20-7	N.D.	0.002	1
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	0.018	0.004	1
10726	2-Methylnaphthalene	91-57-6	0.034	0.004	1
10726	Naphthalene	91-20-3	0.016	0.009	1
GC Volatiles		ECY 97-602 NWTPH-Gx	mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.4	30.75
GC Petroleum Hydrocarbons		ECY 97-602 NWTPH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	5.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	5.18	0.719	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	24.8	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200661AA	03/06/2020 16:40	Jennifer K Howe	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456361	02/27/2020 14:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456361	02/27/2020 14:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456361	02/27/2020 14:00	Client Supplied	1

Sample Description: SVP-5-S-5-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271149
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 14:00
SDG#: LDC16-10

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20066SLB026	03/09/2020 18:10	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20066SLB026	03/06/2020 17:45	Laura Duquette	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A31A	03/05/2020 21:28	Jeremy C Giffin	30.75
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456361	02/27/2020 14:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200660015A	03/10/2020 03:21	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200660015A	03/07/2020 08:40	Joseph Underdonk	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404904	03/06/2020 11:26	Patrick J Engle	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404904	03/05/2020 05:15	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820003A	03/05/2020 09:21	Larry E Bevins	1

Sample Description: SB-28-S-19.5-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271150
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 14:10
SDG#: LDC16-11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.71
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.71
11995	Toluene	108-88-3	N.D.	0.0005	0.71
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.71
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.2	21.09
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.4	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	1.55	0.649	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	9.3	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200651AA	03/05/2020 13:18	Stephen C Nolte	0.71
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/27/2020 14:10	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/27/2020 14:10	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/27/2020 14:10	Client Supplied	1

Sample Description: SB-28-S-19.5-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271150
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 14:10
SDG#: LDC16-11

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20066SLB026	03/09/2020 18:34	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20066SLB026	03/06/2020 17:45	Laura Duquette	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A31A	03/05/2020 12:49	Jeremy C Giffin	21.09
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/27/2020 14:10	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200660015A	03/10/2020 03:43	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200660015A	03/07/2020 08:40	Joseph Underdonk	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404901	03/04/2020 19:07	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404901	03/04/2020 05:55	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820003A	03/05/2020 09:21	Larry E Bevins	1

Sample Description: SB-28-S-24.5-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271151
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 14:15
SDG#: LDC16-12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles					
		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.79
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.79
11995	Toluene	108-88-3	N.D.	0.0005	0.79
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.79
GC/MS Semivolatiles					
		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.003	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.003	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles					
		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.2	22.73
GC Petroleum Hydrocarbons					
		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	10	1
Metals					
		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	N.D.	3.08	5
Wet Chemistry					
		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	4.4	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.				

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200651AA	03/05/2020 13:41	Stephen C Nolte	0.79
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/27/2020 14:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/27/2020 14:15	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/27/2020 14:15	Client Supplied	1

Sample Description: SB-28-S-24.5-200227 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271151
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 14:15
SDG#: LDC16-12

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20066SLB026	03/09/2020 18:58	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20066SLB026	03/06/2020 17:45	Laura Duquette	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A31A	03/05/2020 13:25	Jeremy C Giffin	22.73
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/27/2020 14:15	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200660015A	03/10/2020 04:05	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200660015A	03/07/2020 08:40	Joseph Underdonk	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/06/2020 11:36	Patrick J Engle	5
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820003A	03/05/2020 09:21	Larry E Bevins	1

Sample Description: QA-1-O-200227 Grab Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1271152
ELLE Group #: 2090356
Matrix: Water

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 15:10
SDG#: LDC16-13EB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F200661AA	03/06/2020 14:48	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F200661AA	03/06/2020 14:47	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	20065A20A	03/05/2020 18:38	Erin E Durkaj	1
01146	GC VOA Water Prep	SW-846 5030C	1	20065A20A	03/05/2020 18:37	Erin E Durkaj	1

Sample Description: QA-2-O-200227 Grab Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1271153
ELLE Group #: 2090356
Matrix: Water

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/27/2020 15:20
SDG#: LDC16-14EB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F200661AA	03/06/2020 15:10	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F200661AA	03/06/2020 15:09	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	20065A20A	03/05/2020 19:02	Erin E Durkaj	1
01146	GC VOA Water Prep	SW-846 5030C	1	20065A20A	03/05/2020 19:01	Erin E Durkaj	1

Sample Description: SB-30-S-8-200228 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271154
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/28/2020 09:50
SDG#: LDC16-15

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.76
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.76
11995	Toluene	108-88-3	N.D.	0.0006	0.76
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.76
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	0.22	0.004	1
10726	2-Methylnaphthalene	91-57-6	0.50	0.004	1
10726	Naphthalene	91-20-3	0.35	0.009	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.3	26.85
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	5.1	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.35	0.597	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	22.7	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200651AA	03/05/2020 14:04	Stephen C Nolte	0.76
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/28/2020 09:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/28/2020 09:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/28/2020 09:50	Client Supplied	1

Sample Description: SB-30-S-8-200228 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271154
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/28/2020 09:50
SDG#: LDC16-15

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20066SLB026	03/09/2020 19:21	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20066SLB026	03/06/2020 17:45	Laura Duquette	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A31A	03/05/2020 14:01	Jeremy C Giffin	26.85
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/28/2020 09:50	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200660015A	03/10/2020 05:10	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200660015A	03/07/2020 08:40	Joseph Underdonk	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404901	03/04/2020 19:10	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404901	03/04/2020 05:55	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820003A	03/05/2020 09:21	Larry E Bevins	1

Sample Description: SVP-6-S-5-200228 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271155
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/28/2020 11:30
SDG#: LDC16-16

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	0.0006	0.0005	0.79
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.79
11995	Toluene	108-88-3	0.0007	0.0006	0.79
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.79
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	0.030	0.004	1
10726	2-Methylnaphthalene	91-57-6	0.036	0.004	1
10726	Naphthalene	91-20-3	0.033	0.008	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.3	27.17
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.9	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	12	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	3.56	0.655	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	18.9	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200651AA	03/05/2020 14:26	Stephen C Nolte	0.79
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/28/2020 11:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/28/2020 11:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/28/2020 11:30	Client Supplied	1

Sample Description: SVP-6-S-5-200228 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271155
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/28/2020 11:30
SDG#: LDC16-16

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20066SLB026	03/09/2020 19:45	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20066SLB026	03/06/2020 17:45	Laura Duquette	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A31A	03/05/2020 14:37	Jeremy C Giffin	27.17
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/28/2020 11:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200660015A	03/10/2020 05:32	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200660015A	03/07/2020 08:40	Joseph Underdonk	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404901	03/04/2020 19:13	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404901	03/04/2020 05:55	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820003A	03/05/2020 09:21	Larry E Bevins	1

Sample Description: SB-30-S-15.5-200228 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271156
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/28/2020 11:40
SDG#: LDC16-17

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0005	0.93
11995	Ethylbenzene	100-41-4	N.D.	0.0004	0.93
11995	Toluene	108-88-3	N.D.	0.0006	0.93
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.93
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	0.006	0.004	1
10726	2-Methylnaphthalene	91-57-6	0.010	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.2	22.01
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	4.3	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	25	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	3.88	0.500	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	7.7	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200651AA	03/05/2020 14:49	Stephen C Nolte	0.93
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/28/2020 11:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/28/2020 11:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/28/2020 11:40	Client Supplied	1

Sample Description: SB-30-S-15.5-200228 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271156
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/28/2020 11:40
SDG#: LDC16-17

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20066SLB026	03/09/2020 20:09	Linda M Hartenstine	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20066SLB026	03/06/2020 17:45	Laura Duquette	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A31A	03/05/2020 15:13	Jeremy C Giffin	22.01
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/28/2020 11:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200660015A	03/10/2020 06:15	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200660015A	03/07/2020 08:40	Joseph Underdonk	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 18:56	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820003A	03/05/2020 09:21	Larry E Bevins	1

Sample Description: QA-1-T-200224 Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1271157
ELLE Group #: 2090356
Matrix: Water

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/24/2020 12:00
SDG#: LDC16-18TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F200661AA	03/06/2020 15:32	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F200661AA	03/06/2020 15:31	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	20065A20A	03/05/2020 19:26	Erin E Durkaj	1
01146	GC VOA Water Prep	SW-846 5030C	1	20065A20A	03/05/2020 19:25	Erin E Durkaj	1

Sample Description: QA-2-T-200224 Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1271158
ELLE Group #: 2090356
Matrix: Water

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/24/2020 13:00
SDG#: LDC16-19TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F200661AA	03/06/2020 15:54	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F200661AA	03/06/2020 15:53	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	20065A20A	03/05/2020 19:50	Erin E Durkaj	1
01146	GC VOA Water Prep	SW-846 5030C	1	20065A20A	03/05/2020 19:49	Erin E Durkaj	1

Sample Description: QA-3-T-200224 Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1271159
ELLE Group #: 2090356
Matrix: Water

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/24/2020 14:00
SDG#: LDC16-20TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	D200662AA	03/06/2020 07:42	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	D200662AA	03/06/2020 07:41	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	20065A20A	03/05/2020 20:14	Erin E Durkaj	1
01146	GC VOA Water Prep	SW-846 5030C	1	20065A20A	03/05/2020 20:13	Erin E Durkaj	1

Sample Description: QA-4-T-200224 Water
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1271160
ELLE Group #: 2090356
Matrix: Water

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/24/2020 15:00
SDG#: LDC16-21TB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	ug/l	ug/l	
13130	Benzene	71-43-2	N.D.	0.2	1
13130	Ethylbenzene	100-41-4	N.D.	0.4	1
13130	Toluene	108-88-3	N.D.	0.2	1
13130	Xylene (Total)	1330-20-7	N.D.	1	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	19	1

Sample Comments

State of Washington Lab Certification No. C457

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
13130	BTEX 8260C	SW-846 8260C	1	F200661AA	03/06/2020 07:26	Anita M Dale	1
01163	GC/MS VOA Water Prep	SW-846 5030C	1	F200661AA	03/06/2020 07:25	Anita M Dale	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	20065A20A	03/05/2020 20:37	Erin E Durkaj	1
01146	GC VOA Water Prep	SW-846 5030C	1	20065A20A	03/05/2020 20:36	Erin E Durkaj	1

Sample Description: SB-30-S-11.5-200228 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271161
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submission Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/28/2020 10:45
SDG#: LDC16-22

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260C	mg/kg	mg/kg	
11995	Benzene	71-43-2	N.D.	0.0004	0.7
11995	Ethylbenzene	100-41-4	N.D.	0.0003	0.7
11995	Toluene	108-88-3	N.D.	0.0005	0.7
11995	Xylene (Total)	1330-20-7	N.D.	0.001	0.7
GC/MS Semivolatiles		SW-846 8270D	mg/kg	mg/kg	
10726	1-Methylnaphthalene	90-12-0	N.D.	0.004	1
10726	2-Methylnaphthalene	91-57-6	N.D.	0.004	1
10726	Naphthalene	91-20-3	N.D.	0.007	1
GC Volatiles		ECY 97-602 NWT PH-Gx	mg/kg	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	0.2	21.41
GC Petroleum Hydrocarbons		ECY 97-602 NWT PH-Dx modified	mg/kg	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.5	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
Metals		SW-846 6010D Rev.4, July 2014	mg/kg	mg/kg	
06955	Lead	7439-92-1	2.01	0.558	1
Wet Chemistry		SM 2540 G-2011 %Moisture Calc	%	%	
00111	Moisture	n.a.	10.4	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457
Carcinogenic PAHs have been reported for this sample.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11995	BTEX 8260 Soil	SW-846 8260C	1	A200651AA	03/05/2020 15:11	Stephen C Nolte	0.7
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	202006456355	02/25/2020 10:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	202006456355	02/25/2020 10:45	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	202006456355	02/25/2020 10:45	Client Supplied	1

Sample Description: SB-30-S-11.5-200228 Grab Soil
Facility# 204117
2021 6th Street-Bremerton, WA

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1271161
ELLE Group #: 2090356
Matrix: Soil

Project Name: 204117

Submittal Date/Time: 03/03/2020 09:50
Collection Date/Time: 02/28/2020 10:45
SDG#: LDC16-22

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10726	Naph, 1-MN, 2-MN	SW-846 8270D	1	20064SLB026	03/08/2020 04:47	William H Saadeh	1
10813	BNA Soil Microwave APP IX	SW-846 3546	1	20064SLB026	03/04/2020 17:30	Osvaldo R Sanchez	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	20065A31A	03/05/2020 12:13	Jeremy C Giffin	21.41
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	202006456355	02/25/2020 10:45	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	200660015A	03/10/2020 05:53	Bridget Kovacs	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	200660015A	03/07/2020 08:40	Joseph Underdonk	1
06955	Lead	SW-846 6010D Rev.4, July 2014	1	200641404902	03/05/2020 18:59	Cindy M Gehman	1
14049	ICP/ICPMS-SW, 3050B - U345	SW-846 3050B	1	200641404902	03/05/2020 05:05	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	20064820003A	03/05/2020 09:21	Larry E Bevins	1

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090356

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL
	mg/kg	mg/kg
Batch number: A200651AA	Sample number(s): 1271150-1271151,1271154-1271156,1271161	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: A200661AA	Sample number(s): 1271140-1271141,1271143-1271149	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
Batch number: A200681AA	Sample number(s): 1271142	
Benzene	N.D.	0.0005
Ethylbenzene	N.D.	0.0004
Toluene	N.D.	0.0006
Xylene (Total)	N.D.	0.001
	ug/l	ug/l
Batch number: D200662AA	Sample number(s): 1271159	
Benzene	N.D.	0.2
Ethylbenzene	N.D.	0.4
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
Batch number: F200661AA	Sample number(s): 1271152-1271153,1271157-1271158,1271160	
Benzene	N.D.	0.2
Ethylbenzene	N.D.	0.4
Toluene	N.D.	0.2
Xylene (Total)	N.D.	1
	mg/kg	mg/kg
Batch number: 20064SLB026	Sample number(s): 1271161	
1-Methylnaphthalene	N.D.	0.003
2-Methylnaphthalene	N.D.	0.003
Naphthalene	N.D.	0.007
Batch number: 20065SLA026	Sample number(s): 1271140-1271143	
1-Methylnaphthalene	N.D.	0.003
2-Methylnaphthalene	N.D.	0.003
Naphthalene	N.D.	0.007

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090356

Method Blank (continued)

Analysis Name	Result	MDL
	mg/kg	mg/kg
Batch number: 20066SLB026	Sample number(s): 1271144,1271146-1271151,1271154-1271156	
1-Methylnaphthalene	N.D.	0.003
2-Methylnaphthalene	N.D.	0.003
Naphthalene	N.D.	0.007
Batch number: 20071SLD026	Sample number(s): 1271145	
1-Methylnaphthalene	N.D.	0.003
2-Methylnaphthalene	N.D.	0.003
Naphthalene	N.D.	0.007
Batch number: 20065A31A	Sample number(s): 1271140-1271151,1271154-1271156,1271161	
NWTPH-GX Soil C7-C12	N.D.	0.2
	ug/l	ug/l
Batch number: 20065A20A	Sample number(s): 1271152-1271153,1271157-1271160	
NWTPH-Gx water C7-C12	N.D.	19
	mg/kg	mg/kg
Batch number: 200640018A	Sample number(s): 1271140-1271148	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 200660015A	Sample number(s): 1271149-1271151,1271154-1271156,1271161	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 200641404901	Sample number(s): 1271150,1271154-1271155	
Lead	N.D.	0.600
Batch number: 200641404902	Sample number(s): 1271151,1271156,1271161	
Lead	N.D.	0.600
Batch number: 200641404904	Sample number(s): 1271140-1271149	
Lead	N.D.	0.600

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: A200651AA	Sample number(s): 1271150-1271151,1271154-1271156,1271161								
Benzene	0.0200	0.0187	0.0200	0.0185	93	93	80-120	1	30
Ethylbenzene	0.0200	0.0199	0.0200	0.0195	99	97	78-120	2	30
Toluene	0.0200	0.0192	0.0200	0.0188	96	94	80-120	2	30
Xylene (Total)	0.0600	0.0596	0.0600	0.0587	99	98	75-120	2	30

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090356

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: A200661AA	Sample number(s): 1271140-1271141,1271143-1271149								
Benzene	0.0200	0.0194	0.0200	0.0195	97	98	80-120	1	30
Ethylbenzene	0.0200	0.0206	0.0200	0.0203	103	101	78-120	2	30
Toluene	0.0200	0.0198	0.0200	0.0196	99	98	80-120	1	30
Xylene (Total)	0.0600	0.0621	0.0600	0.0615	103	103	75-120	1	30
Batch number: A200681AA	Sample number(s): 1271142								
Benzene	0.0200	0.0194	0.0200	0.0188	97	94	80-120	3	30
Ethylbenzene	0.0200	0.0205	0.0200	0.0198	103	99	78-120	4	30
Toluene	0.0200	0.0198	0.0200	0.0191	99	96	80-120	3	30
Xylene (Total)	0.0600	0.0622	0.0600	0.0598	104	100	75-120	4	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: D200662AA	Sample number(s): 1271159								
Benzene	20	20.2	20	22.5	101	113	80-120	11	30
Ethylbenzene	20	19.59	20	21.66	98	108	80-120	10	30
Toluene	20	20.67	20	22.67	103	113	80-120	9	30
Xylene (Total)	60	60.28	60	66.73	100	111	80-120	10	30
Batch number: F200661AA	Sample number(s): 1271152-1271153,1271157-1271158,1271160								
Benzene	20	21.01			105		80-120		
Ethylbenzene	20	19.72			99		80-120		
Toluene	20	20.13			101		80-120		
Xylene (Total)	60	59.97			100		80-120		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 20064SLB026	Sample number(s): 1271161								
1-Methylnaphthalene	1.67	1.39			83		59-94		
2-Methylnaphthalene	1.67	1.53			92		52-104		
Naphthalene	1.67	1.39			83		49-104		
Batch number: 20065SLA026	Sample number(s): 1271140-1271143								
1-Methylnaphthalene	1.67	1.28			77		59-94		
2-Methylnaphthalene	1.67	1.32			79		52-104		
Naphthalene	1.67	1.25			75		49-104		
Batch number: 20066SLB026	Sample number(s): 1271144,1271146-1271151,1271154-1271156								
1-Methylnaphthalene	1.67	1.35			81		59-94		
2-Methylnaphthalene	1.67	1.41			85		52-104		
Naphthalene	1.67	1.34			80		49-104		
Batch number: 20071SLD026	Sample number(s): 1271145								
1-Methylnaphthalene	1.67	1.13			68		59-94		
2-Methylnaphthalene	1.67	1.26			76		52-104		
Naphthalene	1.67	1.23			74		49-104		

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090356

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: 20065A31A NWTPH-GX Soil C7-C12	11	11.31	11	11.24	103	102	55-145	1	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 20065A20A NWTPH-Gx water C7-C12	1100	1078.89			98		64-131		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 200640018A Diesel Range Organics C12-C24	133.34	101.68			76		61-115		
Batch number: 200660015A Diesel Range Organics C12-C24	133.34	97.65			73		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 200641404901 Lead	3.00	3.17			106		80-120		
Batch number: 200641404902 Lead	3.00	3.42			114		80-120		
Batch number: 200641404904 Lead	3.00	3.20			107		80-120		
	%	%	%	%					
Batch number: 20064820003A Moisture	89.5	89.45			100		99-101		

MS/MSD

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: 20065SLA026										
1-Methylnaphthalene	N.D.	1.66	1.24	1.65	1.23	74	75	59-94	0	30
2-Methylnaphthalene	N.D.	1.66	1.31	1.65	1.29	79	78	52-104	2	30
Naphthalene	N.D.	1.66	1.19	1.65	1.21	71	73	49-104	2	30
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 200640018A										

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090356

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Diesel Range Organics C12-C24	N.D.	131.16	95.56			73		61-115		
Batch number: 200660015A	Sample number(s): 1271149-1271151,1271154-1271156,1271161 UNSPK: 1271151									
Diesel Range Organics C12-C24	N.D.	132.9	98.32			74		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 200641404902	Sample number(s): 1271151,1271156,1271161 UNSPK: 1271151									
Lead	N.D.	2.17	5.07	2.52	4.92	233*	195*	75-125	3	20
Batch number: 200641404904	Sample number(s): 1271140-1271149 UNSPK: 1271147									
Lead	5.39	2.10	6.56	2.48	7.09	56*	69*	75-125	8	20

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc mg/kg	DUP Conc mg/kg	DUP RPD	DUP RPD Max
Batch number: 200640018A	Sample number(s): 1271140-1271148 BKG: 1271140			
Diesel Range Organics C12-C24	N.D.	N.D.	0 (1)	20
Heavy Range Organics C24-C40	N.D.	N.D.	0 (1)	20
Batch number: 200660015A	Sample number(s): 1271149-1271151,1271154-1271156,1271161 BKG: 1271151			
Diesel Range Organics C12-C24	N.D.	N.D.	0 (1)	20
Heavy Range Organics C24-C40	N.D.	N.D.	0 (1)	20
	mg/kg	mg/kg		
Batch number: 200641404902	Sample number(s): 1271151,1271156,1271161 BKG: 1271151			
Lead	N.D.	N.D.	0 (1)	20
Batch number: 200641404904	Sample number(s): 1271140-1271149 BKG: 1271147			
Lead	5.39	4.92	9 (1)	20

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090356

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260 Soil
Batch number: A200651AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1271150	98	103	97	94
1271151	101	102	96	94
1271154	102	100	96	94
1271155	102	100	96	92
1271156	101	103	97	94
1271161	102	100	96	94
Blank	102	100	96	94
LCS	100	102	100	98
LCSD	99	99	100	98
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260 Soil
Batch number: A200661AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1271140	103	103	96	92
1271141	102	106	95	96
1271143	104	103	94	91
1271144	103	103	95	93
1271145	104	100	95	92
1271146	103	102	95	93
1271147	104	104	95	92
1271148	104	103	94	92
1271149	103	104	95	92
Blank	102	98	96	93
LCS	101	102	99	98
LCSD	103	100	100	99
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260 Soil
Batch number: A200681AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1271142	102	103	96	96
Blank	101	99	97	92
LCS	102	99	100	99
LCSD	101	104	100	99
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX 8260C
Batch number: D200662AA

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090356

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: BTEX 8260C
Batch number: D200662AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1271159	97	93	102	92
Blank	97	92	102	91
LCS	95	96	102	95
LCSD	94	97	102	94
Limits:	80-120	80-120	80-120	80-120

Analysis Name: BTEX 8260C
Batch number: F200661AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
1271152	99	95	98	95
1271153	99	96	98	96
1271157	100	96	99	96
1271158	98	97	98	96
1271160	97	94	99	95
Blank	99	95	99	95
LCS	97	98	99	98
Limits:	80-120	80-120	80-120	80-120

Analysis Name: Naph, 1-MN, 2-MN
Batch number: 20064SLB026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1271161	70	84	79
Blank	78	69	98
LCS	84	80	100
Limits:	23-115	34-117	35-135

Analysis Name: Naph, 1-MN, 2-MN
Batch number: 20065SLA026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1271140	90	93	105
1271141	82	90	103
1271142	83	85	89
1271143	50	52	45
Blank	85	86	104
LCS	75	81	93
MS	73	75	81
MSD	76	79	87

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090356

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: Naph, 1-MN, 2-MN
Batch number: 20065SLA026

Limits: 23-115 34-117 35-135

Analysis Name: Naph, 1-MN, 2-MN
Batch number: 20066SLB026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1271144	84	84	99
1271146	86	90	100
1271147	74	79	79
1271148	74	77	69
1271149	78	82	93
1271150	68	81	89
1271151	82	85	101
1271154	79	81	94
1271155	77	81	95
1271156	49	85	98
Blank	84	88	104
LCS	82	86	97

Limits: 23-115 34-117 35-135

Analysis Name: Naph, 1-MN, 2-MN
Batch number: 20071SLD026

	Nitrobenzene-d5	2-Fluorobiphenyl	Terphenyl-d14
1271145	71	72	91
Blank	71	75	89
LCS	73	73	89

Limits: 23-115 34-117 35-135

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 20065A20A

	Trifluorotoluene-F
1271152	80
1271153	78
1271157	80
1271158	78
1271159	82
1271160	76
Blank	78
LCS	90

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090356

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 20065A20A

Limits: 50-150

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 20065A31A

	Trifluorotoluene-F
1271140	122
1271141	106
1271142	106
1271143	82
1271144	79
1271145	74
1271146	89
1271147	69
1271148	84
1271149	92
1271150	120
1271151	95
1271154	83
1271155	92
1271156	84
1271161	107
Blank	95
LCS	108
LCSD	108

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 200640018A

	Orthoterphenyl
1271140	105
1271141	109
1271142	103
1271143	100
1271144	105
1271145	96
1271146	104
1271147	99
1271148	105
Blank	107
DUP	103
LCS	105

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Chevron c/o Leidos, Inc.
Reported: 03/12/2020 17:02

Group Number: 2090356

Surrogate Quality Control (continued)

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: NWTPH-Dx soil

Batch number: 200640018A

Orthoterphenyl

MS	100
----	-----

Limits: 50-150

Analysis Name: NWTPH-Dx soil

Batch number: 200660015A

Orthoterphenyl

1271149	89
1271150	104
1271151	101
1271154	93
1271155	98
1271156	99
1271161	93
Blank	99
DUP	99
LCS	104
MS	102

Limits: 50-150

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories
Environmental

Acct. # 13271 For Eurofins Lancaster Laboratories Environmental use only
Group # 2090356 Sample # 1271140-61
Instructions on reverse side correspond with circled numbers.

Page 3 of 4

1 Client Information				4 Matrix				5 Analyses Requested										6 Remarks																																																																																																																			
Facility # <u>204117</u>		WBS		Sediment <input type="checkbox"/>		Ground <input type="checkbox"/>		Surface <input type="checkbox"/>		<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="2">Total Number of Containers</td> <td colspan="2">8021 <input type="checkbox"/></td> <td colspan="2">8260 <input type="checkbox"/></td> <td colspan="2">Naphth <input type="checkbox"/></td> <td colspan="2">8260 full scan</td> <td colspan="2">Oxygenates</td> <td colspan="2">NWTPH-Gx</td> <td colspan="2">NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/></td> <td colspan="2">NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/></td> <td colspan="2">WA VPH <input type="checkbox"/></td> <td colspan="2">WA EPH <input type="checkbox"/></td> <td colspan="2">Lead Total <input checked="" type="checkbox"/></td> <td colspan="2">Diss. <input type="checkbox"/></td> <td colspan="2">Method <u>6010B</u></td> </tr> <tr> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> <tr> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> <td colspan="2"></td> </tr> </table>										Total Number of Containers		8021 <input type="checkbox"/>		8260 <input type="checkbox"/>		Naphth <input type="checkbox"/>		8260 full scan		Oxygenates		NWTPH-Gx		NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/>		NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/>		WA VPH <input type="checkbox"/>		WA EPH <input type="checkbox"/>		Lead Total <input checked="" type="checkbox"/>		Diss. <input type="checkbox"/>		Method <u>6010B</u>																																																																																						SCR #: _____	
Total Number of Containers		8021 <input type="checkbox"/>		8260 <input type="checkbox"/>		Naphth <input type="checkbox"/>		8260 full scan												Oxygenates		NWTPH-Gx		NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/>		NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/>		WA VPH <input type="checkbox"/>		WA EPH <input type="checkbox"/>		Lead Total <input checked="" type="checkbox"/>		Diss. <input type="checkbox"/>		Method <u>6010B</u>																																																																																																	
Site Address <u>2021 6th Street, Bremerton, WA</u>		Chevron PM <u>James Kiernan</u>		Lead Consultant <u>Leidos</u>		Consultant/Office <u>Leidos / Bothell, WA</u>		Consultant Project Mgr. <u>Russ Shropshire</u>		Consultant Phone # <u>425-482-3323</u>		Sampler <u>CMW / TED</u>		3		Composite <input checked="" type="checkbox"/>		Soil <input type="checkbox"/>		Water <input type="checkbox"/>		Oil <input type="checkbox"/>		Air <input type="checkbox"/>		Total		Method		<input type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run ____ oxy's on highest hit <input type="checkbox"/> Run ____ oxy's on all hits																																																																																																							
2 Sample Identification		Collected		Grab	Composite	Soil	Water	Oil	Total	8021	8260	Naphth	8260 full scan	Oxygenates	NWTPH-Gx	NWTPH-Dx with Silica Gel Cleanup	NWTPH-Dx without Silica Gel Cleanup	WA VPH	WA EPH	Lead	Total	Diss.	Method	3 Naphthalenes (8270)																																																																																																													
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<u>SB-27-29</u>	<u>2/26</u>	<u>1650</u>	<u>X</u>		<u>X</u>				<u>7</u>	<u>X</u>				<u>X</u>		<u>X</u>					<u>X</u>	<u>X</u>																																																																																																															
<u>SB-29-16</u>	<u>2/27</u>	<u>0900</u>	<u>X</u>		<u>X</u>				<u>7</u>	<u>X</u>				<u>X</u>		<u>X</u>					<u>X</u>	<u>X</u>																																																																																																															
<u>SB-29-18</u>	<u>2/27</u>	<u>0915</u>	<u>X</u>		<u>X</u>				<u>7</u>	<u>X</u>				<u>X</u>		<u>X</u>					<u>X</u>	<u>X</u>																																																																																																															
<u>SB-28-8</u>	<u>2/27</u>	<u>0930</u>	<u>X</u>		<u>X</u>				<u>7</u>	<u>X</u>				<u>X</u>		<u>X</u>					<u>X</u>	<u>X</u>																																																																																																															
<u>DUP-1-022720</u>	<u>2/27</u>	<u>1000</u>	<u>X</u>		<u>X</u>				<u>7</u>	<u>X</u>				<u>X</u>		<u>X</u>					<u>X</u>	<u>X</u>																																																																																																															
<u>DUP-2-022720</u>	<u>2/27</u>	<u>1010</u>	<u>X</u>		<u>X</u>				<u>7</u>	<u>X</u>				<u>X</u>		<u>X</u>					<u>X</u>	<u>X</u>																																																																																																															
<u>SB-29-22</u>	<u>2/27</u>	<u>1030</u>	<u>X</u>		<u>X</u>				<u>7</u>	<u>X</u>				<u>X</u>		<u>X</u>					<u>X</u>	<u>X</u>																																																																																																															
<u>SVP-4-5</u>	<u>2/27</u>	<u>1100</u>	<u>X</u>		<u>X</u>				<u>7</u>	<u>X</u>				<u>X</u>		<u>X</u>					<u>X</u>	<u>X</u>																																																																																																															
<u>SB-28-14</u>	<u>2/27</u>	<u>1340</u>	<u>X</u>		<u>X</u>				<u>7</u>	<u>X</u>				<u>X</u>		<u>X</u>					<u>X</u>	<u>X</u>																																																																																																															
<u>SVP-5-5</u>	<u>2/27</u>	<u>1400</u>	<u>X</u>		<u>X</u>				<u>7</u>	<u>X</u>				<u>X</u>		<u>X</u>					<u>X</u>	<u>X</u>																																																																																																															
<u>SB-28-19.5</u>	<u>2/27</u>	<u>1410</u>	<u>X</u>		<u>X</u>				<u>7</u>	<u>X</u>				<u>X</u>		<u>X</u>					<u>X</u>	<u>X</u>																																																																																																															
<u>SB-28-24.5</u>	<u>2/27</u>	<u>1415</u>	<u>X</u>		<u>X</u>				<u>7</u>	<u>X</u>				<u>X</u>		<u>X</u>					<u>X</u>	<u>X</u>																																																																																																															
<u>ER-1-022720</u>	<u>2/27</u>	<u>1510</u>	<u>X</u>				<u>X</u>		<u>6</u>	<u>X</u>				<u>X</u>																																																																																																																							
7 Turnaround Time Requested (TAT) (please circle)				Relinquished by <u>Thomas Dite</u>				Date <u>3-20-20</u>		Time <u>1515</u>		Received by _____				Date _____		Time _____																																																																																																																			
Standard <input checked="" type="checkbox"/> 5 day 4 day 72 hour 48 hour 24 hour				Relinquished by _____				Date _____		Time _____		Received by _____				Date _____		Time _____																																																																																																																			
8 Data Package (circle if required)				Relinquished by Commercial Carrier:				Received by _____				Date <u>3/2/20</u>		Time <u>950</u>																																																																																																																							
Type I - Full <input checked="" type="checkbox"/> Type VI (Raw Data)				EDD (circle if required) CVX-RTBU-FI_05 (default) Other: _____				UPS <input checked="" type="checkbox"/> FedEx _____ Other _____				Temperature Upon Receipt <u>0.9/3.1</u> °C Custody Seals Intact? <input checked="" type="checkbox"/> Yes No																																																																																																																									

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories
Environmental

Act. # 13271 For Eurofins Lancaster Laboratories Environmental use only
Group # 2090354 Sample # 1271140-61
Instructions on reverse side correspond with circled numbers.

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1 Client Information				4 Matrix				5 Analyses Requested										6 Remarks																															
Facility # <u>204117</u>		WBS		Sediment <input type="checkbox"/>		Ground <input type="checkbox"/>		Surface <input type="checkbox"/>		Potable <input type="checkbox"/>		NPDES <input type="checkbox"/>		Air <input type="checkbox"/>		Oil <input type="checkbox"/>		Total Number of Containers		BTX + MTBE <input type="checkbox"/>		8021 <input type="checkbox"/>		8260 <input type="checkbox"/>		Naphth <input type="checkbox"/>		8260 full scan		Oxygenates		NWTPH-Gx		NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/>		NWTPH-Dx without Silica Gel Cleanup <input checked="" type="checkbox"/>		WA VPH <input type="checkbox"/>		WA EPH <input type="checkbox"/>		Lead Total <input checked="" type="checkbox"/>		Diss. <input type="checkbox"/>		Method <u>6010B</u>		3 Naphthalenes (8270)	
Site Address <u>2021 6th street, Bremerton, WA</u>				Chevron PM <u>James Kiernan</u>				Lead Consultant <u>Leidos</u>				Consultant/Office <u>Leidos / Bothell, WA</u>				Consultant Project Mgr. <u>Russ Shropshire</u>				Consultant Phone # <u>425-482-3323</u>				Sampler <u>CMW/JED</u>				SCR #:		<input type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run ___ oxy's on highest hit <input type="checkbox"/> Run ___ oxy's on all hits																			
2 Sample Identification		Collected		3 Grab		Composite		Soil		Water		Oil		Total Number of Containers		BTX + MTBE		8021		8260		Naphth		8260 full scan		Oxygenates		NWTPH-Gx		NWTPH-Dx with Silica Gel Cleanup		NWTPH-Dx without Silica Gel Cleanup		WA VPH		WA EPH		Lead Total		Diss.		Method							
		Date	Time	Grab	Composite	Soil	Water	Oil	Total Number of Containers	BTX + MTBE	8021	8260	Naphth	8260 full scan	Oxygenates	NWTPH-Gx	NWTPH-Dx with Silica Gel Cleanup	NWTPH-Dx without Silica Gel Cleanup	WA VPH	WA EPH	Lead Total	Diss.	Method																										
<u>ER-2-022720</u>		<u>2/27</u>	<u>1520</u>	<u>X</u>			<u>X</u>		<u>6</u>	<u>X</u>						<u>X</u>																																	
<u>SB-30-8</u>		<u>2/28</u>	<u>0950</u>	<u>X</u>		<u>X</u>			<u>7</u>	<u>X</u>						<u>X</u>		<u>X</u>			<u>X</u>																												
<u>SVP-6-5</u>		<u>2/28</u>	<u>1130</u>	<u>X</u>		<u>X</u>			<u>7</u>	<u>X</u>						<u>X</u>		<u>X</u>			<u>X</u>																												
<u>SB-30-15.5</u>		<u>2/28</u>	<u>1140</u>	<u>X</u>		<u>X</u>			<u>7</u>	<u>X</u>						<u>X</u>		<u>X</u>			<u>X</u>																												
<u>TB-1-022420</u>		<u>2/24</u>	<u>1700</u>	<u>X</u>			<u>X</u>		<u>4</u>	<u>X</u>						<u>X</u>																																	
<u>TB-2-022420</u>		<u>2/24</u>	<u>1300</u>	<u>X</u>			<u>X</u>		<u>4</u>	<u>X</u>						<u>X</u>																																	
<u>TB-3-022420</u>		<u>2/24</u>	<u>1400</u>	<u>X</u>			<u>X</u>		<u>4</u>	<u>X</u>						<u>X</u>																																	
<u>TB-4-022420</u>		<u>2/24</u>	<u>1500</u>	<u>X</u>			<u>X</u>		<u>4</u>	<u>X</u>						<u>X</u>																																	
<u>Thomas Duke</u>																																																	
7 Turnaround Time Requested (TAT) (please circle)				Relinquished by				Date		Time		Received by				Date		Time																															
Standard <input checked="" type="radio"/> 5 day 4 day 72 hour 48 hour 24 hour				<u>Thomas Duke</u>				<u>3-2-20</u>		<u>1515</u>																																							
8 Data Package (circle if required)				Relinquished by Commercial Carrier:				Date		Time		Received by				Date		Time																															
Type I - Full <input checked="" type="radio"/> Type VI (Raw Data)				UPS <input checked="" type="checkbox"/> FedEx _____ Other _____								<u>[Signature]</u>				<u>3/3/2020</u>		<u>950</u>																															
EDD (circle if required)				Temperature Upon Receipt				Custody Seals Intact?		Yes		No																																					
CVX-RTBU-FI_05 (default)				<u>0.9/3.1 °C</u>				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>																																							

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

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

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods.

Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

07 April 2020

Russ Shropshire
Leidos -WA
18939 120th Ave NE, Ste 112
Bothell, WA 98011

H&P Project: LD033020-11
Client Project: 204117 / Bremerton, WA

Dear Russ Shropshire:



Enclosed is the analytical report for the above referenced project. The data herein applies to samples as received by H&P Mobile Geochemistry, Inc. on 30-Mar-20 which were analyzed in accordance with the attached Chain of Custody record(s).

The results for all sample analyses and required QA/QC analyses are presented in the following sections and summarized in the documents:

- Sample Summary
- Case Narrative (if applicable)
- Sample Results
- Quality Control Summary
- Notes and Definitions / Appendix
- Chain of Custody
- Sampling Logs (if applicable)

Unless otherwise noted, I certify that all analyses were performed and reviewed in compliance with our Quality Systems Manual and Standard Operating Procedures. This report shall not be reproduced, except in full, without the written approval of H&P Mobile Geochemistry, Inc.

We at H&P Mobile Geochemistry, Inc. sincerely appreciate the opportunity to provide analytical services to you on this project. If you have any questions or concerns regarding this analytical report, please contact me at your convenience at 760-804-9678.

Sincerely,

Janis La Roux
Laboratory Director

H&P Mobile Geochemistry, Inc. is certified under the California ELAP and the National Environmental Laboratory Accreditation Conference (NELAC). H&P is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs, accreditation number 69070 for EPA Method TO-15, H&P Method TO-15, EPA Method 8260B and H&P 8260SV.

Leidos -WA
18939 120th Ave NE, Ste 112
Bothell, WA 98011

Project: LD033020-11
Project Number: 204117 / Bremerton, WA
Project Manager: Russ Shropshire

Reported:
07-Apr-20 13:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
EB-1-032420	E003092-01	Vapor	24-Mar-20	30-Mar-20
SVP-4-032520	E003092-02	Vapor	25-Mar-20	30-Mar-20
SVP-5-032520	E003092-03	Vapor	25-Mar-20	30-Mar-20
SVP-6-032520	E003092-04	Vapor	25-Mar-20	30-Mar-20
DUP-1-032520	E003092-05	Vapor	25-Mar-20	30-Mar-20

Leidos -WA
18939 120th Ave NE, Ste 112
Bothell, WA 98011

Project: LD033020-11
Project Number: 204117 / Bremerton, WA
Project Manager: Russ Shropshire

Reported:
07-Apr-20 13:13

Soil Vapor/Air Analysis by ASTM D1945

H&P Mobile Geochemistry, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
EB-1-032420 (E003092-01) Vapor Sampled: 24-Mar-20 Received: 30-Mar-20										
Carbon dioxide	ND		0.20	%	1	ED00114	01-Apr-20	01-Apr-20	ASTM D1945	
Oxygen	11		0.20	"	"	"	"	"	"	
Nitrogen	89		0.20	"	"	"	"	"	"	
Methane	ND		1.0	"	"	"	"	"	"	
SVP-4-032520 (E003092-02) Vapor Sampled: 25-Mar-20 Received: 30-Mar-20										
Carbon dioxide	1.8		0.20	%	1	ED00114	01-Apr-20	01-Apr-20	ASTM D1945	
Oxygen	16		0.20	"	"	"	"	"	"	
Nitrogen	82		0.20	"	"	"	"	"	"	
Methane	ND		1.0	"	"	"	"	"	"	
SVP-5-032520 (E003092-03) Vapor Sampled: 25-Mar-20 Received: 30-Mar-20										
Carbon dioxide	1.2		0.20	%	1	ED00114	01-Apr-20	01-Apr-20	ASTM D1945	
Oxygen	19		0.20	"	"	"	"	"	"	
Nitrogen	80		0.20	"	"	"	"	"	"	
Methane	ND		1.0	"	"	"	"	"	"	
SVP-6-032520 (E003092-04) Vapor Sampled: 25-Mar-20 Received: 30-Mar-20										
Carbon dioxide	1.4		0.20	%	1	ED00114	01-Apr-20	01-Apr-20	ASTM D1945	
Oxygen	19		0.20	"	"	"	"	"	"	
Nitrogen	80		0.20	"	"	"	"	"	"	
Methane	ND		1.0	"	"	"	"	"	"	
DUP-1-032520 (E003092-05) Vapor Sampled: 25-Mar-20 Received: 30-Mar-20										
Carbon dioxide	1.1		0.20	%	1	ED00114	01-Apr-20	01-Apr-20	ASTM D1945	
Oxygen	20		0.20	"	"	"	"	"	"	
Nitrogen	79		0.20	"	"	"	"	"	"	
Methane	ND		1.0	"	"	"	"	"	"	

Leidos -WA
18939 120th Ave NE, Ste 112
Bothell, WA 98011

Project: LD033020-11
Project Number: 204117 / Bremerton, WA
Project Manager: Russ Shropshire

Reported:
07-Apr-20 13:13

Soil Vapor/Air Analysis by ASTM D1945M

H&P Mobile Geochemistry, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
EB-1-032420 (E003092-01) Vapor Sampled: 24-Mar-20 Received: 30-Mar-20										
Helium (LCC)	ND		0.10	%	1	ED00114	01-Apr-20	01-Apr-20	ASTM D1945M	
SVP-4-032520 (E003092-02) Vapor Sampled: 25-Mar-20 Received: 30-Mar-20										
Helium (LCC)	ND		0.10	%	1	ED00114	01-Apr-20	01-Apr-20	ASTM D1945M	
SVP-5-032520 (E003092-03) Vapor Sampled: 25-Mar-20 Received: 30-Mar-20										
Helium (LCC)	ND		0.10	%	1	ED00114	01-Apr-20	01-Apr-20	ASTM D1945M	
SVP-6-032520 (E003092-04) Vapor Sampled: 25-Mar-20 Received: 30-Mar-20										
Helium (LCC)	ND		0.10	%	1	ED00114	01-Apr-20	01-Apr-20	ASTM D1945M	
DUP-1-032520 (E003092-05) Vapor Sampled: 25-Mar-20 Received: 30-Mar-20										
Helium (LCC)	ND		0.10	%	1	ED00114	01-Apr-20	01-Apr-20	ASTM D1945M	

Leidos -WA
18939 120th Ave NE, Ste 112
Bothell, WA 98011

Project: LD033020-11
Project Number: 204117 / Bremerton, WA
Project Manager: Russ Shropshire

Reported:
07-Apr-20 13:13

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
EB-1-032420 (E003092-01) Vapor Sampled: 24-Mar-20 Received: 30-Mar-20 J- Report										
Methyl tertiary-butyl ether (MTBE)	ND	0.3	2.9	ug/m3	1	ED00302	03-Apr-20	03-Apr-20	EPA TO-15	
Benzene	0.6	0.1	0.6	"	"	"	"	"	"	J
Toluene	8.3	0.2	3.1	"	"	"	"	"	"	
Ethylbenzene	1.4	0.2	1.8	"	"	"	"	"	"	J
m,p-Xylene	7.1	0.2	1.8	"	"	"	"	"	"	
o-Xylene	2.5	0.2	1.8	"	"	"	"	"	"	
Naphthalene	0.9	0.2	2.1	"	"	"	"	"	"	J

Surrogate: 1,2-Dichloroethane-d4 118 % 76-134 " " " "

Surrogate: Toluene-d8 101 % 78-125 " " " "

Surrogate: 4-Bromofluorobenzene 90.1 % 77-127 " " " "

SVP-4-032520 (E003092-02) Vapor Sampled: 25-Mar-20 Received: 30-Mar-20 J- Report										
Methyl tertiary-butyl ether (MTBE)	ND	0.3	2.9	ug/m3	1	ED00302	03-Apr-20	03-Apr-20	EPA TO-15	
Benzene	4.9	0.1	0.6	"	"	"	"	"	"	
Toluene	50	0.2	3.1	"	"	"	"	"	"	
Ethylbenzene	13	0.2	1.8	"	"	"	"	"	"	
m,p-Xylene	67	0.2	1.8	"	"	"	"	"	"	
o-Xylene	26	0.2	1.8	"	"	"	"	"	"	
Naphthalene	1.4	0.2	2.1	"	"	"	"	"	"	J

Surrogate: 1,2-Dichloroethane-d4 119 % 76-134 " " " "

Surrogate: Toluene-d8 107 % 78-125 " " " "

Surrogate: 4-Bromofluorobenzene 90.6 % 77-127 " " " "

SVP-5-032520 (E003092-03) Vapor Sampled: 25-Mar-20 Received: 30-Mar-20 J- Report										
Methyl tertiary-butyl ether (MTBE)	ND	0.3	2.9	ug/m3	1	ED00302	03-Apr-20	03-Apr-20	EPA TO-15	
Benzene	0.3	0.1	0.6	"	"	"	"	"	"	J
Toluene	1.6	0.2	3.1	"	"	"	"	"	"	J
Ethylbenzene	0.3	0.2	1.8	"	"	"	"	"	"	J
m,p-Xylene	0.9	0.2	1.8	"	"	"	"	"	"	J
o-Xylene	0.3	0.2	1.8	"	"	"	"	"	"	J
Naphthalene	ND	0.2	2.1	"	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 118 % 76-134 " " " "

Surrogate: Toluene-d8 104 % 78-125 " " " "

Surrogate: 4-Bromofluorobenzene 88.6 % 77-127 " " " "

Leidos -WA
18939 120th Ave NE, Ste 112
Bothell, WA 98011

Project: LD033020-11
Project Number: 204117 / Bremerton, WA
Project Manager: Russ Shropshire

Reported:
07-Apr-20 13:13

Volatile Organic Compounds by EPA TO-15

H&P Mobile Geochemistry, Inc.

Analyte	Result	MDL	Reporting Limit	Units	Dilution Factor	Batch	Prepared	Analyzed	Method	Notes
SVP-6-032520 (E003092-04) Vapor										J- Report
Sampled: 25-Mar-20 Received: 30-Mar-20										
Methyl tertiary-butyl ether (MTBE)	ND	0.3	2.9	ug/m3	1	ED00302	03-Apr-20	03-Apr-20	EPA TO-15	
Benzene	0.9	0.1	0.6	"	"	"	"	"	"	
Toluene	4.6	0.2	3.1	"	"	"	"	"	"	
Ethylbenzene	1.0	0.2	1.8	"	"	"	"	"	"	J
m,p-Xylene	2.0	0.2	1.8	"	"	"	"	"	"	
o-Xylene	0.9	0.2	1.8	"	"	"	"	"	"	J
Naphthalene	0.3	0.2	2.1	"	"	"	"	"	"	J

Surrogate: 1,2-Dichloroethane-d4 121 % 76-134 " " " "

Surrogate: Toluene-d8 105 % 78-125 " " " "

Surrogate: 4-Bromofluorobenzene 85.7 % 77-127 " " " "

DUP-1-032520 (E003092-05) Vapor										J- Report
Sampled: 25-Mar-20 Received: 30-Mar-20										
Methyl tertiary-butyl ether (MTBE)	ND	0.3	2.9	ug/m3	1	ED00302	03-Apr-20	03-Apr-20	EPA TO-15	
Benzene	4.6	0.1	0.6	"	"	"	"	"	"	
Toluene	50	0.2	3.1	"	"	"	"	"	"	
Ethylbenzene	16	0.2	1.8	"	"	"	"	"	"	
m,p-Xylene	79	0.2	1.8	"	"	"	"	"	"	
o-Xylene	33	0.2	1.8	"	"	"	"	"	"	
Naphthalene	3.1	0.2	2.1	"	"	"	"	"	"	

Surrogate: 1,2-Dichloroethane-d4 120 % 76-134 " " " "

Surrogate: Toluene-d8 107 % 78-125 " " " "

Surrogate: 4-Bromofluorobenzene 87.6 % 77-127 " " " "

Leidos -WA 18939 120th Ave NE, Ste 112 Bothell, WA 98011	Project: LD033020-11 Project Number: 204117 / Bremerton, WA Project Manager: Russ Shropshire	Reported: 07-Apr-20 13:13
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Soil Vapor/Air Analysis by ASTM D1945 - Quality Control

H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch ED00114 - GC

Blank (ED00114-BLK1)

Prepared & Analyzed: 01-Apr-20

Carbon dioxide	ND	0.20	%							
Methane	ND	1.0	"							

Leidos -WA 18939 120th Ave NE, Ste 112 Bothell, WA 98011	Project: LD033020-11 Project Number: 204117 / Bremerton, WA Project Manager: Russ Shropshire	Reported: 07-Apr-20 13:13
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Soil Vapor/Air Analysis by ASTM D1945M - Quality Control
H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch ED00114 - GC

Blank (ED00114-BLK1)

Prepared & Analyzed: 01-Apr-20

Helium (LCC)	ND	0.10	%							
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Leidos -WA
18939 120th Ave NE, Ste 112
Bothell, WA 98011

Project: LD033020-11
Project Number: 204117 / Bremerton, WA
Project Manager: Russ Shropshire

Reported:
07-Apr-20 13:13

Volatile Organic Compounds by EPA TO-15 - Quality Control
H&P Mobile Geochemistry, Inc.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch ED00302 - TO-15

Blank (ED00302-BLK1)

Prepared & Analyzed: 03-Apr-20

Methyl tertiary-butyl ether (MTBE)	ND	2.9	ug/m3							
Benzene	ND	0.6	"							
Toluene	ND	3.1	"							
Ethylbenzene	ND	1.8	"							
m,p-Xylene	ND	1.8	"							
o-Xylene	ND	1.8	"							
Naphthalene	ND	2.1	"							

Surrogate: 1,2-Dichloroethane-d4	49.8		"	42.7		117	76-134			
Surrogate: Toluene-d8	42.2		"	41.6		102	78-125			
Surrogate: 4-Bromofluorobenzene	64.5		"	72.6		88.9	77-127			

LCS (ED00302-BS1)

Prepared & Analyzed: 03-Apr-20

Benzene	11	0.6	ug/m3	13.0		87.1	69-119			
Toluene	13	3.1	"	15.4		86.2	66-119			
Ethylbenzene	16	1.8	"	17.7		89.8	70-124			
m,p-Xylene	15	1.8	"	17.7		85.8	61-134			
o-Xylene	15	1.8	"	17.7		82.3	67-125			

Surrogate: 1,2-Dichloroethane-d4	48.4		"	42.7		113	76-134			
Surrogate: Toluene-d8	40.7		"	41.6		98.0	78-125			
Surrogate: 4-Bromofluorobenzene	67.9		"	72.6		93.5	77-127			

LCS Dup (ED00302-BSD1)

Prepared & Analyzed: 03-Apr-20

Benzene	12	0.6	ug/m3	13.0		90.9	69-119	4.21	25	
Toluene	13	3.1	"	15.4		84.7	66-119	1.74	25	
Ethylbenzene	16	1.8	"	17.7		87.8	70-124	2.24	25	
m,p-Xylene	15	1.8	"	17.7		82.8	61-134	3.54	25	
o-Xylene	15	1.8	"	17.7		82.1	67-125	0.303	25	

Surrogate: 1,2-Dichloroethane-d4	48.3		"	42.7		113	76-134			
Surrogate: Toluene-d8	40.5		"	41.6		97.4	78-125			
Surrogate: 4-Bromofluorobenzene	65.6		"	72.6		90.4	77-127			

Leidos -WA

18939 120th Ave NE, Ste 112

Bothell, WA 98011

Project: LD033020-11

Project Number: 204117 / Bremerton, WA

Project Manager: Russ Shropshire

Reported:

07-Apr-20 13:13

Notes and Definitions

J- Report This sample is reported to the MDL or LOD determined for this method. All confirmed hits above the listed MDL or LOD value and below the RL/LOQ, will be flagged with a "J" result. If an MDL or LOD is not listed, the analyte is ND at the RL.

J Detected but below the RL/LOQ; therefore, result is an estimated concentration.

LCC Leak Check Compound

ND Analyte NOT DETECTED at or above the reporting limit

MDL Method Detection Limit

%REC Percent Recovery

RPD Relative Percent Difference

All soil results are reported in wet weight.

Appendix

H&P Mobile Geochemistry, Inc. is approved as an Environmental Testing Laboratory and Mobile Laboratory in accordance with the DoD-ELAP Program and ISO/IEC 17025:2005 programs through PJLA, accreditation number 69070 for EPA Method TO-15, H&P Method TO-15, EPA Method 8260B and H&P 8260SV.

H&P is approved by the State of California as an Environmental Laboratory and Mobile Laboratory in conformance with the Environmental Laboratory Accreditation Program (ELAP) for the category of Volatile and Semi-Volatile Organic Chemistry of Hazardous Waste, certification numbers 2740, 2741, 2743 & 2745.

H&P is approved by the State of Louisiana Department of Environmental Quality under the National Environmental Laboratory Accreditation Conference (NELAC) certification number 04138.

The complete list of stationary and mobile laboratory certifications along with the fields of testing (FOTs) and analyte lists are available at www.handpmg.com/about/certifications.

Lab Client and Project Information		
Lab Client/Consultant: <u>Leidos</u>	Project Name / #: <u>204117</u>	
Lab Client Project Manager: <u>Russ Shropshire</u>	Project Location: <u>Bremerton, WA</u>	
Lab Client Address: <u>18939 120th Ave NE, Suite 112</u>	Report E-Mail(s): <u>shropshirer@leidos.com</u>	
Lab Client City, State, Zip: <u>Bothell, WA 98011</u>	<u>cransom@leidos.com</u>	
Phone Number: <u>206-321-2387</u>		
Reporting Requirements	Turnaround Time	Sampler Information
<input type="checkbox"/> Standard Report <input checked="" type="checkbox"/> Level III <input type="checkbox"/> Level IV <input type="checkbox"/> Excel EDD <input type="checkbox"/> Other EDD: _____ <input type="checkbox"/> CA Geotracker Global ID: _____	<input checked="" type="checkbox"/> Standard (7 days for preliminary report, 10 days for final report) <input type="checkbox"/> Rush (specify): _____	Sampler(s): <u>RSS / TED</u> Signature: _____ Date: _____

Sample Receipt (Lab Use Only)	
Date Rec'd: <u>3/30/20</u>	Control #: <u>200262.01</u>
H&P Project # <u>LD033020-11</u>	
Lab Work Order # <u>E003092</u>	
Sample Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> See Notes Below	
Receipt Gauge ID: <u>70020</u>	Temp: <u>RT</u>
Outside Lab:	
Receipt Notes/Tracking #: <u>1293TT619049443973</u>	
Lab PM Initials: <u>KB</u>	

Additional Instructions to Laboratory: MDL report for all analytes, IRLS - KB 3/30
TO-15 - Report BTEX, MTBE, and Naphthalene only
 * Preferred VOC units (please choose one):
 µg/L µg/m³ ppbv ppmv
Report CH₄ by ASTM method - KB 3/30

SAMPLE NAME	FIELD POINT NAME (if applicable)	DATE mm/dd/yy	TIME 24hr clock	SAMPLE TYPE Indoor Air (IA), Ambient Air (AA), Subslab (SS), Soil Vapor (SV)	CONTAINER SIZE & TYPE 400mL/1L/6L Summa, Tedlar, Tube, etc.	CONTAINER ID (###)	Lab use only: Receipt Vac	VOCs Standard Full List		VOCs Short List (Project List)		Oxygenates	Naphthalene	TPHV as Gas	Aromatic/Aliphatic Fractions	Leak Check Compound	Methane by EPA 8015m	Fixed Gases by ASTM D1945	Helium/Methane
								<input type="checkbox"/> 8260SV	<input type="checkbox"/> TO-15	<input type="checkbox"/> 8260SV	<input checked="" type="checkbox"/> TO-15								
<u>EB-1-032420</u>	<u>NA</u>	<u>03/24/20</u>	<u>1717</u>	<u>SV</u>	<u>1L Summa</u>	<u>424</u>	<u>-2.54</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>							<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<u>SVP-4-032520</u>	<u>SVP-4</u>	<u>3/25/20</u>	<u>12521</u>	↓	↓	<u>437</u>	<u>0.05</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
<u>SVP-5-032520</u>	<u>SVP-5</u>	↓	<u>1301</u>	↓	↓	<u>441</u>	<u>0.25</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
<u>SVP-6-032520</u>	<u>SVP-6</u>	↓	<u>1108</u>	↓	↓	<u>748</u>	<u>0.30</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
<u>DUP-1-032520</u>	<u>NA</u>	↓	<u>-</u>	↓	↓	<u>434</u>	<u>0.10</u>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								
<u>7-25-2020</u>																			

Approved/Relinquished by: <u>Russ Shropshire</u>	Company: <u>Leidos</u>	Date: <u>3-25-2020</u>	Time: <u>1545</u>	Received by: <u>Jen Unsworth</u>	Company: <u>H&P</u>	Date: <u>3/30/20</u>	Time: <u>12:45pm</u>
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:
Approved/Relinquished by:	Company:	Date:	Time:	Received by:	Company:	Date:	Time:

*Approval constitutes as authorization to proceed with analysis and acceptance of conditions on back

8/27/2020

Mr. Russ Shropshire
Leidos
18939 120th Ave NE
Ste 112
Bothell WA 98011

Project Name: Newman's Chevron

Project #: 204117

Workorder #: 2008555A

Dear Mr. Russ Shropshire

The following report includes the data for the above referenced project for sample(s) received on 8/21/2020 at Air Toxics Ltd.

The data and associated QC analyzed by Modified TO-15 SIM are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Alexandra Winslow at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Alexandra Winslow
Project Manager

WORK ORDER #: 2008555A

Work Order Summary

CLIENT:	Mr. Russ Shropshire Leidos 18939 120th Ave NE Ste 112 Bothell, WA 98011	BILL TO:	Accounts Payable - Bothell Leidos 18939 120th Ave NE Ste 112 Bothell, WA 98011
PHONE:	425-485-5800	P.O. #	P010242812
FAX:		PROJECT #	204117 Newman's Chevron
DATE RECEIVED:	08/21/2020	CONTACT:	Alexandra Winslow
DATE COMPLETED:	08/27/2020		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SVP-4-081920	Modified TO-15 SIM	3.5 "Hg	5 psi
02A	SVP-5-081920	Modified TO-15 SIM	4.5 "Hg	5 psi
03A	SVP-6-081920	Modified TO-15 SIM	3.0 "Hg	5 psi
04A	DUP-1-081920	Modified TO-15 SIM	4.5 "Hg	5 psi
05A	AMB-1-081920	Modified TO-15 SIM	4.0 "Hg	5 psi
06A	EB-1-081920	Modified TO-15 SIM	3.5 "Hg	5 psi
07A	Lab Blank	Modified TO-15 SIM	NA	NA
07B	Lab Blank	Modified TO-15 SIM	NA	NA
08A	CCV	Modified TO-15 SIM	NA	NA
08B	CCV	Modified TO-15 SIM	NA	NA
09A	LCS	Modified TO-15 SIM	NA	NA
09AA	LCSD	Modified TO-15 SIM	NA	NA
09B	LCS	Modified TO-15 SIM	NA	NA
09BB	LCSD	Modified TO-15 SIM	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 08/27/20

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209219, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-19-14, UT NELAP – CA009332019-12, VA NELAP - 10615, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005-013, Effective date: 10/18/2019, Expiration date: 10/17/2020.

Eurofins Air Toxics, LLC certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
 (916) 985-1000 . (800) 985-5955 . FAX (916) 351-8279

LABORATORY NARRATIVE
Modified TO-15 SIM
Leidos
Workorder# 2008555A

Six 6 Liter Summa Canister (SIM Certified) samples were received on August 21, 2020. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the EATL modifications.

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
ICAL %RSD acceptance criteria	$\leq 30\%$ RSD with 2 compounds allowed out to $< 40\%$ RSD	Project specific; default criteria is $\leq 30\%$ RSD with 10% of compounds allowed out to $< 40\%$ RSD
Daily Calibration	$\pm 30\%$ Difference	Project specific; default criteria is $\leq 30\%$ Difference with 10% of compounds allowed out up to $\leq 40\%$.; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: SVP-4-081920

Lab ID#: 2008555A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.076	0.36	0.40	1.9

Client Sample ID: SVP-5-081920

Lab ID#: 2008555A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	0.079	0.091	0.30	0.34
Ethyl Benzene	0.032	0.043	0.14	0.19
Naphthalene	0.079	0.83	0.41	4.4

Client Sample ID: SVP-6-081920

Lab ID#: 2008555A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	0.074	0.081	0.28	0.31
Ethyl Benzene	0.030	0.21	0.13	0.91
Naphthalene	0.074	0.90	0.39	4.7

Client Sample ID: DUP-1-081920

Lab ID#: 2008555A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.079	0.084	0.25	0.27
Ethyl Benzene	0.032	0.035	0.14	0.15
Naphthalene	0.079	0.84	0.41	4.4

Client Sample ID: AMB-1-081920

Lab ID#: 2008555A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	0.078	0.26	0.29	0.96
Ethyl Benzene	0.031	0.046	0.13	0.20



Air Toxics

Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: AMB-1-081920

Lab ID#: 2008555A-05A

m,p-Xylene	0.062	0.16	0.27	0.68
o-Xylene	0.031	0.052	0.13	0.23

Client Sample ID: EB-1-081920

Lab ID#: 2008555A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	0.076	0.32	0.29	1.2
Ethyl Benzene	0.030	0.052	0.13	0.23
m,p-Xylene	0.061	0.18	0.26	0.77
o-Xylene	0.030	0.063	0.13	0.27



Air Toxics

Client Sample ID: SVP-4-081920

Lab ID#: 2008555A-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	20082517sim	Date of Collection:	8/19/20 15:03:00
Dil. Factor:	1.52	Date of Analysis:	8/25/20 06:40 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.076	Not Detected	0.24	Not Detected
Toluene	0.076	Not Detected	0.29	Not Detected
Ethyl Benzene	0.030	Not Detected	0.13	Not Detected
m,p-Xylene	0.061	Not Detected	0.26	Not Detected
o-Xylene	0.030	Not Detected	0.13	Not Detected
Methyl tert-butyl ether	0.15	Not Detected	0.55	Not Detected
Naphthalene	0.076	0.36	0.40	1.9

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	115	70-130
4-Bromofluorobenzene	95	70-130



Air Toxics

Client Sample ID: SVP-5-081920

Lab ID#: 2008555A-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	20082518sim	Date of Collection:	8/19/20 13:00:00
Dil. Factor:	1.58	Date of Analysis:	8/25/20 07:19 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.079	Not Detected	0.25	Not Detected
Toluene	0.079	0.091	0.30	0.34
Ethyl Benzene	0.032	0.043	0.14	0.19
m,p-Xylene	0.063	Not Detected	0.27	Not Detected
o-Xylene	0.032	Not Detected	0.14	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.57	Not Detected
Naphthalene	0.079	0.83	0.41	4.4

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	112	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: SVP-6-081920

Lab ID#: 2008555A-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	20082608sim	Date of Collection:	8/19/20 10:50:00
Dil. Factor:	1.49	Date of Analysis:	8/26/20 11:52 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.074	Not Detected	0.24	Not Detected
Toluene	0.074	0.081	0.28	0.31
Ethyl Benzene	0.030	0.21	0.13	0.91
m,p-Xylene	0.060	Not Detected	0.26	Not Detected
o-Xylene	0.030	Not Detected	0.13	Not Detected
Methyl tert-butyl ether	0.15	Not Detected	0.54	Not Detected
Naphthalene	0.074	0.90	0.39	4.7

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	130	70-130
Toluene-d8	113	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: DUP-1-081920

Lab ID#: 2008555A-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	20082520sim	Date of Collection:	8/19/20
Dil. Factor:	1.58	Date of Analysis:	8/25/20 08:38 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.079	0.084	0.25	0.27
Toluene	0.079	Not Detected	0.30	Not Detected
Ethyl Benzene	0.032	0.035	0.14	0.15
m,p-Xylene	0.063	Not Detected	0.27	Not Detected
o-Xylene	0.032	Not Detected	0.14	Not Detected
Methyl tert-butyl ether	0.16	Not Detected	0.57	Not Detected
Naphthalene	0.079	0.84	0.41	4.4

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	114	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: AMB-1-081920

Lab ID#: 2008555A-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	20082521sim	Date of Collection:	8/19/20 16:46:00
Dil. Factor:	1.55	Date of Analysis:	8/25/20 09:17 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.078	Not Detected	0.25	Not Detected
Toluene	0.078	0.26	0.29	0.96
Ethyl Benzene	0.031	0.046	0.13	0.20
m,p-Xylene	0.062	0.16	0.27	0.68
o-Xylene	0.031	0.052	0.13	0.23
Methyl tert-butyl ether	0.16	Not Detected	0.56	Not Detected
Naphthalene	0.078	Not Detected	0.41	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	99	70-130
Toluene-d8	113	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: EB-1-081920

Lab ID#: 2008555A-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	20082609sim	Date of Collection:	8/19/20 16:46:00
Dil. Factor:	1.52	Date of Analysis:	8/26/20 12:48 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.076	Not Detected	0.24	Not Detected
Toluene	0.076	0.32	0.29	1.2
Ethyl Benzene	0.030	0.052	0.13	0.23
m,p-Xylene	0.061	0.18	0.26	0.77
o-Xylene	0.030	0.063	0.13	0.27
Methyl tert-butyl ether	0.15	Not Detected	0.55	Not Detected
Naphthalene	0.076	Not Detected	0.40	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	109	70-130
Toluene-d8	114	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2008555A-07A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	20082506sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/25/20 10:03 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.050	Not Detected	0.16	Not Detected
Toluene	0.050	Not Detected	0.19	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected
Naphthalene	0.050	Not Detected	0.26	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	105	70-130
Toluene-d8	111	70-130
4-Bromofluorobenzene	91	70-130



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2008555A-07B

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	20082607sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/26/20 10:35 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.050	Not Detected	0.16	Not Detected
Toluene	0.050	Not Detected	0.19	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected
Naphthalene	0.050	Not Detected	0.26	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	101	70-130
Toluene-d8	112	70-130
4-Bromofluorobenzene	96	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 2008555A-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	20082502sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/25/20 06:41 AM

Compound	%Recovery
Benzene	96
Toluene	100
Ethyl Benzene	98
m,p-Xylene	98
o-Xylene	97
Methyl tert-butyl ether	94
Naphthalene	79

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	110	70-130
4-Bromofluorobenzene	84	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 2008555A-08B

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	20082602sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/26/20 06:34 AM

Compound	%Recovery
Benzene	100
Toluene	108
Ethyl Benzene	100
m,p-Xylene	100
o-Xylene	98
Methyl tert-butyl ether	95
Naphthalene	95

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	91	70-130
Toluene-d8	119	70-130
4-Bromofluorobenzene	85	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 2008555A-09A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	20082503sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/25/20 07:28 AM

Compound	%Recovery	Method Limits
Benzene	99	70-130
Toluene	108	70-130
Ethyl Benzene	94	70-130
m,p-Xylene	93	70-130
o-Xylene	92	70-130
Methyl tert-butyl ether	91	70-130
Naphthalene	89	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	89	70-130
Toluene-d8	124	70-130
4-Bromofluorobenzene	85	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2008555A-09AA

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	20082504sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/25/20 08:07 AM

Compound	%Recovery	Method Limits
Benzene	92	70-130
Toluene	94	70-130
Ethyl Benzene	93	70-130
m,p-Xylene	91	70-130
o-Xylene	90	70-130
Methyl tert-butyl ether	89	70-130
Naphthalene	89	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	90	70-130
Toluene-d8	109	70-130
4-Bromofluorobenzene	84	70-130



Air Toxics

Client Sample ID: LCS

Lab ID#: 2008555A-09B

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	20082603sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/26/20 07:21 AM

Compound	%Recovery	Method Limits
Benzene	93	70-130
Toluene	96	70-130
Ethyl Benzene	95	70-130
m,p-Xylene	94	70-130
o-Xylene	93	70-130
Methyl tert-butyl ether	84	70-130
Naphthalene	88	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	85	70-130
Toluene-d8	112	70-130
4-Bromofluorobenzene	84	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2008555A-09BB

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	20082604sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/26/20 08:01 AM

Compound	%Recovery	Method Limits
Benzene	92	70-130
Toluene	95	70-130
Ethyl Benzene	95	70-130
m,p-Xylene	94	70-130
o-Xylene	93	70-130
Methyl tert-butyl ether	84	70-130
Naphthalene	81	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	85	70-130
Toluene-d8	111	70-130
4-Bromofluorobenzene	85	70-130

8/28/2020

Mr. Russ Shropshire

Leidos

18939 120th Ave NE

Ste 112

Bothell WA 98011

Project Name: Newman's Chevron

Project #: 204117

Workorder #: 2008555B

Dear Mr. Russ Shropshire

The following report includes the data for the above referenced project for sample(s) received on 8/21/2020 at Air Toxics Ltd.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics Inc. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Alexandra Winslow at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Alexandra Winslow

Project Manager

WORK ORDER #: 2008555B

Work Order Summary

CLIENT:	Mr. Russ Shropshire Leidos 18939 120th Ave NE Ste 112 Bothell, WA 98011	BILL TO:	Accounts Payable - Bothell Leidos 18939 120th Ave NE Ste 112 Bothell, WA 98011
PHONE:	425-485-5800	P.O. #	P010242812
FAX:		PROJECT #	204117 Newman's Chevron
DATE RECEIVED:	08/21/2020	CONTACT:	Alexandra Winslow
DATE COMPLETED:	08/28/2020		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SVP-4-081920	Modified ASTM D-1946	3.5 "Hg	5 psi
02A	SVP-5-081920	Modified ASTM D-1946	4.5 "Hg	5 psi
03A	SVP-6-081920	Modified ASTM D-1946	3.0 "Hg	5 psi
04A	DUP-1-081920	Modified ASTM D-1946	4.5 "Hg	5 psi
05A	AMB-1-081920	Modified ASTM D-1946	4.0 "Hg	5 psi
06A	EB-1-081920	Modified ASTM D-1946	3.5 "Hg	5 psi
07A	Lab Blank	Modified ASTM D-1946	NA	NA
07B	Lab Blank	Modified ASTM D-1946	NA	NA
08A	LCS	Modified ASTM D-1946	NA	NA
08AA	LCSD	Modified ASTM D-1946	NA	NA
08B	LCS	Modified ASTM D-1946	NA	NA
08BB	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 08/28/20

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209219, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-19-14, UT NELAP – CA009332019-12, VA NELAP - 10615, WA NELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)

Accreditation number: CA300005-013, Effective date: 10/18/2019, Expiration date: 10/17/2020.

Eurofins Air Toxics, LLC certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
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LABORATORY NARRATIVE
Modified ASTM D-1946
Leidos
Workorder# 2008555B

Six 6 Liter Summa Canister (SIM Certified) samples were received on August 21, 2020. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Since Nitrogen is used to pressurize samples, the reported Nitrogen values are calculated by adding all the sample components and subtracting from 100%.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the EATL modifications.

<i>Requirement</i>	<i>ASTM D-1946</i>	<i>ATL Modifications</i>
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A minimum of 5-point calibration curve is performed. Quantitation is based on average Response Factor.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a $\geq 95\%$ accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections > 5 X's the RL.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit.

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the detection limit.

M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: SVP-4-081920

Lab ID#: 2008555B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.15	18
Nitrogen	0.15	79
Carbon Dioxide	0.015	2.7

Client Sample ID: SVP-5-081920

Lab ID#: 2008555B-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	17
Nitrogen	0.16	80
Carbon Dioxide	0.016	3.2

Client Sample ID: SVP-6-081920

Lab ID#: 2008555B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.15	16
Nitrogen	0.15	79
Carbon Dioxide	0.015	5.4

Client Sample ID: DUP-1-081920

Lab ID#: 2008555B-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	17
Nitrogen	0.16	80
Carbon Dioxide	0.016	3.2

Client Sample ID: AMB-1-081920

Lab ID#: 2008555B-05A

Compound	Rpt. Limit (%)	Amount (%)
----------	----------------	------------



Air Toxics

Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: AMB-1-081920

Lab ID#: 2008555B-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	21
Methane	0.00016	0.00019
Nitrogen	0.16	79
Carbon Dioxide	0.016	0.044

Client Sample ID: EB-1-081920

Lab ID#: 2008555B-06A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.15	21
Methane	0.00015	0.00019
Nitrogen	0.15	79
Carbon Dioxide	0.015	0.044



Air Toxics

Client Sample ID: SVP-4-081920

Lab ID#: 2008555B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10082622	Date of Collection:	8/19/20 3:03:00 PM
Dil. Factor:	1.52	Date of Analysis:	8/27/20 08:20 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.15	18
Methane	0.00015	Not Detected
Helium	0.076	Not Detected
Hydrogen	0.015	Not Detected
Nitrogen	0.15	79
Carbon Dioxide	0.015	2.7

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: SVP-5-081920

Lab ID#: 2008555B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10082623	Date of Collection:	8/19/20 1:00:00 PM
Dil. Factor:	1.58	Date of Analysis:	8/27/20 08:43 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	17
Methane	0.00016	Not Detected
Helium	0.079	Not Detected
Hydrogen	0.016	Not Detected
Nitrogen	0.16	80
Carbon Dioxide	0.016	3.2

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: SVP-6-081920

Lab ID#: 2008555B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10082624	Date of Collection:	8/19/20 10:50:00 AM
Dil. Factor:	1.49	Date of Analysis:	8/27/20 09:08 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.15	16
Methane	0.00015	Not Detected
Helium	0.074	Not Detected
Hydrogen	0.015	Not Detected
Nitrogen	0.15	79
Carbon Dioxide	0.015	5.4

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: DUP-1-081920

Lab ID#: 2008555B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10082625	Date of Collection:	8/19/20
Dil. Factor:	1.58	Date of Analysis:	8/27/20 09:32 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	17
Methane	0.00016	Not Detected
Helium	0.079	Not Detected
Hydrogen	0.016	Not Detected
Nitrogen	0.16	80
Carbon Dioxide	0.016	3.2

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: AMB-1-081920

Lab ID#: 2008555B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10082626	Date of Collection:	8/19/20 4:46:00 PM
Dil. Factor:	1.55	Date of Analysis:	8/27/20 09:55 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	21
Methane	0.00016	0.00019
Helium	0.078	Not Detected
Hydrogen	0.016	Not Detected
Nitrogen	0.16	79
Carbon Dioxide	0.016	0.044

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: EB-1-081920

Lab ID#: 2008555B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10082627	Date of Collection:	8/19/20 4:46:00 PM
Dil. Factor:	1.52	Date of Analysis:	8/27/20 10:31 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.15	21
Methane	0.00015	0.00019
Helium	0.076	Not Detected
Hydrogen	0.015	Not Detected
Nitrogen	0.15	79
Carbon Dioxide	0.015	0.044

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2008555B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10082605	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/26/20 04:18 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Methane	0.00010	Not Detected
Nitrogen	0.10	Not Detected
Carbon Dioxide	0.010	Not Detected

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2008555B-07B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10082604c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	8/26/20 03:55 PM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected
Hydrogen	0.010	Not Detected

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCS

Lab ID#: 2008555B-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10082602	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/26/20 02:59 PM

Compound	%Recovery	Method Limits
Oxygen	98	85-115
Methane	108	85-115
Helium	99	85-115
Nitrogen	97	85-115
Carbon Dioxide	109	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2008555B-08AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10082630	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/27/20 12:18 PM

Compound	%Recovery	Method Limits
Oxygen	98	85-115
Methane	109	85-115
Helium	98	85-115
Nitrogen	97	85-115
Carbon Dioxide	109	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCS

Lab ID#: 2008555B-08B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10082628c	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/27/20 11:13 AM

Compound	%Recovery	Method Limits
Hydrogen	102	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2008555B-08BB

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10082629c	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 8/27/20 11:41 AM

Compound	%Recovery	Method Limits
Hydrogen	98	85-115

Container Type: NA - Not Applicable

ANALYTICAL REPORT

Eurofins TestAmerica, Burlington
30 Community Drive
Suite 11
South Burlington, VT 05403
Tel: (802)660-1990

Laboratory Job ID: 200-54945-1
Laboratory Sample Delivery Group: 200-54945-1
Client Project/Site: Newman's Chevron
Revision: 1

For:
Eurofins Air Toxics, Inc.
180 Blue Ravine Road
Suite B
Folsom, California 95630

Attn: Alexandra Winslow



Authorized for release by:
9/17/2020 10:16:12 AM

Elizabeth Nye, Project Manager I
(802)660-1990
Elizabeth.Nye@Eurofinset.com

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-54945-1
SDG: 200-54945-1

Qualifiers

Air - GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-54945-1
SDG: 200-54945-1

Job ID: 200-54945-1

Laboratory: Eurofins TestAmerica, Burlington

Narrative

CASE NARRATIVE

Client: Eurofins Air Toxics, Inc.

Project: Newman's Chevron

Report Number: 200-54945-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

REVISION SUMMARY

This report was revised on 09/17/2020 to apply the dilution factor to the samples.

RECEIPT

The samples were received on 08/31/2020; the samples arrived in good condition.

PETROLEUM HYDROCARBON

Samples SVP-4-081920, SVP-5-081920, SVP-6-081920, DUP-1-081920, AMB-1-081920 and EB-1-081920 were analyzed for petroleum hydrocarbon in accordance with MADEP APH. The samples were analyzed on 09/08/2020.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-54945-1
SDG: 200-54945-1

Client Sample ID: SVP-4-081920

Lab Sample ID: 200-54945-1

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	2.7		1.6	1.6	ug/m3	1.51		APH	Total/NA
C5-C8 Aliphatics (adjusted)	18		14	14	ug/m3	1.51		APH	Total/NA
C9-C12 Aliphatics (adjusted)	11		11	11	ug/m3	1.51		APH	Total/NA

Client Sample ID: SVP-5-081920

Lab Sample ID: 200-54945-2

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	4.1		1.7	1.7	ug/m3	1.58		APH	Total/NA
C5-C8 Aliphatics (adjusted)	99		14	14	ug/m3	1.58		APH	Total/NA
C9-C12 Aliphatics (adjusted)	15		11	11	ug/m3	1.58		APH	Total/NA

Client Sample ID: SVP-6-081920

Lab Sample ID: 200-54945-3

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	4.3		1.6	1.6	ug/m3	1.49		APH	Total/NA
C5-C8 Aliphatics (adjusted)	410		14	14	ug/m3	1.49		APH	Total/NA
C9-C12 Aliphatics (adjusted)	39		11	11	ug/m3	1.49		APH	Total/NA

Client Sample ID: DUP-1-081920

Lab Sample ID: 200-54945-4

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	3.9		1.7	1.7	ug/m3	1.58		APH	Total/NA
C5-C8 Aliphatics (adjusted)	95		14	14	ug/m3	1.58		APH	Total/NA
C9-C12 Aliphatics (adjusted)	13		11	11	ug/m3	1.58		APH	Total/NA

Client Sample ID: AMB-1-081920

Lab Sample ID: 200-54945-5

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
C5-C8 Aliphatics (adjusted)	22		13	13	ug/m3	1.47		APH	Total/NA

Client Sample ID: EB-1-081920

Lab Sample ID: 200-54945-6

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
C5-C8 Aliphatics (adjusted)	25		14	14	ug/m3	1.52		APH	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Burlington

Client Sample Results

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-54945-1
SDG: 200-54945-1

Client Sample ID: SVP-4-081920

Lab Sample ID: 200-54945-1

Date Collected: 08/19/20 15:03

Matrix: Air

Date Received: 08/31/20 09:48

Sample Container: Summa Canister 6L

Method: APH - Air Phase Petroleum Hydrocarbons

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butadiene	0.66	U	0.66	0.66	ug/m3			09/08/20 13:55	1.51
Methyl tert-butyl ether	1.1	U	1.1	1.1	ug/m3			09/08/20 13:55	1.51
Benzene	0.97	U	0.97	0.97	ug/m3			09/08/20 13:55	1.51
Toluene	1.1	U	1.1	1.1	ug/m3			09/08/20 13:55	1.51
Ethylbenzene	1.3	U	1.3	1.3	ug/m3			09/08/20 13:55	1.51
m-Xylene & p-Xylene	1.3	U	1.3	1.3	ug/m3			09/08/20 13:55	1.51
o-Xylene	1.3	U	1.3	1.3	ug/m3			09/08/20 13:55	1.51
Naphthalene	2.7		1.6	1.6	ug/m3			09/08/20 13:55	1.51
C9-C10 Aromatics	7.6	U	7.6	7.6	ug/m3			09/08/20 13:55	1.51
C5-C8 Aliphatics (adjusted)	18		14	14	ug/m3			09/08/20 13:55	1.51
C9-C12 Aliphatics (adjusted)	11		11	11	ug/m3			09/08/20 13:55	1.51

Client Sample ID: SVP-5-081920

Lab Sample ID: 200-54945-2

Date Collected: 08/19/20 13:00

Matrix: Air

Date Received: 08/31/20 09:48

Sample Container: Summa Canister 6L

Method: APH - Air Phase Petroleum Hydrocarbons

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butadiene	0.70	U	0.70	0.70	ug/m3			09/08/20 14:48	1.58
Methyl tert-butyl ether	1.1	U	1.1	1.1	ug/m3			09/08/20 14:48	1.58
Benzene	1.0	U	1.0	1.0	ug/m3			09/08/20 14:48	1.58
Toluene	1.2	U	1.2	1.2	ug/m3			09/08/20 14:48	1.58
Ethylbenzene	1.4	U	1.4	1.4	ug/m3			09/08/20 14:48	1.58
m-Xylene & p-Xylene	1.4	U	1.4	1.4	ug/m3			09/08/20 14:48	1.58
o-Xylene	1.4	U	1.4	1.4	ug/m3			09/08/20 14:48	1.58
Naphthalene	4.1		1.7	1.7	ug/m3			09/08/20 14:48	1.58
C9-C10 Aromatics	7.9	U	7.9	7.9	ug/m3			09/08/20 14:48	1.58
C5-C8 Aliphatics (adjusted)	99		14	14	ug/m3			09/08/20 14:48	1.58
C9-C12 Aliphatics (adjusted)	15		11	11	ug/m3			09/08/20 14:48	1.58

Client Sample ID: SVP-6-081920

Lab Sample ID: 200-54945-3

Date Collected: 08/19/20 10:50

Matrix: Air

Date Received: 08/31/20 09:48

Sample Container: Summa Canister 6L

Method: APH - Air Phase Petroleum Hydrocarbons

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butadiene	0.66	U	0.66	0.66	ug/m3			09/08/20 15:42	1.49
Methyl tert-butyl ether	1.1	U	1.1	1.1	ug/m3			09/08/20 15:42	1.49
Benzene	0.95	U	0.95	0.95	ug/m3			09/08/20 15:42	1.49
Toluene	1.1	U	1.1	1.1	ug/m3			09/08/20 15:42	1.49
Ethylbenzene	1.3	U	1.3	1.3	ug/m3			09/08/20 15:42	1.49
m-Xylene & p-Xylene	1.3	U	1.3	1.3	ug/m3			09/08/20 15:42	1.49
o-Xylene	1.3	U	1.3	1.3	ug/m3			09/08/20 15:42	1.49
Naphthalene	4.3		1.6	1.6	ug/m3			09/08/20 15:42	1.49
C9-C10 Aromatics	7.5	U	7.5	7.5	ug/m3			09/08/20 15:42	1.49
C5-C8 Aliphatics (adjusted)	410		14	14	ug/m3			09/08/20 15:42	1.49
C9-C12 Aliphatics (adjusted)	39		11	11	ug/m3			09/08/20 15:42	1.49

Eurofins TestAmerica, Burlington

Client Sample Results

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-54945-1
SDG: 200-54945-1

Client Sample ID: DUP-1-081920

Lab Sample ID: 200-54945-4

Date Collected: 08/19/20 00:00

Matrix: Air

Date Received: 08/31/20 09:48

Sample Container: Summa Canister 6L

Method: APH - Air Phase Petroleum Hydrocarbons

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butadiene	0.70	U	0.70	0.70	ug/m3			09/08/20 16:34	1.58
Methyl tert-butyl ether	1.1	U	1.1	1.1	ug/m3			09/08/20 16:34	1.58
Benzene	1.0	U	1.0	1.0	ug/m3			09/08/20 16:34	1.58
Toluene	1.2	U	1.2	1.2	ug/m3			09/08/20 16:34	1.58
Ethylbenzene	1.4	U	1.4	1.4	ug/m3			09/08/20 16:34	1.58
m-Xylene & p-Xylene	1.4	U	1.4	1.4	ug/m3			09/08/20 16:34	1.58
o-Xylene	1.4	U	1.4	1.4	ug/m3			09/08/20 16:34	1.58
Naphthalene	3.9		1.7	1.7	ug/m3			09/08/20 16:34	1.58
C9-C10 Aromatics	7.9	U	7.9	7.9	ug/m3			09/08/20 16:34	1.58
C5-C8 Aliphatics (adjusted)	95		14	14	ug/m3			09/08/20 16:34	1.58
C9-C12 Aliphatics (adjusted)	13		11	11	ug/m3			09/08/20 16:34	1.58

Client Sample ID: AMB-1-081920

Lab Sample ID: 200-54945-5

Date Collected: 08/19/20 16:46

Matrix: Air

Date Received: 08/31/20 09:48

Sample Container: Summa Canister 6L

Method: APH - Air Phase Petroleum Hydrocarbons

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butadiene	0.65	U	0.65	0.65	ug/m3			09/08/20 17:26	1.47
Methyl tert-butyl ether	1.1	U	1.1	1.1	ug/m3			09/08/20 17:26	1.47
Benzene	0.94	U	0.94	0.94	ug/m3			09/08/20 17:26	1.47
Toluene	1.1	U	1.1	1.1	ug/m3			09/08/20 17:26	1.47
Ethylbenzene	1.3	U	1.3	1.3	ug/m3			09/08/20 17:26	1.47
m-Xylene & p-Xylene	1.3	U	1.3	1.3	ug/m3			09/08/20 17:26	1.47
o-Xylene	1.3	U	1.3	1.3	ug/m3			09/08/20 17:26	1.47
Naphthalene	1.5	U	1.5	1.5	ug/m3			09/08/20 17:26	1.47
C9-C10 Aromatics	7.4	U	7.4	7.4	ug/m3			09/08/20 17:26	1.47
C5-C8 Aliphatics (adjusted)	22		13	13	ug/m3			09/08/20 17:26	1.47
C9-C12 Aliphatics (adjusted)	10	U	10	10	ug/m3			09/08/20 17:26	1.47

Client Sample ID: EB-1-081920

Lab Sample ID: 200-54945-6

Date Collected: 08/19/20 16:46

Matrix: Air

Date Received: 08/31/20 09:48

Sample Container: Summa Canister 6L

Method: APH - Air Phase Petroleum Hydrocarbons

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butadiene	0.67	U	0.67	0.67	ug/m3			09/08/20 18:17	1.52
Methyl tert-butyl ether	1.1	U	1.1	1.1	ug/m3			09/08/20 18:17	1.52
Benzene	0.97	U	0.97	0.97	ug/m3			09/08/20 18:17	1.52
Toluene	1.1	U	1.1	1.1	ug/m3			09/08/20 18:17	1.52
Ethylbenzene	1.3	U	1.3	1.3	ug/m3			09/08/20 18:17	1.52
m-Xylene & p-Xylene	1.3	U	1.3	1.3	ug/m3			09/08/20 18:17	1.52
o-Xylene	1.3	U	1.3	1.3	ug/m3			09/08/20 18:17	1.52
Naphthalene	1.6	U	1.6	1.6	ug/m3			09/08/20 18:17	1.52
C9-C10 Aromatics	7.6	U	7.6	7.6	ug/m3			09/08/20 18:17	1.52
C5-C8 Aliphatics (adjusted)	25		14	14	ug/m3			09/08/20 18:17	1.52
C9-C12 Aliphatics (adjusted)	11	U	11	11	ug/m3			09/08/20 18:17	1.52

Eurofins TestAmerica, Burlington

QC Sample Results

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-54945-1
SDG: 200-54945-1

Method: APH - Air Phase Petroleum Hydrocarbons

Lab Sample ID: MB 200-158609/5
Matrix: Air
Analysis Batch: 158609

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Butadiene	0.44	U	0.44	0.44	ug/m3			09/08/20 13:03	1
Methyl tert-butyl ether	0.72	U	0.72	0.72	ug/m3			09/08/20 13:03	1
Benzene	0.64	U	0.64	0.64	ug/m3			09/08/20 13:03	1
Toluene	0.75	U	0.75	0.75	ug/m3			09/08/20 13:03	1
Ethylbenzene	0.87	U	0.87	0.87	ug/m3			09/08/20 13:03	1
m-Xylene & p-Xylene	0.87	U	0.87	0.87	ug/m3			09/08/20 13:03	1
o-Xylene	0.87	U	0.87	0.87	ug/m3			09/08/20 13:03	1
Naphthalene	1.1	U	1.1	1.1	ug/m3			09/08/20 13:03	1
C9-C10 Aromatics	5.0	U	5.0	5.0	ug/m3			09/08/20 13:03	1
C5-C8 Aliphatics (adjusted)	9.1	U	9.1	9.1	ug/m3			09/08/20 13:03	1
C9-C12 Aliphatics (adjusted)	7.1	U	7.1	7.1	ug/m3			09/08/20 13:03	1

Lab Sample ID: LCS 200-158609/3
Matrix: Air
Analysis Batch: 158609

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Butadiene	55.3	53.6		ug/m3		97	70 - 130
Methyl tert-butyl ether	90.4	85.0		ug/m3		94	70 - 130
Benzene	79.9	71.0		ug/m3		89	70 - 130
Toluene	94.4	87.2		ug/m3		92	70 - 130
Ethylbenzene	109	89.9		ug/m3		83	70 - 130
m-Xylene & p-Xylene	109	92.6		ug/m3		85	70 - 130
o-Xylene	109	98.2		ug/m3		90	70 - 130
Naphthalene	131	127		ug/m3		97	50 - 150
C9-C10 Aromatics	630	587		ug/m3		93	70 - 130
n-Heptane	103	102		ug/m3		99	70 - 130
n-Decane	146	151		ug/m3		103	70 - 130
1,3,5-Trimethylbenzene	123	115		ug/m3		94	70 - 130

QC Association Summary

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-54945-1
SDG: 200-54945-1

Air - GC/MS VOA

Analysis Batch: 158609

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-54945-1	SVP-4-081920	Total/NA	Air	APH	
200-54945-2	SVP-5-081920	Total/NA	Air	APH	
200-54945-3	SVP-6-081920	Total/NA	Air	APH	
200-54945-4	DUP-1-081920	Total/NA	Air	APH	
200-54945-5	AMB-1-081920	Total/NA	Air	APH	
200-54945-6	EB-1-081920	Total/NA	Air	APH	
MB 200-158609/5	Method Blank	Total/NA	Air	APH	
LCS 200-158609/3	Lab Control Sample	Total/NA	Air	APH	

Lab Chronicle

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-54945-1
SDG: 200-54945-1

Client Sample ID: SVP-4-081920

Lab Sample ID: 200-54945-1

Date Collected: 08/19/20 15:03

Matrix: Air

Date Received: 08/31/20 09:48

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	APH		1.51	158609	09/08/20 13:55	GGG	TAL BUR

Client Sample ID: SVP-5-081920

Lab Sample ID: 200-54945-2

Date Collected: 08/19/20 13:00

Matrix: Air

Date Received: 08/31/20 09:48

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	APH		1.58	158609	09/08/20 14:48	GGG	TAL BUR

Client Sample ID: SVP-6-081920

Lab Sample ID: 200-54945-3

Date Collected: 08/19/20 10:50

Matrix: Air

Date Received: 08/31/20 09:48

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	APH		1.49	158609	09/08/20 15:42	GGG	TAL BUR

Client Sample ID: DUP-1-081920

Lab Sample ID: 200-54945-4

Date Collected: 08/19/20 00:00

Matrix: Air

Date Received: 08/31/20 09:48

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	APH		1.58	158609	09/08/20 16:34	GGG	TAL BUR

Client Sample ID: AMB-1-081920

Lab Sample ID: 200-54945-5

Date Collected: 08/19/20 16:46

Matrix: Air

Date Received: 08/31/20 09:48

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	APH		1.47	158609	09/08/20 17:26	GGG	TAL BUR

Client Sample ID: EB-1-081920

Lab Sample ID: 200-54945-6

Date Collected: 08/19/20 16:46

Matrix: Air

Date Received: 08/31/20 09:48

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	APH		1.52	158609	09/08/20 18:17	GGG	TAL BUR

Laboratory References:

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Accreditation/Certification Summary

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-54945-1
SDG: 200-54945-1

Laboratory: Eurofins TestAmerica, Burlington

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2336	02-25-23
Connecticut	State	PH-0751	09-30-21
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	05-16-21
Florida	NELAP	E87467	06-30-21
Minnesota	NELAP	050-999-436	12-31-20
New Hampshire	NELAP	2006	12-18-20
New Jersey	NELAP	VT972	06-30-21
New York	NELAP	10391	04-01-21
Pennsylvania	NELAP	68-00489	04-30-21
Rhode Island	State	LAO00298	12-30-20
US Fish & Wildlife	US Federal Programs	058448	07-31-21
Vermont	State	VT4000	12-31-20
Virginia	NELAP	460209	12-14-20
Wisconsin	State	399133350	08-31-21

Method Summary

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-54945-1
SDG: 200-54945-1

Method	Method Description	Protocol	Laboratory
APH	Air Phase Petroleum Hydrocarbons	MA DEP	TAL BUR

Protocol References:

MA DEP = Massachusetts Department Of Environmental Protection

Laboratory References:

TAL BUR = Eurofins TestAmerica, Burlington, 30 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

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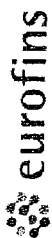
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Sample Summary

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-54945-1
SDG: 200-54945-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
200-54945-1	SVP-4-081920	Air	08/19/20 15:03	08/31/20 09:48	
200-54945-2	SVP-5-081920	Air	08/19/20 13:00	08/31/20 09:48	
200-54945-3	SVP-6-081920	Air	08/19/20 10:50	08/31/20 09:48	
200-54945-4	DUP-1-081920	Air	08/19/20 00:00	08/31/20 09:48	
200-54945-5	AMB-1-081920	Air	08/19/20 16:46	08/31/20 09:48	
200-54945-6	EB-1-081920	Air	08/19/20 16:46	08/31/20 09:48	



Air Toxics

Analysis Request / Canister Chain of Custody

For Laboratory Use Only

PID: _____

Workorder #: _____

2008555

180 Blue Ravine Rd. Suite B, Folsom, CA 95630
Phone (800) 985-5955; Fax (916) 351-8279

Client: Leidos
 Project Name: Newman's Chevron
 Project Manager: R. Shropshire Project # 204117
 Sampler: RSS / TED
 Site Name: Newman's Chevron

Special Instructions/Notes:
Invoice Leidos Task order No. P010242812
Report BTEX, MTBE, and Naphthalene only for TO-15 SIM

Lab ID	Field Sample Identification (Location)	Can #	Flow Controller #	Start Sampling Information		Stop Sampling Information		Initial (in Hg)	Final (in Hg)	Receipt	Final (psi) Gas: N ₂ /He	Lab Use Only	Turnaround Time (Rush surcharges may apply)		Requested Analyses		
				Date	Time	Date	Time						Standard	Rush			
01A	SVP-4-081920	N2531	30956	8-19-20	1358	8-19-20	1503	29	1.5						X EPA TO-15 X Mass APH X ASTM D-1946		
02A	SVP-5-081920	09313	25034	8-19-20	1150	8-19-20	1300	28.5	1.5						X EPA TO-15 X Mass APH X ASTM D-1946		
03A	SVP-6-081920	N 9224	24582	8-19-20	1010	8-19-20	1050	30	2						X EPA TO-15 X Mass APH X ASTM D-1946		
04A	DUP-1-081920	9224	-	8-19-20	NA	8-19-20	NA	-	-						X EPA TO-15 X Mass APH X ASTM D-1946		
05A	AMB-1-081920	04926	30750	8-19-20	1543	8-19-20	1646	30	2						X EPA TO-15 X Mass APH X ASTM D-1946		
06A	EB-1-081920	N4291	30641	8-19-20	1543	8-19-20	1646	29	3.5						X EPA TO-15 X Mass APH X ASTM D-1946		
200-54945 Chain of Custody																	
												Date	8/19/20	Time	17:00	Received by: (Signature/Affiliation)	<u>[Signature]</u> GAT
												Date	8/19/20	Time	17:00	Received by: (Signature/Affiliation)	<u>[Signature]</u> F. Hall
												Date	8/19/20	Time	16:46	Received by: (Signature/Affiliation)	<u>[Signature]</u> GAT

Relinquished by: (Signature/Affiliation) [Signature] Leidos
 Relinquished by: (Signature/Affiliation) [Signature]
 Relinquished by: (Signature/Affiliation) [Signature]

Shipper Name: Felix Custody Seals Intact? Yes No None

Sample Transportation Notice: Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, related to the collection, handling, of shipping of samples. D.O.T. Hotline (800) 467-4922

CH₄, CO₂, H₂, H₂O, He, N₂, and O₂

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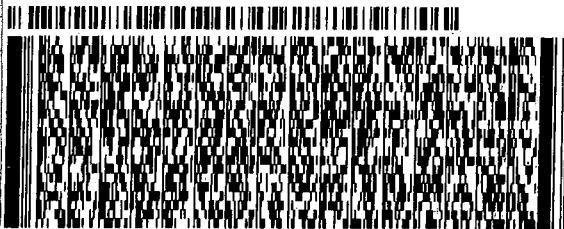
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ORIGIN ID:MHRA (916) 605-3336
SHIPPING
EUROFINS AIR TOXICS INC
180 BLUE RAVINE RD STE B
FOLSOM, CA 95630
UNITED STATES US

SHIP DATE: 28AUG20
ACTWGT: 27.00 LB MAN
CAD: 0488499/CAFES312
DIMS: 19x19x17 IN
BILL SENDER

TO **DON DAWICKI**
EUROFINS TEST AMERICA
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403
(802) 923-1026
REF: 133941

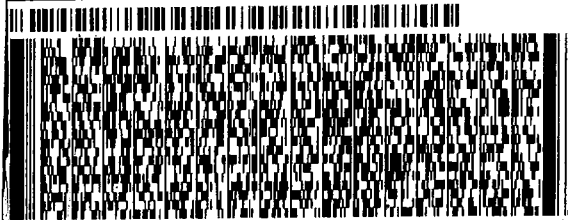


585CE77709/05A2

ORIGIN ID:MHRA (916) 605-3336
SHIPPING
EUROFINS AIR TOXICS INC
180 BLUE RAVINE RD STE B
FOLSOM, CA 95630
UNITED STATES US

ACTWGT:
CAD: 0488499/CAFES312
DIMS: 16x15x8 IN
BILL SENDER

TO **DON DAWICKI**
EUROFINS TEST AMERICA
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403
(802) 923-1026
REF: 133941

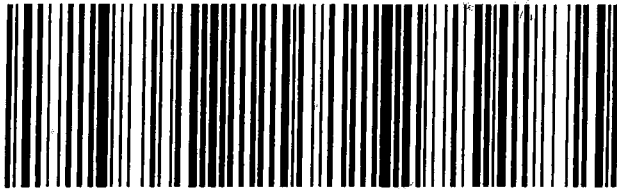


2 of 2
MPS# 9028 0547 1509
0263
Mstr# 9028 0547 1494

MON - 31 AUG 3:00P
STANDARD OVERNIGHT

XH BTVA

05403
VT-US BTV



1 of 2
TRK# 9028 0547 1494
0201
MASTER

MON - 31 AUG 3:00P
STANDARD OVERNIGHT

XH BTVA

0540
VT-US BT



Login Sample Receipt Checklist

Client: Eurofins Air Toxics, Inc.

Job Number: 200-54945-1
SDG Number: 200-54945-1

Login Number: 54945

List Number: 1

Creator: McNabb, Robert W

List Source: Eurofins TestAmerica, Burlington

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	N/A	Thermal preservation not required.
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	RSS/TED
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Summa Canister Dilution Worksheet

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job No.: 200-54945-1
SDG No.: 200-54945-1

Lab Sample ID	Canister Volume (L)	Preadjusted Pressure ("Hg)	Preadjusted Pressure (atm)	Preadjusted Volume (L)	Adjusted Pressure (psig)	Adjusted Pressure (atm)	Adjusted Volume (L)	Initial Volume (mL)	Dilution Factor	Final Dilution Factor	Pressure Gauge ID	Date	Analyst Initials
200-54945-1	6	-3.45	0.88	5.31	5	1.34	8.04		1.51	1.51	na	09/16/20 15:05	GGG
200-54945-2	6	-4.5	0.85	5.10	5	1.34	8.04		1.58	1.58		09/16/20 15:06	GGG
200-54945-3	6	-3.0	0.90	5.40	5	1.34	8.04		1.49	1.49		09/16/20 15:07	GGG
200-54945-4	6	-4.5	0.85	5.10	5	1.34	8.04		1.58	1.58	na	09/16/20 15:07	GGG
200-54945-5	6	-4.0	0.87	5.20	4.0	1.27	7.63		1.47	1.47	na	09/16/20 15:08	GGG
200-54945-6	6	-3.5	0.88	5.30	5	1.34	8.04		1.52	1.52	na	09/16/20 15:09	GGG

Formulae:

- Preadjusted Volume (L) = (Preadjusted Pressure ("Hg) + 29.92 "Hg * Vol L) / 29.92 "Hg
- Adjusted Volume (L) = (Adjusted Pressure (psig) + 14.7 psig * Vol L) / 14.7 psig
- Dilution Factor = Adjusted Volume (L) / Preadjusted Volume (L)

Where:

- 29.92 "Hg = Standard atmospheric pressure in inches of Mercury ("Hg)
- 14.7 psig = Standard atmospheric pressure in pounds per square inch gauge (psig)





Air Toxics

Analysis Request / Canister Chain of Custody

180 Blue Ravine Rd. Suite B, Folsom, CA 95630
Phone (800) 985-5955; Fax (916) 351-8279

PID: _____ Workorder #: **2008555**

CH₄, CO₂, H₂, He, N₂ and O₂

page--of---

Client: <u>Leidos</u>	Special Instructions/Notes: <u>Invoice Leidos Task order No. PO10242812</u>	Turnaround Time (Rush surcharges may apply)
Project Name: <u>Newman's Chevron</u>	Report <u>BTEX, MTBE, and Naphthalene only for TO-15 SIM</u>	Standard <input checked="" type="checkbox"/> Rush _____ (specify)
Project Manager: <u>R. Shropshire</u> Project # <u>204117</u>		Canister Vacuum/Pressure
Sampler: <u>RSS / TED</u>		Requested Analyses
Site Name: <u>Newman's Chevron</u>		Lab Use Only

Lab ID	Field Sample Identification(Location)	Can #	Flow Controller #	Start Sampling Information		Stop Sampling Information		Initial (in Hg)	Final (in Hg)	Receipt	Final (psig) Gas: N ₂ / He	Requested Analyses		
				Date	Time	Date	Time					EPA TO-15 SIM	Mass APH	ASTM D-1946
01A	SVP-4-081920	N2531	30956	8-19-20	1358	8-19-20	1503	29	1.5			X	X	X
02A	SVP-5-081920	04313	25034	8-19-20	1150	8-19-20	1300	28.5	1.5			X	X	X
03A	SVP-6-081920	N 92242827 24582	24582	8-19-20	1010	8-19-20	1050	30	2			X	X	X
04A	DUP-1-081920	9224	-	8-19-20	NA	8-19-20	NA	-	-			X	X	X
05A	AMB-1-081920	04926	30750	8-19-20	1543	8-19-20	1646	30	2			X	X	X
06A	EB-1-081920	N4291	30641	8-19-20	1543	8-19-20	1646	29	3.5			X	X	X

Relinquished by: (Signature/Affiliation) <u>Thomas Dubé / Leidos</u>	Date <u>8-19-20</u>	Time <u>17:00</u>	Received by: (Signature/Affiliation) <u>[Signature]</u>	Date <u>8/19/20</u>	Time <u>1036</u>
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time

Lab Use Only

Shipper Name: Felix Custody Seals Intact? Yes No None 6007

Sample Transportation Notice: Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T Hotline (800) 467-4922

12/15/2020
Mr. Russ Shropshire
Leidos
18939 120th Ave NE
Ste 112
Bothell WA 98011

Project Name: Newman's Chevron
Project #: 204117
Workorder #: 2012224A

Dear Mr. Russ Shropshire

The following report includes the data for the above referenced project for sample(s) received on 12/9/2020 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Modified TO-15 SIM are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Alexandra Winslow at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Alexandra Winslow
Project Manager

WORK ORDER #: 2012224A

Work Order Summary

CLIENT:	Mr. Russ Shropshire Leidos 18939 120th Ave NE Ste 112 Bothell, WA 98011	BILL TO:	Accounts Payable - Bothell Leidos 18939 120th Ave NE Ste 112 Bothell, WA 98011
PHONE:	425-485-5800	P.O. #	P010242812
FAX:		PROJECT #	204117 Newman's Chevron
DATE RECEIVED:	12/09/2020	CONTACT:	Alexandra Winslow
DATE COMPLETED:	12/15/2020		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SVP-1-120420	Modified TO-15 SIM	0.5 "Hg	5 psi
02A	SVP-2-120420	Modified TO-15 SIM	0.5 "Hg	5 psi
03A	SVP-3-120420	Modified TO-15 SIM	0.4 psi	5 psi
04A	SVP-4-120420	Modified TO-15 SIM	0.0 "Hg	5 psi
05A	SVP-5-120420	Modified TO-15 SIM	0.0 "Hg	5 psi
06A	SVP-6-120420	Modified TO-15 SIM	0.5 "Hg	5 psi
07A	OA-1-120420	Modified TO-15 SIM	1.0 "Hg	5 psi
08A	OA-2-120420	Modified TO-15 SIM	4.0 "Hg	5 psi
09A	OA-3-120420	Modified TO-15 SIM	1.0 "Hg	5 psi
10A	DUP-1-120420	Modified TO-15 SIM	0.0 "Hg	5 psi
11A	Lab Blank	Modified TO-15 SIM	NA	NA
12A	CCV	Modified TO-15 SIM	NA	NA
13A	LCS	Modified TO-15 SIM	NA	NA
13AA	LCSD	Modified TO-15 SIM	NA	NA

CERTIFIED BY: 
 Technical Director

DATE: 12/15/20

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209220, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-20-16, UT NELAP – CA009332020-12, VA NELAP - 10615, WA NELAP - C935
 Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005-014, Effective date: 10/18/2020, Expiration date: 10/17/2021.

Eurofins Air Toxics, LLC certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
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LABORATORY NARRATIVE
Modified TO-15 SIM
Leidos
Workorder# 2012224A

Ten 6 Liter Summa Canister (SIM Certified) samples were received on December 09, 2020. The laboratory performed analysis via modified EPA Method TO-15 using GC/MS in the SIM acquisition mode.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the EATL modifications.

<i>Requirement</i>	<i>TO-15</i>	<i>ATL Modifications</i>
ICAL %RSD acceptance criteria	$\leq 30\%$ RSD with 2 compounds allowed out to <math>< 40\%</math> RSD	Project specific; default criteria is $\leq 30\%$ RSD with 10% of compounds allowed out to <math>< 40\%</math> RSD
Daily Calibration	+/- 30% Difference	Project specific; default criteria is $\leq 30\%$ Difference with 10% of compounds allowed out up to $\leq 40\%$; flag and narrate outliers
Blank and standards	Zero air	Nitrogen
Method Detection Limit	Follow 40CFR Pt.136 App. B	The MDL met all relevant requirements in Method TO-15 (statistical MDL less than the LOQ). The concentration of the spiked replicate may have exceeded 10X the calculated MDL in some cases

Receiving Notes

Despite the use of flow controllers for sample collection, the final canister vacuum for samples SVP-3-120420, SVP-4-120420, SVP-5-120420 and DUP-1-120420 were measured at ambient pressure at the laboratory.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Eight qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



Air Toxics

Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: SVP-1-120420

Lab ID#: 2012224A-01A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.068	1.1	0.36	5.8

Client Sample ID: SVP-2-120420

Lab ID#: 2012224A-02A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.068	1.2	0.36	6.6

Client Sample ID: SVP-3-120420

Lab ID#: 2012224A-03A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.065	0.45	0.34	2.4

Client Sample ID: SVP-4-120420

Lab ID#: 2012224A-04A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	0.067	0.20	0.25	0.74
Ethyl Benzene	0.027	0.078	0.12	0.34
m,p-Xylene	0.054	1.4	0.23	6.2
o-Xylene	0.027	0.45	0.12	2.0
Naphthalene	0.067	0.19	0.35	1.0

Client Sample ID: SVP-5-120420

Lab ID#: 2012224A-05A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Naphthalene	0.067	0.18	0.35	0.93

Client Sample ID: SVP-6-120420

Lab ID#: 2012224A-06A



Summary of Detected Compounds MODIFIED EPA METHOD TO-15 GC/MS SIM

Client Sample ID: SVP-6-120420

Lab ID#: 2012224A-06A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Ethyl Benzene	0.027	0.044	0.12	0.19
Naphthalene	0.068	0.22	0.36	1.2

Client Sample ID: OA-1-120420

Lab ID#: 2012224A-07A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.070	0.52	0.22	1.7
Toluene	0.070	0.95	0.26	3.6
Ethyl Benzene	0.028	0.13	0.12	0.55
m,p-Xylene	0.056	0.43	0.24	1.9
o-Xylene	0.028	0.15	0.12	0.63

Client Sample ID: OA-2-120420

Lab ID#: 2012224A-08A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.078	0.47	0.25	1.5
Toluene	0.078	0.85	0.29	3.2
Ethyl Benzene	0.031	0.12	0.13	0.53
m,p-Xylene	0.062	0.41	0.27	1.8
o-Xylene	0.031	0.14	0.13	0.60

Client Sample ID: OA-3-120420

Lab ID#: 2012224A-09A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.070	0.50	0.22	1.6
Toluene	0.070	0.88	0.26	3.3
Ethyl Benzene	0.028	0.12	0.12	0.52
m,p-Xylene	0.056	0.40	0.24	1.8
o-Xylene	0.028	0.14	0.12	0.60



Air Toxics

**Summary of Detected Compounds
MODIFIED EPA METHOD TO-15 GC/MS SIM**

Client Sample ID: DUP-1-120420

Lab ID#: 2012224A-10A

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Toluene	0.067	0.42	0.25	1.6
Ethyl Benzene	0.027	0.14	0.12	0.62
m,p-Xylene	0.054	2.7	0.23	12
o-Xylene	0.027	0.80	0.12	3.5
Naphthalene	0.067	0.20	0.35	1.1



Air Toxics

Client Sample ID: SVP-1-120420

Lab ID#: 2012224A-01A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21121413sim	Date of Collection:	12/4/20 6:33:00 PM
Dil. Factor:	1.36	Date of Analysis:	12/14/20 05:21 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.068	Not Detected	0.22	Not Detected
Toluene	0.068	Not Detected	0.26	Not Detected
Ethyl Benzene	0.027	Not Detected	0.12	Not Detected
m,p-Xylene	0.054	Not Detected	0.24	Not Detected
o-Xylene	0.027	Not Detected	0.12	Not Detected
Methyl tert-butyl ether	0.14	Not Detected	0.49	Not Detected
Naphthalene	0.068	1.1	0.36	5.8

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	117	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	97	70-130



Air Toxics

Client Sample ID: SVP-2-120420

Lab ID#: 2012224A-02A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21121412sim	Date of Collection:	12/4/20 4:53:00 PM
Dil. Factor:	1.36	Date of Analysis:	12/14/20 04:44 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.068	Not Detected	0.22	Not Detected
Toluene	0.068	Not Detected	0.26	Not Detected
Ethyl Benzene	0.027	Not Detected	0.12	Not Detected
m,p-Xylene	0.054	Not Detected	0.24	Not Detected
o-Xylene	0.027	Not Detected	0.12	Not Detected
Methyl tert-butyl ether	0.14	Not Detected	0.49	Not Detected
Naphthalene	0.068	1.2	0.36	6.6

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	117	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: SVP-3-120420

Lab ID#: 2012224A-03A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21121414sim	Date of Collection:	12/4/20 3:51:00 PM
Dil. Factor:	1.30	Date of Analysis:	12/14/20 05:58 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.065	Not Detected	0.21	Not Detected
Toluene	0.065	Not Detected	0.24	Not Detected
Ethyl Benzene	0.026	Not Detected	0.11	Not Detected
m,p-Xylene	0.052	Not Detected	0.22	Not Detected
o-Xylene	0.026	Not Detected	0.11	Not Detected
Methyl tert-butyl ether	0.13	Not Detected	0.47	Not Detected
Naphthalene	0.065	0.45	0.34	2.4

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: SVP-4-120420

Lab ID#: 2012224A-04A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21121415sim	Date of Collection:	12/4/20 2:44:00 PM
Dil. Factor:	1.34	Date of Analysis:	12/14/20 06:35 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.067	Not Detected	0.21	Not Detected
Toluene	0.067	0.20	0.25	0.74
Ethyl Benzene	0.027	0.078	0.12	0.34
m,p-Xylene	0.054	1.4	0.23	6.2
o-Xylene	0.027	0.45	0.12	2.0
Methyl tert-butyl ether	0.13	Not Detected	0.48	Not Detected
Naphthalene	0.067	0.19	0.35	1.0

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: SVP-5-120420

Lab ID#: 2012224A-05A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21121416sim	Date of Collection:	12/4/20 10:36:00 AM
Dil. Factor:	1.34	Date of Analysis:	12/14/20 07:12 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.067	Not Detected	0.21	Not Detected
Toluene	0.067	Not Detected	0.25	Not Detected
Ethyl Benzene	0.027	Not Detected	0.12	Not Detected
m,p-Xylene	0.054	Not Detected	0.23	Not Detected
o-Xylene	0.027	Not Detected	0.12	Not Detected
Methyl tert-butyl ether	0.13	Not Detected	0.48	Not Detected
Naphthalene	0.067	0.18	0.35	0.93

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	112	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: SVP-6-120420

Lab ID#: 2012224A-06A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21121417sim	Date of Collection:	12/4/20 12:39:00 PM
Dil. Factor:	1.36	Date of Analysis:	12/14/20 07:49 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.068	Not Detected	0.22	Not Detected
Toluene	0.068	Not Detected	0.26	Not Detected
Ethyl Benzene	0.027	0.044	0.12	0.19
m,p-Xylene	0.054	Not Detected	0.24	Not Detected
o-Xylene	0.027	Not Detected	0.12	Not Detected
Methyl tert-butyl ether	0.14	Not Detected	0.49	Not Detected
Naphthalene	0.068	0.22	0.36	1.2

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	125	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	100	70-130



Air Toxics

Client Sample ID: OA-1-120420

Lab ID#: 2012224A-07A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21121418sim	Date of Collection:	12/4/20 7:22:00 PM
Dil. Factor:	1.39	Date of Analysis:	12/14/20 09:05 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.070	0.52	0.22	1.7
Toluene	0.070	0.95	0.26	3.6
Ethyl Benzene	0.028	0.13	0.12	0.55
m,p-Xylene	0.056	0.43	0.24	1.9
o-Xylene	0.028	0.15	0.12	0.63
Methyl tert-butyl ether	0.14	Not Detected	0.50	Not Detected
Naphthalene	0.070	Not Detected	0.36	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	98	70-130



Air Toxics

Client Sample ID: OA-2-120420

Lab ID#: 2012224A-08A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21121419sim	Date of Collection:	12/4/20 7:24:00 PM
Dil. Factor:	1.55	Date of Analysis:	12/14/20 09:42 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.078	0.47	0.25	1.5
Toluene	0.078	0.85	0.29	3.2
Ethyl Benzene	0.031	0.12	0.13	0.53
m,p-Xylene	0.062	0.41	0.27	1.8
o-Xylene	0.031	0.14	0.13	0.60
Methyl tert-butyl ether	0.16	Not Detected	0.56	Not Detected
Naphthalene	0.078	Not Detected	0.41	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	113	70-130
Toluene-d8	98	70-130
4-Bromofluorobenzene	102	70-130



Air Toxics

Client Sample ID: OA-3-120420

Lab ID#: 2012224A-09A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21121420sim	Date of Collection:	12/4/20 7:26:00 PM
Dil. Factor:	1.39	Date of Analysis:	12/14/20 10:19 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.070	0.50	0.22	1.6
Toluene	0.070	0.88	0.26	3.3
Ethyl Benzene	0.028	0.12	0.12	0.52
m,p-Xylene	0.056	0.40	0.24	1.8
o-Xylene	0.028	0.14	0.12	0.60
Methyl tert-butyl ether	0.14	Not Detected	0.50	Not Detected
Naphthalene	0.070	Not Detected	0.36	Not Detected

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	115	70-130
Toluene-d8	100	70-130
4-Bromofluorobenzene	99	70-130



Air Toxics

Client Sample ID: DUP-1-120420

Lab ID#: 2012224A-10A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21121421sim	Date of Collection:	12/4/20
Dil. Factor:	1.34	Date of Analysis:	12/14/20 10:56 PM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.067	Not Detected	0.21	Not Detected
Toluene	0.067	0.42	0.25	1.6
Ethyl Benzene	0.027	0.14	0.12	0.62
m,p-Xylene	0.054	2.7	0.23	12
o-Xylene	0.027	0.80	0.12	3.5
Methyl tert-butyl ether	0.13	Not Detected	0.48	Not Detected
Naphthalene	0.067	0.20	0.35	1.1

Container Type: 6 Liter Summa Canister (SIM Certified)

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	117	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	101	70-130

Client Sample ID: Lab Blank

Lab ID#: 2012224A-11A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21121406sim	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/14/20 11:19 AM

Compound	Rpt. Limit (ppbv)	Amount (ppbv)	Rpt. Limit (ug/m3)	Amount (ug/m3)
Benzene	0.050	Not Detected	0.16	Not Detected
Toluene	0.050	Not Detected	0.19	Not Detected
Ethyl Benzene	0.020	Not Detected	0.087	Not Detected
m,p-Xylene	0.040	Not Detected	0.17	Not Detected
o-Xylene	0.020	Not Detected	0.087	Not Detected
Methyl tert-butyl ether	0.10	Not Detected	0.36	Not Detected
Naphthalene	0.050	Not Detected	0.26	Not Detected

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	116	70-130
Toluene-d8	99	70-130
4-Bromofluorobenzene	101	70-130



Air Toxics

Client Sample ID: CCV

Lab ID#: 2012224A-12A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21121402sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/14/20 08:26 AM

Compound	%Recovery
Benzene	101
Toluene	96
Ethyl Benzene	96
m,p-Xylene	94
o-Xylene	91
Methyl tert-butyl ether	99
Naphthalene	75

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	107	70-130
Toluene-d8	108	70-130
4-Bromofluorobenzene	109	70-130

Client Sample ID: LCS

Lab ID#: 2012224A-13A

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21121403sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/14/20 09:12 AM

Compound	%Recovery	Method Limits
Benzene	107	70-130
Toluene	100	70-130
Ethyl Benzene	101	70-130
m,p-Xylene	102	70-130
o-Xylene	98	70-130
Methyl tert-butyl ether	105	70-130
Naphthalene	82	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	109	70-130
4-Bromofluorobenzene	112	70-130



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2012224A-13AA

MODIFIED EPA METHOD TO-15 GC/MS SIM

File Name:	21121404sim	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/14/20 10:00 AM

Compound	%Recovery	Method Limits
Benzene	106	70-130
Toluene	99	70-130
Ethyl Benzene	99	70-130
m,p-Xylene	99	70-130
o-Xylene	95	70-130
Methyl tert-butyl ether	106	70-130
Naphthalene	84	60-140

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
1,2-Dichloroethane-d4	108	70-130
Toluene-d8	107	70-130
4-Bromofluorobenzene	110	70-130

12/16/2020
Mr. Russ Shropshire
Leidos
18939 120th Ave NE
Ste 112
Bothell WA 98011

Project Name: Newman's Chevron
Project #: 204117
Workorder #: 2012224B

Dear Mr. Russ Shropshire

The following report includes the data for the above referenced project for sample(s) received on 12/9/2020 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Modified ASTM D-1946 are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Alexandra Winslow at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Alexandra Winslow
Project Manager

WORK ORDER #: 2012224B

Work Order Summary

CLIENT:	Mr. Russ Shropshire Leidos 18939 120th Ave NE Ste 112 Bothell, WA 98011	BILL TO:	Accounts Payable - Bothell Leidos 18939 120th Ave NE Ste 112 Bothell, WA 98011
PHONE:	425-485-5800	P.O. #	P010242812
FAX:		PROJECT #	204117 Newman's Chevron
DATE RECEIVED:	12/09/2020	CONTACT:	Alexandra Winslow
DATE COMPLETED:	12/16/2020		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>	<u>RECEIPT VAC./PRES.</u>	<u>FINAL PRESSURE</u>
01A	SVP-1-120420	Modified ASTM D-1946	0.5 "Hg	5 psi
02A	SVP-2-120420	Modified ASTM D-1946	0.5 "Hg	5 psi
03A	SVP-3-120420	Modified ASTM D-1946	0.4 psi	5 psi
04A	SVP-4-120420	Modified ASTM D-1946	0.0 "Hg	5 psi
05A	SVP-5-120420	Modified ASTM D-1946	0.0 "Hg	5 psi
06A	SVP-6-120420	Modified ASTM D-1946	0.5 "Hg	5 psi
07A	OA-1-120420	Modified ASTM D-1946	1.0 "Hg	5 psi
08A	OA-2-120420	Modified ASTM D-1946	4.0 "Hg	5 psi
09A	OA-3-120420	Modified ASTM D-1946	1.0 "Hg	5 psi
10A	DUP-1-120420	Modified ASTM D-1946	0.0 "Hg	5 psi
11A	Lab Blank	Modified ASTM D-1946	NA	NA
11B	Lab Blank	Modified ASTM D-1946	NA	NA
12A	LCS	Modified ASTM D-1946	NA	NA
12AA	LCSD	Modified ASTM D-1946	NA	NA
12B	LCS	Modified ASTM D-1946	NA	NA
12BB	LCSD	Modified ASTM D-1946	NA	NA

CERTIFIED BY: 

 Technical Director

DATE: 12/16/20

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209220, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-20-16, UT NELAP – CA009332020-12, VA NELAP - 10615, WA NELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)

Accreditation number: CA300005-014, Effective date: 10/18/2020, Expiration date: 10/17/2021.

Eurofins Air Toxics, LLC certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
Modified ASTM D-1946
Leidos
Workorder# 2012224B

Ten 6 Liter Summa Canister (SIM Certified) samples were received on December 09, 2020. The laboratory performed analysis via Modified ASTM Method D-1946 for Methane and fixed gases in air using GC/FID or GC/TCD. The method involves direct injection of 1.0 mL of sample.

On the analytical column employed for this analysis, Oxygen coelutes with Argon. The corresponding peak is quantitated as Oxygen.

Since Nitrogen is used to pressurize samples, the reported Nitrogen values are calculated by adding all the sample components and subtracting from 100%.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the EATL modifications.

<i>Requirement</i>	<i>ASTM D-1946</i>	<i>ATL Modifications</i>
Calibration	A single point calibration is performed using a reference standard closely matching the composition of the unknown.	A minimum of 5-point calibration curve is performed. Quantitation is based on average Response Factor.
Reference Standard	The composition of any reference standard must be known to within 0.01 mol % for any component.	The standards used by ATL are blended to a \geq 95% accuracy.
Sample Injection Volume	Components whose concentrations are in excess of 5 % should not be analyzed by using sample volumes greater than 0.5 mL.	The sample container is connected directly to a fixed volume sample loop of 1.0 mL on the GC. Linear range is defined by the calibration curve. Bags are loaded by vacuum.
Normalization	Normalize the mole percent values by multiplying each value by 100 and dividing by the sum of the original values. The sum of the original values should not differ from 100% by more than 1.0%.	Results are not normalized. The sum of the reported values can differ from 100% by as much as 15%, either due to analytical variability or an unusual sample matrix.
Precision	Precision requirements established at each concentration level.	Duplicates should agree within 25% RPD for detections > 5 X's the RL.

Receiving Notes

Despite the use of flow controllers for sample collection, the final canister vacuum for samples SVP-3-120420, SVP-4-120420, SVP-5-120420 and DUP-1-120420 were measured at ambient pressure at the laboratory.

Analytical Notes

There were no analytical discrepancies.

Definition of Data Qualifying Flags

Seven qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit.

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the detection limit.

M - Reported value may be biased due to apparent matrix interferences.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue



Air Toxics

Summary of Detected Compounds NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: SVP-1-120420

Lab ID#: 2012224B-01A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.14	11
Nitrogen	0.14	82
Carbon Dioxide	0.014	7.5

Client Sample ID: SVP-2-120420

Lab ID#: 2012224B-02A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.14	14
Nitrogen	0.14	79
Carbon Dioxide	0.014	7.3

Client Sample ID: SVP-3-120420

Lab ID#: 2012224B-03A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.13	16
Nitrogen	0.13	80
Carbon Dioxide	0.013	4.4

Client Sample ID: SVP-4-120420

Lab ID#: 2012224B-04A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.13	19
Nitrogen	0.13	79
Carbon Dioxide	0.013	2.3

Client Sample ID: SVP-5-120420

Lab ID#: 2012224B-05A

Compound	Rpt. Limit (%)	Amount (%)
----------	----------------	------------

**Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946**

Client Sample ID: SVP-5-120420

Lab ID#: 2012224B-05A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.13	18
Nitrogen	0.13	80
Carbon Dioxide	0.013	2.3

Client Sample ID: SVP-6-120420

Lab ID#: 2012224B-06A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.14	17
Nitrogen	0.14	80
Carbon Dioxide	0.014	3.0

Client Sample ID: OA-1-120420

Lab ID#: 2012224B-07A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.14	21
Methane	0.00014	0.00021
Nitrogen	0.14	79
Carbon Dioxide	0.014	0.051

Client Sample ID: OA-2-120420

Lab ID#: 2012224B-08A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	22
Methane	0.00016	0.00020
Nitrogen	0.16	78
Carbon Dioxide	0.016	0.052

Client Sample ID: OA-3-120420

Lab ID#: 2012224B-09A



Air Toxics

Summary of Detected Compounds
NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

Client Sample ID: OA-3-120420

Lab ID#: 2012224B-09A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.14	21
Methane	0.00014	0.00022
Nitrogen	0.14	79
Carbon Dioxide	0.014	0.052

Client Sample ID: DUP-1-120420

Lab ID#: 2012224B-10A

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.13	19
Nitrogen	0.13	79
Carbon Dioxide	0.013	2.3



Air Toxics

Client Sample ID: SVP-1-120420

Lab ID#: 2012224B-01A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10121108	Date of Collection:	12/4/20 6:33:00 PM
Dil. Factor:	1.36	Date of Analysis:	12/12/20 08:52 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.14	11
Methane	0.00014	Not Detected
Helium	0.068	Not Detected
Hydrogen	0.014	Not Detected
Nitrogen	0.14	82
Carbon Dioxide	0.014	7.5

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: SVP-2-120420

Lab ID#: 2012224B-02A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10121109	Date of Collection:	12/4/20 4:53:00 PM
Dil. Factor:	1.36	Date of Analysis:	12/12/20 09:24 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.14	14
Methane	0.00014	Not Detected
Helium	0.068	Not Detected
Hydrogen	0.014	Not Detected
Nitrogen	0.14	79
Carbon Dioxide	0.014	7.3

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: SVP-3-120420

Lab ID#: 2012224B-03A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10121110	Date of Collection:	12/4/20 3:51:00 PM
Dil. Factor:	1.30	Date of Analysis:	12/12/20 09:55 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.13	16
Methane	0.00013	Not Detected
Helium	0.065	Not Detected
Hydrogen	0.013	Not Detected
Nitrogen	0.13	80
Carbon Dioxide	0.013	4.4

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: SVP-4-120420

Lab ID#: 2012224B-04A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10121111	Date of Collection:	12/4/20 2:44:00 PM
Dil. Factor:	1.34	Date of Analysis:	12/12/20 10:31 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.13	19
Methane	0.00013	Not Detected
Helium	0.067	Not Detected
Hydrogen	0.013	Not Detected
Nitrogen	0.13	79
Carbon Dioxide	0.013	2.3

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: SVP-5-120420

Lab ID#: 2012224B-05A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10121112	Date of Collection:	12/4/20 10:36:00 AM
Dil. Factor:	1.34	Date of Analysis:	12/12/20 10:57 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.13	18
Methane	0.00013	Not Detected
Helium	0.067	Not Detected
Hydrogen	0.013	Not Detected
Nitrogen	0.13	80
Carbon Dioxide	0.013	2.3

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: SVP-6-120420

Lab ID#: 2012224B-06A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10121113	Date of Collection:	12/4/20 12:39:00 PM
Dil. Factor:	1.36	Date of Analysis:	12/12/20 11:27 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.14	17
Methane	0.00014	Not Detected
Helium	0.068	Not Detected
Hydrogen	0.014	Not Detected
Nitrogen	0.14	80
Carbon Dioxide	0.014	3.0

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: OA-1-120420

Lab ID#: 2012224B-07A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10121114	Date of Collection:	12/4/20 7:22:00 PM
Dil. Factor:	1.39	Date of Analysis:	12/12/20 11:55 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.14	21
Methane	0.00014	0.00021
Helium	0.070	Not Detected
Hydrogen	0.014	Not Detected
Nitrogen	0.14	79
Carbon Dioxide	0.014	0.051

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: OA-2-120420

Lab ID#: 2012224B-08A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10121115	Date of Collection:	12/4/20 7:24:00 PM
Dil. Factor:	1.55	Date of Analysis:	12/12/20 12:19 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.16	22
Methane	0.00016	0.00020
Helium	0.078	Not Detected
Hydrogen	0.016	Not Detected
Nitrogen	0.16	78
Carbon Dioxide	0.016	0.052

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: OA-3-120420

Lab ID#: 2012224B-09A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10121116	Date of Collection:	12/4/20 7:26:00 PM
Dil. Factor:	1.39	Date of Analysis:	12/12/20 12:56 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.14	21
Methane	0.00014	0.00022
Helium	0.070	Not Detected
Hydrogen	0.014	Not Detected
Nitrogen	0.14	79
Carbon Dioxide	0.014	0.052

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: DUP-1-120420

Lab ID#: 2012224B-10A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10121117	Date of Collection:	12/4/20
Dil. Factor:	1.34	Date of Analysis:	12/12/20 01:21 PM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.13	19
Methane	0.00013	Not Detected
Helium	0.067	Not Detected
Hydrogen	0.013	Not Detected
Nitrogen	0.13	79
Carbon Dioxide	0.013	2.3

Container Type: 6 Liter Summa Canister (SIM Certified)



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2012224B-11A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10121107	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/12/20 08:19 AM

Compound	Rpt. Limit (%)	Amount (%)
Oxygen	0.10	Not Detected
Methane	0.00010	Not Detected
Nitrogen	0.10	Not Detected
Carbon Dioxide	0.010	Not Detected

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2012224B-11B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10121106c	Date of Collection:	NA
Dil. Factor:	1.00	Date of Analysis:	12/12/20 07:51 AM

Compound	Rpt. Limit (%)	Amount (%)
Helium	0.050	Not Detected
Hydrogen	0.010	Not Detected

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCS

Lab ID#: 2012224B-12A

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10121102	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/11/20 09:39 PM

Compound	%Recovery	Method Limits
Oxygen	99	85-115
Methane	97	85-115
Helium	100	85-115
Nitrogen	98	85-115
Carbon Dioxide	111	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2012224B-12AA

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10121103	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/11/20 10:05 PM

Compound	%Recovery	Method Limits
Oxygen	99	85-115
Methane	96	85-115
Helium	100	85-115
Nitrogen	98	85-115
Carbon Dioxide	111	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCS

Lab ID#: 2012224B-12B

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10121105c	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/11/20 11:19 PM

Compound	%Recovery	Method Limits
Hydrogen	103	85-115

Container Type: NA - Not Applicable



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2012224B-12BB

NATURAL GAS ANALYSIS BY MODIFIED ASTM D-1946

File Name:	10121123c	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 12/12/20 04:03 PM

Compound	%Recovery	Method Limits
Hydrogen	103	85-115

Container Type: NA - Not Applicable

ANALYTICAL REPORT

Eurofins TestAmerica, Burlington
530 Community Drive
Suite 11
South Burlington, VT 05403
Tel: (802)660-1990

Laboratory Job ID: 200-56561-1
Laboratory Sample Delivery Group: 200-56561-1
Client Project/Site: Newman's Chevron

For:
Eurofins Air Toxics, Inc.
180 Blue Ravine Road
Suite B
Folsom, California 95630

Attn: Alexandra Winslow

Elizabeth A. Nye

Authorized for release by:
12/30/2020 1:02:40 PM

Elizabeth Nye, Project Manager I
(802)660-1990
Elizabeth.Nye@Eurofinset.com

LINKS

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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Definitions/Glossary

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-56561-1
SDG: 200-56561-1

Qualifiers

Air - GC/MS VOA

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
U	Indicates the analyte was analyzed for but not detected.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-56561-1
SDG: 200-56561-1

Job ID: 200-56561-1

Laboratory: Eurofins TestAmerica, Burlington

Narrative

CASE NARRATIVE

Client: Eurofins Air Toxics, Inc.

Project: Newman's Chevron

Report Number: 200-56561-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

The samples were received on 12/16/2020; the samples arrived in good condition.

PETROLEUM HYDROCARBON

Samples SVP-1-120420, SVP-2-120420, SVP-3-120420, SVP-4-120420, SVP-5-120420, SVP-6-120420, OA-1-120420, OA-2-120420, OA-3-120420 and DUP-1-120420 were analyzed for petroleum hydrocarbon in accordance with MADEP APH. The samples were analyzed on 12/23/2020 and 12/24/2020.

Naphthalene was detected in method blank MB 200-162429/5 at a level exceeding the reporting limit. If the associated sample reported a result above the MDL and/or RL, the result has been flagged.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-56561-1
SDG: 200-56561-1

Client Sample ID: SVP-1-120420

Lab Sample ID: 200-56561-1

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	4.2	B	0.77	0.77	ug/m3	1		APH	Total/NA
C5-C8 Aliphatics (adjusted)	73		6.7	6.7	ug/m3	1		APH	Total/NA

Client Sample ID: SVP-2-120420

Lab Sample ID: 200-56561-2

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	5.6	B	0.77	0.77	ug/m3	1		APH	Total/NA
C5-C8 Aliphatics (adjusted)	30		6.7	6.7	ug/m3	1		APH	Total/NA

Client Sample ID: SVP-3-120420

Lab Sample ID: 200-56561-3

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	2.5	B	0.77	0.77	ug/m3	1		APH	Total/NA
C5-C8 Aliphatics (adjusted)	68		6.7	6.7	ug/m3	1		APH	Total/NA

Client Sample ID: SVP-4-120420

Lab Sample ID: 200-56561-4

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Toluene	0.59		0.56	0.56	ug/m3	1		APH	Total/NA
m-Xylene & p-Xylene	6.0		0.65	0.65	ug/m3	1		APH	Total/NA
o-Xylene	2.1		0.65	0.65	ug/m3	1		APH	Total/NA
Naphthalene	2.0	B	0.78	0.78	ug/m3	1		APH	Total/NA
C9-C10 Aromatics	9.6		3.8	3.8	ug/m3	1		APH	Total/NA
C5-C8 Aliphatics (adjusted)	11		6.8	6.8	ug/m3	1		APH	Total/NA

Client Sample ID: SVP-5-120420

Lab Sample ID: 200-56561-5

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	1.4	B	0.78	0.78	ug/m3	1		APH	Total/NA
C5-C8 Aliphatics (adjusted)	58		6.8	6.8	ug/m3	1		APH	Total/NA

Client Sample ID: SVP-6-120420

Lab Sample ID: 200-56561-6

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Naphthalene	1.9	B	0.77	0.77	ug/m3	1		APH	Total/NA
C5-C8 Aliphatics (adjusted)	170		6.7	6.7	ug/m3	1		APH	Total/NA
C9-C12 Aliphatics (adjusted)	35		5.2	5.2	ug/m3	1		APH	Total/NA

Client Sample ID: OA-1-120420

Lab Sample ID: 200-56561-7

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.0		0.46	0.46	ug/m3	1		APH	Total/NA
Toluene	2.6		0.54	0.54	ug/m3	1		APH	Total/NA
m-Xylene & p-Xylene	1.8		0.63	0.63	ug/m3	1		APH	Total/NA
o-Xylene	0.67		0.63	0.63	ug/m3	1		APH	Total/NA
Naphthalene	1.1	B	0.75	0.75	ug/m3	1		APH	Total/NA
C5-C8 Aliphatics (adjusted)	24		6.6	6.6	ug/m3	1		APH	Total/NA

Client Sample ID: OA-2-120420

Lab Sample ID: 200-56561-8

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.84		0.41	0.41	ug/m3	1		APH	Total/NA
Toluene	2.1		0.48	0.48	ug/m3	1		APH	Total/NA
m-Xylene & p-Xylene	1.6		0.56	0.56	ug/m3	1		APH	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Burlington

Detection Summary

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-56561-1
SDG: 200-56561-1

Client Sample ID: OA-2-120420 (Continued)

Lab Sample ID: 200-56561-8

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
o-Xylene	0.58		0.56	0.56	ug/m3	1		APH	Total/NA
Naphthalene	1.0	B	0.68	0.68	ug/m3	1		APH	Total/NA
C5-C8 Aliphatics (adjusted)	18		5.9	5.9	ug/m3	1		APH	Total/NA

Client Sample ID: OA-3-120420

Lab Sample ID: 200-56561-9

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.97		0.46	0.46	ug/m3	1		APH	Total/NA
Toluene	2.4		0.54	0.54	ug/m3	1		APH	Total/NA
m-Xylene & p-Xylene	1.7		0.63	0.63	ug/m3	1		APH	Total/NA
o-Xylene	0.63		0.63	0.63	ug/m3	1		APH	Total/NA
Naphthalene	1.2	B	0.75	0.75	ug/m3	1		APH	Total/NA
C5-C8 Aliphatics (adjusted)	22		6.6	6.6	ug/m3	1		APH	Total/NA

Client Sample ID: DUP-1-120420

Lab Sample ID: 200-56561-10

Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Toluene	1.2		0.56	0.56	ug/m3	1		APH	Total/NA
m-Xylene & p-Xylene	11		0.65	0.65	ug/m3	1		APH	Total/NA
o-Xylene	3.6		0.65	0.65	ug/m3	1		APH	Total/NA
Naphthalene	5.0	B	0.78	0.78	ug/m3	1		APH	Total/NA
C9-C10 Aromatics	15		3.8	3.8	ug/m3	1		APH	Total/NA
C5-C8 Aliphatics (adjusted)	12		6.8	6.8	ug/m3	1		APH	Total/NA
C9-C12 Aliphatics (adjusted)	7.9		5.3	5.3	ug/m3	1		APH	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins TestAmerica, Burlington

Client Sample Results

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-56561-1
SDG: 200-56561-1

Client Sample ID: SVP-1-120420

Lab Sample ID: 200-56561-1

Date Collected: 12/04/20 18:33

Matrix: Air

Date Received: 12/16/20 11:15

Sample Container: Summa Canister 6L

Method: APH - Air Phase Petroleum Hydrocarbons

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butadiene	0.32	U	0.32	0.32	ug/m3			12/23/20 22:46	1
Methyl tert-butyl ether	0.53	U	0.53	0.53	ug/m3			12/23/20 22:46	1
Benzene	0.47	U	0.47	0.47	ug/m3			12/23/20 22:46	1
Toluene	0.55	U	0.55	0.55	ug/m3			12/23/20 22:46	1
Ethylbenzene	0.64	U	0.64	0.64	ug/m3			12/23/20 22:46	1
m-Xylene & p-Xylene	0.64	U	0.64	0.64	ug/m3			12/23/20 22:46	1
o-Xylene	0.64	U	0.64	0.64	ug/m3			12/23/20 22:46	1
Naphthalene	4.2	B	0.77	0.77	ug/m3			12/23/20 22:46	1
C9-C10 Aromatics	3.7	U	3.7	3.7	ug/m3			12/23/20 22:46	1
C5-C8 Aliphatics (adjusted)	73		6.7	6.7	ug/m3			12/23/20 22:46	1
C9-C12 Aliphatics (adjusted)	5.2	U	5.2	5.2	ug/m3			12/23/20 22:46	1

Client Sample ID: SVP-2-120420

Lab Sample ID: 200-56561-2

Date Collected: 12/04/20 16:53

Matrix: Air

Date Received: 12/16/20 11:15

Sample Container: Summa Canister 6L

Method: APH - Air Phase Petroleum Hydrocarbons

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butadiene	0.32	U	0.32	0.32	ug/m3			12/23/20 23:38	1
Methyl tert-butyl ether	0.53	U	0.53	0.53	ug/m3			12/23/20 23:38	1
Benzene	0.47	U	0.47	0.47	ug/m3			12/23/20 23:38	1
Toluene	0.55	U	0.55	0.55	ug/m3			12/23/20 23:38	1
Ethylbenzene	0.64	U	0.64	0.64	ug/m3			12/23/20 23:38	1
m-Xylene & p-Xylene	0.64	U	0.64	0.64	ug/m3			12/23/20 23:38	1
o-Xylene	0.64	U	0.64	0.64	ug/m3			12/23/20 23:38	1
Naphthalene	5.6	B	0.77	0.77	ug/m3			12/23/20 23:38	1
C9-C10 Aromatics	3.7	U	3.7	3.7	ug/m3			12/23/20 23:38	1
C5-C8 Aliphatics (adjusted)	30		6.7	6.7	ug/m3			12/23/20 23:38	1
C9-C12 Aliphatics (adjusted)	5.2	U	5.2	5.2	ug/m3			12/23/20 23:38	1

Client Sample ID: SVP-3-120420

Lab Sample ID: 200-56561-3

Date Collected: 12/04/20 15:51

Matrix: Air

Date Received: 12/16/20 11:15

Sample Container: Summa Canister 6L

Method: APH - Air Phase Petroleum Hydrocarbons

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butadiene	0.32	U	0.32	0.32	ug/m3			12/24/20 00:30	1
Methyl tert-butyl ether	0.53	U	0.53	0.53	ug/m3			12/24/20 00:30	1
Benzene	0.47	U	0.47	0.47	ug/m3			12/24/20 00:30	1
Toluene	0.55	U	0.55	0.55	ug/m3			12/24/20 00:30	1
Ethylbenzene	0.64	U	0.64	0.64	ug/m3			12/24/20 00:30	1
m-Xylene & p-Xylene	0.64	U	0.64	0.64	ug/m3			12/24/20 00:30	1
o-Xylene	0.64	U	0.64	0.64	ug/m3			12/24/20 00:30	1
Naphthalene	2.5	B	0.77	0.77	ug/m3			12/24/20 00:30	1
C9-C10 Aromatics	3.7	U	3.7	3.7	ug/m3			12/24/20 00:30	1
C5-C8 Aliphatics (adjusted)	68		6.7	6.7	ug/m3			12/24/20 00:30	1
C9-C12 Aliphatics (adjusted)	5.2	U	5.2	5.2	ug/m3			12/24/20 00:30	1

Eurofins TestAmerica, Burlington

Client Sample Results

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-56561-1
SDG: 200-56561-1

Client Sample ID: SVP-4-120420

Lab Sample ID: 200-56561-4

Date Collected: 12/04/20 14:44

Matrix: Air

Date Received: 12/16/20 11:15

Sample Container: Summa Canister 6L

Method: APH - Air Phase Petroleum Hydrocarbons

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butadiene	0.33	U	0.33	0.33	ug/m3			12/24/20 01:23	1
Methyl tert-butyl ether	0.54	U	0.54	0.54	ug/m3			12/24/20 01:23	1
Benzene	0.48	U	0.48	0.48	ug/m3			12/24/20 01:23	1
Toluene	0.59		0.56	0.56	ug/m3			12/24/20 01:23	1
Ethylbenzene	0.65	U	0.65	0.65	ug/m3			12/24/20 01:23	1
m-Xylene & p-Xylene	6.0		0.65	0.65	ug/m3			12/24/20 01:23	1
o-Xylene	2.1		0.65	0.65	ug/m3			12/24/20 01:23	1
Naphthalene	2.0	B	0.78	0.78	ug/m3			12/24/20 01:23	1
C9-C10 Aromatics	9.6		3.8	3.8	ug/m3			12/24/20 01:23	1
C5-C8 Aliphatics (adjusted)	11		6.8	6.8	ug/m3			12/24/20 01:23	1
C9-C12 Aliphatics (adjusted)	5.3	U	5.3	5.3	ug/m3			12/24/20 01:23	1

Client Sample ID: SVP-5-120420

Lab Sample ID: 200-56561-5

Date Collected: 12/04/20 10:36

Matrix: Air

Date Received: 12/16/20 11:15

Sample Container: Summa Canister 6L

Method: APH - Air Phase Petroleum Hydrocarbons

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butadiene	0.33	U	0.33	0.33	ug/m3			12/24/20 02:15	1
Methyl tert-butyl ether	0.54	U	0.54	0.54	ug/m3			12/24/20 02:15	1
Benzene	0.48	U	0.48	0.48	ug/m3			12/24/20 02:15	1
Toluene	0.56	U	0.56	0.56	ug/m3			12/24/20 02:15	1
Ethylbenzene	0.65	U	0.65	0.65	ug/m3			12/24/20 02:15	1
m-Xylene & p-Xylene	0.65	U	0.65	0.65	ug/m3			12/24/20 02:15	1
o-Xylene	0.65	U	0.65	0.65	ug/m3			12/24/20 02:15	1
Naphthalene	1.4	B	0.78	0.78	ug/m3			12/24/20 02:15	1
C9-C10 Aromatics	3.8	U	3.8	3.8	ug/m3			12/24/20 02:15	1
C5-C8 Aliphatics (adjusted)	58		6.8	6.8	ug/m3			12/24/20 02:15	1
C9-C12 Aliphatics (adjusted)	5.3	U	5.3	5.3	ug/m3			12/24/20 02:15	1

Client Sample ID: SVP-6-120420

Lab Sample ID: 200-56561-6

Date Collected: 12/04/20 12:39

Matrix: Air

Date Received: 12/16/20 11:15

Sample Container: Summa Canister 6L

Method: APH - Air Phase Petroleum Hydrocarbons

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butadiene	0.32	U	0.32	0.32	ug/m3			12/24/20 03:08	1
Methyl tert-butyl ether	0.53	U	0.53	0.53	ug/m3			12/24/20 03:08	1
Benzene	0.47	U	0.47	0.47	ug/m3			12/24/20 03:08	1
Toluene	0.55	U	0.55	0.55	ug/m3			12/24/20 03:08	1
Ethylbenzene	0.64	U	0.64	0.64	ug/m3			12/24/20 03:08	1
m-Xylene & p-Xylene	0.64	U	0.64	0.64	ug/m3			12/24/20 03:08	1
o-Xylene	0.64	U	0.64	0.64	ug/m3			12/24/20 03:08	1
Naphthalene	1.9	B	0.77	0.77	ug/m3			12/24/20 03:08	1
C9-C10 Aromatics	3.7	U	3.7	3.7	ug/m3			12/24/20 03:08	1
C5-C8 Aliphatics (adjusted)	170		6.7	6.7	ug/m3			12/24/20 03:08	1
C9-C12 Aliphatics (adjusted)	35		5.2	5.2	ug/m3			12/24/20 03:08	1

Eurofins TestAmerica, Burlington

Client Sample Results

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-56561-1
SDG: 200-56561-1

Client Sample ID: OA-1-120420

Lab Sample ID: 200-56561-7

Date Collected: 12/04/20 19:22

Matrix: Air

Date Received: 12/16/20 11:15

Sample Container: Summa Canister 6L

Method: APH - Air Phase Petroleum Hydrocarbons

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butadiene	0.32	U	0.32	0.32	ug/m3			12/24/20 04:00	1
Methyl tert-butyl ether	0.52	U	0.52	0.52	ug/m3			12/24/20 04:00	1
Benzene	1.0		0.46	0.46	ug/m3			12/24/20 04:00	1
Toluene	2.6		0.54	0.54	ug/m3			12/24/20 04:00	1
Ethylbenzene	0.63	U	0.63	0.63	ug/m3			12/24/20 04:00	1
m-Xylene & p-Xylene	1.8		0.63	0.63	ug/m3			12/24/20 04:00	1
o-Xylene	0.67		0.63	0.63	ug/m3			12/24/20 04:00	1
Naphthalene	1.1 B		0.75	0.75	ug/m3			12/24/20 04:00	1
C9-C10 Aromatics	3.6	U	3.6	3.6	ug/m3			12/24/20 04:00	1
C5-C8 Aliphatics (adjusted)	24		6.6	6.6	ug/m3			12/24/20 04:00	1
C9-C12 Aliphatics (adjusted)	5.1	U	5.1	5.1	ug/m3			12/24/20 04:00	1

Client Sample ID: OA-2-120420

Lab Sample ID: 200-56561-8

Date Collected: 12/04/20 19:24

Matrix: Air

Date Received: 12/16/20 11:15

Sample Container: Summa Canister 6L

Method: APH - Air Phase Petroleum Hydrocarbons

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butadiene	0.28	U	0.28	0.28	ug/m3			12/24/20 04:52	1
Methyl tert-butyl ether	0.46	U	0.46	0.46	ug/m3			12/24/20 04:52	1
Benzene	0.84		0.41	0.41	ug/m3			12/24/20 04:52	1
Toluene	2.1		0.48	0.48	ug/m3			12/24/20 04:52	1
Ethylbenzene	0.56	U	0.56	0.56	ug/m3			12/24/20 04:52	1
m-Xylene & p-Xylene	1.6		0.56	0.56	ug/m3			12/24/20 04:52	1
o-Xylene	0.58		0.56	0.56	ug/m3			12/24/20 04:52	1
Naphthalene	1.0 B		0.68	0.68	ug/m3			12/24/20 04:52	1
C9-C10 Aromatics	3.2	U	3.2	3.2	ug/m3			12/24/20 04:52	1
C5-C8 Aliphatics (adjusted)	18		5.9	5.9	ug/m3			12/24/20 04:52	1
C9-C12 Aliphatics (adjusted)	4.6	U	4.6	4.6	ug/m3			12/24/20 04:52	1

Client Sample ID: OA-3-120420

Lab Sample ID: 200-56561-9

Date Collected: 12/04/20 19:26

Matrix: Air

Date Received: 12/16/20 11:15

Sample Container: Summa Canister 6L

Method: APH - Air Phase Petroleum Hydrocarbons

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butadiene	0.32	U	0.32	0.32	ug/m3			12/24/20 05:45	1
Methyl tert-butyl ether	0.52	U	0.52	0.52	ug/m3			12/24/20 05:45	1
Benzene	0.97		0.46	0.46	ug/m3			12/24/20 05:45	1
Toluene	2.4		0.54	0.54	ug/m3			12/24/20 05:45	1
Ethylbenzene	0.63	U	0.63	0.63	ug/m3			12/24/20 05:45	1
m-Xylene & p-Xylene	1.7		0.63	0.63	ug/m3			12/24/20 05:45	1
o-Xylene	0.63		0.63	0.63	ug/m3			12/24/20 05:45	1
Naphthalene	1.2 B		0.75	0.75	ug/m3			12/24/20 05:45	1
C9-C10 Aromatics	3.6	U	3.6	3.6	ug/m3			12/24/20 05:45	1
C5-C8 Aliphatics (adjusted)	22		6.6	6.6	ug/m3			12/24/20 05:45	1
C9-C12 Aliphatics (adjusted)	5.1	U	5.1	5.1	ug/m3			12/24/20 05:45	1

Eurofins TestAmerica, Burlington

Client Sample Results

Client: Eurofins Air Toxics, Inc.
 Project/Site: Newman's Chevron

Job ID: 200-56561-1
 SDG: 200-56561-1

Client Sample ID: DUP-1-120420

Lab Sample ID: 200-56561-10

Date Collected: 12/04/20 00:00

Matrix: Air

Date Received: 12/16/20 11:15

Sample Container: Summa Canister 6L

Method: APH - Air Phase Petroleum Hydrocarbons

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Butadiene	0.33	U	0.33	0.33	ug/m3			12/24/20 06:38	1
Methyl tert-butyl ether	0.54	U	0.54	0.54	ug/m3			12/24/20 06:38	1
Benzene	0.48	U	0.48	0.48	ug/m3			12/24/20 06:38	1
Toluene	1.2		0.56	0.56	ug/m3			12/24/20 06:38	1
Ethylbenzene	0.65	U	0.65	0.65	ug/m3			12/24/20 06:38	1
m-Xylene & p-Xylene	11		0.65	0.65	ug/m3			12/24/20 06:38	1
o-Xylene	3.6		0.65	0.65	ug/m3			12/24/20 06:38	1
Naphthalene	5.0 B		0.78	0.78	ug/m3			12/24/20 06:38	1
C9-C10 Aromatics	15		3.8	3.8	ug/m3			12/24/20 06:38	1
C5-C8 Aliphatics (adjusted)	12		6.8	6.8	ug/m3			12/24/20 06:38	1
C9-C12 Aliphatics (adjusted)	7.9		5.3	5.3	ug/m3			12/24/20 06:38	1

QC Sample Results

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-56561-1
SDG: 200-56561-1

Method: APH - Air Phase Petroleum Hydrocarbons

Lab Sample ID: MB 200-162429/5
Matrix: Air
Analysis Batch: 162429

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB MB		RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Butadiene	0.44	U	0.44	0.44	ug/m3			12/23/20 13:12	1
Methyl tert-butyl ether	0.72	U	0.72	0.72	ug/m3			12/23/20 13:12	1
Benzene	0.64	U	0.64	0.64	ug/m3			12/23/20 13:12	1
Toluene	0.75	U	0.75	0.75	ug/m3			12/23/20 13:12	1
Ethylbenzene	0.87	U	0.87	0.87	ug/m3			12/23/20 13:12	1
m-Xylene & p-Xylene	0.87	U	0.87	0.87	ug/m3			12/23/20 13:12	1
o-Xylene	0.87	U	0.87	0.87	ug/m3			12/23/20 13:12	1
Naphthalene	2.23		1.1	1.1	ug/m3			12/23/20 13:12	1
C9-C10 Aromatics	5.0	U	5.0	5.0	ug/m3			12/23/20 13:12	1
C5-C8 Aliphatics (adjusted)	9.1	U	9.1	9.1	ug/m3			12/23/20 13:12	1
C9-C12 Aliphatics (adjusted)	7.1	U	7.1	7.1	ug/m3			12/23/20 13:12	1

Lab Sample ID: LCS 200-162429/4
Matrix: Air
Analysis Batch: 162429

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Methyl tert-butyl ether	90.4	90.2		ug/m3		100	70 - 130
Benzene	79.9	74.1		ug/m3		93	70 - 130
Toluene	94.4	95.4		ug/m3		101	70 - 130
Ethylbenzene	109	110		ug/m3		102	70 - 130
m-Xylene & p-Xylene	109	111		ug/m3		102	70 - 130
o-Xylene	109	116		ug/m3		107	70 - 130
Naphthalene	131	166		ug/m3		127	50 - 150
C9-C10 Aromatics	630	793		ug/m3		126	70 - 130
n-Heptane	103	93.6		ug/m3		91	70 - 130
n-Decane	146	156		ug/m3		107	70 - 130
1,3,5-Trimethylbenzene	123	137		ug/m3		111	70 - 130

QC Association Summary

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-56561-1
SDG: 200-56561-1

Air - GC/MS VOA

Analysis Batch: 162429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
200-56561-1	SVP-1-120420	Total/NA	Air	APH	
200-56561-2	SVP-2-120420	Total/NA	Air	APH	
200-56561-3	SVP-3-120420	Total/NA	Air	APH	
200-56561-4	SVP-4-120420	Total/NA	Air	APH	
200-56561-5	SVP-5-120420	Total/NA	Air	APH	
200-56561-6	SVP-6-120420	Total/NA	Air	APH	
200-56561-7	OA-1-120420	Total/NA	Air	APH	
200-56561-8	OA-2-120420	Total/NA	Air	APH	
200-56561-9	OA-3-120420	Total/NA	Air	APH	
200-56561-10	DUP-1-120420	Total/NA	Air	APH	
MB 200-162429/5	Method Blank	Total/NA	Air	APH	
LCS 200-162429/4	Lab Control Sample	Total/NA	Air	APH	

Lab Chronicle

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-56561-1
SDG: 200-56561-1

Client Sample ID: SVP-1-120420

Lab Sample ID: 200-56561-1

Date Collected: 12/04/20 18:33

Matrix: Air

Date Received: 12/16/20 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	APH		1	162429	12/23/20 22:46	GGG	TAL BUR

Client Sample ID: SVP-2-120420

Lab Sample ID: 200-56561-2

Date Collected: 12/04/20 16:53

Matrix: Air

Date Received: 12/16/20 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	APH		1	162429	12/23/20 23:38	GGG	TAL BUR

Client Sample ID: SVP-3-120420

Lab Sample ID: 200-56561-3

Date Collected: 12/04/20 15:51

Matrix: Air

Date Received: 12/16/20 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	APH		1	162429	12/24/20 00:30	GGG	TAL BUR

Client Sample ID: SVP-4-120420

Lab Sample ID: 200-56561-4

Date Collected: 12/04/20 14:44

Matrix: Air

Date Received: 12/16/20 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	APH		1	162429	12/24/20 01:23	GGG	TAL BUR

Client Sample ID: SVP-5-120420

Lab Sample ID: 200-56561-5

Date Collected: 12/04/20 10:36

Matrix: Air

Date Received: 12/16/20 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	APH		1	162429	12/24/20 02:15	GGG	TAL BUR

Client Sample ID: SVP-6-120420

Lab Sample ID: 200-56561-6

Date Collected: 12/04/20 12:39

Matrix: Air

Date Received: 12/16/20 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	APH		1	162429	12/24/20 03:08	GGG	TAL BUR

Client Sample ID: OA-1-120420

Lab Sample ID: 200-56561-7

Date Collected: 12/04/20 19:22

Matrix: Air

Date Received: 12/16/20 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	APH		1	162429	12/24/20 04:00	GGG	TAL BUR

Lab Chronicle

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-56561-1
SDG: 200-56561-1

Client Sample ID: OA-2-120420

Lab Sample ID: 200-56561-8

Date Collected: 12/04/20 19:24

Matrix: Air

Date Received: 12/16/20 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	APH		1	162429	12/24/20 04:52	GGG	TAL BUR

Client Sample ID: OA-3-120420

Lab Sample ID: 200-56561-9

Date Collected: 12/04/20 19:26

Matrix: Air

Date Received: 12/16/20 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	APH		1	162429	12/24/20 05:45	GGG	TAL BUR

Client Sample ID: DUP-1-120420

Lab Sample ID: 200-56561-10

Date Collected: 12/04/20 00:00

Matrix: Air

Date Received: 12/16/20 11:15

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	APH		1	162429	12/24/20 06:38	GGG	TAL BUR

Laboratory References:

TAL BUR = Eurofins TestAmerica, Burlington, 530 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990

Accreditation/Certification Summary

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-56561-1
SDG: 200-56561-1

Laboratory: Eurofins TestAmerica, Burlington

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2336	02-25-23
Connecticut	State	PH-0751	09-30-21
DE Haz. Subst. Cleanup Act (HSCA)	State	N/A	05-16-21
Florida	NELAP	E87467	06-30-21
Minnesota	NELAP	050-999-436	12-31-21
New Hampshire	NELAP	2006	12-18-21
New Jersey	NELAP	VT972	06-30-21
New York	NELAP	10391	04-01-21
Pennsylvania	NELAP	68-00489	04-30-21
Rhode Island	State	LAO00298	12-30-20
US Fish & Wildlife	US Federal Programs	058448	07-31-21
USDA	US Federal Programs	P330-17-00272	10-30-23
Vermont	State	VT4000	12-31-20
Virginia	NELAP	460209	12-14-21
Wisconsin	State	399133350	08-31-21

Method Summary

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-56561-1
SDG: 200-56561-1

Method	Method Description	Protocol	Laboratory
APH	Air Phase Petroleum Hydrocarbons	MA DEP	TAL BUR

Protocol References:

MA DEP = Massachusetts Department Of Environmental Protection

Laboratory References:

TAL BUR = Eurofins TestAmerica, Burlington, 530 Community Drive, Suite 11, South Burlington, VT 05403, TEL (802)660-1990



Sample Summary

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job ID: 200-56561-1
SDG: 200-56561-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
200-56561-1	SVP-1-120420	Air	12/04/20 18:33	12/16/20 11:15	
200-56561-2	SVP-2-120420	Air	12/04/20 16:53	12/16/20 11:15	
200-56561-3	SVP-3-120420	Air	12/04/20 15:51	12/16/20 11:15	
200-56561-4	SVP-4-120420	Air	12/04/20 14:44	12/16/20 11:15	
200-56561-5	SVP-5-120420	Air	12/04/20 10:36	12/16/20 11:15	
200-56561-6	SVP-6-120420	Air	12/04/20 12:39	12/16/20 11:15	
200-56561-7	OA-1-120420	Air	12/04/20 19:22	12/16/20 11:15	
200-56561-8	OA-2-120420	Air	12/04/20 19:24	12/16/20 11:15	
200-56561-9	OA-3-120420	Air	12/04/20 19:26	12/16/20 11:15	
200-56561-10	DUP-1-120420	Air	12/04/20 00:00	12/16/20 11:15	



Air Toxics

Analysis Request /Canister Chain of Custody


180 Blue Ravine Rd. Suite B, Folsom, CA 95630
Phone (800) 985-5955; Fax (916) 351-8279

PID: 2012224
For Laboratory Use Only
Workorder #: 2012224

Special Instructions/Notes:
Invoice Leidos Task order No. PO10242812
Report BTEX, MTBE, and Naphthalene only for TD-15 SIM.

Client: Leidos
Project Name: Newmans Chevron
Project Manager: R. Shropshire Project # 204117
Sampler: RSS / TED
Site Name: Newmans Chevron

CH₄, CO₂, H₂, He, N₂ and O₂
page-of-1

Lab ID	Field Sample Identification (Location)	Can #	Flow Controller #	Start Sampling Information		Stop Sampling Information		Initial (in Hg)	Final (in Hg)	Lab Use Only		Requested Analyses
				Date	Time	Date	Time			Receipt	Final (psig)	
01A	SVP-1-120420	NZ805/641694	20163	12-4-20	1723	12-4-20	1833	30"	30"			EPA TD-15 Mass APH ASTM D-1746
02A	SVP-2-120420	00522/640133	22543	1613	1506	1653	1551	29"	0.5"			
03A	SVP-3-120420	9224	22351	1319	1444	1036	1444	30"	1.5"			
04A	SVP-4-120420	N3516/641826	25048	0931	1036	1036	1036	30"	1"			
05A	SVP-5-120420	00583/640218	21470	1129	0822	1239	1239	24.5"	2"			
06A	SVP-6-120420	N0098/641208	20535	0825	0825	1922	1922	29"	3.5"			
07A	OA-1-120420	12044/1500	25185	0827	0827	1926	1926	30"	6.5"			
08A	OA-2-120420	N0429/641366	23423					28"	3"			
09A	OA-3-120420	N1594/640806	23460					30"	1"			
10A	DUP-1-120420	1561/2269										
 200-56561 COC												
Relinquished by: (Signature/Affiliation)				Date	Time	Received by: (Signature/Affiliation)		Date	Time	Requested Analyses		
R. Shropshire				12-5-20	1630	[Signature]		12/9/20	1045	EPA TD-15 Mass APH ASTM D-1746		
Relinquished by: (Signature/Affiliation)				Date	Time	Received by: (Signature/Affiliation)		Date	Time	Requested Analyses		
[Signature]				12/5/20		[Signature]						
Relinquished by: (Signature/Affiliation)				Date	Time	Received by: (Signature/Affiliation)		Date	Time	Requested Analyses		
[Signature]						[Signature]		12/16/20	1115	EPA TD-15 Mass APH ASTM D-1746		

Shipper Name: Leidos Custody Seals Intact? Yes No

Sample Transportation Notice: Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T Hotline (800) 467-4922





Air Toxics

PACKING SLIP

Prepared For: Leidos

Ship Date: 12/15/20

Ship ID: AMW135923

Item ID Code	Quantity	Description	QC Control
N2805	1	6 Liter Summa Canister	<input type="checkbox"/>
6L1208	1	6 Liter Summa Canister	<input type="checkbox"/>
1561	1	6 Liter Summa Canister	<input type="checkbox"/>
N1594	1	6 Liter Summa Canister	<input type="checkbox"/>
O0583	1	6 Liter Summa Canister	<input type="checkbox"/>
N3516	1	6 Liter Summa Canister	<input type="checkbox"/>
9224ta	1	6 Liter Summa Canister	<input type="checkbox"/>
N0429	1	6 Liter Summa Canister	<input type="checkbox"/>
12044	1	6 Liter Summa Canister	<input type="checkbox"/>
O0522	1	6 Liter Summa Canister	<input type="checkbox"/>
	1	Chain of Custody	<input type="checkbox"/>

IMPORTANT! The preparation and certification charges for the above equipment will be billed upon return to the laboratory for analysis. This equipment is part of an analytical service and must not be transferred to any other party unless approved by Air Toxics Ltd. Any equipment not returned within 30 days will be billed as indicated above. We appreciate your doing business with Air Toxics Ltd.

Air Toxics Limited will ensure that any substances and/or containers shipped to Client for purposes of sampling, are shipped in compliance with all applicable local, State and Federal regulations. Client bears sole responsibility for determining the applicability of and compliance with all regulations applicable to the shipment of samples back to the laboratory. Air Toxics Limited assumes no liability with respect to the collection, handling, or shipping of samples. Client agrees to hold harmless, defend, and indemnify Air Toxics Limited against any claim, demand, or action of any kind related to the collection, handling, or shipping of samples. D.O.T. HAZMAT Hotline (800) 467-4922

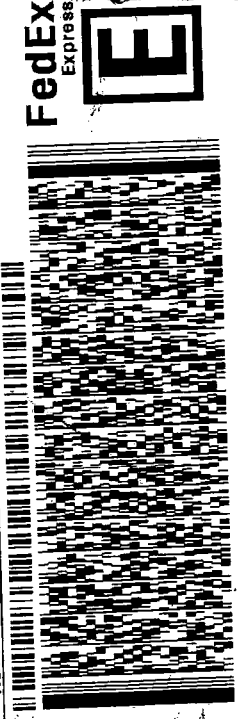
180-B Blue Ravine Road, Folsom, CA 95630
 (916) 985-1000 - (800)985-5955 - FAX (916)985-1020

SHIP: PRIORITY OVERNIGHT

ORIGIN ID:MHRA (916) 605-3336
SHIP DATE: 15DEC20
ACTWGT: 34.10 LB MAN
CAD: 0488489/CAFE3407
DIHS: 19X19X17 IN
BILL SENDER

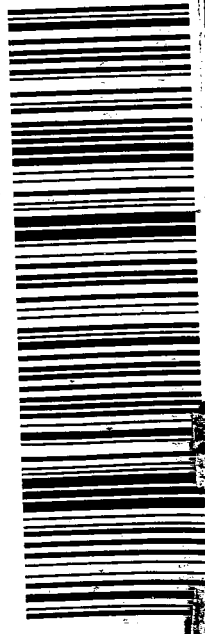
TO DON DAWICKI
EUROFINS TEST AMERICA
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403

(802) 923-1026
REF: 135923



2 of 3
MPS# 9487 1148 3172
Mstr# 9487 1148 3150
XH BTVA
0540
VT-US BT

WED - 16 DEC 10:30
PRIORITY OVERNIGHT

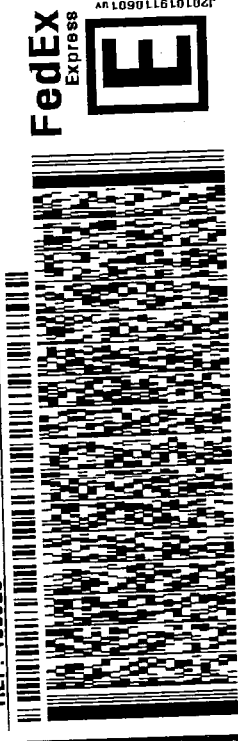


55DC2/9196/0582

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SHIP DATE: 15DEC20
ACTWGT: 34.10 LB MAN
CAD: 0488489/CAFE3407
DIHS: 19X19X17 IN
BILL SENDER

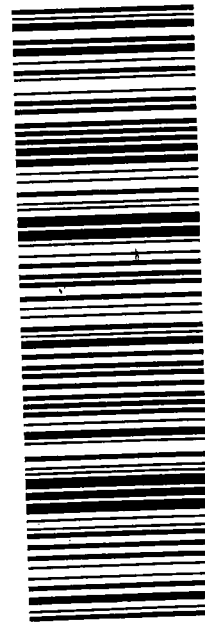
TO DON DAWICKI
EUROFINS TEST AMERICA
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403

(802) 923-1026
REF: 135923



2 of 3
MPS# 9487 1148 3161
Mstr# 9487 1148 3150
XH BTVA
05403
VT-US BTV

WED - 16 DEC 10:30A
PRIORITY OVERNIGHT

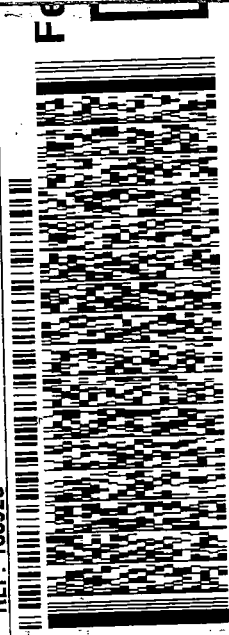


ORIGIN: TD/HRH (816) 605-3336
SHIPPING AIR TOXICS INC
100 BLUE RAVINE RD STE B
FOLSOM, CA 95630
UNITED STATES US

SHIP DATE: 15DEC20
ACTWT: 34.10 LB M
CAD: 0488499/CAFES
DIMS: 19x19x17 IN
BILL SENDER

TO **DON DAWICKI**
EUROFINS TEST AMERICA
30 COMMUNITY DRIVE
SUITE 11
SOUTH BURLINGTON VT 05403

(802) 923-1026
REF: 135923

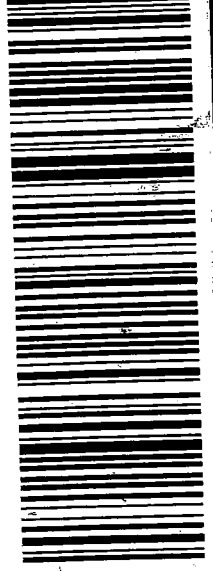


WED - 16 DEC
PRIORITY OVER

1 of 3
TRK# 9487 1148 3150
MASTER

XH BTVA

VT-US



Login Sample Receipt Checklist

Client: Eurofins Air Toxics, Inc.

Job Number: 200-56561-1
SDG Number: 200-56561-1

Login Number: 56561

List Number: 1

Creator: Lavigne, Scott M

List Source: Eurofins TestAmerica, Burlington

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	Not present
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	N/A	Thermal preservation not required.
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	N/A	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Summa Canister Dilution Worksheet

Client: Eurofins Air Toxics, Inc.
Project/Site: Newman's Chevron

Job No.: 200-56561-1
SDG No.: 200-56561-1

Lab Sample ID	Canister Volume (L)	Preadjusted Pressure ("Hg)	Preadjusted Pressure (atm)	Preadjusted Volume (L)	Adjusted Pressure (psig)	Adjusted Pressure (atm)	Adjusted Volume (L)	Initial Volume (mL)	Dilution Factor	Final Dilution Factor	Pressure Gauge ID	Date	Analyst Initials
200-56561-1	6	-0.5	0.98	5.90	5	1.34	8.04		1.36	1.36	na	12/23/20 17:45	GGG
200-56561-2	6	-0.4	0.99	5.92	5	1.34	8.04		1.36	1.36	na	12/23/20 17:46	GGG
200-56561-3	6	-0.4	0.99	5.92	5	1.34	8.04		1.36	1.36	NA	12/23/20 17:46	GGG
200-56561-4	6	0	1.00	6.00	5	1.34	8.04		1.34	1.34	NA	12/23/20 17:46	GGG
200-56561-5	6	0	1.00	6.00	5	1.34	8.04		1.34	1.34	NA	12/23/20 17:47	GGG
200-56561-6	6	-0.5	0.98	5.90	5	1.34	8.04		1.36	1.36	NA	12/23/20 17:48	GGG
200-56561-7	6	-1	0.97	5.80	5	1.34	8.04		1.39	1.39	NA	12/23/20 17:48	GGG
200-56561-8	6	-4.0	0.87	5.20	5	1.34	8.04		1.55	1.55	NA	12/23/20 17:49	GGG
200-56561-9	6	-1.0	0.97	5.80	5	1.34	8.04		1.39	1.39	NA	12/23/20 17:52	GGG
200-56561-10	6	0	1.00	6.00	5	1.34	8.04		1.34	1.34	NA	12/23/20 17:52	GGG

Formulae:

- Preadjusted Volume (L) = (Preadjusted Pressure ("Hg) + 29.92 "Hg * Vol L) / 29.92 "Hg
- Adjusted Volume (L) = (Adjusted Pressure (psig) + 14.7 psig * Vol L) / 14.7 psig
- Dilution Factor = Adjusted Volume (L) / Preadjusted Volume (L)

Where:

- 29.92 "Hg = Standard atmospheric pressure in inches of Mercury ("Hg)
- 14.7 psig = Standard atmospheric pressure in pounds per square inch gauge (psig)



Air Toxics

Analysis Request / Canister Chain of Custody

For Laboratory Use Only

PID: _____ Workorder #: 2012224

CH₄, CO₂, H₂, He, N₂ and O₂
page 1 of 1

180 Blue Ravine Rd. Suite B, Folsom, CA 95630
Phone (800) 985-5955; Fax (916) 351-8279

Client: <u>Leidos</u>	Special Instructions/Notes: <u>Invoice Leidos Task order No. PO10242812</u> <u>Report BTEX, MTBE, and Naphthalene only for TO-15 SIM.</u>	Turnaround Time (Rush surcharges may apply) Standard <input checked="" type="checkbox"/> Rush _____ (specify)									
Project Name: <u>Newman's Chevron</u>		Canister Vacuum/Pressure _____ Requested Analyses									
Project Manager: <u>R. Shropshire</u> Project # <u>204117</u>		<table border="1"> <tr> <th rowspan="2">Initial (in Hg)</th> <th rowspan="2">Final (in Hg)</th> <th colspan="2">Lab Use Only</th> <th rowspan="2">EPA TO-15 SIM</th> <th rowspan="2">Mass APH</th> <th rowspan="2">ASTM D-1946</th> </tr> <tr> <th>Receipt</th> <th>Final (psig) Gas: N₂ / He</th> </tr> </table>	Initial (in Hg)	Final (in Hg)	Lab Use Only		EPA TO-15 SIM	Mass APH	ASTM D-1946	Receipt	Final (psig) Gas: N ₂ / He
Initial (in Hg)					Final (in Hg)	Lab Use Only				EPA TO-15 SIM	Mass APH
	Receipt	Final (psig) Gas: N ₂ / He									
Sampler: <u>RSS / TED</u>	Site Name: <u>Newman's Chevron</u>										

Lab ID	Field Sample Identification (Location)	Can #	Flow Controller #	Start Sampling Information		Stop Sampling Information		Initial (in Hg)	Final (in Hg)	Receipt	Final (psig) Gas: N ₂ / He	EPA TO-15 SIM	Mass APH	ASTM D-1946
				Date	Time	Date	Time							
01A	SVP-1-120420	N2805/6L1694	20163	12-4-20	1723	12-4-20	1833	30"				X	X	X
02A	SVP-2-120420	00522/6L0133	22543		1613		1653	29"	0.5"			X	X	X
03A	SVP-3-120420	9224	22351		1506		1551	29.5"	1"			X	X	X
04A	SVP-4-120420	N3516/6L1826	25048		1319		1444	30"	1.5"			X	X	X
05A	SVP-5-120420	00583/6L0218	21470		0931		1036	30"	1"			X	X	X
06A	SVP-6-120420	N0098/6L1208	20535		1129		1239	29.5"	2"			X	X	X
07A	OA-1-120420	12044/1500	25185		0822		1922	29"	3.5"			X	X	X
08A	OA-2-120420	N0429/6L1336	23423		0825		1924	30"	6.5"			X	X	X
09A	OA-3-120420	N1594/6L0806	23460		0827		1926	28"	3"			X	X	X
10A	DUP-1-120420	1561/2269	—		—		—	30"	1"			X	X	X

Relinquished by: (Signature/Affiliation) <u>R. Shropshire</u> <u>Leidos</u>	Date <u>12-5-20</u>	Time <u>1630</u>	Received by: (Signature/Affiliation) <u>[Signature]</u>	Date <u>12/9/20</u>	Time <u>1040</u>
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time
Relinquished by: (Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)	Date	Time

Lab Use Only

Shipper Name: FedEx Custody Seals Intact? Yes No None

Sample Transportation Notice: Relinquishing signature on this document indicates that samples are shipped in compliance with all applicable local, State, Federal, and international laws, regulations, and ordinances of any kind. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins Air Toxics against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T Hotline (800) 467-4922

7/7/2021

Mr. Russ Shropshire
Leidos
11824 N Creek Parkway North
Ste 101
Bothell WA 98011

Project Name: Newman's Chevron
Project #: 204117
Workorder #: 2106570

Dear Mr. Russ Shropshire

The following report includes the data for the above referenced project for sample(s) received on 6/24/2021 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Modified TO-17 VI are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Monica Tran
Project Manager

WORK ORDER #: 2106570

Work Order Summary

CLIENT:	Mr. Russ Shropshire Leidos 11824 N Creek Parkway North Ste 101 Bothell, WA 98011	BILL TO:	Accounts Payable - Bothell Leidos 11824 N Creek Parkway North Ste 101 Bothell, WA 98011
PHONE:	425-485-5800	P.O. #	P010242812
FAX:		PROJECT #	204117 Newman's Chevron
DATE RECEIVED:	06/24/2021	CONTACT:	Monica Tran
DATE COMPLETED:	07/07/2021		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	SVP-1-062221	Modified TO-17 VI
02A	SVP-2-062221	Modified TO-17 VI
03A	SVP-3-062221	Modified TO-17 VI
04A	SVP-4-062221	Modified TO-17 VI
05A	SVP-5-062221	Modified TO-17 VI
06A	SVP-6-062221	Modified TO-17 VI
07A	FB-1-062221	Modified TO-17 VI
08A	Lab Blank	Modified TO-17 VI
09A	CCV	Modified TO-17 VI
10A	LCS	Modified TO-17 VI
10AA	LCSD	Modified TO-17 VI

CERTIFIED BY: 

 Technical Director

DATE: 07/07/21

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209220, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-20-16, UT NELAP – CA009332020-12, VA NELAP - 10615, WA NELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)

Accreditation number: CA300005-014, Effective date: 10/18/2020, Expiration date: 10/17/2021.

Eurofins Air Toxics, LLC certifies that the test results contained in this report meet all requirements of the NELAC standards

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LABORATORY NARRATIVE
Modified EPA Method TO-17 (VI Tubes)
Leidos
Workorder# 2106570

Seven TO-17 VI Tube samples were received on June 24, 2021. The laboratory performed the analysis via modified EPA Method TO-17 using GC/MS in the full scan mode. TO-17 'VI' sorbent tubes are thermally desorbed onto a secondary trap. The trap is thermally desorbed to elute the components into the GC/MS system for compound separation and detection.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the EATL modifications.

<i>Requirement</i>	<i>TO-17</i>	<i>ATL Modifications</i>
Verification of Safe Sampling Volume	Collect Distributed Volume Pairs at uncharacterized sites and/or utilize field test method to evaluate breakthrough by sampling tubes in series at different air volumes.	Field surrogates are spiked onto each tube prior to deployment in the field. Recoveries are used to monitor method performance from sample collection through analysis for each sample tube.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A sampling volume of 0.800 L was used to convert ng to ug/m3 for the associated Lab Blank and sample FB-1-062221.

Definition of Data Qualifying Flags

Nine qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in blank (subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

CN - See case narrative

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: SVP-1-062221

Lab ID#: 2106570-01A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	12	14

Client Sample ID: SVP-2-062221

Lab ID#: 2106570-02A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	19	23

Client Sample ID: SVP-3-062221

Lab ID#: 2106570-03A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	7.2	9.0

Client Sample ID: SVP-4-062221

Lab ID#: 2106570-04A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	2.3	2.9

Client Sample ID: SVP-5-062221

Lab ID#: 2106570-05A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	3.9	4.9

Client Sample ID: SVP-6-062221

Lab ID#: 2106570-06A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	3.1	3.9

**Summary of Detected Compounds
EPA METHOD TO-17**

Client Sample ID: FB-1-062221

Lab ID#: 2106570-07A

No Detections Were Found.



Air Toxics

Client Sample ID: SVP-1-062221

Lab ID#: 2106570-01A

EPA METHOD TO-17

File Name:	9062513	Date of Extraction: NA	Date of Collection: 6/22/21 9:23:00 AM
Dil. Factor:	1.00	Date of Analysis: 6/25/21 06:39 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	12	14

Air Sample Volume(L): 0.800
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	96	50-150



Air Toxics

Client Sample ID: SVP-2-062221

Lab ID#: 2106570-02A

EPA METHOD TO-17

File Name:	9062514	Date of Extraction:	NA	Date of Collection:	6/22/21 10:06:00 AM
Dil. Factor:	1.00			Date of Analysis:	6/25/21 07:21 PM

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	19	23

Air Sample Volume(L): 0.800
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	84	50-150



Air Toxics

Client Sample ID: SVP-3-062221

Lab ID#: 2106570-03A

EPA METHOD TO-17

File Name:	9062515	Date of Extraction: NA	Date of Collection: 6/22/21 10:47:00 AM
Dil. Factor:	1.00	Date of Analysis: 6/25/21 08:03 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	7.2	9.0

Air Sample Volume(L): 0.800
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	106	50-150



Air Toxics

Client Sample ID: SVP-4-062221

Lab ID#: 2106570-04A

EPA METHOD TO-17

File Name:	9062516	Date of Extraction: NA	Date of Collection: 6/22/21 12:33:00 PM
Dil. Factor:	1.00	Date of Analysis: 6/25/21 08:44 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	2.3	2.9

Air Sample Volume(L): 0.800
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	101	50-150



Air Toxics

Client Sample ID: SVP-5-062221

Lab ID#: 2106570-05A

EPA METHOD TO-17

File Name:	9062517	Date of Extraction: NA	Date of Collection: 6/22/21 1:30:00 PM
Dil. Factor:	1.00	Date of Analysis: 6/25/21 09:25 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	3.9	4.9

Air Sample Volume(L): 0.800
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	94	50-150



Air Toxics

Client Sample ID: SVP-6-062221

Lab ID#: 2106570-06A

EPA METHOD TO-17

File Name:	9062518	Date of Extraction: NA	Date of Collection: 6/22/21 1:58:00 PM
Dil. Factor:	1.00	Date of Analysis: 6/25/21 10:07 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	3.1	3.9

Air Sample Volume(L): 0.800
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	75	50-150



Air Toxics

Client Sample ID: FB-1-062221

Lab ID#: 2106570-07A

EPA METHOD TO-17

File Name:	9062512	Date of Extraction: NA	Date of Collection: 6/22/21 11:02:00 AM
Dil. Factor:	1.00	Date of Analysis: 6/25/21 05:57 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	Not Detected	Not Detected

Air Sample Volume(L): 0.800
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	93	50-150



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2106570-08A

EPA METHOD TO-17

File Name:	9062508	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/25/21 02:26 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	Not Detected	Not Detected

Air Sample Volume(L): 0.800
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	82	50-150



Air Toxics

Client Sample ID: CCV

Lab ID#: 2106570-09A

EPA METHOD TO-17

File Name:	9062505	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/25/21 11:54 AM	

Compound	%Recovery
Naphthalene	89

Air Sample Volume(L): 1.00
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	95	50-150



Air Toxics

Client Sample ID: LCS

Lab ID#: 2106570-10A

EPA METHOD TO-17

File Name:	9062506	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/25/21 12:36 PM	

Compound	%Recovery	Method Limits
Naphthalene	103	70-130

Air Sample Volume(L): 1.00
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	104	50-150



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2106570-10AA

EPA METHOD TO-17

File Name:	9062507	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 6/25/21 01:17 PM	

Compound	%Recovery	Method Limits
Naphthalene	103	70-130

Air Sample Volume(L): 1.00
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	104	50-150

TO-17 SAMPLE COLLECTION



Air Toxics

Sample Transportation Notice

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Eurofins assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922.

**180 BLUE RAVINE ROAD, SUITE B
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(916) 985-1000 FAX (916) 985-1020**

Page 1 of 1

CHAIN-OF-CUSTODY RECORD

Project Manager Russ Shropshire

Collected by: (Print and Sign) Russ Shropshire

Company Leidos Email shropshirec@leidos.com

Address 11824 North Creek Parkway City Bothell State WA Zip 98011

Phone (206) 321-2387 Fax _____

Project Info:		Turn Around Time:	Reporting Units:
P.O. # <u>P010242812</u>	Project # <u>204117</u>		
Project Name <u>Newman's Chevron</u>		<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> ppmv
		<input type="checkbox"/> Rush	<input type="checkbox"/> ppbv
		specify _____	<input checked="" type="checkbox"/> µg/m3
			<input type="checkbox"/> mg/m3

Lab I.D.	Field Sample I.D. (Location)	Engraved or Stamped Tube #	Date of Collection (mm/dd/yy)	Start Time (hr:min)	Date of Retrieval (mm/dd/yy)	End Time (hr:min)	Pre-Test Flow Rate	Post-Test Flow Rate	Volume	Indoor Air	Outdoor Air	Soil Vapor	Other ()	
01A	SVP-1-062221		06/22/21	09:21	06/22/21 09:23	09:23	NA	NA	800ml	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
02A	SVP-2-062221		↓	10:04	10:06	10:06	↓	↓	↓	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
03A	SVP-3-062221			10:45	10:47	10:47				<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
04A	SVP-4-062221			12:30	12:33	12:33				<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
05A	SVP-5-062221			13:28	13:30	13:30				<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
06A	SVP-6-062221			13:56	13:58	13:58				<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
07A	FB-1-062221			11:01	11:02	11:02				<input type="checkbox"/>	<input type="checkbox"/>	NA	<input checked="" type="checkbox"/>	<input type="checkbox"/>
													<input type="checkbox"/>	<input type="checkbox"/>

Relinquished by: (signature) <u>[Signature]</u> Date/Time <u>6/23/21 14:00</u>	Received by: (signature) <u>[Signature]</u> Date/Time <u>6-24-21 1001</u>	Notes: <u>Fed Ex 7740 8029 0790</u>
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	

Lab Use Only	Shipper Name <u>Fed Ex</u>	Air Bill # _____	Temp (°C) <u>2.0°C</u>	Condition <u>GOOD</u>	Custody Seals Intact? Yes No <u>(None)</u>	Work Order # <u>2106570</u>
						<u>2106570</u> <u>6/24/21</u>

ANALYTICAL REPORT

Eurofins Lancaster Laboratories Env, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-61781-1
Client Project/Site: 204117 - Bremerton, WA

For:
Leidos Engineering, LLC
11824 North Creek Parkway N
Suite 101
Bothell, Washington 98011

Attn: Russ Shropshire



Authorized for release by:
11/17/2021 11:13:46 AM

Amek Carter, Project Manager
(717)556-7252
Loran.Carter@eurofinset.com

LINKS

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results through
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The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
 - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
 - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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A handwritten signature in black ink that reads "Amek Carter".

Amek Carter
Project Manager
11/17/2021 11:13:46 AM



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Definitions/Glossary

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA

Job ID: 410-61781-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
F1	MS and/or MSD recovery exceeds control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA

Job ID: 410-61781-1

Job ID: 410-61781-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Narrative

Job Narrative 410-61781-1

Receipt

The sample was received on 11/3/2021 10:45 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.4°C

GC/MS VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

Method NWTPH_Dx: The laboratory control sample (LCS) for preparation batch 410-194569 and analytical batch 410-194880 recovered outside control limits for the following analytes: C12-C24. The associated sample was re-prepared outside holding time. Both sets of data have been reported. SVP-7-3-6.5-211101 (410-61781-1), (410-61781-B-1-C DU) and (410-61781-B-1-B MS)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



Detection Summary

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA

Job ID: 410-61781-1

Client Sample ID: SVP-7-3-6.5-211101

Lab Sample ID: 410-61781-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Toluene	0.79	J	5.8	0.69	ug/Kg	1	*	*	8260D	Total/NA
1-Methylnaphthalene	36		22	4.3	ug/Kg	1	*	*	8270E	Total/NA
2-Methylnaphthalene	49		22	6.5	ug/Kg	1	*	*	8270E	Total/NA
Naphthalene	17	J	22	8.7	ug/Kg	1	*	*	8270E	Total/NA
C7-C12 (1C)	0.52	J	8.0	0.37	mg/Kg	25	*	*	NWTPH-Gx	Total/NA
Lead	4.6		1.8	0.72	mg/Kg	1	*	*	6010D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Env, LLC

Client Sample Results

Client: Leidos Engineering, LLC
 Project/Site: 204117 - Bremerton, WA

Job ID: 410-61781-1

Client Sample ID: SVP-7-3-6.5-211101

Lab Sample ID: 410-61781-1

Date Collected: 11/01/21 10:50

Matrix: Solid

Date Received: 11/03/21 10:45

Percent Solids: 77.0

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		5.8	0.58	ug/Kg	☼	11/09/21 22:53	11/11/21 14:25	1
Ethylbenzene	ND		5.8	0.46	ug/Kg	☼	11/09/21 22:53	11/11/21 14:25	1
Toluene	0.79	J	5.8	0.69	ug/Kg	☼	11/09/21 22:53	11/11/21 14:25	1
Xylenes, Total	ND		12	1.6	ug/Kg	☼	11/09/21 22:53	11/11/21 14:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		54 - 135				11/09/21 22:53	11/11/21 14:25	1
Dibromofluoromethane (Surr)	113		50 - 141				11/09/21 22:53	11/11/21 14:25	1
4-Bromofluorobenzene (Surr)	94		50 - 131				11/09/21 22:53	11/11/21 14:25	1
Toluene-d8 (Surr)	92		52 - 141				11/09/21 22:53	11/11/21 14:25	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	36		22	4.3	ug/Kg	☼	11/09/21 16:05	11/12/21 01:03	1
2-Methylnaphthalene	49		22	6.5	ug/Kg	☼	11/09/21 16:05	11/12/21 01:03	1
Naphthalene	17	J	22	8.7	ug/Kg	☼	11/09/21 16:05	11/12/21 01:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	77		39 - 100				11/09/21 16:05	11/12/21 01:03	1
Nitrobenzene-d5 (Surr)	70		32 - 97				11/09/21 16:05	11/12/21 01:03	1
p-Terphenyl-d14 (Surr)	95		45 - 108				11/09/21 16:05	11/12/21 01:03	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	0.52	J	8.0	0.37	mg/Kg	☼	11/09/21 22:54	11/11/21 19:07	25
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	135		50 - 150				11/09/21 22:54	11/11/21 19:07	25

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND	F1 *-	13	5.2	mg/Kg	☼	11/14/21 11:03	11/15/21 15:29	1
C24-C40	ND		39	13	mg/Kg	☼	11/14/21 11:03	11/15/21 15:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-terphenyl (Surr)	93		50 - 150				11/14/21 11:03	11/15/21 15:29	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	4.6		1.8	0.72	mg/Kg	☼	11/10/21 12:24	11/11/21 11:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	23.0		1.0	1.0	%			11/10/21 08:18	1

Surrogate Summary

Client: Leidos Engineering, LLC
 Project/Site: 204117 - Bremerton, WA

Job ID: 410-61781-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (54-135)	DBFM (50-141)	BFB (50-131)	TOL (52-141)
410-61781-1	SVP-7-3-6.5-211101	111	113	94	92
LCS 410-193527/4	Lab Control Sample	105	106	101	99
LCS 410-193527/5	Lab Control Sample Dup	102	105	100	99
MB 410-193527/7	Method Blank	105	108	93	95

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
 DBFM = Dibromofluoromethane (Surr)
 BFB = 4-Bromofluorobenzene (Surr)
 TOL = Toluene-d8 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		FBP (39-100)	NBZ (32-97)	TPHd14 (45-108)
410-61781-1	SVP-7-3-6.5-211101	77	70	95
LCS 410-192690/2-A	Lab Control Sample	84	75	95
MB 410-192690/1-A	Method Blank	93	82	105

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 TPHd14 = p-Terphenyl-d14 (Surr)

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		TFT-F1 (50-150)
410-61781-1	SVP-7-3-6.5-211101	135
LCS 410-193555/5	Lab Control Sample	110
LCS 410-193555/6	Lab Control Sample Dup	104
MB 410-193555/4	Method Blank	106

Surrogate Legend

TFT-F = a,a,a-Trifluorotoluene (fid)

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		OTP (50-150)
410-61781-1	SVP-7-3-6.5-211101	93
410-61781-1 DU	SVP-7-3-6.5-211101	92
410-61781-1 MS	SVP-7-3-6.5-211101	95
LCS 410-194569/2-A	Lab Control Sample	98
MB 410-194569/1-A	Method Blank	93

Surrogate Legend

Surrogate Summary

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA
OTP = o- terphenyl (Surr)

Job ID: 410-61781-1

1

2

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QC Sample Results

Client: Leidos Engineering, LLC
 Project/Site: 204117 - Bremerton, WA

Job ID: 410-61781-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-193527/7

Matrix: Solid

Analysis Batch: 193527

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	ND		5.0	0.50	ug/Kg			11/11/21 11:38	1
Ethylbenzene	ND		5.0	0.40	ug/Kg			11/11/21 11:38	1
Toluene	ND		5.0	0.60	ug/Kg			11/11/21 11:38	1
Xylenes, Total	ND		10	1.4	ug/Kg			11/11/21 11:38	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	105		54 - 135		11/11/21 11:38	1
Dibromofluoromethane (Surr)	108		50 - 141		11/11/21 11:38	1
4-Bromofluorobenzene (Surr)	93		50 - 131		11/11/21 11:38	1
Toluene-d8 (Surr)	95		52 - 141		11/11/21 11:38	1

Lab Sample ID: LCS 410-193527/4

Matrix: Solid

Analysis Batch: 193527

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
Benzene	20.0	20.8		ug/Kg		104	80 - 120
Ethylbenzene	20.0	21.3		ug/Kg		107	78 - 120
Toluene	20.0	20.4		ug/Kg		102	80 - 120
Xylenes, Total	60.0	64.3		ug/Kg		107	75 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	105		54 - 135
Dibromofluoromethane (Surr)	106		50 - 141
4-Bromofluorobenzene (Surr)	101		50 - 131
Toluene-d8 (Surr)	99		52 - 141

Lab Sample ID: LCSD 410-193527/5

Matrix: Solid

Analysis Batch: 193527

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec. Limits	RPD	Limit
		Result	Qualifier						
Benzene	20.0	20.8		ug/Kg		104	80 - 120	0	30
Ethylbenzene	20.0	21.4		ug/Kg		107	78 - 120	0	30
Toluene	20.0	20.4		ug/Kg		102	80 - 120	0	30
Xylenes, Total	60.0	63.9		ug/Kg		107	75 - 120	1	30

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	102		54 - 135
Dibromofluoromethane (Surr)	105		50 - 141
4-Bromofluorobenzene (Surr)	100		50 - 131
Toluene-d8 (Surr)	99		52 - 141

QC Sample Results

Client: Leidos Engineering, LLC
 Project/Site: 204117 - Bremerton, WA

Job ID: 410-61781-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-192690/1-A
Matrix: Solid
Analysis Batch: 193316

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 192690

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1-Methylnaphthalene	ND		17	3.3	ug/Kg		11/09/21 16:05	11/10/21 22:46	1
2-Methylnaphthalene	ND		17	5.0	ug/Kg		11/09/21 16:05	11/10/21 22:46	1
Naphthalene	ND		17	6.7	ug/Kg		11/09/21 16:05	11/10/21 22:46	1
Surrogate	MB	MB	Limits				Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
2-Fluorobiphenyl (Surr)	93		39 - 100				11/09/21 16:05	11/10/21 22:46	1
Nitrobenzene-d5 (Surr)	82		32 - 97				11/09/21 16:05	11/10/21 22:46	1
p-Terphenyl-d14 (Surr)	105		45 - 108				11/09/21 16:05	11/10/21 22:46	1

Lab Sample ID: LCS 410-192690/2-A
Matrix: Solid
Analysis Batch: 193316

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 192690

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1-Methylnaphthalene	1670	1310		ug/Kg		79	59 - 120
2-Methylnaphthalene	1670	1290		ug/Kg		77	63 - 120
Naphthalene	1670	1280		ug/Kg		77	60 - 120
Surrogate	LCS	LCS	Limits				
	%Recovery	Qualifier					
2-Fluorobiphenyl (Surr)	84		39 - 100				
Nitrobenzene-d5 (Surr)	75		32 - 97				
p-Terphenyl-d14 (Surr)	95		45 - 108				

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 410-193555/4
Matrix: Solid
Analysis Batch: 193555

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
C7-C12 (1C)	ND		5.0	0.23	mg/Kg			11/11/21 14:39	25
Surrogate	MB	MB	Limits				Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier							
a,a,a-Trifluorotoluene (fid) (1C)	106		50 - 150					11/11/21 14:39	25

Lab Sample ID: LCS 410-193555/5
Matrix: Solid
Analysis Batch: 193555

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
C7-C12 (1C)	11.0	11.0		mg/Kg		100	55 - 145
Surrogate	LCS	LCS	Limits				
	%Recovery	Qualifier					
a,a,a-Trifluorotoluene (fid) (1C)	110		50 - 150				

QC Sample Results

Client: Leidos Engineering, LLC
 Project/Site: 204117 - Bremerton, WA

Job ID: 410-61781-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 410-193555/6
Matrix: Solid
Analysis Batch: 193555

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
C7-C12 (1C)	11.0	10.3		mg/Kg		94	55 - 145	7	30
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>a,a,a-Trifluorotoluene (fid) (1C)</i>	104		50 - 150						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 410-194569/1-A
Matrix: Solid
Analysis Batch: 194880

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 194569

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		10	4.0	mg/Kg		11/14/21 11:03	11/15/21 14:49	1
C24-C40	ND		30	10	mg/Kg		11/14/21 11:03	11/15/21 14:49	1
Surrogate	%Recovery	MB Qualifier	Limits						
<i>o-terphenyl (Surr)</i>	93		50 - 150						
							Prepared	Analyzed	Dil Fac
							11/14/21 11:03	11/15/21 14:49	1

Lab Sample ID: LCS 410-194569/2-A
Matrix: Solid
Analysis Batch: 194880

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 194569

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
C12-C24	133	91.2	*-	mg/Kg		68	74 - 115
Surrogate	%Recovery	LCS Qualifier	Limits				
<i>o-terphenyl (Surr)</i>	98		50 - 150				

Lab Sample ID: 410-61781-1 MS
Matrix: Solid
Analysis Batch: 194880

Client Sample ID: SVP-7-3-6.5-211101
Prep Type: Total/NA
Prep Batch: 194569

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
C12-C24	ND	F1 *-	172	118	F1	mg/Kg	⊛	69	74 - 115
Surrogate	%Recovery	MS Qualifier	Limits						
<i>o-terphenyl (Surr)</i>	95		50 - 150						

Lab Sample ID: 410-61781-1 DU
Matrix: Solid
Analysis Batch: 194880

Client Sample ID: SVP-7-3-6.5-211101
Prep Type: Total/NA
Prep Batch: 194569

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
C12-C24	ND	F1 *-	ND	*-	mg/Kg	⊛	NC	20
C24-C40	ND		ND		mg/Kg	⊛	NC	20

QC Sample Results

Client: Leidos Engineering, LLC
 Project/Site: 204117 - Bremerton, WA

Job ID: 410-61781-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: 410-61781-1 DU
 Matrix: Solid
 Analysis Batch: 194880

Client Sample ID: SVP-7-3-6.5-211101
 Prep Type: Total/NA
 Prep Batch: 194569

Surrogate	%Recovery	DU DU Qualifier	Limits
<i>o-terphenyl (Surr)</i>	92		50 - 150

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 410-193109/1-A
 Matrix: Solid
 Analysis Batch: 193663

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 193109

Analyte	MB MB Result Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND	1.5	0.60	mg/Kg		11/10/21 12:24	11/11/21 10:57	1

Lab Sample ID: LCS 410-193109/2-A
 Matrix: Solid
 Analysis Batch: 193663

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 193109

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	5.00	4.76		mg/Kg		95	80 - 120

QC Association Summary

Client: Leidos Engineering, LLC
 Project/Site: 204117 - Bremerton, WA

Job ID: 410-61781-1

GC/MS VOA

Prep Batch: 192807

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61781-1	SVP-7-3-6.5-211101	Total/NA	Solid	5035	

Analysis Batch: 193527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61781-1	SVP-7-3-6.5-211101	Total/NA	Solid	8260D	192807
MB 410-193527/7	Method Blank	Total/NA	Solid	8260D	
LCS 410-193527/4	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 410-193527/5	Lab Control Sample Dup	Total/NA	Solid	8260D	

GC/MS Semi VOA

Prep Batch: 192690

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61781-1	SVP-7-3-6.5-211101	Total/NA	Solid	3546	
MB 410-192690/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-192690/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 193316

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-192690/1-A	Method Blank	Total/NA	Solid	8270E	192690
LCS 410-192690/2-A	Lab Control Sample	Total/NA	Solid	8270E	192690

Analysis Batch: 193914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61781-1	SVP-7-3-6.5-211101	Total/NA	Solid	8270E	192690

GC VOA

Prep Batch: 192832

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61781-1	SVP-7-3-6.5-211101	Total/NA	Solid	5035	

Analysis Batch: 193555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61781-1	SVP-7-3-6.5-211101	Total/NA	Solid	NWTPH-Gx	192832
MB 410-193555/4	Method Blank	Total/NA	Solid	NWTPH-Gx	
LCS 410-193555/5	Lab Control Sample	Total/NA	Solid	NWTPH-Gx	
LCSD 410-193555/6	Lab Control Sample Dup	Total/NA	Solid	NWTPH-Gx	

GC Semi VOA

Prep Batch: 194569

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61781-1	SVP-7-3-6.5-211101	Total/NA	Solid	3550C	
MB 410-194569/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 410-194569/2-A	Lab Control Sample	Total/NA	Solid	3550C	
410-61781-1 MS	SVP-7-3-6.5-211101	Total/NA	Solid	3550C	
410-61781-1 DU	SVP-7-3-6.5-211101	Total/NA	Solid	3550C	

Analysis Batch: 194880

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61781-1	SVP-7-3-6.5-211101	Total/NA	Solid	NWTPH-Dx	194569

QC Association Summary

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA

Job ID: 410-61781-1

GC Semi VOA (Continued)

Analysis Batch: 194880 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-194569/1-A	Method Blank	Total/NA	Solid	NWTPH-Dx	194569
LCS 410-194569/2-A	Lab Control Sample	Total/NA	Solid	NWTPH-Dx	194569
410-61781-1 MS	SVP-7-3-6.5-211101	Total/NA	Solid	NWTPH-Dx	194569
410-61781-1 DU	SVP-7-3-6.5-211101	Total/NA	Solid	NWTPH-Dx	194569

Prep Batch: 195612

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61781-1 - RE	SVP-7-3-6.5-211101	Total/NA	Solid	3550C	
MB 410-195612/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 410-195612/2-A	Lab Control Sample	Total/NA	Solid	3550C	
410-61781-1 MS - RE	SVP-7-3-6.5-211101	Total/NA	Solid	3550C	
410-61781-1 DU - RE	SVP-7-3-6.5-211101	Total/NA	Solid	3550C	

Analysis Batch: 195806

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61781-1 - RE	SVP-7-3-6.5-211101	Total/NA	Solid	NWTPH-Dx	195612
MB 410-195612/1-A	Method Blank	Total/NA	Solid	NWTPH-Dx	195612
LCS 410-195612/2-A	Lab Control Sample	Total/NA	Solid	NWTPH-Dx	195612
410-61781-1 MS - RE	SVP-7-3-6.5-211101	Total/NA	Solid	NWTPH-Dx	195612
410-61781-1 DU - RE	SVP-7-3-6.5-211101	Total/NA	Solid	NWTPH-Dx	195612

Metals

Prep Batch: 193109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61781-1	SVP-7-3-6.5-211101	Total/NA	Solid	3050B	
MB 410-193109/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-193109/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 193663

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61781-1	SVP-7-3-6.5-211101	Total/NA	Solid	6010D	193109
MB 410-193109/1-A	Method Blank	Total/NA	Solid	6010D	193109
LCS 410-193109/2-A	Lab Control Sample	Total/NA	Solid	6010D	193109

General Chemistry

Analysis Batch: 192926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-61781-1	SVP-7-3-6.5-211101	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Leidos Engineering, LLC
 Project/Site: 204117 - Bremerton, WA

Job ID: 410-61781-1

Client Sample ID: SVP-7-3-6.5-211101

Lab Sample ID: 410-61781-1

Date Collected: 11/01/21 10:50

Matrix: Solid

Date Received: 11/03/21 10:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1	192926	11/10/21 08:18	UWC1	ELLE

Client Sample ID: SVP-7-3-6.5-211101

Lab Sample ID: 410-61781-1

Date Collected: 11/01/21 10:50

Matrix: Solid

Date Received: 11/03/21 10:45

Percent Solids: 77.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			192807	11/09/21 22:53	D8NM	ELLE
Total/NA	Analysis	8260D		1	193527	11/11/21 14:25	UCB5	ELLE
Total/NA	Prep	3546			192690	11/09/21 16:05	FTV5	ELLE
Total/NA	Analysis	8270E		1	193914	11/12/21 01:03	DZ6A	ELLE
Total/NA	Prep	5035			192832	11/09/21 22:54	UK30	ELLE
Total/NA	Analysis	NWTPH-Gx		25	193555	11/11/21 19:07	JJT8	ELLE
Total/NA	Prep	3550C			194569	11/14/21 11:03	FTV5	ELLE
Total/NA	Analysis	NWTPH-Dx		1	194880	11/15/21 15:29	IUSB	ELLE
Total/NA	Prep	3550C	RE		195612	11/17/21 01:06	USL7	ELLE
Total/NA	Analysis	NWTPH-Dx	RE	1	195806	11/17/21 10:53	KP5X	ELLE
Total/NA	Prep	3050B			193109	11/10/21 12:24	UJLA	ELLE
Total/NA	Analysis	6010D		1	193663	11/11/21 11:17	WJM9	ELLE

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA

Job ID: 410-61781-1

Laboratory: Eurofins Lancaster Laboratories Env, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-12-22

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA

Job ID: 410-61781-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	ELLE
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	ELLE
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	ELLE
6010D	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
3550C	Ultrasonic Extraction	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Env, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Sample Summary

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA

Job ID: 410-61781-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-61781-1	SVP-7-3-6.5-211101	Solid	11/01/21 10:50	11/03/21 10:45

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Lancaster Laboratories

Acct. i 410-61781 Chain of Custody

Laboratories use only

Sample # _____

Correspond with circled numbers.

1 Client Information				4 Matrix				5 Analyses Requested												6 Remarks	
Facility # <u>204117</u> WBS				Sediment <input type="checkbox"/> Ground <input type="checkbox"/> Surface <input type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Air <input type="checkbox"/> Water <input type="checkbox"/> Oil <input type="checkbox"/> Total Number of Containers _____ BTEX+MTBE 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphth <input type="checkbox"/> 8260 full scan _____ Oxygenates _____ NWTPH GX _____ NWTPH DX <input checked="" type="checkbox"/> Silica Gel Cleanup <input type="checkbox"/> Lead Total <input checked="" type="checkbox"/> Method _____ WAVPH <input type="checkbox"/> WAEPPH <input type="checkbox"/> <i>3 Naphthalenes by 8270 → i-Naphthalene, m-Naphthalene, p-Naphthalene</i>				SCR #: _____ <input checked="" type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits												Submit invoice to Leidos P010229412	
Site Address <u>2021 6th Street, Bremerton, WA</u>																					
Chevron PM <u>James Kiernan</u> Lead Consultant																					
Consultant/Office <u>Leidos - Bothell, WA</u>																					
Consultant Project Mgr. <u>Russ Shapshire</u>																					
Consultant Phone # <u>425-482-3323</u>				Sampler <u>T. Dubé</u>				7 Turnaround Time Requested (TAT) (please circle) Standard <input checked="" type="radio"/> 5 day 4 day 72 hour 48 hour 24 hour												Relinquished by <u>Russ Shapshire</u> Date <u>11-2-21</u> Time <u>1500</u> Received by <u>FedEx</u> Date <u>11-2-21</u> 815528305446	
2 Sample Identification Collected Date Time <u>SVP-7-9-6.5-21101</u> <u>11-1-21</u> <u>10:50</u>																					

Login Sample Receipt Checklist

Client: Leidos Engineering, LLC

Job Number: 410-61781-1

Login Number: 61781

List Source: Eurofins Lancaster Laboratories Env, LLC

List Number: 1

Creator: Jeremiah, Cory T

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	

3/7/2022

Mr. Russ Shropshire
Leidos
11824 N Creek Parkway North
Ste 101
Bothell WA 98011

Project Name: Newman's Chevron
Project #: 204117
Workorder #: 2202501

Dear Mr. Russ Shropshire

The following report includes the data for the above referenced project for sample(s) received on 2/22/2022 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Modified TO-17 VI are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Monica Tran
Project Manager

WORK ORDER #: 2202501

Work Order Summary

CLIENT: Mr. Russ Shropshire
Leidos
11824 N Creek Parkway North
Ste 101
Bothell, WA 98011

BILL TO: Accounts Payable - Bothell
Leidos
11824 N Creek Parkway North
Ste 101
Bothell, WA 98011

PHONE: 425-485-5800

P.O. # P010242812

FAX:

PROJECT # 204117 Newman's Chevron

DATE RECEIVED: 02/22/2022

CONTACT: Monica Tran

DATE COMPLETED: 03/07/2022

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	SVP-7-021822	Modified TO-17 VI
02A	FB-1-021822	Modified TO-17 VI
03A	Lab Blank	Modified TO-17 VI
04A	CCV	Modified TO-17 VI
05A	LCS	Modified TO-17 VI
05AA	LCSD	Modified TO-17 VI

CERTIFIED BY:



Technical Director

DATE: 03/07/22

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209221, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-21-17, UT NELAP – CA009332021-13, VA NELAP - 10615, WA NELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)

Accreditation number: CA300005-015, Effective date: 10/18/2021, Expiration date: 10/17/2022.

Eurofins Air Toxics, LLC certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630

(916) 985-1000 . (800) 985-5955 . FAX (916) 351-8279

LABORATORY NARRATIVE
Modified EPA Method TO-17 (VI Tubes)
Leidos
Workorder# 2202501

Two TO-17 VI Tube samples were received on February 22, 2022. The laboratory performed the analysis via modified EPA Method TO-17 using GC/MS in the full scan mode. TO-17 'VI' sorbent tubes are thermally desorbed onto a secondary trap. The trap is thermally desorbed to elute the components into the GC/MS system for compound separation and detection.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the EATL modifications.

<i>Requirement</i>	<i>TO-17</i>	<i>ATL Modifications</i>
Verification of Safe Sampling Volume	Collect Distributed Volume Pairs at uncharacterized sites and/or utilize field test method to evaluate breakthrough by sampling tubes in series at different air volumes.	Field surrogates are spiked onto each tube prior to deployment in the field. Recoveries are used to monitor method performance from sample collection through analysis for each sample tube.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A sampling volume of 0.8 L was used to convert ng to ug/m3 for the associated Lab Blank.

Definition of Data Qualifying Flags

Nine qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in blank (subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

CN - See case narrative

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

**Summary of Detected Compounds
EPA METHOD TO-17**

Client Sample ID: SVP-7-021822

Lab ID#: 2202501-01A

No Detections Were Found.

Client Sample ID: FB-1-021822

Lab ID#: 2202501-02A

No Detections Were Found.



Air Toxics

Client Sample ID: SVP-7-021822

Lab ID#: 2202501-01A

EPA METHOD TO-17

File Name:	6022313	Date of Extraction: NA	Date of Collection: 2/18/22 10:38:00 AM
Dil. Factor:	1.00	Date of Analysis: 2/23/22 06:42 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	Not Detected	Not Detected

Air Sample Volume(L): 0.800
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	124	50-150



Air Toxics

Client Sample ID: FB-1-021822

Lab ID#: 2202501-02A

EPA METHOD TO-17

File Name:	6022312	Date of Extraction: NA	Date of Collection: 2/18/22 10:50:00 AM
Dil. Factor:	1.00	Date of Analysis: 2/23/22 06:01 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	Not Detected	Not Detected

Air Sample Volume(L): 0.800
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	98	50-150



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2202501-03A

EPA METHOD TO-17

File Name:	6022307	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/23/22 01:45 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	Not Detected	Not Detected

Air Sample Volume(L): 0.800
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	110	50-150



Air Toxics

Client Sample ID: CCV

Lab ID#: 2202501-04A

EPA METHOD TO-17

File Name:	6022304	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/23/22 11:07 AM	

Compound	%Recovery
Naphthalene	94

Air Sample Volume(L): 1.00
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	110	50-150



Air Toxics

Client Sample ID: LCS

Lab ID#: 2202501-05A

EPA METHOD TO-17

File Name:	6022302	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/23/22 09:45 AM	

Compound	%Recovery	Method Limits
Naphthalene	119	70-130

Air Sample Volume(L): 1.00
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	122	50-150



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2202501-05AA

EPA METHOD TO-17

File Name:	6022303	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 2/23/22 10:26 AM	

Compound	%Recovery	Method Limits
Naphthalene	115	70-130

Air Sample Volume(L): 1.00
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	114	50-150

TO-17 SAMPLE COLLECTION



Air Toxics

Sample Transportation Notice

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Eurofins assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922.

**180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630
(916) 985-1000 FAX (916) 985-1020**

Page 1 of 1

CHAIN-OF-CUSTODY RECORD

Project Manager Russ Shropshire
 Collected by: (Print and Sign) Russ Shropshire
 Company Leidos Email shropshire@leidos.com
 Address 11824 Northrock Parkway City Bothell State WA Zip 98011
 Phone 206-321-2387 Fax _____

Project Info: P.O. # <u>P010242812</u> Project # <u>204117</u> Project Name <u>Newman's Chevron</u>	Turn Around Time: <input checked="" type="checkbox"/> Normal <input type="checkbox"/> Rush specify _____	Reporting Units: <input type="checkbox"/> ppmv <input type="checkbox"/> ppbv <input checked="" type="checkbox"/> µg/m3 <input type="checkbox"/> mg/m3	Indoor Air	Outdoor Air	Soil Vapor	Other ()
---	--	--	------------	-------------	------------	-----------

Lab I.D.	Field Sample I.D. (Location)	Engraved or Stamped Tube #	Date of Collection (mm/dd/yy)	Start Time (hr:min)	Date of Retrieval (mm/dd/yy)	End Time (hr:min)	Pre-Test Flow Rate	Post-Test Flow Rate	Volume	Indoor Air	Outdoor Air	Soil Vapor	Other ()
01A	SVP-7-021822	G0150839	02/18/22	10:36	2/18/22	10:38	NA	NA	800 mL	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
02A	FB-1-021822	G0139969	02/18/22	10:49	2/18/22	10:50	NA	NA	800 mL	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
										<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
										<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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										<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Relinquished by: (signature) <u>[Signature]</u> Date/Time <u>2/18/22 15:12</u>	Received by: (signature) <u>Thomas Dube</u> Date/Time <u>2/18/22 15:12</u>	Notes:
Relinquished by: (signature) <u>Thomas Dube</u> Date/Time <u>2/21/22 14:30</u>	Received by: (signature) <u>[Signature]</u> Date/Time <u>2-22-22 1020</u>	
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	<u>Leidos</u>		<u>5.10°C</u>	<u>G000</u>	<input checked="" type="radio"/> Yes <input type="radio"/> No <input type="radio"/> None	<u>2202501</u>

ANALYTICAL REPORT

Eurofins Lancaster Laboratories Environment Testing, LLC
2425 New Holland Pike
Lancaster, PA 17601
Tel: (717)656-2300

Laboratory Job ID: 410-96601-1

Client Project/Site: 204117 - Bremerton, WA

For:

Leidos Engineering, LLC
11824 North Creek Parkway N
Suite 101
Bothell, Washington 98011

Attn: Russ Shropshire



Authorized for release by:
9/19/2022 3:42:56 AM

Amek Carter, Project Manager
(717)556-7252

Loran.Carter@et.eurofinsus.com

LINKS

Review your project
results through



Have a Question?



Visit us at:

www.eurofinsus.com/Env

The test results in this report meet all 2003 NELAC, 2009 TNI, and 2016 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
 - Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
 - Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.
- Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

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WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Amek Carter
Project Manager
9/19/2022 3:42:56 AM



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Definitions/Glossary

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA

Job ID: 410-96601-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC VOA

Qualifier	Qualifier Description
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
S1+	Surrogate recovery exceeds control limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
□	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA

Job ID: 410-96601-1

Job ID: 410-96601-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

Job Narrative 410-96601-1

Receipt

The sample was received on 9/2/2022 10:10 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 2.7°C

GC/MS VOA

Method 8260D: <Client Label Added>SVP-8-S-5-220826 (410-96601-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC/MS Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC VOA

Method NWTPH_Gx: <Client Label Added>SVP-8-S-5-220826 (410-96601-1)

Method NWTPH_Gx: Elevated reporting limits are provided for the following sample due to insufficient sample provided for analysis: SVP-8-S-5-220826 (410-96601-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

GC Semi VOA

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Detection Summary

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA

Job ID: 410-96601-1

Client Sample ID: SVP-8-S-5-220826

Lab Sample ID: 410-96601-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Toluene	1.0	J	5.1	0.61	ug/Kg	1		✳	8260D	Total/NA
C7-C12 (1C)	1.0	J cn	15	0.67	mg/Kg	50		✳	NWTPH-Gx	Total/NA
Lead	4.1		1.6	0.65	mg/Kg	1		✳	6010D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

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Client Sample Results

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA

Job ID: 410-96601-1

Client Sample ID: SVP-8-S-5-220826

Lab Sample ID: 410-96601-1

Date Collected: 08/26/22 09:55

Matrix: Solid

Date Received: 09/02/22 10:10

Percent Solids: 78.8

Method: 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		5.1	0.51	ug/Kg	☼	09/04/22 16:23	09/08/22 14:32	1
Ethylbenzene	ND		5.1	0.41	ug/Kg	☼	09/04/22 16:23	09/08/22 14:32	1
Toluene	1.0	J	5.1	0.61	ug/Kg	☼	09/04/22 16:23	09/08/22 14:32	1
Xylenes, Total	ND		10	1.4	ug/Kg	☼	09/04/22 16:23	09/08/22 14:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		54 - 135				09/04/22 16:23	09/08/22 14:32	1
Dibromofluoromethane (Surr)	99		50 - 141				09/04/22 16:23	09/08/22 14:32	1
4-Bromofluorobenzene (Surr)	96		50 - 131				09/04/22 16:23	09/08/22 14:32	1
Toluene-d8 (Surr)	99		52 - 141				09/04/22 16:23	09/08/22 14:32	1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1-Methylnaphthalene	ND		21	4.2	ug/Kg	☼	09/09/22 09:41	09/12/22 18:27	1
2-Methylnaphthalene	ND		21	6.2	ug/Kg	☼	09/09/22 09:41	09/12/22 18:27	1
Naphthalene	ND		21	8.3	ug/Kg	☼	09/09/22 09:41	09/12/22 18:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	79		27 - 120				09/09/22 09:41	09/12/22 18:27	1
Nitrobenzene-d5 (Surr)	75		15 - 120				09/09/22 09:41	09/12/22 18:27	1
p-Terphenyl-d14 (Surr)	89		31 - 132				09/09/22 09:41	09/12/22 18:27	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C7-C12 (1C)	1.0	J cn	15	0.67	mg/Kg	☼	09/04/22 20:20	09/09/22 14:47	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	165	S1+ cn	50 - 150				09/04/22 20:20	09/09/22 14:47	50

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		13	5.0	mg/Kg	☼	09/07/22 21:41	09/08/22 12:34	1
C24-C40	ND		38	13	mg/Kg	☼	09/07/22 21:41	09/08/22 12:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-terphenyl (Surr)	89		50 - 150				09/07/22 21:41	09/08/22 12:34	1

Method: 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	4.1		1.6	0.65	mg/Kg	☼	09/07/22 20:44	09/16/22 05:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	21.2		1.0	1.0	%			09/06/22 06:07	1

Surrogate Summary

Client: Leidos Engineering, LLC
 Project/Site: 204117 - Bremerton, WA

Job ID: 410-96601-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)			
		DCA (54-135)	DBFM (50-141)	BFB (50-131)	TOL (52-141)
410-96601-1	SVP-8-S-5-220826	106	99	96	99
LCS 410-293779/4	Lab Control Sample	101	99	102	102
LCSD 410-293779/5	Lab Control Sample Dup	105	101	100	103
MB 410-293779/7	Method Blank	105	100	97	99

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
 DBFM = Dibromofluoromethane (Surr)
 BFB = 4-Bromofluorobenzene (Surr)
 TOL = Toluene-d8 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		FBP (27-120)	NBZ (15-120)	TPHd14 (31-132)
410-96601-1	SVP-8-S-5-220826	79	75	89
LCS 410-294174/2-A	Lab Control Sample	73	71	83
MB 410-294174/1-A	Method Blank	82	79	93

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 TPHd14 = p-Terphenyl-d14 (Surr)

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		TFT-F1 (50-150)
410-96601-1	SVP-8-S-5-220826	165 S1+ cn
LCS 410-294313/6	Lab Control Sample	88
LCSD 410-294313/7	Lab Control Sample Dup	89
MB 410-294313/5	Method Blank	93

Surrogate Legend

TFT-F = a,a,a-Trifluorotoluene (fid)

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)
		OTP (50-150)
410-96601-1	SVP-8-S-5-220826	89
LCS 410-293686/2-A	Lab Control Sample	108
MB 410-293686/1-A	Method Blank	96

Surrogate Legend

OTP = o- terphenyl (Surr)

QC Sample Results

Client: Leidos Engineering, LLC
 Project/Site: 204117 - Bremerton, WA

Job ID: 410-96601-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 410-293779/7

Matrix: Solid

Analysis Batch: 293779

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	ND		5.0	0.50	ug/Kg			09/08/22 11:54	1
Ethylbenzene	ND		5.0	0.40	ug/Kg			09/08/22 11:54	1
Toluene	ND		5.0	0.60	ug/Kg			09/08/22 11:54	1
Xylenes, Total	ND		10	1.4	ug/Kg			09/08/22 11:54	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	105		54 - 135		09/08/22 11:54	1
Dibromofluoromethane (Surr)	100		50 - 141		09/08/22 11:54	1
4-Bromofluorobenzene (Surr)	97		50 - 131		09/08/22 11:54	1
Toluene-d8 (Surr)	99		52 - 141		09/08/22 11:54	1

Lab Sample ID: LCS 410-293779/4

Matrix: Solid

Analysis Batch: 293779

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	20.0	19.7		ug/Kg		98	80 - 120
Ethylbenzene	20.0	19.2		ug/Kg		96	78 - 120
Toluene	20.0	19.3		ug/Kg		97	80 - 120
Xylenes, Total	60.0	57.2		ug/Kg		95	75 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	101		54 - 135
Dibromofluoromethane (Surr)	99		50 - 141
4-Bromofluorobenzene (Surr)	102		50 - 131
Toluene-d8 (Surr)	102		52 - 141

Lab Sample ID: LCSD 410-293779/5

Matrix: Solid

Analysis Batch: 293779

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD	LCSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
		Result	Qualifier						
Benzene	20.0	19.4		ug/Kg		97	80 - 120	1	30
Ethylbenzene	20.0	18.7		ug/Kg		94	78 - 120	2	30
Toluene	20.0	18.9		ug/Kg		95	80 - 120	2	30
Xylenes, Total	60.0	55.3		ug/Kg		92	75 - 120	3	30

Surrogate	LCSD	LCSD	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	105		54 - 135
Dibromofluoromethane (Surr)	101		50 - 141
4-Bromofluorobenzene (Surr)	100		50 - 131
Toluene-d8 (Surr)	103		52 - 141

QC Sample Results

Client: Leidos Engineering, LLC
 Project/Site: 204117 - Bremerton, WA

Job ID: 410-96601-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 410-294174/1-A
Matrix: Solid
Analysis Batch: 294860

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 294174

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1-Methylnaphthalene	ND		17	3.3	ug/Kg		09/09/22 09:41	09/12/22 12:30	1
2-Methylnaphthalene	ND		17	5.0	ug/Kg		09/09/22 09:41	09/12/22 12:30	1
Naphthalene	ND		17	6.7	ug/Kg		09/09/22 09:41	09/12/22 12:30	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
2-Fluorobiphenyl (Surr)	82		27 - 120			09/09/22 09:41	09/12/22 12:30	1	
Nitrobenzene-d5 (Surr)	79		15 - 120			09/09/22 09:41	09/12/22 12:30	1	
p-Terphenyl-d14 (Surr)	93		31 - 132			09/09/22 09:41	09/12/22 12:30	1	

Lab Sample ID: LCS 410-294174/2-A
Matrix: Solid
Analysis Batch: 294860

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 294174

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits	
		Result	Qualifier					
1-Methylnaphthalene	1670	1210		ug/Kg		72	67 - 120	
2-Methylnaphthalene	1670	1150		ug/Kg		69	61 - 120	
Naphthalene	1670	1200		ug/Kg		72	62 - 120	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	73		27 - 120					
Nitrobenzene-d5 (Surr)	71		15 - 120					
p-Terphenyl-d14 (Surr)	83		31 - 132					

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Lab Sample ID: MB 410-294313/5
Matrix: Solid
Analysis Batch: 294313

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
C7-C12 (1C)	ND		5.0	0.23	mg/Kg			09/09/22 12:14	25
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac	
a,a,a-Trifluorotoluene (fid) (1C)	93		50 - 150				09/09/22 12:14	25	

Lab Sample ID: LCS 410-294313/6
Matrix: Solid
Analysis Batch: 294313

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits	
		Result	Qualifier					
C7-C12 (1C)	11.0	10.5		mg/Kg		95	55 - 145	
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene (fid) (1C)	88		50 - 150					

QC Sample Results

Client: Leidos Engineering, LLC
 Project/Site: 204117 - Bremerton, WA

Job ID: 410-96601-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 410-294313/7
 Matrix: Solid
 Analysis Batch: 294313

Client Sample ID: Lab Control Sample Dup
 Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
C7-C12 (1C)	11.0	10.6		mg/Kg		96	55 - 145	1	30
Surrogate	%Recovery	LCSD Qualifier	Limits						
a,a,a-Trifluorotoluene (fid) (1C)	89		50 - 150						

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 410-293686/1-A
 Matrix: Solid
 Analysis Batch: 293801

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 293686

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
C12-C24	ND		10	4.0	mg/Kg		09/07/22 21:41	09/08/22 11:54	1
C24-C40	ND		30	10	mg/Kg		09/07/22 21:41	09/08/22 11:54	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-terphenyl (Surr)	96		50 - 150				09/07/22 21:41	09/08/22 11:54	1

Lab Sample ID: LCS 410-293686/2-A
 Matrix: Solid
 Analysis Batch: 293801

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 293686

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
C12-C24	133	98.9		mg/Kg		74	74 - 115
Surrogate	%Recovery	LCS Qualifier	Limits				
o-terphenyl (Surr)	108		50 - 150				

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 410-293647/1-A
 Matrix: Solid
 Analysis Batch: 296770

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 293647

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		1.5	0.60	mg/Kg		09/07/22 20:44	09/16/22 04:07	1

Lab Sample ID: LCS 410-293647/2-A
 Matrix: Solid
 Analysis Batch: 296770

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 293647

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	5.00	4.89		mg/Kg		98	80 - 120

QC Association Summary

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA

Job ID: 410-96601-1

GC/MS VOA

Prep Batch: 292717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-96601-1	SVP-8-S-5-220826	Total/NA	Solid	5035	

Analysis Batch: 293779

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-96601-1	SVP-8-S-5-220826	Total/NA	Solid	8260D	292717
MB 410-293779/7	Method Blank	Total/NA	Solid	8260D	
LCS 410-293779/4	Lab Control Sample	Total/NA	Solid	8260D	
LCSD 410-293779/5	Lab Control Sample Dup	Total/NA	Solid	8260D	

GC/MS Semi VOA

Prep Batch: 294174

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-96601-1	SVP-8-S-5-220826	Total/NA	Solid	3546	
MB 410-294174/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-294174/2-A	Lab Control Sample	Total/NA	Solid	3546	

Analysis Batch: 294860

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-96601-1	SVP-8-S-5-220826	Total/NA	Solid	8270E	294174
MB 410-294174/1-A	Method Blank	Total/NA	Solid	8270E	294174
LCS 410-294174/2-A	Lab Control Sample	Total/NA	Solid	8270E	294174

GC VOA

Prep Batch: 292735

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-96601-1	SVP-8-S-5-220826	Total/NA	Solid	5035	

Analysis Batch: 294313

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-96601-1	SVP-8-S-5-220826	Total/NA	Solid	NWTPH-Gx	292735
MB 410-294313/5	Method Blank	Total/NA	Solid	NWTPH-Gx	
LCS 410-294313/6	Lab Control Sample	Total/NA	Solid	NWTPH-Gx	
LCSD 410-294313/7	Lab Control Sample Dup	Total/NA	Solid	NWTPH-Gx	

GC Semi VOA

Prep Batch: 293686

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-96601-1	SVP-8-S-5-220826	Total/NA	Solid	3550C	
MB 410-293686/1-A	Method Blank	Total/NA	Solid	3550C	
LCS 410-293686/2-A	Lab Control Sample	Total/NA	Solid	3550C	

Analysis Batch: 293801

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-96601-1	SVP-8-S-5-220826	Total/NA	Solid	NWTPH-Dx	293686
MB 410-293686/1-A	Method Blank	Total/NA	Solid	NWTPH-Dx	293686
LCS 410-293686/2-A	Lab Control Sample	Total/NA	Solid	NWTPH-Dx	293686

QC Association Summary

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA

Job ID: 410-96601-1

Metals

Prep Batch: 293647

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-96601-1	SVP-8-S-5-220826	Total/NA	Solid	3050B	
MB 410-293647/1-A	Method Blank	Total/NA	Solid	3050B	
LCS 410-293647/2-A	Lab Control Sample	Total/NA	Solid	3050B	

Analysis Batch: 296770

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-96601-1	SVP-8-S-5-220826	Total/NA	Solid	6010D	293647
MB 410-293647/1-A	Method Blank	Total/NA	Solid	6010D	293647
LCS 410-293647/2-A	Lab Control Sample	Total/NA	Solid	6010D	293647

General Chemistry

Analysis Batch: 292814

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-96601-1	SVP-8-S-5-220826	Total/NA	Solid	Moisture	

Lab Chronicle

Client: Leidos Engineering, LLC
 Project/Site: 204117 - Bremerton, WA

Job ID: 410-96601-1

Client Sample ID: SVP-8-S-5-220826

Lab Sample ID: 410-96601-1

Date Collected: 08/26/22 09:55

Matrix: Solid

Date Received: 09/02/22 10:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	292814	UWC1	ELLE	09/06/22 06:07

Client Sample ID: SVP-8-S-5-220826

Lab Sample ID: 410-96601-1

Date Collected: 08/26/22 09:55

Matrix: Solid

Date Received: 09/02/22 10:10

Percent Solids: 78.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	5035			292717	D8NM	ELLE	09/04/22 16:23
Total/NA	Analysis	8260D		1	293779	L8QZ	ELLE	09/08/22 14:32
Total/NA	Prep	3546			294174	U9KU	ELLE	09/09/22 09:41
Total/NA	Analysis	8270E		1	294860	P7EB	ELLE	09/12/22 18:27
Total/NA	Prep	5035			292735	D8NM	ELLE	09/04/22 20:20
Total/NA	Analysis	NWTPH-Gx		50	294313	NND8	ELLE	09/09/22 14:47
Total/NA	Prep	3550C			293686	UKL2	ELLE	09/07/22 21:41
Total/NA	Analysis	NWTPH-Dx		1	293801	IUSB	ELLE	09/08/22 12:34
Total/NA	Prep	3050B			293647	UJLA	ELLE	09/07/22 20:44
Total/NA	Analysis	6010D		1	296770	T8CQ	ELLE	09/16/22 05:44

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Accreditation/Certification Summary

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA

Job ID: 410-96601-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Washington	State	C457	04-11-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA

Job ID: 410-96601-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	ELLE
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	ELLE
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC)	NWTPH	ELLE
NWTPH-Dx	Northwest - Semi-Volatile Petroleum Products (GC)	NWTPH	ELLE
6010D	Metals (ICP)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
3550C	Ultrasonic Extraction	SW846	ELLE
5035	Closed System Purge and Trap	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Sample Summary

Client: Leidos Engineering, LLC
Project/Site: 204117 - Bremerton, WA

Job ID: 410-96601-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-96601-1	SVP-8-S-5-220826	Solid	08/26/22 09:55	09/02/22 10:10

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15



Lancaster Laboratories Environmental

Acct. # 410-96601 Chain of Custody

Environmental use only
 Sample # _____
 and with circled numbers.

1 Client Information					4 Matrix				5 Analyses Requested												6 Remarks				
Facility #		WBS			Sediment <input type="checkbox"/> Ground <input type="checkbox"/> Surface <input type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Air <input type="checkbox"/> Total Number of Containers _____ BTEX + MTBE 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphth <input type="checkbox"/> 8260 full scan _____ Oxygenates _____ NWTPH-Gx _____ NWTPH-Dx with Silica Gel Cleanup <input type="checkbox"/> NWTPH-Dx without Silica Gel Cleanup <input type="checkbox"/> WA VPH <input type="checkbox"/> WA EPH <input type="checkbox"/> Lead <input checked="" type="checkbox"/> Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <input type="checkbox"/> <i>Naphthalenes * by 8270</i>				SCR #: _____ <input checked="" type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits																
Site Address																									
Chevron PM																									
Consultant/Office																									
Consultant Project Mgr.																									
Consultant Phone #																									
Sampler																									
Sample Identification			Collected		Grab	Composite	Soil	Water	Oil	Total Number of Containers	BTEX + MTBE 8021	8260	Naphth	Oxygenates	NWTPH-Gx	NWTPH-Dx with Silica Gel Cleanup	NWTPH-Dx without Silica Gel Cleanup	WA VPH	WA EPH	Lead	Total	Diss.	Method	Remarks	
SYP-8-5-5-220826			8-26-22 0955		X		X			7					X	X	X	X						* Naphthalens = Naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene. Submit invoice to Leidos P010229412	
7 Turnaround Time Requested (TAT) (please circle)					Relinquished by				Date		Time		Received by				Date		Time						
<input checked="" type="radio"/> Standard 5 day 4 day <input type="radio"/> 72 hour 48 hour 24 hour					<i>Russ Shropshire</i> Relinquished by _____				8-31-22		1500		<i>FedEx</i> Received by _____				8-31-22								
8 Data Package (circle if required)					Relinquished by Commercial Carrier:				Received by				Date		Time										
<input checked="" type="radio"/> Type I - Full Type VI (Raw Data)					<input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Other				<i>MP</i> Received by _____				9/1/22		1016										
EDD (circle if required)					Temperature Upon Receipt				Custody Seals Intact?				Yes		No										
<input type="radio"/> CVX-RTBU-FI_05 (default) Other: _____					2.7 °C				Yes																

Login Sample Receipt Checklist

Client: Leidos Engineering, LLC

Job Number: 410-96601-1

Login Number: 96601

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: McBeth, Jessica

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

10/24/2022

Mr. Russ Shropshire

Leidos

11824 N Creek Parkway North

Ste 101

Bothell WA 98011

Project Name: Newman's Chevron

Project #: 204117

Workorder #: 2210220

Dear Mr. Russ Shropshire

The following report includes the data for the above referenced project for sample(s) received on 10/11/2022 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Modified TO-17 VI are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,



Monica Tran

Project Manager

WORK ORDER #: 2210220

Work Order Summary

CLIENT:	Mr. Russ Shropshire Leidos 11824 N Creek Parkway North Ste 101 Bothell, WA 98011	BILL TO:	Accounts Payable - Bothell Leidos 11824 N Creek Parkway North Ste 101 Bothell, WA 98011
PHONE:	425-485-5800	P.O. #	P010242812
FAX:		PROJECT #	204117 Newman's Chevron
DATE RECEIVED:	10/11/2022	CONTACT:	Monica Tran
DATE COMPLETED:	10/24/2022		

<u>FRACTION #</u>	<u>NAME</u>	<u>TEST</u>
01A	OA-1-100622	Modified TO-17 VI
02A	OA-2-100622	Modified TO-17 VI
03A	OA-3-100622	Modified TO-17 VI
04A	IA-1-100622	Modified TO-17 VI
05A	IA-2-100622	Modified TO-17 VI
06A	IA-3-100622	Modified TO-17 VI
07A	CSA-1-100622	Modified TO-17 VI
08A	CSA-2-100622	Modified TO-17 VI
09A	CSA-B-100622	Modified TO-17 VI
10A	FB-1-100622	Modified TO-17 VI
11A	SSVP-1-100622	Modified TO-17 VI
12A	SSVP-2-100622	Modified TO-17 VI
13A	SSVP-3-100622	Modified TO-17 VI
14A	SVP-8-100622	Modified TO-17 VI
15A	FB-2-100622	Modified TO-17 VI
16A	Lab Blank	Modified TO-17 VI
17A	CCV	Modified TO-17 VI
18A	LCS	Modified TO-17 VI
18AA	LCS D	Modified TO-17 VI

CERTIFIED BY: 

 Technical Director

DATE: 10/24/22

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209221, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-21-17, UT NELAP – CA009332021-13, VA NELAP - 10615, WA NELAP - C935

Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
 Accreditation number: CA300005-015, Effective date: 10/18/2021, Expiration date: 10/17/2022.

Eurofins Air Toxics, LLC certifies that the test results contained in this report meet all requirements of the NELAC standards

This report shall not be reproduced, except in full, without the written approval of Eurofins Air Toxics, LLC.

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
 (916) 985-1000 . (800) 985-5955 . FAX (916) 351-8279

LABORATORY NARRATIVE
Modified EPA Method TO-17 (VI Tubes)
Leidos
Workorder# 2210220

Fifteen TO-17 VI Tube samples were received on October 11, 2022. The laboratory performed the analysis via modified EPA Method TO-17 using GC/MS in the full scan mode. TO-17 'VI' sorbent tubes are thermally desorbed onto a secondary trap. The trap is thermally desorbed to elute the components into the GC/MS system for compound separation and detection.

Method modifications taken to run these samples are summarized in the table below. Specific project requirements may over-ride the EATL modifications.

<i>Requirement</i>	<i>TO-17</i>	<i>ATL Modifications</i>
Verification of Safe Sampling Volume	Collect Distributed Volume Pairs at uncharacterized sites and/or utilize field test method to evaluate breakthrough by sampling tubes in series at different air volumes.	Field surrogates are spiked onto each tube prior to deployment in the field. Recoveries are used to monitor method performance from sample collection through analysis for each sample tube.

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

A sampling volume of 17.8 L was used to convert ng to ug/m3 for the associated Lab Blank and samples FB-1-100622 and FB-2-100622.

Definition of Data Qualifying Flags

Nine qualifiers may have been used on the data analysis sheets and indicates as follows:

B - Compound present in blank (subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit, LOD, or MDL value. See data page for project specific U-flag definition.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

CN - See case narrative

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: OA-1-100622

Lab ID#: 2210220-01A

No Detections Were Found.

Client Sample ID: OA-2-100622

Lab ID#: 2210220-02A

No Detections Were Found.

Client Sample ID: OA-3-100622

Lab ID#: 2210220-03A

No Detections Were Found.

Client Sample ID: IA-1-100622

Lab ID#: 2210220-04A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.069	1.4	0.099

Client Sample ID: IA-2-100622

Lab ID#: 2210220-05A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.064	1.6	0.10

Client Sample ID: IA-3-100622

Lab ID#: 2210220-06A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.071	6.7	0.48

Client Sample ID: CSA-1-100622

Lab ID#: 2210220-07A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.061	1.2	0.072



Summary of Detected Compounds EPA METHOD TO-17

Client Sample ID: CSA-2-100622

Lab ID#: 2210220-08A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.063	1.9	0.12

Client Sample ID: CSA-B-100622

Lab ID#: 2210220-09A

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.062	1.0	0.064

Client Sample ID: FB-1-100622

Lab ID#: 2210220-10A

No Detections Were Found.

Client Sample ID: SSVP-1-100622

Lab ID#: 2210220-11A

No Detections Were Found.

Client Sample ID: SSVP-2-100622

Lab ID#: 2210220-12A

No Detections Were Found.

Client Sample ID: SSVP-3-100622

Lab ID#: 2210220-13A

No Detections Were Found.

Client Sample ID: SVP-8-100622

Lab ID#: 2210220-14A

No Detections Were Found.

Client Sample ID: FB-2-100622

Lab ID#: 2210220-15A

**Summary of Detected Compounds
EPA METHOD TO-17**

Client Sample ID: FB-2-100622

Lab ID#: 2210220-15A

No Detections Were Found.



Air Toxics

Client Sample ID: OA-1-100622

Lab ID#: 2210220-01A

EPA METHOD TO-17

File Name:	9102010	Date of Extraction: NA	Date of Collection: 10/6/22 8:54:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/20/22 04:36 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.057	Not Detected	Not Detected

Air Sample Volume(L): 17.4
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	99	50-150



Air Toxics

Client Sample ID: OA-2-100622

Lab ID#: 2210220-02A

EPA METHOD TO-17

File Name:	9102011	Date of Extraction: NA	Date of Collection: 10/6/22 8:59:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/20/22 05:17 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.056	Not Detected	Not Detected

Air Sample Volume(L): 17.8
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	84	50-150



Air Toxics

Client Sample ID: OA-3-100622

Lab ID#: 2210220-03A

EPA METHOD TO-17

File Name:	9102012	Date of Extraction: NA	Date of Collection: 10/6/22 9:06:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/20/22 05:57 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.058	Not Detected	Not Detected

Air Sample Volume(L): 17.2
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	97	50-150



Air Toxics

Client Sample ID: IA-1-100622

Lab ID#: 2210220-04A

EPA METHOD TO-17

File Name:	9102013	Date of Extraction: NA	Date of Collection: 10/6/22 7:18:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/20/22 06:38 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.069	1.4	0.099

Air Sample Volume(L): 14.4
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	106	50-150



Air Toxics

Client Sample ID: IA-2-100622

Lab ID#: 2210220-05A

EPA METHOD TO-17

File Name:	9102014	Date of Extraction: NA	Date of Collection: 10/6/22 8:18:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/20/22 07:19 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.064	1.6	0.10

Air Sample Volume(L): 15.5
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	104	50-150



Air Toxics

Client Sample ID: IA-3-100622

Lab ID#: 2210220-06A

EPA METHOD TO-17

File Name:	9102015	Date of Extraction: NA	Date of Collection: 10/6/22 7:11:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/20/22 08:00 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.071	6.7	0.48

Air Sample Volume(L): 14.0
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	90	50-150



Air Toxics

Client Sample ID: CSA-1-100622

Lab ID#: 2210220-07A

EPA METHOD TO-17

File Name:	9102016	Date of Extraction: NA	Date of Collection: 10/6/22 8:37:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/20/22 08:40 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.061	1.2	0.072

Air Sample Volume(L): 16.4
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	129	50-150



Air Toxics

Client Sample ID: CSA-2-100622

Lab ID#: 2210220-08A

EPA METHOD TO-17

File Name:	9102017	Date of Extraction: NA	Date of Collection: 10/6/22 8:45:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/20/22 09:21 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.063	1.9	0.12

Air Sample Volume(L): 15.8
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	107	50-150



Air Toxics

Client Sample ID: CSA-B-100622

Lab ID#: 2210220-09A

EPA METHOD TO-17

File Name:	9102018	Date of Extraction: NA	Date of Collection: 10/6/22 8:30:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/20/22 10:02 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.062	1.0	0.064

Air Sample Volume(L): 16.1
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	82	50-150



Air Toxics

Client Sample ID: FB-1-100622

Lab ID#: 2210220-10A

EPA METHOD TO-17

File Name:	9102008	Date of Extraction: NA	Date of Collection: 10/6/22 12:59:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/20/22 03:14 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.056	Not Detected	Not Detected

Air Sample Volume(L): 17.8
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	79	50-150



Air Toxics

Client Sample ID: SSVP-1-100622

Lab ID#: 2210220-11A

EPA METHOD TO-17

File Name:	9102019	Date of Extraction: NA	Date of Collection: 10/6/22 8:10:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/20/22 10:43 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	Not Detected	Not Detected

Air Sample Volume(L): 0.800
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	100	50-150



Air Toxics

Client Sample ID: SSVP-2-100622

Lab ID#: 2210220-12A

EPA METHOD TO-17

File Name:	9102020	Date of Extraction: NA	Date of Collection: 10/6/22 9:25:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/20/22 11:24 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	Not Detected	Not Detected

Air Sample Volume(L): 0.800
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	80	50-150



Air Toxics

Client Sample ID: SSVP-3-100622

Lab ID#: 2210220-13A

EPA METHOD TO-17

File Name:	9102021	Date of Extraction: NA	Date of Collection: 10/6/22 7:50:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/21/22 12:05 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	Not Detected	Not Detected

Air Sample Volume(L): 0.800
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	103	50-150



Air Toxics

Client Sample ID: SVP-8-100622

Lab ID#: 2210220-14A

EPA METHOD TO-17

File Name:	9102022	Date of Extraction: NA	Date of Collection: 10/6/22 2:25:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/21/22 12:45 AM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	1.2	Not Detected	Not Detected

Air Sample Volume(L): 0.800
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	89	50-150



Air Toxics

Client Sample ID: FB-2-100622

Lab ID#: 2210220-15A

EPA METHOD TO-17

File Name:	9102009	Date of Extraction: NA	Date of Collection: 10/6/22 5:05:00 PM
Dil. Factor:	1.00	Date of Analysis: 10/20/22 03:55 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.056	Not Detected	Not Detected

Air Sample Volume(L): 17.8
Container Type: TO-17 VI Tube

Surrogates	%Recovery	Method Limits
Naphthalene-d8	105	50-150



Air Toxics

Client Sample ID: Lab Blank

Lab ID#: 2210220-16A

EPA METHOD TO-17

File Name:	9102007	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/20/22 02:01 PM	

Compound	Rpt. Limit (ng)	Rpt. Limit (ug/m3)	Amount (ng)	Amount (ug/m3)
Naphthalene	1.0	0.056	Not Detected	Not Detected

Air Sample Volume(L): 17.8
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	113	50-150



Air Toxics

Client Sample ID: CCV

Lab ID#: 2210220-17A

EPA METHOD TO-17

File Name:	9102006	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/20/22 01:20 PM	

Compound	%Recovery
Naphthalene	103

Air Sample Volume(L): 1.00
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	103	50-150



Air Toxics

Client Sample ID: LCS

Lab ID#: 2210220-18A

EPA METHOD TO-17

File Name:	9102004	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/20/22 11:58 AM	

Compound	%Recovery	Method Limits
Naphthalene	116	70-130

Air Sample Volume(L): 1.00
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	114	50-150



Air Toxics

Client Sample ID: LCSD

Lab ID#: 2210220-18AA

EPA METHOD TO-17

File Name:	9102005	Date of Extraction: NA	Date of Collection: NA
Dil. Factor:	1.00	Date of Analysis: 10/20/22 12:39 PM	

Compound	%Recovery	Method Limits
Naphthalene	114	70-130

Air Sample Volume(L): 1.00
Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Naphthalene-d8	114	50-150



Air Toxics

Sample Transportation Notice

Relinquishing signature on this document indicates that sample is being shipped in compliance with all applicable local, State, Federal, national, and international laws, regulations and ordinances of any kind. Eurofins assumes no liability with respect to the collection, handling or shipping of these samples. Relinquishing signature also indicates agreement to hold harmless, defend, and indemnify Eurofins against any claim, demand, or action, of any kind, related to the collection, handling, or shipping of samples. D.O.T. Hotline (800) 467-4922.

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FOLSOM, CA 95630
(916) 985-1000 FAX (916) 985-1020

CHAIN-OF-CUSTODY RECORD

Project Manager Russ Shropshire
 Collected by: (Print and Sign) Russ Shropshire
 Company Leidos Email shropshirc@leidos.com
 Address 11824 North Creek Pkwy N City Bothell State WA Zip 98011
 Phone 206-321-2387 Fax _____

Project Info:		Turn Around Time:	Reporting Units:	Indoor Air	Outdoor Air	Soil Vapor	Other ()
P.O. # <u>P010242812</u>	Project # <u>204117</u>						
Project Name <u>Newman's Chevron</u>		<input type="checkbox"/> Rush	<input type="checkbox"/> ppbv				
		specify _____	<input checked="" type="checkbox"/> µg/m3				
			<input type="checkbox"/> mg/m3				

Lab I.D.	Field Sample I.D. (Location)	Engraved or Stamped Tube #	Date of Collection (mm/dd/yy)	Start Time (hr : min)	Date of Retrieval (mm/dd/yy)	End Time (hr : min)	Pre-Test Flow Rate	Post-Test Flow Rate	Volume	Indoor Air	Outdoor Air	Soil Vapor	Other ()
01A	OA-1-100622	G0149671	10/06/22	10:53	10/06/22	20:54	30 ml/min	28 ml/min		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
02A	OA-2-100622	C14605	10/06/22	10:56	10/06/22	20:59	31 ml/min	28 ml/min		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
03A	OA-3-100622	G0153670	10/06/22	11:01	10/06/22	21:06	30 ml/min	27 ml/min		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
04A	IA-1-100622	G0148916	10/06/22	11:11	10/06/22	19:18	30 ml/min	29 ml/min		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
05A	IA-2-100622	G0149598	10/06/22	11:15	10/06/22	20:18	30 ml/min	27 ml/min		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
06A	IA-3-100622	G0152248	10/06/22	11:07	10/06/22	19:11	30 ml/min	28 ml/min		<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
07A	CSA-1-100622	G0141769	10/06/22	11:29	10/06/22	20:37	30 ml/min	29 ml/min		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
08A	CSA-2-100622	G0143668	10/06/22	11:35	10/06/22	20:45	30 ml/min	29 ml/min		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
09A	CSA-B-100622	G0152285	10/06/22	11:23	10/06/22	20:30	30 ml/min	28 ml/min		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10A	FB-1-100622	G0153850	10/06/22	12:57	10/06/22	12:59	NA	NA	NA	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Relinquished by: (signature) <u>[Signature]</u> Date/Time <u>10/10/22 15:00</u>	Received by: (signature) <u>[Signature]</u> Date/Time <u>10/11/22 10:06</u>	Notes: <u>FedEx 5662 0998 6294</u>
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	<u>Prox</u>		<u>28°C</u>	<u>Good</u>	Yes No <u>None</u>	<u>2210220</u>



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180 BLUE RAVINE ROAD, SUITE B
FOLSOM, CA 95630

(916) 985-1000 FAX (916) 985-1020

CHAIN-OF-CUSTODY RECORD

Project Manager Russ Shropshire

Collected by: (Print and Sign) Russ Shropshire

Company Leidos Email shropshire@leidos.com

Address 11824 North Creek Pkwy City Bothell State WA Zip 98011

Phone 206-321-2387 Fax _____

Project Info:		Turn Around Time:	Reporting Units:				
P.O. # <u>P01024281Z</u>	Project # <u>204117</u>	<input checked="" type="checkbox"/> Normal	<input type="checkbox"/> ppmv				
Project Name <u>Newman's Chevron</u>		<input type="checkbox"/> Rush	<input type="checkbox"/> ppbv				
		specify _____	<input checked="" type="checkbox"/> µg/m3				
			<input type="checkbox"/> mg/m3				

Lab I.D.	Field Sample I.D. (Location)	Engraved or Stamped Tube #	Date of Collection (mm/dd/yy)	Start Time (hr:min)	Date of Retrieval (mm/dd/yy)	End Time (hr:min)	Pre-Test Flow Rate	Post-Test Flow Rate	Volume	Indoor Air	Outdoor Air	Soil Vapor	Other
11A	SSVP-1-100622	C09478	10/06/22	20:08	10/06/22	20:10	NA	NA	800 mL	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12A	SSVP-2-100622	C08355	10/06/22	21:23	10/06/22	21:25	NA	NA	800 mL	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
13A	SSVP-3-100622	G0145558	10/06/22	19:48	10/06/22	19:50	NA	NA	800 mL	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
14A	SVP-8-100622	G0143714	10/06/22	14:22	10/06/22	14:25	NA	NA	800 mL	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
15A	FB-2-100622	G0137603	10/06/22	17:03	10/06/22	17:05	NA	NA	NA	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Relinquished by: (signature) <u>[Signature]</u> Date/Time <u>10/10/22 15:00</u>	Received by: (signature) <u>[Signature]</u> Date/Time <u>10/11/22 1006</u>	Notes: <u>Fed Ex 5662 0998 6294</u>
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	
Relinquished by: (signature) _____ Date/Time _____	Received by: (signature) _____ Date/Time _____	

Lab Use Only	Shipper Name	Air Bill #	Temp (°C)	Condition	Custody Seals Intact?	Work Order #
	<u>Fox</u>		<u>2802</u>	<u>Good</u>	Yes No <u>None</u>	<u>2210220</u>

Appendix E:
RI Data Validation Reports



**DATA VALIDATION REPORT
NEWMAN'S CHEVRON REMEDIAL INVESTIGATION**

Prepared for:

Leidos
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Prepared by:

EcoChem, Inc.
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EcoChem Project: C4159-1

November 29, 2018

Approved for Release:

A handwritten signature in black ink, appearing to read "Christine Ransom", written over a horizontal line.

Christine Ransom
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of summary validation (EPA Stage 2B) performed on soil, air, and associated quality control sample data for the Newman’s Chevron Remedial Investigation project. A complete list of samples is provided in the Sample Index.

All soil analyses were performed by Eurofins Laboratories Environmental, Lancaster, PA. Soil Vapor analyses were performed by ALS, Simi Valley, CA. The analytical methods and EcoChem project chemists are listed in the following table:

ANALYSIS	METHOD	PRIMARY REVIEW	SECONDARY REVIEW
Volatiles	8260B	E. Clayton	C. Ransom
PAH	8270D SIM		
Naphthalene	8270D		
PCB Aroclors	8082		
Gas Range Hydrocarbons	NWTPH-Gx		
Diesel Range Hydrocarbons	NWTPH-Dx		
Extractable Petroleum Hydrocarbons	NW EPH		
Volatile Petroleum Hydrocarbons	NW VPH		
Lead	6010D		
BTEX, MTBE Naphthalene	TO15		
Fixed Gases	EPA 3C		
Helium	ASTM D1946		

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Final Remedial Investigation Work Plan Newman’s Chevron* (Leidos, July 2018); *National Functional Guidelines for Organic Data Review* (USEPA 2016); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2016).

EcoChem’s goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Validation criteria are included as Appendix A. The qualified data summary table (QDST) is included as Appendix B. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted.

Sample Index
Newman's Chevron

SDG	Sample ID	Lab Sample ID	8260C	PAH 8270D-SIM	8270D	TPH-Gx	TPH-DX	EPH	VPH	8082A	Lead	TO15	Fixed Gases	Helium
LDC01	SB-4-S-6.0-180823	9780531	✓		✓	✓	✓				✓			
LDC01	SB-1-S-6.0-180823	9780532	✓		✓	✓	✓				✓			
LDC01	SB-7-S-6.0-180823	9780533	✓		✓	✓	✓				✓			
LDC01	SB-2-S-6.0-180824	9780534	✓		✓	✓	✓				✓			
LDC01	SB-6-S-2.0-180824	9780535	✓		✓	✓	✓				✓			
LDC01	SB-6-S-6.0-180824	9780536	✓		✓	✓	✓				✓			
LDC01	SB-1-S-12.0-180827	9780537	✓		✓	✓	✓				✓			
LDC01	SB-1-S-51.0-180827	9780538	✓		✓	✓	✓				✓			
LDC01	SB-7-S-10.0-180827	9780539	✓	✓	✓	✓	✓	✓	✓		✓			
LDC01	SB-7-S-14.0-180827	9780540	✓		✓	✓	✓				✓			
LDC01	SB-7-S-22.0-180827	9780541	✓		✓	✓	✓				✓			
LDC01	SB-7-S-28.0-180827	9780542	✓		✓	✓	✓				✓			
LDC01	SB-3-S-10.0-180828	9780543	✓		✓	✓	✓				✓			
LDC01	SB-3-S-12.0-180828	9780544	✓		✓	✓	✓				✓			
LDC01	SB-3-S-16.0-180828	9780545	✓		✓	✓	✓				✓			
LDC01	SB-3-S-24.0-180828	9780546	✓		✓	✓	✓				✓			
LDC01	UST-1-S-8.0-180828	9780547	✓		✓	✓	✓				✓			
LDC01	SB-2-S-11.0-180828	9780548	✓		✓	✓	✓				✓			
LDC01	SB-2-S-15.0-180828	9780549	✓		✓	✓	✓				✓			
LDC01	SB-2-S-20.0-180828	9780550	✓		✓	✓	✓				✓			
LDC01	SB-2-S-8.0-180828	9780551	✓		✓	✓	✓				✓			
LDC01	QA-1-O-180828	9780552	✓			✓								
LDC01	UST-2-S-8.0-180828	9780553	✓		✓	✓	✓	✓	✓	✓	✓			
LDC01	SB-5-S-12.0-180828	9780554	✓		✓	✓	✓				✓			
LDC01	SB-5-S-17.5-180828	9780555	✓	✓	✓	✓	✓	✓	✓		✓			
LDC01	SB-1-S-14.0-180827	9780556	✓		✓	✓	✓				✓			
LDC01	SB-1-S-16.0-180827	9780557	✓		✓	✓	✓				✓			
LDC01	DUP-1-SD-180828	9780558	✓		✓	✓	✓			✓	✓			

Sample Index
Newman's Chevron

SDG	Sample ID	Lab Sample ID	8260C	PAH 8270D-SIM	8270D	TPH-Gx	TPH-DX	EPH	VPH	8082A	Lead	TO15	Fixed Gases	Helium
LDC01	SB-5-S-24.0-180828	9780559	✓		✓	✓	✓				✓			
LDC01	SB-5-S-6.0-180823	9780560	✓		✓	✓	✓				✓			
LDC01	SB-5-S-14.0-180828	9780561	✓	✓	✓	✓	✓	✓	✓		✓			
LDC01	QA-1-T-180829	9780562	✓			✓								
LDC01	QA-2-T-180829	9780563	✓			✓								
LDC01	QA-3-T-180829	9780564	✓			✓								
LDC01	QA-4-T-180829	9780565	✓			✓								
LDC01	QA-5-T-180829	9780566	✓			✓								
LDC01	SB-8-S-2.0-180829	9780568	✓		✓	✓	✓				✓			
LDC01	SB-5-S-30.0-180829	9780569	✓		✓	✓	✓				✓			
LDC01	UST-3-S-8.0-180829	9780570	✓		✓	✓	✓	✓	✓	✓	✓			
LDC01	SB-4-S-12.0-180829	9780571	✓		✓	✓	✓				✓			
LDC01	DUP-2-SD-180829	9780572	✓		✓	✓	✓				✓			
LDC01	SB-4-S-14.0-180829	9780573	✓		✓	✓	✓				✓			
LDC01	UST-4-S-8.0-180829	9780574	✓		✓	✓	✓				✓			
LDC01	SB-4-S-25.0-180829	9780575	✓		✓	✓	✓				✓			
LDC01	UST-5-S-8.0-180829	9780576	✓		✓	✓	✓	✓	✓	✓	✓			
LDC01	UST-6-S-8.0-180829	9780577	✓		✓	✓	✓				✓			
LDC01	SB-8-S-12.0-180829	9780578	✓		✓	✓	✓				✓			
LDC01	SB-8-S-14.0-180829	9780579	✓		✓	✓	✓				✓			
LDC01	SB-8-S-25.0-180829	9780580	✓		✓	✓	✓				✓			
LDC03	SVP-1-S-10.0-180830	9789519	✓		✓	✓	✓	✓	✓	✓	✓			
LDC03	SVP-1-S-8.0-180830	9789520	✓		✓	✓	✓	✓	✓	✓	✓			
LDC03	UST-8-S-8.0-180829	9789521	✓		✓	✓	✓				✓			
LDC03	UST-7-S-8.0-180829	9789522	✓		✓	✓	✓				✓			
LDC03	SVP-2-S-8.0-180830	9789523	✓		✓	✓	✓	✓	✓	✓	✓			
LDC03	SVP-2-S-10.0-180830	9789524	✓		✓	✓	✓	✓	✓	✓	✓			
LDC03	SVP-3-S-8.0-180830	9789525	✓		✓	✓	✓				✓			

Sample Index
Newman's Chevron

SDG	Sample ID	Lab Sample ID	8260C	PAH 8270D-SIM	8270D	TPH-Gx	TPH-DX	EPH	VPH	8082A	Lead	TO15	Fixed Gases	Helium
LDC03	SVP-3-S-10.0-180830	9789526	✓		✓	✓	✓				✓			
LDC03	SB-9-S-7.0-180831	9789527	✓		✓	✓	✓				✓			
LDC03	SB-9-S-11.5-180831	9789528	✓		✓	✓	✓				✓			
LDC03	QA-2-O-180831	9789529	✓			✓								
LDC03	QA-6-T-180831	9789530	✓			✓								
P1805236	SVP-1-092718	P1805236-001										✓	✓	✓
P1805236	SVP-2-092718	P1805236-002										✓	✓	✓
P1805236	SVP-3-092718	P1805236-003										✓	✓	✓
P1805236	DUP-1-092718	P1805236-004										✓	✓	✓
P1805236	EB-1-092618	P1805236-005										✓	✓	✓
P1805236	EB-1-092818	P1805236-006										✓	✓	✓

DATA VALIDATION REPORT
Newman's Chevron
Volatile Organic Compounds by SW8260B

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC01	44 Soil, 1 Rinsate, 5 Trip Blank	Stage 2B
LDC03	10 Soil, 1 Rinsate, 1 Trip Blank	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

The laboratory logged in the field blanks with different IDs than were noted on the chains-of-custody. No action was taken other than to note the discrepancies:

SDG	Chain of Custody ID	Lab Log-in ID	Lab ID
LDC01	ER-1-082818	QA-1-O-180828	9780552
LDC01	TB-1-082918	QA-1-T-180829	9780562
LDC01	TB-2-082918	QA-2-T-180829	9780563
LDC01	TB-3-082918	QA-3-T-180829	9780564
LDC01	TB-4-082918	QA-4-T-180829	9780565
LDC01	TB-5-082918	QA-5-T-180829	9780566
LDC03	ER-2-083118	QA-2-O-180831	9789529
LDC03	TB-6-083118	QA-6-T-180831	9789530

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	GC/MS Instrument Performance (Tune)	2	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration (ICAL)	2	Field Duplicates
2	Continuing Calibration (CCAL)	✓	Internal Standards
✓	Laboratory Blanks	✓	Target Analyte List
2	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	✓	Reported Results

✓ *Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.*

1 *Quality control outliers are discussed below, but no data were qualified.*

2 *Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.*

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. With the following exceptions noted below, the laboratory received the sample coolers within the advisory temperature range.

SDG LDC01: Several sample cooler temperatures were less than the lower control limit, the lowest at 1.4°C. These outliers did not impact data quality; no data were qualified.

Sample UST-7-8.0-S-082918 listed on the chain-of-custody (COC) was missing from the sample cooler. This sample was included in SDG LDC03.

SDG LDC03: The sample cooler temperature was greater than the upper control limit, at 6.3°C. This outlier did not impact data quality; no data were qualified.

Continuing Calibration (CCAL)

With the exception noted below, the RRF values were greater than the 0.05 minimum control limit and the percent difference (%D) values were within the +/- 25% control limits for the continuing calibrations (CCAL).

SDG LDC01: For the CCAL analyzed on 9/7/18, the %D value for bromomethane was less than the lower control limit; associated sample results were estimated (UJ-5BL) to indicate a potential low bias.

Field Blanks

SDG LDC01: One rinsate blank, ER-1-082818, and five trip blanks, TB-1-082918, TB-2-082918, TB-3-082918, TB-4-082918, and TB-5-082918, were submitted. No target analytes were detected in these blanks. Toluene was detected in ER-1-082818. Toluene results in samples collected the same day as the field blank and that were less than 5x the concentration in the blank were qualified as not-detected (U-6).

SDG LDC03: One rinsate blank, ER-2-083118, and one trip blank, TB-6-083118, were submitted. Toluene was detected in Sample ER-2-083118. All associated sample results were greater than the 5x action level or were not detected; no data were qualified.

Matrix Spike/Matrix Spike Duplicates

SDG LDC01: For the matrix spike/matrix spike duplicate (MS/MSD) analyses performed using Sample SB-7-S-10.0-180827, the %R values for n-hexane were outside of the control limits; one was greater than the upper control limit and one was less than the lower control limit. The result for this compound in the parent sample was estimated (J-8) with no bias assigned. The RPD values for n-hexane, toluene, and xylene were greater than the control limit; the results in the parent sample were estimated (J-9).

Field Duplicates

SDG LDC01: Two sets of field duplicates were submitted: UST-2-S-8.0-180828 & DUP-1-SD-180828 and SB-4-S-12.0-180829 & DUP-2-SD-180829.

For samples SB-4-S-12.0-180829 & DUP-2-SD-180829, the results for ethylbenzene were less than 5x the reporting limit (RL) and the difference between the two results was greater than 2x the RL. The ethylbenzene results for these two samples were estimated (J-9).

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and MS/MSD recovery values and precision were acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate RPD values.

Detection limits were elevated based on rinsate blank contamination. Results were estimated based on a CCAL %D value, MS/MSD recovery and precision outliers, and a field duplicate precision outlier.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Newman's Chevron
Naphthalene by SW8270D and
Polycyclic Aromatic Hydrocarbons by 8270D-SIM

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC01	44 Soil	Stage 2B
LDC03	10 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS)
✓	GC/MS Instrument Performance (Tune)	✓	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration (ICAL)	✓	Internal Standards
✓	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Target Analyte List
1	Field Blanks	✓	Reporting Limits
2	Surrogate Compounds	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. With the following exceptions noted below, the laboratory received the sample coolers within the advisory temperature range.

SDG LDC01: Several sample cooler temperatures were less than the lower control limit, the lowest at 1.4°C. These outliers did not impact data quality; no data were qualified.

Sample UST-7-8.0-S-082918 listed on the chain-of-custody (COC) was missing from the sample cooler. This sample was included in SDG LDC03.

SDG LDC03: The sample cooler temperature was greater than the upper control limit, at 6.3°C. This outlier did not impact data quality; no data were qualified.

Field Blanks

No field blanks were submitted.

Surrogate Compounds

SDG LDC01: For Sample UST-3-S-8.0-180829, 2 of the 3 surrogate recoveries were greater than the upper control limits; all detected results in the sample were estimated (J-13H) to indicate a potential high bias.

Field Duplicates

SDG LDC01: Two sets of field duplicates were submitted: UST-2-S-8.0-180828 & DUP-1-SD-180828 and SB-4-S-12.0-180829 & DUP-2-SD-180829 were submitted as field duplicates. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, laboratory control sample, and matrix spike/matrix spike duplicate (MS/MSD) percent recovery values. Precision was also acceptable as demonstrated by the MS/MSD and field duplicate relative percent difference values.

Data were qualified due to surrogate recovery outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

PCB Aroclors by SW846 Method 8082

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory quality control (QC) samples. Eurofins Lancaster, Lancaster, Pennsylvania, analyzed the samples. Refer to the **SAMPLE INDEX** for a list of the individual samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC01	4 Soil	EPA Stage 2B
LDC03	4 Soil	EPA Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

VERIFICATION OF EDD TO LABORATORY REPORT

Sample results and related quality control data were received as an electronic data deliverable (EDD) and laboratory report. The EDD was verified against the laboratory report; no errors were found.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	✓	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration (ICAL)	1	Field Duplicates
✓	Continuing Calibration (CCAL)	✓	Target Analyte List
✓	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Compound Identification
✓	Surrogate Compounds	✓	Reported Results
✓	Laboratory Control Samples (LCS)		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. With the following exceptions noted below, the laboratory received the sample coolers within the advisory temperature range.

SDG LDC01: Several sample cooler temperatures were less than the lower control limit, the lowest at 1.4°C. These outliers did not impact data quality; no data were qualified.

Sample UST-7-8.0-S-082918 listed on the chain-of-custody (COC) was missing from the sample cooler. This sample was included in SDG LDC03.

SDG LDC03: The sample cooler temperature was greater than the upper control limit, at 6.3°C. This outlier did not impact data quality; no data were qualified.

Field Blanks

No field blanks were submitted.

Field Duplicates

SDG LDC01: Samples UST-2-S-8.0-180828 and DUP-1-SD-180828 were submitted as field duplicates. NO target analytes were detected in these samples; field precision was acceptable.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory performed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, laboratory control sample, and matrix spike/matrix spike duplicated (MS/MSD) recoveries. Precision was also acceptable as demonstrated by the MS/MSD and field duplicate relative percent difference values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Gasoline Range Organics by NWTPH-Gx

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC01	44 Soil, 1 Rinsate, 5 Trip Blank	Stage 2B
LDC03	10 Soil, 1 Rinsate, 1 Trip Blank	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

The laboratory logged in the field blanks with different IDs than were noted on the chains-of-custody. No action was taken other than to note the discrepancies:

SDG	Chain of Custody ID	Lab Log-in ID	Lab ID
LDC01	ER-1-082818	QA-1-O-180828	9780552
LDC01	TB-1-082918	QA-1-T-180829	9780562
LDC01	TB-2-082918	QA-2-T-180829	9780563
LDC01	TB-3-082918	QA-3-T-180829	9780564
LDC01	TB-4-082918	QA-4-T-180829	9780565
LDC01	TB-5-082918	QA-5-T-180829	9780566
LDC03	ER-2-083118	QA-2-O-180831	9789529
LDC03	TB-6-083118	QA-6-T-180831	9789530

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Preservation and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	Initial Calibration (ICAL)	1	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Reported Results
✓	Surrogate Compounds		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. With the following exceptions noted below, the laboratory received the sample coolers within the advisory temperature range.

SDG LDC01: Several sample cooler temperatures were less than the lower control limit, the lowest at 1.4°C. These outliers did not impact data quality; no data were qualified.

Sample UST-7-8.0-S-082918 listed on the chain-of-custody (COC) was missing from the sample cooler. This sample was included in SDG LDC03.

SDG LDC03: The sample cooler temperature was greater than the upper control limit, at 6.3°C. This outlier did not impact data quality; no data were qualified.

Field Blanks

SDG LDC01: One rinsate blank, ER-1-082818, and five trip blanks, TB-1-082918, TB-2-082918, TB-3-082918, TB-4-082918, and TB-5-082918, were submitted. Gasoline range organics were not detected in these blanks.

SDG LDC03: One rinsate blank, ER-2-083118, and one trip blank, TB-6-083118, were submitted. No results were detected. Gasoline range organics were not detected in these blanks.

Matrix Spike/Matrix Spike Duplicates

Matrix spikes were not analyzed. Precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) results.

Field Duplicates

SDG LDC01: Two sets of field duplicates were submitted: UST-2-S-8.0-180828 & DUP-1-SD-180828 and SB-4-S-12.0-180829 & DUP-2-SD-180829. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the surrogate and LCS/LCSD percent recovery values. Precision was also acceptable as demonstrated by the LCS/LCSD and field duplicate RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Diesel Range Organics (extended) by NWTPH-Dx

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC01	44 Soil	Stage 2B
LDC03	10 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples
✓	Initial Calibration (ICAL)	2	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
✓	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Reported Results
✓	Surrogate Compounds		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. With the following exceptions noted below, the laboratory received the sample coolers within the advisory temperature range.

SDG LDC01: Several sample cooler temperatures were less than the lower control limit, the lowest at 1.4°C. These outliers did not impact data quality; no data were qualified.

Sample UST-7-8.0-S-082918 listed on the chain-of-custody (COC) was missing from the sample cooler. This sample was included in SDG LDC03.

SDG LDC03: The sample cooler temperature was greater than the upper control limit, at 6.3°C. This outlier did not impact data quality; no data were qualified.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicate Samples

SDG LDC01: For batch 182500053A, the MS/MSD analyses were performed using Sample UST-6-S-8.0-180829. The MS/MSD RPD values for DRO and HRO were greater than the control limit; the results in the parent sample were estimated (J-9).

Field Duplicates

SDG LDC01: Two sets of field duplicates were submitted: UST-2-S-8.0-180828 & DUP-1-SD-180828 and SB-4-S-12.0-180829 & DUP-2-SD-180829. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, laboratory control sample, and matrix spike/matrix spike duplicate (MS/MSD) percent recovery values and precision was acceptable as demonstrated by the MS/MSD and field duplicate RPD values.

Results were estimated due to MS/MSD precision outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Volatile Petroleum Hydrocarbons by NW VPH

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC01	6 Soil	Stage 2B
LDC03	4 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	Initial Calibration (ICAL)	1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
✓	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Target Analyte List
1	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. With the following exceptions noted below, the laboratory received the sample coolers within the advisory temperature range.

SDG LDC01: Several sample cooler temperatures were less than the lower control limit, the lowest at 1.4°C. These outliers did not impact data quality; no data were qualified.

Sample UST-7-8.0-S-082918 listed on the chain-of-custody (COC) was missing from the sample cooler. This sample was included in SDG LDC03.

SDG LDC03: The sample cooler temperature was greater than the upper control limit, at 6.3°C. This outlier did not impact data quality; no data were qualified.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spikes were not analyzed. Precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) results.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate and LCS/LCSD recovery values. Precision was acceptable as demonstrated by the LCS/LCSD RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Extractable Petroleum Hydrocarbons by NW EPH

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC01	6 Soil	Stage 2B
LDC03	4 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package. The laboratory did not include matrix spike or sample duplicate data in the EDD.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	2	Laboratory Control Samples (LCS/LCSD)
✓	Initial Calibration (ICAL)	2	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
✓	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Target Analyte List
1	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	2	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. With the following exceptions noted below, the laboratory received the sample coolers within the advisory temperature range.

SDG LDC01: Several sample cooler temperatures were less than the lower control limit, the lowest at 1.4°C. These outliers did not impact data quality; no data were qualified.

Sample UST-7-8.0-S-082918 listed on the chain-of-custody (COC) was missing from the sample cooler. This sample was included in SDG LDC03.

SDG LDC03: The sample cooler temperature was greater than the upper control limit, at 6.3°C. This outlier did not impact data quality; no data were qualified.

Field Blanks

No field blanks were submitted.

Laboratory Control Samples

SDG LDC01, LDC03: The laboratory control sample/laboratory control sample duplicate (LCS/LCSD) percent recovery (%R) values for the C10-C12 aliphatic and aromatic ranges and the C12-C16 aliphatic range hydrocarbons were less than the lower control limit of 61% specified in the QAPP. The associated sample results were estimated (J/UJ-10L) to indicate a potential low bias. The RPD value for the C10-C12 aliphatic range was greater than the control limit of 20%; associated detected results were estimated (J-9).

Matrix Spike/Matrix Spike Duplicates

SDG LDC01, LDC03: The matrix spike/matrix spike duplicate analyses were performed using Sample UST-5-S-8.0-180829. The recoveries for the C10-C12 aromatic and aliphatic ranges were less than the lower control limit specified in the QAPP. The results for these fractions in the parent sample were estimated (J-8L). In addition, the RPD value for the C12-C16 aliphatic range was greater than 20%. The result for this range was estimated (J-9) in the parent sample.

Field Duplicates

No field duplicates were submitted.

Reported Results

SDG LDC01, LDC03: All samples were re-extracted based on LCS/LCSD recovery outliers in the original analysis. Both sets of data were reported. Because the re-extraction was done after the holding time had elapsed, the results from the original analysis should be used. Results from the re-extraction were flagged as do-not-report (DNR-11).

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and MS/MSD recovery values and precision was acceptable as demonstrated by the LCS/LCSD and MS/MSD RPD values.

Results were estimated based on LCS/LCSD and MS/MSD recovery and precision outliers. Data were flagged as do-not-report (DNR) to indicate which results should not be used from multiple reported analyses. A usable result remains for all analytes and all samples; completeness is not affected.

Data flagged DNR should not be used. All other data, as qualified, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Lead by Method SW6010D

This report documents the review of analytical data from the analyses of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES AND MATRIX	VALIDATION LEVEL
LDC01	44 Soil	Stage 2B
LDC03	10 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	✓	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration	2	Laboratory Duplicates
✓	Calibration Verification	✓	Interference Check Samples
✓	Reporting Limit Standards	✓	Serial Dilutions
2	Laboratory Blanks	1	Field Duplicates
1	Field Blanks	1	Reporting Limits
✓	Laboratory Control Samples (LCS)	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. With the following exceptions noted below, the laboratory received the sample coolers within the advisory temperature range.

SDG LDC01: Several sample cooler temperatures were less than the lower control limit, the lowest at 1.4°C. These outliers did not impact data quality; no data were qualified.

Sample UST-7-8.0-S-082918 listed on the chain-of-custody (COC) was missing from the sample cooler. This sample was included in SDG LDC03.

SDG LDC03: The sample cooler temperature was greater than the upper control limit, at 6.3°C. This outlier did not impact data quality; no data were qualified.

Laboratory Blanks

SDG LDC01: The instrument blanks analyzed on 9/05/18 were less than the negative detection limit (DL), indicating a potential low bias. The lead result for the associated sample, SB-8-S-25.0-180829, was estimated (UJ-7L).

The results for the instrument blanks analyzed on 9/06/18 were less than the negative DL. The lead result for the associated sample, SB-8-S-12.0-180829, was estimated (UJ-7L).

The results for the instrument blanks analyzed on 9/09/18 were less than the negative DL. The associated Sample SB-8-S-14.0-180829, was not detected and was qualified (UJ-7L).

Field Blanks

No field blanks were submitted.

Laboratory Duplicates

SDG LDC01: Sample SB-4-S-6.0-180823 was used for the laboratory duplicate analysis. The relative percent difference (RPD) value for lead was greater than the control limit of 20%. Results for this analyte were estimated (J-9) for all samples in the batch.

Field Duplicates

The field duplicate RPD control limit is 20% for results greater than 5x the reporting limit (RL)

SDG LDC01: Two sets of field duplicates were submitted: UST-2-S-8.0-180828 & DUP-1-SD-180828 and SB-4-S-12.0-180829 & DUP-2-SD-180829. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable, as demonstrated by the laboratory control sample and matrix spike/matrix spike duplicate (MS/MSD) recoveries. With the exceptions noted above, precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Data were estimated based on instrument blank results and a laboratory duplicate precision outlier.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Newman's Chevron
Volatile Organic Compounds by EPA TO-15 GC-MS SIM
Helium by EPA 3C
Fixed Gases by ASTM D1946

This report documents the review of analytical data from the analysis of air samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by ALS, Simi Valley, California. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
P1805236	4 Air & 2 Field Blank	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	GC/MS Instrument Performance (Tune)	1	Field Duplicates
✓	Initial Calibration (ICAL)	✓	Internal Standards
✓	Continuing Calibration (CCAL)	✓	Target Analyte List
✓	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	1	Reported Results
✓	Surrogate Compounds		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Two field blanks were submitted: EB-1-092618 and EB-1-092818. Field blanks were connected to the manifold and nitrogen was run through the system. For both field blanks, levels of oxygen, helium, benzene, toluene, ethylbenzene, m,p-xylenes, and o-xylene were detected at approximately the same concentrations as for the field samples. The exceptions were: carbon dioxide, which was not

detected in the field blanks, but was approximately 5% v/v in the field samples; toluene, which was approximately 10 times higher in the field blanks than in the field samples; and helium in EB-1, which was about 10 times higher than the field samples. These results indicate possible leaks in the system and/or canisters that were not completely clean. No data were qualified; however, field blank results should be considered when interpreting sample data. All field sample results were less than the MTCA B Sub-Slab Soil Gas Screening Levels, so the potential high bias from possible canister contamination does not impact data usability.

Field Duplicates

One set of field duplicates was submitted: SVP-2-092718 and DUP-1-092718. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate and laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recovery values and precision was acceptable as demonstrated by the LCS/LCSD and field duplicate RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.



APPENDIX A

DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES **Based on National Functional Guidelines**

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.
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DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r^2)
	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L) ¹ where appropriate
Blank Contamination	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L) ¹ where appropriate
	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
Precision and Accuracy	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L) ¹ for negative instrument blanks
	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L) ¹ where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L) ¹ where appropriate
	12	Reference Material Use bias flags (H,L) ¹ where appropriate
Interferences	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L) ¹ where appropriate
	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L) ¹ where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
Identification and Quantitation	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2 nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
Miscellaneous	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)
	26	Method QC information not provided

¹H = high bias indicated

L = low bias indicated

Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8260C)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	4°C±2°C Aqueous: HCl to pH < 2 Current SW846 criterion is ≤ 6° C ⁽³⁾	NFG ⁽¹⁾ Method ⁽³⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use PJ for temp outliers; see TM20 if pH ≤ 2, reject 2-chloroethyl vinyl ether (R-1) some projects may require methanol preserved soils/seds
Holding Time	Aqueous: 14 days preserved 7 Days: unpreserved Solid: 14 Days	NFG ⁽¹⁾ Method ⁽³⁾	J (pos)/UJ (ND) if HT exceeded J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Gross exceedance = > 2x HT, as per 1999 NFG
Instrument Performance					
Tuning	BFB Beginning of each 12 hour period Use method or project acceptance criteria	NFG ⁽¹⁾ Method ⁽³⁾	R (pos/ND) all analytes in all samples associated with the tune	24	
Initial Calibration Sensitivity	Minimum 5 standards RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders * RRF ≥ 0.005 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5A	TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance PJ - no action if response is stable (ICAL RSD and CCAL %D acceptable)
Initial Calibration Stability	%RSD ≤ 20% except: %RSD ≤ 40% poor responders * %RSD ≤ 50% 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %RSD > limit	5A	
Initial Calibration Verification	Second source analyzed immediately after ICAL %R 70% - 130%	Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) %R < LCL	5A (H,L) ⁴	QAPP may have overriding accuracy limits.
Continuing Calibration Sensitivity	RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders * RRF ≥ 0.005 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5B	see ICAL RRF guidance
Continuing Calibration Stability	%D ≤ 25% except: %D ≤ 40% poor responders * %D ≤ 50% 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) - %D > control limit (high bias) J (pos)/UJ (ND) - %D < -control limit (low bias)	5B (H,L) ⁴	

Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8260C)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Blank Contamination					
Method Blank (MB)	<u>MB: One per matrix per batch (of ≤ 20 samples)</u> No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	7	10X action level for methylene chloride, acetone, & 2-butanone. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review TB, qualify as needed #3 - Review FB, qualify as needed Note: Actions as per NFG 1999
	No TICs present		R (pos) TICs using 10X rule		
Trip Blank (TB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	
Field Blank (FB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	
Precision and Accuracy					
LCS/LCSD (recovery)	One per matrix per batch (of ≤ 20 samples) LCSD not required by NFG or method Use method acceptance criteria/laboratory limits	Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND)%R < 10%	10 (H,L) ⁴	No action if only one spike %R is outside criteria when LCSD is analyzed, unless one recovery is <10%. QAPP may have overriding accuracy limits.
LCS/LCSD RPD	If LCSD analyzed RPD < lab limits	Method ⁽³⁾	J (pos)	9	Qualify all associated samples. QAPP may have overriding precision limits.
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ⁴	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Surrogates	Added to all samples Within method/laboratory control limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %R >UCL J (pos)/UJ (ND) if %R <LCL J (pos)/R (ND) if <10%	13 (H,L) ⁴	No action if there are 4+ surrogates and only 1 outlier Qualify all compounds if qualification is required.
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if > 200% J (pos)/UJ (ND) if < 50% J (pos)/R (ND) if < 25% if RT >30 seconds use PJ	19	Qualify compounds quantified using particular internal standard

**Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8260C)**

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy (continued)					
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) %R > UCL J (pos)/UJ (ND) if both %R < LCL J (pos)/R (ND) if both %R < 10% J (pos)/UJ (ND) if one > UCL & one < LCL, with no bias	8 (H,L) ⁴	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only.
MS/MSD (RPD)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) If RPD > control limit	9	Qualify parent sample only
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified
Compound Identification and Quantitation					
Retention Time Relative Ion Intensities	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if identification criteria not met	25	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NFG ⁽¹⁾ Method ⁽²⁾	NJ TIC R (pos) if common laboratory contaminants	4	Common laboratory contaminants: aldol condensation products, solvent preservatives, and reagent contaminants
Calibration Range	Results greater than highest calibration standard	EcoChem standard policy	Qualify J (pos)	20	If result from dilution analysis is not reported.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Organic Data Review, June, 2008² National Functional Guidelines for Organic Data Review, Oct, 1999³ Method SW846 8260C Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)⁴ NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

* "Poor responder" compounds: Acetone, 2-butanone, carbon disulfide, chloroethane, chloromethane, cyclohexane, 1,2-dibromoethane, dichlorodifluoromethane, cis-1,2-dichloroethene, 1,2-dichloropropane, 1,2-dibromo-3-chloropropane, 2-hexanone, isopropylbenzene, methyl acetate, methylene chloride, methylcyclohexane, 4-methyl-2-pentanone, methyl tert-butyl ether, trans-1,2-dichloroethene, trichlorofluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane **criterion is 0.010 RRF**; 1,4-dioxane RRF **criterion is 0.005**.

(pos): Positive Result

(ND): Non-detect

DATA VALIDATION CRITERIA

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
 (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	4°C±2°C sediment/tissues may require storage at -20°C	NFG ⁽¹⁾ Method ⁽³⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use PJ for temp outliers; see TM20 Current SW846 criterion is ≤ 6° C ⁽³⁾
Holding Time	Extraction Aqueous: 7 days from collection Extraction Solid: 14 days from collection Analysis (all matrices): 40 days from extraction Holding time may be extended to 1 year for frozen sediments/tissues	NFG ⁽¹⁾ Method ⁽³⁾	J (pos)/UJ (ND) if HT exceeded J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Gross exceedance = > 2x HT, as per 1999 NFG
Instrument Performance					
Tuning	DFTPP Beginning of each 12 hour period Use method or project acceptance criteria	NFG ⁽¹⁾ Method ⁽³⁾	R (pos/ND) all analytes in all samples associated with the tune	24	
Initial Calibration Sensitivity	RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5A	TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance PJ - no action if response is stable (ICAL RSD and CCAL %D acceptable)
Initial Calibration Stability	Minimum 5 standards %RSD ≤ 20.0% except: %RSD ≤ 40.0% poor responders * or co-efficient of determination (r ²) > 0.99	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %RSD > limit or r ² value <0.99	5A	
Initial Calibration Verification Check	Prepared from second source; analyze after each ICAL Percent recovery limits = 70-130%	Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) %R < LCL	5A (H,L) ⁴	QAPP may have overriding accuracy limits.

DATA VALIDATION CRITERIA

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
 (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Performance (continued)					
Continuing Calibration Sensitivity	RRF \geq 0.05 except: RRF \geq 0.01 poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5B	see ICAL RRF guidance
Continuing Calibration Stability	Prior to sample analysis and every 12 hours %D \leq 25% except: %D \leq 40.0% poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) - %D > control limit (high bias) J (pos)/UJ (ND) - %D < -control limit (low bias)	5B (H,L) ⁴	
Blank Contamination					
Method Blank (MB)	MB: One per matrix per batch of (of \leq 20 samples) No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U(pos) if result is < 5X or 10X action level	7	10X action level applies to phthalates only. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review FB , qualify as needed Note: Actions as per 1999 NFG
	No TICs present		R (pos) TICs using 10X rule	7	
Field Blank (FB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	
Precision and Accuracy					
LCS/LCSD (recovery)	One per matrix per batch (of \leq 20 samples) LCSD not required by NFG or method Use method acceptance criteria/laboratory limits	Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND)%R < 10%	10 (H,L) ⁴	No action if only one spike %R is outside criteria when LCSD is analyzed, unless one recovery is <10%. QAPP may have overriding accuracy limits. Qualify all associated samples.
LCS/LCSD (RPD)	If LCSD analyzed RPD < lab limits	Method ⁽³⁾	J (pos)	9	Qualify all associated samples. QAPP may have overriding precision limits.

DATA VALIDATION CRITERIA

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
 (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy (continued)					
Reference Material (RM, SRM, or CRM)	Result \pm 20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ⁴	QAPP may have overriding accuracy limits. Some manufacturers have different RM control limits
MS/MSD (recovery)	One per matrix per batch (of \leq 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) if both %R < LCL J (pos)/R (ND) if both %R < 10% J (pos)/UJ (ND) if one > UCL & one < LCL, with no bias	8 (H,L) ⁴	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only.
MS/MSD (RPD)	One per matrix per batch (of \leq 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) in parent sample if RPD > CL	9	Qualify parent sample only
Surrogates	Minimum of 3 acid & 3 base/neutral (B/N) compounds added to all samples Within method control limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND) if %R < 10%	13 (H,L) ⁴	Qualify all compounds in associated fraction. Do not qualify if only 1 acid and/or 1 B/N surrogate is out, unless <10%. If 1 surrogate outlier < 10% then J (pos)/R (ND)
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if > 200% J (pos)/UJ (ND) if < 50% J (pos)/R (ND) if < 25% if RT >30 seconds use PJ	19	Qualify compounds quantified using particular internal standard
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Identification and Quantitation and Calculation					
Retention times and relative ion intensities	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	NFG ⁽¹⁾ Method ⁽³⁾	U (pos) if identification criteria not met	25	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NFG ⁽¹⁾ Method ⁽³⁾	NJ the TIC unless: R (pos) common laboratory contaminants	4	
Calibration Range	Results greater than highest calibration standard	EcoChem standard policy	Qualify J (pos)	20	If result from dilution analysis is not reported.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Organic Data Review, June, 2008

(pos): Positive Result(s)

² National Functional Guidelines for Organic Data Review, October, 1999

(ND): Non-detects

³ Method SW846 8270D Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 4, February 2007.

⁴ NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

* "Poor responder" compounds: acetophenone, atrazine, benzaldehyde, 1,1'-biphenyl, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, caprolactam, carbazole, 4-chloroaniline, diethylphthalate, di-n-butylphthalate, 3-3'-dichlorobenzidine, dimethylphthalate, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol, di-n-octylphthalate, hexachlorobutadiene, hexachlorocyclopentadiene, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 4-nitrophenol, N-nitrosodiphenylamine, 2,2'-oxybis-(1-chloropropane), 1,2,4,5-tetrachlorobenzene use a 0.010 RRF criterion.

PCB Aroclors by GC
(Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample					
Cooler/Storage Temperature Preservation	4°C ± 2°C Tissue/sediments (may be frozen -20°C)	NFG ⁽¹⁾ Method ⁽²⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use Professional Judgment (PJ) to qualify for temperature outlier. Current SW846 criterion is ≤ 6° C ⁽³⁾
Holding Time	Extraction Aqueous: 7 days from collection Extraction Solid: 14 days from collection Extraction Tissue/Sediment (frozen): 1 year Analysis (all matrices): 40 days from extraction	NFG ⁽¹⁾ Method ⁽²⁾	If required by project: J (pos)/UJ (ND) if ext/analyzed > HT J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Use PJ to qualify for holding time outlier. Current SW846 does not have an extraction holding time limit. ⁽³⁾ Gross exceedance > 2x HT, as per NFG 1999
Instrument Performance					
Retention Times	Surrogates: TCMX (± 0.05); DCB (± 0.10) Aroclors (± 0.07)	NFG ⁽¹⁾	NJ (pos)/R (ND) results for analytes with RT shifts	24	
Initial Calibration	Minimum 5 point with RSD ≤ 20% OR correlation coefficient (r-value) ≥ 0.995 OR Minimum 6-point with co-efficient of determination (r ² -value) ≥ 0.99	NFG ⁽¹⁾ Method ⁽⁴⁾	J (pos) if %RSD greater than 20% OR r-value < 0.995 OR r ² -value < 0.99	5A	Refer to TM-01 for additional information. Use bias flags (H,L) ⁽⁵⁾ where appropriate
Initial Calibration Verification (ICV)	No NFG criteria. Project specific.	Project	J (pos) if > UCL J (pos)/UJ (ND) if < LCL	5B	Use bias flags (H,L) where appropriate
Continuing Calibration (Prior to each 12 hr. shift)	%D ± 20%	Method ⁽²⁾	If > 20% (high bias): J (pos) If < 20% (low bias): J (pos)/UJ (ND)	5B	Refer to TM-01 for additional information. Use bias flags (H,L) where appropriate
Blank Contamination					
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected compounds > RL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is less than appropriate 5X action level.	7	Hierarchy of blank review: #1 - Review MB and IB, qualify as needed #2 - Review FB , qualify as needed Note: Actions as per NFG 1999 Note: IB not required by method
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > RL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is less than appropriate 5X action level.	6	
Instrument Blanks (IB)	Analyzed at the beginning and end of every 12 hour sequence No analyte > CRQL	NFG ⁽¹⁾	U (pos) if result is less than appropriate 5X action level.	7	

PCB Aroclors by GC
(Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy					
MS/MSD (recovery)	One set per matrix per batch (of ≤ 20 samples) AR1016 and AR1260: %R = 29% - 135%, or project limits	NFG ⁽¹⁾ Method ⁽²⁾	Qualify parent only unless other QC indicates systematic problems. J (pos) if both %R > upper control limit (UCL) J (pos)/UJ (ND) if both %R < lower control limit (LCL) J (pos)/R (ND) if both %R < 10%	8	No action if only one spike %R is outside criteria. No action if native analyte conc. > 5x the amount spiked. Use bias flags (H,L) where appropriate. Actions apply to all Aroclors in parent sample.
MS/MSD (RPD)	One set per matrix per batch (of ≤ 20 samples) AR1016: RPD < 15%, AR1260: RPD < 20% or project limits	NFG ⁽¹⁾ Method ⁽²⁾	Qualify parent only unless other QC indicates systematic problems. J (pos) if RPD > control limit	9	No action if parent is ND.
LCS	One per lab batch (of ≤ 20 samples) AR1016 and AR1260: %R = 50% - 150%, or project limits	NFG ⁽¹⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND) if %R < 10%	10	Use bias flags (H,L) where appropriate. Actions apply to all Aroclors in associated samples.
LCS/LCSD (RPD)	if analyzed use MS/MSD RPD criteria	NFG ⁽¹⁾	J (pos) assoc. compound in all samples	9	LCSD not required by method or NFG
Precision and Accuracy					
Surrogates	TCMX and DCBP added to every sample %R = 30% - 150% or project limits	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if either %R > UCL J (pos)/UJ (ND) if either %R < LCL J (pos)/R (ND) if either %R < 10%	13	If %R < 10% (sample dilution is a factor), use PJ Use bias flags (H,L) where appropriate
Internal Standards (if used)	Acceptable Range: IS area = 50% to 200% of CCAL area RT within 30 seconds of CC RT	Method ⁽²⁾	J (pos) if area > 200% J (pos)/UJ (ND) if area < 50% J (pos)/R (ND) if area < 25% RT > 30 seconds, narrate	19	
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	use project limits if specified

PCB Aroclors by GC
(Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Identification/Quantification					
Quantitation/ Identification	Between two columns: RPD < 40% or %D < 25% Within Retention Time Windows on both columns.	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if RPD = 40% - 60% (25% - 60% for %D) NJ (pos) if > 60% R (pos) if RTW criterion not met	3	See TM-08 for additional info.
Calibration Range	on column concentration < high calibration standard	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if conc > high standard and sample was not diluted	20	
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	Standard reporting policy	Use "DNR" to flag results that will not be reported.	11	TM-04 Rev. 1 for additional info.
Sample Clean-up					
GPC/Sulfur/ Florisil/Acid	No criteria - cleanups are optional	NFG ⁽¹⁾ Method ⁽²⁾	Use Professional Judgment	14	special cleanups may be required for project cleanup standards may be associated with GPC/florisil cleanups

¹ National Functional Guidelines for Organic Data Review, June, 2008

² Polychlorinated Biphenyls (PCBs) by Gas Chromatography USEPA Method SW846 8082A, Feb 2007, Rev. 1

³ SW846, Chapter 4, Organic Analytes

⁴ Determinative Chromatographic Separations, Method 8000C, March 2003, Rev.3

⁵ "H" = high bias indicated; "L" = low bias indicated

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Gasoline Range
(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Gx,
June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling				
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6°C	1	
Holding Time	Waters: 14 days preserved 7 days unpreserved Solids: 14 Days	J(+)/UJ(-) if hold times exceeded J(+)/R(-) if exceeded > 3X	1	Professional Judgement
Instrument Performance				
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: $r^2 \geq 0.990$ If used, RSD of response factors $\leq 20\%$	Narrate if fewer than 5 calibration levels or if %R > 15% J(+)/UJ(-) if $r^2 < 0.990$ J(+)/UJ(-) if %RSD > 20%	5A	
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 80% to 120%	Narrate if frequency not met. J(+)/UJ(-) if %R < 80% J(+) if %R > 120%	5B	
Blank Contamination				
Method Blank	At least one per batch (≤ 10 samples) No results > RL	U (at the RL) if sample result is < RL & < 5X blank result.	7	
		U (at reported sample value) if sample result is \geq RL and < 5X blank result	7	
Trip Blank (if required by project)	No results > RL	Action is same as method blank for positive results remaining in trip blank after method blank qualifiers are assigned.	18	
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in field blank after method and trip blank qualifiers are assigned.	6	

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Gasoline Range
(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Gx,
June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10%	10	Professional Judgement
Surrogates	Bromofluorobenzene and/or 1,4-difluorobenzene added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP EcoChem default: water: RPD < 35% solids: RPD < 50%	Narrate outliers If required by project, qualify with J(+)/UJ(-)	9	
Compound ID and Calculation				
Two analyses for one sample (e.g., dilution)	Report only one result per analyte	"DNR" (or client requested qualifier) all results that should not be reported.	11	See EcoChem TM-04

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range
(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx,
June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling				
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6 deg. C	1	
Holding Time	Ext. Waters: 14 days preserved 7 days unpreserved Ext. Solids: 14 Days Analysis: 40 days from extraction	J(+)/UJ(-) if hold times exceeded J(+)/R(-) if exceeded > 3X	1	Professional Judgement
Instrument Performance				
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: $r^2 \geq 0.990$ If used, RSD of response factors $\leq 20\%$	Narrate if fewer than 5 calibration levels or if %R > 15% J(+)/UJ(-) if $r^2 < 0.990$ J(+)/UJ(-) if %RSD > 20%	5A	
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 85% to 115%	Narrate if frequency not met. J(+)/UJ(-) if %R < 85% J(+) if %R > 115%	5B	
Blank Contamination				
Method Blank	At least one per batch (≤ 20 samples) No results > RL	U (at the RL) if sample result is < RL & < 5X blank result.	7	
		U (at reported sample value) if sample result is \geq RL and < 5X blank result	7	
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in the field blank after method blank qualifiers are assigned.	6	

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range
(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx,
June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10%	10	Professional Judgement
Surrogates	2-fluorobiphenyl, p-terphenyl, o-terphenyl, and/or pentacosane added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP EcoChem default: water: RPD < 35% solids: RPD < 50%	Narrate (Use Professional Judgement to qualify)	9	

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range
 (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx,
 June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound ID and Calculation				
Two analyses for one sample (dilution)	Report only one result per analyte	"DNR" (or client requested qualifier) all results that should not be reported.	11	See EcoChem TM-04

Metals by ICP-AES
 (Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler / Storage Temperature Preservation	Solid: Cooler temperature 4°C±2°C Aqueous: Nitric Acid to pH < 2 Dissolved Metals: 0.45 µm filter, preserve to pH < 2 after filtration	NFG ⁽¹⁾ Method ⁽²⁾	Cooler Temps: If required by project J (pos)/UJ (ND) if greater than 6° C Aqueous: J (pos)/UJ (ND) if pH > 2	1	Use PJ to qualify for temperature outlier. Current SW846 criterion is ≤ 6° C (4) No quals for pH if samples preserved by lab upon receipt and within 1 day of collection.
Holding Time	All matrices: 180 days from date sampled Frozen soils, sediments, tissues (-20°C) - HT extended to 1 year	NFG ⁽¹⁾ Method ⁽²⁾ EcoChem standard policy	J (pos)/UJ (ND) if holding time exceeded	1	
Instrument Performance					
Initial Calibration (ICAL)	Based on instrument requirements, blank + 1 standard minimum requirement for calibration If more than 1 standard used, r ≥ 0.995	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if r < 0.995	5A	
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R within ± 10% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R > 111%	5A (H,L) ³	Qualify all samples in run
Reporting Limit (RL) Standard Low Level ICV/CCV	concentration at RL %R = 70%-130%	Method ⁽²⁾	J (pos) < 2x RL / R (ND) if %R < 50% J (pos) < 2x RL / UJ (ND) if %R 50 - 69% J (pos) < 2x RL if %R > 130%	5A (H,L) ³	Qualify all samples in run
Continuing Calibration Verification (CCV)	Immediately following ICV/ICB, then every two hours or ten samples, and at end of run. %R within ± 10% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R > 111%	5B (H,L) ³	Qualify samples bracketed by CCV outliers
Interference Check Samples (ICSA / ICSAB)	ICSAB %R 80% - 120% for all spiked elements ICSA < MDL for all unspiked elements	NFG ⁽¹⁾ Method ⁽²⁾	For samples with Al, Ca, Fe, Mg > ICS levels: ICSAB: J(pos)/R (ND) if %R < 50% J (pos)/UJ (ND) if %R = 50% - 79% J (pos) if %R > 120% ICSA: J (pos) < 2x ICSA/UJ (ND) for ICSA < Neg MDL J (pos) < 2x ICSA for ICSA > MDL	17 (H,L) ³	Use PJ and inter-element correction factors to evaluate ICSA to determine if bias is present. Refer to TM-09 for additional information.

Metals by ICP-AES
 (Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Blank Contamination					
Method Blank (MB)	One per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is < 5X method blank concentration	7	Refer to TM-02 for additional information. Blank Evaluation based on NFG 1994
Instrument Blanks (ICB/CCB)	After each ICV & CCV blank concentration < MDL	NFG ⁽¹⁾ Method ⁽²⁾	Action level is 5x absolute value of blank conc. For positive blanks: U (pos) results < action level For negative blanks: J (pos)/UJ (ND) results < action level	Pos Blanks: 7 Neg Blanks: 7L ³	Use blanks bracketing samples for Qualification Refer to TM-02 for additional information. Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review IB, qualify as needed #3 - Review FB, qualify as needed
Field Blank (FB)	Blank conc < MDL	EcoChem standard policy	U (pos) if result is < 5x action level, as per analyte.	6	Qualify in associated field samples only. Refer to TM-02 for additional information.
Precision and Accuracy					
LCS (recovery)	One per matrix per batch (of ≤ 20 samples); LCSD not required %R between 80-120%	Method ⁽²⁾	J (pos)/R (ND) if %R < 50% J (pos)/UJ (ND) if %R 50% - 79% J (pos) if %R > 120%	10 (H,L) ³	Qualify all samples in batch QAPP may have overriding accuracy limits. NFG Limits 70% -130% (50% - 150% Ab, Ag)
LCS/LCSD (RPD)	LCSD not required, if analyzed: RPD ≤ 20%	Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	Qualify all samples in batch QAPP may have overriding precision limits.
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples); MSD not required %R between 75-125%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if %R > 125% J (pos)/UJ (ND) if %R < 75% J (pos)/R (ND) if %R < 30%, unless post digestion spike analyzed, J (pos)/UJ (ND) if post digestion spike %R OK	8 (H,L) ³	No action if only one spike %R is outside criteria. NA if parent concentration >4x the amount spiked. Qualify all samples in batch. QAPP may have overriding accuracy limits.

DATA VALIDATION CRITERIA

Metals by ICP-AES
 (Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy con't					
Post Digestion Spikes	If MS is outside 75-125%, post-spike should be analyzed %R 80%-120% (method); 75%-125% (NFG)	NFG ⁽¹⁾ Method ⁽²⁾	Only used to support MS qualification decisions	NA	No qualifiers assigned based solely on this element.
MS/MSD (RPD)	MSD not required, if analyzed: RPD ≤ 20%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	QAPP may have overriding precision limits.
Laboratory Duplicate	One per matrix per batch (of ≤ 20 samples) RPD ≤ 20% for results ≥ 5x RL Solids: difference < 2X RL for results < 5X RL Aqueous: difference < 1X RL for results < 5X RL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20% or if difference > control limit	9	Qualify all samples in batch. QAPP may have overriding precision limits.
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ³	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Serial Dilution	Analyze one sample per matrix at a 5x dilution %D <10% for original sample conc. > 50x MDL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if %D > 10% and native sample concentration > 50x MDL	16	Qualify all samples in batch.
Field Duplicate	Solids: RPD <50% (for results ≥ 5x RL) OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% (for results ≥ 5x RL) OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Qualify only parent and field duplicate samples J (pos)/UJ (ND)	9	QAPP may have overriding precision limits. Client/QAPP may not require qualification based on field precision.

Metals by ICP-AES
 (Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Quantitation					
Total and Dissolved Comparison	Total > Dissolved	EcoChem standard policy	J (pos)/UJ (ND) if Dissolved > Total and results fall outside of standard duplicate precision criteria	14	
Calibration Range	Results < instrument linear range	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if result exceeds linear range and sample was not diluted	20	
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Inorganic Superfund Data Review, January 2010.

² Method SW846 6010C Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES), Revision 3, February 2007.

³ "H" = high bias indicated; "L" = low bias indicated

⁴ SW846, Chapter 3, Inorganic Analytes

(pos): Positive Result

(ND): Not Detected

Volatile Organics in Air by GCMS and GCMS-SIM, Method TO-15

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	SUMMA Canister - no preservation requirements				
SUMMA Canister Pressure	Pressure of Canister upon receipt at lab should be between 5-10 inches of Hg or greater of vacuum	Method ^{1,2}	If vacuum is > 8 inch Hg or < 1 inch Hg, note in report.	1	Professional judgment
Holding Time	30 days from collection to analysis	Method ¹	J(pos)/UJ(ND) if HT exceeded J(pos)/R(ND) if gross exceedance (> 2X HT)	1	Gross exceedance = > 2X HT, as per 1999 NFG
Instrument Performance					
Tuning	BFB Beginning of each 24 hour period Use method acceptance criteria (Table 3)	Method ¹	R(pos/ND) all analytes in all samples associated with the tune	5A	every 24 hours or every 20 samples (Section 10.4.2 of method) TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance
Initial Calibration (Minimum 5 stds.) Sensitivity	RRF ≥ 0.05 Note: not discussed in method. Default to NFG criteria.	NFG ³	J(pos)/R(ND) if RRF/RF is less than criterion		
Initial Calibration (Minimum 5 stds.) Stability	%RSD ≤ 30% with up to 2 compounds max 40%; OR Linear r ≥ 0.995 or r ² ≥ 0.990 (6 points must be used) (NFG optional criteria)	Method ¹ NFG ³	J(pos) if %RSD > 30% OR r/r2-value < 0.995 (or 0.990)		
Initial Calibration Verification (ICV) Stability	Not required by method. Standard from independent source Analyzed immediately after ICAL If analyzed, use lab or QAPP limits		J(pos) if high bias J(pos)/UJ(ND) if low bias J(pos)/R(ND) if significant low bias		
Continuing Calibration (Prior to each 24 hr. shift) Sensitivity	RRF ≥ 0.05 Note: not discussed in method. Default to NFG criteria.	NFG ³	J(pos)/R(ND) if RRF/RF is less than criterion	5B	
Continuing Calibration (Prior to each 24 hr. shift) Stability	%Drift ≤ 30%	Method ¹	If > +/- 70%: J(pos)/R(ND) If -69% to -31%: J(pos) (high bias) If 31% to 69%: J(pos)/UJ(ND) (low bias)	5B (H,L) ⁴	

Volatile Organics in Air by GCMS and GCMS-SIM, Method TO-15

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Blank Contamination					
Method Blank (MB)	MB: One per batch of (of ≤ 20 samples) No detected compounds > MDL	Method ¹ NFG ³	U(pos) if result is < 5X or 10X action level, as per analyte.	7	10X action level for methylene chloride, acetone, & 2-butanone. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review FB, qualify as needed
	No TICs present		R(pos) TICs using 10X rule		
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > MDL	Method ¹ NFG ³	U(pos) if result is < 5X or 10X action level, as per analyte.	6	
Precision and Accuracy					
LCS	One per lab batch (of ≤ 20 samples) Note: not discussed in method. Default to lab or QAPP limits.	NFG ³	Qualify all associated samples J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if both %R < LCL - low bias J(pos)/R(ND) if both %R < 10% - very low bias J(pos)/UJ(ND) if one > UCL & one < LCL, with no bias	10 (H,L) ⁴	No action if only one spike %R is outside criteria, when LCSD is analyzed. Qualify all associated samples.
LCS/LCSD (RPD)	if analyzed RPD $\leq 30\%$	NFG ³	J(pos) assoc. cmpd. in all samples	9	Qualify all associated samples.
Surrogates	Note: not discussed in method. Default to lab or QAPP limits.	NFG ³	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if < 10% - very low bias	13 (H,L) ⁴	Note: No action if there are 4+ surrogates and only 1 outlier.
Internal Standards	Added to all samples Acceptable Range: IS area $\pm 40\%$ of CCAL area RT within 20 seconds of mean RT over ICAL range RT within 0.33 minutes of CC RT	Method ¹ NFG ³	J(pos) if > 140% J(pos)/UJ(ND) if < 60% J(pos)/R(ND) if < 25% RT > 0.33 mins, narrate and notify PM	19	
Field Duplicates	RPD $\leq 25\%$ OR difference < 1X RL (for results < 5X RL)	Method ¹ EcoChem standard policy	Narrate and qualify if required by project (EcoChem PJ) Qualify only field duplicate samples J(pos)/UJ(ND)	9	
Compound ID and Calculation					
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	Method ¹ NFG ³	See Technical Director if outliers are found	14 25 (false pos)	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	Method ¹ NFG ³	NJ the TIC unless: R(pos) common laboratory contaminants See Technical Director for ID issues	4	Common laboratory contaminants: aldol condensation products, solvent preservatives, and reagent contaminants
Calibration Range	Results exceed the upper calibration range	EcoChem standard policy	Qualify J(pos)	20	If result from dilution analysis is not reported.
Calculation Check	Check 10% of field & QC sample results	EcoChem standard policy	Contact laboratory for resolution and/or corrective action	na	Full data validation only.

Volatile Organics in Air by GCMS and GCMS-SIM, Method TO-15

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Electronic Data Deliverable (EDD)					
Verification of EDD to hardcopy data	EcoChem verify @ 10% unless problems noted; then increase level up to 100% for next several packages.	EcoChem standard policy	Depending on scope of problem, correct at EcoChem (minor issues) to resubmittal by laboratory (major issues).	na	EcoChem Project Manager and/or Database Administrator will work with lab to provide long-term corrective action.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 Rev. 1 EcoChem Policy for Rejection/Selection Process for Multiple Results

(pos): Positive Result(s)
(ND): Non-detects

¹ Compendium Method TO-15, Determination of Volatile Organic Compounds (VOCs) in Air Collected In Specially-Prepared Canisters And Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), Second Edition, January 1999. EPA/625/R-96/010b

¹ Supplement to EPA Compendium Method TO-15. Reduction of Method Detection Limits to Meet Vapor Intrusion Monitoring Needs. E.H. Daughtrey Jr., K.D. Oliver, H.H. Jacumin Jr., and W.A. McClenny, 2/18/2009.

¹ ASTM D1945 - 03 Standard Test Method for Analysis of Natural Gas by Gas Chromatography. January 1, 2010.

² Air Toxics Ltd: Guide to Air Sampling and Analysis

³ National Functional Guidelines for Organic Data Review, June, 2008

⁴ "H" = high bias indicated; "L" = low bias indicated



APPENDIX B

QUALIFIED DATA SUMMARY TABLE

Qualified Data Summary Table
Newman's Chevron

SDG	SAMPLE ID	LAB ID	METHOD	ANALYTE	RESULT	UNITS	LAB FLAG	DV QUALIFIER	DV REASON
LDC01	SB-7-S-10.0-180827	9780539	NWEPH	>C10-C12 Aliphatic	1.3	mg/kg	U	UJ	10L
LDC01	SB-7-S-10.0-180827	9780539RE	NWEPH	>C10-C12 Aliphatic	1.3	mg/kg	U	DNR	11
LDC01	SB-7-S-10.0-180827	9780539	NWEPH	>C12-C16 Aliphatic	1.3	mg/kg	U	UJ	10L
LDC01	SB-7-S-10.0-180827	9780539RE	NWEPH	>C12-C16 Aliphatic	1.3	mg/kg	U	DNR	11
LDC01	SB-7-S-10.0-180827	9780539RE	NWEPH	>C16-C21 Aliphatic	3.8	mg/kg	U	DNR	11
LDC01	SB-7-S-10.0-180827	9780539RE	NWEPH	>C21-C34 Aliphatic	7.6	mg/kg	U	DNR	11
LDC01	SB-7-S-10.0-180827	9780539	NWEPH	>C10-C12 Aromatic	1.3	mg/kg	U	UJ	10L
LDC01	SB-7-S-10.0-180827	9780539RE	NWEPH	>C10-C12 Aromatic	1.3	mg/kg	U	DNR	11
LDC01	SB-7-S-10.0-180827	9780539RE	NWEPH	>C12-C16 Aromatic	1.3	mg/kg	U	DNR	11
LDC01	SB-7-S-10.0-180827	9780539RE	NWEPH	>C16-C21 Aromatic	2.5	mg/kg	U	DNR	11
LDC01	SB-7-S-10.0-180827	9780539RE	NWEPH	>C21-C34 Aromatic	2.5	mg/kg	U	DNR	11
LDC01	UST-2-S-8.0-180828	9780553	NWEPH	>C10-C12 Aliphatic	69	mg/kg		J	9,10L
LDC01	UST-2-S-8.0-180828	9780553RE	NWEPH	>C10-C12 Aliphatic	100	mg/kg		DNR	11
LDC01	UST-2-S-8.0-180828	9780553	NWEPH	>C12-C16 Aliphatic	550	mg/kg		J	10L
LDC01	UST-2-S-8.0-180828	9780553RE	NWEPH	>C12-C16 Aliphatic	750	mg/kg		DNR	11
LDC01	UST-2-S-8.0-180828	9780553RE	NWEPH	>C16-C21 Aliphatic	460	mg/kg		DNR	11
LDC01	UST-2-S-8.0-180828	9780553RE	NWEPH	>C21-C34 Aliphatic	35	mg/kg		DNR	11
LDC01	UST-2-S-8.0-180828	9780553	NWEPH	>C10-C12 Aromatic	3.5	mg/kg		J	10L
LDC01	UST-2-S-8.0-180828	9780553RE	NWEPH	>C10-C12 Aromatic	7.5	mg/kg		DNR	11
LDC01	UST-2-S-8.0-180828	9780553RE	NWEPH	>C12-C16 Aromatic	120	mg/kg		DNR	11
LDC01	SB-7-S-10.0-180827	9780539	8260C	n-Hexane	0.074	mg/kg		J	8,9
LDC01	SB-7-S-10.0-180827	9780539	8260C	Toluene	0.16	mg/kg		J	9
LDC01	SB-7-S-10.0-180827	9780539	8260C	Xylene (Total)	0.38	mg/kg		J	9
LDC01	SB-2-S-11.0-180828	9780548	8260C	Toluene	0.001	mg/kg		U	6
LDC01	SB-2-S-15.0-180828	9780549	8260C	Toluene	0.0006	mg/kg		U	6
LDC01	SB-2-S-8.0-180828	9780551	8260C	Toluene	0.0009	mg/kg		U	6
LDC01	UST-2-S-8.0-180828	9780553RE	NWEPH	>C16-C21 Aromatic	290	mg/kg		DNR	11
LDC01	UST-2-S-8.0-180828	9780553RE	NWEPH	>C21-C34 Aromatic	29	mg/kg		DNR	11
LDC01	SB-5-S-17.5-180828	9780555	NWEPH	>C10-C12 Aliphatic	8.3	mg/kg		J	9,10L
LDC01	SB-5-S-17.5-180828	9780555RE	NWEPH	>C10-C12 Aliphatic	10	mg/kg		DNR	11

**Qualified Data Summary Table
Newman's Chevron**

SDG	SAMPLE ID	LAB ID	METHOD	ANALYTE	RESULT	UNITS	LAB FLAG	DV QUALIFIER	DV REASON
LDC01	SB-5-S-17.5-180828	9780555	NWEPH	>C12-C16 Aliphatic	2.1	mg/kg		J	10L
LDC01	SB-5-S-17.5-180828	9780555RE	NWEPH	>C12-C16 Aliphatic	6	mg/kg		DNR	11
LDC01	SB-5-S-17.5-180828	9780555RE	NWEPH	>C16-C21 Aliphatic	3.1	mg/kg	U	DNR	11
LDC01	SB-5-S-17.5-180828	9780555RE	NWEPH	>C21-C34 Aliphatic	6.3	mg/kg	U	DNR	11
LDC01	SB-5-S-17.5-180828	9780555	NWEPH	>C10-C12 Aromatic	3	mg/kg		J	10L
LDC01	SB-5-S-17.5-180828	9780555RE	NWEPH	>C10-C12 Aromatic	5.1	mg/kg		DNR	11
LDC01	SB-5-S-17.5-180828	9780555RE	NWEPH	>C12-C16 Aromatic	6.6	mg/kg		DNR	11
LDC01	SB-5-S-17.5-180828	9780555RE	NWEPH	>C16-C21 Aromatic	2.8	mg/kg		DNR	11
LDC01	SB-5-S-17.5-180828	9780555RE	NWEPH	>C21-C34 Aromatic	2.1	mg/kg	U	DNR	11
LDC01	SB-5-S-14.0-180828	9780561	NWEPH	>C10-C12 Aliphatic	6.4	mg/kg		J	9,10L
LDC01	SB-5-S-14.0-180828	9780561RE	NWEPH	>C10-C12 Aliphatic	5.3	mg/kg		DNR	11
LDC01	SB-5-S-14.0-180828	9780561	NWEPH	>C12-C16 Aliphatic	1.2	mg/kg	U	UJ	10L
LDC01	SB-5-S-14.0-180828	9780561RE	NWEPH	>C12-C16 Aliphatic	1.4	mg/kg		DNR	11
LDC01	SB-5-S-14.0-180828	9780561RE	NWEPH	>C16-C21 Aliphatic	3.6	mg/kg	U	DNR	11
LDC01	SB-5-S-14.0-180828	9780561RE	NWEPH	>C21-C34 Aliphatic	7.2	mg/kg	U	DNR	11
LDC01	UST-6-S-8.0-180829	9780577	NWTPH-Dx	Diesel Range Organics C12-C24	160	mg/kg		J	9
LDC01	SB-5-S-14.0-180828	9780561	NWEPH	>C10-C12 Aromatic	1.2	mg/kg	U	UJ	10L
LDC01	SB-5-S-14.0-180828	9780561RE	NWEPH	>C10-C12 Aromatic	1.6	mg/kg		DNR	11
LDC01	SB-5-S-14.0-180828	9780561RE	NWEPH	>C12-C16 Aromatic	1.2	mg/kg	U	DNR	11
LDC01	SB-5-S-14.0-180828	9780561RE	NWEPH	>C16-C21 Aromatic	2.4	mg/kg	U	DNR	11
LDC01	SB-5-S-14.0-180828	9780561RE	NWEPH	>C21-C34 Aromatic	2.4	mg/kg	U	DNR	11
LDC01	UST-3-S-8.0-180829	9780570	NWEPH	>C10-C12 Aliphatic	1.1	mg/kg	U	UJ	10L
LDC01	UST-3-S-8.0-180829	9780570RE	NWEPH	>C10-C12 Aliphatic	1.1	mg/kg	U	DNR	11
LDC01	UST-3-S-8.0-180829	9780570	NWEPH	>C12-C16 Aliphatic	29	mg/kg		J	10L
LDC01	UST-3-S-8.0-180829	9780570RE	NWEPH	>C12-C16 Aliphatic	77	mg/kg		DNR	11
LDC01	UST-3-S-8.0-180829	9780570RE	NWEPH	>C16-C21 Aliphatic	170	mg/kg		DNR	11
LDC01	UST-3-S-8.0-180829	9780570RE	NWEPH	>C21-C34 Aliphatic	22	mg/kg		DNR	11
LDC01	UST-3-S-8.0-180829	9780570	NWEPH	>C10-C12 Aromatic	1.1	mg/kg	U	UJ	10L
LDC01	UST-3-S-8.0-180829	9780570RE	NWEPH	>C10-C12 Aromatic	1.1	mg/kg	U	DNR	11
LDC01	UST-3-S-8.0-180829	9780570RE	NWEPH	>C12-C16 Aromatic	1.7	mg/kg		DNR	11

**Qualified Data Summary Table
Newman's Chevron**

SDG	SAMPLE ID	LAB ID	METHOD	ANALYTE	RESULT	UNITS	LAB FLAG	DV QUALIFIER	DV REASON
LDC01	UST-3-S-8.0-180829	9780570RE	NWEPH	>C16-C21 Aromatic	58	mg/kg		DNR	11
LDC01	UST-3-S-8.0-180829	9780570RE	NWEPH	>C21-C34 Aromatic	9	mg/kg		DNR	11
LDC01	UST-5-S-8.0-180829	9780576	NWEPH	>C10-C12 Aliphatic	1.1	mg/kg	U	UJ	8L,10L
LDC01	UST-5-S-8.0-180829	9780576RE	NWEPH	>C10-C12 Aliphatic	1.1	mg/kg	U	DNR	11
LDC01	UST-5-S-8.0-180829	9780576	NWEPH	>C12-C16 Aliphatic	5	mg/kg		J	9,10L
LDC01	UST-5-S-8.0-180829	9780576RE	NWEPH	>C12-C16 Aliphatic	16	mg/kg		DNR	11
LDC01	UST-6-S-8.0-180829	9780577	NWTPH-Dx	Heavy Range Organics C24-C40	47	mg/kg		J	9
LDC01	SB-5-S-24.0-180828	9780559	8260C	Toluene	0.001	mg/kg		U	6
LDC01	UST-5-S-8.0-180829	9780576RE	NWEPH	>C16-C21 Aliphatic	79	mg/kg		DNR	11
LDC01	UST-5-S-8.0-180829	9780576RE	NWEPH	>C21-C34 Aliphatic	260	mg/kg		DNR	11
LDC01	UST-5-S-8.0-180829	9780576	NWEPH	>C10-C12 Aromatic	1.1	mg/kg	U	UJ	8L,10L
LDC01	UST-5-S-8.0-180829	9780576RE	NWEPH	>C10-C12 Aromatic	1.1	mg/kg	U	DNR	11
LDC01	UST-5-S-8.0-180829	9780576RE	NWEPH	>C12-C16 Aromatic	1.1	mg/kg	U	DNR	11
LDC01	UST-5-S-8.0-180829	9780576RE	NWEPH	>C16-C21 Aromatic	27	mg/kg		DNR	11
LDC01	UST-5-S-8.0-180829	9780576RE	NWEPH	>C21-C34 Aromatic	210	mg/kg		DNR	11
LDC01		P70701AB	NWEPH	>C10-C12 Aliphatic	1	mg/kg	U	DNR	11
LDC01		P70701AB	NWEPH	>C12-C16 Aliphatic	1	mg/kg	U	DNR	11
LDC01		P70701AB	NWEPH	>C16-C21 Aliphatic	3	mg/kg	U	DNR	11
LDC01		P70701AB	NWEPH	>C21-C34 Aliphatic	6	mg/kg	U	DNR	11
LDC01		P70701AB	NWEPH	>C10-C12 Aromatic	1	mg/kg	U	DNR	11
LDC01		P70701AB	NWEPH	>C12-C16 Aromatic	1	mg/kg	U	DNR	11
LDC01		P70701AB	NWEPH	>C16-C21 Aromatic	2	mg/kg	U	DNR	11
LDC01		P70701AB	NWEPH	>C21-C34 Aromatic	2	mg/kg	U	DNR	11
LDC01	UST-3-S-8.0-180829	9780570	8260C	Bromomethane	0.0006	mg/kg	U	UJ	5BL
LDC01	SB-4-S-12.0-180829	9780571	8260C	Ethylbenzene	0.002	mg/kg		J	9
LDC01	DUP-2-SD-180829	9780572	8260C	Ethylbenzene	0.0005	mg/kg		J	9
LDC01	UST-5-S-8.0-180829	9780576	8260C	Bromomethane	0.0007	mg/kg	U	UJ	5BL
LDC01	SB-8-S-12.0-180829	9780578	SW-846 6010D	Lead	2.34	mg/kg	U	UJ	7L
LDC01	SB-8-S-14.0-180829	9780579	SW-846 6010D	Lead	12.5	mg/kg	U	UJ	7L
LDC01	SB-8-S-25.0-180829	9780580	SW-846 6010D	Lead	0.542	mg/kg	U	UJ	7L

**Qualified Data Summary Table
Newman's Chevron**

SDG	SAMPLE ID	LAB ID	METHOD	ANALYTE	RESULT	UNITS	LAB FLAG	DV QUALIFIER	DV REASON
LDC03	SVP-1-S-10.0-180830	9789519	NWEPH	>C10-C12 Aliphatic	1.2	mg/kg	U	UJ	10L
LDC03	SVP-1-S-10.0-180830	9789519RE	NWEPH	>C10-C12 Aliphatic	1.2	mg/kg	U	DNR	11
LDC03	SVP-1-S-10.0-180830	9789519	NWEPH	>C12-C16 Aliphatic	1.2	mg/kg	U	UJ	10L
LDC03	SVP-1-S-10.0-180830	9789519RE	NWEPH	>C12-C16 Aliphatic	1.2	mg/kg	U	DNR	11
LDC03	SVP-1-S-10.0-180830	9789519RE	NWEPH	>C16-C21 Aliphatic	3.7	mg/kg	U	DNR	11
LDC03	SVP-1-S-10.0-180830	9789519RE	NWEPH	>C21-C34 Aliphatic	7.3	mg/kg	U	DNR	11
LDC03	SVP-1-S-10.0-180830	9789519	NWEPH	>C10-C12 Aromatic	1.2	mg/kg	U	UJ	10L
LDC03	SVP-1-S-10.0-180830	9789519RE	NWEPH	>C10-C12 Aromatic	1.2	mg/kg	U	DNR	11
LDC03	SVP-1-S-10.0-180830	9789519RE	NWEPH	>C12-C16 Aromatic	1.2	mg/kg	U	DNR	11
LDC03	SVP-1-S-10.0-180830	9789519RE	NWEPH	>C16-C21 Aromatic	2.4	mg/kg	U	DNR	11
LDC03	SVP-1-S-10.0-180830	9789519RE	NWEPH	>C21-C34 Aromatic	2.4	mg/kg	U	DNR	11
LDC03	SVP-1-S-8.0-180830	9789520	NWEPH	>C10-C12 Aliphatic	1.1	mg/kg	U	UJ	10L
LDC03	SVP-1-S-8.0-180830	9789520RE	NWEPH	>C10-C12 Aliphatic	1.1	mg/kg	U	DNR	11
LDC03	SVP-1-S-8.0-180830	9789520	NWEPH	>C12-C16 Aliphatic	1.1	mg/kg	U	UJ	10L
LDC03	SVP-1-S-8.0-180830	9789520RE	NWEPH	>C12-C16 Aliphatic	1.1	mg/kg	U	DNR	11
LDC03	SVP-1-S-8.0-180830	9789520RE	NWEPH	>C16-C21 Aliphatic	3.2	mg/kg	U	DNR	11
LDC03	SVP-1-S-8.0-180830	9789520RE	NWEPH	>C21-C34 Aliphatic	9.7	mg/kg		DNR	11
LDC03	SVP-1-S-8.0-180830	9789520	NWEPH	>C10-C12 Aromatic	1.1	mg/kg	U	UJ	10L
LDC03	SVP-1-S-8.0-180830	9789520RE	NWEPH	>C10-C12 Aromatic	1.1	mg/kg	U	DNR	11
LDC03	SVP-1-S-8.0-180830	9789520RE	NWEPH	>C12-C16 Aromatic	1.1	mg/kg	U	DNR	11
LDC03	SVP-1-S-8.0-180830	9789520RE	NWEPH	>C16-C21 Aromatic	2.2	mg/kg	U	DNR	11
LDC03	SVP-1-S-8.0-180830	9789520RE	NWEPH	>C21-C34 Aromatic	11	mg/kg		DNR	11
LDC03	SVP-2-S-8.0-180830	9789523	NWEPH	>C10-C12 Aliphatic	1.2	mg/kg	U	UJ	10L
LDC03	SVP-2-S-8.0-180830	9789523RE	NWEPH	>C10-C12 Aliphatic	1.2	mg/kg	U	DNR	11
LDC03	SVP-2-S-8.0-180830	9789523	NWEPH	>C12-C16 Aliphatic	1.2	mg/kg	U	UJ	10L
LDC03	SVP-2-S-8.0-180830	9789523RE	NWEPH	>C12-C16 Aliphatic	1.2	mg/kg	U	DNR	11
LDC03	SVP-2-S-8.0-180830	9789523RE	NWEPH	>C16-C21 Aliphatic	3.7	mg/kg	U	DNR	11
LDC03	SVP-2-S-8.0-180830	9789523RE	NWEPH	>C21-C34 Aliphatic	7.4	mg/kg	U	DNR	11
LDC03	SVP-2-S-8.0-180830	9789523	NWEPH	>C10-C12 Aromatic	1.2	mg/kg	U	UJ	10L
LDC03	SVP-2-S-8.0-180830	9789523RE	NWEPH	>C10-C12 Aromatic	1.2	mg/kg	U	DNR	11

**Qualified Data Summary Table
Newman's Chevron**

SDG	SAMPLE ID	LAB ID	METHOD	ANALYTE	RESULT	UNITS	LAB FLAG	DV QUALIFIER	DV REASON
LDC03	SVP-2-S-8.0-180830	9789523RE	NWEPH	>C12-C16 Aromatic	1.2	mg/kg	U	DNR	11
LDC03	SVP-2-S-8.0-180830	9789523RE	NWEPH	>C16-C21 Aromatic	2.5	mg/kg	U	DNR	11
LDC03	SVP-2-S-8.0-180830	9789523RE	NWEPH	>C21-C34 Aromatic	2.5	mg/kg	U	DNR	11
LDC03	SVP-2-S-10.0-180830	9789524	NWEPH	>C10-C12 Aliphatic	1.2	mg/kg	U	UJ	10L
LDC03	SVP-2-S-10.0-180830	9789524RE	NWEPH	>C10-C12 Aliphatic	1.2	mg/kg	U	DNR	11
LDC03	SVP-2-S-10.0-180830	9789524	NWEPH	>C12-C16 Aliphatic	1.2	mg/kg	U	UJ	10L
LDC03	SVP-2-S-10.0-180830	9789524RE	NWEPH	>C12-C16 Aliphatic	1.2	mg/kg	U	DNR	11
LDC03	SVP-2-S-10.0-180830	9789524RE	NWEPH	>C16-C21 Aliphatic	3.7	mg/kg	U	DNR	11
LDC03	SVP-2-S-10.0-180830	9789524RE	NWEPH	>C21-C34 Aliphatic	7.3	mg/kg	U	DNR	11
LDC03	SVP-2-S-10.0-180830	9789524	NWEPH	>C10-C12 Aromatic	1.2	mg/kg	U	UJ	10L
LDC03	SVP-2-S-10.0-180830	9789524RE	NWEPH	>C10-C12 Aromatic	1.2	mg/kg	U	DNR	11
LDC03	SVP-2-S-10.0-180830	9789524RE	NWEPH	>C12-C16 Aromatic	1.2	mg/kg	U	DNR	11
LDC03	SVP-2-S-10.0-180830	9789524RE	NWEPH	>C16-C21 Aromatic	2.4	mg/kg	U	DNR	11
LDC03	SVP-2-S-10.0-180830	9789524RE	NWEPH	>C21-C34 Aromatic	2.4	mg/kg	U	DNR	11



DATA VALIDATION REPORT NEWMAN'S CHEVRON

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EcoChem Project: C4159-2

September 27, 2019

Approved for Release:

A handwritten signature in black ink, appearing to read "Christine Ransom", with a long horizontal flourish extending to the right.

Christine Ransom
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of summary validation (EPA Stage 2B) performed on soil, grab water, and associated quality control sample data for the Newman's Chevron project. A complete list of samples is provided in the Sample Index. The laboratory revised the sample IDs originally provided on the chains-of-custody to match the project naming convention.

All analyses were performed by Eurofins Laboratories Environmental, Lancaster, PA. The analytical methods and EcoChem project chemists are listed in the following table:

ANALYSIS	METHOD	PRIMARY REVIEW	SECONDARY REVIEW
Volatiles	8260C	E. Clayton	C. Ransom
TCLP Volatiles	8260C		
Semivolatiles	8270D		
TCLP Semivolatiles	8270D		
PAH	8270D-SIM		
PCB Aroclors	8082A		
EDB	8011		
Gas Range Hydrocarbons	NWTPH-Gx		
Petroleum Hydrocarbons	NWTPH-Dx		
Lead	6010D		
Percent Moisture	SM 2540		

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Final Remedial Investigation Work Plan Newman's Chevron* (Leidos, July 2018); *National Functional Guidelines for Organic Data Review* (USEPA 2008); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2010).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. Data that have been rejected are flagged with (R). Rejected data should not be used for any purpose. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Validation criteria are included as Appendix A. The qualified data summary table (QDST) is included as Appendix B. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted.

Sample Index
Newman's Chevron

SDG	Sample ID	Lab ID	VOC BTEX 8260C	TCLP VOC	EDB 8011	SVOC 8270D	PAH 8270SIM	TCLP SVOC	PCB 8082A	TPH-Gx	TPH-Dx	Metals 6010D	Mercury 7470A
LDC06	SB-13-S-12.0-190724	1114243	✓			✓				✓	✓	✓	
LDC06	SB-13-S-16.0-190724	1114244	✓			✓				✓	✓	✓	
LDC06	SB-13-S-27.5-190724	1114245	✓			✓				✓	✓	✓	
LDC06	QA-T-190724	1114246	✓							✓			
LDC06	SB-14-S-12.0-190724	1114247	✓			✓				✓	✓	✓	
LDC07	SB-15-S-8.0-190723	1114252	✓			✓				✓	✓	✓	
LDC07	SB-15-S-13.0-190723	1114253	✓			✓				✓	✓	✓	
LDC07	SB-15-S-22.5-190723	1114254	✓			✓				✓	✓	✓	
LDC07	SB-16-S-9.0-190723	1114255	✓			✓				✓	✓	✓	
LDC07	SB-16-S-13.0-190723	1114256	✓			✓				✓	✓	✓	
LDC07	SB-16-S-22.5-190723	1114257	✓			✓				✓	✓	✓	
LDC07	QA-T-190724	1114258	✓							✓			
LDC08	SB-18-S-8.0-190723	1114303	✓			✓				✓	✓	✓	
LDC08	SB-18-S-18.0-190723	1114304	✓			✓				✓	✓	✓	
LDC08	SB-18-S-22.5-190723	1114305	✓			✓				✓	✓	✓	
LDC08	DUP-1-SD-190723	1114306	✓			✓				✓	✓	✓	
LDC08	SB-19-S-8.0-190725	1114307	✓			✓				✓	✓	✓	
LDC08	SB-19-S-14.0-190725	1114308	✓			✓				✓	✓	✓	
LDC08	QA-T-190725	1114309	✓							✓			
LDC09	SB-19-S-22.5-190725	1114310	✓			✓				✓	✓	✓	
LDC09	SB-19-S-27.5-190725	1114311	✓			✓				✓	✓	✓	
LDC09	DUP-2-SD-190725	1114312	✓			✓				✓	✓	✓	
LDC09	SB-20-S-8.0-190725	1114313	✓			✓				✓	✓	✓	
LDC09	SB-20-S-14.0-190725	1114314	✓			✓				✓	✓	✓	
LDC09	SB-20-S-22.5-190725	1114315	✓			✓				✓	✓	✓	
LDC09	QA-T-190725	1114316	✓							✓			
LDC10	SB-11-S-6.0-190723	1114317	✓			✓				✓	✓	✓	

Sample Index
Newman's Chevron

SDG	Sample ID	Lab ID	VOC BTEX 8260C	TCLP VOC	EDB 8011	SVOC 8270D	PAH 8270SIM	TCLP SVOC	PCB 8082A	TPH-Gx	TPH-Dx	Metals 6010D	Mercury 7470A
LDC10	SB-11-S-10.0-190724	1114318	✓			✓				✓	✓	✓	
LDC10	SB-11-S-14.0-190724	1114319	✓			✓				✓	✓	✓	
LDC10	SB-11-S-20.0-190724	1114320	✓			✓				✓	✓	✓	
LDC10	SB-11-S-27.5-190724	1114321	✓			✓				✓	✓	✓	
LDC10	QA-T-190724	1114322	✓							✓			
LDC11	SB-20-S-27.5-190725	1114323	✓			✓				✓	✓	✓	
LDC11	SB-14-S-20.0-190724	1114324	✓			✓				✓	✓	✓	
LDC11	SB-14-S-27.5-190724	1114325	✓			✓				✓	✓	✓	
LDC11	SB-12-S-6.0-190723	1114326	✓			✓				✓	✓	✓	
LDC11	SB-12-S-14.5-190724	1114327	✓			✓				✓	✓	✓	
LDC11	SB-12-S-20.0-190724	1114328	✓			✓				✓	✓	✓	
LDC11	QA-T-190725	1114329	✓							✓			
LDC12	SB-10-S-27.5-190724	1114330	✓			✓				✓	✓	✓	
LDC12	SB-10-S-20.0-190724	1114331	✓			✓				✓	✓	✓	
LDC12	SB-10-S-14.0-190724	1114332	✓			✓				✓	✓	✓	
LDC12	SB-10-S-8.0-190724	1114333	✓			✓				✓	✓	✓	
LDC12	QA-T-190724	1114334	✓							✓			
LDC13	SB-17-S-8.0-190723	1114335	✓			✓				✓	✓	✓	
LDC13	SB-17-S-14.5-190723	1114336	✓				✓		✓	✓	✓	✓	
LDC13	SB-17-S-19.5-190723	1114337	✓			✓				✓	✓	✓	
LDC13	QA-T-190723	1114338	✓							✓			
LDC13	SB-17-S-24.0-190723	1114339	✓			✓				✓	✓	✓	
LDC13	SB-17-S-29.5-190723	1114340	✓			✓				✓	✓	✓	
LDC14	USTSOUTH-CONTENTS-W-190725	1115414	✓		✓	✓	✓		✓	✓	✓	✓	✓
LDC14	USTSOUTH-CONTENTS-W-190725	1115415						✓					
LDC14	USTSOUTH-CONTENTS-W-190725	1115416		✓									
LDC14	SB-12-S-27.5-190724	1115417	✓			✓				✓	✓	✓	

Sample Index
Newman's Chevron

SDG	Sample ID	Lab ID	VOC BTEX 8260C	TCLP VOC	EDB 8011	SVOC 8270D	PAH 8270SIM	TCLP SVOC	PCB 8082A	TPH-Gx	TPH-Dx	Metals 6010D	Mercury 7470A
LDC14	QA-T-190725	1115418	✓							✓			
LDC14	QA-2-O-190724	1115419	✓							✓			
LDC14	QA-1-O-190723	1115420	✓							✓			

DATA VALIDATION REPORT
Newman's Chevron
Volatile Organic Compounds by SW8260C

This report documents the review of analytical data from the analysis of soil samples, one grab water, and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC06	4 Soil, 1 Trip Blank	Stage 2B
LDC07	6 Soil, 1 Trip Blank	Stage 2B
LDC08	6 Soil, 1 Trip Blank	Stage 2B
LDC09	6 Soil, 1 Trip Blank	Stage 2B
LDC10	5 Soil, 1 Trip Blank	Stage 2B
LDC11	6 Soil, 1 Trip Blank	Stage 2B
LDC12	4 Soil, 1 Trip Blank	Stage 2B
LDC13	5 Soil, 1 Trip Blank	Stage 2B
LDC14	1 Grab Water, 1 Soil, 1 Trip Blank, 2 Equipment Blank	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

The laboratory changed the sample IDs from those noted on the chains-of-custody, e.g. "-S-8.0-" was changed to "-8.0-S-". Also, the date segment was changed from a mmddyy format to a yymmdd format. This was done to make the sample naming convention consistent with the first round of sampling.

The field blank IDs were also changed to agree with first round naming conventions. See the field blank section for a comparison of IDs.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

2	Sample Receipt, Preservation, and Holding Times	1	Laboratory Control Samples (LCS/LCSD)
✓	GC/MS Instrument Performance (Tune)	✓	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration (ICAL)	1	Field Duplicates
✓	Continuing Calibration (CCAL)	2	Internal Standards
2	Laboratory Blanks	✓	Target Analyte List
1	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. Several coolers were received at temperatures less than the lower control limit, ranging from 0.6C to 1.8C. These outliers did not impact data quality; no data were qualified.

SDG LDC08: For Sample SB-19-8.0-S-072519, the collection time on the COC of 12:05 was 12:15 on the label; the time noted on the COC was used for login.

SDG LDC10: Sample SB-11-20.0-S-072419 was analyzed after the 14 day holding time; associated sample results were estimated (J/UJ-1).

SDG LDC14: Samples USTSOUTH-CONTENTS-W-190725 and ER-2-072419 were noted to have headspace at the time of analysis. There were no target analytes detected in these samples; results were estimated (UJ-1).

Laboratory Blanks

SDGs LDC10, LDC11, LDC12, LDC14: Toluene was detected in the method blank for batch X192191AA. Toluene results less in the associated samples that were less than the action level of 5x the blank concentration were qualified as not detected (U-7).

Field Blanks

The following field blanks were submitted. No target analytes were detected in these blanks.

SDG	CHAIN OF CUSTODY ID	LAB LOG-IN ID
LDC06	TB-4-072419	QA-T-190724
LDC07	TB-5-072419	QA-T-190724
LDC08	TB-6-072519	QA-T-190725
LDC09	TB-7-072519	QA-T-190725
LDC10	TB-3-072419	QA-T-190724
LDC11	TB-8-072519	QA-T-190725
LDC12	TB-2-072419	QA-T-190724
LDC13	TB-1-072319	QA-T-190723
LDC14	TB-1-072519	QA-T-190725
LDC14	ER-2-072419	QA-2-O-190724
LDC14	ER-1-072319	QA-1-O-190723

Laboratory Control Samples

SDGs LDC10, LDC11, LDC12, LDC14: The percent recovery (%R) value for the laboratory control sample (LCS) associated with batch X192191AA was greater than the upper control limit but was in control in the associated laboratory control sample duplicate sample (LCSD). No data were qualified based on the single outlier single outlier.

Field Duplicates

SDG LDC08: One set of field duplicates were submitted: SB-17-S-19.5-190723 (LDC13) & DUP-1-190723 (LDC08). All acceptance criteria were met.

SDG LDC09: One set of field duplicates were submitted: SB-19-S-8.0-190725 (LDC08) & DUP-2-190725 (LDC09). All acceptance criteria were met.

Internal Standards

Internal standards were added to all samples as required by the method. With the following exceptions, the internal standard responses were within the method specified control limits of 50%-200% of the response in the associated calibration verification standard.

SDG LDC07: For Sample SB-15-8.0-S-190723, all internal standard recoveries were less than the lower control limit; associated sample results were estimated (J/UJ-19).

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and MS/MSD recovery values and precision were acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate RPD values.

Detection limits were elevated based on method blank contamination. Results were estimated based on holding time outliers and internal standard recovery outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT
Newman's Chevron
Naphthalene by SW8270D and
Polycyclic Aromatic Hydrocarbons by 8270 & 8270D-SIM

This report documents the review of analytical data from the analysis of soil samples, one grab water, sample, and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC06	4 Soil	Stage 2B
LDC07	6 Soil	Stage 2B
LDC08	6 Soil	Stage 2B
LDC09	6 Soil	Stage 2B
LDC10	5 Soil	Stage 2B
LDC11	6 Soil	Stage 2B
LDC12	4 Soil	Stage 2B
LDC13	5 Soil	Stage 2B
LDC14	1 Grab Water, 1 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

The laboratory changed the sample IDs from those noted on the chains-of-custody, e.g. "-S-8.0-" was changed to "-8.0-S-". Also, the date segment was changed from a mmddy format to a yymmdd format. This was done to make the sample naming convention consistent with the first round of sampling.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

2	Sample Receipt, Preservation, and Holding Times	2	Laboratory Control Samples (LCS/LCSD)
✓	GC/MS Instrument Performance (Tune)	✓	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration (ICAL)	✓	Internal Standards
✓	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Target Analyte List
1	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. Several coolers were received at temperatures less than the lower control limit, ranging from 0.6C to 1.8C. These outliers did not impact data quality; no data were qualified.

SDG LDC08: For Sample SB-19-8.0-S-072519, the collection time on the COC of 12:05 was 12:15 on the label; the time noted on the COC was used for login.

SDG LDC14: Sample USTSouth-contents-072519 was extracted past the 7 day hold time for water samples; associated sample results were estimated (UJ-1).

Field Blanks

No field blanks were submitted.

Laboratory Control Samples

Laboratory control samples and laboratory control duplicate samples (LCS/LCSD) were analyzed at the required frequency of one per batch of 20 or fewer samples. With the following exceptions, all spike recoveries (%R) and relative percent difference (RPD) values were within the laboratory control limits.

SDG LDC14: For the TCLP extraction sample, the RPD values for 1,4-dichlorobenzene, 2,4-dinitrotoluene, hexachlorobenzene, hexachloroethane, and nitrobenzene were greater than the control limit. These analytes were not detected in the field sample; no qualification of data was necessary. The LCS %R value for 2,4-dinitrotoluene was less than the lower control limit but was in control in the associated LCSD. No data were qualified based on the single outlier.

For the water extraction batch, the LCS/LCSD %R values for naphthalene were less than the lower control limit. the associated sample result was estimated (UJ-10L).

Field Duplicates

SDG LDC08: One set of field duplicates were submitted: SB-17-S-19.5-190723 (LDC13) & DUP-1-190723 (LDC08). All acceptance criteria were met.

SDG LDC09: One set of field duplicates were submitted: SB-19-S-8.0-190725 (LDC08) & DUP-2-190725 (LDC09). All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and matrix spike/matrix spike duplicate (MS/MSD) percent recovery values. Precision was also acceptable as demonstrated by the LCS/LCSD, MS/MSD, and field duplicate relative percent difference values.

Data were estimated due to an exceeded holding time and LCS/LCSD recovery outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

PCB Aroclors by SW846 Method 8082

This report documents the review of analytical data from the analysis of one soil sample, one grab water samples, and the associated laboratory quality control (QC) samples. Eurofins Lancaster, Lancaster, Pennsylvania, analyzed the samples. Refer to the **SAMPLE INDEX** for a list of the individual samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC13	1 Soil	EPA Stage 2B
LDC14	1 Grab Water	EPA Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

The laboratory changed the sample IDs from those noted on the chains-of-custody, e.g. "-S-8.0-" was changed to "-8.0-S-". Also, the date segment was changed from a mmddyy format to a yymmdd format. This was done to make the sample naming convention consistent with the first round of sampling.

VERIFICATION OF EDD TO LABORATORY REPORT

Sample results and related quality control data were received as an electronic data deliverable (EDD) and laboratory report. The EDD was verified against the laboratory report; no errors were found.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration (ICAL)	1	Field Duplicates
✓	Continuing Calibration (CCAL)	✓	Target Analyte List
✓	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Compound Identification
✓	Surrogate Compounds	✓	Reported Results
✓	Laboratory Control Samples (LCS/LCSD)		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. The sample coolers were received at temperatures less than the lower control limit, at 0.8°C and 1.8°C. These outliers did not impact data quality; no data were qualified.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicates were not analyzed. Laboratory precision and accuracy were evaluated using the surrogate and laboratory control sample/laboratory control sample duplicate (LCS/LCSD) results.

Field Blanks

No field blanks were submitted.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As was determined by this evaluation, the laboratory performed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate and LCS/LCSD recoveries. Precision was also acceptable as demonstrated by the LCS/LCSD relative percent difference values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Ethylene Dibromide by SW8011

This report documents the review of analytical data from the analysis of a grab water sample and the associated laboratory quality control (QC) samples. The analysis was performed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the **Sample Index** for a sample ID cross reference.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC14	1 Grab Water	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	Initial Calibration (ICAL)	1	Matrix Spikes/Matrix Spike Duplicates (MS/MSD)
✓	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Reported Results
✓	Surrogate Compounds		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. The sample cooler temperature was less than the lower control limit, at 0.8°C. This outlier did not impact data quality; no data were qualified.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spikes were not analyzed. Laboratory accuracy and precision were evaluated using the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) results.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate and LCS/LCSD recovery values and precision was acceptable as demonstrated by the LCS/LCSD relative percent difference values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Gasoline Range Organics by NWTPH-Gx

This report documents the review of analytical data from the analysis of soil samples, one grab water sample, and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC06	4 Soil, 1 Trip Blank	Stage 2B
LDC07	6 Soil, 1 Trip Blank	Stage 2B
LDC08	6 Soil, 1 Trip Blank	Stage 2B
LDC09	6 Soil, 1 Trip Blank	Stage 2B
LDC10	5 Soil, 1 Trip Blank	Stage 2B
LDC11	6 Soil, 1 Trip Blank	Stage 2B
LDC12	4 Soil, 1 Trip Blank	Stage 2B
LDC13	5 Soil, 1 Trip Blank	Stage 2B
LDC14	1 Grab Water, 1 Soil, 1 Trip Blank, 2 Equipment Blank	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

The laboratory changed the sample IDs from those noted on the chains-of-custody, e.g. "-S-8.0-" was changed to "-8.0-S-". Also, the date segment was changed from a mmddy format to a yymmdd format. This was done to make the sample naming convention consistent with the first round of sampling.

The field blank IDs were also changed to agree with first round naming conventions. See the field blank section for a comparison of IDs.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Preservation and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	Initial Calibration (ICAL)	1	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Reported Results
✓	Surrogate Compounds		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. Several coolers were received at temperatures less than the lower control limit, ranging from 0.6C to 1.8C. These outliers did not impact data quality; no data were qualified.

SDG LDC08: For Sample SB-19-8.0-S-072519, the collection time on the COC of 12:05 was 12:15 on the label; the time noted on the COC was used for login.

Field Blanks

The following field blanks were submitted. No target analytes were detected in these blanks.

SDG	CHAIN OF CUSTODY ID	LAB LOG-IN ID
LDC06	TB-4-072419	QA-T-190724
LDC07	TB-5-072419	QA-T-190724
LDC08	TB-6-072519	QA-T-190725
LDC09	TB-7-072519	QA-T-190725
LDC10	TB-3-072419	QA-T-190724
LDC11	TB-8-072519	QA-T-190725
LDC12	TB-2-072419	QA-T-190725
LDC13	TB-1-072319	QA-T-190723
LDC14	TB-1-072519	QA-T-190725
LDC14	ER-2-072419	QA-2-O-190724
LDC14	ER-1-072319	QA-1-O-190723

Matrix Spike/Matrix Spike Duplicates

Matrix spikes were not analyzed. Precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) results.

Field Duplicates

SDG LDC08: One set of field duplicates were submitted: SB-17-S-19.5-190723 (LDC13) & DUP-1-190723 (LDC08). All acceptance criteria were met.

SDG LDC09: One set of field duplicates were submitted: SB-19-S-8.0-190725 (LDC08) & DUP-2-190725 (LDC09). All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the surrogate and LCS/LCSD percent recovery values. Precision was also acceptable as demonstrated by the LCS/LCSD and field duplicate RPD values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
Newman's Chevron
Diesel Range Organics (extended) by NWTPH-Dx

This report documents the review of analytical data from the analysis of soil samples, one grab water sample, and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC06	4 Soil	Stage 2B
LDC07	6 Soil	Stage 2B
LDC08	6 Soil	Stage 2B
LDC09	6 Soil	Stage 2B
LDC10	5 Soil	Stage 2B
LDC11	6 Soil	Stage 2B
LDC12	4 Soil	Stage 2B
LDC13	5 Soil	Stage 2B
LDC14	1 Grab Water, 1 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

The laboratory changed the sample IDs from those noted on the chains-of-custody, e.g. "-S-8.0-" was changed to "-8.0-S-". Also, the date segment was changed from a mmddyy format to a yymmdd format. This was done to make the sample naming convention consistent with the first round of sampling.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	2	Laboratory Control Samples (LCS/LCSD)
✓	Initial Calibration (ICAL)	2	Matrix Spikes
✓	Continuing Calibration (CCAL)	2	Laboratory Duplicates
1	Laboratory Blanks	2	Field Duplicates
1	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. Several coolers were received at temperatures less than the lower control limit, ranging from 0.6C to 1.8C. These outliers did not impact data quality; no data were qualified.

SDG LDC08: For Sample SB-19-8.0-S-072519, the collection time on the COC of 12:05 was 12:15 on the label; the time noted on the COC was used for login.

Laboratory Blanks

SDGs LDC06, LDC07: Heavy range organics C24-C40 (RRO) were detected in the method blank for batch 192140026A. RRO was not detected in the associated samples; no data were qualified.

Field Blanks

No field blanks were submitted.

Matrix Spikes

SDG LDC11: For batch 192190015A, the matrix spike analysis was performed using Sample SB-14-20.0-S-072419. The MS percent recovery (%R) value for DRO was less than the lower control limit; the result in the parent sample was estimated (J-8L).

Laboratory Control Samples

Laboratory control samples/laboratory control duplicate samples (LCS/LCSD) were analyzed at the required frequency of one per batch of 20 or fewer samples. With the following exception, all recoveries and relative percent difference (RPD) were within the control limits.

SDG LDC14: The RPD for DRO was greater than the control limit; the associated sample result was estimated (J-9).

Laboratory Duplicates

The duplicate relative percent difference control limit is 20% for results greater than 5x the reporting limit (RL). For results less than 5X the RL, the difference between the sample and duplicate must be less than 2x the RL.

SDG LDC08: For batch 192140030A, the laboratory duplicate analysis was performed using Sample DUP-1-SD-190723. The RPD value for DRO was greater than the control limit of 20%. The DRO result in the parent sample was estimated (J-9).

SDG LDC10: For batch 192180010A, the laboratory duplicate analysis was performed using Sample SB-11-20.0-S-072419. For DRO, the difference was greater than the control limit; the result in the parent sample was estimated (J-9).

Field Duplicates

SDG LDC08: One set of field duplicates were submitted: SB-17-S-19.5-190723 (LDC13) & DUP-1-190723 (LDC08). The RPD value for DRO was greater than the control limit; the associated parent and duplicate results were estimated (J-9).

SDG LDC09: One set of field duplicates were submitted: SB-19-S-8.0-190725 (LDC08) & DUP-2-190725 (LDC09). All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate, LCS/LCSD, and matrix spike percent recovery values and precision were acceptable as demonstrated by the LCS/LCSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated due to matrix spike recovery, LCS/LCSD RPD, laboratory duplicate RPD, and field duplicate RPD outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Metals by SW6010D, Mercury by SW7470A and Moisture by SM2540G

This report documents the review of analytical data from the analyses of soil samples, one grab water sample, and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES AND MATRIX	VALIDATION LEVEL
LDC06	4 Soil	Stage 2B
LDC07	6 Soil	Stage 2B
LDC08	6 Soil	Stage 2B
LDC09	6 Soil	Stage 2B
LDC10	5 Soil	Stage 2B
LDC11	6 Soil	Stage 2B
LDC12	4 Soil	Stage 2B
LDC13	5 Soil	Stage 2B
LDC14	1 Grab Water, 1 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

The laboratory changed the sample IDs from those noted on the chains-of-custody, e.g. "-S-8.0-" was changed to "-8.0-S-". Also, the date segment was changed from a mmddyy format to a yymmdd format. This was done to make the sample naming convention consistent with the first round of sampling.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	✓	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration	✓	Laboratory Duplicates
✓	Calibration Verification	✓	Interference Check Samples
✓	Reporting Limit Standards	✓	Serial Dilutions
1	Laboratory Blanks	2	Field Duplicates
1	Field Blanks	✓	Reporting Limits
✓	Laboratory Control Samples (LCS)	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. Several coolers were received at temperatures less than the lower control limit, ranging from 0.6C to 1.8C. These outliers did not impact data quality; no data were qualified.

SDG LDC08: For Sample SB-19-8.0-S-072519, the collection time on the COC of 12:05 was 12:15 on the label; the time noted on the COC was used for login.

Laboratory Blanks

SDGs LDC06, LDC09: The instrument blank analyzed on 8/7/19 had a detected value for lead, however, the associated sample results were not detected or were greater than the 5x action level; no qualification was required.

SDGs LDC08, LDC09, LDC10: The instrument blank analyzed on 8/8/19 had a detected value for lead, however, the associated sample results were greater than the 5x action level; no qualification was required.

SDG LDC14: Arsenic was detected in the instrument blank analyzed on 8/7/19. This analyte was not detected in the associated sample; no qualification was necessary.

Field Blanks

No field blanks were submitted.

Field Duplicates

The field duplicate RPD control limit is 20% for results greater than 5x the reporting limit (RL)

SDG LDC08: One set of field duplicates were submitted: SB-17-S-19.5-190723 (LDC13) & DUP-1-190723 (LDC08). All acceptance criteria were met.

SDG LDC09: One set of field duplicates were submitted: SB-19-S-8.0-190725 (LDC08) & DUP-2-190725 (LDC09). The RPD value for lead was greater than the control limit; the associated parent and duplicate sample results are estimated (J-9).

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable, as demonstrated by the laboratory control sample and matrix spike/matrix spike duplicate (MS/MSD) recoveries. Precision was also acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

No data was qualified for any reason. All data, as reported, are acceptable for use.



APPENDIX A

DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES **Based on National Functional Guidelines**

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.
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DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r^2)
	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L) ¹ where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L) ¹ where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L) ¹ for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L) ¹ where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L) ¹ where appropriate
	12	Reference Material Use bias flags (H,L) ¹ where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L) ¹ where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L) ¹ where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2 nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)
	26	Method QC information not provided

¹H = high bias indicated

L = low bias indicated

**Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8260C)**

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	4°C±2°C Aqueous: HCl to pH < 2 Current SW846 criterion is ≤ 6° C ⁽³⁾	NFG ⁽¹⁾ Method ⁽³⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use PJ for temp outliers; see TM20 if pH ≤ 2, reject 2-chloroethyl vinyl ether (R-1) some projects may require methanol preserved soils/seds
Holding Time	Aqueous: 14 days preserved 7 Days: unpreserved Solid: 14 Days	NFG ⁽¹⁾ Method ⁽³⁾	J (pos)/UJ (ND) if HT exceeded J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Gross exceedance = > 2x HT, as per 1999 NFG
Instrument Performance					
Tuning	BFB Beginning of each 12 hour period Use method or project acceptance criteria	NFG ⁽¹⁾ Method ⁽³⁾	R (pos/ND) all analytes in all samples associated with the tune	24	
Initial Calibration Sensitivity	Minimum 5 standards RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders * RRF ≥ 0.005 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5A	TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance PJ - no action if response is stable (ICAL RSD and CCAL %D acceptable)
Initial Calibration Stability	%RSD ≤ 20% except: %RSD ≤ 40% poor responders * %RSD ≤ 50% 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %RSD > limit	5A	
Initial Calibration Verification	Second source analyzed immediately after ICAL %R 70% - 130%	Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) %R < LCL	5A (H,L) ⁴	QAPP may have overriding accuracy limits.
Continuing Calibration Sensitivity	RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders * RRF ≥ 0.005 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5B	see ICAL RRF guidance
Continuing Calibration Stability	%D ≤ 25% except: %D ≤ 40% poor responders * %D ≤ 50% 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) - %D > control limit (high bias) J (pos)/UJ (ND) - %D < -control limit (low bias)	5B (H,L) ⁴	

**Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8260C)**

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments	
Blank Contamination						
Method Blank (MB)	<u>MB: One per matrix per batch (of ≤ 20 samples)</u> No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	7	10X action level for methylene chloride, acetone, & 2-butanone. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review TB, qualify as needed #3 - Review FB, qualify as needed Note: Actions as per NFG 1999	
	No TICs present		R (pos) TICs using 10X rule			
Trip Blank (TB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6		
Field Blank (FB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6		
Precision and Accuracy						
LCS/LCSD (recovery)	One per matrix per batch (of ≤ 20 samples) LCSD not required by NFG or method Use method acceptance criteria/laboratory limits	Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND)%R < 10%	10 (H,L) ⁴		No action if only one spike %R is outside criteria when LCSD is analyzed, unless one recovery is <10%. QAPP may have overriding accuracy limits.
LCS/LCSD RPD	If LCSD analyzed RPD < lab limits	Method ⁽³⁾	J (pos)	9	Qualify all associated samples. QAPP may have overriding precision limits.	
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ⁴	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits	
Surrogates	Added to all samples Within method/laboratory control limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %R >UCL J (pos)/UJ (ND) if %R <LCL J (pos)/R (ND) if <10%	13 (H,L) ⁴	No action if there are 4+ surrogates and only 1 outlier Qualify all compounds if qualification is required.	
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if > 200% J (pos)/UJ (ND) if < 50% J (pos)/R (ND) if < 25% if RT >30 seconds use PJ	19	Qualify compounds quantified using particular internal standard	

**Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8260C)**

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy (continued)					
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) if both %R < LCL J (pos)/R (ND) if both %R < 10% J (pos)/UJ (ND) if one > UCL & one < LCL, with no bias	8 (H,L) ⁴	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only.
MS/MSD (RPD)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) If RPD > control limit	9	Qualify parent sample only
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified
Compound Identification and Quantitation					
Retention Time Relative Ion Intensities	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	NFG ⁽¹⁾ Method ⁽³⁾	U (pos) if identification criteria not met	25	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NFG ⁽¹⁾ Method ⁽³⁾	NJ TIC R (pos) if common laboratory contaminants	4	Common laboratory contaminants: aldol condensation products, solvent preservatives, and reagent contaminants
Calibration Range	Results greater than highest calibration standard	EcoChem standard policy	Qualify J (pos)	20	If result from dilution analysis is not reported.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Organic Data Review, June, 2008² National Functional Guidelines for Organic Data Review, Oct, 1999³ Method SW846 8260C Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)⁴ NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

* "Poor responder" compounds: Acetone, 2-butanone, carbon disulfide, chloroethane, chloromethane, cyclohexane, 1,2-dibromoethane, dichlorodifluoromethane, cis-1,2-dichloroethene, 1,2-dichloropropane, 1,2-dibromo-3-chloropropane, 2-hexanone, isopropylbenzene, methyl acetate, methylene chloride, methylcyclohexane, 4-methyl-2-pentanone, methyl tert-butyl ether, trans-1,2-dichloroethene, trichlorofluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane **criterion is 0.010 RRF**; 1,4-dioxane RRF **criterion is 0.005**.

(pos): Positive Result

(ND): Non-detect

DATA VALIDATION CRITERIA

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
 (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	4°C±2°C sediment/tissues may require storage at -20°C	NFG ⁽¹⁾ Method ⁽³⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use PJ for temp outliers; see TM20 Current SW846 criterion is ≤ 6° C ⁽³⁾
Holding Time	Extraction Aqueous: 7 days from collection Extraction Solid: 14 days from collection Analysis (all matrices): 40 days from extraction Holding time may be extended to 1 year for frozen sediments/tissues	NFG ⁽¹⁾ Method ⁽³⁾	J (pos)/UJ (ND) if HT exceeded J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Gross exceedance = > 2x HT, as per 1999 NFG
Instrument Performance					
Tuning	DFTPP Beginning of each 12 hour period Use method or project acceptance criteria	NFG ⁽¹⁾ Method ⁽³⁾	R (pos/ND) all analytes in all samples associated with the tune	24	
Initial Calibration Sensitivity	RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5A	TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance PJ - no action if response is stable (ICAL RSD and CCAL %D acceptable)
Initial Calibration Stability	Minimum 5 standards %RSD ≤ 20.0% except: %RSD ≤ 40.0% poor responders * or co-efficient of determination (r ²) > 0.99	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %RSD > limit or r ² value <0.99	5A	
Initial Calibration Verification Check	Prepared from second source; analyze after each ICAL Percent recovery limits = 70-130%	Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) %R < LCL	5A (H,L) ⁴	QAPP may have overriding accuracy limits.

**Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
 (Based on NFG 1999 & 2008 and SW-846 Method 8270D)**

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Performance (continued)					
Continuing Calibration Sensitivity	RRF \geq 0.05 except: RRF \geq 0.01 poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5B	see ICAL RRF guidance
Continuing Calibration Stability	Prior to sample analysis and every 12 hours %D \leq 25% except: %D \leq 40.0% poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) - %D > control limit (high bias) J (pos)/UJ (ND) - %D < -control limit (low bias)	5B (H,L) ⁴	
Blank Contamination					
Method Blank (MB)	MB: One per matrix per batch of (of \leq 20 samples) No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U(pos) if result is < 5X or 10X action level	7	10X action level applies to phthalates only. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review FB , qualify as needed Note: Actions as per 1999 NFG
	No TICs present		R (pos) TICs using 10X rule	7	
Field Blank (FB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	
Precision and Accuracy					
LCS/LCSD (recovery)	One per matrix per batch (of \leq 20 samples) LCSD not required by NFG or method Use method acceptance criteria/laboratory limits	Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND)%R < 10%	10 (H,L) ⁴	No action if only one spike %R is outside criteria when LCSD is analyzed, unless one recovery is <10%. QAPP may have overriding accuracy limits. Qualify all associated samples.
LCS/LCSD (RPD)	If LCSD analyzed RPD < lab limits	Method ⁽³⁾	J (pos)	9	Qualify all associated samples. QAPP may have overriding precision limits.

DATA VALIDATION CRITERIA

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
 (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy (continued)					
Reference Material (RM, SRM, or CRM)	Result \pm 20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ⁴	QAPP may have overriding accuracy limits. Some manufacturers have different RM control limits
MS/MSD (recovery)	One per matrix per batch (of \leq 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) if both %R < LCL J (pos)/R (ND) if both %R < 10% J (pos)/UJ (ND) if one > UCL & one < LCL, with no bias	8 (H,L) ⁴	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only.
MS/MSD (RPD)	One per matrix per batch (of \leq 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) in parent sample if RPD > CL	9	Qualify parent sample only
Surrogates	Minimum of 3 acid & 3 base/neutral (B/N) compounds added to all samples Within method control limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND) if %R < 10%	13 (H,L) ⁴	Qualify all compounds in associated fraction. Do not qualify if only 1 acid and/or 1 B/N surrogate is out, unless <10%. If 1 surrogate outlier < 10% then J (pos)/R (ND)
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if > 200% J (pos)/UJ (ND) if < 50% J (pos)/R (ND) if < 25% if RT >30 seconds use PJ	19	Qualify compounds quantified using particular internal standard
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Identification and Quantitation and Calculation					
Retention times and relative ion intensities	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	NFG ⁽¹⁾ Method ⁽³⁾	U (pos) if identification criteria not met	25	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NFG ⁽¹⁾ Method ⁽³⁾	NJ the TIC unless: R (pos) common laboratory contaminants	4	
Calibration Range	Results greater than highest calibration standard	EcoChem standard policy	Qualify J (pos)	20	If result from dilution analysis is not reported.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Organic Data Review, June, 2008

(pos): Positive Result(s)

² National Functional Guidelines for Organic Data Review, October, 1999

(ND): Non-detects

³ Method SW846 8270D Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 4, February 2007.

⁴ NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

* "Poor responder" compounds: acetophenone, atrazine, benzaldehyde, 1,1'-biphenyl, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, caprolactam, carbazole, 4-chloroaniline, diethylphthalate, di-n-butylphthalate, 3-3'-dichlorobenzidine, dimethylphthalate, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol, di-n-octylphthalate, hexachlorobutadiene, hexachlorocyclopentadiene, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 4-nitrophenol, N-nitrosodiphenylamine, 2,2'-oxybis-(1-chloropropane), 1,2,4,5-tetrachlorobenzene use a 0.010 RRF criterion.

PCB Aroclors by GC
(Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample					
Cooler/Storage Temperature Preservation	4°C ± 2°C Tissue/sediments (may be frozen -20°C)	NFG ⁽¹⁾ Method ⁽²⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use Professional Judgment (PJ) to qualify for temperature outlier. Current SW846 criterion is ≤ 6° C ⁽³⁾
Holding Time	Extraction Aqueous: 7 days from collection Extraction Solid: 14 days from collection Extraction Tissue/Sediment (frozen): 1 year Analysis (all matrices): 40 days from extraction	NFG ⁽¹⁾ Method ⁽²⁾	If required by project: J (pos)/UJ (ND) if ext/analyzed > HT J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Use PJ to qualify for holding time outlier. Current SW846 does not have an extraction holding time limit. ⁽³⁾ Gross exceedance > 2x HT, as per NFG 1999
Instrument Performance					
Retention Times	Surrogates: TCMX (± 0.05); DCB (± 0.10) Aroclors (± 0.07)	NFG ⁽¹⁾	NJ (pos)/R (ND) results for analytes with RT shifts	24	
Initial Calibration	Minimum 5 point with RSD ≤ 20% OR correlation coefficient (r-value) ≥ 0.995 OR Minimum 6-point with co-efficient of determination (r ² -value) ≥ 0.99	NFG ⁽¹⁾ Method ⁽⁴⁾	J (pos) if %RSD greater than 20% OR r-value < 0.995 OR r ² -value < 0.99	5A	Refer to TM-01 for additional information. Use bias flags (H,L) ⁽⁵⁾ where appropriate
Initial Calibration Verification (ICV)	No NFG criteria. Project specific.	Project	J (pos) if > UCL J (pos)/UJ (ND) if < LCL	5B	Use bias flags (H,L) where appropriate
Continuing Calibration (Prior to each 12 hr. shift)	%D ± 20%	Method ⁽²⁾	If > 20% (high bias): J (pos) If < 20% (low bias): J (pos)/UJ (ND)	5B	Refer to TM-01 for additional information. Use bias flags (H,L) where appropriate
Blank Contamination					
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected compounds > RL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is less than appropriate 5X action level.	7	Hierarchy of blank review: #1 - Review MB and IB, qualify as needed #2 - Review FB , qualify as needed Note: Actions as per NFG 1999 Note: IB not required by method
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > RL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is less than appropriate 5X action level.	6	
Instrument Blanks (IB)	Analyzed at the beginning and end of every 12 hour sequence No analyte > CRQL	NFG ⁽¹⁾	U (pos) if result is less than appropriate 5X action level.	7	

PCB Aroclors by GC
(Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy					
MS/MSD (recovery)	One set per matrix per batch (of ≤ 20 samples) AR1016 and AR1260: %R = 29% - 135%, or project limits	NFG ⁽¹⁾ Method ⁽²⁾	Qualify parent only unless other QC indicates systematic problems. J (pos) if both %R > upper control limit (UCL) J (pos)/UJ (ND) if both %R < lower control limit (LCL) J (pos)/R (ND) if both %R < 10%	8	No action if only one spike %R is outside criteria. No action if native analyte conc. > 5x the amount spiked. Use bias flags (H,L) where appropriate. Actions apply to all Aroclors in parent sample.
MS/MSD (RPD)	One set per matrix per batch (of ≤ 20 samples) AR1016: RPD < 15%, AR1260: RPD < 20% or project limits	NFG ⁽¹⁾ Method ⁽²⁾	Qualify parent only unless other QC indicates systematic problems. J (pos) if RPD > control limit	9	No action if parent is ND.
LCS	One per lab batch (of ≤ 20 samples) AR1016 and AR1260: %R = 50% - 150%, or project limits	NFG ⁽¹⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND) if %R < 10%	10	Use bias flags (H,L) where appropriate. Actions apply to all Aroclors in associated samples.
LCS/LCSD (RPD)	if analyzed use MS/MSD RPD criteria	NFG ⁽¹⁾	J (pos) assoc. compound in all samples	9	LCSD not required by method or NFG
Precision and Accuracy					
Surrogates	TCMX and DCBP added to every sample %R = 30% - 150% or project limits	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if either %R > UCL J (pos)/UJ (ND) if either %R < LCL J (pos)/R (ND) if either %R < 10%	13	If %R < 10% (sample dilution is a factor), use PJ Use bias flags (H,L) where appropriate
Internal Standards (if used)	Acceptable Range: IS area = 50% to 200% of CCAL area RT within 30 seconds of CC RT	Method ⁽²⁾	J (pos) if area > 200% J (pos)/UJ (ND) if area < 50% J (pos)/R (ND) if area < 25% RT > 30 seconds, narrate	19	
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	use project limits if specified

PCB Aroclors by GC
(Based on Organic NFG 2008 and SW-846 Method 8082A)

QC Element	Acceptance Criteria (NFG)	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Identification/Quantification					
Quantitation/ Identification	Between two columns: RPD < 40% or %D < 25% Within Retention Time Windows on both columns.	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if RPD = 40% - 60% (25% - 60% for %D) NJ (pos) if > 60% R (pos) if RTW criterion not met	3	See TM-08 for additional info.
Calibration Range	on column concentration < high calibration standard	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if conc > high standard and sample was not diluted	20	
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	Standard reporting policy	Use "DNR" to flag results that will not be reported.	11	TM-04 Rev. 1 for additional info.
Sample Clean-up					
GPC/Sulfur/ Florisil/Acid	No criteria - cleanups are optional	NFG ⁽¹⁾ Method ⁽²⁾	Use Professional Judgment	14	special cleanups may be required for project cleanup standards may be associated with GPC/florisil cleanups

¹ National Functional Guidelines for Organic Data Review, June, 2008

² Polychlorinated Biphenyls (PCBs) by Gas Chromatography USEPA Method SW846 8082A, Feb 2007, Rev. 1

³ SW846, Chapter 4, Organic Analytes

⁴ Determinative Chromatographic Separations, Method 8000C, March 2003, Rev.3

⁵ "H" = high bias indicated; "L" = low bias indicated

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Gasoline Range
(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Gx,
June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling				
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6°C	1	
Holding Time	Waters: 14 days preserved 7 days unpreserved Solids: 14 Days	J(+)/UJ(-) if hold times exceeded J(+)/R(-) if exceeded > 3X	1	Professional Judgement
Instrument Performance				
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: $r^2 \geq 0.990$ If used, RSD of response factors $\leq 20\%$	Narrate if fewer than 5 calibration levels or if %R > 15% J(+)/UJ(-) if $r^2 < 0.990$ J(+)/UJ(-) if %RSD > 20%	5A	
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 80% to 120%	Narrate if frequency not met. J(+)/UJ(-) if %R < 80% J(+) if %R > 120%	5B	
Blank Contamination				
Method Blank	At least one per batch (≤ 10 samples) No results > RL	U (at the RL) if sample result is < RL & < 5X blank result.	7	
		U (at reported sample value) if sample result is \geq RL and < 5X blank result	7	
Trip Blank (if required by project)	No results > RL	Action is same as method blank for positive results remaining in trip blank after method blank qualifiers are assigned.	18	
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in field blank after method and trip blank qualifiers are assigned.	6	

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Gasoline Range
(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Gx,
June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10%	10	Professional Judgement
Surrogates	Bromofluorobenzene and/or 1,4-difluorobenzene added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R >UCL J(+)/R(-) if any %R < 10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP EcoChem default: water: RPD < 35% solids: RPD < 50%	Narrate outliers If required by project, qualify with J(+)/UJ(-)	9	
Compound ID and Calculation				
Two analyses for one sample (e.g., dilution)	Report only one result per analyte	"DNR" (or client requested qualifier) all results that should not be reported.	11	See EcoChem TM-04

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range
(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx,
June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling				
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6 deg. C	1	
Holding Time	Ext. Waters: 14 days preserved 7 days unpreserved Ext. Solids: 14 Days Analysis: 40 days from extraction	J(+)/UJ(-) if hold times exceeded J(+)/R(-) if exceeded > 3X	1	Professional Judgement
Instrument Performance				
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: $r^2 \geq 0.990$ If used, RSD of response factors $\leq 20\%$	Narrate if fewer than 5 calibration levels or if %R > 15% J(+)/UJ(-) if $r^2 < 0.990$ J(+)/UJ(-) if %RSD > 20%	5A	
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 85% to 115%	Narrate if frequency not met. J(+)/UJ(-) if %R < 85% J(+) if %R > 115%	5B	
Blank Contamination				
Method Blank	At least one per batch (≤ 20 samples) No results > RL	U (at the RL) if sample result is < RL & < 5X blank result.	7	
		U (at reported sample value) if sample result is \geq RL and < 5X blank result	7	
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in the field blank after method blank qualifiers are assigned.	6	

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range
(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx,
June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10%	10	Professional Judgement
Surrogates	2-fluorobiphenyl, p-terphenyl, o-terphenyl, and/or pentacosane added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP EcoChem default: water: RPD < 35% solids: RPD < 50%	Narrate (Use Professional Judgement to qualify)	9	

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range
 (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx,
 June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound ID and Calculation				
Two analyses for one sample (dilution)	Report only one result per analyte	"DNR" (or client requested qualifier) all results that should not be reported.	11	See EcoChem TM-04

Metals by ICP-AES
 (Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler / Storage Temperature Preservation	Solid: Cooler temperature 4°C±2°C Aqueous: Nitric Acid to pH < 2 Dissolved Metals: 0.45 µm filter, preserve to pH < 2 after filtration	NFG ⁽¹⁾ Method ⁽²⁾	Cooler Temps: If required by project J (pos)/UJ (ND) if greater than 6° C Aqueous: J (pos)/UJ (ND) if pH > 2	1	Use PJ to qualify for temperature outlier. Current SW846 criterion is ≤ 6° C (4) No quals for pH if samples preserved by lab upon receipt and within 1 day of collection.
Holding Time	All matrices: 180 days from date sampled Frozen soils, sediments, tissues (-20°C) - HT extended to 1 year	NFG ⁽¹⁾ Method ⁽²⁾ EcoChem standard policy	J (pos)/UJ (ND) if holding time exceeded	1	
Instrument Performance					
Initial Calibration (ICAL)	Based on instrument requirements, blank + 1 standard minimum requirement for calibration If more than 1 standard used, r ≥ 0.995	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if r < 0.995	5A	
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R within ± 10% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R > 111%	5A (H,L) ³	Qualify all samples in run
Reporting Limit (RL) Standard Low Level ICV/CCV	concentration at RL %R = 70%-130%	Method ⁽²⁾	J (pos) < 2x RL / R (ND) if %R < 50% J (pos) < 2x RL / UJ (ND) if %R 50 - 69% J (pos) < 2x RL if %R > 130%	5A (H,L) ³	Qualify all samples in run
Continuing Calibration Verification (CCV)	Immediately following ICV/ICB, then every two hours or ten samples, and at end of run. %R within ± 10% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R > 111%	5B (H,L) ³	Qualify samples bracketed by CCV outliers
Interference Check Samples (ICSA / ICSAB)	ICSAB %R 80% - 120% for all spiked elements ICSA < MDL for all unspiked elements	NFG ⁽¹⁾ Method ⁽²⁾	For samples with Al, Ca, Fe, Mg > ICS levels: ICSAB: J(pos)/R (ND) if %R < 50% J (pos)/UJ (ND) if %R = 50% - 79% J (pos) if %R > 120% ICSA: J (pos) < 2x ICSA/UJ (ND) for ICSA < Neg MDL J (pos) < 2x ICSA for ICSA > MDL	17 (H,L) ³	Use PJ and inter-element correction factors to evaluate ICSA to determine if bias is present. Refer to TM-09 for additional information.

Metals by ICP-AES
 (Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Blank Contamination					
Method Blank (MB)	One per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is < 5X method blank concentration	7	Refer to TM-02 for additional information. Blank Evaluation based on NFG 1994
Instrument Blanks (ICB/CCB)	After each ICV & CCV blank concentration < MDL	NFG ⁽¹⁾ Method ⁽²⁾	Action level is 5x absolute value of blank conc. For positive blanks: U (pos) results < action level For negative blanks: J (pos)/UJ (ND) results < action level	Pos Blanks: 7 Neg Blanks: 7L ³	Use blanks bracketing samples for Qualification Refer to TM-02 for additional information. Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review IB, qualify as needed #3 - Review FB, qualify as needed
Field Blank (FB)	Blank conc < MDL	EcoChem standard policy	U (pos) if result is < 5x action level, as per analyte.	6	Qualify in associated field samples only. Refer to TM-02 for additional information.
Precision and Accuracy					
LCS (recovery)	One per matrix per batch (of ≤ 20 samples); LCSD not required %R between 80-120%	Method ⁽²⁾	J (pos)/R (ND) if %R < 50% J (pos)/UJ (ND) if %R 50% - 79% J (pos) if %R > 120%	10 (H,L) ³	Qualify all samples in batch QAPP may have overriding accuracy limits. NFG Limits 70% -130% (50% - 150% Ab, Ag)
LCS/LCSD (RPD)	LCSD not required, if analyzed: RPD ≤ 20%	Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	Qualify all samples in batch QAPP may have overriding precision limits.
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples); MSD not required %R between 75-125%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if %R > 125% J (pos)/UJ (ND) if %R < 75% J (pos)/R (ND) if %R < 30%, unless post digestion spike analyzed, J (pos)/UJ (ND) if post digestion spike %R OK	8 (H,L) ³	No action if only one spike %R is outside criteria. NA if parent concentration >4x the amount spiked. Qualify all samples in batch. QAPP may have overriding accuracy limits.

DATA VALIDATION CRITERIA

Metals by ICP-AES
 (Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy con't					
Post Digestion Spikes	If MS is outside 75-125%, post-spike should be analyzed %R 80%-120% (method); 75%-125% (NFG)	NFG ⁽¹⁾ Method ⁽²⁾	Only used to support MS qualification decisions	NA	No qualifiers assigned based solely on this element.
MS/MSD (RPD)	MSD not required, if analyzed: RPD ≤ 20%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	QAPP may have overriding precision limits.
Laboratory Duplicate	One per matrix per batch (of ≤ 20 samples) RPD ≤ 20% for results ≥ 5x RL Solids: difference < 2X RL for results < 5X RL Aqueous: difference < 1X RL for results < 5X RL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20% or if difference > control limit	9	Qualify all samples in batch. QAPP may have overriding precision limits.
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ³	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Serial Dilution	Analyze one sample per matrix at a 5x dilution %D <10% for original sample conc. > 50x MDL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if %D > 10% and native sample concentration > 50x MDL	16	Qualify all samples in batch.
Field Duplicate	Solids: RPD <50% (for results ≥ 5x RL) OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% (for results ≥ 5x RL) OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Qualify only parent and field duplicate samples J (pos)/UJ (ND)	9	QAPP may have overriding precision limits. Client/QAPP may not require qualification based on field precision.

Metals by ICP-AES
(Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Quantitation					
Total and Dissolved Comparison	Total > Dissolved	EcoChem standard policy	J (pos)/UJ (ND) if Dissolved > Total and results fall outside of standard duplicate precision criteria	14	
Calibration Range	Results < instrument linear range	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if result exceeds linear range and sample was not diluted	20	
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Inorganic Superfund Data Review, January 2010.

² Method SW846 6010C Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES), Revision 3, February 2007.

³ "H" = high bias indicated; "L" = low bias indicated

⁴ SW846, Chapter 3, Inorganic Analytes

(pos): Positive Result

(ND): Not Detected

Mercury by CVAA
(Based on Inorganic NFG 2010 and SW846 7470A & 7471B)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler / Storage Temperature Preservation	Solid: Cooler temperature 4°C±2°C Aqueous: Nitric Acid to pH < 2 Dissolved Metals: 0.45 µm filter, preserve to pH < 2 after filtration	NFG ⁽¹⁾ Method ⁽²⁾	Cooler Temps: If required by project J (pos)/UJ (ND) if greater than 6° C Aqueous: J (pos)/UJ (ND) if pH > 2	1	Use PJ to qualify for temperature outlier. Current SW846 criterion is ≤ 6° C (4) No quals for pH if samples preserved by lab immediately upon receipt and within 1 day of collection.
Holding Time	28 days from date sampled Frozen solids and tissues HT extended to 6 months	NFG ⁽¹⁾ Method ⁽²⁾ EcoChem standard policy	J (pos)/UJ (ND) if HT exceeded	1	
Instrument Performance					
Initial Calibration (ICAL)	Daily Calibration Blank + 5 standards, one ≤ RL Correlation coefficient (r) ≥ 0.995	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if r < 0.995	5A (H,L) ³	
Initial Calibration Verification (ICV)	Independent source analyzed immediately after ICAL %R within ± 15% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R(pos/ND) if %R < 70% J(pos)/UJ(ND) if %R = 70-84% J(pos) if %R = > 116%	5A (H,L) ³	Qualify all samples in run
Reporting Limit (RL) Standard	Conc = RL %R = 70-130%	Method ⁽²⁾	J (pos) < 2x RL / R (ND) if %R < 50% J (pos) < 2x RL / UJ (ND) if %R 50 - 69% J (pos) < 2x RL if %R > 130%	5A (H,L) ³	Qualify all samples in run
Continuing Calibration Verification (CCV)	At beginning of run, every ten samples, and again after last sample. %R within ± 15% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R(pos/ND) if %R < 70% J(pos)/UJ(ND) if %R = 70-84% J(pos) if %R = > 116%	5B (H,L) ³	Qualify samples bracketed by CCV outliers
Blank Contamination					
Method Blank (MB)	One per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is < 5X method blank concentration	7	Refer to TM-02 for additional information. Blank Evaluation based on NFG 1994

Mercury by CVAA
 (Based on Inorganic NFG 2010 and SW846 7470A & 7471B)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Blanks (ICB/CCB)	After each ICV & CCV blank concentration < MDL	NFG ⁽¹⁾ Method ⁽²⁾	Action level is 5x absolute value of blank conc. For positive blanks: U (pos) results < action level For negative blanks: J (pos)/UJ (ND) results < action level	Pos Blanks: 7 Neg Blanks: 7L ³	Use blanks bracketing samples for Qualification Refer to TM-02 for additional information. Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review IB, qualify as needed #3 - Review FB, qualify as needed
Field Blank (FB)	Blank conc < MDL	EcoChem standard policy	U (pos) if result is < 5x action level, as per analyte.	6	Qualify in associated field samples only. Refer to TM-02 for additional information.
Precision and Accuracy					
Laboratory Control Sample (recovery)	One per matrix per batch (of ≤ 20 samples); LCSD not required %R between 80-120%	Method ⁽²⁾	J (pos)/R (ND) if %R < 50% J (pos)/UJ (ND) if %R 50% - 79% J (pos) if %R > 120%	10 (H,L) ³	Qualify all samples in batch QAPP may have overriding accuracy limits. NFG does not address LCS
LCS/LCSD (RPD)	LCSD not required, if analyzed: RPD ≤ 20%	Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	Qualify all samples in batch QAPP may have overriding precision limits.
Matrix Spike/Matrix Spike Duplicate MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples); MSD not required %R between 75-125%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if %R > 125% J (pos)/UJ (ND) if %R < 75% J (pos)/R (ND) if %R < 30%	8 (H,L) ³	No action if only one spike %R is outside criteria. NA if parent concentration > 4x the amount spiked. Qualify all samples in batch. QAPP may have overriding accuracy limits.
MS/MSD (RPD)	MSD not required, if analyzed: RPD ≤ 20%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	QAPP may have overriding precision limits.
Laboratory Duplicate	One per matrix per batch (of ≤ 20 samples) RPD ≤ 20% for results ≥ 5x RL Solids: difference < 2X RL for results < 5X RL Aqueous: difference < 1X RL for results < 5X RL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20% or if difference > control limit	9	Qualify all samples in batch. QAPP may have overriding precision limits.

Mercury by CVAA
(Based on Inorganic NFG 2010 and SW846 7470A & 7471B)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Reference Material (RM, SRM, or CRM)	Result \pm 20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ³	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Field Duplicate	Solids: RPD <50% (for results \geq 5x RL) OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% (for results \geq 5x RL) OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Qualify only parent and field duplicate samples J (pos)/UJ (ND)	9	QAPP may have overriding precision limits. Client/QAPP may not require qualification based on field precision.
Compound Quantitation					
Total and Dissolved Comparison	Total > Dissolved	EcoChem standard policy	J (pos)/UJ (ND) if Dissolved > Total and results fall outside of standard duplicate precision criteria	14	
Calibration Range	Results < instrument linear range	NFG ⁽¹⁾ Method ⁽²⁾	if result exceeds linear range and sample was not diluted J (pos)	20	
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Inorganic Superfund Data Review, January 2010.

² Method SW846 7470A Mercury in Liquid Waste (Manual Cold-Vapor Technique), Revision 1, September 1994.
 Method SW846 7471B Mercury in Solid or Semisolid Waste (Manual Cold-Vapor Technique), Revision 2, February 2007.

³ "H" = high bias indicated; "L" = low bias indicated

⁴ SW846, Chapter 3, Inorganic Analytes

(pos): Positive Result
 (ND): Not Detected



APPENDIX B

QUALIFIED DATA SUMMARY TABLE

**Qualified Data Summary Table
Norman's Chevron**

SDG	SAMPLE ID	METHOD	ANALYTE	RESULT	UNITS	LAB FLAG	DV QUAL	DV REASON
LDC08	DUP-1-SD-190723	NWTPH-Dx	Diesel Range Organics C12-C24	730	mg/kg		J	9
LDC08	SB-19-S-8.0-190725	SW-846 6010D	Lead	1.72	mg/kg		J	9
LDC13	SB-17-S-19.5-190723	NWTPH-Dx	Diesel Range Organics C12-C24	3500	mg/kg		J	9
LDC09	DUP-2-SD-190725	SW-846 6010D	Lead	3.89	mg/kg		J	9
LDC10	SB-11-S-20.0-190724	NWTPH-Dx	Diesel Range Organics C12-C24	55	mg/kg		J	9
LDC10	SB-11-S-20.0-190724	SW-846 8260C	Benzene	0.047	mg/kg	U	UJ	1
LDC10	SB-11-S-20.0-190724	SW-846 8260C	Toluene	0.58	mg/kg		J	1
LDC10	SB-11-S-20.0-190724	SW-846 8260C	Ethylbenzene	12	mg/kg		J	1
LDC10	SB-11-S-20.0-190724	SW-846 8260C	Xylene (Total)	100	mg/kg		J	1
LDC10	SB-11-S-27.5-190724	SW-846 8260C	Toluene	0.004	mg/kg		U	7
LDC07	SB-15-S-8.0-190723	SW-846 8260C	Benzene	0.0004	mg/kg	U	UJ	19
LDC07	SB-15-S-8.0-190723	SW-846 8260C	Toluene	0.001	mg/kg		J	19
LDC07	SB-15-S-8.0-190723	SW-846 8260C	Ethylbenzene	0.0004	mg/kg	U	UJ	19
LDC07	SB-15-S-8.0-190723	SW-846 8260C	Xylene (Total)	0.0009	mg/kg	U	UJ	19
LDC11	SB-14-S-20.0-190724	NWTPH-Dx	Diesel Range Organics C12-C24	130	mg/kg		J	8L
LDC11	SB-14-S-20.0-190724	SW-846 8260C	Toluene	0.001	mg/kg		U	7
LDC11	SB-14-S-27.5-190724	SW-846 8260C	Toluene	0.002	mg/kg		U	7
LDC11	SB-12-S-14.5-190724	SW-846 8260C	Toluene	0.002	mg/kg		U	7
LDC11	SB-12-S-20.0-190724	SW-846 8260C	Toluene	0.001	mg/kg		U	7
LDC12	SB-10-S-27.5-190724	SW-846 8260C	Toluene	0.002	mg/kg		U	7
LDC12	SB-10-S-20.0-190724	SW-846 8260C	Toluene	0.001	mg/kg		U	7
LDC12	SB-10-S-14.0-190724	SW-846 8260C	Toluene	0.001	mg/kg		U	7
LDC12	SB-10-S-8.0-190724	SW-846 8260C	Toluene	0.001	mg/kg		U	7
LDC14	USTSOUTH-CONTENTS-W-190725	NWTPH-Dx	DX DRO C12-C24	1400	ug/l		J	9
LDC14	USTSOUTH-CONTENTS-W-190725	SW-846 8260C	Methyl Tertiary Butyl Ether	2	ug/l	U	UJ	1
LDC14	USTSOUTH-CONTENTS-W-190725	SW-846 8260C	Benzene	2	ug/l	U	UJ	1
LDC14	USTSOUTH-CONTENTS-W-190725	SW-846 8260C	1,2-Dichloroethane	3	ug/l	U	UJ	1
LDC14	USTSOUTH-CONTENTS-W-190725	SW-846 8260C	Toluene	2	ug/l	U	UJ	1
LDC14	USTSOUTH-CONTENTS-W-190725	SW-846 8260C	Ethylbenzene	4	ug/l	U	UJ	1
LDC14	USTSOUTH-CONTENTS-W-190725	SW-846 8260C	Xylene (Total)	10	ug/l	U	UJ	1

**Qualified Data Summary Table
Norman's Chevron**

SDG	SAMPLE ID	METHOD	ANALYTE	RESULT	UNITS	LAB FLAG	DV QUAL	DV REASON
LDC14	USTSOUTH-CONTENTS-W-190725	SW-846 8270D	Naphthalene	0.1	ug/l	U	UJ	1,10L
LDC14	USTSOUTH-CONTENTS-W-190725	SW-846 8270D SIM	Benzo(a)anthracene	0.01	ug/l	U	UJ	1
LDC14	USTSOUTH-CONTENTS-W-190725	SW-846 8270D SIM	Chrysene	0.01	ug/l	U	UJ	1
LDC14	USTSOUTH-CONTENTS-W-190725	SW-846 8270D SIM	Benzo(b)fluoranthene	0.01	ug/l	U	UJ	1
LDC14	USTSOUTH-CONTENTS-W-190725	SW-846 8270D SIM	Benzo(k)fluoranthene	0.01	ug/l	U	UJ	1
LDC14	USTSOUTH-CONTENTS-W-190725	SW-846 8270D SIM	Benzo(a)pyrene	0.01	ug/l	U	UJ	1
LDC14	USTSOUTH-CONTENTS-W-190725	SW-846 8270D SIM	Indeno(1,2,3-cd)pyrene	0.01	ug/l	U	UJ	1
LDC14	USTSOUTH-CONTENTS-W-190725	SW-846 8270D SIM	Dibenz(a,h)anthracene	0.02	ug/l	U	UJ	1
LDC14	SB-12-S-27.5-190724	SW-846 8260C	Toluene	0.001	mg/kg		U	7
LDC14	QA-2-O-190724	SW-846 8260C	Benzene	0.2	ug/l	U	UJ	1
LDC14	QA-2-O-190724	SW-846 8260C	Toluene	0.2	ug/l	U	UJ	1
LDC14	QA-2-O-190724	SW-846 8260C	Ethylbenzene	0.4	ug/l	U	UJ	1
LDC14	QA-2-O-190724	SW-846 8260C	Xylene (Total)	1	ug/l	U	UJ	1



DATA VALIDATION REPORT NEWMAN'S CHEVRON

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Approved for Release:

A handwritten signature in black ink, appearing to read "Christine Ransom". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Christine Ransom
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of summary validation (EPA Stage 2B) performed on soil, soil vapor, and associated quality control sample data for the Newman's Chevron project. A complete list of samples is provided in the Sample Index. The laboratory revised the sample IDs originally provided on the chains-of-custody to match the project naming convention. Both sets of IDs are noted in the Sample Index.

All soil analyses were performed by Eurofins Laboratories Environmental, Lancaster, PA. The soil vapor analyses were performed by H&P Mobile Geochemistry, Inc., Carlsbad, California. The analytical methods and EcoChem project chemists are listed in the following table:

ANALYSIS	METHOD	PRIMARY REVIEW	SECONDARY REVIEW
Volatile Organic Compounds	8260B	E. Clayton	C. Ransom
Semivolatile Organic Compounds	8270D		
Semivolatile Organic Compounds	8270DSIM		
Gasoline Range Hydrocarbons	NWTPH-Gx		
Diesel Range Hydrocarbons	NWTPH-Dx		
Lead	6010B		
Percent Moisture	SM 2540		
BTEX, MTBE, Naphthalene	TO15		
Fixed Gases	EPA 3C		
Helium	ASTM D1946		

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Final Remedial Investigation Work Plan Newman's Chevron* (Leidos, July 2018); *National Functional Guidelines for Organic Data Review* (USEPA 2008); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2010).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. Data that have been rejected are flagged with (R). Rejected data should not be used for any purpose. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Validation criteria are included as Appendix A. The qualified data summary table (QDST) is included as Appendix B. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted.

Sample Index
Newman's Chevron

SDG	Sample ID	Lab ID	VOC/BTEX 8260C	T015	Helium	Fixed Gases	SVOC 8270D	PAH 8270SIM	NWTPH-Gx	NWTPH-DX	Lead 6010D
LDC15	SB-21-S-8-200224	1271114	✓				✓		✓	✓	✓
LDC15	SB-22-S-8-200224	1271115	✓				✓		✓	✓	✓
LDC15	SB-21-S-16-200225	1271116	✓					✓	✓	✓	✓
LDC15	SB-21-S-18-200225	1271117	✓				✓		✓	✓	✓
LDC15	SB-21-S-20.5-200225	1271118	✓				✓		✓	✓	✓
LDC15	SB-23-S-8-200225	1271119	✓				✓		✓	✓	✓
LDC15	SB-23-S-16-200225	1271120	✓				✓		✓	✓	✓
LDC15	SB-23-S-23-200225	1271121	✓				✓		✓	✓	✓
LDC15	SB-23-S-19.5-200225	1271122	✓				✓		✓	✓	✓
LDC15	SB-24-S-8-200225	1271123	✓				✓		✓	✓	✓
LDC15	SB-24-S-14-200225	1271124	✓				✓		✓	✓	✓
LDC15	SB-24-S-17.5-200225	1271125	✓					✓	✓	✓	✓
LDC15	SB-24-S-22-200225	1271126	✓					✓	✓	✓	✓
LDC15	SB-24-S-29-200225	1271127	✓				✓		✓	✓	✓
LDC15	SB-22-S-16-200226	1271128	✓				✓		✓	✓	✓
LDC15	SB-26-S-8-200226	1271129	✓				✓		✓	✓	✓
LDC15	SB-26-S-15.5-200226	1271130	✓				✓		✓	✓	✓
LDC15	SB-26-S-20-200226	1271131	✓				✓		✓	✓	✓
LDC15	SB-27-S-8-200226	1271132	✓				✓		✓	✓	✓
LDC15	SB-25-S-8.5-200226	1271133	✓				✓		✓	✓	✓
LDC15	SB-25-S-12-200226	1271134	✓				✓		✓	✓	✓
LDC15	SB-25-S-19-200226	1271135	✓				✓		✓	✓	✓
LDC15	SB-27-S-15.5-200226	1271136	✓					✓	✓	✓	✓
LDC15	SB-29-S-8-200226	1271137	✓				✓		✓	✓	✓
LDC15	SB-27-S-22-200226	1271138	✓				✓		✓	✓	✓
LDC15	SB-27-S-26-200226	1271139	✓				✓		✓	✓	✓
LDC16	SB-27-S-29-200226	1271140	✓				✓		✓	✓	✓
LDC16	SB-29-S-16-200227	1271141	✓				✓		✓	✓	✓

Sample Index
Newman's Chevron

SDG	Sample ID	Lab ID	VOC/BTEX 8260C	T015	Helium	Fixed Gases	SVOC 8270D	PAH 8270SIM	NWTPH-Gx	NWTPH-DX	Lead 6010D
LDC16	SB-29-S-18-200227	1271142	✓				✓		✓	✓	✓
LDC16	SB-28-S-8-200227	1271143	✓				✓		✓	✓	✓
LDC16	DUP-1-SD-200227	1271144	✓				✓		✓	✓	✓
LDC16	DUP-2-SD-200227	1271145	✓				✓		✓	✓	✓
LDC16	SB-29-S-22-200227	1271146	✓				✓		✓	✓	✓
LDC16	SVP-4-S-5-200227	1271147	✓				✓		✓	✓	✓
LDC16	SB-28-S-14-200227	1271148	✓				✓		✓	✓	✓
LDC16	SVP-5-S-5-200227	1271149	✓				✓		✓	✓	✓
LDC16	SB-28-S-19.5-200227	1271150	✓				✓		✓	✓	✓
LDC16	SB-28-S-24.5-200227	1271151	✓				✓		✓	✓	✓
LDC16	QA-1-O-200227	1271152	✓						✓		
LDC16	QA-2-O-200227	1271153	✓						✓		
LDC16	SB-30-S-8-200228	1271154	✓				✓		✓	✓	✓
LDC16	SVP-6-S-5-200228	1271155	✓				✓		✓	✓	✓
LDC16	SB-30-S-15.5-200228	1271156	✓				✓		✓	✓	✓
LDC16	QA-1-T-200224	1271157	✓						✓		
LDC16	QA-2-T-200224	1271158	✓						✓		
LDC16	QA-3-T-200224	1271159	✓						✓		
LDC16	QA-4-T-200224	1271160	✓						✓		
LDC16	SB-30-S-11.5-200228	1271161	✓				✓		✓	✓	✓
LD033020	EB-1-032420	E003092-01		✓	✓	✓					
LD033020	SVP-4-032520	E003092-02		✓	✓	✓					
LD033020	SVP-5-032520	E003092-03		✓	✓	✓					
LD033020	SVP-6-032520	E003092-04		✓	✓	✓					
LD033020	DUP-1-032520	E003092-05		✓	✓	✓					

DATA VALIDATION REPORT
Newman's Chevron
Volatile Organic Compounds by EPA TO-15 GC-MS
Helium by ASTM 1945M
Fixed Gases by ASTM D1945

This report documents the review of analytical data from the analysis of soil vapor samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by H&P Mobile Geochemistry, Inc., Carlsbad, California. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LD033020	4 Soil Vapor & 1 Field Blank	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	✓	Surrogate Compounds
1	Canister Checks	✓	Laboratory Control Samples (LCS/LCSD)
✓	GC/MS Instrument Performance (Tune)	1	Field Duplicates
2	Initial Calibration (ICAL)	✓	Internal Standards
✓	Continuing Calibration (CCAL)	✓	Target Analyte List
✓	Laboratory Blanks	✓	Reporting Limits
2	Field Blanks	1	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Canister Checks

The laboratory checked canisters for contamination prior to sending to the field. All canisters passed laboratory criteria.

Initial Calibration

The TO-15 initial calibration was performed on 2/10/20. The second source calibration verification standard recoveries for m,p-xylene and naphthalene were less than the lower control limit. Associated sample results were estimated (J/UJ-5A).

Field Blanks

One equipment blank was submitted: EB-1-032420. The field blank was connected to the manifold and another canister provided by the laboratory that was pressurized with nitrogen. Helium was not detected in the EB, indicating that there were no leaks in the field. Levels of oxygen and nitrogen in the EB were at approximately the same levels of the field samples. No action was taken for the fixed gases.

Benzene, toluene, ethylbenzene, m,p-xylenes, o-xylene, and naphthalene were also detected in the equipment blank. In order to evaluate the effect on the field samples, action levels were established at 5X the blank concentrations. Results for these analytes in the field samples that were less than the action levels were qualified as not-detected (U-6).

Field Duplicates

One set of field duplicates was submitted: SVP-5-032520 and DUP-1-032520. The levels for benzene, ethylbenzene, toluene, m,p-xylenes, and o-xylene were much higher in the field duplicate than in the parent sample. Results for these compounds in these two samples were estimated (J-9).

Reported Results

After qualification based on equipment blank contamination, all detected results were less than the screening levels.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate and laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recovery values. With the exceptions noted above, precision was acceptable as demonstrated by the LCS/LCSD and field duplicate RPD values.

Detection limits were elevated based on equipment blank contamination. Results were estimated due to second source calibration verification standard recovery outliers and field precision outliers.

All data, as qualified, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Volatile Organic Compounds by SW8260C

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC15	26 Soil	Stage 2B
LDC16	16 Soil, 4 Trip Blank, 2 Equipment Blank	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

The laboratory changed the sample IDs from those noted on the chains-of-custody, e.g. "SB-21-8" was changed to "SB-21-S-8-". Also, the collection date was added as a suffix in the yymmdd format. This was done to make the sample naming convention consistent with the first round of sampling.

The laboratory changed the sample IDs from those noted on the chains-of-custody, e.g. "DUP-1-" was changed to "DUP-1-SD-". The field blank IDs were also changed to agree with first round naming conventions. See the field blank section for a comparison of IDs.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	GC/MS Instrument Performance (Tune)	✓	Matrix Spikes (MS)
✓	Initial Calibration (ICAL)	1	Field Duplicates
✓	Continuing Calibration (CCAL)	✓	Internal Standards
✓	Laboratory Blanks	✓	Target Analyte List
1	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. Several coolers were received at temperatures less than the lower control limit, ranging from 0.9C to 1.1C. These outliers did not impact data quality; no data were qualified.

SDG LDC16: Sample SB30-11.5 was received by the laboratory but was not listed on the chain-of-custody.

Field Blanks

The following field blanks were submitted. No target analytes were detected in these blanks.

SDG	CHAIN OF CUSTODY ID	LAB LOG-IN ID
LDC16	ER-1-022720	QA-1-O-200227
	ER-2-022720	QA-2-O-200227
	TB-1-022420	QA-1-T-200224
	TB-2-022420	QA-2-T-200224
	TB-3-022420	QA-3-T-200224
	TB-4-022420	QA-4-T-200224

Field Duplicates

For soil samples, the RPD control limit is 30% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the difference between the sample and duplicate must be less than 2x the RL.

SDG LDC16: Two sets of field duplicates were submitted: SB-29-S-18-200227 & DUP-1-SD-200227 and SB-28-S-8-200227 & DUP-2-SD-200227. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, laboratory control sample/laboratory control sample duplicate (LCS/LCSD), and matrix spike recovery values. Precision was also acceptable as demonstrated by the LCS/LCSD and field duplicate RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
Newman's Chevron
Naphthalenes by SW8270D and
Polycyclic Aromatic Hydrocarbons by SW8270D-SIM

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC15	26 Soil	Stage 2B
LDC16	16 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

The laboratory changed the sample IDs from those noted on the chains-of-custody, e.g. "SB-21-8" was changed to "SB-21-S-8-". Also, the collection date was added as a suffix in the yymmdd format. This was done to make the sample naming convention consistent with the first round of sampling.

The laboratory changed the sample IDs from those noted on the chains-of-custody, e.g. "DUP-1-" was changed to "DUP-1-SD-".

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS)
✓	GC/MS Instrument Performance (Tune)	✓	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration (ICAL)	✓	Internal Standards
✓	Continuing Calibration (CCAL)	1	Field Duplicates
1	Laboratory Blanks	✓	Target Analyte List
1	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. Several coolers were received at temperatures less than the lower control limit, ranging from 0.9C to 1.1C. These outliers did not impact data quality; no data were qualified.

SDG LDC16: Sample SB30-11.5 was received by the laboratory but was not listed on the chain-of-custody.

Laboratory Blanks

A method blank was analyzed at the required frequency of one per batch of 20 or fewer samples. Action levels were established at five times (5x) the concentration reported in the field blank. If a contaminant is reported in an associated field sample and the concentration is less than the action level, the result is qualified as not detected (U-7). No action is taken if the sample result is greater than the action level, or for non-detected results.

SDG LDC15: Naphthalene was detected in the method blank for Batch 20064SLB026. Associated sample results were either greater than the action limit or were not-detected; no qualification was required.

Field Blanks

No field blanks were submitted.

Field Duplicates

For soil samples, the RPD control limit is 30% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the difference between the sample and duplicate must be less than 2x the RL.

SDG LDC16: Two sets of field duplicates were submitted: SB-29-S-18-200227 & DUP-1-SD-200227 and SB-28-S-8-200227 & DUP-2-SD-200227. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, laboratory control sample, and matrix spike/matrix spike duplicate (MS/MSD) percent recovery values. Precision was also acceptable as demonstrated by the MS/MSD and field duplicate relative percent difference values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Gasoline Range Organics by NWTPH-Gx

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC15	26 Soil	Stage 2B
LDC16	16 Soil, 4 Trip Blank, 2 Equipment Blank	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

The laboratory changed the sample IDs from those noted on the chains-of-custody, e.g. "SB-21-8" was changed to "SB-21-S-8-". Also, the collection date was added as a suffix in the yymmdd format. This was done to make the sample naming convention consistent with the first round of sampling.

The laboratory changed the sample IDs for the field duplicates, e.g. "DUP-1-" was changed to "DUP-1-SD-". The field blank IDs were also changed to agree with first round naming conventions. See the field blank section for a comparison of IDs.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Preservation and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	Initial Calibration (ICAL)	1	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Reported Results
✓	Surrogate Compounds		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. Several coolers were received at temperatures less than the lower control limit, ranging from 0.9C to 1.1C. These outliers did not impact data quality; no data were qualified.

SDG LDC16: Sample SB30-11.5 was received by the laboratory, but was not listed on the chain-of-custody.

Field Blanks

The following field blanks were submitted. No target analytes were detected in these blanks.

SDG	CHAIN OF CUSTODY ID	LAB LOG-IN ID
LDC16	ER-1-022720	QA-1-O-200227
	ER-2-022720	QA-2-O-200227
	TB-1-022420	QA-1-T-200224
	TB-2-022420	QA-2-T-200224
	TB-3-022420	QA-3-T-200224
	TB-4-022420	QA-4-T-200224

Matrix Spike/Matrix Spike Duplicates

Matrix spikes were not analyzed. Precision and accuracy were evaluated using the surrogate and laboratory control sample/laboratory control sample duplicate (LCS/LCSD) results.

Field Duplicates

For soil samples, the RPD control limit is 30% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the difference between the sample and duplicate must be less than 2x the RL.

SDG LDC16: Two sets of field duplicates were submitted: SB-29-S-18-200227 & DUP-1-SD-200227 and SB-28-S-8-200227 & DUP-2-SD-200227. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the surrogate and LCS/LCSD percent recovery values. Precision was also acceptable as demonstrated by the LCS/LCSD and field duplicate RPD values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
Newman's Chevron
Diesel Range Organics (extended) by NWTPH-Dx

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
LDC15	26 Soil	Stage 2B
LDC16	16 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

The laboratory changed the sample IDs from those noted on the chains-of-custody, e.g. "SB-21-8" was changed to "SB-21-S-8-". Also, the collection date was added as a suffix in the yymmdd format. This was done to make the sample naming convention consistent with the first round of sampling.

The laboratory changed the sample IDs from those noted on the chains-of-custody, e.g. "DUP-1-" was changed to "DUP-1-SD-".

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS)
✓	Initial Calibration (ICAL)	✓	Matrix Spikes (MS)
✓	Continuing Calibration (CCAL)	✓	Laboratory Duplicates
✓	Laboratory Blanks	1	Field Duplicates
1	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. Several coolers were received at temperatures less than the lower control limit, ranging from 0.9C to 1.1C. These outliers did not impact data quality; no data were qualified.

SDG LDC16: Sample SB30-11.5 was received by the laboratory but was not listed on the chain-of-custody.

Field Blanks

No field blanks were submitted.

Field Duplicates

For soil samples, the RPD control limit is 20% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the difference between the sample and duplicate must be less than 2x the RL.

SDG LDC16: Two sets of field duplicates were submitted: SB-29-S-18-200227 & DUP-1-SD-200227 and SB-28-S-8-200227 & DUP-2-SD-200227. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, laboratory control sample, and matrix spike percent recovery values. Precision was also acceptable as demonstrated by the laboratory duplicate and field duplicate relative percent difference (RPD) values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Lead by SW6010D and Moisture by SM2540G

This report documents the review of analytical data from the analysis of soil samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Lancaster, Lancaster, Pennsylvania. Refer to the Sample Index for a complete list of samples.

SDG	NUMBER OF SAMPLES AND MATRIX	VALIDATION LEVEL
LDC15	26 Soil	Stage 2B
LDC16	16 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

The laboratory changed the sample IDs from those noted on the chains-of-custody, e.g. "SB-21-8" was changed to "SB-21-S-8-". Also, the collection date was added as a suffix in the yymmdd format. This was done to make the sample naming convention consistent with the first round of sampling.

The laboratory changed the sample IDs for the field duplicates, e.g. "DUP-1-" was changed to "DUP-1-SD-".

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

1	Sample Receipt, Preservation, and Holding Times	2	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration	✓	Laboratory Duplicates
✓	Calibration Verification	✓	Interference Check Samples
✓	Reporting Limit Standards	✓	Serial Dilutions
1	Laboratory Blanks	1	Field Duplicates
1	Field Blanks	✓	Reporting Limits
✓	Laboratory Control Samples (LCS)	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

The validation guidance documents state that the cooler temperatures should be within an advisory temperature range of 2-6°C. Several coolers were received at temperatures less than the lower control limit, ranging from 0.9C to 1.1C. These outliers did not impact data quality; no data were qualified.

SDG LDC16: Sample SB30-11.5 was received by the laboratory but was not listed on the chain-of-custody.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate samples (MS/MSD) were analyzed at the proper frequency of one per 20 samples or one per batch for soil samples. If the percent recovery values indicate a potential low bias, associated results are estimated (J/UJ-8L). If the %R values indicate a potential high bias, only the associated positive results are estimated (J-8H). For relative percent difference (RPD) outliers, positive results are estimated (J-9).

The following analytes were qualified in one or more samples based on %R and/or RPD value outliers. Qualifiers were issued to all samples associated with a QC batch.

Batch	Parent Sample	MS %R	MSD %R	RPD	Qualifier
200641404901	SB-25-S-12-200226			22%	J-9
200641404902	SB-28-S-24.5-200227	233%	195%		J-8H
200641404904	SVP-4-S-5-200227	56%	69%		J-8L

Field Duplicates

The field duplicate RPD control limit is 20% for results greater than 5x the reporting limit (RL). For results less than 5x the RL, the difference between the sample and duplicate must be less than 2x the RL.

SDG LDC16: Two sets of field duplicates were submitted: SB-29-S-18-200227 & DUP-1-SD-200227 and SB-28-S-8-200227 & DUP-2-SD-200227. All field precision criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the laboratory control sample and MS/MSD recoveries and precision was acceptable as demonstrated by the MS/MSD, laboratory duplicate, and field duplicate RPD values.

Results were estimated based on MS/MSD precision and recovery outliers.

All data, as qualified, are acceptable for use.



APPENDIX A

DATA QUALIFIER DEFINITIONS

REASON CODES

AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES **Based on National Functional Guidelines**

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.
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DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r^2)
	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L) ¹ where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L) ¹ where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L) ¹ for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L) ¹ where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L) ¹ where appropriate
	12	Reference Material Use bias flags (H,L) ¹ where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L) ¹ where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L) ¹ where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2 nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)
	26	Method QC information not provided

¹H = high bias indicated

L = low bias indicated

**Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8260C)**

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	4°C±2°C Aqueous: HCl to pH < 2 Current SW846 criterion is ≤ 6° C ⁽³⁾	NFG ⁽¹⁾ Method ⁽³⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use PJ for temp outliers; see TM20 if pH ≤ 2, reject 2-chloroethyl vinyl ether (R-1) some projects may require methanol preserved soils/seds
Holding Time	Aqueous: 14 days preserved 7 Days: unpreserved Solid: 14 Days	NFG ⁽¹⁾ Method ⁽³⁾	J (pos)/UJ (ND) if HT exceeded J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Gross exceedance = > 2x HT, as per 1999 NFG
Instrument Performance					
Tuning	BFB Beginning of each 12 hour period Use method or project acceptance criteria	NFG ⁽¹⁾ Method ⁽³⁾	R (pos/ND) all analytes in all samples associated with the tune	24	
Initial Calibration Sensitivity	Minimum 5 standards RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders * RRF ≥ 0.005 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5A	TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance PJ - no action if response is stable (ICAL RSD and CCAL %D acceptable)
Initial Calibration Stability	%RSD ≤ 20% except: %RSD ≤ 40% poor responders * %RSD ≤ 50% 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %RSD > limit	5A	
Initial Calibration Verification	Second source analyzed immediately after ICAL %R 70% - 130%	Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) %R < LCL	5A (H,L) ⁴	QAPP may have overriding accuracy limits.
Continuing Calibration Sensitivity	RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders * RRF ≥ 0.005 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5B	see ICAL RRF guidance
Continuing Calibration Stability	%D ≤ 25% except: %D ≤ 40% poor responders * %D ≤ 50% 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) - %D > control limit (high bias) J (pos)/UJ (ND) - %D < -control limit (low bias)	5B (H,L) ⁴	

Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8260C)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Blank Contamination					
Method Blank (MB)	<u>MB: One per matrix per batch (of ≤ 20 samples)</u> No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	7	10X action level for methylene chloride, acetone, & 2-butanone. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review TB, qualify as needed #3 - Review FB, qualify as needed Note: Actions as per NFG 1999
	No TICs present		R (pos) TICs using 10X rule		
Trip Blank (TB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	
Field Blank (FB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	
Precision and Accuracy					
LCS/LCSD (recovery)	One per matrix per batch (of ≤ 20 samples) LCSD not required by NFG or method Use method acceptance criteria/laboratory limits	Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND)%R < 10%	10 (H,L) ⁴	No action if only one spike %R is outside criteria when LCSD is analyzed, unless one recovery is <10%. QAPP may have overriding accuracy limits.
LCS/LCSD RPD	If LCSD analyzed RPD < lab limits	Method ⁽³⁾	J (pos)	9	Qualify all associated samples. QAPP may have overriding precision limits.
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ⁴	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Surrogates	Added to all samples Within method/laboratory control limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %R >UCL J (pos)/UJ (ND) if %R <LCL J (pos)/R (ND) if <10%	13 (H,L) ⁴	No action if there are 4+ surrogates and only 1 outlier Qualify all compounds if qualification is required.
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if > 200% J (pos)/UJ (ND) if < 50% J (pos)/R (ND) if < 25% if RT >30 seconds use PJ	19	Qualify compounds quantified using particular internal standard

**Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8260C)**

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy (continued)					
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) if both %R < LCL J (pos)/R (ND) if both %R < 10% J (pos)/UJ (ND) if one > UCL & one < LCL, with no bias	8 (H,L) ⁴	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only.
MS/MSD (RPD)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) If RPD > control limit	9	Qualify parent sample only
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified
Compound Identification and Quantitation					
Retention Time Relative Ion Intensities	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	NFG ⁽¹⁾ Method ⁽³⁾	U (pos) if identification criteria not met	25	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NFG ⁽¹⁾ Method ⁽³⁾	NJ TIC R (pos) if common laboratory contaminants	4	Common laboratory contaminants: aldol condensation products, solvent preservatives, and reagent contaminants
Calibration Range	Results greater than highest calibration standard	EcoChem standard policy	Qualify J (pos)	20	If result from dilution analysis is not reported.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Organic Data Review, June, 2008

² National Functional Guidelines for Organic Data Review, Oct, 1999

³ Method SW846 8260C Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)

⁴ NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

* "Poor responder" compounds: Acetone, 2-butanone, carbon disulfide, chloroethane, chloromethane, cyclohexane, 1,2-dibromoethane, dichlorodifluoromethane, cis-1,2-dichloroethene, 1,2-dichloropropane, 1,2-dibromo-3-chloropropane, 2-hexanone, isopropylbenzene, methyl acetate, methylene chloride, methylcyclohexane, 4-methyl-2-pentanone, methyl tert-butyl ether, trans-1,2-dichloroethene, trichlorofluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane **criterion is 0.010 RRF**; 1,4-dioxane RRF **criterion is 0.005**.

(pos): Positive Result

(ND): Non-detect

Volatile Organics in Air by GCMS and GCMS-SIM, Method TO-15

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	SUMMA Canister - no preservation requirements				
SUMMA Canister Pressure	Pressure of Canister upon receipt at lab should be between 5-10 inches of Hg or greater of vacuum	Method ^{1,2}	If vacuum is > 8 inch Hg or < 1 inch Hg, note in report.	1	Professional judgment
Holding Time	30 days from collection to analysis	Method ¹	J(pos)/UJ(ND) if HT exceeded J(pos)/R(ND) if gross exceedance (> 2X HT)	1	Gross exceedance = > 2X HT, as per 1999 NFG
Instrument Performance					
Tuning	BFB Beginning of each 24 hour period Use method acceptance criteria (Table 3)	Method ¹	R(pos/ND) all analytes in all samples associated with the tune	5A	every 24 hours or every 20 samples (Section 10.4.2 of method) TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance
Initial Calibration (Minimum 5 stds.) Sensitivity	RRF ≥ 0.05 Note: not discussed in method. Default to NFG criteria.	NFG ³	J(pos)/R(ND) if RRF/RF is less than criterion		
Initial Calibration (Minimum 5 stds.) Stability	%RSD ≤ 30% with up to 2 compounds max 40%; OR Linear r ≥ 0.995 or r ² ≥ 0.990 (6 points must be used) (NFG optional criteria)	Method ¹ NFG ³	J(pos) if %RSD > 30% OR r/r2-value < 0.995 (or 0.990)		
Initial Calibration Verification (ICV) Stability	Not required by method. Standard from independent source Analyzed immediately after ICAL If analyzed, use lab or QAPP limits		J(pos) if high bias J(pos)/UJ(ND) if low bias J(pos)/R(ND) if significant low bias		
Continuing Calibration (Prior to each 24 hr. shift) Sensitivity	RRF ≥ 0.05 Note: not discussed in method. Default to NFG criteria.	NFG ³	J(pos)/R(ND) if RRF/RF is less than criterion	5B	
Continuing Calibration (Prior to each 24 hr. shift) Stability	%Drift ≤ 30%	Method ¹	If > +/- 70%: J(pos)/R(ND) If -69% to -31%: J(pos) (high bias) If 31% to 69%: J(pos)/UJ(ND) (low bias)	5B (H,L) ⁴	

Volatile Organics in Air by GCMS and GCMS-SIM, Method TO-15

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Blank Contamination					
Method Blank (MB)	MB: One per batch of (of ≤ 20 samples) No detected compounds > MDL	Method ¹ NFG ³	U(pos) if result is < 5X or 10X action level, as per analyte.	7	10X action level for methylene chloride, acetone, & 2-butanone. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review FB, qualify as needed
	No TICs present		R(pos) TICs using 10X rule		
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > MDL	Method ¹ NFG ³	U(pos) if result is < 5X or 10X action level, as per analyte.	6	
Precision and Accuracy					
LCS	One per lab batch (of ≤ 20 samples) Note: not discussed in method. Default to lab or QAPP limits.	NFG ³	Qualify all associated samples J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if both %R < LCL - low bias J(pos)/R(ND) if both %R < 10% - very low bias J(pos)/UJ(ND) if one > UCL & one < LCL, with no bias	10 (H,L) ⁴	No action if only one spike %R is outside criteria, when LCSD is analyzed. Qualify all associated samples.
LCS/LCSD (RPD)	if analyzed RPD $\leq 30\%$	NFG ³	J(pos) assoc. cmpd. in all samples	9	Qualify all associated samples.
Surrogates	Note: not discussed in method. Default to lab or QAPP limits.	NFG ³	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if < 10% - very low bias	13 (H,L) ⁴	Note: No action if there are 4+ surrogates and only 1 outlier.
Internal Standards	Added to all samples Acceptable Range: IS area $\pm 40\%$ of CCAL area RT within 20 seconds of mean RT over ICAL range RT within 0.33 minutes of CC RT	Method ¹ NFG ³	J(pos) if > 140% J(pos)/UJ(ND) if < 60% J(pos)/R(ND) if < 25% RT > 0.33 mins, narrate and notify PM	19	
Field Duplicates	RPD $\leq 25\%$ OR difference < 1X RL (for results < 5X RL)	Method ¹ EcoChem standard policy	Narrate and qualify if required by project (EcoChem PJ) Qualify only field duplicate samples J(pos)/UJ(ND)	9	
Compound ID and Calculation					
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	Method ¹ NFG ³	See Technical Director if outliers are found	14 25 (false pos)	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	Method ¹ NFG ³	NJ the TIC unless: R(pos) common laboratory contaminants See Technical Director for ID issues	4	Common laboratory contaminants: aldol condensation products, solvent preservatives, and reagent contaminants
Calibration Range	Results exceed the upper calibration range	EcoChem standard policy	Qualify J(pos)	20	If result from dilution analysis is not reported.
Calculation Check	Check 10% of field & QC sample results	EcoChem standard policy	Contact laboratory for resolution and/or corrective action	na	Full data validation only.

Volatile Organics in Air by GCMS and GCMS-SIM, Method TO-15

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Electronic Data Deliverable (EDD)					
Verification of EDD to hardcopy data	EcoChem verify @ 10% unless problems noted; then increase level up to 100% for next several packages.	EcoChem standard policy	Depending on scope of problem, correct at EcoChem (minor issues) to resubmittal by laboratory (major issues).	na	EcoChem Project Manager and/or Database Administrator will work with lab to provide long-term corrective action.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 Rev. 1 EcoChem Policy for Rejection/Selection Process for Multiple Results

(pos): Positive Result(s)
 (ND): Non-detects

- ¹ Compendium Method TO-15, Determination of Volatile Organic Compounds (VOCs) in Air Collected In Specially-Prepared Canisters And Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), Second Edition, January 1999. EPA/625/R-96/010b
- ¹ Supplement to EPA Compendium Method TO-15. Reduction of Method Detection Limits to Meet Vapor Intrusion Monitoring Needs. E.H. Daughtrey Jr., K.D. Oliver, H.H. Jacumin Jr., and W.A. McClenny, 2/18/2009.
- ¹ ASTM D1945 - 03 Standard Test Method for Analysis of Natural Gas by Gas Chromatography. January 1, 2010.
- ² Air Toxics Ltd: Guide to Air Sampling and Analysis
- ³ National Functional Guidelines for Organic Data Review, June, 2008
- ⁴ "H" = high bias indicated; "L" = low bias indicated

DATA VALIDATION CRITERIA

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
 (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	4°C±2°C sediment/tissues may require storage at -20°C	NFG ⁽¹⁾ Method ⁽³⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use PJ for temp outliers; see TM20 Current SW846 criterion is ≤ 6° C ⁽³⁾
Holding Time	Extraction Aqueous: 7 days from collection Extraction Solid: 14 days from collection Analysis (all matrices): 40 days from extraction Holding time may be extended to 1 year for frozen sediments/tissues	NFG ⁽¹⁾ Method ⁽³⁾	J (pos)/UJ (ND) if HT exceeded J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Gross exceedance = > 2x HT, as per 1999 NFG
Instrument Performance					
Tuning	DFTPP Beginning of each 12 hour period Use method or project acceptance criteria	NFG ⁽¹⁾ Method ⁽³⁾	R (pos/ND) all analytes in all samples associated with the tune	24	
Initial Calibration Sensitivity	RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5A	TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance PJ - no action if response is stable (ICAL RSD and CCAL %D acceptable)
Initial Calibration Stability	Minimum 5 standards %RSD ≤ 20.0% except: %RSD ≤ 40.0% poor responders * or co-efficient of determination (r ²) > 0.99	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %RSD > limit or r ² value <0.99	5A	
Initial Calibration Verification Check	Prepared from second source; analyze after each ICAL Percent recovery limits = 70-130%	Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) %R < LCL	5A (H,L) ⁴	QAPP may have overriding accuracy limits.

DATA VALIDATION CRITERIA

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
 (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Performance (continued)					
Continuing Calibration Sensitivity	RRF \geq 0.05 except: RRF \geq 0.01 poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5B	see ICAL RRF guidance
Continuing Calibration Stability	Prior to sample analysis and every 12 hours %D \leq 25% except: %D \leq 40.0% poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) - %D > control limit (high bias) J (pos)/UJ (ND) - %D < -control limit (low bias)	5B (H,L) ⁴	
Blank Contamination					
Method Blank (MB)	MB: One per matrix per batch of (of \leq 20 samples) No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U(pos) if result is < 5X or 10X action level	7	10X action level applies to phthalates only. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review FB , qualify as needed Note: Actions as per 1999 NFG
	No TICs present		R (pos) TICs using 10X rule	7	
Field Blank (FB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	
Precision and Accuracy					
LCS/LCSD (recovery)	One per matrix per batch (of \leq 20 samples) LCSD not required by NFG or method Use method acceptance criteria/laboratory limits	Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND)%R < 10%	10 (H,L) ⁴	No action if only one spike %R is outside criteria when LCSD is analyzed, unless one recovery is <10%. QAPP may have overriding accuracy limits. Qualify all associated samples.
LCS/LCSD (RPD)	If LCSD analyzed RPD < lab limits	Method ⁽³⁾	J (pos)	9	Qualify all associated samples. QAPP may have overriding precision limits.

DATA VALIDATION CRITERIA

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
 (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy (continued)					
Reference Material (RM, SRM, or CRM)	Result $\pm 20\%$ of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ⁴	QAPP may have overriding accuracy limits. Some manufacturers have different RM control limits
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) if both %R < LCL J (pos)/R (ND) if both %R < 10% J (pos)/UJ (ND) if one > UCL & one < LCL, with no bias	8 (H,L) ⁴	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only.
MS/MSD (RPD)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) in parent sample if RPD > CL	9	Qualify parent sample only
Surrogates	Minimum of 3 acid & 3 base/neutral (B/N) compounds added to all samples Within method control limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND) if %R < 10%	13 (H,L) ⁴	Qualify all compounds in associated fraction. Do not qualify if only 1 acid and/or 1 B/N surrogate is out, unless <10%. If 1 surrogate outlier < 10% then J (pos)/R (ND)
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if > 200% J (pos)/UJ (ND) if < 50% J (pos)/R (ND) if < 25% if RT >30 seconds use PJ	19	Qualify compounds quantified using particular internal standard
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Identification and Quantitation and Calculation					
Retention times and relative ion intensities	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	NFG ⁽¹⁾ Method ⁽³⁾	U (pos) if identification criteria not met	25	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NFG ⁽¹⁾ Method ⁽³⁾	NJ the TIC unless: R (pos) common laboratory contaminants	4	
Calibration Range	Results greater than highest calibration standard	EcoChem standard policy	Qualify J (pos)	20	If result from dilution analysis is not reported.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Organic Data Review, June, 2008

(pos): Positive Result(s)

² National Functional Guidelines for Organic Data Review, October, 1999

(ND): Non-detects

³ Method SW846 8270D Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 4, February 2007.

⁴ NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

* "Poor responder" compounds: acetophenone, atrazine, benzaldehyde, 1,1'-biphenyl, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, caprolactam, carbazole, 4-chloroaniline, diethylphthalate, di-n-butylphthalate, 3-3'-dichlorobenzidine, dimethylphthalate, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol, di-n-octylphthalate, hexachlorobutadiene, hexachlorocyclopentadiene, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 4-nitrophenol, N-nitrosodiphenylamine, 2,2'-oxybis-(1-chloropropane), 1,2,4,5-tetrachlorobenzene use a 0.010 RRF criterion.

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Gasoline Range
(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Gx,
June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling				
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6°C	1	
Holding Time	Waters: 14 days preserved 7 days unpreserved Solids: 14 Days	J(+)/UJ(-) if hold times exceeded J(+)/R(-) if exceeded > 3X	1	Professional Judgement
Instrument Performance				
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: $r^2 \geq 0.990$ If used, RSD of response factors $\leq 20\%$	Narrate if fewer than 5 calibration levels or if %R > 15% J(+)/UJ(-) if $r^2 < 0.990$ J(+)/UJ(-) if %RSD > 20%	5A	
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 80% to 120%	Narrate if frequency not met. J(+)/UJ(-) if %R < 80% J(+) if %R > 120%	5B	
Blank Contamination				
Method Blank	At least one per batch (≤ 10 samples) No results > RL	U (at the RL) if sample result is < RL & < 5X blank result.	7	
		U (at reported sample value) if sample result is \geq RL and < 5X blank result	7	
Trip Blank (if required by project)	No results > RL	Action is same as method blank for positive results remaining in trip blank after method blank qualifiers are assigned.	18	
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in field blank after method and trip blank qualifiers are assigned.	6	

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Gasoline Range
(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Gx,
June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10%	10	Professional Judgement
Surrogates	Bromofluorobenzene and/or 1,4-difluorobenzene added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R >UCL J(+)/R(-) if any %R < 10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP EcoChem default: water: RPD < 35% solids: RPD < 50%	Narrate outliers If required by project, qualify with J(+)/UJ(-)	9	
Compound ID and Calculation				
Two analyses for one sample (e.g., dilution)	Report only one result per analyte	"DNR" (or client requested qualifier) all results that should not be reported.	11	See EcoChem TM-04

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range
(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx,
June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling				
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6 deg. C	1	
Holding Time	Ext. Waters: 14 days preserved 7 days unpreserved Ext. Solids: 14 Days Analysis: 40 days from extraction	J(+)/UJ(-) if hold times exceeded J(+)/R(-) if exceeded > 3X	1	Professional Judgement
Instrument Performance				
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: $r^2 \geq 0.990$ If used, RSD of response factors $\leq 20\%$	Narrate if fewer than 5 calibration levels or if %R > 15% J(+)/UJ(-) if $r^2 < 0.990$ J(+)/UJ(-) if %RSD > 20%	5A	
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 85% to 115%	Narrate if frequency not met. J(+)/UJ(-) if %R < 85% J(+) if %R > 115%	5B	
Blank Contamination				
Method Blank	At least one per batch (≤ 20 samples) No results > RL	U (at the RL) if sample result is < RL & < 5X blank result.	7	
		U (at reported sample value) if sample result is \geq RL and < 5X blank result	7	
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in the field blank after method blank qualifiers are assigned.	6	

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range
 (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx,
 June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10%	10	Professional Judgement
Surrogates	2-fluorobiphenyl, p-terphenyl, o-terphenyl, and/or pentacosane added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP EcoChem default: water: RPD < 35% solids: RPD < 50%	Narrate (Use Professional Judgement to qualify)	9	

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range
 (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx,
 June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound ID and Calculation				
Two analyses for one sample (dilution)	Report only one result per analyte	"DNR" (or client requested qualifier) all results that should not be reported.	11	See EcoChem TM-04

Metals by ICP-AES
 (Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler / Storage Temperature Preservation	Solid: Cooler temperature 4°C±2°C Aqueous: Nitric Acid to pH < 2 Dissolved Metals: 0.45 µm filter, preserve to pH < 2 after filtration	NFG ⁽¹⁾ Method ⁽²⁾	Cooler Temps: If required by project J (pos)/UJ (ND) if greater than 6° C Aqueous: J (pos)/UJ (ND) if pH > 2	1	Use PJ to qualify for temperature outlier. Current SW846 criterion is ≤ 6° C (4) No quals for pH if samples preserved by lab upon receipt and within 1 day of collection.
Holding Time	All matrices: 180 days from date sampled Frozen soils, sediments, tissues (-20°C) - HT extended to 1 year	NFG ⁽¹⁾ Method ⁽²⁾ EcoChem standard policy	J (pos)/UJ (ND) if holding time exceeded	1	
Instrument Performance					
Initial Calibration (ICAL)	Based on instrument requirements, blank + 1 standard minimum requirement for calibration If more than 1 standard used, r ≥ 0.995	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if r < 0.995	5A	
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R within ± 10% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R > 111%	5A (H,L) ³	Qualify all samples in run
Reporting Limit (RL) Standard Low Level ICV/CCV	concentration at RL %R = 70%-130%	Method ⁽²⁾	J (pos) < 2x RL / R (ND) if %R < 50% J (pos) < 2x RL / UJ (ND) if %R 50 - 69% J (pos) < 2x RL if %R > 130%	5A (H,L) ³	Qualify all samples in run
Continuing Calibration Verification (CCV)	Immediately following ICV/ICB, then every two hours or ten samples, and at end of run. %R within ± 10% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R > 111%	5B (H,L) ³	Qualify samples bracketed by CCV outliers
Interference Check Samples (ICSA / ICSAB)	ICSAB %R 80% - 120% for all spiked elements ICSA < MDL for all unspiked elements	NFG ⁽¹⁾ Method ⁽²⁾	For samples with Al, Ca, Fe, Mg > ICS levels: ICSAB: J(pos)/R (ND) if %R < 50% J (pos)/UJ (ND) if %R = 50% - 79% J (pos) if %R > 120% ICSA: J (pos) < 2x ICSA/UJ (ND) for ICSA < Neg MDL J (pos) < 2x ICSA for ICSA > MDL	17 (H,L) ³	Use PJ and inter-element correction factors to evaluate ICSA to determine if bias is present. Refer to TM-09 for additional information.

Metals by ICP-AES
 (Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Blank Contamination					
Method Blank (MB)	One per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is < 5X method blank concentration	7	Refer to TM-02 for additional information. Blank Evaluation based on NFG 1994
Instrument Blanks (ICB/CCB)	After each ICV & CCV blank concentration < MDL	NFG ⁽¹⁾ Method ⁽²⁾	Action level is 5x absolute value of blank conc. For positive blanks: U (pos) results < action level For negative blanks: J (pos)/UJ (ND) results < action level	Pos Blanks: 7 Neg Blanks: 7L ³	Use blanks bracketing samples for Qualification Refer to TM-02 for additional information. Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review IB, qualify as needed #3 - Review FB, qualify as needed
Field Blank (FB)	Blank conc < MDL	EcoChem standard policy	U (pos) if result is < 5x action level, as per analyte.	6	Qualify in associated field samples only. Refer to TM-02 for additional information.
Precision and Accuracy					
LCS (recovery)	One per matrix per batch (of ≤ 20 samples); LCSD not required %R between 80-120%	Method ⁽²⁾	J (pos)/R (ND) if %R < 50% J (pos)/UJ (ND) if %R 50% - 79% J (pos) if %R > 120%	10 (H,L) ³	Qualify all samples in batch QAPP may have overriding accuracy limits. NFG Limits 70% -130% (50% - 150% Ab, Ag)
LCS/LCSD (RPD)	LCSD not required, if analyzed: RPD ≤ 20%	Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	Qualify all samples in batch QAPP may have overriding precision limits.
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples); MSD not required %R between 75-125%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if %R > 125% J (pos)/UJ (ND) if %R < 75% J (pos)/R (ND) if %R < 30%, unless post digestion spike analyzed, J (pos)/UJ (ND) if post digestion spike %R OK	8 (H,L) ³	No action if only one spike %R is outside criteria. NA if parent concentration >4x the amount spiked. Qualify all samples in batch. QAPP may have overriding accuracy limits.

DATA VALIDATION CRITERIA

Metals by ICP-AES
 (Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy con't					
Post Digestion Spikes	If MS is outside 75-125%, post-spike should be analyzed %R 80%-120% (method); 75%-125% (NFG)	NFG ⁽¹⁾ Method ⁽²⁾	Only used to support MS qualification decisions	NA	No qualifiers assigned based solely on this element.
MS/MSD (RPD)	MSD not required, if analyzed: RPD ≤ 20%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	QAPP may have overriding precision limits.
Laboratory Duplicate	One per matrix per batch (of ≤ 20 samples) RPD ≤ 20% for results ≥ 5x RL Solids: difference < 2X RL for results < 5X RL Aqueous: difference < 1X RL for results < 5X RL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20% or if difference > control limit	9	Qualify all samples in batch. QAPP may have overriding precision limits.
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ³	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Serial Dilution	Analyze one sample per matrix at a 5x dilution %D <10% for original sample conc. > 50x MDL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if %D > 10% and native sample concentration > 50x MDL	16	Qualify all samples in batch.
Field Duplicate	Solids: RPD <50% (for results ≥ 5x RL) OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% (for results ≥ 5x RL) OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Qualify only parent and field duplicate samples J (pos)/UJ (ND)	9	QAPP may have overriding precision limits. Client/QAPP may not require qualification based on field precision.

Metals by ICP-AES
(Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Quantitation					
Total and Dissolved Comparison	Total > Dissolved	EcoChem standard policy	J (pos)/UJ (ND) if Dissolved > Total and results fall outside of standard duplicate precision criteria	14	
Calibration Range	Results < instrument linear range	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if result exceeds linear range and sample was not diluted	20	
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Inorganic Superfund Data Review, January 2010.

² Method SW846 6010C Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES), Revision 3, February 2007.

³ "H" = high bias indicated; "L" = low bias indicated

⁴ SW846, Chapter 3, Inorganic Analytes

(pos): Positive Result

(ND): Not Detected



APPENDIX B

QUALIFIED DATA SUMMARY TABLE

**Qualified Data Summary Table
Norman's Chevron**

SDG	SAMPLE ID	LAB ID	METHOD	ANALYTE	RESULT	UNITS	LAB FLAG	DV QUAL	DV REASON
LDC15	SB-21-S-8-200224	1271114	SW-846 6010D	Lead	2.03	mg/kg		J	8L
LDC15	SB-22-S-8-200224	1271115	SW-846 6010D	Lead	6.02	mg/kg		J	8L
LDC15	SB-21-S-16-200225	1271116	SW-846 6010D	Lead	2	mg/kg		J	8H
LDC15	SB-21-S-20.5-200225	1271118	SW-846 6010D	Lead	6.53	mg/kg		J	8H
LDC15	SB-23-S-8-200225	1271119	SW-846 6010D	Lead	2.59	mg/kg		J	8H
LDC15	SB-23-S-16-200225	1271120	SW-846 6010D	Lead	2.35	mg/kg		J	8H
LDC15	SB-23-S-23-200225	1271121	SW-846 6010D	Lead	1.98	mg/kg		J	8H
LDC15	SB-23-S-19.5-200225	1271122	SW-846 6010D	Lead	1.96	mg/kg		J	8H
LDC15	SB-24-S-8-200225	1271123	SW-846 6010D	Lead	2.81	mg/kg		J	8H
LDC15	SB-24-S-14-200225	1271124	SW-846 6010D	Lead	1.93	mg/kg		J	8H
LDC15	SB-24-S-17.5-200225	1271125	SW-846 6010D	Lead	1.81	mg/kg		J	8H
LDC15	SB-24-S-22-200225	1271126	SW-846 6010D	Lead	3	mg/kg		J	8H
LDC15	SB-24-S-29-200225	1271127	SW-846 6010D	Lead	1.79	mg/kg		J	8H
LDC15	SB-22-S-16-200226	1271128	SW-846 6010D	Lead	4.11	mg/kg		J	8H
LDC15	SB-26-S-8-200226	1271129	SW-846 6010D	Lead	1.23	mg/kg		J	9
LDC15	SB-26-S-15.5-200226	1271130	SW-846 6010D	Lead	1.74	mg/kg		J	9
LDC15	SB-26-S-20-200226	1271131	SW-846 6010D	Lead	14.2	mg/kg		J	9
LDC15	SB-27-S-8-200226	1271132	SW-846 6010D	Lead	6.36	mg/kg		J	8H
LDC15	SB-25-S-8.5-200226	1271133	SW-846 6010D	Lead	18.5	mg/kg		J	8H
LDC15	SB-25-S-12-200226	1271134	SW-846 6010D	Lead	0.836	mg/kg		J	9
LDC15	SB-25-S-19-200226	1271135	SW-846 6010D	Lead	2.34	mg/kg		J	9
LDC15	SB-27-S-15.5-200226	1271136	SW-846 6010D	Lead	19.7	mg/kg		J	9
LDC15	SB-29-S-8-200226	1271137	SW-846 6010D	Lead	3.83	mg/kg		J	9
LDC15	SB-27-S-22-200226	1271138	SW-846 6010D	Lead	16.1	mg/kg		J	8L
LDC15	SB-27-S-26-200226	1271139	SW-846 6010D	Lead	27.1	mg/kg		J	8L
LDC16	SB-27-S-29-200226	1271140	SW-846 6010D	Lead	1.64	mg/kg		J	8L
LDC16	SB-29-S-16-200227	1271141	SW-846 6010D	Lead	2.59	mg/kg		J	8L

Qualified Data Summary Table
Norman's Chevron

SDG	SAMPLE ID	LAB ID	METHOD	ANALYTE	RESULT	UNITS	LAB FLAG	DV QUAL	DV REASON
LDC16	SB-29-S-18-200227	1271142	SW-846 6010D	Lead	1.68	mg/kg		J	8L
LDC16	SB-28-S-8-200227	1271143	SW-846 6010D	Lead	5.63	mg/kg		J	8L
LDC16	DUP-1-SD-200227	1271144	SW-846 6010D	Lead	1.92	mg/kg		J	8L
LDC16	DUP-2-SD-200227	1271145	SW-846 6010D	Lead	5.73	mg/kg		J	8L
LDC16	SB-29-S-22-200227	1271146	SW-846 6010D	Lead	2.03	mg/kg		J	8L
LDC16	SVP-4-S-5-200227	1271147	SW-846 6010D	Lead	7.22	mg/kg		J	8L
LDC16	SB-28-S-14-200227	1271148	SW-846 6010D	Lead	2.37	mg/kg		J	8L
LDC16	SVP-5-S-5-200227	1271149	SW-846 6010D	Lead	5.18	mg/kg		J	8L
LDC16	SB-28-S-19.5-200227	1271150	SW-846 6010D	Lead	1.55	mg/kg		J	9
LDC16	SB-30-S-8-200228	1271154	SW-846 6010D	Lead	2.35	mg/kg		J	9
LDC16	SVP-6-S-5-200228	1271155	SW-846 6010D	Lead	3.56	mg/kg		J	9
LDC16	SB-30-S-15.5-200228	1271156	SW-846 6010D	Lead	3.88	mg/kg		J	8H
LDC16	SB-30-S-11.5-200228	1271161	SW-846 6010D	Lead	2.01	mg/kg		J	8H
LD033020	EB-1-032420	E003092-01	EPA TO-15	m,p-Xylene	7.1	ug/m3		J	5A
LD033020	EB-1-032420	E003092-01	EPA TO-15	Naphthalene	0.9	ug/m3	J	J	5A
LD033020	SVP-4-032520	E003092-02	EPA TO-15	m,p-Xylene	67	ug/m3		J	5A
LD033020	SVP-4-032520	E003092-02	EPA TO-15	Naphthalene	1.4	ug/m3	J	UJ	5A,6
LD033020	SVP-5-032520	E003092-03	EPA TO-15	Benzene	0.3	ug/m3	J	UJ	6,9
LD033020	SVP-5-032520	E003092-03	EPA TO-15	Toluene	1.6	ug/m3	J	UJ	6,9
LD033020	SVP-5-032520	E003092-03	EPA TO-15	Ethylbenzene	0.3	ug/m3	J	UJ	6,9
LD033020	SVP-5-032520	E003092-03	EPA TO-15	m,p-Xylene	0.9	ug/m3	J	UJ	5A,6,9
LD033020	SVP-5-032520	E003092-03	EPA TO-15	o-Xylene	0.3	ug/m3	J	UJ	6,9
LD033020	SVP-5-032520	E003092-03	EPA TO-15	Naphthalene	ND	ug/m3		UJ	5A
LD033020	SVP-6-032520	E003092-04	EPA TO-15	Benzene	0.9	ug/m3		UJ	6
LD033020	SVP-6-032520	E003092-04	EPA TO-15	Ethylbenzene	1.0	ug/m3	J	U	6
LD033020	SVP-6-032520	E003092-04	EPA TO-15	m,p-Xylene	2.0	ug/m3		UJ	5A,6
LD033020	SVP-6-032520	E003092-04	EPA TO-15	Naphthalene	0.3	ug/m3	J	UJ	5A,6

Qualified Data Summary Table
Norman's Chevron

SDG	SAMPLE ID	LAB ID	METHOD	ANALYTE	RESULT	UNITS	LAB FLAG	DV QUAL	DV REASON
LD033020	SVP-6-032520	E003092-04	EPA TO-15	o-Xylene	0.9	ug/m3	J	U	6
LD033020	SVP-6-032520	E003092-04	EPA TO-15	Toluene	4.6	ug/m3		U	6
LD033020	DUP-1-032520	E003092-05	EPA TO-15	Benzene	4.6	ug/m3		J	9
LD033020	DUP-1-032520	E003092-05	EPA TO-15	Ethylbenzene	16	ug/m3		J	9
LD033020	DUP-1-032520	E003092-05	EPA TO-15	m,p-Xylene	79	ug/m3		J	5A,9
LD033020	DUP-1-032520	E003092-05	EPA TO-15	Naphthalene	3.1	ug/m3		UJ	5A,6
LD033020	DUP-1-032520	E003092-05	EPA TO-15	o-Xylene	33	ug/m3		J	9
LD033020	DUP-1-032520	E003092-05	EPA TO-15	Toluene	50	ug/m3		J	9



**DATA VALIDATION REPORT
NEWMAN'S CHEVRON – SOIL VAPOR**

Prepared for:

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EcoChem Project: C4159-4

October 13, 2020

Approved for Release:

A handwritten signature in black ink, appearing to read "Christine Ransom", written over a horizontal line.

Christine Ransom
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PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of summary validation (EPA Stage 2B) performed on soil vapor and associated quality control sample data for the Newman's Chevron project. A complete list of samples is provided in the Sample Index.

The MADEP APH analysis was performed by Eurofins Air Toxics, South Burlington, Vermont. The TO-15 and ASTM D1946 analyses were performed by Eurofins Air Toxics, Folsom, California. The analytical methods and EcoChem project chemists are listed in the following table:

ANALYSIS	METHOD	PRIMARY REVIEW	SECONDARY REVIEW
Volatile Organic Compounds	TO-15	E. Clayton	C. Ransom
Air Phase Petroleum Hydrocarbons	MADEP ADH		
Fixed Gases	ASTM D1946		

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Final Remedial Investigation Work Plan Newman's Chevron* (Leidos, July 2018); and *National Functional Guidelines for Organic Data Review* (USEPA 2008).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. Data that have been rejected are flagged with (R). Rejected data should not be used for any purpose. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Validation criteria are included as Appendix A. The qualified data summary table (QDST) is included as Appendix B. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted.

Sample Index
Newman's Chevron- Soil Vapor

SDG	Sample ID	Lab ID	T015	Fixed Gases	APH
2008555	SVP-4-081920	2008555B-01A	✓	✓	
2008555	SVP-5-081920	2008555B-02A	✓	✓	
2008555	SVP-6-081920	2008555B-03A	✓	✓	
2008555	DUP-1-081920	2008555B-04A	✓	✓	
2008555	AMB-1-081920	2008555B-05A	✓	✓	
2008555	EB-1-081920	2008555B-06A	✓	✓	
200-54945-1	SVP-4-081920	200-54945-1			✓
200-54945-1	SVP-5-081920	200-54945-2			✓
200-54945-1	SVP-6-081920	200-54945-3			✓
200-54945-1	DUP-1-081920	200-54945-4			✓
200-54945-1	AMB-1-081920	200-54945-5			✓
200-54945-1	EB-1-081920	200-54945-6			✓

DATA VALIDATION REPORT
Newman's Chevron
Volatile Organic Compounds by EPA TO-15 GCMS-SIM
Fixed Gases by ASTM D-1946
Air Phase Petroleum Hydrocarbons by MADEP APH

This report documents the review of analytical data from the analysis of soil vapor samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins, Folsom, California and South Burlington, Vermont. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
2008555	4 Soil Vapor & 2 Field Blank	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

A question regarding the MADEP APH results lead to the discovery that incorrect dilution factors had been used. The laboratory PM contacted the Burlington lab, which submitted a revised data package and EDD.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	GC/MS Instrument Performance (Tune)	1	Field Duplicates
2	Initial Calibration (ICAL)	✓	Internal Standards
✓	Continuing Calibration (CCAL)	✓	Target Analyte List
✓	Laboratory Blanks	✓	Reporting Limits
2	Field Blanks	✓	Reported Results
✓	Surrogate Compounds		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Initial Calibration

For the TO-15 initial calibration performed on 6/2/20, the percent relative standard deviation (%RSD) value for naphthalene greater than the method specified control limit. Detected naphthalene results in the associated samples were estimated (J-5A). No action was taken for non-detects.

Field Blanks

One ambient blank, AMB-1-081920, and one equipment blank, EB-1-081920, were submitted. The equipment blank was collected by drawing ambient air through a probe screen/control valve/Teflon tubing assembly which is similar to the soil vapor sampling probes. The ambient blank was collected without the screen/valve/tubing assembly attached.

Toluene, ethylbenzene, m,p-xylenes, o-xylene, methane, and C5-C8 aliphatics were detected in both blanks at approximately the same levels. The highest concentration between the two blanks was used to evaluate the effects on the field samples. Detected results less than the 5x action levels were qualified as not detected (U-6).

Field Duplicates

For results greater than 5X the reporting limit (RL), The field duplicate relative percent difference (RPD) control limit is 25%. For results less than 5X the RL, the difference between the results should be less than the RL.

One set of field duplicates was submitted: SVP-5-081920 and DUP-1-081920. All acceptance criteria were met.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the surrogate and laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recovery values. Precision was acceptable as demonstrated by the LCS/LCSD and field duplicate RPD values.

Detection limits were elevated based on field blank results. Data were estimated due to a calibration RSD outlier.

All data, as qualified, are acceptable for use.



APPENDIX A

DATA QUALIFIER DEFINITIONS

REASON CODES

AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES **Based on National Functional Guidelines**

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.
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DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r^2)
	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L) ¹ where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L) ¹ where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L) ¹ for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L) ¹ where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L) ¹ where appropriate
	12	Reference Material Use bias flags (H,L) ¹ where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L) ¹ where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L) ¹ where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2 nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)
	26	Method QC information not provided

¹H = high bias indicated

L = low bias indicated

Volatile Organics in Air by GCMS and GCMS-SIM, Method TO-15

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	SUMMA Canister - no preservation requirements				
SUMMA Canister Pressure	Pressure of Canister upon receipt at lab should be between 5-10 inches of Hg or greater of vacuum	Method ^{1,2}	If vacuum is > 8 inch Hg or < 1 inch Hg, note in report.	1	Professional judgment
Holding Time	30 days from collection to analysis	Method ¹	J(pos)/UJ(ND) if HT exceeded J(pos)/R(ND) if gross exceedance (> 2X HT)	1	Gross exceedance = > 2X HT, as per 1999 NFG
Instrument Performance					
Tuning	BFB Beginning of each 24 hour period Use method acceptance criteria (Table 3)	Method ¹	R(pos/ND) all analytes in all samples associated with the tune	5A	every 24 hours or every 20 samples (Section 10.4.2 of method) TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance
Initial Calibration (Minimum 5 stds.) Sensitivity	RRF \geq 0.05 Note: not discussed in method. Default to NFG criteria.	NFG ³	J(pos)/R(ND) if RRF/RF is less than criterion		
Initial Calibration (Minimum 5 stds.) Stability	%RSD \leq 30% with up to 2 compounds max 40%; OR Linear $r \geq 0.995$ or $r^2 \geq 0.990$ (6 points must be used) (NFG optional criteria)	Method ¹ NFG ³	J(pos) if %RSD > 30% OR r/r2-value < 0.995 (or 0.990)		
Initial Calibration Verification (ICV) Stability	Not required by method. Standard from independent source Analyzed immediately after ICAL If analyzed, use lab or QAPP limits		J(pos) if high bias J(pos)/UJ(ND) if low bias J(pos)/R(ND) if significant low bias		
Continuing Calibration (Prior to each 24 hr. shift) Sensitivity	RRF \geq 0.05 Note: not discussed in method. Default to NFG criteria.	NFG ³	J(pos)/R(ND) if RRF/RF is less than criterion	5B	
Continuing Calibration (Prior to each 24 hr. shift) Stability	%Drift \leq 30%	Method ¹	If > +/- 70%: J(pos)/R(ND) If -69% to -31%: J(pos) (high bias) If 31% to 69%: J(pos)/UJ(ND) (low bias)	5B (H,L) ⁴	

Volatile Organics in Air by GCMS and GCMS-SIM, Method TO-15

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Blank Contamination					
Method Blank (MB)	MB: One per batch of (of ≤ 20 samples) No detected compounds > MDL	Method ¹ NFG ³	U(pos) if result is < 5X or 10X action level, as per analyte.	7	10X action level for methylene chloride, acetone, & 2-butanone. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review FB, qualify as needed
	No TICs present		R(pos) TICs using 10X rule		
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > MDL	Method ¹ NFG ³	U(pos) if result is < 5X or 10X action level, as per analyte.	6	
Precision and Accuracy					
LCS	One per lab batch (of ≤ 20 samples) Note: not discussed in method. Default to lab or QAPP limits.	NFG ³	Qualify all associated samples J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if both %R < LCL - low bias J(pos)/R(ND) if both %R < 10% - very low bias J(pos)/UJ(ND) if one > UCL & one < LCL, with no bias	10 (H,L) ⁴	No action if only one spike %R is outside criteria, when LCSD is analyzed. Qualify all associated samples.
LCS/LCSD (RPD)	if analyzed RPD $\leq 30\%$	NFG ³	J(pos) assoc. compd. in all samples	9	Qualify all associated samples.
Surrogates	Note: not discussed in method. Default to lab or QAPP limits.	NFG ³	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if < 10% - very low bias	13 (H,L) ⁴	Note: No action if there are 4+ surrogates and only 1 outlier.
Internal Standards	Added to all samples Acceptable Range: IS area $\pm 40\%$ of CCAL area RT within 20 seconds of mean RT over ICAL range RT within 0.33 minutes of CC RT	Method ¹ NFG ³	J(pos) if > 140% J(pos)/UJ(ND) if < 60% J(pos)/R(ND) if < 25% RT > 0.33 mins, narrate and notify PM	19	
Field Duplicates	RPD $\leq 25\%$ OR difference < 1X RL (for results < 5X RL)	Method ¹ EcoChem standard policy	Narrate and qualify if required by project (EcoChem PJ) Qualify only field duplicate samples J(pos)/UJ(ND)	9	
Compound ID and Calculation					
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	Method ¹ NFG ³	See Technical Director if outliers are found	14 25 (false pos)	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	Method ¹ NFG ³	NJ the TIC unless: R(pos) common laboratory contaminants See Technical Director for ID issues	4	Common laboratory contaminants: aldol condensation products, solvent preservatives, and reagent contaminants
Calibration Range	Results exceed the upper calibration range	EcoChem standard policy	Qualify J(pos)	20	If result from dilution analysis is not reported.
Calculation Check	Check 10% of field & QC sample results	EcoChem standard policy	Contact laboratory for resolution and/or corrective action	na	Full data validation only.

Volatile Organics in Air by GCMS and GCMS-SIM, Method TO-15

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Electronic Data Deliverable (EDD)					
Verification of EDD to hardcopy data	EcoChem verify @ 10% unless problems noted; then increase level up to 100% for next several packages.	EcoChem standard policy	Depending on scope of problem, correct at EcoChem (minor issues) to resubmittal by laboratory (major issues).	na	EcoChem Project Manager and/or Database Administrator will work with lab to provide long-term corrective action.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 Rev. 1 EcoChem Policy for Rejection/Selection Process for Multiple Results

(pos): Positive Result(s)
 (ND): Non-detects

- ¹ Compendium Method TO-15, Determination of Volatile Organic Compounds (VOCs) in Air Collected In Specially-Prepared Canisters And Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), Second Edition, January 1999. EPA/625/R-96/010b
- ¹ Supplement to EPA Compendium Method TO-15. Reduction of Method Detection Limits to Meet Vapor Intrusion Monitoring Needs. E.H. Daughtrey Jr., K.D. Oliver, H.H. Jacumin Jr., and W.A. McClenny, 2/18/2009.
- ¹ ASTM D1945 - 03 Standard Test Method for Analysis of Natural Gas by Gas Chromatography. January 1, 2010.
- ² Air Toxics Ltd: Guide to Air Sampling and Analysis
- ³ National Functional Guidelines for Organic Data Review, June, 2008
- ⁴ "H" = high bias indicated; "L" = low bias indicated



APPENDIX B

QUALIFIED DATA SUMMARY TABLE

**Qualified Data Summary Table
Newman's Chevron - Soil Vapor**

SDG	SAMPLE ID	LAB ID	METHOD	ANALYTE	RESULT	UNITS	LAB FLAG	DV QUAL	DV REASON
2008555A	SVP-4-081920	2008555A-01A	TO-15	Naphthalene	1.9	ug/m3		J	5A
2008555A	SVP-5-081920	2008555A-02A	TO-15	Toluene	0.34	ug/m3		U	6
2008555A	SVP-5-081920	2008555A-02A	TO-15	Ethyl Benzene	0.19	ug/m3		U	6
2008555A	SVP-5-081920	2008555A-02A	TO-15	Naphthalene	4.4	ug/m3		J	5A
2008555A	SVP-6-081920	2008555A-03A	TO-15	Toluene	0.31	ug/m3		U	6
2008555A	SVP-6-081920	2008555A-03A	TO-15	Ethyl Benzene	0.91	ug/m3		U	6
2008555A	SVP-6-081920	2008555A-03A	TO-15	Naphthalene	4.7	ug/m3		J	5A
2008555A	DUP-1-081920	2008555A-04A	TO-15	Ethyl Benzene	0.15	ug/m3		U	6
2008555A	DUP-1-081920	2008555A-04A	TO-15	Naphthalene	4.4	ug/m3		J	5A
2008555A	AMB-1-081920	2008555A-05A	TO-15	Toluene	0.96	ug/m3		U	6
2008555A	AMB-1-081920	2008555A-05A	TO-15	Ethyl Benzene	0.2	ug/m3		U	6
2008555A	AMB-1-081920	2008555A-05A	TO-15	m,p-Xylene	0.68	ug/m3		U	6
2008555A	AMB-1-081920	2008555A-05A	TO-15	o-Xylene	0.23	ug/m3		U	6
200-54945-1	SVP-4-081920	200-54945-1	APH	C5-C8 Aliphatics (adjusted)	18	ug/m3		U	6
200-54945-1	SVP-5-081920	200-54945-2	APH	C5-C8 Aliphatics (adjusted)	99	ug/m3		U	6
200-54945-1	DUP-1-081920	200-54945-4	APH	C5-C8 Aliphatics (adjusted)	95	ug/m3		U	6



ECO CHEM
Data Quality

**DATA VALIDATION REPORT
NEWMAN'S CHEVRON – SOIL VAPOR**

Prepared for:

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EcoChem Project: C4159-5

February 5, 2021

Approved for Release:

Christine Ransom
Senior Project Chemist
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PROJECT NARRATIVE

Basis for the Data Validation

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The MADEP APH analysis was performed by Eurofins Air Toxics, South Burlington, Vermont. The TO-15 and ASTM D1946 analyses were performed by Eurofins Air Toxics, Folsom, California. The analytical methods and EcoChem project chemists are listed in the following table:

ANALYSIS	METHOD	PRIMARY REVIEW	SECONDARY REVIEW
Volatile Organic Compounds	TO-15	E. Clayton	C. Ransom
Air Phase Petroleum Hydrocarbons	MADEP ADH		
Fixed Gases	ASTM D1946		

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Final Remedial Investigation Work Plan Newman's Chevron* (Leidos, July 2018); and *National Functional Guidelines for Organic Data Review* (USEPA 2008).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. Data that have been rejected are flagged with (R). Rejected data should not be used for any purpose. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Validation criteria are included as Appendix A. The qualified data summary table (QDST) is included as Appendix B. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted.

Sample Index
Newman's Chevron- Soil Vapor

SDG	Sample ID	Lab ID	T015	Fixed Gases	APH
200-5656-1	SVP-1-120420	200-56561-1			✓
200-5656-1	SVP-2-120420	200-56561-2			✓
200-5656-1	SVP-3-120420	200-56561-3			✓
200-5656-1	SVP-4-120420	200-56561-4			✓
200-5656-1	SVP-5-120420	200-56561-5			✓
200-5656-1	SVP-6-120420	200-56561-6			✓
200-5656-1	OA-1-120420	200-56561-7			✓
200-5656-1	OA-2-120420	200-56561-8			✓
200-5656-1	OA-3-120420	200-56561-9			✓
200-5656-1	DUP-1-120420	200-56561-10			✓
2012224A	SVP-1-120420	2012224A-01A	✓		
2012224A	SVP-2-120420	2012224A-02A	✓		
2012224A	SVP-3-120420	2012224A-03A	✓		
2012224A	SVP-4-120420	2012224A-04A	✓		
2012224A	SVP-5-120420	2012224A-05A	✓		
2012224A	SVP-6-120420	2012224A-06A	✓		
2012224A	OA-1-120420	2012224A-07A	✓		
2012224A	OA-2-120420	2012224A-08A	✓		
2012224A	OA-3-120420	2012224A-09A	✓		
2012224A	DUP-1-120420	2012224A-10A	✓		
2012224B	SVP-1-120420	2012224B-01A		✓	
2012224B	SVP-2-120420	2012224B-02A		✓	
2012224B	SVP-3-120420	2012224B-03A		✓	
2012224B	SVP-4-120420	2012224B-04A		✓	
2012224B	SVP-5-120420	2012224B-05A		✓	
2012224B	SVP-6-120420	2012224B-06A		✓	
2012224B	OA-1-120420	2012224B-07A		✓	
2012224B	OA-2-120420	2012224B-08A		✓	
2012224B	OA-3-120420	2012224B-09A		✓	
2012224B	DUP-1-120420	2012224B-10A		✓	

DATA VALIDATION REPORT
Newman's Chevron
Volatile Organic Compounds by EPA TO-15 GCMS-SIM
Fixed Gases by ASTM D-1946
Air Phase Petroleum Hydrocarbons by MADEP APH

This report documents the review of analytical data from the analysis of soil vapor and outdoor air samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins, Folsom, California and South Burlington, Vermont. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
2012224	7 Soil Vapor, 3 Outdoor Air	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	GC/MS Instrument Performance (Tune)	2	Field Duplicates
✓	Initial Calibration (ICAL)	✓	Internal Standards
✓	Continuing Calibration (CCAL)	✓	Target Analyte List
2	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Reported Results
✓	Surrogate Compounds		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Laboratory Blanks

A method blank was analyzed at the required frequency of one per batch of 20 or fewer samples. Action levels were established at five times (5x) the concentration reported in the field blank. If a contaminant is reported in an associated field sample and the concentration is less than the action

level, the result is qualified as not detected (U-7). No action is taken if the sample result is greater than the action level, or for non-detected results.

Naphthalene was detected in the method blank for the MADEP APH analyses. All associated naphthalene results were less than the 5x action level and were qualified as not detected (U-7).

Field Blanks

No field blanks were collected. Three outdoor air samples, OA1-120420, OA2-120420, and OA3-120420, were collected to evaluate ambient conditions. They were not used to determine potential field contamination.

Field Duplicates

For results greater than 5X the reporting limit (RL), The field duplicate relative percent difference (RPD) control limit is 25%. For results less than 5X the RL, the difference between the results should be less than the RL.

One set of field duplicates was submitted: SVP-4-120420 and DUP-1-120420. The following outliers were noted:

Fraction	Analyte	Outlier	Qualifier
TO-15	Toluene	Diff > RL	J-9
	Ethyl benzene	Diff > RL	J-9
	m,p-xylene	RPD	J-9
	o-xylene	RPD	J-9
MADEP APH	C9-C10 aromatics	Diff > RL	J-9
	toluene	Diff > RL	J-9
	m,p-xylene	RPD	J-9
	o-xylene	Diff > RL	J-9

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. With the exceptions noted above, accuracy was acceptable as demonstrated by the surrogate and laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recovery values and precision was acceptable as demonstrated by the LCS/LCSD and field duplicate RPD values.

Detection limits were elevated based on method blank contamination. Data were estimated due to field duplicate precision outliers.

All data, as qualified, are acceptable for use.



APPENDIX A

DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES **Based on National Functional Guidelines**

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.
-----	---

DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r^2)
	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L) ¹ where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L) ¹ where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L) ¹ for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L) ¹ where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L) ¹ where appropriate
	12	Reference Material Use bias flags (H,L) ¹ where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L) ¹ where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L) ¹ where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2 nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)
	26	Method QC information not provided

¹H = high bias indicated

L = low bias indicated

Volatile Organics in Air by GCMS and GCMS-SIM, Method TO-15

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	SUMMA Canister - no preservation requirements				
SUMMA Canister Pressure	Pressure of Canister upon receipt at lab should be between 5-10 inches of Hg or greater of vacuum	Method ^{1,2}	If vacuum is > 8 inch Hg or < 1 inch Hg, note in report.	1	Professional judgment
Holding Time	30 days from collection to analysis	Method ¹	J(pos)/UJ(ND) if HT exceeded J(pos)/R(ND) if gross exceedance (> 2X HT)	1	Gross exceedance = > 2X HT, as per 1999 NFG
Instrument Performance					
Tuning	BFB Beginning of each 24 hour period Use method acceptance criteria (Table 3)	Method ¹	R(pos/ND) all analytes in all samples associated with the tune	5A	every 24 hours or every 20 samples (Section 10.4.2 of method) TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance
Initial Calibration (Minimum 5 stds.) Sensitivity	RRF ≥ 0.05 Note: not discussed in method. Default to NFG criteria.	NFG ³	J(pos)/R(ND) if RRF/RF is less than criterion		
Initial Calibration (Minimum 5 stds.) Stability	%RSD ≤ 30% with up to 2 compounds max 40%; OR Linear r ≥ 0.995 or r ² ≥ 0.990 (6 points must be used) (NFG optional criteria)	Method ¹ NFG ³	J(pos) if %RSD > 30% OR r/r2-value < 0.995 (or 0.990)		
Initial Calibration Verification (ICV) Stability	Not required by method. Standard from independent source Analyzed immediately after ICAL If analyzed, use lab or QAPP limits		J(pos) if high bias J(pos)/UJ(ND) if low bias J(pos)/R(ND) if significant low bias		
Continuing Calibration (Prior to each 24 hr. shift) Sensitivity	RRF ≥ 0.05 Note: not discussed in method. Default to NFG criteria.	NFG ³	J(pos)/R(ND) if RRF/RF is less than criterion	5B	
Continuing Calibration (Prior to each 24 hr. shift) Stability	%Drift ≤ 30%	Method ¹	If > +/- 70%: J(pos)/R(ND) If -69% to -31%: J(pos) (high bias) If 31% to 69%: J(pos)/UJ(ND) (low bias)	5B (H,L) ⁴	

Volatile Organics in Air by GCMS and GCMS-SIM, Method TO-15

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Blank Contamination					
Method Blank (MB)	MB: One per batch of (of ≤ 20 samples) No detected compounds > MDL	Method ¹ NFG ³	U(pos) if result is < 5X or 10X action level, as per analyte.	7	10X action level for methylene chloride, acetone, & 2-butanone. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review FB, qualify as needed
	No TICs present		R(pos) TICs using 10X rule		
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > MDL	Method ¹ NFG ³	U(pos) if result is < 5X or 10X action level, as per analyte.	6	
Precision and Accuracy					
LCS	One per lab batch (of ≤ 20 samples) Note: not discussed in method. Default to lab or QAPP limits.	NFG ³	Qualify all associated samples J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if both %R < LCL - low bias J(pos)/R(ND) if both %R < 10% - very low bias J(pos)/UJ(ND) if one > UCL & one < LCL, with no bias	10 (H,L) ⁴	No action if only one spike %R is outside criteria, when LCSD is analyzed. Qualify all associated samples.
LCS/LCSD (RPD)	if analyzed RPD $\leq 30\%$	NFG ³	J(pos) assoc. compd. in all samples	9	Qualify all associated samples.
Surrogates	Note: not discussed in method. Default to lab or QAPP limits.	NFG ³	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if < 10% - very low bias	13 (H,L) ⁴	Note: No action if there are 4+ surrogates and only 1 outlier.
Internal Standards	Added to all samples Acceptable Range: IS area $\pm 40\%$ of CCAL area RT within 20 seconds of mean RT over ICAL range RT within 0.33 minutes of CC RT	Method ¹ NFG ³	J(pos) if > 140% J(pos)/UJ(ND) if < 60% J(pos)/R(ND) if < 25% RT > 0.33 mins, narrate and notify PM	19	
Field Duplicates	RPD $\leq 25\%$ OR difference < 1X RL (for results < 5X RL)	Method ¹ EcoChem standard policy	Narrate and qualify if required by project (EcoChem PJ) Qualify only field duplicate samples J(pos)/UJ(ND)	9	
Compound ID and Calculation					
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	Method ¹ NFG ³	See Technical Director if outliers are found	14 25 (false pos)	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	Method ¹ NFG ³	NJ the TIC unless: R(pos) common laboratory contaminants See Technical Director for ID issues	4	Common laboratory contaminants: aldol condensation products, solvent preservatives, and reagent contaminants
Calibration Range	Results exceed the upper calibration range	EcoChem standard policy	Qualify J(pos)	20	If result from dilution analysis is not reported.
Calculation Check	Check 10% of field & QC sample results	EcoChem standard policy	Contact laboratory for resolution and/or corrective action	na	Full data validation only.

Volatile Organics in Air by GCMS and GCMS-SIM, Method TO-15

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Electronic Data Deliverable (EDD)					
Verification of EDD to hardcopy data	EcoChem verify @ 10% unless problems noted; then increase level up to 100% for next several packages.	EcoChem standard policy	Depending on scope of problem, correct at EcoChem (minor issues) to resubmittal by laboratory (major issues).	na	EcoChem Project Manager and/or Database Administrator will work with lab to provide long-term corrective action.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 Rev. 1 EcoChem Policy for Rejection/Selection Process for Multiple Results

(pos): Positive Result(s)
 (ND): Non-detects

- ¹ Compendium Method TO-15, Determination of Volatile Organic Compounds (VOCs) in Air Collected In Specially-Prepared Canisters And Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), Second Edition, January 1999. EPA/625/R-96/010b
- ¹ Supplement to EPA Compendium Method TO-15. Reduction of Method Detection Limits to Meet Vapor Intrusion Monitoring Needs. E.H. Daughtrey Jr., K.D. Oliver, H.H. Jacumin Jr., and W.A. McClenny, 2/18/2009.
- ¹ ASTM D1945 - 03 Standard Test Method for Analysis of Natural Gas by Gas Chromatography. January 1, 2010.
- ² Air Toxics Ltd: Guide to Air Sampling and Analysis
- ³ National Functional Guidelines for Organic Data Review, June, 2008
- ⁴ "H" = high bias indicated; "L" = low bias indicated



APPENDIX B

QUALIFIED DATA SUMMARY TABLE

**Qualified Data Summary Table
Newman's Chevron - Soil Vapor**

SDG	SAMPLE ID	LAB ID	METHOD	ANALYTE	RESULT	UNITS	LAB FLAG	DV QUAL	DV REASON
2012224A	SVP-4-120420	2012224A-04A	TO-15	Toluene	0.74	UG/M3		J	9
2012224A	SVP-4-120420	2012224A-04A	TO-15	Ethyl Benzene	0.34	UG/M3		J	9
2012224A	SVP-4-120420	2012224A-04A	TO-15	m,p-Xylene	6.2	UG/M3		J	9
2012224A	SVP-4-120420	2012224A-04A	TO-15	o-Xylene	2.0	UG/M3		J	9
2012224A	DUP-1-120420	2012224A-10A	TO-15	Toluene	1.6	UG/M3		J	9
2012224A	DUP-1-120420	2012224A-10A	TO-15	Ethyl Benzene	0.62	UG/M3		J	9
2012224A	DUP-1-120420	2012224A-10A	TO-15	m,p-Xylene	12	UG/M3		J	9
2012224A	DUP-1-120420	2012224A-10A	TO-15	o-Xylene	3.5	UG/M3		J	9
200-56561-1	SVP-1-120420	200-56561-1	APH	Naphthalene	4.2	UG/M3	B	U	7
200-56561-1	DUP-1-120420	200-56561-10	APH	C9-C10 Aromatics	15	UG/M3		J	9
200-56561-1	DUP-1-120420	200-56561-10	APH	m-Xylene & p-Xylene	11	UG/M3		J	9
200-56561-1	DUP-1-120420	200-56561-10	APH	Naphthalene	5	UG/M3	B	U	7
200-56561-1	DUP-1-120420	200-56561-10	APH	o-Xylene	3.6	UG/M3		J	9
200-56561-1	DUP-1-120420	200-56561-10	APH	Toluene	1.2	UG/M3		J	9
200-56561-1	SVP-2-120420	200-56561-2	APH	Naphthalene	5.6	UG/M3	B	U	7
200-56561-1	SVP-3-120420	200-56561-3	APH	Naphthalene	2.5	UG/M3	B	U	7
200-56561-1	SVP-4-120420	200-56561-4	APH	C9-C10 Aromatics	9.6	UG/M3		J	9
200-56561-1	SVP-4-120420	200-56561-4	APH	m-Xylene & p-Xylene	6	UG/M3		J	9
200-56561-1	SVP-4-120420	200-56561-4	APH	Naphthalene	2	UG/M3	B	U	7
200-56561-1	SVP-4-120420	200-56561-4	APH	o-Xylene	2.1	UG/M3		J	9
200-56561-1	SVP-4-120420	200-56561-4	APH	Toluene	0.59	UG/M3		J	9
200-56561-1	SVP-5-120420	200-56561-5	APH	Naphthalene	1.4	UG/M3	B	U	7
200-56561-1	SVP-6-120420	200-56561-6	APH	Naphthalene	1.9	UG/M3	B	U	7
200-56561-1	OA-1-120420	200-56561-7	APH	Naphthalene	1.1	UG/M3	B	U	7
200-56561-1	OA-2-120420	200-56561-8	APH	Naphthalene	1	UG/M3	B	U	7
200-56561-1	OA-3-120420	200-56561-9	APH	Naphthalene	1.2	UG/M3	B	U	7



**DATA VALIDATION REPORT
NEWMAN'S CHEVRON – SOIL VAPOR**

Prepared for:

Leidos
18939 120th Ave NE, Suite 112
Bothell, Washington 98011

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C4159-6

July 30, 2021

Approved for Release:

A handwritten signature in black ink, appearing to read "Christine Ransom". The signature is written in a cursive style with a long horizontal flourish extending to the right.

Christine Ransom
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of summary validation (EPA Stage 2B) performed on soil vapor and associated quality control sample data for the Newman's Chevron project. A complete list of samples is provided in the **Sample Index**.

The analysis was performed by Eurofins Air Toxics, Folsom, California. The analytical method and EcoChem project chemists are listed in the following table:

ANALYSIS	METHOD	PRIMARY REVIEW	SECONDARY REVIEW
Naphthalene	TO-17	E. Clayton	C. Ransom

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Final Remedial Investigation Work Plan-Addendum 3, Newman's Chevron* (Leidos, May 12 2021); and *National Functional Guidelines for Organic Data Review* (USEPA 2008).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. Data that have been rejected are flagged with (R). Rejected data should not be used for any purpose. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Validation criteria are included as **Appendix A**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted.

Sample Index
Newman's Chevron- Soil Vapor

SDG	Sample ID	Lab ID	TO17
2106570	SVP-1-062221	2106570-01A	✓
2106570	SVP-2-062221	2106570-02A	✓
2106570	SVP-3-062221	2106570-03A	✓
2106570	SVP-4-062221	2106570-04A	✓
2106570	SVP-5-062221	2106570-05A	✓
2106570	SVP-6-062221	2106570-06A	✓
2106570	FB-1-062221	2106570-07A	✓

DATA VALIDATION REPORT

Newman's Chevron

Naphthalene by EPA TO-17 GCMS

This report documents the review of analytical data from the analysis of soil vapor and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Air Toxics, Folsom, California. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
2106570	6 Soil Vapor, 1 Field Blank	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	GC/MS Instrument Performance (Tune)	1	Field Duplicates
✓	Initial Calibration (ICAL)	✓	Internal Standards
✓	Continuing Calibration (CCAL)	✓	Target Analyte List
✓	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Reported Results
✓	Surrogate Compounds		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

On field blank, FB-1-062221, was submitted. Naphthalene was not detected in this blank.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate and laboratory control sample/laboratory control sample duplicate (LCS/LCSD) recovery values and precision was acceptable as demonstrated by the LCS/LCSD relative percent difference values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.



APPENDIX A

DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES **Based on National Functional Guidelines**

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.
-----	---

DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r^2)
	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L) ¹ where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L) ¹ where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L) ¹ for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L) ¹ where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L) ¹ where appropriate
	12	Reference Material Use bias flags (H,L) ¹ where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L) ¹ where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L) ¹ where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2 nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)
	26	Method QC information not provided

¹H = high bias indicated

L = low bias indicated

Polycyclic Aromatic Hydrocarbons (PAH) by GCMS, Method TO17

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	Air cartridge - Cool to $\leq 6^{\circ}\text{C}$	Method ^{1,2}	J(pos)/UJ(ND) if > 6 deg. C (EcoChem PJ)	1	
Holding Time	30 days from collection to analysis	Method ^{1,2}	J(pos)/UJ(ND) if HT exceeded J(pos)/R(ND) if gross exceedance(> 2X HT)	1	Gross exceedance = > 2X HT, as per 1999 NFG
Instrument Performance					
Tuning	DFTPP Beginning of each 12 hour period Use method acceptance criteria	Method ^{1,2} NFG ³	R(pos/ND) all analytes in all samples associated with the tune	24	12 hour clock begins with a new DFTPP tune or if the closing CCV within criteria.
Initial Calibration (Minimum 5 stds.) Sensitivity	TAL Compounds: RRF ≥ 0.050	QSM ⁽¹⁾ QAPP ⁽³⁾	J(pos)/R(ND) if RRF/RF is less than criterion	5A	
Initial Calibration (Minimum 5 stds.) Stability	CCC Compounds: %RSD $\leq 30\%$ and one option as follows: RSD for each analyte $\leq 20\%$; OR Linear $r \geq 0.995$; OR Non-linear $r^2 \geq 0.99$ (6 points must be used) CCC Compounds: Acenaphthene, Fluoranthene, Benzo(a)pyrene	Method ^{1,2} NFG ³	J(pos) if %RSD > 30% (for CCC Compounds) OR >20% (all other compounds) OR r^2 -value < 0.990 OR $r < 0.995$	5A	
Initial Calibration Verification (ICV)	Standard from independent source Analyzed immediately after ICAL %R within $\pm 30\%$ of true value	Method ^{1,2} NFG ³	If > +/-80%: J(pos)/R(ND) If -79% to -31%: J(pos) - high bias If 31% to 79%: J(pos)/UJ(ND) - low bias	5A (H,L) ⁴	
Continuing Calibration (Prior to each 12 hr. shift) Sensitivity	TAL Compounds: RRF ≥ 0.050	QSM ⁽¹⁾ QAPP ⁽³⁾	J(pos)/R(ND) if RRF/RF is less than criterion	5B	
Continuing Calibration (Prior to each 12 hr. shift) Stability	%Drift $\leq 30\%$	Method ^{1,2} NFG ³	If > +/-80%: J(pos)/R(ND) If -79% to -31%: J(pos) - high bias If 31% to 79%: J(pos)/UJ(ND) - low bias	5B (H,L) ⁴	QSM states that analysis cannot proceed if any CCC fails acceptance criterion.
Blank Contamination					
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected compounds > RL	Method ^{1,2} NFG ³	U(pos) if result is < 5X or 10X action level, as per analyte.	7	10X action level applies to bis(2-ethylhexyl) phthalate only. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review FB, qualify as needed
	No TICs present		R(pos) TICs using 10X rule		
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > RL	Method ^{1,2} NFG ³	U(pos) if result is < 5X or 10X action level, as per analyte.	6	

Polycyclic Aromatic Hydrocarbons (PAH) by GCMS, Method TO17

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy					
LCS	One per lab batch (of ≤ 20 samples) 70% -130%	NFG ³	Qualify all associated samples J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if both %R < LCL - low bias J(pos)/R(ND) if both %R < 10% - very low bias J(pos)/UJ(ND) if one > UCL & one < LCL, with no bias PJ if only one %R outlier	10 (H,L) ⁴	No action if only one spike %R is outside criteria, when LCSD is analyzed. Qualify all associated samples.
LCS/LCSD (RPD)	One set per matrix per batch (of ≤ 20 samples) RPD ≤ 30%	NFG ³	J(pos) assoc. compd. in all samples	9	Qualify all associated samples.
Surrogates	Minimum of 3 acid & 3 base/neutral (B/N) compounds added to all samples Within method control limits	Method ^{1,2} NFG ³	Note: Do not qualify if only 1 acid and/or 1 B/N surrogate is out, unless <10%. *** J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if %R < 10% - very low bias	13 (H,L) ⁴	*** If 1 surrogate outlier < 10% then J(pos)/R(ND) NFG specifies surrogates and CL, and to J(pos)/R(ND) results <20%, EcoChem PJ is J(pos)/R(ND) <10%.
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	Method ^{1,2} NFG ³	J(pos) if > 200% J(pos)/UJ(ND) if < 50% J(pos)/R(ND) if < 25% RT>30 seconds, narrate and notify PM	19	NFG specifies surrogates and CL, and to J(pos)/R(ND) results <20%, EcoChem PJ is J(pos)/R(ND) <10%.
Field Duplicates	RPD ≤30% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Narrate and qualify if required by project (EcoChem PJ) Qualify only field duplicate samples J(pos)/UJ(ND)	9	
Compound ID and Calculation					
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	Method ^{1,2} NFG ³	See Technical Director if outliers are found	14 25 (false pos)	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	Method ^{1,2} NFG ³	NJ the TIC unless: R(pos) common laboratory contaminants See Technical Director for ID issues	4	Common laboratory contaminants: aldol condensation products, solvent preservatives, and reagent contaminants
Calibration Range	Results exceed the upper calibration range	EcoChem standard policy	Qualify J(pos)	20	If result from dilution analysis is not reported.
Calculation Check	Check 10% of field & QC sample results	EcoChem standard policy	Contact laboratory for resolution and/or corrective action	na	Full data validation only.
Electronic Data Deliverable (EDD)					
Verification of EDD to hardcopy data	EcoChem verify @ 10% unless problems noted; then increase level up to 100% for next several packages.	EcoChem standard policy	Depending on scope of problem, correct at EcoChem (minor issues) to resubmittal by laboratory (major issues).	na	EcoChem Project Manager and/or Database Administrator will work with lab to provide long-term corrective action.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 Rev. 1 EcoChem Policy for Rejection/Selection Process for Multiple Results

(pos): Positive Result(s)
(ND): Non-detects¹ Compendium Method TO-17, Determination of Volatile Organic Compounds (VOCs) in Ambient Air Using Active Sampling Onto Sorbent Tubes, Second Edition, January 1999. EPA/625/R-96/010b² Air Toxics/Eurofin SOP: Analysis of Volatile and Semivolatile Organic Compounds in Vapor by Thermal Desorption GC/MS Full Scan Using Modified EPA Method TO-17 (SOP 109)³ National Functional Guidelines for Organic Data Review, June, 2008⁴ "H" = high bias indicated; "L" = low bias indicated



DATA VALIDATION REPORT NEWMAN'S CHEVRON

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March 7, 2022

Approved for Release:

A handwritten signature in black ink, appearing to read "Christine Ransom", written over a horizontal line.

Christine Ransom
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of summary validation (EPA Stage 2B) performed on one soil sample and associated quality control sample data for the Newman's Chevron project. The **Sample Index** contains sample ID cross-reference information.

The analysis was performed by Eurofins, Lancaster, Pennsylvania. The analytical methods and EcoChem project chemists are listed in the following table:

ANALYSIS	METHOD	PRIMARY REVIEW	SECONDARY REVIEW
Naphthalenes	SW8270E	A. Bodkin	C. Ransom
BTEX	SW8260D		
Total Petroleum Hydrocarbons	NWTPH-Dx		
Gas Range Hydrocarbons	NWTPH-Gx		
Lead	SW6010D		

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Remedial Investigation Work Plan, Newman's Chevron* (Leidos, July 13, 2018); *National Functional Guidelines for Organic Data Review* (USEPA 2017); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2017).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. Data that have been rejected are flagged with (R). Rejected data should not be used for any purpose. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above.

Validation criteria are included as **Appendix A**. A Qualified Data Summary Table is included as **Appendix B**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A qualified laboratory electronic data deliverable (EDD) is also submitted.

Sample Index
Newman's Chevron

SDG	Sample ID	Lab ID	BTEX 8260D	Naphthalenes 8270E	NWTPH-Gx	NWTPH-Dx	Lead 6010D
J6178-1	SVP-7-S-6.5-211101	410-61781-1	✓	✓	✓	✓	✓

DATA VALIDATION REPORT
Newman's Chevron
Volatile Organic Compounds by SW8260D

This report documents the review of analytical data from the analysis of one soil sample and the associated laboratory quality control (QC) samples. The sample was analyzed by Eurofins, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
J61781-1	1 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	GC/MS Instrument Performance (Tune)	1	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration (ICAL)	1	Field Duplicates
✓	Continuing Calibration (CCAL)	✓	Internal Standards
✓	Laboratory Blanks	✓	Target Analyte List
1	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate analyses were not performed. Accuracy and precision were evaluated using the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) results.

Field Duplicates

No Field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate and LCS/LCSD recovery values and precision was acceptable as demonstrated by the LCS/LCSD relative percent difference values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron Naphthalenes by SW8270E

This report documents the review of analytical data from the analysis of one soil sample and the associated laboratory quality control (QC) samples. Samples were analyzed by Eurofins, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
J61781-1	1 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS)
✓	GC/MS Instrument Performance (Tune)	1	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration (ICAL)	✓	Internal Standards
1	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Target Analyte List
1	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Continuing Calibration

For the CCAL analyzed on 11/11/21 @ 23:43, the retention time for the internal standard Naphthalene-d8 was outside the ± 30 second window established from the ICAL retention time. Since the internal standard retention time for the sample and QC samples were within the ± 30 second window established from the associated CCAL, data was judged as not impacted. No qualifiers were assigned.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spike/matrix spike duplicate analyses were not performed. Accuracy was evaluated using the laboratory control sample. Laboratory precision could not be evaluated.

Field Duplicates

No Field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate and laboratory control sample percent recovery values. Precision could not be evaluated.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
Newman's Chevron
Lead by SW6010D and Moisture by SM2540G

This report documents the review of analytical data from the analysis of one soil sample and the associated laboratory quality control (QC) samples. Samples were analyzed by Eurofins, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES AND MATRIX	VALIDATION LEVEL
J61781-1	1 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	1	Matrix Spikes
✓	Initial Calibration	1	Laboratory Duplicates
✓	Calibration Verification	✓	Interference Check Samples
✓	Reporting Limit Standards	1	Field Duplicates
✓	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Reported Results
✓	Laboratory Control Samples (LCS)		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted.

Matrix Spikes

Matrix spikes were not analyzed. Accuracy was evaluated using the laboratory control sample (LCS) result.

Laboratory Duplicates

Laboratory duplicates were not analyzed. Laboratory precision could not be evaluated.

Field Duplicates

No field blanks were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the laboratory control sample recovery. Precision could not be evaluated.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Gasoline Range Organics by NWTPH-Gx

This report documents the review of analytical data from the analysis of one soil sample and the associated laboratory quality control (QC) samples. Samples were analyzed by Eurofins, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
J61781-1	1 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

The Result_Parameter_Name field was incorrectly populated as "Diesel Range Organics". It was corrected to say, "Gasoline Range Organics".

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Preservation and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	Initial Calibration (ICAL)	1	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Reported Results
✓	Surrogate Compounds		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spikes were not analyzed. Precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) results.

Field Duplicates

No field blanks were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable, as demonstrated by the surrogate and LCS/LCSD percent recovery values. Precision was also acceptable as demonstrated by the LCS/LCSD relative percent difference values.

No data were qualified for any reason. All data, as reported, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Diesel Range Organics by NWTPH-Dx

This report documents the review of analytical data from the analysis of one soil sample and the associated laboratory quality control (QC) samples. Samples were analyzed by Eurofins, Lancaster, Pennsylvania. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
J61781-1	1 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

2	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS)
✓	Initial Calibration (ICAL)	✓	Matrix Spikes (MS)
✓	Continuing Calibration (CCAL)	✓	Laboratory Duplicates
✓	Laboratory Blanks	1	Field Duplicates
1	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	2	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Sample Receipt, Preservation, and Holding Times

Sample SVP-7-S-6.5-211101 was initially extracted within the 14-day holding time. The laboratory re-extracted the sample based on laboratory control sample (LCS) and matrix spike (MS) recovery outliers, but the re-extraction was done 3 days past the holding time. It was determined that the original results should be used; no action was taken based on holding times.

Field Blanks

No field blanks were submitted.

Field Duplicates

No field duplicates were submitted.

Reported Results

Sample SVP-7-S-6.5-211101 was re-extracted based on LCS and MS recovery outliers based on the current laboratory control limits. The re-extraction was done 3 days past the holding time, with acceptable recoveries. The sample results from the initial extraction and the re-extraction were the same. In addition, the LCS and MS recovery values were within the QAPP control limits for the initial extraction. It was determined that the results from the original extraction should be used. The results from the re-extraction were qualified as do-not-report (DNR-11).

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate, LCS, and MS recovery values. Precision was also acceptable as demonstrated by the laboratory duplicate relative percent difference (RPD) values.

Data were flagged as do-not-report (DNR) to indicate which result should not be used from multiple reported analyses. Completion is not affected.

Data that are flagged DNR should not be used. All other data, as reported, are acceptable for use.



APPENDIX A

DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES **Based on National Functional Guidelines**

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.
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DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r^2)
	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L) ¹ where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L) ¹ where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L) ¹ for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L) ¹ where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L) ¹ where appropriate
	12	Reference Material Use bias flags (H,L) ¹ where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L) ¹ where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L) ¹ where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2 nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)
	26	Method QC information not provided

¹H = high bias indicated

L = low bias indicated

**Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8260C)**

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	4°C±2°C Aqueous: HCl to pH < 2 Current SW846 criterion is ≤ 6° C ⁽³⁾	NFG ⁽¹⁾ Method ⁽³⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use PJ for temp outliers; see TM20 if pH ≤ 2, reject 2-chloroethyl vinyl ether (R-1) some projects may require methanol preserved soils/seds
Holding Time	Aqueous: 14 days preserved 7 Days: unpreserved Solid: 14 Days	NFG ⁽¹⁾ Method ⁽³⁾	J (pos)/UJ (ND) if HT exceeded J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Gross exceedance = > 2x HT, as per 1999 NFG
Instrument Performance					
Tuning	BFB Beginning of each 12 hour period Use method or project acceptance criteria	NFG ⁽¹⁾ Method ⁽³⁾	R (pos/ND) all analytes in all samples associated with the tune	24	
Initial Calibration Sensitivity	Minimum 5 standards RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders * RRF ≥ 0.005 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5A	TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance PJ - no action if response is stable (ICAL RSD and CCAL %D acceptable)
Initial Calibration Stability	%RSD ≤ 20% except: %RSD ≤ 40% poor responders * %RSD ≤ 50% 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %RSD > limit	5A	
Initial Calibration Verification	Second source analyzed immediately after ICAL %R 70% - 130%	Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) %R < LCL	5A (H,L) ⁴	QAPP may have overriding accuracy limits.
Continuing Calibration Sensitivity	RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders * RRF ≥ 0.005 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5B	see ICAL RRF guidance
Continuing Calibration Stability	%D ≤ 25% except: %D ≤ 40% poor responders * %D ≤ 50% 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) - %D > control limit (high bias) J (pos)/UJ (ND) - %D < -control limit (low bias)	5B (H,L) ⁴	

Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8260C)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Blank Contamination					
Method Blank (MB)	<u>MB: One per matrix per batch (of ≤ 20 samples)</u> No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	7	10X action level for methylene chloride, acetone, & 2-butanone. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review TB, qualify as needed #3 - Review FB, qualify as needed Note: Actions as per NFG 1999
	No TICs present		R (pos) TICs using 10X rule		
Trip Blank (TB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	
Field Blank (FB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	
Precision and Accuracy					
LCS/LCSD (recovery)	One per matrix per batch (of ≤ 20 samples) LCSD not required by NFG or method Use method acceptance criteria/laboratory limits	Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND)%R < 10%	10 (H,L) ⁴	No action if only one spike %R is outside criteria when LCSD is analyzed, unless one recovery is <10%. QAPP may have overriding accuracy limits.
LCS/LCSD RPD	If LCSD analyzed RPD < lab limits	Method ⁽³⁾	J (pos)	9	Qualify all associated samples. QAPP may have overriding precision limits.
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ⁴	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Surrogates	Added to all samples Within method/laboratory control limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %R >UCL J (pos)/UJ (ND) if %R <LCL J (pos)/R (ND) if <10%	13 (H,L) ⁴	No action if there are 4+ surrogates and only 1 outlier Qualify all compounds if qualification is required.
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if > 200% J (pos)/UJ (ND) if < 50% J (pos)/R (ND) if < 25% if RT >30 seconds use PJ	19	Qualify compounds quantified using particular internal standard

**Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8260C)**

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy (continued)					
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) if both %R < LCL J (pos)/R (ND) if both %R < 10% J (pos)/UJ (ND) if one > UCL & one < LCL, with no bias	8 (H,L) ⁴	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only.
MS/MSD (RPD)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) If RPD > control limit	9	Qualify parent sample only
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified
Compound Identification and Quantitation					
Retention Time Relative Ion Intensities	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	NFG ⁽¹⁾ Method ⁽³⁾	U (pos) if identification criteria not met	25	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NFG ⁽¹⁾ Method ⁽³⁾	NJ TIC R (pos) if common laboratory contaminants	4	Common laboratory contaminants: aldol condensation products, solvent preservatives, and reagent contaminants
Calibration Range	Results greater than highest calibration standard	EcoChem standard policy	Qualify J (pos)	20	If result from dilution analysis is not reported.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Organic Data Review, June, 2008² National Functional Guidelines for Organic Data Review, Oct, 1999³ Method SW846 8260C Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)⁴ NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

* "Poor responder" compounds: Acetone, 2-butanone, carbon disulfide, chloroethane, chloromethane, cyclohexane, 1,2-dibromoethane, dichlorodifluoromethane, cis-1,2-dichloroethene, 1,2-dichloropropane, 1,2-dibromo-3-chloropropane, 2-hexanone, isopropylbenzene, methyl acetate, methylene chloride, methylcyclohexane, 4-methyl-2-pentanone, methyl tert-butyl ether, trans-1,2-dichloroethene, trichlorofluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane **criterion is 0.010 RRF**; 1,4-dioxane RRF **criterion is 0.005**.

(pos): Positive Result

(ND): Non-detect

DATA VALIDATION CRITERIA

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
 (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	4°C±2°C sediment/tissues may require storage at -20°C	NFG ⁽¹⁾ Method ⁽³⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use PJ for temp outliers; see TM20 Current SW846 criterion is ≤ 6° C ⁽³⁾
Holding Time	Extraction Aqueous: 7 days from collection Extraction Solid: 14 days from collection Analysis (all matrices): 40 days from extraction Holding time may be extended to 1 year for frozen sediments/tissues	NFG ⁽¹⁾ Method ⁽³⁾	J (pos)/UJ (ND) if HT exceeded J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Gross exceedance = > 2x HT, as per 1999 NFG
Instrument Performance					
Tuning	DFTPP Beginning of each 12 hour period Use method or project acceptance criteria	NFG ⁽¹⁾ Method ⁽³⁾	R (pos/ND) all analytes in all samples associated with the tune	24	
Initial Calibration Sensitivity	RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5A	TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance PJ - no action if response is stable (ICAL RSD and CCAL %D acceptable)
Initial Calibration Stability	Minimum 5 standards %RSD ≤ 20.0% except: %RSD ≤ 40.0% poor responders * or co-efficient of determination (r ²) > 0.99	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %RSD > limit or r ² value <0.99	5A	
Initial Calibration Verification Check	Prepared from second source; analyze after each ICAL Percent recovery limits = 70-130%	Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) %R < LCL	5A (H,L) ⁴	QAPP may have overriding accuracy limits.

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
 (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Performance (continued)					
Continuing Calibration Sensitivity	RRF \geq 0.05 except: RRF \geq 0.01 poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5B	see ICAL RRF guidance
Continuing Calibration Stability	Prior to sample analysis and every 12 hours %D \leq 25% except: %D \leq 40.0% poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) - %D > control limit (high bias) J (pos)/UJ (ND) - %D < -control limit (low bias)	5B (H,L) ⁴	
Blank Contamination					
Method Blank (MB)	MB: One per matrix per batch of (of \leq 20 samples) No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U(pos) if result is < 5X or 10X action level	7	10X action level applies to phthalates only. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review FB , qualify as needed Note: Actions as per 1999 NFG
	No TICs present		R (pos) TICs using 10X rule	7	
Field Blank (FB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	
Precision and Accuracy					
LCS/LCSD (recovery)	One per matrix per batch (of \leq 20 samples) LCSD not required by NFG or method Use method acceptance criteria/laboratory limits	Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND)%R < 10%	10 (H,L) ⁴	No action if only one spike %R is outside criteria when LCSD is analyzed, unless one recovery is <10%. QAPP may have overriding accuracy limits. Qualify all associated samples.
LCS/LCSD (RPD)	If LCSD analyzed RPD < lab limits	Method ⁽³⁾	J (pos)	9	Qualify all associated samples. QAPP may have overriding precision limits.

DATA VALIDATION CRITERIA

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
 (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy (continued)					
Reference Material (RM, SRM, or CRM)	Result \pm 20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ⁴	QAPP may have overriding accuracy limits. Some manufacturers have different RM control limits
MS/MSD (recovery)	One per matrix per batch (of \leq 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) if both %R < LCL J (pos)/R (ND) if both %R < 10% J (pos)/UJ (ND) if one > UCL & one < LCL, with no bias	8 (H,L) ⁴	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only.
MS/MSD (RPD)	One per matrix per batch (of \leq 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) in parent sample if RPD > CL	9	Qualify parent sample only
Surrogates	Minimum of 3 acid & 3 base/neutral (B/N) compounds added to all samples Within method control limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND) if %R < 10%	13 (H,L) ⁴	Qualify all compounds in associated fraction. Do not qualify if only 1 acid and/or 1 B/N surrogate is out, unless <10%. If 1 surrogate outlier < 10% then J (pos)/R (ND)
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if > 200% J (pos)/UJ (ND) if < 50% J (pos)/R (ND) if < 25% if RT >30 seconds use PJ	19	Qualify compounds quantified using particular internal standard
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Identification and Quantitation and Calculation					
Retention times and relative ion intensities	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	NFG ⁽¹⁾ Method ⁽³⁾	U (pos) if identification criteria not met	25	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NFG ⁽¹⁾ Method ⁽³⁾	NJ the TIC unless: R (pos) common laboratory contaminants	4	
Calibration Range	Results greater than highest calibration standard	EcoChem standard policy	Qualify J (pos)	20	If result from dilution analysis is not reported.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Organic Data Review, June, 2008

(pos): Positive Result(s)

² National Functional Guidelines for Organic Data Review, October, 1999

(ND): Non-detects

³ Method SW846 8270D Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 4, February 2007.

⁴ NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

* "Poor responder" compounds: acetophenone, atrazine, benzaldehyde, 1,1'-biphenyl, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, caprolactam, carbazole, 4-chloroaniline, diethylphthalate, di-n-butylphthalate, 3-3'-dichlorobenzidine, dimethylphthalate, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol, di-n-octylphthalate, hexachlorobutadiene, hexachlorocyclopentadiene, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 4-nitrophenol, N-nitrosodiphenylamine, 2,2'-oxybis-(1-chloropropane), 1,2,4,5-tetrachlorobenzene use a 0.010 RRF criterion.

**EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Gasoline Range
 (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Gx,
 June 1997, Wa DOE & Oregon DEQ)**

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling				
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6°C	1	
Holding Time	Waters: 14 days preserved 7 days unpreserved Solids: 14 Days	J(+)/UJ(-) if hold times exceeded J(+)/R(-) if exceeded > 3X	1	Professional Judgement
Instrument Performance				
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: $r^2 \geq 0.990$ If used, RSD of response factors $\leq 20\%$	Narrate if fewer than 5 calibration levels or if %R > 15% J(+)/UJ(-) if $r^2 < 0.990$ J(+)/UJ(-) if %RSD > 20%	5A	
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 80% to 120%	Narrate if frequency not met. J(+)/UJ(-) if %R < 80% J(+) if %R > 120%	5B	
Blank Contamination				
Method Blank	At least one per batch (≤ 10 samples) No results > RL	U (at the RL) if sample result is < RL & < 5X blank result.	7	
		U (at reported sample value) if sample result is \geq RL and < 5X blank result	7	
Trip Blank (if required by project)	No results > RL	Action is same as method blank for positive results remaining in trip blank after method blank qualifiers are assigned.	18	
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in field blank after method and trip blank qualifiers are assigned.	6	

**EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Gasoline Range
 (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Gx,
 June 1997, Wa DOE & Oregon DEQ)**

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10%	10	Professional Judgement
Surrogates	Bromofluorobenzene and/or 1,4-difluorobenzene added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R >UCL J(+)/R(-) if any %R < 10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP EcoChem default: water: RPD < 35% solids: RPD < 50%	Narrate outliers If required by project , qualify with J(+)/UJ(-)	9	
Compound ID and Calculation				
Two analyses for one sample (e.g., dilution)	Report only one result per analyte	"DNR" (or client requested qualifier) all results that should not be reported.	11	See EcoChem TM-04

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range
 (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx,
 June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling				
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6 deg. C	1	
Holding Time	Ext. Waters: 14 days preserved 7 days unpreserved Ext. Solids: 14 Days Analysis: 40 days from extraction	J(+)/UJ(-) if hold times exceeded J(+)/R(-) if exceeded > 3X	1	Professional Judgement
Instrument Performance				
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: $r^2 \geq 0.990$ If used, RSD of response factors $\leq 20\%$	Narrate if fewer than 5 calibration levels or if %R > 15% J(+)/UJ(-) if $r^2 < 0.990$ J(+)/UJ(-) if %RSD > 20%	5A	
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 85% to 115%	Narrate if frequency not met. J(+)/UJ(-) if %R < 85% J(+) if %R > 115%	5B	
Blank Contamination				
Method Blank	At least one per batch (≤ 20 samples) No results > RL	U (at the RL) if sample result is < RL & < 5X blank result.	7	
		U (at reported sample value) if sample result is \geq RL and < 5X blank result	7	
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in the field blank after method blank qualifiers are assigned.	6	

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range
 (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx,
 June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10%	10	Professional Judgement
Surrogates	2-fluorobiphenyl, p-terphenyl, o-terphenyl, and/or pentacosane added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP EcoChem default: water: RPD < 35% solids: RPD < 50%	Narrate (Use Professional Judgement to qualify)	9	

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range
 (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx,
 June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound ID and Calculation				
Two analyses for one sample (dilution)	Report only one result per analyte	"DNR" (or client requested qualifier) all results that should not be reported.	11	See EcoChem TM-04

Metals by ICP-AES
 (Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler / Storage Temperature Preservation	Solid: Cooler temperature 4°C±2°C Aqueous: Nitric Acid to pH < 2 Dissolved Metals: 0.45 µm filter, preserve to pH < 2 after filtration	NFG ⁽¹⁾ Method ⁽²⁾	Cooler Temps: If required by project J (pos)/UJ (ND) if greater than 6° C Aqueous: J (pos)/UJ (ND) if pH > 2	1	Use PJ to qualify for temperature outlier. Current SW846 criterion is ≤ 6° C (4) No quals for pH if samples preserved by lab upon receipt and within 1 day of collection.
Holding Time	All matrices: 180 days from date sampled Frozen soils, sediments, tissues (-20°C) - HT extended to 1 year	NFG ⁽¹⁾ Method ⁽²⁾ EcoChem standard policy	J (pos)/UJ (ND) if holding time exceeded	1	
Instrument Performance					
Initial Calibration (ICAL)	Based on instrument requirements, blank + 1 standard minimum requirement for calibration If more than 1 standard used, r ≥ 0.995	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if r < 0.995	5A	
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R within ± 10% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R > 111%	5A (H,L) ³	Qualify all samples in run
Reporting Limit (RL) Standard Low Level ICV/CCV	concentration at RL %R = 70%-130%	Method ⁽²⁾	J (pos) < 2x RL / R (ND) if %R < 50% J (pos) < 2x RL / UJ (ND) if %R 50 - 69% J (pos) < 2x RL if %R > 130%	5A (H,L) ³	Qualify all samples in run
Continuing Calibration Verification (CCV)	Immediately following ICV/ICB, then every two hours or ten samples, and at end of run. %R within ± 10% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R > 111%	5B (H,L) ³	Qualify samples bracketed by CCV outliers
Interference Check Samples (ICSA / ICSAB)	ICSAB %R 80% - 120% for all spiked elements ICSA < MDL for all unspiked elements	NFG ⁽¹⁾ Method ⁽²⁾	For samples with Al, Ca, Fe, Mg > ICS levels: ICSAB: J(pos)/R (ND) if %R < 50% J (pos)/UJ (ND) if %R = 50% - 79% J (pos) if %R > 120% ICSA: J (pos) < 2x ICSA/UJ (ND) for ICSA < Neg MDL J (pos) < 2x ICSA for ICSA > MDL	17 (H,L) ³	Use PJ and inter-element correction factors to evaluate ICSA to determine if bias is present. Refer to TM-09 for additional information.

Metals by ICP-AES
 (Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Blank Contamination					
Method Blank (MB)	One per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is < 5X method blank concentration	7	Refer to TM-02 for additional information. Blank Evaluation based on NFG 1994
Instrument Blanks (ICB/CCB)	After each ICV & CCV blank concentration < MDL	NFG ⁽¹⁾ Method ⁽²⁾	Action level is 5x absolute value of blank conc. For positive blanks: U (pos) results < action level For negative blanks: J (pos)/UJ (ND) results < action level	Pos Blanks: 7 Neg Blanks: 7L ³	Use blanks bracketing samples for Qualification Refer to TM-02 for additional information. Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review IB, qualify as needed #3 - Review FB, qualify as needed
Field Blank (FB)	Blank conc < MDL	EcoChem standard policy	U (pos) if result is < 5x action level, as per analyte.	6	Qualify in associated field samples only. Refer to TM-02 for additional information.
Precision and Accuracy					
LCS (recovery)	One per matrix per batch (of ≤ 20 samples); LCSD not required %R between 80-120%	Method ⁽²⁾	J (pos)/R (ND) if %R < 50% J (pos)/UJ (ND) if %R 50% - 79% J (pos) if %R > 120%	10 (H,L) ³	Qualify all samples in batch QAPP may have overriding accuracy limits. NFG Limits 70% -130% (50% - 150% Ab, Ag)
LCS/LCSD (RPD)	LCSD not required, if analyzed: RPD ≤ 20%	Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	Qualify all samples in batch QAPP may have overriding precision limits.
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples); MSD not required %R between 75-125%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if %R > 125% J (pos)/UJ (ND) if %R < 75% J (pos)/R (ND) if %R < 30%, unless post digestion spike analyzed, J (pos)/UJ (ND) if post digestion spike %R OK	8 (H,L) ³	No action if only one spike %R is outside criteria. NA if parent concentration >4x the amount spiked. Qualify all samples in batch. QAPP may have overriding accuracy limits.

DATA VALIDATION CRITERIA

Metals by ICP-AES
 (Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy con't					
Post Digestion Spikes	If MS is outside 75-125%, post-spike should be analyzed %R 80%-120% (method); 75%-125% (NFG)	NFG ⁽¹⁾ Method ⁽²⁾	Only used to support MS qualification decisions	NA	No qualifiers assigned based solely on this element.
MS/MSD (RPD)	MSD not required, if analyzed: RPD ≤ 20%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	QAPP may have overriding precision limits.
Laboratory Duplicate	One per matrix per batch (of ≤ 20 samples) RPD ≤ 20% for results ≥ 5x RL Solids: difference < 2X RL for results < 5X RL Aqueous: difference < 1X RL for results < 5X RL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20% or if difference > control limit	9	Qualify all samples in batch. QAPP may have overriding precision limits.
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ³	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Serial Dilution	Analyze one sample per matrix at a 5x dilution %D <10% for original sample conc. > 50x MDL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if %D > 10% and native sample concentration > 50x MDL	16	Qualify all samples in batch.
Field Duplicate	Solids: RPD <50% (for results ≥ 5x RL) OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% (for results ≥ 5x RL) OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Qualify only parent and field duplicate samples J (pos)/UJ (ND)	9	QAPP may have overriding precision limits. Client/QAPP may not require qualification based on field precision.

Metals by ICP-AES
(Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Quantitation					
Total and Dissolved Comparison	Total > Dissolved	EcoChem standard policy	J (pos)/UJ (ND) if Dissolved > Total and results fall outside of standard duplicate precision criteria	14	
Calibration Range	Results < instrument linear range	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if result exceeds linear range and sample was not diluted	20	
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Inorganic Superfund Data Review, January 2010.

² Method SW846 6010C Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES), Revision 3, February 2007.

³ "H" = high bias indicated; "L" = low bias indicated

⁴ SW846, Chapter 3, Inorganic Analytes

(pos): Positive Result

(ND): Not Detected



APPENDIX B

QUALIFIED DATA SUMMARY TABLE

**Qualified Data Summary Table
Newman's Chevron**

SAMPLE ID	LAB ID	METHOD	ANALYTE	RESULT	UNITS	LAB FLAG	DV QUAL	DV REASON
SVP-7-S-6.5-211101	410-61781-1	NWTPH-Dx	Diesel Range Organics	5.2	mg/kg	UH	DNR	11
SVP-7-S-6.5-211101	410-61781-1	NWTPH-Dx	Motor Oil	13	mg/kg	UH	DNR	11



**DATA VALIDATION REPORT
NEWMAN'S CHEVRON – SOIL VAPOR**

Prepared for:

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EcoChem Project: C4159-8

March 25, 2022

Approved for Release:

A handwritten signature in black ink, appearing to read "Christine Ransom". The signature is written in a cursive style with a long horizontal flourish extending to the right.

Christine Ransom
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of summary validation (EPA Stage 2B) performed on soil vapor and associated quality control sample data for the Newman's Chevron project. A cross-reference of field and laboratory IDs is provided in the **Sample Index**.

The analyses were performed by Eurofins Air Toxics, Folsom, California. The analytical method and EcoChem project chemists are noted below:

ANALYSIS	METHOD	PRIMARY REVIEW	SECONDARY REVIEW
Naphthalene	TO-17	E. Clayton	C. Ransom

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Final Remedial Investigation Work Plan Newman's Chevron* (Leidos, July 2018); and *National Functional Guidelines for Organic Data Review* (USEPA 2008).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. Data that have been rejected are flagged with (R). Rejected data should not be used for any purpose. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above. No data were qualified.

Validation criteria are included as **Appendix A**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A verified laboratory electronic data deliverable (EDD) is also submitted.

Sample Index
Newman's Chevron- Soil Vapor

SDG	Sample ID	Lab ID	TO17
2202501	SVP-7-021822	2202501-01A	✓
2202501	FB-1-021822	2202501-02A	✓

DATA VALIDATION REPORT

Newman's Chevron

Naphthalene by EPA TO-17 GCMS

This report documents the review of analytical data from the analysis of one soil vapor sample and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Air Toxics, Folsom, California. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
2202501	1 Soil Vapor, 1 Field Blank	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	GC/MS Instrument Performance (Tune)	1	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration (ICAL)	✓	Internal Standards
✓	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Target Analyte List
1	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

On field blank, FB-1-021822, was submitted. Naphthalene was not detected in this blank.

Matrix Spike/Matrix Spike Duplicates (MS/MSD)

Matrix Spike/matrix spike duplicate analyses were not performed. Laboratory precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicate (LCs/LCSD) results.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate and LCS/LCSD recovery values and precision was acceptable as demonstrated by the LCS/LCSD relative percent difference value.

No data were qualified for any reason. All data, as reported, are acceptable for use.



APPENDIX A

DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES **Based on National Functional Guidelines**

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.
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DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r^2)
	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L) ¹ where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L) ¹ where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L) ¹ for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L) ¹ where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L) ¹ where appropriate
	12	Reference Material Use bias flags (H,L) ¹ where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L) ¹ where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L) ¹ where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2 nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)
	26	Method QC information not provided

¹H = high bias indicated

L = low bias indicated

Polycyclic Aromatic Hydrocarbons (PAH) by GCMS, Method TO17

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	Air cartridge - Cool to $\leq 6^{\circ}\text{C}$	Method ^{1,2}	J(pos)/UJ(ND) if > 6 deg. C (EcoChem PJ)	1	
Holding Time	30 days from collection to analysis	Method ^{1,2}	J(pos)/UJ(ND) if HT exceeded J(pos)/R(ND) if gross exceedance($> 2\text{X HT}$)	1	Gross exceedance = $> 2\text{X HT}$, as per 1999 NFG
Instrument Performance					
Tuning	DFTPP Beginning of each 12 hour period Use method acceptance criteria	Method ^{1,2} NFG ³	R(pos/ND) all analytes in all samples associated with the tune	24	12 hour clock begins with a new DFTPP tune or if the closing CCV within criteria.
Initial Calibration (Minimum 5 stds.) Sensitivity	TAL Compounds: RRF ≥ 0.050	QSM ⁽¹⁾ QAPP ⁽³⁾	J(pos)/R(ND) if RRF/RF is less than criterion	5A	
Initial Calibration (Minimum 5 stds.) Stability	CCC Compounds: %RSD $\leq 30\%$ and one option as follows: RSD for each analyte $\leq 20\%$; OR Linear $r \geq 0.995$; OR Non-linear $r^2 \geq 0.99$ (6 points must be used) CCC Compounds: Acenaphthene, Fluoranthene, Benzo(a)pyrene	Method ^{1,2} NFG ³	J(pos) if %RSD $> 30\%$ (for CCC Compounds) OR $> 20\%$ (all other compounds) OR r^2 -value < 0.990 OR $r < 0.995$	5A	
Initial Calibration Verification (ICV)	Standard from independent source Analyzed immediately after ICAL %R within $\pm 30\%$ of true value	Method ^{1,2} NFG ³	If $> +/ - 80\%$: J(pos)/R(ND) If -79% to -31% : J(pos) - high bias If 31% to 79% : J(pos)/UJ(ND) - low bias	5A (H,L) ⁴	
Continuing Calibration (Prior to each 12 hr. shift) Sensitivity	TAL Compounds: RRF ≥ 0.050	QSM ⁽¹⁾ QAPP ⁽³⁾	J(pos)/R(ND) if RRF/RF is less than criterion	5B	
Continuing Calibration (Prior to each 12 hr. shift) Stability	%Drift $\leq 30\%$	Method ^{1,2} NFG ³	If $> +/ - 80\%$: J(pos)/R(ND) If -79% to -31% : J(pos) - high bias If 31% to 79% : J(pos)/UJ(ND) - low bias	5B (H,L) ⁴	QSM states that analysis cannot proceed if any CCC fails acceptance criterion.
Blank Contamination					
Method Blank (MB)	MB: One per matrix per batch of (of ≤ 20 samples) No detected compounds $> \text{RL}$	Method ^{1,2} NFG ³	U(pos) if result is $< 5\text{X}$ or 10X action level, as per analyte.	7	10X action level applies to bis(2-ethylhexyl) phthalate only. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review FB, qualify as needed
	No TICs present		R(pos) TICs using 10X rule	7	
Field Blank (FB)	FB: frequency as per QAPP No detected compounds $> \text{RL}$	Method ^{1,2} NFG ³	U(pos) if result is $< 5\text{X}$ or 10X action level, as per analyte.	6	

Polycyclic Aromatic Hydrocarbons (PAH) by GCMS, Method TO17

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy					
LCS	One per lab batch (of ≤ 20 samples) 70% -130%	NFG ³	Qualify all associated samples J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if both %R < LCL - low bias J(pos)/R(ND) if both %R < 10% - very low bias J(pos)/UJ(ND) if one > UCL & one < LCL, with no bias PJ if only one %R outlier	10 (H,L) ⁴	No action if only one spike %R is outside criteria, when LCSD is analyzed. Qualify all associated samples.
LCS/LCSD (RPD)	One set per matrix per batch (of ≤ 20 samples) RPD ≤ 30%	NFG ³	J(pos) assoc. compd. in all samples	9	Qualify all associated samples.
Surrogates	Minimum of 3 acid & 3 base/neutral (B/N) compounds added to all samples Within method control limits	Method ^{1,2} NFG ³	Note: Do not qualify if only 1 acid and/or 1 B/N surrogate is out, unless <10%. *** J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if %R < 10% - very low bias	13 (H,L) ⁴	*** If 1 surrogate outlier < 10% then J(pos)/R(ND) NFG specifies surrogates and CL, and to J(pos)/R(ND) results <20%, EcoChem PJ is J(pos)/R(ND) <10%.
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	Method ^{1,2} NFG ³	J(pos) if > 200% J(pos)/UJ(ND) if < 50% J(pos)/R(ND) if < 25% RT>30 seconds, narrate and notify PM	19	NFG specifies surrogates and CL, and to J(pos)/R(ND) results <20%, EcoChem PJ is J(pos)/R(ND) <10%.
Field Duplicates	RPD ≤30% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Narrate and qualify if required by project (EcoChem PJ) Qualify only field duplicate samples J(pos)/UJ(ND)	9	
Compound ID and Calculation					
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	Method ^{1,2} NFG ³	See Technical Director if outliers are found	14 25 (false pos)	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	Method ^{1,2} NFG ³	NJ the TIC unless: R(pos) common laboratory contaminants See Technical Director for ID issues	4	Common laboratory contaminants: aldol condensation products, solvent preservatives, and reagent contaminants
Calibration Range	Results exceed the upper calibration range	EcoChem standard policy	Qualify J(pos)	20	If result from dilution analysis is not reported.
Calculation Check	Check 10% of field & QC sample results	EcoChem standard policy	Contact laboratory for resolution and/or corrective action	na	Full data validation only.
Electronic Data Deliverable (EDD)					
Verification of EDD to hardcopy data	EcoChem verify @ 10% unless problems noted; then increase level up to 100% for next several packages.	EcoChem standard policy	Depending on scope of problem, correct at EcoChem (minor issues) to resubmittal by laboratory (major issues).	na	EcoChem Project Manager and/or Database Administrator will work with lab to provide long-term corrective action.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 Rev. 1 EcoChem Policy for Rejection/Selection Process for Multiple Results

(pos): Positive Result(s)
(ND): Non-detects¹ Compendium Method TO-17, Determination of Volatile Organic Compounds (VOCs) in Ambient Air Using Active Sampling Onto Sorbent Tubes, Second Edition, January 1999. EPA/625/R-96/010b² Air Toxics/Eurofin SOP: Analysis of Volatile and Semivolatile Organic Compounds in Vapor by Thermal Desorption GC/MS Full Scan Using Modified EPA Method TO-17 (SOP 109)³ National Functional Guidelines for Organic Data Review, June, 2008⁴ "H" = high bias indicated; "L" = low bias indicated



DATA VALIDATION REPORT NEWMAN'S CHEVRON

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December 22, 2022

Approved for Release:

A handwritten signature in black ink, appearing to read "Christine Ransom". The signature is written in a cursive style with a long horizontal flourish extending to the right.

Christine Ransom
Senior Project Chemist
EcoChem, Inc.

PROJECT NARRATIVE

Basis for the Data Validation

This report summarizes the results of summary validation (EPA Stage 2B) performed on soil vapor, indoor air, outdoor air, crawl space air, soil, and associated quality control sample data for the Newman's Chevron project. A cross-reference of field and laboratory IDs is provided in the **Sample Index**.

The TO-17 analysis was performed by Eurofins Air Toxics, Folsom, California. All other analyses were performed by Eurofins, Lancaster, Pennsylvania. The analytical methods and EcoChem project chemists are listed in the following table:

ANALYSIS	METHOD	PRIMARY REVIEW	SECONDARY REVIEW
Naphthalene	TO-17	E. Clayton	C. Ransom
BTEX	8260D		
SVOC	8270E		
Gasoline Range Hydrocarbons	NWTPH-Gx		
Diesel Range Hydrocarbons	NWTPH-Dx		
Lead	6010D		

The data were reviewed using guidance and quality control criteria documented in the analytical methods; *Final Remedial Investigation Work Plan Newman's Chevron* (Leidos, July 2018); *Final Remedial Investigation Work Plan Newman's Chevron, Addendum 4* (Leidos, August 2022); *National Functional Guidelines for Organic Data Review* (USEPA 2017, 2020); and *National Functional Guidelines for Inorganic Data Review* (USEPA 2017, 2020).

EcoChem's goal in assigning data assessment qualifiers is to assist in proper data interpretation. If values are estimated (J or UJ), data may be used for site evaluation and risk assessment purposes but reasons for data qualification should be taken into consideration when interpreting sample concentrations. Data that have been rejected are flagged with (R). Rejected data should not be used for any purpose. If values have no data qualifier assigned, then the data meet the data quality objectives as stated in the documents and methods referenced above. No data were qualified.

Validation criteria are included as **Appendix A**. Data Validation Worksheets and project associated communications will be kept on file at EcoChem, Inc. A verified laboratory electronic data deliverable (EDD) is also submitted.

Sample Index
Newman's Chevron

SDG	Sample ID	Lab ID	TO17	BETX	SVOC	NWTPH-Gx	NWTPH-Dx	LEAD	TOTAL SOLIDS
2210220	OA-1-100622	2210220-01A	✓						
2210220	OA-2-100622	2210220-02A	✓						
2210220	OA-3-100622	2210220-03A	✓						
2210220	IA-1-100622	2210220-04A	✓						
2210220	IA-2-100622	2210220-05A	✓						
2210220	IA-3-100622	2210220-06A	✓						
2210220	CSA-1-100622	2210220-07A	✓						
2210220	CSA-2-100622	2210220-08A	✓						
2210220	CSA-B-100622	2210220-09A	✓						
2210220	FB-1-100622	2210220-10A	✓						
2210220	SSVP-1-100622	2210220-11A	✓						
2210220	SSVP-2-100622	2210220-12A	✓						
2210220	SSVP-3-100622	2210220-13A	✓						
2210220	SVP-8-100622	2210220-14A	✓						
2210220	FB-2-100622	2210220-15A	✓						
J96601-1	SVP-8-S-5-220826	410-96601-1		✓	✓	✓	✓	✓	✓

DATA VALIDATION REPORT

Newman's Chevron

Naphthalene by EPA TO-17 GCMS

This report documents the review of analytical data from the analysis of soil vapor, indoor air, outdoor air, and crawl space air samples and the associated laboratory and field quality control (QC) samples. Samples were analyzed by Eurofins Air Toxics, Folsom, California. Refer to the **Sample Index** for a complete list of samples.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
2210220	13 Soil Vapor, 2 Field Blank	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

The Internal Standard (IS) summary form has the control limits for bromochloromethane, but the IS values reported for the samples are for bromofluorobenzene, which is the IS associated with naphthalene. All IS area responses were within the control limits.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	GC/MS Instrument Performance (Tune)	1	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration (ICAL)	✓	Internal Standards
✓	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Target Analyte List
1	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

Two field blanks, FB-1-100622 and FB-2-100622, were submitted. Naphthalene was not detected in these blanks.

Sample CSA-B-100622 was collected as a field blank and was associated with the crawl space samples. Naphthalene was detected in this sample. A review of the sampling method indicated that this was not a true equipment blank; therefore, no data were qualified based on the result for this blank.

Matrix Spike/Matrix Spike Duplicates

Matrix spikes were not analyzed. Laboratory precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) and surrogate results.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate and LCS/LCSD recovery values and precision was acceptable as demonstrated by the LCS/LCSD relative percent difference value.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Naphthalenes by SW8270E

This report documents the review of analytical data from the analysis of one soil sample and the associated laboratory quality control (QC) samples. The analysis was performed by Eurofins, Lancaster, Pennsylvania. Refer to the **Sample Index** for a cross-reference of sample IDs.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
J96601-1	1 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS)
✓	GC/MS Instrument Performance (Tune)	1	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration (ICAL)	✓	Internal Standards
1	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Target Analyte List
1	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Continuing Calibration

For the calibration verification (CCAL) analyzed on 9/12/22 @ 11:03, the retention time for the internal standard Naphthalene-d8 was outside the ± 30 second window established from the initial calibration. Since the internal standard retention time for the sample and QC samples were within the ± 30 second window established from the associated CCAL, data was judged as not impacted. No qualifiers were assigned.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spikes were not analyzed. Accuracy was evaluated using the laboratory control sample and surrogate recoveries. Laboratory precision could not be evaluated.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate and laboratory control sample percent recovery values. Precision could not be evaluated.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Volatile Organic Compounds by SW8260D

This report documents the review of analytical data from the analysis of one soil sample and the associated laboratory quality control (QC) samples. The analysis was performed by Eurofins, Lancaster, Pennsylvania. Refer to the **Sample Index** for a cross-reference of sample IDs.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
J96601-1	1 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	GC/MS Instrument Performance (Tune)	1	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Initial Calibration (ICAL)	1	Field Duplicates
✓	Continuing Calibration (CCAL)	✓	Internal Standards
✓	Laboratory Blanks	✓	Target Analyte List
1	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spikes were not analyzed. Accuracy and precision were evaluated using the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) and surrogate results.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate and LCS/LCSD recovery values and precision was acceptable as demonstrated by the LCS/LCSD relative percent difference values.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT
Newman's Chevron
Diesel Range Organics by NWTPH-Dx

This report documents the review of analytical data from the analysis of one soil sample and the associated laboratory quality control (QC) samples. The analysis was performed by Eurofins, Lancaster, Pennsylvania. Refer to the **Sample Index** for a cross reference of sample IDs.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
J96601-1	1 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

The original lab report did not contain the initial and continuing calibration information. The lab was contacted and submitted a revised report.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	✓	Laboratory Control Samples (LCS)
✓	Initial Calibration (ICAL)	1	Matrix Spikes (MS)
✓	Continuing Calibration (CCAL)	✓	Laboratory Duplicates
✓	Laboratory Blanks	1	Field Duplicates
1	Field Blanks	✓	Reporting Limits
✓	Surrogate Compounds	✓	Reported Results

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted.

Matrix Spikes

Matrix Spike/matrix spike duplicates were not analyzed. Accuracy was evaluated using the laboratory control sample and surrogate recoveries. Precision could not be assessed.

Field Duplicates

No field duplicates were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. Accuracy was acceptable as demonstrated by the surrogate and laboratory control sample recovery values. Precision could not be assessed.

No data were qualified for any reason.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Gasoline Range Organics by NWTPH-Gx

This report documents the review of analytical data from the analysis of one soil sample and the associated laboratory quality control (QC) samples. The analysis was performed by Eurofins, Lancaster, Pennsylvania. Refer to the **Sample Index** for a cross-reference of sample IDs.

SDG	NUMBER OF SAMPLES	VALIDATION LEVEL
J96601-1	1 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

The Result_Parameter_Name field was incorrectly populated as "Diesel Range Organics". It was corrected to "Gasoline Range Organics".

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Preservation and Holding Times	✓	Laboratory Control Samples (LCS/LCSD)
✓	Initial Calibration (ICAL)	1	Matrix Spike/Matrix Spike Duplicates (MS/MSD)
✓	Continuing Calibration (CCAL)	1	Field Duplicates
✓	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Reported Results
2	Surrogate Compounds		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted.

Matrix Spike/Matrix Spike Duplicates

Matrix spikes were not analyzed. Precision and accuracy were evaluated using the laboratory control sample/laboratory control sample duplicate (LCS/LCSD) and surrogate results.

Field Duplicates

No field blanks were submitted.

Surrogate Compounds

The recovery value for the surrogate compound a,a,a-Trifluorotoluene in the field sample was greater than the upper control limit of 150%; the sample result was estimated (J-13H).

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical method. With the exception noted above, accuracy was acceptable, as demonstrated by the surrogate and LCS/LCSD percent recovery values. Precision was also acceptable as demonstrated by the LCS/LCSD relative percent difference value.

The sample result was estimated due to a surrogate recovery outlier.

All data, as reported, are acceptable for use.

DATA VALIDATION REPORT

Newman's Chevron

Lead by SW6010D and Percent Solids

This report documents the review of analytical data from the analysis of one soil sample and the associated laboratory quality control (QC) samples. The analyses were performed by Eurofins, Lancaster, Pennsylvania. Refer to the **Sample Index** for a cross reference of sample IDs.

SDG	NUMBER OF SAMPLES AND MATRIX	VALIDATION LEVEL
J96601-1	1 Soil	Stage 2B

DATA PACKAGE COMPLETENESS

The laboratory submitted all required deliverables. The laboratory followed adequate corrective action processes and all anomalies were discussed in the case narrative.

EDD TO HARDCOPY VERIFICATION

All sample IDs and results reported in the electronic data deliverable (EDD) were verified (10% verification) by comparing the EDD to the laboratory data package.

The percent moisture data was not included in the EDD. The data was added during validation.

TECHNICAL DATA VALIDATION

The QC requirements that were reviewed are listed below.

✓	Sample Receipt, Preservation, and Holding Times	1	Matrix Spikes
✓	Initial Calibration	1	Laboratory Duplicates
✓	Calibration Verification	✓	Interference Check Samples
✓	Reporting Limit Standards	1	Field Duplicates
✓	Laboratory Blanks	✓	Reporting Limits
1	Field Blanks	✓	Reported Results
✓	Laboratory Control Samples (LCS)		

✓ Stated method quality objectives (MQO) and QC criteria have been met. No outliers are noted or discussed.

1 Quality control outliers are discussed below, but no data were qualified.

2 Quality control outliers that impact the reported data were noted. Data qualifiers were issued as discussed below.

Field Blanks

No field blanks were submitted.

Matrix Spikes

Matrix spikes were not analyzed. Accuracy was evaluated using the laboratory control sample (LCS) result.

Laboratory Duplicates

Laboratory duplicates were not analyzed. Laboratory precision could not be evaluated.

Field Duplicates

No field blanks were submitted.

OVERALL ASSESSMENT

As determined by this evaluation, the laboratory followed the specified analytical methods. Accuracy was acceptable as demonstrated by the laboratory control sample recovery. Precision could not be evaluated.

No data were qualified for any reason.

All data, as reported, are acceptable for use.



APPENDIX A

DATA QUALIFIER DEFINITIONS REASON CODES AND CRITERIA TABLES

DATA VALIDATION QUALIFIER CODES **Based on National Functional Guidelines**

The following definitions provide brief explanations of the qualifiers assigned to results in the data review process.

U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis indicates the presence of an analyte that has been “tentatively identified” and the associated numerical value represents the approximate concentration.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

The following is an EcoChem qualifier that may also be assigned during the data review process:

DNR	Do not report; a more appropriate result is reported from another analysis or dilution.
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DATA QUALIFIER REASON CODES

Group	Code	Reason for Qualification
Sample Handling	1	Improper Sample Handling or Sample Preservation (i.e., headspace, cooler temperature, pH, summa canister pressure); Exceeded Holding Times
Instrument Performance	24	Instrument Performance (i.e., tune, resolution, retention time window, endrin breakdown, lock-mass)
	5A	Initial Calibration (RF, %RSD, r^2)
	5B	Calibration Verification (CCV, CCAL; RF, %D, %R) Use bias flags (H,L) ¹ where appropriate
	5C	Initial Calibration Verification (ICV %D, %R) Use bias flags (H,L) ¹ where appropriate
Blank Contamination	6	Field Blank Contamination (Equipment Rinsate, Trip Blank, etc.)
	7	Lab Blank Contamination (i.e., method blank, instrument blank, etc.) Use low bias flag (L) ¹ for negative instrument blanks
Precision and Accuracy	8	Matrix Spike (MS and/or MSD) Recoveries Use bias flags (H,L) ¹ where appropriate
	9	Precision (all replicates: LCS/LCSD, MS/MSD, Lab Replicate, Field Replicate)
	10	Laboratory Control Sample Recoveries (a.k.a. Blank Spikes) Use bias flags (H,L) ¹ where appropriate
	12	Reference Material Use bias flags (H,L) ¹ where appropriate
	13	Surrogate Spike Recoveries (a.k.a. labeled compounds, recovery standards) Use bias flags (H,L) ¹ where appropriate
Interferences	16	ICP/ICP-MS Serial Dilution Percent Difference
	17	ICP/ICP-MS Interference Check Standard Recovery Use bias flags (H,L) ¹ where appropriate
	19	Internal Standard Performance (i.e., area, retention time, recovery)
	22	Elevated Detection Limit due to Interference (i.e., chemical and/or matrix)
	23	Bias from Matrix Interference (i.e. diphenyl ether, PCB/pesticides)
Identification and Quantitation	2	Chromatographic pattern in sample does not match pattern of calibration standard
	3	2 nd column confirmation (RPD or %D)
	4	Tentatively Identified Compound (TIC) (associated with NJ only)
	20	Calibration Range or Linear Range Exceeded
	25	Compound Identification (i.e., ion ratio, retention time, relative abundance, etc.)
Miscellaneous	11	A more appropriate result is reported (multiple reported analyses i.e., dilutions, re-extractions, etc. Associated with "R" and "DNR" only)
	14	Other (See DV report for details)
	26	Method QC information not provided

¹H = high bias indicated

L = low bias indicated

**Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8260C)**

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	4°C±2°C Aqueous: HCl to pH < 2 Current SW846 criterion is ≤ 6° C ⁽³⁾	NFG ⁽¹⁾ Method ⁽³⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use PJ for temp outliers; see TM20 if pH ≤ 2, reject 2-chloroethyl vinyl ether (R-1) some projects may require methanol preserved soils/seds
Holding Time	Aqueous: 14 days preserved 7 Days: unpreserved Solid: 14 Days	NFG ⁽¹⁾ Method ⁽³⁾	J (pos)/UJ (ND) if HT exceeded J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Gross exceedance = > 2x HT, as per 1999 NFG
Instrument Performance					
Tuning	BFB Beginning of each 12 hour period Use method or project acceptance criteria	NFG ⁽¹⁾ Method ⁽³⁾	R (pos/ND) all analytes in all samples associated with the tune	24	
Initial Calibration Sensitivity	Minimum 5 standards RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders * RRF ≥ 0.005 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5A	TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance PJ - no action if response is stable (ICAL RSD and CCAL %D acceptable)
Initial Calibration Stability	%RSD ≤ 20% except: %RSD ≤ 40% poor responders * %RSD ≤ 50% 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %RSD > limit	5A	
Initial Calibration Verification	Second source analyzed immediately after ICAL %R 70% - 130%	Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) %R < LCL	5A (H,L) ⁴	QAPP may have overriding accuracy limits.
Continuing Calibration Sensitivity	RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders * RRF ≥ 0.005 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5B	see ICAL RRF guidance
Continuing Calibration Stability	%D ≤ 25% except: %D ≤ 40% poor responders * %D ≤ 50% 1,4-dioxane	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) - %D > control limit (high bias) J (pos)/UJ (ND) - %D < -control limit (low bias)	5B (H,L) ⁴	

Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8260C)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Blank Contamination					
Method Blank (MB)	<u>MB: One per matrix per batch (of ≤ 20 samples)</u> No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	7	10X action level for methylene chloride, acetone, & 2-butanone. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review TB, qualify as needed #3 - Review FB, qualify as needed Note: Actions as per NFG 1999
	No TICs present		R (pos) TICs using 10X rule		
Trip Blank (TB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	
Field Blank (FB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	
Precision and Accuracy					
LCS/LCSD (recovery)	One per matrix per batch (of ≤ 20 samples) LCSD not required by NFG or method Use method acceptance criteria/laboratory limits	Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND)%R < 10%	10 (H,L) ⁴	No action if only one spike %R is outside criteria when LCSD is analyzed, unless one recovery is <10%. QAPP may have overriding accuracy limits.
LCS/LCSD RPD	If LCSD analyzed RPD < lab limits	Method ⁽³⁾	J (pos)	9	Qualify all associated samples. QAPP may have overriding precision limits.
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ⁴	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Surrogates	Added to all samples Within method/laboratory control limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %R >UCL J (pos)/UJ (ND) if %R <LCL J (pos)/R (ND) if <10%	13 (H,L) ⁴	No action if there are 4+ surrogates and only 1 outlier Qualify all compounds if qualification is required.
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if > 200% J (pos)/UJ (ND) if < 50% J (pos)/R (ND) if < 25% if RT >30 seconds use PJ	19	Qualify compounds quantified using particular internal standard

**Volatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8260C)**

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy (continued)					
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) if both %R < LCL J (pos)/R (ND) if both %R < 10% J (pos)/UJ (ND) if one > UCL & one < LCL, with no bias	8 (H,L) ⁴	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only.
MS/MSD (RPD)	One per matrix per batch (of ≤ 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) If RPD > control limit	9	Qualify parent sample only
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified
Compound Identification and Quantitation					
Retention Time Relative Ion Intensities	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	NFG ⁽¹⁾ Method ⁽³⁾	U (pos) if identification criteria not met	25	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NFG ⁽¹⁾ Method ⁽³⁾	NJ TIC R (pos) if common laboratory contaminants	4	Common laboratory contaminants: aldol condensation products, solvent preservatives, and reagent contaminants
Calibration Range	Results greater than highest calibration standard	EcoChem standard policy	Qualify J (pos)	20	If result from dilution analysis is not reported.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Organic Data Review, June, 2008² National Functional Guidelines for Organic Data Review, Oct, 1999³ Method SW846 8260C Volatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS)⁴ NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

* "Poor responder" compounds: Acetone, 2-butanone, carbon disulfide, chloroethane, chloromethane, cyclohexane, 1,2-dibromoethane, dichlorodifluoromethane, cis-1,2-dichloroethene, 1,2-dichloropropane, 1,2-dibromo-3-chloropropane, 2-hexanone, isopropylbenzene, methyl acetate, methylene chloride, methylcyclohexane, 4-methyl-2-pentanone, methyl tert-butyl ether, trans-1,2-dichloroethene, trichlorofluoromethane, 1,1,2-trichloro-1,2,2-trifluoroethane **criterion is 0.010 RRF**; 1,4-dioxane RRF **criterion is 0.005**.

(pos): Positive Result

(ND): Non-detect

Volatile Organics in Air by GCMS and GCMS-SIM, Method TO-15

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	SUMMA Canister - no preservation requirements				
SUMMA Canister Pressure	Pressure of Canister upon receipt at lab should be between 5-10 inches of Hg or greater of vacuum	Method ^{1,2}	If vacuum is > 8 inch Hg or < 1 inch Hg, note in report.	1	Professional judgment
Holding Time	30 days from collection to analysis	Method ¹	J(pos)/UJ(ND) if HT exceeded J(pos)/R(ND) if gross exceedance (> 2X HT)	1	Gross exceedance = > 2X HT, as per 1999 NFG
Instrument Performance					
Tuning	BFB Beginning of each 24 hour period Use method acceptance criteria (Table 3)	Method ¹	R(pos/ND) all analytes in all samples associated with the tune	5A	every 24 hours or every 20 samples (Section 10.4.2 of method) TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance
Initial Calibration (Minimum 5 stds.) Sensitivity	RRF \geq 0.05 Note: not discussed in method. Default to NFG criteria.	NFG ³	J(pos)/R(ND) if RRF/RF is less than criterion		
Initial Calibration (Minimum 5 stds.) Stability	%RSD \leq 30% with up to 2 compounds max 40%; OR Linear $r \geq 0.995$ or $r^2 \geq 0.990$ (6 points must be used) (NFG optional criteria)	Method ¹ NFG ³	J(pos) if %RSD > 30% OR r/r2-value < 0.995 (or 0.990)		
Initial Calibration Verification (ICV) Stability	Not required by method. Standard from independent source Analyzed immediately after ICAL If analyzed, use lab or QAPP limits		J(pos) if high bias J(pos)/UJ(ND) if low bias J(pos)/R(ND) if significant low bias		
Continuing Calibration (Prior to each 24 hr. shift) Sensitivity	RRF \geq 0.05 Note: not discussed in method. Default to NFG criteria.	NFG ³	J(pos)/R(ND) if RRF/RF is less than criterion	5B	
Continuing Calibration (Prior to each 24 hr. shift) Stability	%Drift \leq 30%	Method ¹	If > +/- 70%: J(pos)/R(ND) If -69% to -31%: J(pos) (high bias) If 31% to 69%: J(pos)/UJ(ND) (low bias)	5B (H,L) ⁴	

Volatile Organics in Air by GCMS and GCMS-SIM, Method TO-15

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Blank Contamination					
Method Blank (MB)	MB: One per batch of (of ≤ 20 samples) No detected compounds > MDL	Method ¹ NFG ³	U(pos) if result is < 5X or 10X action level, as per analyte.	7	10X action level for methylene chloride, acetone, & 2-butanone. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review FB, qualify as needed
	No TICs present		R(pos) TICs using 10X rule		
Field Blank (FB)	FB: frequency as per QAPP No detected compounds > MDL	Method ¹ NFG ³	U(pos) if result is < 5X or 10X action level, as per analyte.	6	
Precision and Accuracy					
LCS	One per lab batch (of ≤ 20 samples) Note: not discussed in method. Default to lab or QAPP limits.	NFG ³	Qualify all associated samples J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if both %R < LCL - low bias J(pos)/R(ND) if both %R < 10% - very low bias J(pos)/UJ(ND) if one > UCL & one < LCL, with no bias	10 (H,L) ⁴	No action if only one spike %R is outside criteria, when LCSD is analyzed. Qualify all associated samples.
LCS/LCSD (RPD)	if analyzed RPD $\leq 30\%$	NFG ³	J(pos) assoc. cmpd. in all samples	9	Qualify all associated samples.
Surrogates	Note: not discussed in method. Default to lab or QAPP limits.	NFG ³	J(pos) if %R > UCL - high bias J(pos)/UJ(ND) if %R < LCL - low bias J(pos)/R(ND) if < 10% - very low bias	13 (H,L) ⁴	Note: No action if there are 4+ surrogates and only 1 outlier.
Internal Standards	Added to all samples Acceptable Range: IS area $\pm 40\%$ of CCAL area RT within 20 seconds of mean RT over ICAL range RT within 0.33 minutes of CC RT	Method ¹ NFG ³	J(pos) if > 140% J(pos)/UJ(ND) if < 60% J(pos)/R(ND) if < 25% RT > 0.33 mins, narrate and notify PM	19	
Field Duplicates	RPD $\leq 25\%$ OR difference < 1X RL (for results < 5X RL)	Method ¹ EcoChem standard policy	Narrate and qualify if required by project (EcoChem PJ) Qualify only field duplicate samples J(pos)/UJ(ND)	9	
Compound ID and Calculation					
Quantitation/ Identification	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	Method ¹ NFG ³	See Technical Director if outliers are found	14 25 (false pos)	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	Method ¹ NFG ³	NJ the TIC unless: R(pos) common laboratory contaminants See Technical Director for ID issues	4	Common laboratory contaminants: aldol condensation products, solvent preservatives, and reagent contaminants
Calibration Range	Results exceed the upper calibration range	EcoChem standard policy	Qualify J(pos)	20	If result from dilution analysis is not reported.
Calculation Check	Check 10% of field & QC sample results	EcoChem standard policy	Contact laboratory for resolution and/or corrective action	na	Full data validation only.

Volatile Organics in Air by GCMS and GCMS-SIM, Method TO-15

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Electronic Data Deliverable (EDD)					
Verification of EDD to hardcopy data	EcoChem verify @ 10% unless problems noted; then increase level up to 100% for next several packages.	EcoChem standard policy	Depending on scope of problem, correct at EcoChem (minor issues) to resubmittal by laboratory (major issues).	na	EcoChem Project Manager and/or Database Administrator will work with lab to provide long-term corrective action.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 Rev. 1 EcoChem Policy for Rejection/Selection Process for Multiple Results

(pos): Positive Result(s)
 (ND): Non-detects

- ¹ Compendium Method TO-15, Determination of Volatile Organic Compounds (VOCs) in Air Collected In Specially-Prepared Canisters And Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), Second Edition, January 1999. EPA/625/R-96/010b
- ¹ Supplement to EPA Compendium Method TO-15. Reduction of Method Detection Limits to Meet Vapor Intrusion Monitoring Needs. E.H. Daughtrey Jr., K.D. Oliver, H.H. Jacumin Jr., and W.A. McClenny, 2/18/2009.
- ¹ ASTM D1945 - 03 Standard Test Method for Analysis of Natural Gas by Gas Chromatography. January 1, 2010.
- ² Air Toxics Ltd: Guide to Air Sampling and Analysis
- ³ National Functional Guidelines for Organic Data Review, June, 2008
- ⁴ "H" = high bias indicated; "L" = low bias indicated

DATA VALIDATION CRITERIA

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
 (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler/Storage Temperature Preservation	4°C±2°C sediment/tissues may require storage at -20°C	NFG ⁽¹⁾ Method ⁽³⁾	If required by project: J (pos)/UJ (ND) if greater than 6° C	1	Use PJ for temp outliers; see TM20 Current SW846 criterion is ≤ 6° C ⁽³⁾
Holding Time	Extraction Aqueous: 7 days from collection Extraction Solid: 14 days from collection Analysis (all matrices): 40 days from extraction Holding time may be extended to 1 year for frozen sediments/tissues	NFG ⁽¹⁾ Method ⁽³⁾	J (pos)/UJ (ND) if HT exceeded J (pos)/R (ND) if gross exceedance (> 2x HT)	1	Gross exceedance = > 2x HT, as per 1999 NFG
Instrument Performance					
Tuning	DFTPP Beginning of each 12 hour period Use method or project acceptance criteria	NFG ⁽¹⁾ Method ⁽³⁾	R (pos/ND) all analytes in all samples associated with the tune	24	
Initial Calibration Sensitivity	RRF ≥ 0.05 except: RRF ≥ 0.01 poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5A	TM-06 EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance PJ - no action if response is stable (ICAL RSD and CCAL %D acceptable)
Initial Calibration Stability	Minimum 5 standards %RSD ≤ 20.0% except: %RSD ≤ 40.0% poor responders * or co-efficient of determination (r ²) > 0.99	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %RSD > limit or r ² value <0.99	5A	
Initial Calibration Verification Check	Prepared from second source; analyze after each ICAL Percent recovery limits = 70-130%	Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) %R < LCL	5A (H,L) ⁴	QAPP may have overriding accuracy limits.

DATA VALIDATION CRITERIA

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
 (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Instrument Performance (continued)					
Continuing Calibration Sensitivity	RRF \geq 0.05 except: RRF \geq 0.01 poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	Use PJ to qualify J (pos)/UJ (ND)	5B	see ICAL RRF guidance
Continuing Calibration Stability	Prior to sample analysis and every 12 hours %D \leq 25% except: %D \leq 40.0% poor responders *	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) - %D > control limit (high bias) J (pos)/UJ (ND) - %D < -control limit (low bias)	5B (H,L) ⁴	
Blank Contamination					
Method Blank (MB)	MB: One per matrix per batch of (of \leq 20 samples) No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U(pos) if result is < 5X or 10X action level	7	10X action level applies to phthalates only. 5X for all other target analytes Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review FB , qualify as needed Note: Actions as per 1999 NFG
	No TICs present		R (pos) TICs using 10X rule	7	
Field Blank (FB)	No detected compounds > MDL	NFG ⁽²⁾ Method ⁽³⁾	U (pos) if result is < 5X or 10X action level	6	
Precision and Accuracy					
LCS/LCSD (recovery)	One per matrix per batch (of \leq 20 samples) LCSD not required by NFG or method Use method acceptance criteria/laboratory limits	Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND)%R < 10%	10 (H,L) ⁴	No action if only one spike %R is outside criteria when LCSD is analyzed, unless one recovery is <10%. QAPP may have overriding accuracy limits. Qualify all associated samples.
LCS/LCSD (RPD)	If LCSD analyzed RPD < lab limits	Method ⁽³⁾	J (pos)	9	Qualify all associated samples. QAPP may have overriding precision limits.

DATA VALIDATION CRITERIA

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
 (Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy (continued)					
Reference Material (RM, SRM, or CRM)	Result \pm 20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ⁴	QAPP may have overriding accuracy limits. Some manufacturers have different RM control limits
MS/MSD (recovery)	One per matrix per batch (of \leq 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) %R > UCL J (pos)/UJ (ND) if both %R < LCL J (pos)/R (ND) if both %R < 10% J (pos)/UJ (ND) if one > UCL & one < LCL, with no bias	8 (H,L) ⁴	No action if only one spike %R is outside criteria. No action if parent concentration is >4x the amount spiked. Qualify parent sample only.
MS/MSD (RPD)	One per matrix per batch (of \leq 20 samples) Use method acceptance criteria/laboratory limits	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) in parent sample if RPD > CL	9	Qualify parent sample only
Surrogates	Minimum of 3 acid & 3 base/neutral (B/N) compounds added to all samples Within method control limits	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if %R > UCL J (pos)/UJ (ND) if %R < LCL J (pos)/R (ND) if %R < 10%	13 (H,L) ⁴	Qualify all compounds in associated fraction. Do not qualify if only 1 acid and/or 1 B/N surrogate is out, unless <10%. If 1 surrogate outlier < 10% then J (pos)/R (ND)
Internal Standards	Added to all samples Acceptable Range: IS area 50% to 200% of CCAL area RT within 30 seconds of CC RT	NFG ⁽¹⁾ Method ⁽³⁾	J (pos) if > 200% J (pos)/UJ (ND) if < 50% J (pos)/R (ND) if < 25% if RT >30 seconds use PJ	19	Qualify compounds quantified using particular internal standard
Field Duplicates	Solids: RPD < 50% OR difference < 2X RL (for results < 5X RL) Aqueous: RPD < 35% OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	J (pos)/UJ (ND) Qualify only parent and field duplicate samples	9	Use project limits if specified

Semivolatile Organic Compounds by Gas Chromatography-Mass Spectroscopy (GC-MS)
(Based on NFG 1999 & 2008 and SW-846 Method 8270D)

QC Element	Acceptance Criteria	Source of Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Identification and Quantitation and Calculation					
Retention times and relative ion intensities	RRT within 0.06 of standard RRT Ion relative intensity within 20% of standard All ions in std. at > 10% intensity must be present in sample	NFG ⁽¹⁾ Method ⁽³⁾	U (pos) if identification criteria not met	25	
TICs	Major ions (>10%) in reference must be present in sample; intensities agree within 20%; check identification	NFG ⁽¹⁾ Method ⁽³⁾	NJ the TIC unless: R (pos) common laboratory contaminants	4	
Calibration Range	Results greater than highest calibration standard	EcoChem standard policy	Qualify J (pos)	20	If result from dilution analysis is not reported.
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Organic Data Review, June, 2008

(pos): Positive Result(s)

² National Functional Guidelines for Organic Data Review, October, 1999

(ND): Non-detects

³ Method SW846 8270D Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 4, February 2007.

⁴ NFG 2013 suggests using "+ / -" to indicate bias; EcoChem has chosen "H" = high bias indicated; "L" = low bias indicated.

* "Poor responder" compounds: acetophenone, atrazine, benzaldehyde, 1,1'-biphenyl, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, caprolactam, carbazole, 4-chloroaniline, diethylphthalate, di-n-butylphthalate, 3-3'-dichlorobenzidine, dimethylphthalate, 2,4-dinitrophenol, 4,6-dinitro-2-methylphenol, di-n-octylphthalate, hexachlorobutadiene, hexachlorocyclopentadiene, 2-nitroaniline, 3-nitroaniline, 4-nitroaniline, 4-nitrophenol, N-nitrosodiphenylamine, 2,2'-oxybis-(1-chloropropane), 1,2,4,5-tetrachlorobenzene use a 0.010 RRF criterion.

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Gasoline Range
(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Gx,
June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling				
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6°C	1	
Holding Time	Waters: 14 days preserved 7 days unpreserved Solids: 14 Days	J(+)/UJ(-) if hold times exceeded J(+)/R(-) if exceeded > 3X	1	Professional Judgement
Instrument Performance				
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: $r^2 \geq 0.990$ If used, RSD of response factors $\leq 20\%$	Narrate if fewer than 5 calibration levels or if %R > 15% J(+)/UJ(-) if $r^2 < 0.990$ J(+)/UJ(-) if %RSD > 20%	5A	
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 80% to 120%	Narrate if frequency not met. J(+)/UJ(-) if %R < 80% J(+) if %R > 120%	5B	
Blank Contamination				
Method Blank	At least one per batch (≤ 10 samples) No results > RL	U (at the RL) if sample result is < RL & < 5X blank result.	7	
		U (at reported sample value) if sample result is \geq RL and < 5X blank result	7	
Trip Blank (if required by project)	No results > RL	Action is same as method blank for positive results remaining in trip blank after method blank qualifiers are assigned.	18	
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in field blank after method and trip blank qualifiers are assigned.	6	

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Gasoline Range
(Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Gx,
June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10%	10	Professional Judgement
Surrogates	Bromofluorobenzene and/or 1,4-difluorobenzene added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP EcoChem default: water: RPD < 35% solids: RPD < 50%	Narrate outliers If required by project, qualify with J(+)/UJ(-)	9	
Compound ID and Calculation				
Two analyses for one sample (e.g., dilution)	Report only one result per analyte	"DNR" (or client requested qualifier) all results that should not be reported.	11	See EcoChem TM-04

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range
 (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx,
 June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling				
Cooler Temperature & Preservation	4°C±2°C Water: HCl to pH < 2	J(+)/UJ(-) if greater than 6 deg. C	1	
Holding Time	Ext. Waters: 14 days preserved 7 days unpreserved Ext. Solids: 14 Days Analysis: 40 days from extraction	J(+)/UJ(-) if hold times exceeded J(+)/R(-) if exceeded > 3X	1	Professional Judgement
Instrument Performance				
Initial Calibration	5 calibration points (All within 15% of true value) Linear Regression: $r^2 \geq 0.990$ If used, RSD of response factors $\leq 20\%$	Narrate if fewer than 5 calibration levels or if %R > 15% J(+)/UJ(-) if $r^2 < 0.990$ J(+)/UJ(-) if %RSD > 20%	5A	
Mid-range Calibration Check Std.	Analyzed before and after each analysis shift & every 20 samples. Recovery range 85% to 115%	Narrate if frequency not met. J(+)/UJ(-) if %R < 85% J(+) if %R > 115%	5B	
Blank Contamination				
Method Blank	At least one per batch (≤ 20 samples) No results > RL	U (at the RL) if sample result is < RL & < 5X blank result.	7	
		U (at reported sample value) if sample result is \geq RL and < 5X blank result	7	
Field Blanks (if required by project)	No results > RL	Action is same as method blank for positive results remaining in the field blank after method blank qualifiers are assigned.	6	

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range
 (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx,
 June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy				
MS samples (accuracy) (if required by project)	%R within lab control limits	Qualify parent only, unless other QC indicates systematic problems. J(+) if both %R > upper control limit (UCL) J(+)/UJ(-) if both %R < lower control limit (LCL) No action if parent conc. >5X the amount spiked.	8	Use Professional Judgement if only one %R outlier
Precision: MS/MSD or LCS/LCSD or sample/dup	At least one set per batch (≤10 samples) RPD ≤ lab control limit	J(+) if RPD > lab control limits	9	
LCS (not required by method)	%R within lab control limits	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10%	10	Professional Judgement
Surrogates	2-fluorobiphenyl, p-terphenyl, o-terphenyl, and/or pentacosane added to all samples (inc. QC samples). %R = 50-150%	J(+)/UJ(-) if %R < LCL J(+) if %R > UCL J(+)/R(-) if any %R < 10% No action if 2 or more surrogates are used, and only one is outside control limits.	13	Professional Judgement
Pattern Identification	Compare sample chromatogram to standard chromatogram to ensure range and pattern are reasonable match. Laboratory may flag results which have poor match.	J(+)	2	
Field Duplicates	Use project control limits, if stated in QAPP EcoChem default: water: RPD < 35% solids: RPD < 50%	Narrate (Use Professional Judgement to qualify)	9	

EcoChem Validation Guidelines for Total Petroleum Hydrocarbons-Diesel & Residual Range
 (Based on EPA National Functional Guidelines as applied to criteria in NWTPH-Dx,
 June 1997, Wa DOE & Oregon DEQ)

QC Element	Acceptance Criteria	Action for Non-Conformance	Reason Code	Discussion and Comments
Compound ID and Calculation				
Two analyses for one sample (dilution)	Report only one result per analyte	"DNR" (or client requested qualifier) all results that should not be reported.	11	See EcoChem TM-04

Metals by ICP-AES
 (Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Sample Handling					
Cooler / Storage Temperature Preservation	Solid: Cooler temperature 4°C±2°C Aqueous: Nitric Acid to pH < 2 Dissolved Metals: 0.45 µm filter, preserve to pH < 2 after filtration	NFG ⁽¹⁾ Method ⁽²⁾	Cooler Temps: If required by project J (pos)/UJ (ND) if greater than 6° C Aqueous: J (pos)/UJ (ND) if pH > 2	1	Use PJ to qualify for temperature outlier. Current SW846 criterion is ≤ 6° C (4) No quals for pH if samples preserved by lab upon receipt and within 1 day of collection.
Holding Time	All matrices: 180 days from date sampled Frozen soils, sediments, tissues (-20°C) - HT extended to 1 year	NFG ⁽¹⁾ Method ⁽²⁾ EcoChem standard policy	J (pos)/UJ (ND) if holding time exceeded	1	
Instrument Performance					
Initial Calibration (ICAL)	Based on instrument requirements, blank + 1 standard minimum requirement for calibration If more than 1 standard used, r ≥ 0.995	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if r < 0.995	5A	
Initial Calibration Verification (ICV)	Independent source analyzed immediately after calibration %R within ± 10% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R > 111%	5A (H,L) ³	Qualify all samples in run
Reporting Limit (RL) Standard Low Level ICV/CCV	concentration at RL %R = 70%-130%	Method ⁽²⁾	J (pos) < 2x RL / R (ND) if %R < 50% J (pos) < 2x RL / UJ (ND) if %R 50 - 69% J (pos) < 2x RL if %R > 130%	5A (H,L) ³	Qualify all samples in run
Continuing Calibration Verification (CCV)	Immediately following ICV/ICB, then every two hours or ten samples, and at end of run. %R within ± 10% of true value	NFG ⁽¹⁾ Method ⁽²⁾	R (pos/ND) if %R < 75% J (pos)/UJ (ND) if %R 75% - 89% J (pos) if %R > 111%	5B (H,L) ³	Qualify samples bracketed by CCV outliers
Interference Check Samples (ICSA / ICSAB)	ICSAB %R 80% - 120% for all spiked elements ICSA < MDL for all unspiked elements	NFG ⁽¹⁾ Method ⁽²⁾	For samples with Al, Ca, Fe, Mg > ICS levels: ICSAB: J(pos)/R (ND) if %R < 50% J (pos)/UJ (ND) if %R = 50% - 79% J (pos) if %R > 120% ICSA: J (pos) < 2x ICSA/UJ (ND) for ICSA < Neg MDL J (pos) < 2x ICSA for ICSA > MDL	17 (H,L) ³	Use PJ and inter-element correction factors to evaluate ICSA to determine if bias is present. Refer to TM-09 for additional information.

Metals by ICP-AES
 (Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Blank Contamination					
Method Blank (MB)	One per matrix per batch of (of ≤ 20 samples) Blank conc < MDL	NFG ⁽¹⁾ Method ⁽²⁾	U (pos) if result is < 5X method blank concentration	7	Refer to TM-02 for additional information. Blank Evaluation based on NFG 1994
Instrument Blanks (ICB/CCB)	After each ICV & CCV blank concentration < MDL	NFG ⁽¹⁾ Method ⁽²⁾	Action level is 5x absolute value of blank conc. For positive blanks: U (pos) results < action level For negative blanks: J (pos)/UJ (ND) results < action level	Pos Blanks: 7 Neg Blanks: 7L ³	Use blanks bracketing samples for Qualification Refer to TM-02 for additional information. Hierarchy of blank review: #1 - Review MB, qualify as needed #2 - Review IB, qualify as needed #3 - Review FB, qualify as needed
Field Blank (FB)	Blank conc < MDL	EcoChem standard policy	U (pos) if result is < 5x action level, as per analyte.	6	Qualify in associated field samples only. Refer to TM-02 for additional information.
Precision and Accuracy					
LCS (recovery)	One per matrix per batch (of ≤ 20 samples); LCSD not required %R between 80-120%	Method ⁽²⁾	J (pos)/R (ND) if %R < 50% J (pos)/UJ (ND) if %R 50% - 79% J (pos) if %R > 120%	10 (H,L) ³	Qualify all samples in batch QAPP may have overriding accuracy limits. NFG Limits 70% -130% (50% - 150% Ab, Ag)
LCS/LCSD (RPD)	LCSD not required, if analyzed: RPD ≤ 20%	Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	Qualify all samples in batch QAPP may have overriding precision limits.
MS/MSD (recovery)	One per matrix per batch (of ≤ 20 samples); MSD not required %R between 75-125%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if %R > 125% J (pos)/UJ (ND) if %R < 75% J (pos)/R (ND) if %R < 30%, unless post digestion spike analyzed, J (pos)/UJ (ND) if post digestion spike %R OK	8 (H,L) ³	No action if only one spike %R is outside criteria. NA if parent concentration >4x the amount spiked. Qualify all samples in batch. QAPP may have overriding accuracy limits.

DATA VALIDATION CRITERIA

Metals by ICP-AES
 (Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Precision and Accuracy con't					
Post Digestion Spikes	If MS is outside 75-125%, post-spike should be analyzed %R 80%-120% (method); 75%-125% (NFG)	NFG ⁽¹⁾ Method ⁽²⁾	Only used to support MS qualification decisions	NA	No qualifiers assigned based solely on this element.
MS/MSD (RPD)	MSD not required, if analyzed: RPD ≤ 20%	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20%	9	QAPP may have overriding precision limits.
Laboratory Duplicate	One per matrix per batch (of ≤ 20 samples) RPD ≤ 20% for results ≥ 5x RL Solids: difference < 2X RL for results < 5X RL Aqueous: difference < 1X RL for results < 5X RL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if RPD > 20% or if difference > control limit	9	Qualify all samples in batch. QAPP may have overriding precision limits.
Reference Material (RM, SRM, or CRM)	Result ±20% of the 95% confidence interval of the true value for analytes	EcoChem standard policy	J (pos)/UJ (ND) if < LCL J (pos) if > UCL	12 (H,L) ³	QAPP may have overriding accuracy limits. Some manufacturers may have different RM control limits
Serial Dilution	Analyze one sample per matrix at a 5x dilution %D <10% for original sample conc. > 50x MDL	NFG ⁽¹⁾ Method ⁽²⁾	J (pos)/UJ (ND) if %D > 10% and native sample concentration > 50x MDL	16	Qualify all samples in batch.
Field Duplicate	Solids: RPD <50% (for results ≥ 5x RL) OR difference < 2X RL (for results < 5X RL) Aqueous: RPD <35% (for results ≥ 5x RL) OR difference < 1X RL (for results < 5X RL)	EcoChem standard policy	Qualify only parent and field duplicate samples J (pos)/UJ (ND)	9	QAPP may have overriding precision limits. Client/QAPP may not require qualification based on field precision.

Metals by ICP-AES
(Based on Inorganic NFG 2010 and SW-846 6010C)

QC Element	EcoChem Acceptance Criteria	Source of Criteria	EcoChem Action for Non-Conformance	Reason Code	Discussion and Comments
Compound Quantitation					
Total and Dissolved Comparison	Total > Dissolved	EcoChem standard policy	J (pos)/UJ (ND) if Dissolved > Total and results fall outside of standard duplicate precision criteria	14	
Calibration Range	Results < instrument linear range	NFG ⁽¹⁾ Method ⁽²⁾	J (pos) if result exceeds linear range and sample was not diluted	20	
Dilutions, Re-extractions and/or Reanalyses	Report only one result per analyte	EcoChem standard policy	Use "DNR" to flag results that will not be reported.	11	TM-04 EcoChem Policy for Rejection/Selection Process for Multiple Results

¹ National Functional Guidelines for Inorganic Superfund Data Review, January 2010.

² Method SW846 6010C Inductively Coupled Plasma-Atomic Emission Spectrometry (ICP-AES), Revision 3, February 2007.

³ "H" = high bias indicated; "L" = low bias indicated

⁴ SW846, Chapter 3, Inorganic Analytes

(pos): Positive Result

(ND): Not Detected



APPENDIX B

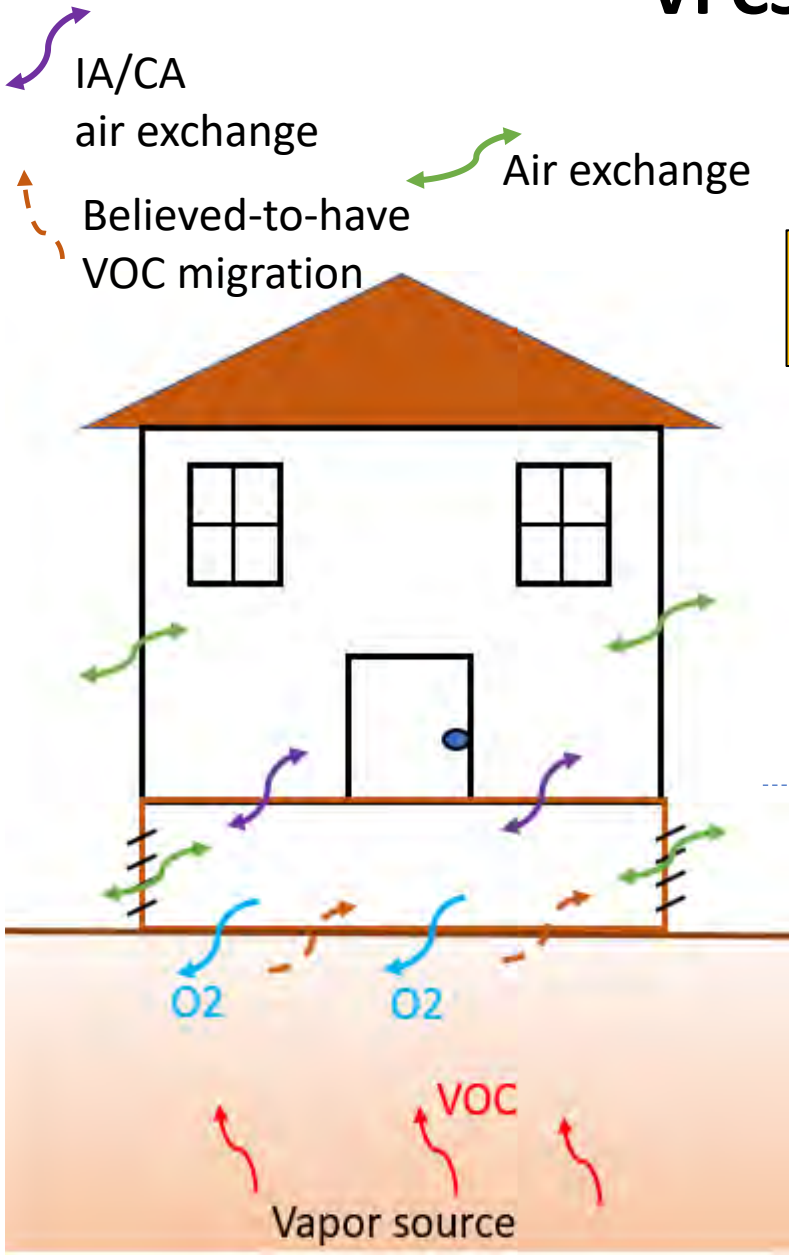
QUALIFIED DATA SUMMARY TABLE

**Qualified Data Summary Table
Newman's Chevron**

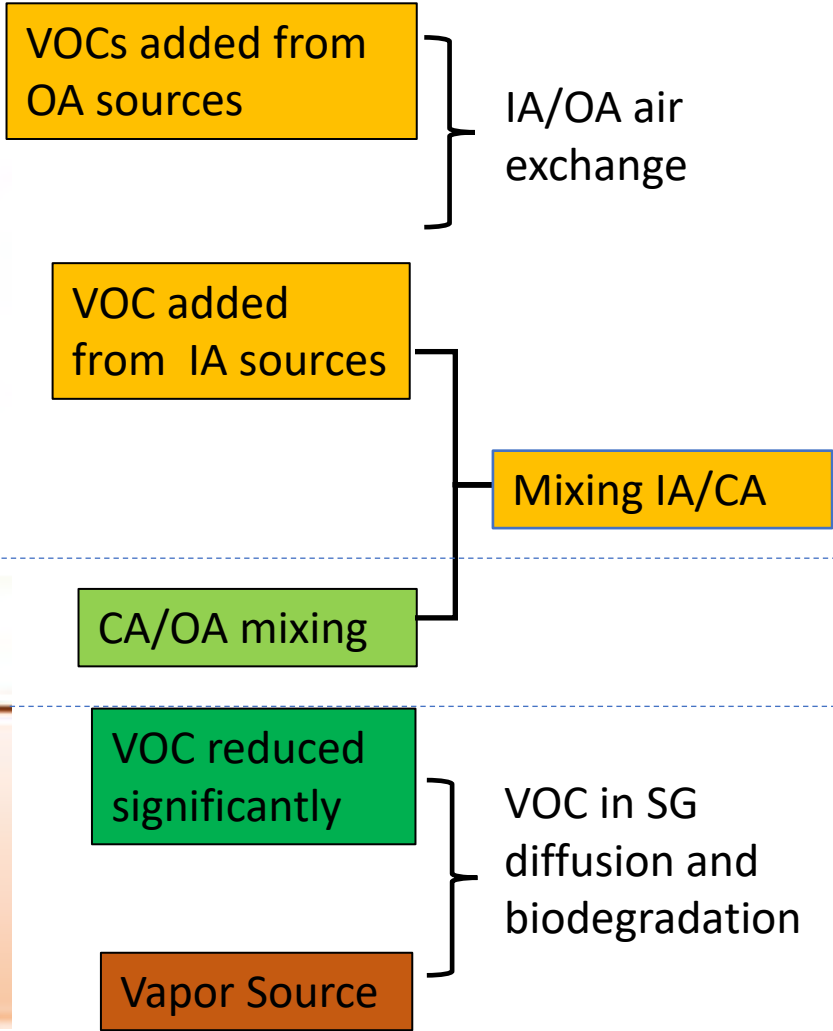
SAMPLE ID	LAB ID	METHOD	ANALYTE	RESULT	UNITS	LAB FLAG	DV QUAL	DV REASON
SVP-8-S-5-220826	410-96601-1	NWTPH-Gx	Gasoline Range Organics	1.0	mg/kg	J cn	J	13H

Appendix F:
VI CSM for Buildings with Crawlspace

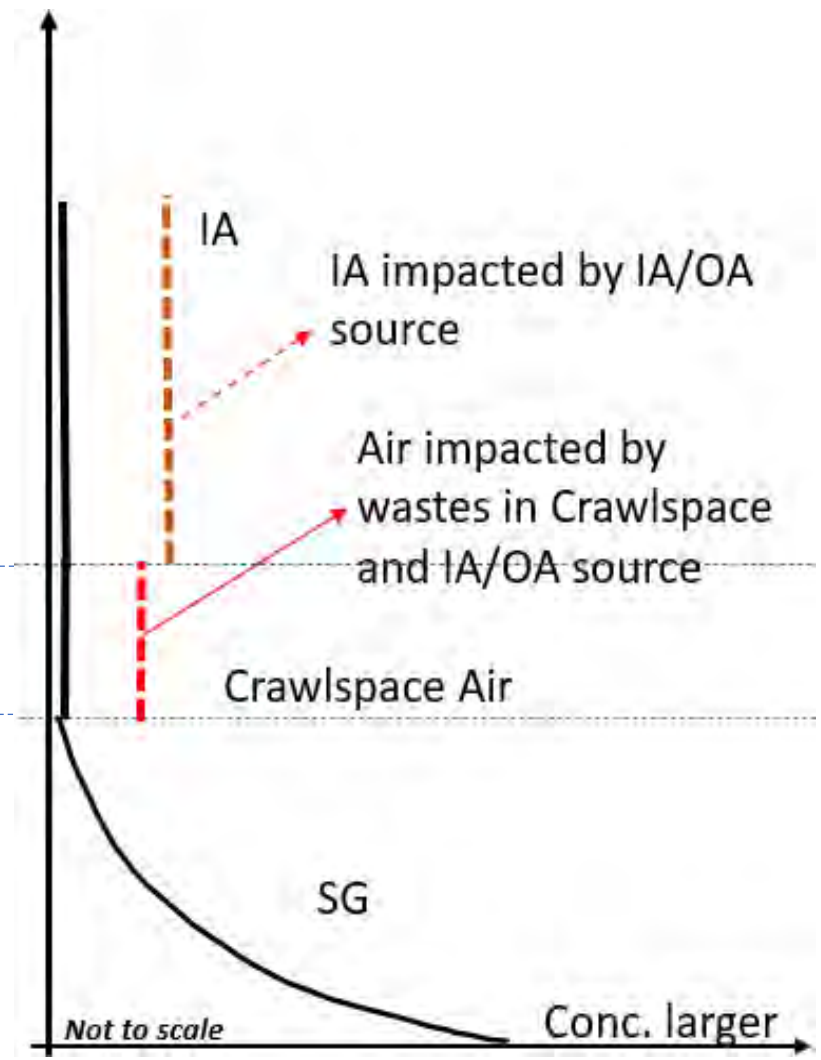
VI CSM for Buildings with Crawlspace



Fate of VOCs



Expected VOC conc.



CA— Crawlspace air

Appendix G:
MTCA TPH 11.1 Workbook Tool Calculations

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 11/05/19
 Site Name: 204117 Newman's Chevron
 Sample Name: SB-5-17.5

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc	Composition
	dry basis	Ratio
	mg/kg	%
<u>Petroleum EC Fraction</u>		
AL_EC >5-6	1.2335	0.52%
AL_EC >6-8	9.67	4.09%
AL_EC >8-10	108	45.64%
AL_EC >10-12	8.3	3.51%
AL_EC >12-16	2.1	0.89%
AL_EC >16-21	1.6	0.68%
AL_EC >21-34	3.15	1.33%
AR_EC >8-10	82.449	34.84%
AR_EC >10-12	2.66	1.12%
AR_EC >12-16	4.4	1.86%
AR_EC >16-21	1.05	0.44%
AR_EC >21-34	1.04545	0.44%
Benzene	0.0115	0.00%
Toluene	0.042	0.02%
Ethylbenzene	0.751	0.32%
Total Xylenes	9.8	4.14%
Naphthalene	0.34	0.14%
1-Methyl Naphthalene		0.00%
2-Methyl Naphthalene		0.00%
n-Hexane	0.0115	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0.0008	0.00%
Benzo(b)fluoranthene	0.00035	0.00%
Benzo(k)fluoranthene	0.00035	0.00%
Benzo(a)pyrene	0.00035	0.00%
Chrysene	0.002	0.00%
Dibenz(a,h)anthracene	0.00035	0.00%
Indeno(1,2,3-cd)pyrene	0.00035	0.00%
Sum	236.6185	100.00%

Notes for Data Entry

Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:

half detection limits for: AL_EC>16-21, AR_EC>16-21, AL_EC>21-34, AR_EC>21-34, AL_EC>5-6, benzene, Benzo(a) pyrene , Benzo(b) fluoranthene, Benzo(k) fluoranthene, Dibenz[a,h] anthracene, Indeno (1,2,3-cd) pyrene, and n-hexane

zero was entered for EDB, EDC, and MTBE because they have never been detected at the site.

double counting avoided for EC fractions

default values used for FOC, dilution factor (20 for unsaturated zone soil)

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.42	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.12	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentration (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value 355 ug/L here:

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 11/5/2019

Site Name: 204117 Newman's Chevron

Sample Name:

Measured Soil TPH Concentration, mg/kg: **236.619**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	3,353	6.32E-09	7.06E-02	Pass
	Method C	63,596	1.50E-09	3.72E-03	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	70	2.10E-06	1.62E+00	Fail
	Target TPH GW Conc. @ 355 ug/L	23	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	3,352.94	63,596.20
Most Stringent Criterion	HI =1	HI =1

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI=1	YES	3.35E+03	8.96E-08	1.00E+00	YES	6.36E+04	4.03E-07	1.00E+00
Total Risk=1E-5	NO	3.74E+05	1.00E-05	1.12E+02	NO	1.58E+06	1.00E-05	2.48E+01
Risk of Benzene= 1E-6	NO	3.74E+05	9.99E-06	1.11E+02	NA			
Risk of cPAHs mixture= 1E-6	NO		1.11E-06	1.24E+01				
EDB	NA		NA	NA				
EDC	NA		NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	HI=1
Protective Ground Water Concentration, ug/L	838.66
Protective Soil Concentration, mg/kg	70.49

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	8.39E+02	7.38E-07	1.00E+00	7.05E+01
Total Risk = 1E-5	NO	1.72E+03	8.58E-06	2.17E+00	100% NAPL
Total Risk = 1E-6	NO	1.00E+03	1.00E-06	1.19E+00	9.82E+01
Risk of cPAHs mixture= 1E-5	NO	1.72E+03	8.58E-06	2.17E+00	100% NAPL
Benzene MCL = 5 ug/L	NO	1.67E+03	6.29E-06	2.06E+00	1.92E+03
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 63000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 355 ug/L	3.55E+02	2.46E-07	4.45E-01	2.25E+01

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 11/04/19

Site Name: 204117 Newman's Chevron

Sample Name: UST-2-8

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc	Composition
	dry basis	Ratio
	mg/kg	%
<u>Petroleum EC Fraction</u>		
AL_EC >5-6	1.368	0.10%
AL_EC >6-8	1.38	0.10%
AL_EC >8-10	12.7	0.95%
AL_EC >10-12	69	5.14%
AL_EC >12-16	550	40.99%
AL_EC >16-21	340	25.34%
AL_EC >21-34	32	2.38%
AR_EC >8-10	9.704	0.72%
AR_EC >10-12	3.497	0.26%
AR_EC >12-16	96	7.15%
AR_EC >16-21	210	15.65%
AR_EC >21-34	15.9977	1.19%
Benzene	0.013	0.00%
Toluene	0.0155	0.00%
Ethylbenzene	0.0105	0.00%
Total Xylenes	0.0255	0.00%
Naphthalene	0.003	0.00%
1-Methyl Naphthalene		0.00%
2-Methyl Naphthalene		0.00%
n-Hexane	0.012	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0.00035	0.00%
Benzo(b)fluoranthene	0.00035	0.00%
Benzo(k)fluoranthene	0.00035	0.00%
Benzo(a)pyrene	0.00035	0.00%
Chrysene	0.0002	0.00%
Dibenz(a,h)anthracene	0.00035	0.00%
Indeno(1,2,3-cd)pyrene	0.00035	0.00%
Sum	1341.7285	100.00%

Notes for Data Entry

Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:

half detection limits for: AL_EC>5-6, AL_EC>6-8, benzene, toluene, ethylbenzene, total xylenes, Benzo(a) anthracene, **Benzo(a) pyrene**, Benzo(b) fluoranthene, Benzo(k) fluoranthene, Chrysene, Dibenz[a,h] anthracene, Indeno (1,2,3-cd) pyrene, and n-hexane

zero was entered for EDB, EDC, and MTBE because they have never been detected at the site

PAH and n-hexane results are from sample SB-17-14.5 which was collected from the same source area

double counting avoided for EC fractions

default values used for FOC, dilution factor (20 for unsaturated zone soil),

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.42	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.12	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentration (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value ug/L here:

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 11/4/2019

Site Name: 204117 Newman's Chevron

Sample Name:

Measured Soil TPH Concentration, mg/kg: **1,341.729**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,477	5.80E-09	5.42E-01	Pass
	Method C	30,616	1.36E-09	4.38E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	100% NAPL	1.43E-06	1.56E-01	Pass
	Target TPH GW Conc. @ 355 ug/L	100% NAPL	NA	NA	Pass

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	2,476.79	30,616.31
Most Stringent Criterion	HI =1	HI =1

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI=1	YES	2.48E+03	1.07E-08	1.00E+00	YES	3.06E+04	3.10E-08	1.00E+00
Total Risk=1E-5	NO	2.31E+06	1.00E-05	9.34E+02	NO	9.88E+06	1.00E-05	3.23E+02
Risk of Benzene= 1E-6	NO	1.87E+06	8.10E-06	7.57E+02	NA			
Risk of cPAHs mixture= 1E-6	NO		1.14E-06	1.07E+02				
EDB	NA		NA	NA				
EDC	NA		NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	NA
Protective Ground Water Concentration, ug/L	NA
Protective Soil Concentration, mg/kg	Soil-to-Ground Water is not a critical pathway!

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	8.65E+01	2.74E-06	1.98E-01	100% NAPL
Total Risk = 1E-5	YES	8.65E+01	2.74E-06	1.98E-01	100% NAPL
Total Risk = 1E-6	YES	7.34E+01	1.00E-06	1.39E-01	7.09E+02
Risk of cPAHs mixture= 1E-5	YES	8.65E+01	2.74E-06	1.98E-01	100% NAPL
Benzene MCL = 5 ug/L	YES	8.65E+01	2.74E-06	1.98E-01	100% NAPL
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 66000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 355 ug/L	8.65E+01	2.74E-06	1.98E-01	100% NAPL