FINAL
REMEDIAL INVESTIGATION WORK PLAN – ADDENDUM 2
NEWMAN'S CHEVRON
2021 6th Street
Bremerton, Washington

November 20, 2019

Prepared for:
Washington State Department of Ecology
3190 160th Ave SE
Bellevue, Washington 98008

Prepared by:
Leidos Inc.
18939 120th Avenue, Suite 112
Bothell, Washington 98011

On Behalf of:
Chevron Environmental Management Company
6001 Bollinger Canyon Road
San Ramon, California 94583

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

and

Victory Business Park L.L.C.
1503 Lower Marine Drive
Bremerton, Washington 98312

leidos

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Russell Shropshire, PE
Principal Engineer

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REMEDIAL INVESTIGATION WORK PLAN – ADDENDUM 2
NEWMAN'S CHEVRON

1 INTRODUCTION AND OBJECTIVES

Leidos, Inc. (Leidos), on behalf of Chevron Environmental Management Company (CEMC), Nordic Properties, Inc., and Victory Business Park L.L.C. (herein collectively referred to as the PLPs), has prepared this addendum (Addendum 2) to the *Final Remedial Investigation Work Plan* (RIWP), dated July 3, 2018, for the Newman's Chevron Site (the Site), located at 2021 6th Street in Bremerton, Washington (Figure 1). The objective of Addendum 2 is to describe the proposed scope of work and methodology to address environmental data gaps that remain following remedial investigation (RI) field activities completed at the Site in July 2019.

RI activities at this Site are being performed pursuant to the requirements of Agreed Order No. DE 14246, which was executed by the Washington State Department of Ecology (Ecology) and the PLPs on February 6, 2018.

Upon Ecology approval of this document, Addendum 2 will become a component of the RIWP and shall be used in conjunction with the Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP) established by the RIWP.

2 SUMMARY OF RI FIELD ACTIVITIES COMPLETED TO DATE

The first phase of RI field activities at the Site was completed by Leidos in August and September 2018. This work included the following RI tasks, which were proposed in the original RIWP (Leidos, 2018):

- On August 22, 2018, a visual inspection of the property and former service station building interior were completed, as well as a utility survey and geophysical investigation to look for evidence of undocumented USTs or other former service station infrastructure below the ground surface.
- The presence of three undocumented underground storage tanks (USTs) was confirmed by shallow air-vacuum excavation in the southwest portion of the Site, and ten shallow soil borings (UST-1 through UST-10) were advanced by hand-auger/air-vacuum excavation and sampled to assess potential petroleum-hydrocarbon impacts to soil in the area of the USTs.
- Twelve soil borings (SB-1 through SB-9 and SVP-1 through SVP-3) were completed and sampled to further evaluate the extent of petroleum-hydrocarbon impacts to soil previously detected in the vicinity of the current UST basin and dispenser islands. In addition, one of these borings (SB-1) was advanced to a depth of approximately 51.5 feet below ground surface (bgs) in order to evaluate the presence of groundwater at the Site; however, groundwater was not encountered.
- Three permanent soil vapor sampling probes (SVP-1 through SVP-3) were installed on the former service station property in August 2018, and soil vapor sampling was completed in September 2018.

Based on the results of the August and September 2018 field events, additional investigation was necessary to further evaluate the extent of petroleum hydrocarbon impacts in soil to the west,

south, and east of the Site, which included the residential property to the east of the Site at 2005/2007 6th Street. Due to the need to extend the RI field activities onto this property, CEMC, on behalf of the PLPs, began efforts to obtain access to the property in January 2019. An access agreement for the property was executed in June 2019.

Additional details regarding the work performed and the results of the August and September 2018 RI field events were presented in the first addendum to the RIWP (Addendum 1), which was prepared by Leidos to summarize the RI data collected to date and propose additional investigation activities to complete the RI. The draft Addendum 1 was approved by Ecology via email, with no requested changes, on June 11, 2019 and a final version was submitted to Ecology on June 13 (Leidos, 2019).

Between July 22 and 25, 2019, Leidos returned to the Site to complete the additional RI field activities proposed in Addendum 1. Soil sampling was completed at 11 soil boring locations (SB-10 through SB-20), which included nine locations proposed in Addendum 1 plus two additional step-out borings (SB-19 and SB-20) that were advanced to the north of the undocumented UST basin in the western portion of the Site. The approximate boring locations are shown on Figure 1.

Soil sampling analytical results for petroleum constituent substances are presented in Table 1. Boring logs for soil borings SB-10 through SB-20 are included in Appendix A.

Laboratory analytical results for the 2019 soil samples indicated that petroleum hydrocarbon constituents were detected at concentrations exceeding Model Toxics Control Act (MTCA) Method A cleanup levels at the following locations:

- SB-11 – Gasoline-range organics (GRO), ethylbenzene, total xylenes, and naphthalene were detected at concentrations of 3,200 milligrams per kilogram (mg/kg), 12 mg/kg, 100 mg/kg, and 11 mg/kg, respectively, at a depth of 20 feet bgs.
- SB-13 – GRO was detected at a concentration of 460 mg/kg at 12 feet bgs.
- SB-16 – GRO was detected at concentrations of 1,500 mg/kg at 9 feet bgs and 78 mg/kg at 13 feet bgs.
- SB-17 – GRO was detected at concentrations of 210 mg/kg at 14.5 feet bgs, 1,400 mg/kg at 19.5 feet bgs, and 140 mg/kg at 24 feet bgs. Diesel-range organics (DRO) were also detected at this location at concentrations of 3,500 mg/kg at 19.5 feet bgs and 2,800 mg/kg at 24 feet bgs.
- SB-20 – GRO was detected at concentrations of 46 mg/kg at 8 feet bgs and 170 mg/kg at 14 feet bgs.

Section 2.1 below provides additional discussion of the soil sampling activities and results for each soil boring location completed during the July 2019 RI field event.

During this field event, Leidos was also able to obtain a liquid sample from the southernmost of the three undocumented USTs. The UST was accessed through an opening present at the top of the tank that was previously uncovered by an air-vacuum excavation boring. A peristaltic pump was then used to collect the liquid sample, which was assigned the sample description "USTSOUTH-CONTENTS-W-190725 Grab Water". Laboratory results indicated that this sample contained DRO at a concentration of 1,400 micrograms per liter (µg/L), which exceeds the MTCA Method A cleanup level (500 µg/L). However, the DRO result for this sample is

considered an estimated value based on data validation results. GRO and heavy-oil-range organics (HRO) were detected at concentrations of 84 µg/L and 160 µg/L, respectively, which are below their Method A cleanup levels. Barium was detected at a concentration of 0.0654 milligrams per liter, which is below the MTCA Method B cleanup level for this compound. No other requested analytes were detected in this sample.

On August 21, 2019, Leidos returned to the Site to evaluate the contents of the two other undocumented USTs. Clearcreek Contractors Inc. (Clearcreek) of Everett, Washington provided access to the USTs via limited-area excavations to expose the top of each tank. Access bungs were located on each tank and the caps were removed, under the supervision of a marine chemist, in order to determine the contents of the tanks. Each tank was determined to have been previously filled with sand. Thus, no samples of the tanks' contents were collected.

2.1 JULY 2019 SOIL BORING DESCRIPTIONS

Soil borings SB-10 through SB-20 were completed in July 2019 to address data gaps regarding the lateral and vertical extent of petroleum-hydrocarbon impacts to soil in the eastern, southern, and western portions of the Site. At each boring location, samples were collected at 2-foot intervals between the ground surface and 8 feet bgs, and continuously using direct-push sampling equipment below 8 feet bgs.

- **SB-10** - Soil boring SB-10 was completed to the east of the former service station property, in the northwest portion of the property at 2005/2007 6th Street. This boring was advanced to an approximate depth of 28 feet bgs. Field screening results for this boring suggested no evidence of petroleum impacts or elevated PID readings. Four soil samples from the boring were submitted for laboratory analysis. Laboratory results indicated that HRO was detected at a concentration of 21 mg/kg in the sample collected at 8 feet bgs. Trace concentrations of toluene were also detected in all four samples from this boring; however, data validation results indicated that these detections were associated with lab blank contamination. All other laboratory results were non-detect.
- **SB-11** - Soil boring SB-11 was also completed on the 2005/2007 6th Street property, to the south of SB-10, to an approximate depth of 28 feet bgs. Field screening results for this boring indicated evidence of petroleum impacts beginning at approximately 14 feet bgs, based on elevated PID readings and a slight sheen, and extending to a depth of at least 24 feet bgs. Five samples from this boring were submitted for laboratory analysis. Laboratory results indicate that low levels of GRO were detected beginning at 10 feet bgs. GRO was detected at a concentration of 3,200 mg/kg in the sample collected at 20 feet bgs; this sample also contained ethylbenzene, total xylenes, and naphthalene at concentrations exceeding MTCA Method A cleanup levels. DRO and BTEX results for the sample collected at 20 feet bgs are considered estimated values based on data validation results.
- **SB-12** - Soil boring SB-12 was completed on the 2005/2007 6th Street property, to the south of SB-11, and also advanced to an approximate depth of 28 feet bgs. Field screening results for this boring suggested no evidence of petroleum impacts or elevated PID readings. Four soil samples from this boring were submitted for laboratory analysis. Trace concentrations of toluene were detected in the samples collected at 14.5, 20, and

27.5 feet bgs; however, similar to SB-10 data validation results indicated that these detections were associated with lab blank contamination. All other laboratory results were non-detect, except for naphthalene, which was detected at a concentration of 3.2 mg/kg at 27.5 feet bgs. A step-out boring was not able to be completed to the east of SB-12 due to equipment access restrictions caused by a large shipping container that was staged on the property.

- **SB-13** - Soil boring SB-13 was completed near the southeastern corner of the Site, in the alley to the south. The intent of this boring was to delineate the southern extent of petroleum impacted soil previously encountered at soil boring SB-5. This boring was advanced to an approximate depth of 28 feet bgs. Field screening results indicated evidence of petroleum impacts beginning at approximately 12 feet bgs, with elevated PID readings and hydrocarbon-like odor extending to a depth of approximately 14 feet bgs. Three samples from SB-13 were submitted for laboratory analysis. GRO was detected at a concentration of 460 mg/kg in the sample collected at 12 feet bgs. All other laboratory results were non-detect. No data assessment qualifiers were assigned to these data by third-party data validation. Although Leidos had obtained a right-of-way use permit to complete soil borings in the alley, a step-out boring was not able to be completed in this area due to the proximity of utilities.
- **SB-14** - Soil boring SB-14 was also completed in the alley, adjacent to the southern boundary of the former service station property. This boring was necessary because soil boring SB-9, completed in August 2018, could not be advanced to a sufficient depth to delineate the lateral extent of petroleum impacts previously detected near the service station dispenser islands. SB-14 was advanced to approximately 28 feet bgs. Field screening results for this boring suggested no evidence of petroleum impacts. Three samples from SB-14 were submitted for laboratory analysis. Naphthalene was detected at a concentration of 0.051 mg/kg in the sample collected at 12 feet bgs, and low levels of GRO, DRO, HRO, ethylbenzene, and total xylenes were detected in the sample collected at 20 feet bgs. The DRO result for the sample collected at 20 feet bgs is considered an estimated value based on data validation results. Low levels of toluene were also detected in the samples collected at 20 and 27.5 feet bgs; however, data validation results indicated that these detections were associated with lab blank contamination.
- **SB-15** - Soil boring SB-15 was completed to the east of the undocumented UST basin, in the western portion of the Site. The intent of this boring was to delineate the eastern and vertical extent of petroleum impacted soil previously encountered at soil borings UST-2 and UST-4. Soil boring SB-15 was advanced to 23 feet bgs. Field screening results from this boring indicated evidence of potential petroleum impacts beginning at approximately 8 feet bgs and extending to approximately 15 feet bgs. Three samples from SB-15 were submitted for laboratory analysis. GRO and DRO were detected in all three of the samples collected at this boring, and trace levels of toluene were detected in the samples collected at 8 and 13 feet bgs. Naphthalene was detected in the bottom-most sample (22.5 feet bgs) at a concentration of 0.021 mg/kg. However, all laboratory results for this boring were below MTCA Method A cleanup levels. BTEX results for the sample

collected from SB-15 at 8 feet bgs are considered estimated values based on data validation results.

- **SB-16** - Soil boring SB-16 was completed to the west of the undocumented UST basin, in the western portion of the Site. The intent of this boring was to delineate the western and vertical extent of petroleum impacted soil previously encountered at soil borings UST-2 and UST-4. Soil boring SB-16 was advanced to a depth of 23 feet bgs. Field screening results indicated evidence of petroleum impacts beginning at approximately 8 feet bgs, based on elevated PID readings, and extending to approximately 20 feet bgs. Three samples from this boring were submitted for laboratory analysis. GRO was detected at concentrations exceeding the MTCA Method A cleanup level in the samples collected at 9 and 13 feet bgs. DRO was also detected in both of these samples, and low levels of benzene, toluene, and total xylenes were detected in the sample collected from 13 feet bgs. No petroleum-range constituents were detected in the bottom-most sample collected at 22.5 feet bgs.
- **SB-17** - Soil boring SB-17 was completed to the north of the undocumented UST basin, in the western portion of the Site. The intent of this boring was to delineate the northern and vertical extent of petroleum impacted soil previously encountered at soil borings UST-2 and UST-4. Soil boring SB-17 was advanced to 30 feet bgs. Field screening results indicated petroleum impacts beginning at approximately 10 to 12 feet bgs and extending to a depth of approximately 28 feet bgs. Six samples from this boring were submitted for laboratory analysis, including one duplicate sample. Laboratory results confirmed the presence of GRO at concentrations exceeding the MTCA Method A cleanup level in samples collected at 14.5, 19.5, and 24 feet bgs. DRO was also detected above the MTCA Method A cleanup level in the samples collected at 19.5 and 24 feet bgs. However, the DRO results for the sample and duplicate sample collected at 19.5 feet bgs are considered estimated values based on data validation results, and the duplicate sample result did not exceed the Method A cleanup level. Low levels of HRO and naphthalene were also detected in samples from this boring. The vertical extent of petroleum impacts at SB-17 were delineated by the sample collected at 29.5 feet bgs, which contained GRO at a concentration of 0.2 mg/kg. All other results for this sample were non-detect.
- **SB-18** - Soil boring SB-18 was completed to the south of the undocumented UST basin, in the western portion of the Site. The intent of this boring was to delineate the southern and vertical extent of petroleum impacted soil previously encountered at soil borings UST-2 and UST-4. Soil boring SB-18 was advanced to 23 feet bgs. Field screening results provided no strong indications of petroleum impacts throughout the sampled boring intervals. Three samples from this boring were submitted for laboratory analysis. Laboratory results indicated low levels of GRO, DRO, and toluene in the sample collected at 8 feet bgs, and DRO and HRO were detected in the sample collected at 18 feet bgs. However, all detections were below their respective MTCA Method A cleanup levels. All other results were non-detect. No data assessment qualifiers were assigned by third-party data validation to the results for this boring.

- **SB-19** - Soil boring SB-19 was completed at a location not originally proposed in RIWP Addendum 1. Instead, this was a contingency boring that was added to the scope of the July 2019 field activities as a field modification based on field screening evidence of petroleum impacts in SB-17. Soil boring SB-19 was advanced to approximately 28 feet bgs; however, there was no sample recovery between 23 and 27 feet bgs. Field screening results indicated no evidence of petroleum impacts. Five soil samples were submitted for laboratory analysis, including one duplicate sample. Laboratory results indicated that low levels of DRO, HRO, and/or toluene were detected throughout much of the sampled interval; however, all results were below their respective MTCA Method A cleanup levels.
- **SB-20** - Soil boring SB-20 was another contingency boring that was added to delineate the lateral extent of petroleum impacts encountered at SB-17. This boring was advanced to approximately 28 feet bgs. Field screening results did not provide strong evidence of petroleum impacts within the sampled interval. Four soil samples from this boring were submitted for laboratory analysis. Laboratory results indicated that GRO was detected above the MTCA Method A cleanup level in the samples collected at 8 and 14 feet bgs. Low levels of DRO, HRO, and BTEX were also detected, but at concentrations less than their respective Method A cleanup levels. No data assessment qualifiers were assigned to these data by third-party data validation.

3 SUMMARY OF REMAINING DATA GAPS

Based on the results of RI field activities completed to date, Leidos has identified data gaps related to the lateral extent of petroleum impacts to soil at the Site, and the need to further evaluate potential petroleum vapor intrusion (PVI) concerns to nearby structures.

3.1 LATERAL EXTENT OF PETROLEUM IMPACTS TO SOIL

- In the eastern portion of the Site, the lateral extent of petroleum impacts detected at soil boring SB-11 have not been adequately delineated.
- In the southeastern portion of the Site, the lateral extent of petroleum impacts detected at soil boring SB-13 have not been adequately delineated.
- In the western portion of the Site, the western extent of petroleum impacts detected at soil borings SB-16 and SB-17, and the northern extent of petroleum impacts detected in SB-20, have not been adequately delineated.

3.2 FURTHER EVALUATION OF POTENTIAL PVI

An assessment of potential human-health risks associated with PVI was previously completed by shallow soil vapor sampling conducted in September 2018. Results of that sampling indicated that PVI was not an exposure pathway of concern for the Site. However, soil sampling results from the July 2019 RI field event confirmed the presence of additional petroleum impacted soils to the south and east of the former service station property that are closer in proximity to nearby residential structures.

Per Ecology guidance for assessing the potential for PVI (Ecology, 2009, 2016), Leidos used the July 2019 soil sampling results to conduct an initial assessment in order to determine if further

investigation of PVI potential is warranted for the Site. Based on the guidance provided by Ecology Implementation Memorandum No. 14, Leidos assumed use of a 30-foot horizontal separation distance, and a vertical separation distance for soil of 15 feet. Although Implementation Memorandum No. 14 allows use of development of site-specific lateral and vertical inclusion zones, it is Leidos' opinion that use of the recommended default values is more appropriate for this Site because the extent of petroleum impacts at the Site is currently not well-defined. Based on the use of these screening criteria, Leidos has concluded the following:

- Further assessment of PVI potential is warranted for the occupied residential structures located at 2007 6th Street, 1932 5th Street, and 1936 5th Street due to their proximity to petroleum impacted soil detected in SB-13 at 12 feet bgs.
- Further assessment of PVI potential should be considered for the occupied residential structure located at 2005 6th Street due to its proximity to petroleum impacted soil detected in SB-11 at 20 feet bgs. Although these impacts are at a greater depth than the recommended vertical separation distance of 15 feet for petroleum impacted soil, this approach is recommended in order to account for precluding factors, such as preferential pathways or highly permeable soil zones, that may justify use of a greater vertical separation distance.

4 RIWP ADDENDUM 2 – PROPOSED RI FIELD ACTIVITIES

In order to address the data gaps identified in the preceding section, Leidos proposes to complete the following scope of work (Figure 2):

1. On the 2005/2007 6th Street property, at least two soil borings will be completed to further evaluate the eastern extent of petroleum-impacted soils encountered at soil boring SB-11. If necessary (based on evidence of petroleum impacts from field screening results), additional contingency borings will also be completed. One potential contingency soil boring location for this area is shown on Figure 2. A shallow soil vapor sampling probe will also be installed to the west of the 2005 6th Street residence to assess PVI potential to this structure.
2. To the south of the former service station property, at least three soil borings will be completed to further evaluate the lateral extent of petroleum-impacted soils encountered at soil boring SB-13. At least three shallow soil vapor sampling probes will be installed to assess PVI potential to the occupied residences at 2007 6th Street, 1932 5th Street, and 1936 5th Street. Possible contingency soil boring and soil vapor sampling probe locations for this area are also shown on Figure 2.
3. In the western portion of the Site, at least three soil borings will be completed to delineate the northern and western extents of petroleum-impacted soils encountered in soil borings SB-16, SB-17, and SB-20.
4. At least one round of soil vapor sample collection will be conducted at each of the new soil vapor sampling probes.

Proposed soil boring and soil vapor sampling probe locations are shown on Figure 2. Due to the proposed location of these soil borings and soil vapor sampling probes on properties that are not owned by the PLPs, this scope of work is contingent upon approval by the respective property owners and the City of Bremerton. Actual soil boring and soil vapor sampling locations may also be changed based on the proximity of utilities, or other conditions encountered in the field.

Additional details regarding the implementation of this proposed scope of work are provided in the following subsections.

4.1 UTILITY LOCATION

Prior to the start of any subsurface investigation activities, Leidos will contact the Washington Utility Notification Center to coordinate location of all public utilities in the vicinity of the Site. Leidos will also subcontract a utility locating contractor to conduct a private utility location survey in and around the anticipated investigation areas.

4.2 SOIL BORINGS

Soil boring procedures will be the same as those completed in July 2019. Based on the dense soil conditions previously encountered at the Site, and the expected need to advance these borings to depths of 20 or more feet bgs, Leidos anticipates use of a Geoprobe 7822DT or similar drill rig, which offers the capability of soil sampling using either direct-push or hollow-stem auger methodologies. When conditions allow, direct-push sampling will be performed in order to maximize the length of continuous soil cores that can be collected and to minimize production of soil waste. However, continuous-interval soil sampling will also be conducted using a split-spoon sampler if the hollow-stem auger drilling method must be utilized.

Soil boring clearance, sampling and abandonment procedures, and laboratory analyses will be the same as those used for the 2018 RI field activities, which were specified in Section 3 of the SAP.

4.3 SOIL VAPOR SAMPLING PROBE INSTALLATION

Soil vapor sampling probe installation procedures will be as specified in Section 6 of the RIWP SAP. Borings will be advanced with a stainless-steel hand auger only. No air-vacuum or pressure excavation equipment will be utilized, unless refusal is encountered during hand augering. Construction of the soil vapor sampling probes will be performed under the supervision of a Washington State licensed driller. The soil vapor sampling probes will be constructed so that the top of the 6-inch long probe screen is set at least 5 feet bgs to minimize potential for short-circuiting of ambient air to the probe screen.

4.4 SOIL VAPOR SAMPLING

Soil vapor sample collection will be performed according to the procedures specified in Section 7 of the RIWP SAP, except that a laboratory other than ALS Environmental may be utilized for analysis of the samples. Sampling will not be performed within the first 48 hours after installation of the probes; and will not be performed during or within 48 hours after a significant rain event (greater than 1 inch of precipitation). Soil vapor sampling will also not be performed during periods of high wind, or during other major storm events with the potential to cause significant and rapid changes in barometric pressure trends.

5 ANTICIPATED PROJECT SCHEDULE

Due to the need to coordinate access to conduct work on the properties located at 1932 and 1936 5th Street, Leidos expects that the scope of work proposed by Addendum 2 will be implemented in the following four phases:

1. The first phase of work would include completion of soil borings and installation of soil vapor sampling probes on the 2005/2007 6th Street property and in the alley to the south of the Site. This phase would also include completion of soil borings in the Naval Avenue right-of-way. This work is expected to be completed in November or December 2019.
2. The second phase of work would consist of soil vapor sample collection at soil vapor sampling wells installed on the 2005/2007 6th Street property and in the alley south of the Site. This work is expected to be completed in November or December 2019.
3. The third phase of work would include completion of soil borings and installation of soil vapor sampling probes on the properties at 1932 and 1936 5th Street. This work will be completed as soon as possible following execution of access agreements for both of these properties.
4. The fourth phase of work would consist of soil vapor sample collection at soil vapor sampling wells on the 1932 and 1936 5th Street properties.

6 CONCEPTUAL PLAN FOR TIER II PVI ASSESSMENT

Per the letter dated September 30, 2019, providing formal notification of a 180-day extension for completion of RI field activities, Ecology requested that this RIWP Addendum include provisions for Tier II PVI assessment if deemed necessary. Based on this request, Leidos is providing this conceptual plan for Tier II PVI assessment at this time.

Per Ecology's 2009 VI guidance (Ecology, 2009), the objective of Tier II VI assessment is to determine what impact VI is actually having on indoor air, which requires that samples of indoor air be collected and analyzed. However, the evaluation of indoor air sampling data is very complex due to a myriad of other possible volatile organic compound (VOC) sources that are often found in homes, such as cleaning and maintenance products, personal hygiene products, or tobacco use. The presence of these sources, or even background concentrations in outdoor ambient air, often result in false indications of VI impacts to indoor air. Therefore, Leidos and CEMC recommend that Tier II VI assessments include concurrent collection of sub-slab soil vapor, indoor air, and outdoor air samples.

To prepare for a Tier II VI assessment, Leidos would begin by identifying the structure(s) of potential concern. We would then attempt to coordinate access to conduct an inspection of the structure(s) to determine details such as building use, layout, construction, and ventilation as well as any chemicals or materials present that may emit VOCs. Based on these details, a building-specific sampling plan would be developed to specify the type and number of samples to be collected from in and around each structure.

Following Tier II sample collection, results from sub-slab soil vapor, indoor air, and outdoor air samples would be evaluated to determine if petroleum-range hydrocarbons were present in indoor air at concentrations exceeding Method B cleanup levels, and if so, whether the source of these compounds appeared to originate from soil vapor, outdoor air, or other indoor air sources.

If deemed necessary, due to the complexity of these investigations, it is unlikely that Tier II VI assessment planning and implementation could be completed prior to the current deadline for the completion of RI field activities.

7 REFERENCES

Ecology (2009). "Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action" – Review Draft. Washington State Department of Ecology Publication No. 09-09-047. October.

Ecology (2016). "Updated Process for Initially Assessing the Potential for Petroleum Vapor Intrusion" – Implementation Memorandum No. 14. Washington State Department of Ecology. March 31.

Leidos (2018). "Final Remedial Investigation Work Plan, Newman's Chevron, 2021 6th Street, Bremerton, Washington." July 3.

Leidos (2019). "Final Remedial Investigation Work Plan – Addendum 1, Newman's Chevron, 2021 6th Street, Bremerton, Washington." June 13.

LIMITATIONS

This technical document was prepared on behalf of the PLPs 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 PLPs and others. Leidos has not made, nor has it been asked to make, any independent investigation concerning the accuracy, reliability, or completeness of such information beyond that described in this technical document.

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

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

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

Figures

LEGEND:

- SB-10 — July 2019 RI Soil Boring Location
- SB-2 — 2018 RI Soil Boring Location
- SVP-1 — 2018 RI Soil Boring/Soil Vapor Sampling Probe Location
- Approximate Location of Undocumented UST Confirmed by 2018 RI Field Activities
- 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)
- N — Approximate Location of Confirmation Soil Sample (AGI, 1990)
- Approximate Location of Test Pit (AGI, 1990)
- Approximate Location of Former Service Bay Hoist
- UST-4 (Depth (feet) 8; GRO (mg/kg) 130) — Soil Analytical Results from 2018 RI Field Activities with Detections of Petroleum-Range Hydrocarbons Exceeding MTCA Method A Cleanup Levels

Approximate Property Boundary
2021 6th Street, Bremerton, WA

6th Street

SB-17		
Depth (feet)	GRO (mg/kg)	DRO (mg/kg)
14.5	210	
19.5	1,400	3,500
19.5 (duplicate)	1,100	
24	140	2,800

SB-20	
Depth (feet)	GRO (mg/kg)
8	46
14	170

UST-2		
Depth (feet)	GRO (mg/kg)	DRO (mg/kg)
8	670	2,800
8 (duplicate)	530	2,500

UST-4	
Depth (feet)	GRO (mg/kg)
8	130

SB-7	
Depth (feet)	Benzene (mg/kg)
10	0.46
14	0.18

SB-16	
Depth (feet)	GRO (mg/kg)
9	1,500
13	78

SB-4	
Depth (feet)	GRO (mg/kg)
12	550
12 (duplicate)	410

SB-11				
Depth (feet)	GRO (mg/kg)	Ethylbenzene (mg/kg)	Toluene (mg/kg)	Naphthalene (mg/kg)
20	3,200	12	100	11

SB-5	
Depth (feet)	GRO (mg/kg)
14	420
17.5	1,100

SB-13	
Depth (feet)	GRO (mg/kg)
12	460

SB-1, SB-2, SB-3, SB-4, SB-5, SB-6, SB-7, SB-8, SB-9, SB-10, SB-11, SB-12, SB-13, SB-14, SB-15, SB-16, SB-17, SB-18, SB-19, SB-20
UST-1, UST-2, UST-3, UST-4, UST-5, UST-6, UST-7, UST-8, UST-9, UST-10
BM-1, BM-2, BM-3, BM-4, BM-5, BM-6, BM-7, BM-8, BM-9, BM-9A, BM-10, BM-11, BM-12, BM-13
B-1, B-2, B-3, B-4, B-5, B-6, B-7
SVP-1, SVP-2, SVP-3
PIT-1, PIT-2

DISPENSER
DISPENSER
CURRENT UST PAD
FORMER UST BASIN
FORMER WASTE OIL UST
FORMER CONVENIENCE STORE AREA
FORMER SERVICE BAY AREA
OIL/WATER SEPARATOR
FORMER FUEL OIL UST
NE WALL-11.5
BOTTOM-14.5
SE WALL-11.5
2005 6th Street
Bremerton, WA
2007 6th Street
Bremerton, WA
1936 5th Street
Bremerton, WA
1932 5th Street
Bremerton, WA
Naval Avenue
Alley

IMAGE SOURCE: GOOGLE EARTH, 2017.

SCALE
0 20 40 60ft

N

leidos

Newman's Chevron
2021 6th Street
Bremerton, Washington

FIGURE 1
Site Map with Historical Sampling Locations

DATE: 10/21/2019 | DRAWING: 204177 Site Map.dwg

LEGEND:

- SB-XX — Proposed Soil Boring Location
- SVP-X — Proposed Soil Vapor Sampling Probe Location
- SB-10 — July 2019 RI Soil Boring Location
- SB-10 — August 2018 RI Soil Boring Location
- SB-10 — July 2019 RI Soil Boring Location
- SAN — Approximate Location of Sanitary Sewer Utility
- W — Approximate Location of Water Supply Utility
- STORM — Approximate Location of Storm Sewer Utility
- E — Approximate Location of Electrical Supply Utility
- GAS — Approximate Location of Gas Supply Utility
- COM — Approximate Location of Communication Utility
- Approximate Location of Unidentified Utility

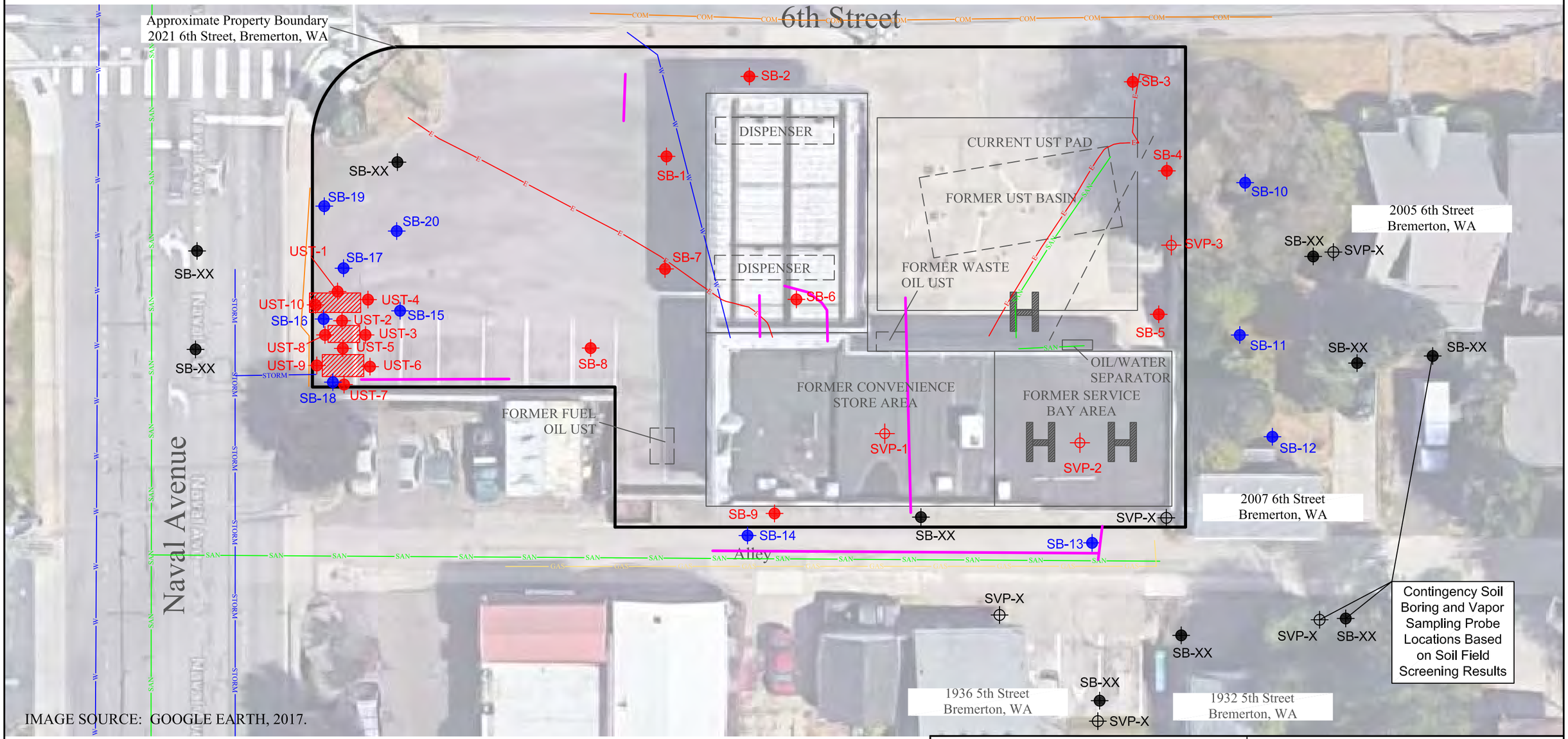

IMAGE SOURCE: GOOGLE EARTH, 2017.

leidos

SCALE
0 20 40 60ft

N

Newman's Chevron
2021 6th Street
Bremerton, Washington

FIGURE 2
Completed and Proposed RI Sampling Locations

DATE: 10/31/2019 | DRAWING: 204177 Site Map.dwg

Tables

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

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	
	20	08/28/18	0.2		<3.2		<11		<0.0005		<0.0006		<0.0004		<0.0009		<0.007		--		--		--		4.14	
SB-3	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	
	24	08/28/18	<0.2		<3.2		<11		<0.0005		<0.0006		<0.0004		<0.0009		<0.007		--		--		--		3.41	
SB-4	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	
	25	08/29/18	0.8		<3.1		<10		0.0005		0.001		<0.0004		<0.001		<0.007		--		--		--		1.27	
SB-5	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	
	30	08/29/18	0.3		<3.2		<11		0.0006		0.002		<0.0004		0.002		<0.007		--		--		--		1.54	
SB-6	2	08/24/18	<0.2		<3.2		<11		<0.0005		<0.0005		<0.0004		<0.0009		<0.007		--		--		--		2.20	
	6	08/24/18	<0.2		<3.1		<10		<0.0004		<0.0004		<0.0003		<0.0007		<0.007		--		--		--		2.20	
SB-7	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	
	28	08/27/18	<0.2		<3.2		<11		<0.0005		0.001		<0.0004		<0.001		<0.007		--		--		--		2.73	
SB-8	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	UJ
	14	08/29/18	<0.2		<3.1		<10		<0.0005		<0.0006		<0.0004		<0.001		0.011		--		--		--		<12.5	UJ
	25	08/29/18	<0.2		<3.3		<11		<0.0005		<0.0006		<0.0004		<0.001		<0.007		--		--		--		<0.542	UJ
SB-9	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

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	
	29.5	07/23/19	0.2		<4.1		<10		<0.0004		<0.0005		<0.0003		<0.0009		<0.007		--		--		--		1.92	
SB-18	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	
	22.5	07/23/19	<0.2		<4.4		<11		<0.0004		<0.0005		<0.0003		<0.0008		<0.007		--		--		--		2.09	
SB-19	8	07/25/19	<0.2		<4.2		<11		<0.0005		<0.0006		<0.0004		<0.0009		<0.007		--		--		--		1.72	J
	8 (D)	07/25/19	<0.2		11		43		<0.0004		0.0009		<0.0003		<0.0008		<0.007		--		--		--		3.89	J
	14	07/25/19	<0.2		<4.3		<11		<0.0004		0.0005		<0.0003		<0.0008		<0.007		--		--		--		2.37	
	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	
SB-20	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	
	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	

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

Boring ID	Depth (feet)	Sample Date	GRO		DRO		HRO		Benzene		Toluene		Ethylbenzene		Total Xylenes		Naphthalene		MTBE		EDB		EDC		Lead	
UST-1	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	
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	
MTCA Method A Cleanup Level:			**30**		**2,000**		**2,000**		**0.03**		**7**		**6**		**9**				**0.1**		**0.005**		**--**		**250**	

NOTES:
Bold results indicate compound detected above MTCA Method A Cleanup Level.
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

Appendix A:
Boring Logs

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

leidos

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
damp	0.0				ML		11	(ML) SAA, no odor, no sheen at 10 ft
damp	0.0				ML		12	(ML) SAA, no odor, no sheen
							13	
	0.0		SB-10-14	G <0.3 D <4.7 HO <12 B <0.0005	ML		14	(ML) orangish-brown SILT, no gravel, no odor, no sheen
moist					SM		15	(SM) brown silty SAND
					SP			(SP) brown, medium SAND, poorly graded, 5% silt, 5% gravel, no odor, no sheen
damp	0.0						16	
					SP		17	(SP) SAA
damp	0.0				SP		18	(SP) SAA, no odor, no sheen
							19	
							20	

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
damp	0.0		SB-10-20	G <0.3 D <4.3 HO <11 B <0.0004	SP		20	(SP) SAA, no odor, no sheen at 20 ft
							21	(SW) brown, well graded, gravelly SAND, 10% silt, well graded, coarse to fine, 15% gravel, no odor, no sheen
damp	0.0				SW		22	
damp	0.0						23	(SM) brown, silty SAND with 10% gravel, well graded, no odor, no sheen
damp	0.0				SM		24	
							25	
damp	0.0				SW-SM		26	(SW-SM) brown, well graded, gravelly SAND / silty SAND, 10% silt, 20% gravel, 70% coarse to fine, no odor, no sheen
							27	
damp	0.0		SB-10-27.5	G <0.3 D <4.4 HO <11 B <0.0005	SW-SM		28	(SW-SM) SAA, no odor, no sheen Bottom of borehole at 28.0 feet.
							29	
							30	

leidos

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
							0	grass
dry	1.8				SM		1	(SM) light brown, silty SAND, 5% gravel, organic debris, 20% silt, no odor, no sheen
dry	2.4				SM		4	(SM) orangish-brown silty SAND / sandy SILT, organic debris (roots), no odor, no sheen
dry	2.2		SB-11-6	G <0.3 D <4.9 HO <10 B <0.0006	SM		6	(SM) orange and gray, mottled, sandy SILT, <1% gravel, no odor, no sheen
damp	2.9				ML		8	(ML) brown SILT, 5% sand, 5% clay, no odor, no sheen
							10	

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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			(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			(SM) SAA, HC odor, slight sheen
damp	402				SM		18	(SM) SAA, strong HC odor, slight sheen
							19	
					SP-		20	

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	684		SB-11-20	G = 3200 D = 55 HO = 24 B <0.047	SM		21	(SP-SM) gray, medium SAND, 5% silt, 5% gravel, strong HC odor, moderate sheen
damp	500				SP-SM		22	(SP-SM) SAA, HC odor, no sheen
					SP-SM		23	(SP-SM) SAA, no odor, no sheen
damp	284				SW		24	(SW) well graded, gravelly SAND, 10% silt, 25% gravel, slight HC odor, slight sheen
							25	
damp	17.6				SW		26	(SW) SAA, no odor, no sheen
							27	(SM) brown, silty SAND, 5% gravel, no odor, no sheen
damp	10.6		SB-11-27	G = 0.6 D <4.3 HO <11 B <0.0005	SM		28	
								Bottom of borehole at 28.0 feet.
							29	
							30	

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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	grass
dry	3.9				SM		1	(SM) orange-brown, sandy SILT / silty SAND, no odor, no sheen
dry	3.9				SM		4	(SM) SAA, no odor, no sheen
dry	6.6		SB-12-6	G <0.3 D <5.1 HO <13 B <0.0005	SM		6	(SM) brown and gray, mottled, sandy SILT, no odor, no sheen
	1.7				SM		8	(SM) SAA
moist					ML		9	(ML) orange-gray SILT, 5% clay, 5% sand, no odor, no sheen
							10	

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
							13	
damp	0.0		SB-12-14.5	G <0.3 D <5.1 HO <13 B <0.0005	ML		14	(ML) SAA, no odor, no sheen
							15	
damp	0.0						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						18	(ML) brown SILT, no odor, no sheen
					ML			
					SM		19	(SM) brown silty SAND / gravelly SAND, 15-20% gravel, 15-20% silt, well graded sand, no odor, no sheen
							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
damo	0.0		SB-12-20	G <0.2 D <4.3 HO <11 B <0.0004	SM		20	(SM) SAA, no odor, no sheen at 20 ft
							21	
damp	0.0				SM		22	(SM) SAA, no odor, no sheen
damp							23	
	0.0				SM		24	(SM) SAA, no odor, no sheen
							25	
damp	0.0				SM		26	(SM) SAA, no odor, no sheen
							27	
damp	0.0		SB-12-27.5	G <0.2 D <4.3 HO <11 B <0.0005			28	Bottom of borehole at 28.0 feet.
							29	
							30	

Soil Boring: SB-13

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

Logged By: R. Otteman
Date Started: 7/22/2019
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	asphalt
damp	10.6				SM		2	(SM) dark brown silty SAND, wood debris, 5% gravel, 15% silt, no odor, no sheen
damp	10.8				SM		4	(SM) light brown sandy SILT, 15% sand, no odor, no sheen
damp	10.2				SM		6	(SM) light gray sandy SILT, 10% sand, no odor, no sheen
damp	0.0				ML		8	(ML) light orangish-brown SILT, 5-10% clay, no odor, no sheen
							10	

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Soil Boring: SB-13

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

Logged By: R. Otteman
Date Started: 7/22/2019
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) SAA, laminated layers of dark brown and light brown SILT, no odor, no sheen
moist	777		SB-13-12	G = 460 D <4.5 HO <11 B <0.022	SM		12	(SM) light brown silty SAND, HC odor, slight sheen
					ML		13	(ML) light brown SILT, no sand
damp	220				SM		14	(SM) brown silty SAND with gravel, 15% gravel, coarse to fine sand, well graded, slight odor, no sheen
damp	3.4		SB-13-16	G <0.4 D <4.3 HO <11 B <0.0005	SM		16	(SM) SAA, no odor, no sheen
damp	0.0				SM		18	(SM) SAA, no odor, no sheen
							20	

Soil Boring: SB-13

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

Logged By: R. Otteman
Date Started: 7/22/2019
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	5.9				SM			(SM) SAA, no odor, no sheen
							21	
damp	0.0				SM		22	(SM) SAA, no odor, no sheen
damp							23	
damp	0.0				SM		24	(SM) SAA, no odor, no sheen
					SP		25	(SP) brown, poorly graded, medium SAND, <5% gravel, 5% silt, no odor, no sheen
damp	0.0				SP		26	(SP) SAA, no odor, no sheen
					SP		27	(SP) SAA, no odor, no sheen
damp	0.0		SB-13-27.5	G <0.2 D <4.1 HO <10 B <0.0004			28	
								Bottom of borehole at 28.0 feet.
							29	
							30	

Soil Boring: SB-14

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

Logged By: R. Otteman
Date Started: 7/22/2019
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	asphalt (3 inches)
damp	5.5				SM		1	(SM) light brown silty SAND, 15-20% silt, 5% gravel, no odor, no sheen
							2	
							3	
damp	0.8				SM		4	(SM) brown silty SAND / sandy SILT, 5% rounded gravel, no odor, no sheen
							5	
damp	0.0				SM		6	(SM) mottled gray and brown sandy SILT, 10% sand, no odor, no sheen
							7	
damp	1.7				ML		8	(ML) orange-light brown SILT, no odor, no sheen
							9	
							10	

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Soil Boring: SB-14

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

Logged By: R. Otteman
Date Started: 7/22/2019
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			(ML) SAA, no odor, no sheen at 10 ft
					SM			(SM) brown silty SAND, 5% gravel, 10% silt, no odor, no sheen
							11	
damp	6.1		SB-14-12	G <0.2 D <4.3 HO <11 B <0.0004	SM		12	(SM) SAA, no odor, no sheen
							13	
damp	0.0						14	
					ML			(ML) orange-brown SILT, no odor, no sheen
								(SM) brown silty SAND, no odor, no sheen
							15	
					SM			
damp	0.0						16	(SP) light brown, medium SAND, no odor, no sheen
					SP			
					SM		17	(SM) light brown silty SAND, 5-10% gravel, 10-15% silt, no odor, no sheen
damp	0.0				SM		18	(SM) SAA, no odor, no sheen
					SM		19	(SM) SAA, no odor, no sheen
							20	

Soil Boring: SB-14

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

Logged By: R. Otteman
Date Started: 7/22/2019
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	0.0		SB-14-20	G = 29 D = 130 HO = 120 B <0.0004	SM		20	(SM) SAA, no odor, no sheen at 20 ft
damp	0.0				SM		22	(SM) SAA, no odor, no sheen
damp							23	
damp	0.0				SM		24	(SM) SAA, no odor, no sheen
					SP		25	(SP) light brown, medium SAND, no odor, no sheen
damp	0.0						26	
					SP		27	(SP) SAA, no odor, no sheen
damp	0.0		SB-14-27.5	G <0.2 D <4.2 HO <10 B <0.0005			28	Bottom of borehole at 28.0 feet.
							29	
							30	

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
								asphalt (3 inches)
damp	4.6				SM		2	(SM) brown silty SAND, well graded, 10% silt, 5% gravel, no odor, no sheen
damp	4.4				SM		4	(SM) orangish-brown silty SAND, well graded, no gravel, 5-10% silt, no odor, no sheen
damp	4.3				SM		6	(SM) light brown silty SAND, well graded, 5% gravel, no odor, no sheen
damp	13.9		SB-15-8	G = 3.1 D = 290 HO <100 B <0.0004	SM		8	(SM) orange-brown silty SAND, no odor, no sheen

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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			(SM) SAA, no odor, no sheen at 10 ft
							11	
damp	7.5				SM		12	(SM) SAA, no odor, no sheen
damp	20.7		SB-15-13	G = 3.2 D = 1100 HO <210 B <0.0004	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	

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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			(SM) SAA, no odor, no sheen
	5.1		SB-15-22.5	G = 1.2 D = 18 HO <10 B <0.0005	SM		23	(SM) SAA, no odor, no sheen
								Bottom of borehole at 23.0 feet.

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27
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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
								asphalt (3 inches)
damp	3.0				SM		2	(SM) light orangish-brown silty SAND, 5% gravel (up to 2 inches), rounded gravel, no odor, slight globular (organic) sheen
damp	2.0				SM		4	(SM) SAA, no odor, no sheen
damp	2.0				SM		6	(SM) SAA, 10% gravel, 15% silt, no odor, no sheen
damp	91.0				SM		8	(SM) light brown silty SAND, 15% silt, <5% gravel, no odor, no sheen
					SP			(SP)
damp	303		SB-16-9	G = 1500 D = 46 HO <11 B <0.023	SP		9	(SP) gray, medium SAND, 5% silt, strong HC odor, heavy sheen
							10	

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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		SB-16-13	G = 78 D = 760 HO <110 B = 0.0005	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						17	
					SM			(SM) SAA, no odor, no sheen
damp	34.9						18	
							19	
							20	

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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		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	

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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
								asphalt (3 inches)
damp	4.0				SM		2	(SM) brown silty SAND, 10% silt, 5% gravel, no odor, no sheen
damp	4.2				SM		4	(SM) orangish-brown silty SAND, 5% gravel, 10% silt, no odor, no sheen
damp	4.6				SM		6	(SM) light brown silty SAND, 5% gravel, no odor, no sheen
damp	4.4		SB-17-8	G <0.2 D <4.4 HO <11 B <0.0004	SM		8	(SM) gray-brown silty SAND, 5% gravel, no odor, slight globular sheen
					SM		9	(SM) gray-brown silty SAND, 15% gravel

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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
							11	
					SP			(SP) gray, medium SAND, 10% gravel
					SM			(SM)
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
					SP-SM		19	(SP-SM) brown, medium SAND, 5% silt, 5% gravel, 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)				HC odor, moderate to heavy sheen
							20	

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			(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			(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		SB-17-24	G = 140 D = 2800 HO = 110 B <0.025			24	
damp	31.7				SP		25	(SP) gray-light brown, medium SAND, <5% silt, no gravel, HC odor, moderate sheen
damp	3.7				SP		26	(SP) SAA, HC odor, moderate sheen
					SP		27	(SP) SAA
damp	4.5				SP		28	(SP) SAA, HC odor, slight sheen
							29	
damp	5.3		SB-17-29.5	G = 0.2 D <4.1 HO <10 B <0.0004	SP		30	(SP) SAA, no odor, no sheen

Bottom of borehole at 30.0 feet.

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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		2	(SM) orangish-brown silty SAND, 5% gravel, 10% silt, no odor, slight sheen
damp	3.0				SM		4	(SM) SAA, no odor, slight globular sheen
damp	4.0				SM		6	(SM) light brown silty SAND, 10% silt, 5% rounded gravel, small pieces of charred wood, no odor, no sheen
damp	6.2		SB-18-8	G = 0.3 D = 85 HO <11 B <0.0004	SM		8	(SM) brown silty SAND, 5% gravel, no odor, no sheen
							10	

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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		11	(SM) SAA, no odor, no sheen
damp	2.0				SM		12	(SM) SAA, no odor, no sheen
							13	(SP) brown, medium SAND, 5% silt, 5% gravel
					SP			
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		SB-18-18	G <0.2 D = 8.1 HO = 41 B <0.0004	SM		18	(SM) brown silty SAND, no odor, slight sheen
							19	
							20	

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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
								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		2	(SM) orangish-brown sandy SILT, 10-15% sand, 5% gravel, no odor, no sheen
damp	6.4				SM		4	(SM) orangish-brown silty SAND, 5% rounded gravel, 10-15% silt, no odor, no sheen
damp	6.7				SM		6	(SM) SAA except larger rounded gravel up to 5 inches, no odor, no sheen
damp	0.0		SB-19-8	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
							10	

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		SB-19-14	G <0.2 D <4.3 HO <11 B <0.0004	SM		14	(SM) SAA, no odor, no sheen
							15	
damp	0.0						16	(SP) light brown, medium, poorly graded SAND, 5% gravel, no odor, no sheen
					SP		17	
					SM			(SM) light brown silty SAND, no odor, no sheen
damp	0.0						18	
					SM			(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	

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						21	
							22	
damp	0.0		SB-19-22.5	G <0.4 D = 120 HO = 20 B <0.0007	SP		23	(SP) SAA, no odor, no sheen no recovery, crushed sleeve
							24	
							25	
							26	
damp	5.7		SB-19-27.5	G <2.4 D = 340 HO = 35 B <0.0004	SP		27	(SP) gray, medium SAND, no odor, no sheen
							28	Bottom of borehole at 28.0 feet.
							29	
							30	

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
								asphalt (3 inches)
damp	4.8				SM		2	(SM) orange-brown silty SAND, well graded, 15% gravel, 15% silt, coarse to fine sand, rounded gravel, no odor, no sheen
damp	5.1				SM		4	(SM) SAA, no odor, no sheen
damp	5.9				SM		6	(SM) SAA, no odor, no sheen
							7	concrete at 7 ft
								cobbles 2 feet in diameter at 7.5 ft
damp	29.5		SB-20-8	G = 46 D <4.3 HO <11 B = 0.001	SM		8	(SM) SAA, no odor, no sheen
							10	

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			(SM) SAA, orange-light brown silty SAND, no odor, no sheen
							11	
damp	18.6				SM		12	(SM) SAA, no odor, no sheen
								large gravel, >2 inches at 12.5 ft
							13	
damp	49.0		SB-20-14	G = 170 D = 23 HO = 53 B <0.034	SM		14	(SM) SAA, no odor, no sheen
							15	
damp	3.2						16	
					SP		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	

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	24.2				SP			(SP) SAA, no odor, no sheen at 20 ft
							21	
							22	
damp	2.4		SB-20-22.5	G <0.2 D <4.1 HO <10 B <0.0005	SP			(SP) SAA, no odor, no sheen
							23	
	15.3				SP		24	(SP) SAA, no odor, no sheen
							25	
	10.0				SP		26	(SP) SAA, no odor, no sheen
							27	
	0.8		SB-20-27.5	G <2.4 D = 210 HO = 32 B <0.0004	SP		28	(SP) SAA, no odor, no sheen
								Bottom of borehole at 28.0 feet.
							29	
							30	

Appendix B:
2019 Laboratory Analysis Reports

eurofins | Lancaster Laboratories Environmental

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-6766 • www.EurofinsUS.com/LancLabsEnv

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	Attn: Russ Shropshire
Electronic Copy To	EcoChem	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.

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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 15:50
SDG#: LDC06-01

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114243
ELLE Group #: 2056399
Matrix: Soil

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 NWTPH-Gx**		**mg/kg**	**mg/kg**	
02005	NWTPH-GX Soil C7-C12	n.a.	460	8.4	808.48
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 15:50
SDG#: LDC06-01

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114243
ELLE Group #: 2056399
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 15:40
SDG#: LDC06-02

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114244
ELLE Group #: 2056399
Matrix: Soil

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 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.	7.3	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 15:40
SDG#: LDC06-02

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114244
ELLE Group #: 2056399
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 15:30
SDG#: LDC06-03

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114245
ELLE Group #: 2056399
Matrix: Soil

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 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.	4.9	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 15:30
SDG#: LDC06-03

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114245
ELLE Group #: 2056399
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 15:20
SDG#: LDC06-04TB

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1114246
ELLE Group #: 2056399
Matrix: Water

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 17:40
SDG#: LDC06-05

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114247
ELLE Group #: 2056399
Matrix: Soil

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 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.	8.2	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 17:40
SDG#: LDC06-05

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114247
ELLE Group #: 2056399
Matrix: Soil

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. Group Number: 2056399
Reported: 08/13/2019 18:25

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. Group Number: 2056399
Reported: 08/13/2019 18:25

Method Blank (continued)

Analysis Name	Result	MDL
	mg/kg	mg/kg
Batch number: 192141404903	Sample number(s): 1114244-1114245,1114247	
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: 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. Group Number: 2056399
Reported: 08/13/2019 18:25

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	Sample number(s): 1114246								
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): 1114243-1114245,1114247								
Diesel Range Organics C12-C24	133.4	101.47			76		61-115		
	mg/kg	**mg/kg**	**mg/kg**	**mg/kg**					
Batch number: 192141404902	Sample number(s): 1114243								
Lead	15	15.79			105		90-115		
Batch number: 192141404903	Sample number(s): 1114244-1114245,1114247								
Lead	15	14.59			97		90-115		
	%	**%**	**%**	**%**					
Batch number: 19214820004A	Sample number(s): 1114243-1114245,1114247								
Moisture	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	Sample number(s): 1114243-1114245,1114247 UNSPK: 1114243									
Diesel Range Organics C12-C24	N.D.	132.87	96.56			73		61-115		
	mg/kg	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**					
Batch number: 192141404903	Sample number(s): 1114244-1114245,1114247 UNSPK: 1114245									
Lead	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. Group Number: 2056399
Reported: 08/13/2019 18:25

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc	DUP Conc	DUP RPD	DUP RPD Max
	mg/kg	mg/kg		
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. Group Number: 2056399
Reported: 08/13/2019 18:25

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. Group Number: 2056399
Reported: 08/13/2019 18:25

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

eurofins | 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.

SCR #: _____

1 Client Information

Facility # 204117 WBS

Site Address: 2021 6th St Bremerton, WA

Chevron PM: Eric Hetrick Lead Consultant: Leidos

Consultant/Office: Leidos - Bothell, WA

Consultant Project Mgr.: Russ Shropshire

Consultant Phone #: 425-482-3323

Sampler: RAO/CMW

2 Sample Identification

Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	4 Matrix: Soil	Water	Sediment	Potable	Ground	NPDES	Surface	Oil	Air	Total Number of Containers	5 Analyses Requested
SB-13-2.0-S-072419	7/24/19	1550	X		X									7	BTEX + ~~MTBE~~ 8021 X Naphth; 8260 full scan; Oxygenates; NWTPH-Gx; NWTPH-Dx with Silica Gel Cleanup; NWTPH-Dx without Silica Gel Cleanup X; WA VPH; WA EPH; Lead Total X Diss. Method COLAB; Naphthalenes EPA 8270
SB-13-12.0-S-072419	7/24/19	1550	X		X									12	
SB-13-16.0-S-072419	7/24/19	1540	X		X									7	
SB-13-27.5-S-072419	7/24/19	1530	X		X									7	
TB-4-072419	7/24/19	1520	X			X								4	
SB-14-12.0-S-072419	7/24/19	1740	X		X									7	

Ruth Ott

- ☐ 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

6 Remarks

Invoice to Leidos PO10229412

7 Turnaround Time Requested (TAT) (please circle)

Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

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	Date	Time	Received by	Date	Time
Ruth Ott	7/29/19	1230			
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Commercial Carrier: UPS X FedEx ____ Other ____			Received by	Date 7/30/19	Time 1015
Temperature Upon Receipt 1.2 °C			Custody Seals Intact? Yes / No		

9

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Sample Administration Receipt Documentation Log

Doc Log ID: 255338

Group Number(s): 2056399

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:	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 12:18 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	1.2	DT	Wet	Y	Bagged	N

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.co

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.

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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 >= 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.

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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 — Attn: Russ Shropshire
Electronic Copy To EcoChem — 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.

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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
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**

Submittal 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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 16:15
SDG#: LDC07-01

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114252
ELLE Group #: 2056401
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 16:10
SDG#: LDC07-02

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114253
ELLE Group #: 2056401
Matrix: Soil

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 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.	6.9	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 16:10
SDG#: LDC07-02

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114253
ELLE Group #: 2056401
Matrix: Soil

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**

Submittal 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 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.	4.9	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 16:00
SDG#: LDC07-03

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114254
ELLE Group #: 2056401
Matrix: Soil

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**

Submittal 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 NWTPH-Gx**		**mg/kg**	**mg/kg**	
02005	NWTPH-GX Soil C7-C12	n.a.	1,500	18	1773.65
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 13:35
SDG#: LDC07-04

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114255
ELLE Group #: 2056401
Matrix: Soil

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 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 22:11	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**

Submittal 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 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.	8.6	0.50	1

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

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Sample Description: **SB-16-S-13.0-190723 Grab Soil**
Facility# 204117
2021 6th Street-Bremerton, WA

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 14:25
SDG#: LDC07-05

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114256
ELLE Group #: 2056401
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 14:10
SDG#: LDC07-06

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114257
ELLE Group #: 2056401
Matrix: Soil

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 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.	5.1	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 14:10
SDG#: LDC07-06

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114257
ELLE Group #: 2056401
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 14:00
SDG#: LDC07-07TB

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1114258
ELLE Group #: 2056401
Matrix: Water

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. Group Number: 2056401
Reported: 09/05/2019 14:17

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. Group Number: 2056401
Reported: 09/05/2019 14:17

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: 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. Group Number: 2056401
Reported: 09/05/2019 14:17

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. Group Number: 2056401
Reported: 09/05/2019 14:17

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. Group Number: 2056401
Reported: 09/05/2019 14:17

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

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For Eurofins Lancaster Laboratories Environmental use only

Acct. # 13271 Group # 2056401 Sample # 1114252-58

Instructions on reverse side correspond with circled numbers.

SCR #: ____

(1) Client Information

Facility #: 204117

WBS:

Site Address: 2021 6th St, Bremerton, WA

Chevron PM: Eric Hetrick

Lead Consultant: Leidos

Consultant/Office: Leidos - Bothell, WA

Consultant Project Mgr.: Russ Shropshire

Consultant Phone #: 425-482-3323

Sampler: RAO/CMW

(4) Matrix: ☐ Sediment ☐ Ground ☐ Surface ☒ Soil ☐ Potable ☐ NPDES ☐ Water ☐ Air ☐ Oil

(5) Analyses Requested: BTEX + ~~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 ____; Napthalenes EPA 8270

(2) Sample Identification	Collected Date	Collected Time	(3) Grab	Composite	Soil	Water	Oil	Total Number of Containers	BTEX + ~~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.	Napthalenes EPA 8270
SB-15-8.0-S-072319	7/23/19	1615	✓		✓			7	✓			✓		✓		✓	✓
SB-15-13.0-S-072319	7/23/19	1610	✓		✓			7	✓			✓		✓		✓	✓
SB-15-22.5-S-072319	7/23/19	1600	✓		✓			7	✓			✓		✓		✓	✓
SB-16-9.0-S-072319	7/23/19	1335	✓		✓			7	✓			✓		✓		✓	✓
SB-16-13.0-S-072319	7/23/19	1425	✓		✓			7	✓			✓		✓		✓	✓
SB-16-22.5-S-072319	7/23/19	1410	✓		✓			7	✓			✓		✓		✓	✓
~~TB-5-072419~~	~~7/24/19~~	~~1400~~	~~✓~~		~~✓~~			~~4~~	~~✓~~								
TB-5-072419	7/24/19	1400	✓			✓		4	✓			✓					

(Unused rows struck through; initialed 7/29/19)

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

(6) Remarks

Submit Invoice to Leidos. P010229412

(7) Turnaround Time Requested (TAT) (please circle)

(Standard) 5 day 4 day

72 hour 48 hour 24 hour

(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	Date	Time	Received by	Date	Time
[signature]	7/29/19	1230			
Relinquished by			Received by		
Relinquished by Commercial Carrier: UPS X FedEx ____ Other ____			Received by [signature]	7/30/19	1015

(9)

Temperature Upon Receipt 0.7 °C

Custody Seals Intact? (Yes) No

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300

7051 0913

The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be given to the SeaTac Courier. The pink copy should be retained by the client.

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Sample Administration Receipt Documentation Log

Doc Log ID: 255340

Group Number(s): 2056401

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:	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 12:27 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

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.co

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 >= 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.

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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	Attn: Russ Shropshire
Electronic Copy To	EcoChem	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.

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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 15:00
SDG#: LDC08-01

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114303
ELLE Group #: 2056413
Matrix: Soil

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 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.	7.0	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 15:00
SDG#: LDC08-01

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114303
ELLE Group #: 2056413
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 15:20
SDG#: LDC08-02

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114304
ELLE Group #: 2056413
Matrix: Soil

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 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.	5.3	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 15:20
SDG#: LDC08-02

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114304
ELLE Group #: 2056413
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 14:55
SDG#: LDC08-03

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114305
ELLE Group #: 2056413
Matrix: Soil

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 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.	10.1	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 14:55
SDG#: LDC08-03

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114305
ELLE Group #: 2056413
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 11:05
SDG#: LDC08-04FD

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114306
ELLE Group #: 2056413
Matrix: Soil

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 NWTPH-Gx**		**mg/kg**	**mg/kg**	
02005	NWTPH-GX Soil C7-C12	n.a.	1,100	16	1592.57
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 11:05
SDG#: LDC08-04FD

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114306
ELLE Group #: 2056413
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 12:05
SDG#: LDC08-05

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114307
ELLE Group #: 2056413
Matrix: Soil

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 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.	6.3	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 12:05
SDG#: LDC08-05

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114307
ELLE Group #: 2056413
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 11:50
SDG#: LDC08-06

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114308
ELLE Group #: 2056413
Matrix: Soil

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 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.	8.7	0.50	1

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

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Sample Description: **SB-19-S-14.0-190725 Grab Soil**
Facility# 204117
2021 6th Street-Bremerton, WA

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 11:50
SDG#: LDC08-06

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114308
ELLE Group #: 2056413
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 12:00
SDG#: LDC08-07TB

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1114309
ELLE Group #: 2056413
Matrix: Water

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. Group Number: 2056413
Reported: 08/13/2019 11:22

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. Group Number: 2056413
Reported: 08/13/2019 11:22

Method Blank (continued)

Analysis Name	Result	MDL
	ug/l	ug/l
NWTPH-Gx water C7-C12	N.D.	19
	mg/kg	mg/kg
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. Group Number: 2056413
Reported: 08/13/2019 11:22

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
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 19217SLA026	Sample number(s): 1114303-1114307								
Naphthalene	1.67	1.23			74		46-99		
Batch number: 19217SLB026	Sample number(s): 1114308								
Naphthalene	1.67	1.32			79		46-99		
	mg/kg	**mg/kg**	**mg/kg**	**mg/kg**					
Batch number: 19216A31A	Sample number(s): 1114303-1114305								
NWTPH-GX Soil C7-C12	11	11.46	11	11.37	104	103	55-145	1	30
Batch number: 19216A31B	Sample number(s): 1114306								
NWTPH-GX Soil C7-C12	11	11.46	11	11.37	104	103	55-145	1	30
Batch number: 19216C31A	Sample number(s): 1114307-1114308								
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): 1114309								
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): 1114303-1114308								
Diesel Range Organics C12-C24	133.4	101.08			76		61-115		
	mg/kg	**mg/kg**	**mg/kg**	**mg/kg**					
Batch number: 192141404903	Sample number(s): 1114303-1114304,1114306-1114308								
Lead	15	14.59			97		90-115		
Batch number: 192141404904	Sample number(s): 1114305								
Lead	15	15.24			102		90-115		
	%	**%**	**%**	**%**					
Batch number: 19217820006A	Sample number(s): 1114303-1114307								
Moisture	89.5	89.43			100		99-101		
Batch number: 19217820006B	Sample number(s): 1114308								
Moisture	89.5	89.43			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. Group Number: 2056413
Reported: 08/13/2019 11:22

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	Sample number(s): 1114303-1114308 UNSPK: 1114306									
Diesel Range Organics C12-C24	662.85	133.4	2886.35			1667 (2)		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 192141404904	Sample number(s): 1114305 UNSPK: 1114305									
Lead	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	DUP Conc	DUP RPD	DUP RPD Max
	mg/kg	mg/kg		
Batch number: 192140030A	Sample number(s): 1114303-1114308 BKG: 1114306			
Diesel Range Organics C12-C24	662.85	3055.1	129*	20
Heavy Range Organics C24-C40	124.03	N.D.	200* (1)	20
	mg/kg	mg/kg		
Batch number: 192141404904	Sample number(s): 1114305 BKG: 1114305			
Lead	1.88	1.89	1 (1)	20
	%	%		
Batch number: 19217820006A	Sample number(s): 1114303-1114307 BKG: 1114307			
Moisture	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. Group Number: 2056413
Reported: 08/13/2019 11:22

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. Group Number: 2056413
Reported: 08/13/2019 11:22

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. Group Number: 2056413
Reported: 08/13/2019 11:22

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

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Acct. # 13271 — For Eurofins Lancaster Laboratories Environmental use only — Group # 2056413 Sample # 1114303-09

Instructions on reverse side correspond with circled numbers.

SCR #: _____

1 Client Information

Facility # 204117 — WBS

Site Address: 2021 6th St, Bremerton, WA

Chevron PM: Eric Hetrick — Lead Consultant: Leidos

Consultant/Office: Leidos - Bothell, WA

Consultant Project Mgr.: Russ Shropshire

Consultant Phone #: 425-482-3323

Sampler: RAO / CMW

2 Sample Identification

Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	4 Matrix: Soil	Water	Sediment	Potable	Ground	NPDES	Surface	Oil	Air	Total Number of Containers	5 Analyses Requested
SB-18-8.0-S-072319	7/23/19	1500	/		/									7	
SB-18-18.0-S-072319	7/23/19	1520	/		/									7	
SB-18-22.5-S-072319	7/23/19	1455	/		/									7	
DUP-1-072319	7/23/19	1105	/		/									7	
SB-19-8.0-S-072519	7/25/19	1205	/		/									7	
SB-19-14.0-S-072519	7/25/19	1150	/		/									7	
~~TB-6-072319~~	~~7/23/19~~	RO													
TB-6-072519	7/25/19	1200	/			/								4	

5 Analyses Requested: BTEX + ~~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 GCMS — Naphthalenes EPA 8270

Turn Around 7/29/19

☐ 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

6 Remarks

Submit invoice to Leidos
PO10229412

7 Turnaround Time Requested (TAT) (please circle)

Standard — 5 day — 4 day — 72 hour — 48 hour — 24 hour

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	Date	Time	Received by	Date	Time
[signature]	7/29/19	1350	[signature]		
[signature]			[signature]		

Relinquished by Commercial Carrier: UPS X — FedEx ____ — Other ____

Received by [signature] — Date 7/30/19 — Time 1015

Temperature Upon Receipt 0.6 °C

Custody Seals Intact? Yes / No

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Sample Administration Receipt Documentation Log

Doc Log ID: 255345

Group Number(s): 2056413

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:	No
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 12:43 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

Sample ID on COC	Date/Time on Label	Comments
SB-19-8.0-S-072519	7/25/2019 12:15	

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.co

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 >= 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.

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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	Attn: Russ Shropshire
Electronic Copy To	EcoChem	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.

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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 11:45
SDG#: LDC09-01

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114310
ELLE Group #: 2056414
Matrix: Soil

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 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.	11.6	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 11:45
SDG#: LDC09-01

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114310
ELLE Group #: 2056414
Matrix: Soil

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**

Submittal 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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 11:40
SDG#: LDC09-02

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114311
ELLE Group #: 2056414
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 12:15
SDG#: LDC09-03FD

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114312
ELLE Group #: 2056414
Matrix: Soil

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 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.	2.5	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 12:15
SDG#: LDC09-03FD

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114312
ELLE Group #: 2056414
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:40
SDG#: LDC09-04

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114313
ELLE Group #: 2056414
Matrix: Soil

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 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.

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:40
SDG#: LDC09-04

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114313
ELLE Group #: 2056414
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:30
SDG#: LDC09-05

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114314
ELLE Group #: 2056414
Matrix: Soil

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 NWTPH-Gx**		**mg/kg**	**mg/kg**	
02005	NWTPH-GX Soil C7-C12	n.a.	170	2.4	243.19
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:30
SDG#: LDC09-05

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114314
ELLE Group #: 2056414
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:20
SDG#: LDC09-06

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114315
ELLE Group #: 2056414
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:20
SDG#: LDC09-06

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114315
ELLE Group #: 2056414
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 11:00
SDG#: LDC09-07TB

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1114316
ELLE Group #: 2056414
Matrix: Water

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. Group Number: 2056414
Reported: 08/20/2019 11:38

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: 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. Group Number: 2056414
Reported: 08/20/2019 11:38

Method Blank (continued)

Analysis Name	Result	MDL
	mg/kg	mg/kg
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: 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
(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. Group Number: 2056414
Reported: 08/20/2019 11:38

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	Sample number(s): 1114314-1114315								
Diesel Range Organics C12-C24	133.4	105.63			79		61-115		
	mg/kg	**mg/kg**	**mg/kg**	**mg/kg**					
Batch number: 192141404902	Sample number(s): 1114310-1114311,1114314								
Lead	15	15.79			105		90-115		
Batch number: 192141404903	Sample number(s): 1114312-1114313,1114315								
Lead	15	14.59			97		90-115		
	%	**%**	**%**	**%**					
Batch number: 19217820006B	Sample number(s): 1114310-1114315								
Moisture	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	Sample number(s): 1114310-1114315 UNSPK: 1114314									
Naphthalene	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	Sample number(s): 1114310-1114311,1114314 UNSPK: 1114311									
Lead	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	Sample number(s): 1114310-1114311,1114314 BKG: 1114311			
Lead	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. Group Number: 2056414
Reported: 08/20/2019 11:38

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. Group Number: 2056414
Reported: 08/20/2019 11:38

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. Group Number: 2056414
Reported: 08/20/2019 11:38

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

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Acct. # 13271 For Eurofins Lancaster Laboratories Environmental use only Group # 2056414 Sample # 1114310-16
Instructions on reverse side correspond with circled numbers.

SCR #: _____

1 Client Information

Facility # 204117 WBS
Site Address: 2021 6th St, Bremerton, WA
Chevron PM: Eric Hetrick Lead Consultant: Leidos
Consultant/Office: Leidos - Bothell, WA
Consultant Project Mgr.: Russ Shropshire
Consultant Phone #: 425-482-3323
Sampler: RAO/CMW

2 Sample Identification | Collected Date | Time | **3** Grab | Composite | **4 Matrix**: Soil | Water | Sediment | Ground | Potable | NPDES | Surface | Air | Oil | Total Number of Containers | **5 Analyses Requested**: BTEX +~~MTBE~~ | Naphth | 8021 | 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 GC/MS | Naphthalenes 8270

Sample Identification	Date	Time	Grab	Composite	Soil	Water	Sediment	Ground	Potable	NPDES	Surface	Air	Oil	Total Containers	BTEX +~~MTBE~~	Naphth	8021	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 GC/MS	Naphthalenes 8270
SB-19-22.5-S-072519	7/25/19	1145			X									7									X							
SB-19-27.5-S-072519		1140												7																
~~SB-19~~ DUP-2-072519		1215												7																
SB-20-8.0-S-072519		1340												7																
SB-20-14.0-S-072519		1330												7																
SB-20-22.5-S-072519		1320												7																
TB-7-072519	↓	1100												4																
~~DUP-2~~																														

Relinquished by: Ruth Ann Date: 7/29/19 Time: 1430 Received by:
Relinquished by: Date: Time: Received by:
Relinquished by Commercial Carrier: UPS X FedEx ____ Other ____ Received by: Date: 7/30/19 Time: 1005
Temperature Upon Receipt 0.8 °C Custody Seals Intact? Yes No

6 Remarks

Submit Invoice to Leidos
PO10229412

7 Turnaround Time Requested (TAT) (please circle)
Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

8 Data Package (circle if required)
Type I - Full
Type VI (Raw Data)

EDD (circle if required)
CVX-RTBU-FI_05 (default)
Other: _____

9

Eurofins Lancaster Laboratories Environmental, LLC • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 7051 0913

The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be given to the SeaTac Courier. The pink copy should be retained by the client.

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Sample Administration Receipt Documentation Log

Doc Log ID: 255347

Group Number(s): 2056414

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:	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

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.co

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 >= 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.

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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	Attn: Russ Shropshire
Electronic Copy To	EcoChem	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.

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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 08:25
SDG#: LDC10-01

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114317
ELLE Group #: 2056415
Matrix: Soil

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 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.	19.0	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 08:25
SDG#: LDC10-01

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114317
ELLE Group #: 2056415
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:20
SDG#: LDC10-02

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114318
ELLE Group #: 2056415
Matrix: Soil

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 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.	22.4	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:20
SDG#: LDC10-02

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114318
ELLE Group #: 2056415
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:30
SDG#: LDC10-03

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114319
ELLE Group #: 2056415
Matrix: Soil

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 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.	22.6	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:30
SDG#: LDC10-03

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114319
ELLE Group #: 2056415
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:40
SDG#: LDC10-04

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114320
ELLE Group #: 2056415
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:40
SDG#: LDC10-04

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114320
ELLE Group #: 2056415
Matrix: Soil

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**

Submittal 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	**SW-846 8260C**		**mg/kg**	**mg/kg**	
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	**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.	0.6	0.2	20.29
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-Dx modified**		**mg/kg**	**mg/kg**	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.3	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	0.445	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

Sample Description: **SB-11-S-27.5-190724 Grab Soil**
Facility# 204117
2021 6th Street-Bremerton, WA

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:50
SDG#: LDC10-05

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114321
ELLE Group #: 2056415
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 09:00
SDG#: LDC10-06TB

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1114322
ELLE Group #: 2056415
Matrix: Water

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. Group Number: 2056415
Reported: 08/20/2019 11:35

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. Group Number: 2056415
Reported: 08/20/2019 11:35

Method Blank (continued)

Analysis Name	Result	MDL
	ug/l	ug/l
Batch number: 19213B20A	Sample number(s): 1114322	
NWTPH-Gx water C7-C12	N.D.	19
	mg/kg	mg/kg
Batch number: 192180010A	Sample number(s): 1114317-1114320	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 192190015A	Sample number(s): 1114321	
Diesel Range Organics C12-C24	N.D.	4.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 192141404903	Sample number(s): 1114317-1114319	
Lead	N.D.	0.600
Batch number: 192141404904	Sample number(s): 1114320-1114321	
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): 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
(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. Group Number: 2056415
Reported: 08/20/2019 11:35

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
	mg/kg	mg/kg	mg/kg	mg/kg					
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
(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. Group Number: 2056415
Reported: 08/20/2019 11:35

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	Sample number(s): 1114317-1114320 UNSPK: 1114320									
Diesel Range Organics C12-C24	50.95	132.03	171.24			91		61-115		

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	Sample number(s): 1114317-1114320 BKG: 1114320			
Diesel Range Organics C12-C24	50.95	97.51	63*	20
Heavy Range Organics C24-C40	21.9	N.D.	200* (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
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. Group Number: 2056415
Reported: 08/20/2019 11:35

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
(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. Group Number: 2056415
Reported: 08/20/2019 11:35

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. Group Number: 2056415
Reported: 08/20/2019 11:35

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

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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

Facility # 204177 — WBS

Site Address: 2021 6th St Bremerton, WA

Chevron PM: Eric Hetrick — Lead Consultant: Leidos

Consultant/Office: Leidos - Bothell, WA

Consultant Project Mgr.: Russ Shropshire

Consultant Phone #: 425-482-3323

Sampler: RAO/CMW

2 Sample Identification

Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	4 Matrix: Soil	Water	Sediment	Oil	Potable	Ground	NPDES	Surface	Air	Total Number of Containers	5 Analyses Requested
SB-11-6.0-S-072319	7/23/19	0825	X		X									7	
SB-11-10.0-S-072419	7/24/19	0920	X		X									7	
SB-11-14.0-S-072419	7/24/19	0930	X		X									7	
SB-11-20.0-S-072419	7/24/19	0940	X		X									7	
SB-11-27.5-S-072419	7/24/19	0950	X		X									7	
TB-3-072419	7/24/19	0900	X			X								4	RO
TB-3-072419	7/24/19	0900	X			X								4	

5 Analyses Requested: BTEX + MTBE; 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 6010B; Naphthalenes EPA 8270; Naphth; 8260; 8021

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

6 Remarks

Submit Invoice to Leidos

PO10229412

7 Turnaround Time Requested (TAT) (please circle)

Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

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	Date	Time	Received by	Date	Time
[signature]	7/29/19	1440			9
Relinquished by	Date	Time	Received by	Date	Time

Relinquished by Commercial Carrier: UPS X FedEx ____ Other ____

Temperature Upon Receipt 1.0 °C

Received by [signature] — Date 7/30/19 — Time 1015

Custody Seals Intact? (Yes) No

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Sample Administration Receipt Documentation Log

Doc Log ID: 255351

Group Number(s): 2056415

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:	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 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

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.co

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 >= 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.

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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	Attn: Russ Shropshire
Electronic Copy To	EcoChem	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.

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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:10
SDG#: LDC11-01

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114323
ELLE Group #: 2056416
Matrix: Soil

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 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.	4.5	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:10
SDG#: LDC11-01

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114323
ELLE Group #: 2056416
Matrix: Soil

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**

Submittal 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**	**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**	**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.	29	2.1	210.1
	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.	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**	**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

Sample Description: **SB-14-S-20.0-190724 Grab Soil**
Facility# 204117
2021 6th Street-Bremerton, WA

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 17:30
SDG#: LDC11-02

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114324
ELLE Group #: 2056416
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 17:25
SDG#: LDC11-03

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114325
ELLE Group #: 2056416
Matrix: Soil

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	0.002	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**	**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	25.65
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-Dx modified**		**mg/kg**	**mg/kg**	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.2	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	1.74	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

Sample Description: **SB-14-S-27.5-190724 Grab Soil**
Facility# 204117
2021 6th Street-Bremerton, WA

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 17:25
SDG#: LDC11-03

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114325
ELLE Group #: 2056416
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 09:00
SDG#: LDC11-04

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114326
ELLE Group #: 2056416
Matrix: Soil

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 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.	22.2	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 09:00
SDG#: LDC11-04

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114326
ELLE Group #: 2056416
Matrix: Soil

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**

Submittal 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**	**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**	**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	26.57
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	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

Sample Description: **SB-12-S-14.5-190724 Grab Soil**
Facility# 204117
2021 6th Street-Bremerton, WA

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 14:10
SDG#: LDC11-05

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114327
ELLE Group #: 2056416
Matrix: Soil

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**

Submittal 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**	**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**	**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	22.43
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	2.42	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

Sample Description: **SB-12-S-20.0-190724 Grab Soil**
Facility# 204117
2021 6th Street-Bremerton, WA

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 14:00
SDG#: LDC11-06

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114328
ELLE Group #: 2056416
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 13:00
SDG#: LDC11-07TB

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1114329
ELLE Group #: 2056416
Matrix: Water

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. Group Number: 2056416
Reported: 08/20/2019 11:34

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): 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	Sample number(s): 1114326	
NWTPH-GX Soil C7-C12	N.D.	0.2
Batch number: 19216C31A	Sample number(s): 1114323-1114325,1114327-1114328	
NWTPH-GX Soil C7-C12	N.D.	0.2
	ug/l	**ug/l**
Batch number: 19213B20A	Sample number(s): 1114329	
NWTPH-Gx water C7-C12	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. Group Number: 2056416
Reported: 08/20/2019 11:34

Method Blank (continued)

Analysis Name	Result	MDL
	mg/kg	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	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): 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. Group Number: 2056416
Reported: 08/20/2019 11:34

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	Sample number(s): 1114327-1114328								
Naphthalene	1.67	1.42			85		46-99		
	mg/kg	**mg/kg**	**mg/kg**	**mg/kg**					
Batch number: 19216A31A	Sample number(s): 1114326								
NWTPH-GX Soil C7-C12	11	11.46	11	11.37	104	103	55-145	1	30
Batch number: 19216C31A	Sample number(s): 1114323-1114325,1114327-1114328								
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): 1114329								
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): 1114326								
Diesel Range Organics C12-C24	133.4	108.3			81		61-115		
Batch number: 192190015A	Sample number(s): 1114323-1114325,1114327-1114328								
Diesel Range Organics C12-C24	133.4	105.63			79		61-115		
	mg/kg	**mg/kg**	**mg/kg**	**mg/kg**					
Batch number: 192141404904	Sample number(s): 1114323-1114328								
Lead	15	15.24			102		90-115		
	%	**%**	**%**	**%**					
Batch number: 19217820001A	Sample number(s): 1114323-1114328								
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	Sample number(s): 1114323-1114325,1114327-1114328 UNSPK: 1114324									
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. Group Number: 2056416
Reported: 08/20/2019 11:34

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. Group Number: 2056416
Reported: 08/20/2019 11:34

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. Group Number: 2056416
Reported: 08/20/2019 11:34

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. Group Number: 2056416
Reported: 08/20/2019 11:34

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

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Acct. # 13271 For Lancaster Laboratories use only Group # 2056416 Sample # 1114323-29
Instructions on reverse side correspond with circled numbers.

1 Client Information

Facility # 204117 WBS
Site Address 2021 6th St, Bremerton, WA
Chevron PM Eric Hetrick Lead Consultant Leidos
Consultant/Office Leidos - Bothell, WA
Consultant Project Mgr. Russ Shropshire
Consultant Phone # 425-482-3323
Sampler RO/CW

4 Matrix

Soil ☐ Water Sediment ☐ Potable Ground ☐ NPDES Surface ☐ Oil ☐ Air ☐

5 Analyses Requested

Total Number of Containers
BTEX ~~+MTBE~~ ☐ 8021 ☐ 8260 ☒ Naphth ☐
8260 full scan
Oxygenates ____
NWTPH GX
NWTPH DX ☒ Silica Gel Cleanup ☐
Lead Total ☒ Diss. ☐ Method 6010B
WAVPH ☐ WAEPH ☐
Naphthalenes EPA 8270

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

6 Remarks

2 Sample Identification	Collected Date	Collected Time	3 Grab	3 Composite	Soil	Water	Oil	Total Number of Containers	BTEX	8260 full scan	Oxygenates	NWTPH GX	NWTPH DX	Lead	WAVPH	Naphthalenes EPA 8270
SB-20-27.5-S-072519	7/25/19	1318	✓		✓			7	✓			✓		✓		✓
~~SB-14-20.0-S-072519~~																
SB-14-20.0-S-072419	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	0900	✓		✓			7	✓			✓		✓		✓
SB-12-14.5-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	✓			✓		4	✓			✓				
		7/29/19														

7 Turnaround Time Requested (TAT) (please circle)
Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

8 Data Package Options (please circle if required)
Type I - Full | Type VI (Raw Data)

Relinquished by	Date	Time	Received by	Date	Time
[signature]	7/29/19	1450	[signature]		
Relinquished by	Date	Time	Received by	Date	Time
Relinquished by Commerical Carrier: UPS X FedEx ____ Other ____			Received by [signature]	7/30/19	1015
Temperature Upon Receipt 0.9 °C			Custody Seals Intact? Yes / No		

Lancaster Laboratories, Inc. • 2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300
The white copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the client.
Issued by Dept. 40 Management
7051.01

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 255354

Group Number(s): 2056416

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:	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 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

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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 >= 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.

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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	Attn: Russ Shropshire
Electronic Copy To	EcoChem	Attn: Christine Ransom

Respectfully Submitted,

Amek Carter
Specialist

(717) 556-7252

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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
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**

Submittal 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	**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	0.002	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	**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	33.08
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	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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 11:55
SDG#: LDC12-01

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114330
ELLE Group #: 2056417
Matrix: Soil

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**

Submittal 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**	**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**	**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	25.17
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	1.83	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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 12:00
SDG#: LDC12-02

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114331
ELLE Group #: 2056417
Matrix: Soil

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**	**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**	**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	25.7
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-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	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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 12:10
SDG#: LDC12-03

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114332
ELLE Group #: 2056417
Matrix: Soil

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**	**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**	**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	26.28
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-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.	21	13	1
Metals	**SW-846 6010D Rev.4, July 2014**		**mg/kg**	**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

Sample Description: **SB-10-S-8.0-190724 Grab Soil**
Facility# 204117
2021 6th Street-Bremerton, WA

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 12:20
SDG#: LDC12-04

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114333
ELLE Group #: 2056417
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 11:00
SDG#: LDC12-05TB

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1114334
ELLE Group #: 2056417
Matrix: Water

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. Group Number: 2056417
Reported: 08/20/2019 11:32

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. Group Number: 2056417
Reported: 08/20/2019 11:32

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. Group Number: 2056417
Reported: 08/20/2019 11:32

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	Sample number(s): 1114330-1114333 UNSPK: 1114330									
Naphthalene	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	Sample number(s): 1114330-1114333 BKG: 1114332			
Moisture	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. Group Number: 2056417
Reported: 08/20/2019 11:32

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. Group Number: 2056417
Reported: 08/20/2019 11:32

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

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Acct. # 13271 — For Eurofins Lancaster Laboratories Environmental use only — Group # 2056417 Sample # 1114330-34

Instructions on reverse side correspond with circled numbers.

SCR #: ______

① Client Information

Facility # 204117 WBS

Site Address: 2021 6th St, Bremerton, WA

Chevron PM: Eric Hetrick Lead Consultant: Leidos

Consultant/Office: Leidos-Bothell, WA

Consultant Project Mgr.: Russ Shropshire

Consultant Phone #: 425-482-3323

Sampler: RAO/CW

④ Matrix: Sediment ☐ Ground ☐ Surface ☐ Soil ☒ Potable ☐ NPDES ☐ Water; Oil ☐ Air ☐

⑤ Analyses Requested: BTEX + ~~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 6010B; Naphthalenes EPA 8270

② Sample Identification	Date	Time	Grab	Composite	Soil	Water	Oil	Total Number of Containers	BTEX	8260 full scan	Oxygenates	NWTPH-Gx	NWTPH-Dx with Silica Gel Cleanup	NWTPH-Dx without Silica Gel Cleanup	WA VPH / WA EPH	Lead	Naphthalenes
SB-10-27.5-S-072419	7/24/19	1155	✓		✓			7	X			X		X		X	X
SB-10-20.0-S-072419	↓	1200	✓		✓			7	X			X		X		X	X
SB-10-14.0-S-072419	↓	1210	✓		✓			7	X			X		X		X	X
~~SB-8~~ SB-10-8.0-S-072419	↓	1220	✓		✓			7	X			X		X		X	X
TB-2-072419	7/24/19	1100	✓		~~✓~~ RSS 7-29-19	X		4	✓			✓					

[signature] 7/29/19

⑥ Remarks

Invoice to Leidos P010229412

☐ 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

⑦ Turnaround Time Requested (TAT) (please circle): (Standard) 5 day 4 day 72 hour 48 hour 24 hour

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	Date	Time	Received by	Date	Time
[signature]	7/29/19	1430			
Relinquished by			Received by		
Relinquished by Commercial Carrier: UPS X FedEx ___ Other ___			Received by [signature]	7/30/19	1015

Temperature Upon Receipt 0.9 °C — Custody Seals Intact? (Yes) No

⑨

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The white copy should accompany samples to Eurofins Lancaster Laboratories Environmental. The yellow copy should be given to the SeaTac Courier. The pink copy should be retained by the client.

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Sample Administration Receipt Documentation Log

Doc Log ID: 255356

Group Number(s): 2056417

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:	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 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

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.com

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 >= 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.

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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: 2056418
SDG: LDC13
PO Number: P010215249
Release Number: HETRICK
State of Sample Origin: WA

Electronic Copy To	EcoChem	Attn: Christine Ransom
Electronic Copy To	Leidos	Attn: Russ Shropshire

Respectfully Submitted,

Amek Carter
Specialist

(717) 556-7252

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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 10:05
SDG#: LDC13-01

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114335
ELLE Group #: 2056418
Matrix: Soil

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 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.	9.8	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 10:05
SDG#: LDC13-01

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114335
ELLE Group #: 2056418
Matrix: Soil

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**

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
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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 10:30
SDG#: LDC13-02

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114336
ELLE Group #: 2056418
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 11:05
SDG#: LDC13-03

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114337
ELLE Group #: 2056418
Matrix: Soil

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 NWTPH-Gx**		**mg/kg**	**mg/kg**	
02005	NWTPH-GX Soil C7-C12	n.a.	1,400	19	1872.07
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 11:05
SDG#: LDC13-03

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114337
ELLE Group #: 2056418
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 08:20
SDG#: LDC13-04TB

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1114338
ELLE Group #: 2056418
Matrix: Water

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 11:55
SDG#: LDC13-05

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114339
ELLE Group #: 2056418
Matrix: Soil

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 NWTPH-Gx**		**mg/kg**	**mg/kg**	
02005	NWTPH-GX Soil C7-C12	n.a.	140	2.5	254.11
GC Petroleum Hydrocarbons	**ECY 97-602 NWTPH-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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 11:55
SDG#: LDC13-05

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114339
ELLE Group #: 2056418
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 11:45
SDG#: LDC13-06

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114340
ELLE Group #: 2056418
Matrix: Soil

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 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.	4.2	0.50	1

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/23/2019 11:45
SDG#: LDC13-06

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1114340
ELLE Group #: 2056418
Matrix: Soil

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. Group Number: 2056418
Reported: 08/13/2019 11:22

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. Group Number: 2056418
Reported: 08/13/2019 11:22

Method Blank (continued)

Analysis Name	Result	MDL
	mg/kg	mg/kg
	ug/l	ug/l
Batch number: 19213B20A	Sample number(s): 1114338	
NWTPH-Gx water C7-C12	N.D.	19
	mg/kg	mg/kg
Batch number: 192170012A	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. Group Number: 2056418
Reported: 08/13/2019 11:22

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		

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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. Group Number: 2056418
Reported: 08/13/2019 11:22

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. Group Number: 2056418
Reported: 08/13/2019 11:22

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
LCSD	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. Group Number: 2056418
Reported: 08/13/2019 11:22

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. Group Number: 2056418
Reported: 08/13/2019 11:22

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

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Acct. # 13271 — For Eurofins Lancaster Laboratories Environmental use only — Group # 2056418 — Sample # 1114335-40

Instructions on reverse side correspond with circled numbers.

SCR #: ______

① Client Information

- Facility #: 204117
- WBS:
- Site Address: 2021 6th St, Bremerton, WA
- Chevron PM: Eric Hetrick
- Lead Consultant: Leidos
- Consultant/Office: Leidos-Bothell, WA
- Consultant Project Mgr.: Russ Shropshire
- Consultant Phone #: 425-482-3323
- Sampler: RAO/CMW

④ Matrix: ☐ Sediment ☐ Ground ☐ Surface ☒ Soil ☐ Potable ☐ NPDES ☐ Water ☐ Oil ☐ Air

⑤ Analyses Requested: BTEX ~~+ 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 6010B; Naphthalenes EPA 8270; MTBE, EDB, EDC, N-hexane 8260; cPAHs 8270 SIM; PCBs EPA 8082*

② Sample Identification / Collected

Sample Identification	Date	Time	Grab	Composite	Soil	Water	Oil	Total Number of Containers	BTEX	8260 full scan	Oxygenates	NWTPH-Gx	NWTPH-Dx with SGC	NWTPH-Dx without SGC	WA VPH	WA EPH	Lead	Naphthalenes EPA 8270	MTBE, EDB, EDC, N-hexane 8260	cPAHs 8270 SIM	PCBs EPA 8082
SB-17-8.0-S-072319	7/23/19	1005	✓		✓			7	✓			✓		✓			✓	✓			
SB-17-14.5-S-072319	7/23/19	1030	✓		✓			12	✓			✓		✓			✓	✓	✓	✓	✓
SB-17-19.5-S-072319	7/23/19	1105	✓		✓			7	✓			✓		✓			✓	✓			
TB-1-072319	7/23/19	0820				✓		4	✓			✓									
SB-17-24.0-S-072319	7/23/19	1155	✓		✓			7	✓			✓		✓			✓	✓			
SB-17-29.5-S-072319	7/23/19	1145	✓		✓			7	✓			✓		✓			✓	✓			

[signature] 7/29/19

Special instructions: ☐ 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

⑥ Remarks: Submit invoice to Leidos P010229412

⑦ Turnaround Time Requested (TAT) (please circle): (Standard) 5 day 4 day 72 hour 48 hour 24 hour

⑧ Data Package (circle if required): (Type I - Full) Type VI (Raw Data)

EDD (circle if required): CVX-RTBU-FI_05 (default) Other: ______

⑨

Relinquished by	Date	Time	Received by	Date	Time
[signature]	7/29/19	1334			
Relinquished by Commercial Carrier: UPS X FedEx ___ Other ___			[signature]	7/30/19	1015

Temperature Upon Receipt 1.8 °C — Custody Seals Intact? (Yes) No

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Sample Administration Receipt Documentation Log

Doc Log ID: 255343

Group Number(s): 2056418

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:	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 12:34 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

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.co

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 >= 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.

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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	Attn: Christine Ransom
Electronic Copy To	Leidos	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.

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SAMPLE INFORMATION

Client Sample Description	Sample Collection Date/Time	ELLE#
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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 14:30
SDG#: LDC14-01

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1115414
ELLE Group #: 2056642
Matrix: Water

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 14:30
SDG#: LDC14-01

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1115414
ELLE Group #: 2056642
Matrix: Water

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 13:40
SDG#: LDC14-04

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1115417
ELLE Group #: 2056642
Matrix: Soil

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	0.001	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	**SW-846 8270D**		**mg/kg**	**mg/kg**	
10726	Naphthalene	91-20-3	3.2	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	21.38
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	2.58	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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 13:40
SDG#: LDC14-04

Chevron c/o Leidos, Inc.
ELLE Sample #: SW 1115417
ELLE Group #: 2056642
Matrix: Soil

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/25/2019 14:15
SDG#: LDC14-05TB

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1115418
ELLE Group #: 2056642
Matrix: Water

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

Project Name: **204117**

Submittal Date/Time: 07/30/2019 10:15
Collection Date/Time: 07/24/2019 12:30
SDG#: LDC14-06

Chevron c/o Leidos, Inc.
ELLE Sample #: WW 1115419
ELLE Group #: 2056642
Matrix: Water

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. Group Number: 2056642
Reported: 08/20/2019 13:46

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): 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
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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. Group Number: 2056642
Reported: 08/20/2019 13:46

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

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Quality Control Summary

Client Name: Chevron c/o Leidos, Inc. Group Number: 2056642
Reported: 08/20/2019 13:46

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

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Quality Control Summary

Client Name: Chevron c/o Leidos, Inc. Group Number: 2056642
Reported: 08/20/2019 13:46

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
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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. Group Number: 2056642
Reported: 08/20/2019 13:46

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	Sample number(s): 1115417								
Naphthalene	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	Sample number(s): 1115414								
Naphthalene	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	Sample number(s): 1115417								
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: 19217D20A	Sample number(s): 1115414,1115418-1115420								
NWTPH-Gx water C7-C12	1100	1316.68	1100	1211.34	120	110	64-131	8	30
	ug/l	**ug/l**	**ug/l**	**ug/l**					
Batch number: 192140010A	Sample number(s): 1115414								
PCB-1016	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

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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. Group Number: 2056642
Reported: 08/20/2019 13:46

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	Sample number(s): 1115414								
Ethylene dibromide	0.128	0.145			113		60-140		
	mg/kg	**mg/kg**	**mg/kg**	**mg/kg**					
Batch number: 192190016A	Sample number(s): 1115417								
Diesel Range Organics C12-C24	133.4	104.44			78		61-115		
	ug/l	**ug/l**	**ug/l**	**ug/l**					
Batch number: 192180014A	Sample number(s): 1115414								
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	Sample number(s): 1115417								
Lead	15	14.58			97		90-115		
	mg/l	**mg/l**	**mg/l**	**mg/l**					
Batch number: 192141404402	Sample number(s): 1115414								
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	Sample number(s): 1115414								
Mercury	0.00100	0.000841			84		80-110		
	%	**%**	**%**	**%**					
Batch number: 19214820001B	Sample number(s): 1115417								
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	Sample number(s): 1115417 UNSPK: 1115417									
Diesel Range Organics C12-C24	N.D.	132.47	105.31			79		61-115		

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Quality Control Summary

Client Name: Chevron c/o Leidos, Inc. Group Number: 2056642
Reported: 08/20/2019 13:46

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

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Quality Control Summary

Client Name: Chevron c/o Leidos, Inc. Group Number: 2056642
Reported: 08/20/2019 13:46

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

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Quality Control Summary

Client Name: Chevron c/o Leidos, Inc. Group Number: 2056642
Reported: 08/20/2019 13:46

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

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Quality Control Summary

Client Name: Chevron c/o Leidos, Inc. Group Number: 2056642
Reported: 08/20/2019 13:46

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

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Quality Control Summary

Client Name: Chevron c/o Leidos, Inc. Group Number: 2056642
Reported: 08/20/2019 13:46

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(2) The unspiked result was more than four times the spike added.

Chevron Northwest Region Analysis Request/Chain of Custody

eurofins | Lancaster Laboratories Environmental

Acct. # 13271 For Eurofins Lancaster Laboratories Environmental use only Group # 205642 Sample # 1115414-20
Instructions on reverse side correspond with circled numbers.

SCR #: 246268

1 Client Information

Facility # 204117 WBS
Site Address: 2021 6th St, Bremerton, WA
Chevron PM: Eric Hetrick Lead Consultant: Leidos
Consultant/Office: Leidos - Bothell, WA
Consultant Project Mgr.: Russ Shropshire
Consultant Phone #: 425-482-3323
Sampler: RAO / CMW

4 Matrix: Soil ☒, Sediment ☐, Water: Potable ☐, Ground ☐, NPDES ☐, Surface ☐, Oil ☐, Air ☐

3 Grab / Composite

2 Sample Identification | Collected Date | Time | Total Number of Containers

Sample Identification	Collected Date	Time	Grab	Composite	Soil	Sediment	Water: Potable	Water: Ground	Water: NPDES	Water: Surface	Oil	Air	Total Number of Containers
UST South - contents - 072519	7/25/19	1430	/					/					19
SB-12-275-S-072419	7/24/19	1340	/		/								4
TB-9-072519	7/25/19	1415	/					/					4
ER-2-072419	7/24/19	1230	/					/					6
ER-1-072319	7/23/19	0815	/					/					6

5 Analyses Requested

Sample Identification	BTEX + MTBE 8021 ☐ 8260 ☒ MTBE and EDC	8260 full scan	CPAHs by 8270 SIM	Oxygenates by 8082 PCBs	NWTPH-Gx	NWTPH-Dx with Silica Gel Cleanup ☐	BTEX 8260	NWTPH-Dx without Silica Gel Cleanup ☒	WA VPH ☐ WA EPH ☐	RCRA 8 Metals 6010 and 7470	Lead Total ☒ Diss. ☐ Method 6010B	Naphthalenes by 8270	EDB by 8011	TCLP volatiles by 8260	TCLP Semivolatiles by 8270
UST South - contents - 072519	X	X	X	X				X	X			X	X	X	X
SB-12-275-S-072419					X										
TB-9-072519					X										
ER-2-072419					X										
ER-1-072319					X										

- ☐ 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

6 Remarks

BTEX, MTBE, and EDC by 8260 for ~~Water sample~~ UST South - Contents - 072519

Submit invoice to Leidos PO10229412

7 Turnaround Time Requested (TAT) (please circle)

Standard | 5 day | 4 day | 72 hour | 48 hour | 24 hour

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	Date	Time	Received by	Date	Time
[signature]	7/17/19	4:20	[signature]		
[signature]	7/30/19	1530	[signature]		
Relinquished by Commercial Carrier: UPS X FedEx ____ Other ____			[signature]	7/30/19	1015

Temperature Upon Receipt 0.4 °C

Custody Seals Intact? (Yes) No

9

eurofins | Lancaster Laboratories Environmental

Sample Administration Receipt Documentation Log

Doc Log ID: 255359

Group Number(s): 2056642

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:	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

2425 New Holland Pike
Lancaster, PA 17605-2425

T | 717-656-2300
F | 717-656-2681
www.LancasterLabs.co

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 >= 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.

Appendix C:
Data Validation Reports

DATA VALIDATION REPORT
NEWMAN'S CHEVRON

Prepared for:

Leidos
18912 North Creek Parkway, Suite 101
Bothell, Washington 981011

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C4159-2

September 27, 2019

Approved for Release:

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 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.

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 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.

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.

ECOCHEM
Data Quality

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	2nd 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

[1] H = 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)	MB: One per matrix per batch (of ≤ 20 samples) 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.

(pos): Positive Result
(ND): Non-detect

* "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**.

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 ≥ 0.05 except: RRF ≥ 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 ≤ 25% except: %D ≤ 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 ≤ 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 ≤ 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.

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 ±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
[2] National Functional Guidelines for Organic Data Review, October, 1999
[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.

(pos): Positive Result(s)
(ND): Non-detects

* "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 **Exraction 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 (r2-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 ≤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 ≥ 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 ≤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 ≥ 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, quaify 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.

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, quaify 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					
Laboratroy 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.
Matris 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 ±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 ≥ 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.
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

ECOCHEM
Data Quality

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 REMEDIAL INVESTIGATION

Prepared for:

Leidos
18912 North Creek Parkway, Suite 101
Bothell, Washington 981011

Prepared by:

EcoChem, Inc.
500 Union Street, Suite 1010
Seattle, WA 98101

EcoChem Project: C4159-1

November 29, 2018

Approved for Release:

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 form 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 an 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 cannister 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.

ECOCHEM
Data Quality

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	2nd 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

[1] H = 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)	MB: One per matrix per batch (of ≤ 20 samples) 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.

(pos): Positive Result
(ND): Non-detect

* "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**.

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 ≥ 0.05 except: RRF ≥ 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 ≤ 25% except: %D ≤ 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 ≤ 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 ≤ 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.

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 ±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
[2] National Functional Guidelines for Organic Data Review, October, 1999
[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.

(pos): Positive Result(s)
(ND): Non-detects

* "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 **Exraction 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 (r2-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 ≤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 ≥ 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 ≤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 ≥ 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, quaify 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.

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)
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		**TM-06** EcoChem Policy for the Evaluation and Qualification of GCMS Instrument Performance
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 ≤ 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 ±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 ≤ 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

ECOCHEM
Data Quality

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