

**AGENCY REVIEW DRAFT
SUPPLEMENTAL REMEDIAL INVESTIGATION REPORT– PHASE 2
CHELAN CHEVRON
CLEANUP SITE ID: 6660
232 East Woodin Avenue
Chelan, Washington**

May 31, 2017

**Prepared for:
Washington State Department of Ecology
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Union Gap, Washington 98903**

**Prepared by:
Leidos, Inc.
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**On Behalf of:
Chevron Environmental Management Company
6001 Bollinger Canyon Road
San Ramon, California 94583**

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1. INTRODUCTION AND OBJECTIVES

Leidos, Inc. (Leidos), on behalf of Chevron Environmental Management Company (Chevron), prepared this report to summarize the results of the second phase of Supplemental Remedial Investigation (SRI Phase 2) activities performed at the Chelan Chevron site (the Site) between October 20, and November 15, 2016. SRI activities for the Site are being performed pursuant to the terms of Agreed Order No. DE 10629, which was entered into by Chevron and the Washington State Department of Ecology (Ecology) in June 2014.

The objectives of the SRI Phase 2 activities were to address data gaps regarding the vertical extent of petroleum hydrocarbon contamination and light non-aqueous phase liquid (LNAPL), and to facilitate a greater understanding of the extent of shallow perched groundwater at the Site and its relationship to Lake Chelan. Specifically, this phase of the SRI included the following investigation elements:

1. Performance of a soil boring and sampling investigation to address LNAPL data gaps, including additional delineation of the vertical extent of LNAPL in areas where LNAPL is known to be present, and determination of representative LNAPL saturation values in those areas;
2. Installation of two new monitoring wells to further evaluate the extent of the shallow perched aquifer at the Site and its relationship with Lake Chelan; and
3. Collection of supplemental shallow soil samples to evaluate current concentrations of selected gasoline constituents in soil in the vicinity of monitoring well MW-5.

2. BACKGROUND

Pursuant to the terms of an earlier Agreed Order for the Site (Agreed Order No. DE 02TCPCR-4905), Science Applications International Corporation (SAIC, a predecessor of Leidos), on behalf of Chevron, submitted a Remedial Investigation and Feasibility Study (RI/FS) report to Ecology in December 2006 (SAIC, 2006). That document is referred to as the 2006 RI/FS throughout the remainder of this report. The 2006 RI/FS identified Alternative 2C as the preferred cleanup alternative for the Site, which consisted of natural attenuation for soil, periodic LNAPL removal by bailing, and monitored natural attenuation of groundwater in the shallow perched aquifer. The 2006 RI/FS was approved by Ecology with no comments, by letter dated January 29, 2007, which completed the requirements of Agreed Order No. DE 02TCPCR-4905. Following approval of the 2006 RI/FS and satisfaction of the original Agreed Order, Chevron worked cooperatively with Ecology to develop a draft Cleanup Action Plan (dCAP) for the Site.

By letter dated November 1, 2012, Ecology rescinded approval of the 2006 RI/FS and requested that Chevron conduct a Supplemental Feasibility Study to evaluate more aggressive cleanup technologies for the Site. In June 2014, Chevron and Ecology entered into Agreed Order No. DE 10629, which requires that Chevron complete a Supplemental Remedial Investigation (SRI) and Supplemental Feasibility Study (SFS), and prepare a dCAP for the Site. Following execution of the 2014 Agreed Order, Leidos, on behalf of Chevron, planned and executed the first phase of

SRI activities at the Site, which included two rounds of Tier 2 vapor intrusion assessment sampling, LNAPL transmissivity evaluation by baildown testing, and an expanded scope of groundwater monitoring. That work is documented in reports prepared by Leidos that were submitted to Ecology in December 2015 and June 2016 (Leidos, 2015 and 2016). The work described in this report represents the second phase of SRI activities (SRI Phase 2) performed under Agreed Order No. DE 10629.

3. SUMMARY OF SRI PHASE 2 FIELD ACTIVITIES

As previously discussed in Section 1.0, the SRI Phase 2 field activities consisted of the following three investigation elements:

1. Performance of a soil boring and sampling investigation to address LNAPL data gaps;
2. Installation of two monitoring wells to further evaluate the extent of the shallow perched aquifer at the Site and its relationship with Lake Chelan; and
3. Collection of supplemental shallow soil samples to evaluate current concentrations of selected gasoline constituents in soil in the vicinity of monitoring well MW-5.

Additional details regarding the justification, planning, and execution of these investigation activities are provided in the following subsections.

3.1 PRELIMINARY INVESTIGATION TO ADDRESS LNAPL DATA GAPS

As documented in the 2006 RI/FS, previous investigation activities at the Site have included soil sampling at over 50 discrete soil boring locations and installation of 38 groundwater monitoring wells. These investigations have confirmed the presence of gasoline-range LNAPL in multiple monitoring wells to the west and southwest of the Chevron service station property, some of which are located more than 500 feet from the station. Subsequent long-term LNAPL gauging results, which were most recently reported in the Supplemental Remedial Investigation Report – Phase 1 (Leidos, 2015), indicate that in some of these monitoring wells LNAPL has routinely been measured at thicknesses of several feet or more, even while routine bailing efforts were being performed on an approximate monthly basis.

Despite the extensive subsurface investigation data that had previously been collected, numerous questions still remained regarding the presence of LNAPL at the Site, including:

- The lateral and vertical extent of LNAPL present;
- Transport mechanisms and pathways, and the number of petroleum sources, that have resulted in the current configuration of the LNAPL plume(s);
- The hydrogeologic condition(s) under which LNAPL is present (i.e., unconfined, confined, or perched);
- The approximate range and distribution of LNAPL saturation values at the Site; and
- The approximate mass of LNAPL present at the Site and the portion of the LNAPL that may be recoverable.

In order to begin to address these data gaps, Leidos performed a preliminary investigation that included the following components:

- Use of laser-induced fluorescence (LIF) technology to collect additional data regarding the vertical extent of LNAPL in select areas where LNAPL is known to be present; and

- Collection of soil core samples and soil confirmation samples to verify the results of the LIF investigation and to develop “worst case” estimates for LNAPL saturation values at the Site.

3.1.1 LIF Investigation

LIF is an investigation technique with the potential to rapidly identify the presence of petroleum fuels and other hazardous non-aqueous phase liquids (NAPLs) in the subsurface. This technology uses laser light to excite fluorescent molecules present in the NAPL, the response of which can be measured in real time to aid in determining the approximate vertical extent of NAPL at a boring location. The fluorescence intensity and colors emitted by the chemicals present can be used to identify the chemical and determine the relative saturation throughout the boring. Therefore, LIF waveform data can also be used to differentiate between NAPL types, which may be useful at complex sites with more than one potential NAPL source. LIF tooling is typically advanced into the subsurface using direct-push drilling equipment.

Based on the results of prior drilling activities at the Site, which typically have encountered gravel and cobbles at depths of approximately 5 to 15 feet below ground surface (bgs), LIF was previously thought to be poorly suited for the conditions at this Site. However, after further evaluation and in consideration of advances that have been made with direct push drilling equipment, Leidos concluded that LIF had the potential to be a cost-effective strategy for LNAPL delineation within certain lithologic units at the Site. Because the suitability of using LIF at the Site was still largely unknown, the scope for the SRI Phase 2 LIF investigation was somewhat limited and was considered a test for the technology at the Site. The goals for this initial use of LIF at the Site were to:

- Collect additional data to determine vertical delineation in areas where LNAPL is known to be present;
- Collect additional data to evaluate the potential for multiple LNAPL sources through waveform data and vertical delineation; and
- Evaluate the suitability, performance, and cost-effectiveness for using LIF to complete additional LNAPL delineation at the Site.

3.1.1.1 LIF Investigation Locations

Based on the goals of the LIF investigation, Leidos identified six locations to use and evaluate LIF at the Site. LIF boring locations are shown on Figure 1 and the justification for their selection is provided below.

As previously stated, one primary goal of the LIF investigation was to collect additional data regarding the vertical extent of LNAPL in areas where LNAPL is known to be present. Therefore, each of the LIF borings was completed in the vicinity of an existing or former monitoring well where LNAPL is known or expected to be present, based on previously existing data for the Site.

All SRI Phase 2 investigation boring locations were located on City of Chelan property. Therefore, prior to the start of work all boring locations were reviewed and approved by a representative of the City of Chelan Department of Public Works.

LIFB-1:

LIF boring LIFB-1 was located approximately 70 feet northwest of monitoring well MW-10 and approximately 40 feet east of monitoring well MW-12. The location for LIFB-1 was chosen in this area due to the long-term recurrence of measurable LNAPL in these monitoring wells, as well as the lack of data to adequately define the vertical extent of LNAPL present in this area.

Monitoring well MW-10 is located west of the Chevron service station property, in the driveway for the drive-up window for the Wells Fargo Bank. Monitoring well MW-12 is located a short distance further west, within the parking zone on the south side of East Woodin Avenue. Soil sampling results and boring logs from 2001, when the wells were installed, provide little data to define the vertical extent of contamination at these locations. For MW-10, the soil samples analyzed showed non-detect results for all analytes tested, and photo-ionization detector (PID) results were all generally low (≤ 20 parts per million [ppm]). Samples collected at 5-foot intervals between 20 and 31.5 feet bgs indicate that hydrocarbon odor was observed, but otherwise there is little evidence to indicate the presence of petroleum contamination. Results for MW-12 are similar, except that benzene was detected in the soil sample collected at 26.5 feet bgs and a PID reading of 1,645 ppm was recorded for the sample collected at 31.5 feet bgs. However, that sample was not submitted for laboratory analysis.

Despite the lack of evidence indicating the presence of petroleum contamination in soil at these locations, monitoring wells MW-10 and MW-12 have consistently contained measurable LNAPL since being installed in 2001. Both of these wells have frequently contained LNAPL at thicknesses greater than 1 foot, and gauging results for MW-10 routinely indicate that the well casing contains LNAPL only.

During the SRI Phase 2 field activities, measurements made using an oil-water interface probe indicate that LNAPL was present in monitoring well MW-10 at a thickness of 3.03 feet (approximately 24.61 to 27.64 feet bgs) and in monitoring well MW-12 at a thickness of 3.40 feet (approximately 21 to 24 feet bgs).

LIFB-2:

LIF boring LIFB-2 was installed approximately 3 feet north of monitoring well MW-16, in a parking zone on the east side of South Emerson Street, south of East Woodin Avenue. Long-term LNAPL gauging results indicate that MW-16 has typically contained LNAPL since 2002, frequently at thicknesses of several feet or more. Soil sampling results from the well's installation in 2001 provides little data to suggest that LNAPL was present at this location. PID measurements for all samples were relatively low (≤ 67 ppm) and there was only one detection of a petroleum constituent above MTCA Method A cleanup levels (benzene at 0.046 milligrams per kilogram [mg/kg] in the sample collected at 40 feet bgs). Sample descriptions contain some mention of hydrocarbon odor beginning at approximately 25 feet bgs.

During the SRI Phase 2 field activities, LNAPL was present in monitoring well MW-16 at a thickness of 11.37 feet (approximately 37 to 48 feet bgs).

LIFB-3:

LIF boring LIFB-3 was installed approximately 3 feet southeast of monitoring well MW-2, near the northwest corner of the intersection of East Woodin Avenue and South Emerson Street. This boring was installed in the vicinity of monitoring well MW-21 to further evaluate the potential

that petroleum impacts in this area did not originate from the Chevron service station. Soil samples collected during installation of this monitoring well in March 2003 indicate that gasoline-range organics (GRO) were detected at a concentration of 11,000 mg/kg at a depth of 15 feet bgs. Benzene was also detected in the same sample at a concentration of 19 mg/kg. Due to the shallow depth of these detections, as well as the benzene concentration, which is high relative to soil sampling results for locations closer to the Chevron service station, it is believed that the petroleum contamination detected at MW-21 is likely attributable to a different, yet currently unidentified source. Recent LNAPL fingerprinting analysis performed by Chevron also supports this theory.

Despite the detection of GRO in soil at 11,000 mg/kg, which suggests the presence of LNAPL, long-term groundwater monitoring results from March 2003 through December 2015 indicate that LNAPL was never detected in this well. However, the first occurrence of LNAPL was more recently detected in this monitoring well during the March 2016 quarterly sampling event, at a thickness of 1.23 feet. Gauging results from subsequent groundwater monitoring events indicate that LNAPL was detected during the June 2016 and September 2016 sampling events, at thicknesses of 6.60 feet and 14.86 feet, respectively. During the SRI Phase 2 field activities, LNAPL was present in monitoring well MW-21 at a thickness of 17.77 feet (approximately 21 to 38 feet bgs).

LIFB-4:

LIF boring LIFB-4 was installed approximately 3 feet west of monitoring well MW-9, southwest of the Chevron service station property, in the parking lot south of the Wells Fargo Bank building. LIFB-4 was installed in this area due to the long-term recurrence of measurable LNAPL in monitoring well MW-9, and the lack of data to adequately define the vertical extent of LNAPL present. Similar to monitoring well MW-10, field screening and soil sampling results for MW-9 do not provide sufficient evidence to delineate the vertical extent of LNAPL at this location. The boring log for this well indicates low PID results (≤ 18 ppm) for all samples collected, and hydrocarbon odor was noted in association with several of the samples. One sample, collected at a depth of 20 feet bgs, was submitted for laboratory analysis and was found to contain relatively low levels of GRO and benzene that were greater than MTCA Method A cleanup levels.

Like MW-10, monitoring well MW-9 has routinely contained LNAPL since its installation in 2001, often at thicknesses of several feet or more. During the SRI Phase 2 field activities, LNAPL was present in monitoring well MW-9 at a thickness of 5.55 feet (approximately 30 to 35 feet bgs).

LIFB-5:

LIF boring LIFB-5 was installed in the approximate vicinity of former monitoring well MW-11, southwest of the Chevron service station, in the City of Chelan parking lot north of Wapato Avenue. The actual location of former monitoring well MW-11 could not be positively identified during the SRI Phase 2 activities, due to a more recent asphalt paving patch in the parking lot that had apparently been completed after abandonment of the monitoring well. The approximate location of former monitoring well MW-11 was estimated, based on measurements from monitoring well MW-30 and former monitoring well MW-33. The actual boring location for LIFB-5 was also adjusted based on the findings of the utility locate survey performed in that area.

An LIF boring was completed in this location to collect additional data regarding the vertical extent of LNAPL in the southern portion of the Site, where the shallow perched aquifer is not believed to be present. Monitoring well MW-11 was typically found to be dry and measurable LNAPL was never gauged at this location. However, soil sampling results from September 2001 indicate that GRO was detected at a concentration of 8,80mg/kg for the soil sample collected at 26.5 feet bgs, which suggests that LNAPL may be present in the vicinity of this location.

LIFB-6:

LIF boring LIFB-6 was installed approximately 4 feet east of monitoring well MW-36, near the southwest corner of the intersection of East Woodin Avenue and South Emerson Street. The purpose of installing LIFB-6 in this area was to better understand the vertical distribution of LNAPL that has resulted in the somewhat anomalous data set for monitoring well MW-36. Soil samples collected during the installation of this well in June 2003 indicate that GRO was detected (up to 30 mg/kg) in soil samples collected from depths ranging from 15 to 50 feet bgs. The boring log for this well indicates that during removal of the lower 20 feet of auger flights, red gasoline product was observed on the soil on the augers. During LNAPL gauging events conducted in June, July, and September 2003, in-well LNAPL was measured at thicknesses ranging from 9.00 to 11.55 feet; however, during subsequent gauging events LNAPL thickness in the well was typically less than 1 foot, and gauging results often indicate that no LNAPL is present.

During the SRI Phase 2 field activities, measurements made using an oil-water interface probe indicate that LNAPL was present in monitoring well MW-36 at a thickness of 0.02 feet (approximately 28 feet bgs).

3.1.1.2 LIF Boring Preparation

Prior to the start of any subsurface activities, each LIF boring location was thoroughly checked for the presence of subsurface or overhead utilities. Leidos notified the Utilities Underground Location Center to coordinate location and mark-out of all public utilities in the vicinity of the work zones. A private utility locate survey was also performed on October 20, 2016 by Geophysical Survey, LLC of Kennewick, Washington, under a subcontract agreement with Leidos. Geophysical Survey, LLC used ground penetrating radar and electromagnetic line locating methods to identify potential subsurface utilities located in the vicinity of the work zones and mapped the location of utilities identified using a Global Positioning System (GPS) receiver. A copy of the Geophysical Survey, LLC report is included as Appendix A.

In order to provide further assurance that subsurface utilities would not be damaged during the boring activities, and to comply with Chevron safe-work requirements, each boring was initially cleared to a depth of at least 8 feet bgs using an air-vacuum excavation system (commonly referred to as an air-knife). Air-knife services were provided by Cascade Drilling, L.P. (Cascade Drilling) of Woodinville, Washington.

Due to the typical presence of cobbles in the upper 8 feet of soil at the Site, and based on experience from previous investigation work at the Site, Leidos expected that the borehole clearance process would be very time consuming. Therefore, air-knife clearance activities were scheduled to begin approximately one week prior to the start of the LIF boring work. Air-knife borehole clearance activities were performed from October 25 to November 3, 2016.

During the borehole clearance activities, a Leidos representative was present to direct the process and document the soil conditions encountered. Soil samples were collected from each boring at approximate 2-foot intervals using a stainless steel hand-auger. Each sample was classified and logged in accordance with the Unified Soil Classification System and field-screened for the presence of petroleum hydrocarbons by visual and olfactory observations, headspace vapor measurements using a PID, and sheen testing. Field screening results during the borehole clearance process did not indicate evidence of petroleum contamination within the upper 8 feet of soil at any boring location during the SRI Phase 2 activities. Therefore, no soil samples collected in this interval were submitted for laboratory analysis. Boring logs, which include the field screening results for each boring, are included in Appendix B.

Following completion of the borehole clearance process, each LIF boring underwent additional preparation by using a sonic drill rig to advance the boring through the remaining portion of Lithologic Unit A (as described in the 2006 RI/FS) and set a 4-inch diameter PVC casing from the ground surface to the top of Lithologic Unit B. Sonic drilling services were provided by Cascade Drilling. Due to the gravel and cobble layers that have typically been encountered in Unit A, Leidos believes this step was necessary to ensure that the LIF tooling could be pushed into Lithologic Unit B, which is the silt and clay unit where most of the contamination at the Site is present. During this process, the sonic drill rig was used to collect a continuous core sample from the ground surface to the approximate interface of Lithologic Units A and B, which was typically encountered at approximately 15 to 20 feet bgs at each location. Sonic cores (except for the borehole clearance backfill interval from 0 to 8 feet bgs) were classified, logged, and field-screened by a Leidos representative. Photographs of the sonic core samples are included in Appendix C. Leidos personnel collected soil samples for analysis from within this interval when field-screening results indicated that contamination had been encountered. Selected samples were analyzed according to the procedures presented in Section 3.1.2.4. Sonic drilling and casing installation activities related to the LIF boring preparation were performed from October 31 to November 3, 2016.

3.1.1.3 LIF Data Collection and Analysis

Following preparation of the LIF boring locations, a direct-push rig was used to advance the LIF tooling into Lithologic Unit B at each of the six LIF boring locations. Cascade Drilling provided LIF services using the Ultra Violet Optical Screening Tool (UVOST[®]) technology, under a license agreement with Dakota Technologies, Inc. of Fargo, North Dakota. The LIF data collection activities were performed from November 2 to 4, 2016.

To collect the LIF data at each boring location, the UVOST[®] probe was simply lowered through the cased upper interval and then driven through the target depth interval with the direct-push rig. As the UVOST[®] probe was advanced into the subsurface, the tool transmitted pulses of laser light through a clear sapphire window located on the side of the probe. The light pulses shine onto the face of soil passing the sapphire window, resulting in fluorescence and/or scattered laser light in response to the presence of polycyclic aromatic hydrocarbons (PAHs) found in petroleum LNAPL. The resulting fluorescence response was processed and analyzed in real time to create a continuous log of fluorescence intensity versus depth. A depth measurement device, which was calibrated to read zero depth at the ground surface, provided soil profile depth measurement data that was recorded simultaneously the fluorescence response. The UVOST[®] also measured and created continuous logs of electrical conductivity and rate versus depth.

Each LIF boring was advanced to a depth greater than the bottom depth of the adjacent target monitoring well that it was intended to evaluate.

In addition to the six LIF borings completed, Cascade Drilling also conducted a bench-scale test in the field to evaluate the LIF response of LNAPL collected from five monitoring wells at the Site. Samples were collected from monitoring wells MW-9, MW-10, MW-12, MW-16, and MW-21. An LNAPL sample could not be collected from monitoring well MW-36 due to the minimal thickness of LNAPL present in the well at that time. Samples were collected from each well using a disposable bailer and were temporarily stored in unpreserved glass sample containers. To conduct the test, the UVOST operator applied a small drop of LNAPL to the sapphire window of the tool and recorded the fluorescence response. The intent of this exercise was to verify that the LNAPL types present at the Site would fluoresce in response to the applied laser light and also to evaluate potential differences between the LIF waveform generated by each LNAPL sample.

Results of the LIF borings are discussed in Section 4.1.

3.1.2 Soil Core Collection and Confirmation Sampling

In association with the LIF investigation, Leidos also collected soil core samples and confirmation soil samples at three locations to further evaluate the vertical delineation data collected using LIF. The objective of this work was to verify the real-time data provided by the LIF investigation, and to use the LIF data to collect soil core samples to assess LNAPL saturation from select locations at the Site. This component of the investigation consisted of the following tasks:

- **Soil Core Sample Collection** – Based on the results of the LIF investigation, Leidos identified specific vertical intervals within the soil column considered to be representative of “worst-case” conditions for LNAPL saturation for three locations at the Site. Within these intervals, soil core samples were collected using 30-inch long, thin-walled sampling tubes (i.e., Shelby tubes), which were submitted to a laboratory for digital imaging and LNAPL mobility analysis.
- **Soil Confirmation Sampling** – Based on the results of the LIF investigation, Leidos identified specific vertical zones within the soil column for collection of soil confirmation samples. The objective of this activity was to visually observe and field screen soils within specific depth intervals and to collect samples for laboratory analysis to confirm the absence or presence of petroleum hydrocarbon contamination at target depths.

The soil core collection and confirmation sampling could not be completed within boreholes used for the LIF investigation; therefore, additional borings (SCB-1 through SCB-3) were completed adjacent to three of the LIF boreholes. The soil core collection and confirmation sampling boreholes were located approximately 3 to 6 feet from the corresponding LIF boreholes. Soil core collection and confirmation sampling locations are shown on Figure 1 and are discussed further in the following section.

3.1.2.1 Soil Core Collection and Confirmation Sampling Locations

Soil core collection and confirmation sampling borings were completed at the following locations. Prior to initiating each boring, Leidos worked with Chevron to identify target intervals for collection of the Shelby tube samples, based on the results of the LIF investigation and other available data for the Site.

SCB-1 – This boring location was adjacent to LIFB-1 and was selected based on long-term LNAPL gauging data from monitoring wells MW-10 and MW-12. This area was expected to represent worst-case LNAPL saturation conditions in the eastern portion of the Site, near the Chevron service station property.

The target depth interval identified for boring SCB-1 was 20 – 40 feet bgs. No significant LIF response was observed in the adjacent boring, LIFB-1. Therefore, the target interval for this location was based upon the depth to LNAPL at monitoring well MW-12 (approximately 21 feet bgs) and the depth of monitoring wells MW-10 and MW-12 (approximately 40 feet bgs).

SCB-2 – This boring location was adjacent to LIFB-2 and chosen due to the long-term LNAPL gauging data near monitoring well MW-16. It was selected to represent worst-case LNAPL saturation conditions in the central portion of the Site, along South Emerson Street.

The target depth interval identified for boring SCB-2 was 45 – 55 feet bgs. This interval was selected based on strong LIF response from approximately 49 – 53 feet bgs in the adjacent boring, LIFB-2.

SCB-3 – This boring location was installed adjacent to LIFB-3 and was selected based on soil sampling results from 2003, as well as recent LNAPL gauging results that indicate that LNAPL has been measured at thicknesses of up to 14.86 feet in the area in the vicinity of monitoring well MW-21. This boring was chosen to represent the worst-case LNAPL saturation conditions in the western portion of the Site, west of South Emerson Street.

The target depth interval identified for boring SCB-3 was 10 – 20 feet bgs. No significant LIF response was observed in the adjacent boring, LIFB-3. Therefore, the target interval for this location was based field screening results for the sample collected from 11 feet bgs at LIFB-3, which indicated that strong hydrocarbon odor and a heavy sheen were observed, as well as soil sampling results for monitoring well MW-21, which indicated that GRO was detected at 11,000 mg/kg in the sample collected at 15 feet bgs.

3.1.2.2 Soil Core and Confirmation Sample Collection

Borehole location approval and utility clearance procedures for the SCB borings were the same as those presented in Section 3.1.1.2 for the LIF investigation borings. Air-knife clearance and sampling of these borings was conducted between October 27 and October 31, 2017.

Following completion of the borehole clearance process, Cascade Drilling used a sonic drill rig to collect the Shelby tube samples and the confirmation soil samples. At each location, the sonic rig was used to advance the boring from the ground surface (through the previously cleared boring interval) to a depth approximately 1 foot above the top of the target interval for Shelby tube sampling. Within this upper interval, the sonic rig provided continuous core samples, which were logged in the field by a Leidos geologist and field-screened for the presence of petroleum hydrocarbons. Soil samples were collected for laboratory analysis based on field screening results.

Upon reaching the target interval for the soil core collection, the sonic rig was used to advance the Shelby tubes through the target interval. Shelby tubes were 3-inch diameter thin-walled steel tubes, 30 inches in length.

Due to the cohesive nature of the fine-grained soils typically encountered with the target intervals for soil core sample collection, Cascade Drilling encountered challenges with soil core

recovery at all of the SCB boring locations, and was not able to collect a complete set of cores within the target depth intervals for borings SCB-1 and SCB-3. Due to the intended function of a Shelby tube to collect a generally undisturbed soil core, these sampling tubes cannot be fitted with devices to aid retention of the soil column that the sampling tube is advanced through. Therefore, when the Shelby tubes were retrieved from the boreholes, the tubes were often found to be empty or missing a portion of the intended core sample interval.

Following advancement of the each Shelby tube core sample to the desired depth, the tubes were quickly brought to the surface, removed from the drill string, and immediately placed in a horizontal position. Void spaces present at the ends of the tubes were filled with plastic wrap (e.g., Saran™ Wrap) to help minimize core movement during transport. The ends of the tubes were then fitted with plastic end caps that were taped in place. Each core was labeled to identify the top and bottom of the core, and with the top and bottom depths to the nearest 0.5 foot. Multiple cores from a single boring location were labeled sequentially using A, B, C...etc., starting with A on the uppermost (i.e., shallowest sleeve). Cores were immediately placed in coolers containing dry ice in order to minimize core pore fluid migration.

Upon completion of the Shelby tube sampling at each location, Cascade resumed standard sonic drilling operations to further advance the borings for collection of confirmation soil samples. Each boring was generally advanced until field-screening results suggested that the bottom-most extent of petroleum impacts have been reached. However, at boring SCB-1, Leidos concluded drilling at approximately 75 feet bgs, despite field screening results that suggested petroleum contamination was still present at that depth. Within the lower sonic interval of each boring, Leidos collected at least one soil sample for laboratory analysis to confirm that the lower extent of petroleum contamination had been reached. Additional samples were also collected for laboratory analysis based on results of the LIF investigation, or based on the results of the field-screening analyses.

Results of the soil core and confirmation sampling activities are discussed in Section 4.2.

3.1.2.3 Soil Core Sample Analysis

Soil core samples were submitted to Core Lab, Petroleum Services Division (Core Lab) in Bakersfield, California. Core Lab initially prepared the samples by cutting the frozen cores lengthwise and digitally photographing a cross-section of the cores under white light and ultraviolet (UV) light conditions. The digital imaging procedure provided a photographic record of each core and the photograph under UV light conditions was used to detect the presence of LNAPL, which will fluoresce under UV light. Following completion of this procedure, the cores were returned to frozen storage and held for later petrophysical analyses, pending direction from Leidos.

On December 6, 2016, Core Lab provided a preliminary report presenting the results of the soil core digital imaging. Based on the report, Leidos directed Core Lab to collect samples from ten discrete depth intervals for LNAPL mobility testing. Sample selection was based on the digital images and notes provided by Core Lab, as well as LIF results and field observations that suggested the potential presence of LNAPL. Results of the soil core sample analyses are discussed in Section 4.2.1.

In addition to the LNAPL mobility testing performed by Core Lab, Leidos also requested that Core Lab collect split samples at each sampling interval for submittal to Eurofins Lancaster

Laboratories. These samples were analyzed for petroleum range compounds according to the procedures presented in Section 3.1.2.4. Collection and handling of these soil samples was not consistent with standard methods, as the cores had previously been cryogenically frozen and the samples were collected from the cores approximately six weeks after collection of the soil cores. However, Leidos believes the data provided by these additional samples was beneficial in developing a greater understanding of the vertical profile of petroleum-range contamination at these boring locations. Analytical results for these samples are discussed in Section 4.2.2.

3.1.2.4 Soil Sample Analysis

Selected soil samples were submitted to Eurofins Lancaster Laboratories for the following analyses:

- Gasoline-range organics (GRO) by ECY 97-602 NWTPH-Gx;
- Diesel-range organics (DRO) and heavy oil-range organics (HRO) by ECY 97-602 NWTPH-Dx;
- DRO and HRO by ECY 97-602 NWTPH-Dx with silica-gel cleanup;
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX), methyl tertiary butyl ether (MTBE), ethylene dibromide (EDB), and 1,2 dichloroethane (EDC) by USEPA 8260B; and
- Total lead by USEPA 6010B.

One duplicate soil sample was collected and submitted for the above-referenced analyses to ensure quality assurance and quality control (QA/QC).

Additional QA/QC samples included one trip blank to accompany each sample cooler, and equipment rinse samples to verify equipment decontamination procedures. Equipment rinse sampling was performed by collecting laboratory-supplied distilled water that was used as the final rinse following equipment decontamination procedures. Equipment rinse samples were collected at a rate of one per sample collection method (e.g., hand-auger or sonic core barrel). The equipment rinse sample collected from the hand-auger was identified as QA-O-161103 Grab Water and the equipment rinse blank for the sonic tooling was identified as QA-O—161115 Grab Water. Trip blank and equipment rinse QA/QC samples were submitted for the following analyses:

- GRO by ECY 97-602 NWTPH-Gx; and
- BTEX, MTBE, EDB, and EDC by USEPA 8260B.

3.2 MONITORING WELL INSTALLATION

As discussed in the 2006 RI/FS report, based on results from the previous remedial investigation activities, SAIC concluded that the petroleum-impacted shallow perched aquifer extends to the south only as far as the alley between Woodin and Wapato Avenues, except near MW-9 which is just south of the alley. Southward from this alley, the perched water table was described as becoming steeper and terminating against the upper till layer of Lithologic Unit C. These conclusions were supported by groundwater elevation data from ten former monitoring wells located in the southwest portion of the Site, which indicated that groundwater was not present at elevations below the surface elevation of Lake Chelan. Based on these data, SAIC further

concluded water from the perched aquifer on the downgradient southwest side of the Site cannot physically reach Lake Chelan.

Despite the available data indicating that shallow groundwater has typically not been encountered in monitoring wells south of the alley, recent analysis of groundwater elevation data collected at the Site since 1992 indicates that long-term trends in shallow groundwater elevation change have occurred that were previously not identified, and therefore were not considered prior to the abandonment of monitoring wells in the southern portion of Site. In addition, this recent analysis also suggests that groundwater elevation in the western portion of the shallow perched aquifer (i.e., in monitoring wells MW-23 and MW-19) appears to be affected by seasonal changes in the surface level of Lake Chelan, which is actively managed by the Chelan County Public Utilities District.

Based on these recent findings, Leidos recommended further investigation in the southwest portion of the Site in order to evaluate long-term groundwater elevation trends and their impact on the extent of the shallow perched aquifer in this area, as well as the potential for communication between the aquifer and Lake Chelan. To address these data gaps, Leidos proposed to install three new monitoring wells in the southwestern portion of the Site. Two of the proposed monitoring wells (MW-38 and MW-39) were installed during the SRI Phase 2 field activities. However, the third proposed monitoring well (MW-40) could not be installed due to property access limitations. The locations of the new monitoring wells are shown on Figure 1.

3.2.1 Monitoring Well Soil Boring and Sampling

Borehole location approval and utility clearance procedures for the monitoring well installation borings were the same as those presented in Section 3.1.1.2 for the LIF investigation borings.

Following completion of the borehole clearance procedure, Cascade Drilling used a sonic drilling rig to advance each boring to its target depth. During this process, the sonic rig provided a continuous core sample, which was classified, logged, and field screened by a Leidos geologist.

At least two soil samples were collected and submitted for laboratory analysis from each monitoring well boring. One sample was collected from the interval at the approximate depth of the top of the monitoring well screen and the second sample was collected from the interval at the approximate depth of the bottom of the well screen. For the MW-38 boring, one additional sample was collected at approximately 30 feet bgs. This sample interval was selected based previously detected GRO exceedences in soil at 30 feet bgs in the boring for monitoring well MW-30, which is located approximately 140 feet to the east of MW-38.

Samples selected for laboratory analysis were analyzed according to the procedures presented in Section 3.1.2.4; however, the sample collected from the boring for MW-39 at 40 feet bgs was not analyzed for BTEX due to an error on the Chain of Custody form. Sampling results are discussed in Section 4.3.

3.2.2 Monitoring Well Construction and Development

Following the completion of drilling and sampling activities at each location, each boring was completed as a 2-inch diameter monitoring well. As previously discussed, the objective for installing these wells was to evaluate the extent of the shallow perched groundwater to the southwest of the Site and the potential for communication with Lake Chelan. Therefore, the depth and screened interval of these wells were specified to provide groundwater elevation

monitoring data within the normal operating range of the lake surface elevation (typically 1,084 to 1,100 feet above mean sea level [msl], with a current license minimum of 1,079 feet above msl), and account for long-term changes in groundwater elevation, which have routinely varied by values of 10 feet or more. Based on this objective, each monitoring well was constructed with a 25-foot screened interval that was set at an elevation of approximately 1,075 to 1,100 feet above msl. As constructed, these wells are sufficiently deep to determine whether groundwater is present in this area at an elevation high enough to induce groundwater flow toward the lake.

Groundwater monitoring well MW-38 was installed to a total depth of 46 feet bgs. Based on the approximate ground surface elevation at this location, the 25-foot, 10-slot screen was placed from approximately 21 to 46 feet bgs (elevation of 1,075 to 1,100 feet above msl). Monitoring well MW-39 was installed to a total depth of 45 feet bgs, with a 25-foot, 10-slot screen placed from approximately 17 to 42 feet (elevation of 1,076 to 1,101 feet above msl).

During the SRI Phase 2 field activities, groundwater was not found to be present within the screened interval for monitoring well MW-38, or MW-39. Due to the lack of groundwater present in these wells, the wells could not be developed.

3.2.3 Monitoring Well Location and Elevation Survey

Following installation of the new wells, Leidos surveyed the monitoring wells to the nearest 0.01 foot using a Leica Rugby 50 land surveying laser and Leica Rod Eye 140. The new wells were measured at the ground surface (i.e., top of well-box lid) and at the top of the well casing, relative to the North American Vertical Datum of 1988.

3.2.4 Groundwater Monitoring

Monitoring wells MW-38 and MW-39 have been added to the on-going quarterly groundwater monitoring program for the Site, which is managed and performed on behalf of Chevron by Gettler-Ryan, Inc. (Gettler-Ryan). Future groundwater monitoring at these locations will consist of LNAPL thickness and water level measurements, and groundwater samples will be collected for laboratory analysis if sufficient groundwater is present and no LNAPL is present. When conditions permit, groundwater samples will be collected using low-flow purging and sampling techniques and will be submitted to Eurofins Lancaster Laboratories for the following analyses:

- GRO by ECY 97-602 NWTPH-Gx; and
- DRO and HRO by ECY 97-602 NWTPH-Dx;
- DRO and HRO by ECY 97-602 NWTPH-Dx with silica-gel cleanup;
- BTEX, MTBE, and EDC by USEPA 8260B;
- EDB by USEPA 8011; and
- Total lead and dissolved lead by USEPA 6010B.

Groundwater monitoring results will be presented in a future SRI report submittal.

3.3 SUPPLEMENTAL SHALLOW SOIL SAMPLING AND ANALYSIS

As more completely discussed in Section 4.3 of the 2006 RI/FS, all previous soil sampling results from the Site that exceed MTCA Method A cleanup levels have been collected from depths of 15 feet (bgs) or more, with the exception of one sample collected from 12.5 to 14 feet

bgs in the boring for monitoring well MW-5. This sample contained benzene at a concentration of 0.517 mg/kg. Due to the date that this sample was collected (1992), the 2006 RI/FS report suggested that this relatively low-level, shallow soil contamination may have been addressed by the soil vapor extraction system that was previously operated at the Site and/or biodegradation that has taken place since that time.

In order to address this data gap, Leidos directed completion of two soil borings in the vicinity of monitoring well MW-5 in order to perform additional characterization of shallow soils in this area. One soil boring (SSB-1) was installed approximately 3 feet to the east of monitoring well MW-5, and the second boring (SSB-2) was installed approximately 3 feet to the south (Figure 1). Due to the close proximity of an overhead power line in the vicinity of MW-5, as well as other subsurface utilities in that area, the actual locations for soil borings SSB-1 and SSB-2 differ slightly from those proposed in the SRI Phase 2 Work Plan.

3.3.1 Soil Boring and Sampling Procedures

Borehole location approval and utility clearance procedures for the shallow soil sampling borings were the same as those presented in Section 3.1.1.2 for the LIF investigation borings.

Following completion of the borehole clearance procedure, Cascade Drilling used a sonic drilling rig to advance each boring to a depth of approximately 15 feet bgs. Within this interval, the sonic rig provided continuous core samples, which were logged in the field by a Leidos geologist and field-screened for the presence of petroleum hydrocarbons.

Field screening results for both of the shallow soil sampling borings suggested no evidence of petroleum hydrocarbon contamination. Therefore, soil samples for laboratory analysis were collected at approximately 12.5 and 14.5 feet bgs from each boring, in order to be representative of the depth interval where contamination had previously been detected in the boring for MW-5.

Soil samples were submitted to Lancaster Laboratories for the following analyses:

- GRO by ECY 97-602 NWTTPH-Gx; and
- BTEX, MTBE, EDB, and EDC by USEPA 8260B.

Results of the supplemental shallow soil sampling activities are discussed in Section 4.4.

4. SUMMARY OF RESULTS

4.1 LIF INVESTIGATION RESULTS

Results of the LIF investigation are presented in the *Final Data Package for UVOST Services* prepared by Cascade Technical Services, which is included as Appendix D. For each LIF boring location, a log was generated that presents the real-time data recorded during advancement of the UVOST tooling. On each log, depth relative to the ground surface is shown along the vertical axis, while total fluorescence readings are presented on the horizontal axis as a percentage of the Reference Emitter (RE) response. Total fluorescence readings indicate the quantity of LNAPL present at that depth. The RE response is essentially a calibration value for the UVOST that is recorded by measuring the LIF response of a standard fluorescing NAPL that is supplied by Dakota Technologies (St. Germain, 2013). Electrical conductivity (shown as Cond on the logs) and the drive or advancement rate of the UVOST tooling (shown as Rate on the logs) are also shown versus depth on the horizontal axis.

The left side portion of each log presents callouts of LIF waveform response. The upper callout shows the LIF waveform for the RE calibration standard (i.e., 100.0%RE). The next lower callout represents the background response, which is low-level fluorescence response in the system that prevents the UVOST from obtaining a true zero reading for LIF response. For each UVOST log, the background reading should be considered the zero value for LIF response. The lower two callouts represent response wave forms for specific depths of interest. Generally, these depths were selected based on the strongest response.

The four colored peaks (blue, green, orange, and red) represent the four wavelength ranges of fluorescence response measured by the UVOST. These fluorescence “waveforms” can be used to qualitatively evaluate LNAPL type because differing LNAPL types will fluoresce in characteristic ways. For example, for gasoline LNAPL the blue peak will typically be the predominant peak shown, while for diesel LNAPL the green peak will be predominant. Additional details regarding interpretation of LIF waveforms can be found on Dakota Technologies’ website (www.dakotatechnologies.com).

LIF results for each of the six LIF borings completed are discussed below.

LIFB-1 – Results for LIFB-1 suggest that petroleum LNAPL was not encountered within the subsurface interval that the UVOST was advanced (approximately 15 to 52.5 feet bgs). Within this interval, total fluorescence response was consistently less than 2.5%RE and in the approximate range of background measurements for fluorescence response.

LIFB-2 – As indicated on the log for LIFB-2, at this location the UVOST was advanced from approximately 12.5 to 59.4 feet bgs. Within this interval, strong total fluorescence response (approaching 100%RE) was recorded from approximately 49 to 52 feet bgs. Within the upper and lower portions of LIFB-2 (approximately 12.5 to 49 feet bgs and 52 to 59.4 feet bgs, respectively), total fluorescence response was at very low (near background) levels. This response suggests that LNAPL is present in the vicinity of this boring location within a relatively thin interval that exists at approximately 50 feet bgs.

The EC log for LIFB-2 indicates a drop in EC values that generally correspond with this interval and the Rate log indicates that the UVOST penetration-rate increased significantly at the upper boundary of the LNAPL interval. Together, the EC and Rate Log data suggest that LNAPL may be present at this depth due to a change in soil conditions within this interval.

LIF waveform data presented in the callouts for 49.63 feet and 50.69 feet bgs are consistent with typical waveforms for gasoline LNAPL.

LIFB-3 – Results for LIFB-3 indicate that no strong fluorescence response was recorded within the subsurface interval that the UVOST was advanced (approximately 17 to 60 feet bgs). Within this interval, relatively low response values (13.2% and 2.9%) were observed at 17.58 feet and 18.70 feet, respectively. Within the remainder of the boring, fluorescence response values were generally found to be in the range of background levels.

LIFB-4 – Results for LIFB-4 indicate that no strong LIF response was recorded within the subsurface interval that the UVOST was advanced (approximately 20 to 48 feet bgs). Within this interval, a very thin peak was observed at approximately 21.1 feet bgs with a response value of 69%. However, the fluorescence response waveform recorded at this depth is not consistent with the expected response for gasoline LNAPL.

LIFB-5 – Results for LIFB-5 indicate that no strong LIF response was recorded within the subsurface interval that the UVOST was advanced (approximately 20 to 48 feet bgs). Within this interval, relatively low response values (14.7% and 12.8%) were observed at 27.34 feet and 39.25 feet, respectively. However, these values are only marginally higher than the background response level at this boring location, 8.4%.

LIFB-6 – Results for LIFB-6 suggest that petroleum LNAPL was not encountered within the subsurface interval that the UVOST was advanced (approximately 15 to 52 feet bgs). Within this interval, fluorescence response was consistently less than one percent of the RE response and in the approximate range of background measurements for fluorescence response.

LIF-96590 LNAPL Samples – This UVOST log presents the results of bench-scale test using LNAPL samples, which was previously discussed in Section 3.1.1.3. Due to potential variability in the amount of LNAPL that may have been applied to the UVOST, the different values of total fluorescence response shown for the samples tested is not considered meaningful. However, the test did confirm that LNAPL from each of the wells tested would fluoresce in response to LIF and the LIF waveforms generated for each well were consistent with typical waveforms for gasoline LNAPL.

4.2 SOIL CORE AND SOIL CONFIRMATION SAMPLING RESULTS

As previously discussed in Section 3.1.2, soil core and soil confirmation sampling was conducted at three boring locations (SCB-1 through SCB-3) at the Site. Within each boring, soil core samples were collected for digital imaging and product mobility analysis, and soil confirmation grab samples were collected for laboratory quantification of petroleum chemical constituents. Logs for each boring, which include field screening results and depth interval information for the soil cores and confirmation samples, are presented in Appendix B. Laboratory results are further discussed in the following sections.

4.2.1 Soil Core Sampling Results

Results of the soil core collection and analyses are presented in the *Free Product Mobility Analysis* report prepared by Core Lab, which is included as Appendix E.

4.2.1.1 Soil Core Digital Imaging Results

Digital imaging results for the soil core sampling work are presented in Figures 1 through 15 of the Core Lab report. Figures 1 through 3 present photos of the cores collected from sampling locations SCB-1 through SCB-3, respectively, and Figures 4 through 15 present photos for each of the twelve cores collected. On each figure, a digital image showing a cross-section of a soil core is shown to the left of a scale that indicates the depth interval that the soil core was collected from. This image is a photograph of the soil core taken under white light conditions. To the right of the depth scale is a digital image of the same soil core cross-section photographed under UV light conditions.

Figures 4 through 15 also present notes recorded by a Core Lab technician based on inspection of the cores and review of the UV imaging results, as well as results of the mobility testing.

SCB-1 – Digital imaging results for the four soil cores collected at location SCB-1 are presented in Figure 1 and Figures 4 through 7. As indicated by the notes provided by Core Lab on Figures 4 through 7, no odor and no UV response were observed in any of the core samples collected from SCB-1.

SCB-2 – Digital imaging results for the four soil cores collected at location SCB-2 are presented in Figure 2 and Figures 8 through 11. Notes provided by Core Lab on Figures 8 through 11 indicate that faint odor was observed at depths of approximately 47 and 51 feet bgs; however, no UV response was observed in any of the core samples collected from SCB-2. A note provided on Figure 10 indicates that duct tape was present in soil core SCB-2C at a depth of approximately 51.6 feet bgs. The presence of duct tape in the upper portion of this soil core indicates that this core is not completely representative of undisturbed soil conditions from 51 to 53.5 feet bgs at this location. Instead it appears that at least the upper portion of soil core SCB-2C contained some amount of disturbed material, which likely had sloughed into the core interval from the open borehole above.

SCB-3 – Digital imaging results for the four soil cores collected at location SCB-3 are presented in Figure 3 and Figures 12 through 15. Notes provided by Core Lab on Figure 12 indicate that medium to strong odor was observed from approximately 12.5 to 14.5 feet bgs in soil core SCB-3A and that very faint UV response was observed from 13.1 to 13.2 feet bgs and at silt/mud layer interfaces from approximately 13 to 14 feet. Medium to strong odor was noted throughout soil cores SCB-3B, SCB-3C, and SCB-3D (Figures 13, 14, and 15).

As indicated by the digital imaging performed by Core Lab, no to very faint UV response was detected in the soil cores submitted for analysis. These results are generally consistent with the results of the LIF investigation, which suggest that LNAPL was not present in soils analyzed at concentrations sufficient to result in fluorescence response.

4.2.1.2 Soil Core Mobility Testing Results

As previously discussed in Section 3.1.2.3, based on the results of the soil core digital imaging, Leidos directed Core Lab to collect samples from 10 discrete depth intervals for LNAPL mobility testing. Results of the mobility analyses are presented in the Core Lab report, provided in Appendix E and pore fluid saturation results from the testing are included in Table 1.

As the pore fluid saturation data indicate, initial NAPL saturation values were generally low, ranging from 0.88 to 4.05 percent, except for sample SCB-3C which contained an initial NAPL fluid saturation of 8.17 percent. Results for final NAPL saturation, which was measured after spinning the samples in a centrifuge for one hour at 1,000G, were unchanged, again except for sample SCB-3C which contained a final NAPL fluid saturation of 6.33 percent.

4.2.2 Soil Confirmation Sampling Results

Analytical results for soil samples collected from borings SCB-1 through SCB-3 are presented in Table 1 and boring logs, which include field screening results, are included in Appendix B. Laboratory analytical reports are included in Appendix F. In Table 1, results for the SCB borings have been grouped with available soil sampling results from their companion LIF boring in order to present a vertical profile of the analytical results for each location. These sampling results also include the ten samples collected by Core Lab from the soil core sampling intervals (see Section 3.1.2.3). Samples collected from the soil cores can be identified by their December 2016 sample dates, as well as the additional alphabetic character (A, B, C, or D) included in their sample ID, which aids in identifying the core they were collected from.

At the SCB-1 boring location, benzene was detected above the MTCA Method A cleanup level in nine soil samples collected from 15 to 74.5 feet bgs. GRO was detected above the MTCA Method A cleanup level in samples collected between 27.5 and 52 feet bgs. GRO concentrations

within this interval were relatively low (typically under 100 mg/kg and with a maximum detection of 160 mg/kg). These GRO concentrations are not consistent with levels generally associated with LNAPL occurrence. EDB was also detected at this location, in samples collected at 27.5 and 39.9 feet bgs. These were the only confirmed detections of EDB in any of the SRI Phase 2 soil sampling results.

For the vicinity of monitoring well MW-16, eight soil samples were collected from LIFB-2 and SCB-2 from 11 to 60.5 feet bgs. Five samples collected between 47.1 and 56 feet bgs contained GRO at concentrations exceeding the MTCA Method A cleanup level. This is the approximate interval where significant fluorescence response was observed for the boring at LIFB-2. The maximum concentration of GRO detected in SCB-2 was in the sample collected at 48.5 feet bgs (3,000 mg/kg). Benzene and xylenes were also detected above their respective Method A cleanup levels at this location.

Soil sampling results for the vicinity of monitoring well MW-21 (LIFB-3/SCB-3) confirm previous sampling data from this area, which indicate that significant GRO impact to shallow soils is present. Between 11 and 32 feet bgs, GRO was detected at concentrations ranging from 140 to 7,500 mg/kg. Benzene was confirmed above the Method A cleanup level in seven soil samples collected from 17.3 to 49.5 feet bgs. Field screening notes on the boring log for SCB-3 indicate that PID readings were greater than 15,000 parts per million (ppm) for samples collected from approximately 32 to 38 feet bgs, and that LNAPL was visible in the samples collected from approximately 34 to 40 feet bgs.

Laboratory analytical results for the trip blank and equipment rinse QA/QC samples indicate that none of the requested analytes were detected in any of the QA/QC samples submitted. Results for these samples can be found in the laboratory analytical reports included in Appendix F.

4.3 MONITORING WELL INSTALLATION RESULTS

Analytical results for soil samples collected during installation of monitoring wells MW-38 and MW-39 are presented in Table 1, and boring/well construction logs are included in Appendix B. Laboratory analytical reports are included in Appendix F. Soil field screening results presented on the boring logs indicate that no evidence of petroleum impact was observed during the drilling activities associated with these two monitoring wells. Analytical results for the soil samples collected indicate that low levels of DRO, ORO, and lead were detected in samples collected from the boring for MW-38 and ORO was detected in one sample collected from the boring for MW-39; however, results for all analytes were well below their respective MTCA Method A cleanup levels.

As previously discussed in Section 3.2.2, groundwater was not present within the screened interval of monitoring wells MW-38 or MW-39 during the SRI Phase 2 field activities. Leidos will continue to evaluate groundwater conditions at these locations based on the results of future groundwater monitoring events at the Site.

4.4 SUPPLEMENTAL SHALLOW SOIL SAMPLING RESULTS

Analytical results for the samples collected from the shallow soil borings (SSB-1 and SSB-2) completed in the vicinity of monitoring well MW-5 are presented in Table 1 and logs for these borings, which include the results of field screening analyses performed, are included in Appendix B. Laboratory analytical reports are included in Appendix F. As these results

indicate, GRO, BTEX, MTBE, EDB, and EDC were not detected in any of the samples collected at these two boring locations. Based on the proximity of soil borings SSB-1 and SSB-2 to monitoring well MW-5, Leidos believes these data confirm SAIC's presumption presented in the 2006 RI/FS that the relatively low-level benzene impact detected in 1992 in soil at MW-5, at a depth of 12.5 feet bgs, has been addressed by some combination of soil vapor extraction, air sparging, and biodegradation that occurred in the vicinity of that monitoring well. Therefore, direct-contact with petroleum impacted soil is no longer considered a potentially complete exposure pathway within this area of the Site.

5. CONCLUSIONS

Results of the SRI Phase 2 activities were beneficial in furthering our understanding of the Conceptual Site Model (CSM) for the Site.

As intended, the LIF and soil core and confirmation sampling activities provided a significant data set regarding the vertical extent of LNAPL in areas where LNAPL was known to be present. At the locations investigated, analysis for the presence of LNAPL was performed on a continuous basis using LIF and/or soil core collection and conventional soil sampling methods beginning at a depth of approximately 8 feet bgs. Above this depth, soil samples were collected every 2 feet. This frequency of data collection within the vertical soil profile eliminated data gaps, such as those existing in earlier soil sampling data collected prior to 2006.

The results of these activities support Leidos' previous conclusion that another gasoline source area, not related to the Chelan Chevron service station, is impacting the Site in the vicinity of monitoring well MW-21. This conclusion is supported by the significant GRO impacts detected in samples collected from boring SCB-3, which have been confirmed to begin at approximately 11 feet bgs. Multiple lines of evidence now suggest that the area around MW-21 may be the most highly impacted area at the Site.

Collectively, the results of the preliminary LNAPL investigation suggest that the presence of LNAPL at the Site may not be as extensive as previously believed. Previous LNAPL volume estimates for the Site, such as the one presented in the 2006 RI/FS, assume that a relatively thick interval (greater than 1 foot) is present throughout an area of the Site greater than 2 acres. Within this interval, this estimate assumed that LNAPL is present at a saturation value of approximately 60 percent, which yielded a LNAPL volume estimate of approximately 300,000 gallons. Instead, the weight of evidence provided the SRI Phase 2 results indicates that large zones of highly LNAPL saturated soil do not appear to be present at the Site, even in areas immediately adjacent to monitoring wells containing LNAPL at thicknesses of nearly 18 feet. Multiple lines of evidence in support of this revised model include generally low LIF response at five out of six LIF boring locations, no to faint UV response in soil core samples collected, and generally low values for initial LNAPL saturation provided by NAPL mobility analyses performed. These data are also consistent with long-term LNAPL bailing data for the Site, as well as previously performed transmissivity testing, both of which suggest that LNAPL removal strategies would likely fail in removing significant volumes of LNAPL. Based on the low LNAPL saturation results provided by the LNAPL mobility testing, Leidos believes that previously prepared LNAPL volume estimates for the Site are likely exaggerated by a factor of ten.

Although useful data was collected using LIF technology as part of the SRI Phase 2 activities, Leidos does not recommend its use for future investigation activities at the Site. The benefits of LIF are realized at sites where the real-time data can be used to make real-time decisions regarding if, where, and how more borings should be advanced to complete delineation of an LNAPL plume. Even at sites where LIF is effective, LIF results must be corroborated with soil sampling data from nearby adjacent borings. Due to the layout and location of the Chelan Chevron site in the downtown retail area of Chelan, extensive network of public utilities, and geology of the Site, on-the-fly decision making about boring locations is not possible. In addition, the multi-step process necessary to prepare an LIF boring location at the Site, as well as the need for additional soil sampling confirmation borings, results in longer periods in the field, additional costs, and further disruption of local businesses. Based on the results of the SRI Phase 2 activities, Leidos believes that use of a sonic drilling rig with standard field screening and soil sampling procedures would be the most cost effective, and least disruptive, method to further assess the lateral and vertical extent of soil impacts at the Site.

At this time, Leidos has not drawn any conclusions related to the installation of new monitoring wells MW-38 and MW-39. Initial and early water level elevation gauging data suggest that these wells did not intersect a water bearing zone in communication with Lake Chelan or the shallow perched aquifer. However, additional data from future groundwater monitoring events will be necessary to further evaluate the presence of groundwater at these locations, and the potential connection between the shallow perched aquifer and Lake Chelan. At this time, Leidos expects that work to install a new monitoring well, in the vicinity of the area proposed for installation of monitoring well MW-40, will be completed during a future phase of investigation work at the Site.

As previously discussed in Section 4.4, results of the shallow soil sampling investigation indicate that benzene is no longer present above the MTCA Method A cleanup level in soil above 15 feet bgs in the vicinity of monitoring well MW-5. However, shallow soil (less than or equal to 15 feet bgs) impacts were detected in samples from borings SCB-1, LIFB-3, and LIFB-6 during the SRI Phase 2 activities. Therefore, future exposure pathway analysis for the Site should still consider direct contact with soil as a potential exposure pathway.

6. REFERENCES

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- SAIC (2006). “Final Remedial Investigation / Feasibility Study Report, Chevron Service Station No. 9-6590.” December 2006.
- St. Germain, R. (2013). “Interpreting LIF Waveforms.” Dakotatechnologies.com, LIF Line Newsletter – Vol. 3, February.

LIMITATIONS

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

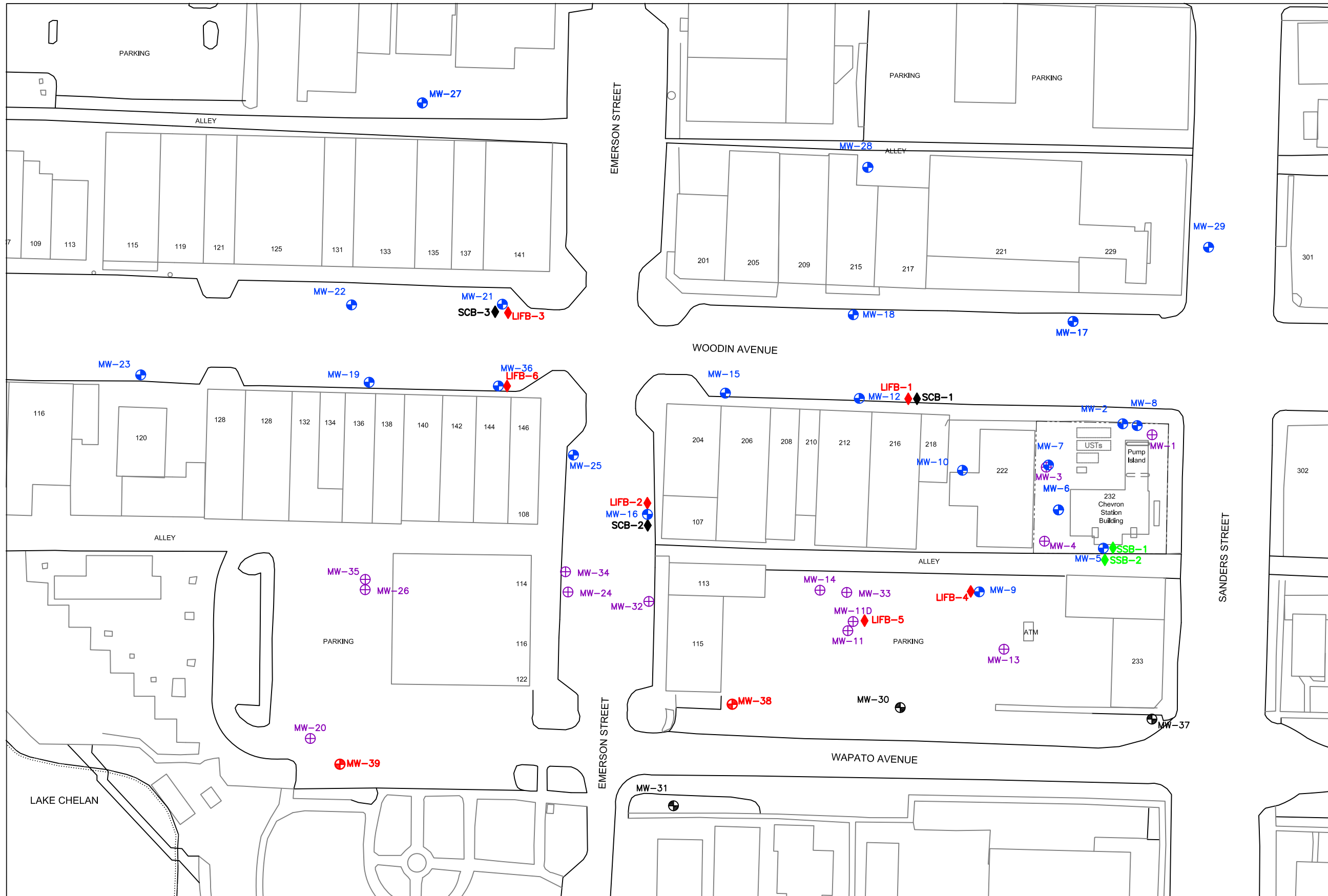
Site history and background information provided in this technical document are based on sources that may include interviews with environmental regulatory agencies and property management personnel and a review of acquired environmental regulatory agency documents and property information obtained from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

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

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

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

Figures



- LEGEND**
- MW-2 PERCHED GROUNDWATER MONITORING WELL
 - MW-30 DEEP GROUNDWATER MONITORING WELL
 - MW-1 ABANDONED DRY MONITORING WELL
 - MW-38 SRI PHASE 2 GROUNDWATER MONITORING WELL LOCATION
 - LIFB-1 SRI PHASE 2 LIF BORING LOCATION
 - SCB-1 SRI PHASE 2 SOIL CORE AND SOIL CONFIRMATION SAMPLING LOCATION
 - SSB-1 SRI PHASE 2 SHALLOW SOIL SAMPLING LOCATION
 - 204 STREET ADDRESS

NOTES

Base Map from City of Chelan, 1994

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

0 80' 160'



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

FIGURE 1
Site Map with SRI Phase 2
Investigation Locations

FILE NAME: 96590_Site Map.dwg DATE: 5/19/2017

Tables

Table 1
Summary of SRI Phase 2 Soil Sampling Results
Chevron Service Station No. 9-6590
232 East Woodin Avenue
Chelan, Washington

Sample Identification	Sample Depth	Sample Date	GRO	DRO	DRO w/ SGC	ORO	ORO w/ SGC	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	MTBE	1,2 - Dibromoethane	1,2- Dichloroethane	Lead	Initial Fluid Saturation - Water	Final Fluid Saturation - Water	Initial Fluid Saturation - LNAPL	Final Fluid Saturation - LNAPL
			Concentrations in mg/kg													%	%	%	%
MTCA Method A Cleanup Level			30	2,000	2,000	2,000	2,000	0.03	7	6	9	0.1	0.005	---	250	---	---	---	---
LIFB-1/SCB-1																			
SCB-1-S-15-161109	15	11/9/2016	10	5.6	8.1	< 14	< 14	0.066	0.036	0.030	0.11	< 0.0006	< 0.001	< 0.001	3.69	---	---	---	---
SCB-1-S-19-161109	19	11/9/2016	7.2	< 4.1	< 4.1	< 14	< 14	0.13	0.005	0.044	0.004	< 0.0006	< 0.001	0.003	4.58	---	---	---	---
SCB-1A-S-24.5' -161227	24.5	12/27/2016	11	< 6.4	NA	< 21	NA	5.0	0.18	0.69	0.61	< 0.045	< 0.090	< 0.090	NA	89.0	25.2	1.50	1.50
SCB-1-S-27.5-161109	27.5	11/9/2016	61	< 4.2	< 4.2	< 14	< 14	7.0	0.74	0.71	2.3	< 0.042	0.097	0.19	6.38	---	---	---	---
DUP1-SD-161109	27.5	11/9/2016	160	5.1	< 4.0	< 13	< 13	5.1	0.75	1.3	4.2	< 0.036	< 0.073	< 0.073	5.30	---	---	---	---
SCB-1D-S-39.9' -161227	39.9	12/27/2016	54	< 5.9	NA	< 20	NA	6.4	8.3	0.85	6.5	< 0.039	0.080	0.50	NA	92.0	40.9	0.88	0.88
SCB-1-S-44-161109	44	11/9/2016	62	< 4.2	< 4.2	< 14	< 14	6.7	11	0.74	6.7	< 0.040	< 0.079	0.61	6.62	---	---	---	---
SCB-1-S-48-161109	48	11/14/2016	85	< 4.4	< 4.4	< 15	< 15	7.7	14	1.3	9.1	< 0.032	< 0.088	0.71	15.7	---	---	---	---
SCB-1-S-52-161109	52	11/14/2016	44	< 4.1	< 4.1	< 14	< 14	4.2	7.2	0.71	4.3	< 0.037	< 0.075	0.17	19.8	---	---	---	---
SCB-1-S-74.5-161109	74.5	11/14/2016	< 1.4	< 4.1	< 4.1	< 14	< 14	6.3	< 0.071	< 0.071	< 0.071	< 0.035	< 0.071	0.91	25.0	---	---	---	---
LIFB-2/SCB-2																			
LIFB-2-S-11-161103	11	11/3/2016	11	180	170	210	220	< 0.021	< 0.043	< 0.043	< 0.043	< 0.021	< 0.043	< 0.043	1.32	---	---	---	---
SCB-2-S-28-161107	28	11/7/2016	29	< 4.2	< 4.2	< 14	< 14	< 0.040	1.8	1.5	13	< 0.040	< 0.079	< 0.079	< 3.12	---	---	---	---
SCB-2A-S-47.1' -161227	47.1	12/27/2016	260	< 6.9	NA	< 23	NA	< 0.053	0.28	0.82	11	< 0.053	< 0.11	< 0.11	NA	92.5	66.0	1.28	1.28
SCB-2-S-48.5-161107	48.5	11/7/2016	3,000	52	72	< 14	38	< 0.038	1.6	3.4	47	< 0.038	< 0.075	< 0.075	< 3.11	---	---	---	---
SCB-2B-S-50.5' -161227	50.5	12/27/2016	37	< 5.8	NA	< 19	NA	0.047	1.7	0.37	5.3	< 0.039	< 0.078	< 0.078	NA	89.3	36.2	0.99	0.99
SCB-2C-S-51.3' -161228	51.3	12/28/2016	880	44	NA	< 21	NA	0.063	4.5	2.4	25	< 0.045	< 0.090	< 0.090	NA	87.5	38.5	2.34	2.34
SCB-2-S-56-161107	56	11/7/2016	120	< 4.1	< 4.1	< 14	< 14	0.047	1.6	0.71	9.7	< 0.040	< 0.079	< 0.079	< 2.61	---	---	---	---
SCB-2-S-60.5-161107	60.5	11/7/2016	< 1.2	< 3.3	8.0	< 11	12	< 0.0006	< 0.001	< 0.001	< 0.001	< 0.0006	< 0.001	< 0.001	< 0.56	---	---	---	---
LIFB-3/SCB-3																			
LIFB-3-S-11-161102	11	11/2/2016	6,800	160	190	< 15	< 15	< 0.040	< 0.080	1.7	3.0	< 0.040	< 0.080	< 0.080	< 3.55	---	---	---	---
SCB-3-S-11.5-161108	11.5	11/8/2016	< 0.9	< 3.1	< 3.1	< 10	< 10	< 0.0004	< 0.0009	< 0.0009	< 0.0009	< 0.0004	< 0.0009	< 0.0009	2.31	---	---	---	---
SCB-3A-S-13.8' -161228	13.8	12/28/2016	1,700	25	NA	27	NA	< 0.072	0.17	5.1	12	< 0.072	< 0.14	< 0.14	NA	83.9	42.7	2.35	2.35
SCB-3B-S-15.0' -161228	15.0	12/28/2016	140	7.6	NA	29	NA	< 0.028	0.40	1.5	5.4	< 0.028	< 0.055	< 0.055	NA	36.9	21.0	2.80	2.80
SCB-3C-S-17.3' -161228	17.3	12/28/2016	6,300	390	NA	27	NA	8.8	56	35	170	< 0.20	< 0.41	< 0.41	NA	75.3	21.3	8.17	6.33
SCB-3C-S-19.1' -161228	19.1	12/28/2016	6,500	230	NA	< 19	NA	9.7	5.3	2.8	12	< 0.41	< 0.83	< 0.83	NA	83.0	16.2	2.97	2.97
SCB-3D-S-19.6' -161228	19.6	12/28/2016	7,500	410	NA	36	NA	8.4	20	10	53	< 0.043	< 0.086	< 0.086	NA	76.1	34.4	4.05	4.05
SCB-3-S-29-161108	29	11/8/2016	2.4	< 4.2	< 4.2	< 14	< 14	0.11	0.005	0.005	0.015	< 0.0006	< 0.001	< 0.001	5.71	---	---	---	---
SCB-3-S-32-161108	32	11/8/2016	2,100	48	54	< 15	< 15	4.1	22	11	67	< 0.48	< 0.96	1.1	7.5	---	---	---	---
SCB-3-S-46-161108	46	11/8/2016	2.3	< 4.2	< 4.2	< 14	< 14	0.31	0.006	0.019	0.014	< 0.0006	< 0.001	< 0.001	4.44	---	---	---	---
SCB-3-S-49.5-161108	49.5	11/8/2016	5.6	< 4.0	< 4.0	< 13	< 13	0.73	0.006	0.015	0.032	< 0.0005	< 0.001	< 0.001	6.80	---	---	---	---
LIFB-4																			
LIFB-4-S-9-161031	9	10/31/2016	< 0.9	7.1	< 3.1	13	< 10	< 0.0005	< 0.0009	< 0.0009	< 0.0009	< 0.0005	< 0.0009	< 0.0009	< 2.31	---	---	---	---
LIFB-5																			
No Soil Samples Collected			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
LIFB-6																			
LIFB-6-S-14-161102	14	11/2/2016	31	< 4.2	< 4.2	< 14	< 14	< 0.032	< 0.065	< 0.065	< 0.065	< 0.032	< 0.065	< 0.065	< 2.74	---	---	---	---
LIFB-6-S-15-161102	15	11/2/2016	55	< 3.8	< 3.8	< 13	< 13	< 0.026	< 0.051	< 0.051	< 0.051	< 0.026	< 0.051	< 0.051	< 2.55	---	---	---	---

Table 1
Summary of SRI Phase 2 Soil Sampling Results
Chevron Service Station No. 9-6590
232 East Woodin Avenue
Chelan, Washington

Sample Identification	Sample Depth	Sample Date	GRO	DRO	DRO w/ SGC	ORO	ORO w/ SGC	Benzene	Toluene	Ethylbenzene	Xylenes (Total)	MTBE	1,2 - Dibromoethane	1,2- Dichloroethane	Lead	Initial Fluid Saturation - Water	Final Fluid Saturation - Water	Initial Fluid Saturation - LNAPL	Final Fluid Saturation - LNAPL
			Concentrations in mg/kg													%	%	%	%
MTCA Method A Cleanup Level			30	2,000	2,000	2,000	2,000	0.03	7	6	9	0.1	0.005	---	250	---	---	---	---
MW-38																			
MW-38-S-21-161114	21	11/14/2016	< 1	4.6	< 3.2	12	< 11	< 0.0004	< 0.0009	< 0.0009	< 0.0009	< 0.0004	< 0.0009	< 0.0009	13.0	---	---	---	---
MW-38-S-30-161114	30	11/14/2016	< 1.7	< 4.3	< 4.3	< 14	< 14	< 0.0006	< 0.001	< 0.001	< 0.001	< 0.0006	< 0.001	< 0.001	22.7	---	---	---	---
MW-38-S-45-161114	45	11/14/2016	< 0.8	< 3.1	< 3.1	< 10	< 10	< 0.0004	< 0.0008	< 0.0008	< 0.0008	< 0.0004	< 0.0008	< 0.0008	5.49	---	---	---	---
MW-39																			
MW-39-S-18-161104	18	11/4/2016	< 1.4	< 3.9	< 3.9	< 13	14	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.0005	< 0.001	< 0.001	< 2.55	---	---	---	---
MW-39-S-40-161104	40	11/4/2016	< 1.0	< 3.2	< 3.2	< 11	< 11	---	---	---	---	---	< 0.001	< 0.001	< 2.01	---	---	---	---
SSB-1																			
SSB-1-S-12.5-161103	12.5	11/3/2016	< 1.1	---	---	---	---	< 0.0005	< 0.0009	< 0.0009	< 0.0009	< 0.0005	< 0.0009	< 0.0009	---	---	---	---	---
SSB-1-S-14.5-161103	14.5	11/3/2016	< 1.5	---	---	---	---	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.0005	< 0.001	< 0.001	---	---	---	---	---
SSB-2																			
SSB-2-S-12.5-161103	12.5	11/3/2016	< 1	---	---	---	---	< 0.0004	< 0.0009	< 0.0009	< 0.0009	< 0.0004	< 0.0009	< 0.0009	---	---	---	---	---
SSB-2-S-14.5-161103	14.5	11/3/2016	< 1.3	---	---	---	---	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.0005	< 0.001	< 0.001	---	---	---	---	---

61 = Results exceeding MTCA Method A Cleanup Levels

< 0.040 = Laboratory detection limit was greater than the MTCA Method A Cleanup Level

Appendix A:
Utility Location Investigation Report

Geophysical Survey LLC
711 S Tacoma Street
Kennewick, Washington 99336

October 25, 2016

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

Re: ***Concrete Investigation
Chelan, WA***

Mr. Shropshire:

Geophysical Survey LLC conducted a concrete investigation at 9 locations in Chelan, WA on October 20, 2016. The objectives of the survey were to locate subsurface utilities.

Methodology

Ground-Penetrating Radar

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

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

The depth of investigation is a function of the transmit power, receiver sensitivity, frequency of the antenna, and attenuation of the transmitted energy due to the geologic medium. The maximum depth of investigation may vary significantly as a result of the changing soil conditions. High attenuation, and consequent smaller penetration depths, of the EM energy typically occurs where the soil conductivity is greater than 25 millisiemens per meter and/or in areas with numerous reflective interfaces. Depth of investigation is also affected by highly conductive material, such as metal drums and pipes that essentially reflect all the energy. The method cannot “see” directly below areas of highly reflective material because all of the energy is reflected.

Electromagnetic Line Locating

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

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

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

FIELD SURVEY

GPR Data Acquisition

GPR data were acquired with a Geophysical Survey Systems, Inc. (GSSI) SIR3000 control unit, a 400 MHz antenna. GPR data were collected at 15 scans/foot with a 50 nanoSecond window (approximately 7 inches with a dielectric constant of 8) in two directions across each survey area.

DATA PROCESSING

GPR Data Processing

GPR data was processed using Radan 7.0 from GSSI. GPR data was processed to confirm concrete thickness estimates in the field.

RESULTS AND INTERPRETATION

Location 1:

Boring locations are 5 feet from located utilities. The sanitary sewer line was approximately 12 feet deep running east-west. One unknown conductive utility was located 13/4 feet south of the sanitary sewer. Water and communication lines were detected south of the unknown line. A non-conductive unknown utility was detected at a depth of 5 feet running north south. The sanitary sewer lateral was detected using a 512 Hz sonde and is approximately 30 feet east of the boring locations. Two unknown linear anomalies were detected 15 and 20 feet east of the nearest boring location, the anomalies exhibited an induced 512 Hz frequency during the sanitary sewer trace.

Location 2:

No utilities in the boring location. A non-continuous utility was detected approximately 10 feet south and 10 feet west of the location.

Location 3:

Four pieces of abandoned utility lines (non-continuous and non-conductive) were detected 5 feet west of the boring location. High amplitude reflections typical of a foundation were detected 5 feet south west of the boring location.

Location 4:

The north-south electrical line 4 feet east of the monitoring well is located under the brick pavers in the sidewalk. The north-south communication line in the road is located 2.5 feet west of the existing monitoring well (boring locations are in line with the monitoring well). The unknown north south utility is located 5 feet west of the monitoring well and the communication west of it is the fiber optic line.

Location 5:

There are two east west utilities south of the existing monitoring well and two to the north. The electrical line furthest south is 6 feet south of the monitoring well is located under the brick pavers in the sidewalk. The unknown line 3.5 feet south of the monitoring well is a non-continuous, non-conductive line. It ends approximately 20 feet to the west under the concrete sidewalk. The line is air-filled (determined by phase change). The line located 2 feet to the north of the monitoring well is a non-continuous line (does not extend to intersection). The line does not exhibit a 60 Hz or Radio frequency signature in passive mode locating but it was possible to induce a radio frequency on the line. A metallic non-continuous line would match those criteria. The water line is located approximately 10 feet north of the boring location.

Location 6:

There is one east west utility south of the existing monitoring well and one to the north. The electrical line to the north is 3.5 feet north of the monitoring well is located under the brick pavers in the sidewalk. The storm sewer is located 18 feet to the south.

Location 7:

A non-continuous, non-conductive target was detected approximately 4 feet east of the boring location. The irrigation main is located approximately 6 feet south of the boring location.

Location 8:

There are two existing monitoring wells at this location, one 4 ½ feet north of the other. The electrical line is present in the sidewalk 2 ¾ feet south of the monitoring wells. A conductive line passes between the two well, the line was traced to a utility box to the east and to the sidewalk electrical line to the west. The line does not exhibit a 60 Hz signature typical of electrical lines with current but the line should be treated

as an electrical line. The line located 2 feet to the north of the monitoring wells is a non-continuous line (does not extend west to the intersection). The line does not exhibit a 60 Hz or Radio frequency signature in passive mode locating but it was possible to induce a radio frequency on the line. A metallic non-continuous line would match those criteria. The water line is located approximately 6 feet north of the boring location.

Location 9:

High voltage lines located 15 feet south of the boring location. Unknown conductive line locate 6.5 feet north of the location and a unknown non-conductive line is located 9 feet to the east.

CLOSURE

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

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

Respectfully,

Geophysical Survey LLC



Mark Villa L.G.
Geophysicist

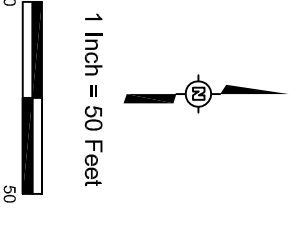


FIGURE 1
 Site Map
 Chelan, WA



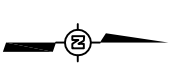
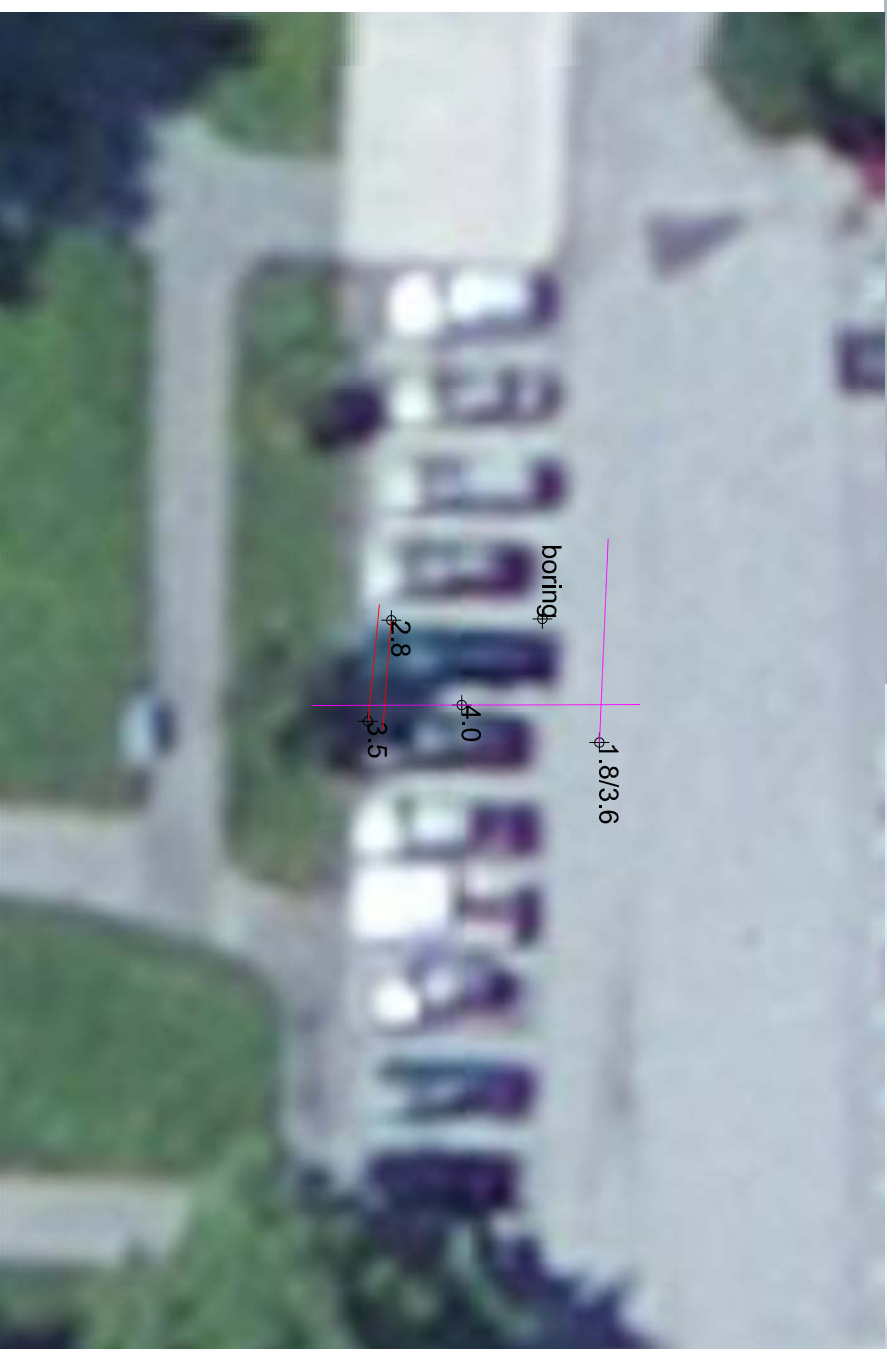
Legend

- 2.0 Depth to top in feet
- Unknown utility
- E Electric line
- W Water line
- IRR Irrigation line
- COM Telecom line
- 2.0 Debris



1 Inch = 20 Feet





1 Inch = 20 Feet



Legend

- ϕ2.0 Depth to top in feet
- Unknown utility
- Electric line
- Water line
- Irrigation line
- Telcom line
- Debrts

**Appendix B:
Boring Logs**



18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Soil Boring: LIFB-1

Project: Chevron Service Station No. 96590
Client: Chevron EMC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: R. Otteman
Date Started: 10/31/2016
Date Completed: 11/3/2016

Driller: Cascade Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 52.62 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
moist	0.0				SM		1	Asphalt. 6 inches (SM)
wet	0.0				SM		2	brown silty SAND, no odor, no sheen
moist	0.0				SM		3	brown silty SAND, no odor, no sheen (SM)
moist	0.1				SM		4	(SM) brown silty fine SAND, no gravel, 15% silt, 85% fine sand, cobbles starting at 6 ft, no odor, no sheen
moist	0.0				SW		5	(SW) brown well graded fine to coarse SAND with 15% gravel, no odor, no sheen
moist	0.0				SW		6	(SW) brown well graded SAND with 15% gravel, no odor, no sheen
moist	37.1				SW		7	(SW) SAA, no odor, slight sheen
moist	72.9				SW		8	(SW) SAA with slight color change, HC odor, no sheen
moist	9.4				SW		9	(SW) SAA, no odor, slight sheen
moist	6.9				SW		10	(SW) SAA, no odor, no sheen
moist	6.5				SW		11	(SW) brown well graded SAND with 20% gravel, no odor, no sheen
moist	2.1				SW		12	(SW) SAA, no odor, no sheen
					ML		13	(ML) Gray clayey SILT with no sand or gravel, no odor, no sheen.
							14	SEE UVOST LOG FOR REMAINDER OF BORING
							15	
							16	
							17	
							18	
							19	
							20	
							21	
							22	
							23	
							24	
							25	
							26	
							27	
							28	
							29	
							30	
							31	
							32	
							33	
							34	
							35	

LIFB-1-UVOST



18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Soil Boring: LIFB-1

Project: Chevron Service Station No. 96590
Client: Chevron EMC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: R. Otteman
Date Started: 10/31/2016
Date Completed: 11/3/2016

Driller: Cascade Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 52.62 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
							36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52	
							53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	Bottom of borehole at 52.6 feet.



18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Soil Boring: LIFB-2

Project: Chevron Service Station No. 96590
Client: Chevron EMC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: R. Otteman
Date Started: 10/27/2016
Date Completed: 11/3/2016

Driller: Cascade Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 59.38 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
							1	Asphalt
	1.5	1.5 - 2.2			SM	[Pattern]	2	(SM) brown dense silty SAND with gravel, 20% silt, 10% gravel, no odor, no sheen
	2.2	2.2 - 4.0			SM	[Pattern]	4	(SM) SAA, no odor, no sheen
	8.0	4.0 - 8.0			SP	[Pattern]	6	(SP) brown silty coarse SAND with cobbles, 5% silt, no odor, no sheen
wet	9.2	8.0 - 9.2			SW	[Pattern]	8	(SW) brown well graded fine to coarse gravelly SAND, with <5% silt, 25% gravel and 60% sand, no odor, no sheen
moist	0.1	9.2 - 10.0			SW	[Pattern]	9	(SW) SAA, no odor, no sheen
wet	0.1	10.0 - 11.0			SW	[Pattern]	10	(SW) SAA, no odor, no sheen
wet	0.1	11.0 - 11.5			SM	[Pattern]	11	(SM) brown coarse SAND; 5% gravel and no silt no odor, no sheen
	0.1	11.5 - 12.0			ML	[Pattern]	12	(ML) brown clayey SILT with 15% clay, slight HC odor, medium globular sheen SAA, no odor no sheen
							13	
							14	
							15	
							16	
							17	
							18	SEE UVOST LOG FOR REMAINDER OF BORING
							19	
							20	
							21	
							22	
							23	
							24	
							25	
							26	
							27	
							28	
							29	
							30	
							31	
							32	
							33	
							34	
							35	

LIFB-2-11
G = 11
D = 180
HO = 210
B <0.021

LIFB-2-UVOST



18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Soil Boring: LIFB-3

Project: Chevron Service Station No. 96590
Client: Chevron EMC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: R. Otteman
Date Started: 10/27/2016
Date Completed: 11/4/2016

Driller: Cascade Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 60.07 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
							36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	
								Bottom of borehole at 60.1 feet.



18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Soil Boring: LIFB-4

Project: Chevron Service Station No. 96590
Client: Chevron EMC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: R. Otteman
Date Started: 10/25/2016
Date Completed: 11/2/2016

Driller: Cascade Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 48.32 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
							36 37 38 39 40 41 42 43 44 45 46 47 48	
							49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	Bottom of borehole at 48.3 feet.



18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Soil Boring: LIFB-5

Project: Chevron Service Station No. 96590
Client: Chevron EMC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: R. Otteman
Date Started: 10/26/2016
Date Completed: 11/2/2016

Driller: Cascade Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 48.05 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
							1	Asphalt
	1.2				SM		2	(SM) brown dense silty SAND with 25% silt and 10% gravel, no odor, no sheen
							3	
	1.9				SM		4	(SM) SAA, no odor, no sheen
							5	
	0.8				SM		6	(SM) brown dense silty SAND with cobbles and 25% silt, no odor, no sheen
							7	
damp	6.5				SM		8	(SM) unable to collect sample due so cobbles
damp	1.3				SW		9	(SW) brown silty SAND, no odor, no sheen
damp	1.3				ML		10	(ML) 6 inch SILT lense. no odor, no sheen
damp	11.5				SW		11	(SW) brown well graded fine to coarse SAND, with 5% silt, 5% gravel and 90% sand, no odor, no sheen
damp	13.4				SW		12	(SW) SAA, no odor, no sheen
damp	17.0				SW		13	(SW) SAA, no odor, no sheen cobbles at 12.5 feet
damp	15.4				SW		14	(SW) brown well graded SAND with <5% silt and 15% gravel, gravel is subrounded to angular, no odor, slight sheen
moist	3.4				SW		15	(SW) SAA, no odor, no sheen
moist	0.0				CL		16	(SW) brown gravelly well graded coarse to fine SAND, with 20% silt and 20% gravel, no odor, no sheen
wet	0.0				ML		17	(CL) brown CLAY with 10% silt, no plasticity, no odor, no sheen
wet	21.2				CL		18	(ML) brown poorly graded well sorted SILT with no sand, no odor, no sheen
wet	29.6				CL		19	(ML) SAA, no odor, no sheen
wet	19.9				CL		19	(CL) gray CLAY lense 4 inches thick, no odor, no sheen
					ML		20	(ML) gray SILT
							20	(CL) gray CLAY lense, no odor, no sheen
							21	(ML) gray clayey SILT, no odor, no sheen
							21	SEE UVOST LOG FOR REMAINDER OF BORING
							22	
							23	
							24	
							25	
							26	
							27	
							28	
							29	
							30	
							31	
							32	
							33	
							34	
							35	

LIFB-5-UVOST



18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Soil Boring: LIFB-5

Project: Chevron Service Station No. 96590
Client: Chevron EMC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: R. Otteman
Date Started: 10/26/2016
Date Completed: 11/2/2016

Driller: Cascade Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 48.05 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
							36 37 38 39 40 41 42 43 44 45 46 47 48	
							48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	Bottom of borehole at 48.1 feet.



18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Soil Boring: LIFB-6

Project: Chevron Service Station No. 96590
Client: Chevron EMC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: R. Otteman
Date Started: 11/1/2016
Date Completed: 11/3/2016

Driller: Cascade Drilling
Drill Method: Air Knife/Sonic/Direct Push
Total Boring Depth: 52 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
							36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52	
							52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	Bottom of borehole at 52.0 feet.



18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Monitoring Well: MW-38

Project: Chevron Service Station No. 96590
Client: Chevron EMC
Location: 232 East Woodin Ave, Chelan, WA
Logged By: R. Otteman

Date Started: 11/2/2016
Date Completed: 11/14/2016
Driller: Cascade Drilling
Drill Method: Air Knife/Sonic

Total Boring Depth: 46 ft
Hole Diameter: 6 in
Well Depth: 46 ft
TOC Elevation: 1121.08 ft

Well Diameter: 2 in
Well Screen: 10 slot; 21-46 ft
Filter Pack: 10/20 Colorado
Well Casing: Schedule 40 PVC

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION	WELL DIAGRAM
							1	Asphalt top 2 inches. (SW)	<p>Well Box Concrete Seal Sch 40 PVC Riser</p> <p>Bentonite</p>
damp	0.3				SW		2	brown, well graded, silty SAND, 15% silt, coarse to fine sand, no odor, no sheen	
damp	0.6				SW		4	(SW) brown, well graded SAND, 5% silt, slight sheen, no odor	
damp	0.2				SW		6	(SW) brown gravelly SAND, 6'-8' cobbles, no silt, no odor, no sheen	
damp	0.2				SW		7	(SW) brown gravelly SAND with no silt, no odor, no sheen cobbles from 6-8 feet	
damp	1.0				SW		9	(SW) brown gravelly, well graded, fine to coarse SAND, no silt, 25% gravel, no odor, no sheen,	
damp	1.2				SW		10	(SW) SAA, no sheen, no odor	
damp	0.3				SW		11	(SW) SAA, 10% silt, no odor, no sheen	
damp	0.4				SW		12	increasing more silt.	
moist	1.2				ML		13	(ML) brown SILT, no sand or gravel, no odor, no sheen	
wet	1.7				ML		14	(ML) olive gray brown clayey SILT, 20% clay, medium plasticity, no odor	
wet	1.5				ML		15	(ML) SAA, no odor, no sheen	
moist	12.1				ML		16	(ML) SAA, no odor, no sheen	
wet	2.0				ML		17	(ML) SAA, no odor, no sheen	
moist	2.4				ML		18	(ML) SAA, no odor, no sheen	
wet	1.2				ML		19	(ML) SAA, no odor, no sheen	
					ML		20		



18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Monitoring Well: MW-38

Project: Chevron Service Station No. 96590
Client: Chevron EMC
Location: 232 East Woodin Ave, Chelan, WA
Logged By: R. Otteman

Date Started: 11/2/2016
Date Completed: 11/14/2016
Driller: Cascade Drilling
Drill Method: Air Knife/Sonic

Total Boring Depth: 46 ft
Hole Diameter: 6 in
Well Depth: 46 ft
TOC Elevation: 1121.08 ft

Well Diameter: 2 in
Well Screen: 10 slot; 21-46 ft
Filter Pack: 10/20 Colorado
Well Casing: Schedule 40 PVC

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION	WELL DIAGRAM
wet	5.8				ML			(ML) SAA, no odor, no sheen	
wet	5.2		MW-38-21	G < 1.0 D = 4.6 HO = 12 B < 0.0004	ML		21 (ML) SAA, no odor, no sheen		
wet	2.7				ML		22 (ML) SAA, no odor, no sheen		
wet	2.3				ML		23 (ML) SAA, no odor, no sheen		
wet	1.7				ML		24 (ML) SAA, no odor, no sheen		
wet	1.7				ML		25 (ML) SAA, no odor, no sheen		
wet	0.9				ML		26 (ML) SAA, no odor, no sheen		
wet	0.9				ML		27 (ML) SAA, no odor, no sheen		
wet	1.5				ML		28 (ML) SAA, no odor, no sheen		
wet	3.1				ML		29 (ML) SAA, no odor, no sheen		
wet	1.0		MW-38-30	G < 1.7 D < 4.3 HO < 14 B < 0.0006	ML		30 (ML) olive gray clayey SILT, 20% clay, no odor, no sheen		
wet	1.0				ML		31 (ML) SAA, no odor, no sheen		
wet	1.4				ML		32 (ML) SAA, no odor, no sheen		
wet	1.0				ML		33 (ML) SAA, no odor, no sheen		
wet	0.2				ML		34 (ML) SAA, no odor, no sheen		
wet	0.6				ML		35 (ML) SAA, no odor, no sheen		
wet	1.5				ML		36 (ML) SAA, no odor, no sheen		
moist	0.5				SM		37 (SM) olive gray fine SAND, 10% silt, no odor, no sheen		
damp	0.5				SW		38 (SW) gray well graded gravelly coarse to fine SAND, 5% silt, 20% gravel, no odor, no sheen		
damp	0.5				SW		39 (SW) SAA, no odor, no sheen		
							40		

10/20 Colorado Silica Sand
Ecology Unique Well ID BJH-316



18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Monitoring Well: MW-38

Project: Chevron Service Station No. 96590
Client: Chevron EMC
Location: 232 East Woodin Ave, Chelan, WA
Logged By: R. Otteman

Date Started: 11/2/2016
Date Completed: 11/14/2016
Driller: Cascade Drilling
Drill Method: Air Knife/Sonic

Total Boring Depth: 46 ft
Hole Diameter: 6 in
Well Depth: 46 ft
TOC Elevation: 1121.08 ft

Well Diameter: 2 in
Well Screen: 10 slot; 21-46 ft
Filter Pack: 10/20 Colorado
Well Casing: Schedule 40 PVC

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION	WELL DIAGRAM
damp	1.2				SW		40	(SW) gray well gaded gravelly SAND, 5% silt, no odor, no sheen	
damp	1.3				SW		41	(SW) SAA, no odor, no sheen	
damp	1.2				SW		42	(SW) SAA, no odor, no sheen	
damp	1.4				SW		43	(SW) SAA, no odor, no sheen	
damp	1.3				SW		44	(SW) SAA, no odor, no sheen	
damp	1.7				SW		45	(SW) olive gray, well graded, gravelly SAND, no odor, no sheen	
			MW-38-45	G < 0.8 D < 3.1 HO < 10 B < 0.0004	SW		46	Bottom of borehole at 46.0 feet.	
							47		
							48		
							49		
							50		
							51		
							52		
							53		
							54		
							55		
							56		
							57		
							58		
							59		
							60		



18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Monitoring Well: MW-39

Project: Chevron Service Station No. 96590
Client: Chevron EMC
Location: 232 East Woodin Ave, Chelan, WA
Logged By: R. Otteman

Date Started: 11/3/2016
Date Completed: 11/4/2016
Driller: Cascade Drilling
Drill Method: Air Knife/Sonic

Total Boring Depth: 45 ft
Hole Diameter: 6 in
Well Depth: 45 ft
TOC Elevation: 1117.42 ft

Well Diameter: 2 in
Well Screen: 10 slot; 17-42 ft
Filter Pack: 10/20 Colorado
Well Casing: Schedule 40 PVC

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION	WELL DIAGRAM
							0	Asphalt top 2 inches.	<p>Well Box Concrete Seal Sch 40 PVC Riser</p> <p>Bentonite</p> <p>10/20 Colorado Silica Sand</p>
damp	0.0				SM		1	(SM) brown sandy SILT, 15% coarse to fine sand, no sheen, no odor	
damp	0.0				SM		2	(SM) brown silty SAND, <5% gravel, 10% silt, no cobbles, no odor, no sheen	
damp	0.0				SM		3	(SM) light brown silty SAND, 15% coarse to fine sand, no gravel, no cobbles no sheen, no odor	
damp	0.0				SM		4	(SM) SAA, no sheen, no odor	
wet	0.9				ML		5	(ML) brown clayey SILT, 30% clay, 70% silt, medium plasticity, no sand or gravel, no odor, no sheen	
wet	1.0				ML		6	(ML) SAA except decreasing clay, no odor, no sheen	
wet	1.0				ML		7	(ML) SAA, no odor, no sheen	
wet	1.1				SM		8	(SM) brown fine SAND, 10% silt, no odor, no sheen	
wet	0.8				CL-ML		9	(CL-ML) brown clayey SILT, no gravel, no odor, no sheen	
wet	0.9				CL-ML		10	(CL-ML) SAA, no odor, no sheen	
wet	1.0				CL-ML		11	(CL-ML) SAA, no odor, no sheen	
wet	1.0				SM		12	(SM) brown fine SAND, no odor, no sheen	
wet	0.8				CL-ML		13	(CL-ML) brown clayey SILT, no odor, no sheen	
wet	0.7				CL-ML		14	(CL-ML) SAA, no odor, no sheen	
wet	0.3				ML		15	(ML)	
wet	0.5				ML		16	(ML) brown clayey SILT, no odor, no sheen	
					ML		17	(ML) SAA, no odor, no sheen	
					CL		18	(CL) SAA, no odor, no sheen	

MW-39-18
 DG < 1.4
 HO < 3.9
 B < 0.0005



18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Monitoring Well: MW-39

Project: Chevron Service Station No. 96590
Client: Chevron EMC
Location: 232 East Woodin Ave, Chelan, WA
Logged By: R. Otteman

Date Started: 11/3/2016
Date Completed: 11/4/2016
Driller: Cascade Drilling
Drill Method: Air Knife/Sonic

Total Boring Depth: 45 ft
Hole Diameter: 6 in
Well Depth: 45 ft
TOC Elevation: 1117.42 ft

Well Diameter: 2 in
Well Screen: 10 slot; 17-42 ft
Filter Pack: 10/20 Colorado
Well Casing: Schedule 40 PVC

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION	WELL DIAGRAM
dry	1.1				SM		20	(CL) olive gray CLAY, dense, no odor, no sheen	
moist	0.7				CL		21	(SM) olive gray fine SAND (CL) olive gray CLAY	
wet	0.6				SM		22	(SM) olive gray fine SAND	
dry	0.6				SW		23	(SW) light gray gravelly coarse to fine SAND, 15% gravel, <5% silt, 2% cobbles, well graded, no odor, no sheen	
dry	0.6				SW		24		
wet	0.3				ML		25	(ML) olive gray clayey SILT	
damp	0.7				SW		26	(SW) light gray gravelly coarse to fine SAND, well graded, <5% silt, 15% gravel, 2% cobbles, no odor, no sheen	
damp	0.3				SW		27	(SW) SAA, no odor, no sheen	
damp	0.3				SW		28	(SW) SAA, no odor, no sheen	
damp	0.3				SW		29	(SW) SAA, no odor, no sheen	
damp	3.5				SW		30	(SW) SAA except 5% silt, no odor, no sheen	
damp	3.5				SW		31		
moist	4.8				SM		32	(SM) olive gray sandy SILT, no odor	
moist	4.8				SM		32	(SM) olive gray silty SAND, 10% gravel, no odor, no sheen	
damp	4.8				SW		33	(SW) light gray well graded gravelly SAND with <5% silt, cobbles at 33 feet. no odor, no sheen	
damp	4.8				SW		34	(SW) cobbles at 34.5 feet	
damp	4.8				SW		35		
moist	3.0				SW		36	(SW) SAA, no odor, no sheen	
moist	3.0				SW		37		
damp	3.8				SW		38	(SW) light gray well graded gravelly SAND with 10% silt, 15% gravel and 1% cobbles, no odor, no sheen	
damp	3.8				SW		39	(SW) SAA, no odor, no sheen	
damp	3.8				SW		40		



18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Monitoring Well: MW-39

Project: Chevron Service Station No. 96590
Client: Chevron EMC
Location: 232 East Woodin Ave, Chelan, WA
Logged By: R. Otteman

Date Started: 11/3/2016
Date Completed: 11/4/2016
Driller: Cascade Drilling
Drill Method: Air Knife/Sonic

Total Boring Depth: 45 ft
Hole Diameter: 6 in
Well Depth: 45 ft
TOC Elevation: 1117.42 ft

Well Diameter: 2 in
Well Screen: 10 slot; 17-42 ft
Filter Pack: 10/20 Colorado
Well Casing: Schedule 40 PVC

MOISTURE CONTENT	ORGANIC VAPOR (ppm)	SAMP. INTERVAL	ANALYTICAL SAMPLE	ANALYTICAL RESULTS (mg/kg)	U.S.C.S. SYMBOL	GRAPHIC LOG	DEPTH (ft)	LITHOLOGY/DESCRIPTION	WELL DIAGRAM
moist	5.6		MW-39-40	DGA 1.0 HOA 3.2 A 11	SW		41	(SW) light gray well graded SAND, 5%-10% gravel, 10% silt, no odor, no sheen	
dry	2.7						42	(SW) SAA, no odor, no sheen	
damp	0.8						43	(SW) SAA, no odor, no sheen	
					SW		44	(SW) SAA, no odor, no sheen	
							45	Bottom of borehole at 45.0 feet.	
							46		
							47		
							48		
							49		
							50		
							51		
							52		
							53		
							54		
							55		
							56		
							57		
							58		
							59		
							60		

Sch 40 Sump to 45'
Ecology Unique Well ID BJH-315



18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Soil Boring: SCB-1

Project: Chevron Service Station No. 96590
Client: Chevron EMC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: R. Otteman
Date Started: 10/31/2016
Date Completed: 11/14/2016

Driller: Cascade Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 75 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. 6 inches.
moist	0.1				SW		1	(SW) brown silty fine SAND, no odor, no sheen
wet	0.1				SW		2	(SW) brown silty fine SAND with 80% sand, 15% silt and 5% gravel, no odor, no sheen
moist	0.1				SW		3	(SW) brown gravelly well graded fine to coarse SAND with 5% silt and 15% gravel, no odor, no sheen
	24.1				SW		4	(SW) brown gravelly well graded SAND with 5% silt,
damp	0.5				SW		5	(SW) SAA, no odor, no sheen
moist	19.6				SW		6	(SW) brown silty coarse to fine SAND with 5% gravel and 15% silt, no odor, no sheen
damp	1.5				SW		7	(SW) SAA, no odor, no sheen
moist	1.8				SW		8	(SW) brown coarse SAND with 10% gravel and little to no fines, no odor, no sheen
moist	2.1				SW		9	(SW) SAA, no odor, no sheen
wet	18.3				ML		10	(ML) olive gray clayey silt with 15% clay, no odor, no sheen
wet	85.7		SCB-1-15	G = 10 D = 5.6 HO < 14 B 0.066	ML		11	(ML) SAA, HC odor, no sheen
wet	2.3				ML		12	(ML) SAA, no odor, no sheen
wet	16.1				ML		13	(ML) SAA, no odor, no sheen
wet	71.2				ML		14	(ML) SAA, no odor, no sheen
wet	36.1		SCB-1-19	G = 7.2 D = 4.1 HO < 14 B 0.13	ML	15	(ML) SAA, slight HC odor, no sheen	
wet	59.0				ML	16	(ML) failed attempt on Shelby Tube 20-22.5 ft bgs, 2 attempts with no recovery cleanout showed slight odor, no sheen	
wet	230				ML	17	(ML)	
wet	120				ML	18	(ML) clayey SILT, 15% clay, no odor, no sheen	
					ML	19	(ML) Shelby Tube Sample collected from 22.5 to 25 ft bgs	
					ML	20		
wet	15.4		SCB-1A	G = 11 D < 6.4 HO < 21 B 5.0	ML	21	(ML) failed attempt on Shelby Tube 25-27.5ft, no recovery cleanout showed olive gray clayey SILT, moderate HC odor, no sheen	
wet	22.7				ML	22	(ML) SAA, moderate HC odor, medium sheen	
wet	232.9				ML	23	(ML) Shelby Tube Sample collected from 27.5 to 30 ft bgs	
					ML	24		
wet	183.3				ML	25	(ML) failed attempt on shelby tube 30-32.5ft cleanout showed olive gray clayey SILT, no odor, no sheen	
wet	282.5				ML	26	(ML) cleanout showed strong HC odor, no sheen	
wet	3,014				ML	27	(ML) cleanout showed strong HC odor, no sheen	
wet	387				ML	28	(ML) Shelby Tube Sample collected 32.5 to 35 ft bgs cleanout showed olive gray clayey SILT, HC odor, no sheen	
wet	220.3		SCB-1C	G 61 D < 4.2 HO < 14 B 7.0	ML	29		
wet	195.9				ML	30		
					ML	31		
					ML	32		
					ML	33		
					ML	34		
					ML	35		



18912 North Creek Parkway, Suite 101
Bothell, WA 98011

Soil Boring: SCB-2

Project: Chevron Service Station No. 96590
Client: Chevron EMC
Location: 232 East Woodin Ave, Chelan, WA

Logged By: R. Otteman
Date Started: 10/27/2016
Date Completed: 11/7/2016

Driller: Cascade Drilling
Drill Method: Air Knife/Sonic
Total Boring Depth: 61.5 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
							1	Asphalt
damp	8.6				SM		2	(SM) brown dense silty SAND with 5% gravel, no odor, no sheen
damp	5.6				SM		4	(SM) SAA, no odor, no sheen
damp	0.6				SP		6	(SP) brown loose SAND with 5% silt, cobbles, no odor, no sheen
damp	5.8				SW		8	(SW) well graded SAND with 10% gravel, no odor, no sheen
damp	0.7				SW		9	(SW) SAA with 5% silt, no odor, no sheen
damp	0.7				SW		10	(SW) SAA, no odor, no sheen
moist	1.6				SW		11	(SW) SAA, no odor, no sheen
wet	1.0				ML		12	(ML) brown clayey SILT with no sand or gravel, no odor, no sheen
wet	0.4				ML		13	(ML) SAA, no odor, no sheen
wet	0.9				ML		14	(ML) olive gray SILT with <5% fine sand, no odor, no sheen
wet	1.1				ML		15	(ML) SAA, no odor, no sheen
wet	1.0				SM		15	(SM) brown silty coarse to fine SAND with 20% silt, no odor, no sheen
wet	1.0				ML		16	(ML) olive gray SILT with 10% clay, 5% fine sand and 85% silt, no odor, no sheen
wet	1.1				ML		17	(ML) SAA, no odor, no sheen
wet	1.1				ML		18	(ML) SAA, no odor, no sheen
wet	0.8				ML		19	(ML) SAA, no odor, no sheen
wet	1.2				ML		20	(ML) SAA, no odor, no sheen
wet	0.9				ML		21	(ML) SAA, no odor, no sheen
wet	1.0				ML		22	(ML) SAA, no odor, no sheen
wet	0.7				ML		23	(ML) SAA, no odor, no sheen
wet	19.8				ML		24	(ML) SAA, no odor, no sheen
wet	0.6				ML		25	(ML) olive gray SILT with 20% clay with no sand or gravel, no odor, no sheen
wet	1.5				ML		26	(ML) SAA, no odor, no sheen
wet	117				ML		27	(ML) SAA, no odor, no sheen
wet	209.4				ML		28	(ML) SAA, no odor, no sheen
wet	83.3				ML		29	(ML) SAA, no odor, no sheen
wet	77.8				ML		30	(ML) SAA, slight HC odor, no sheen
wet	173.7				ML		31	(ML) SAA, HC odor, no sheen
wet	86.9				ML		32	(ML) SAA, no odor, no sheen
wet	130.2				ML		33	(ML) SAA, no odor, no sheen
wet	103.4				ML		34	(ML) SAA, no odor, no sheen
					ML		35	

SCB-2-28

G = 29
D < 4.2
HO < 14
B < 0.040

**Appendix C:
Soil Sample Photographs**

Family Company
Une Entreprise Familiale

Ziploc®
BRAND / MARQUE

LIFB-1

4ft

1200

10/31/2016

Johnson
A Family Company
The Entrepreneur's Favorite

Ziploc®
BRAND/MARQUE

LIFB-1 2 ft
2 ft

10/31/2016

Ziploc®
Family Company
Une Entreprise familiale

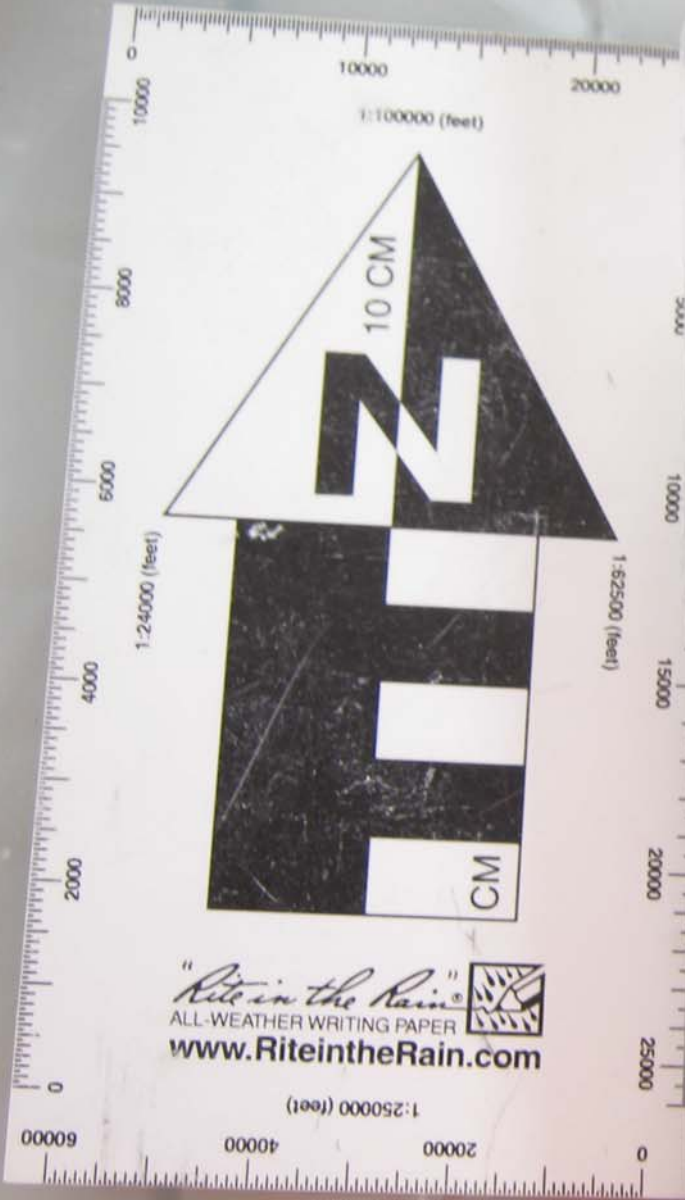
Ziploc®
MARQUE
LIFB-1
6#

10/31/2016

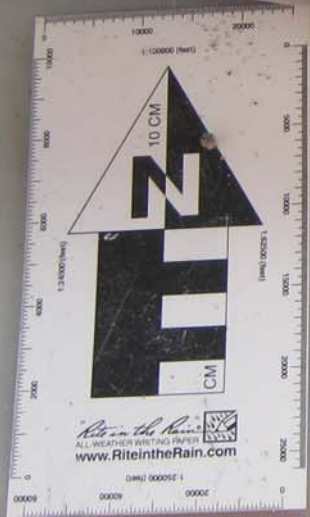
Johnson
A Family Company
Une Entreprise Familiale

Ziploc®
BRAND / MARQUE

LIFB-81
8ft



10/31/2016



LIFB-4
10 ft → 8 ft

10/31/2016

LIFB-4

LIFB-7

~~10 ft~~ → 8 ft
~~17 ft~~ → 14 ft
12 ft — 10 ft (+1' slough)

10/31/2016

LIFB-4-17

LIFB-4-13

LIFB-4-12

LI + 15-4

~~17 ft → 20 ft~~
14 ft → 12 ft

10/31/2016

LIFB-4

~~10A~~ → 8A
17A → 14A

10/31/2016

LIFB-4

~~10 ft~~ → 8 ft
17 ft → 14 ft

10/31/2016

LIFB-4

17A —————> 20A

10/31/2016



Ziploc®
GRAND/MARQUE
SCB-1
2A



Ziploc®
GRAND/MARQUE
~~FFB-4~~ 4A
SCB-1



Ziploc®
GRAND/MARQUE
SCB-1-6A

10/31/2016

LIFB-5

10ft → 8ft

11/01/2016

8

LIFB-5

12.5ft → 10ft

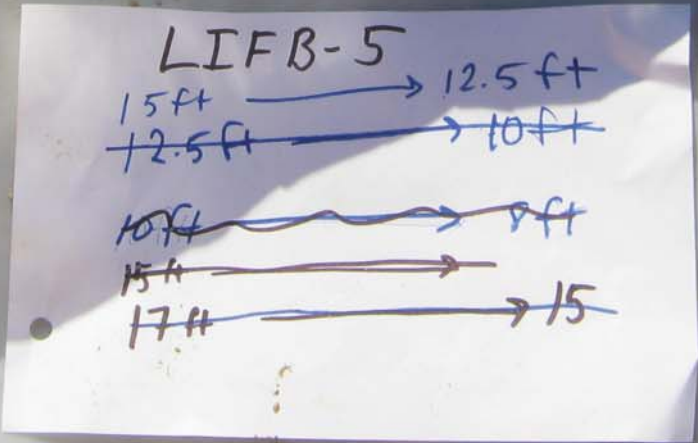
~~10ft → 8ft~~

~~15ft →~~

● ~~17ft → 15~~

11/01/2016

LIFB-5-B



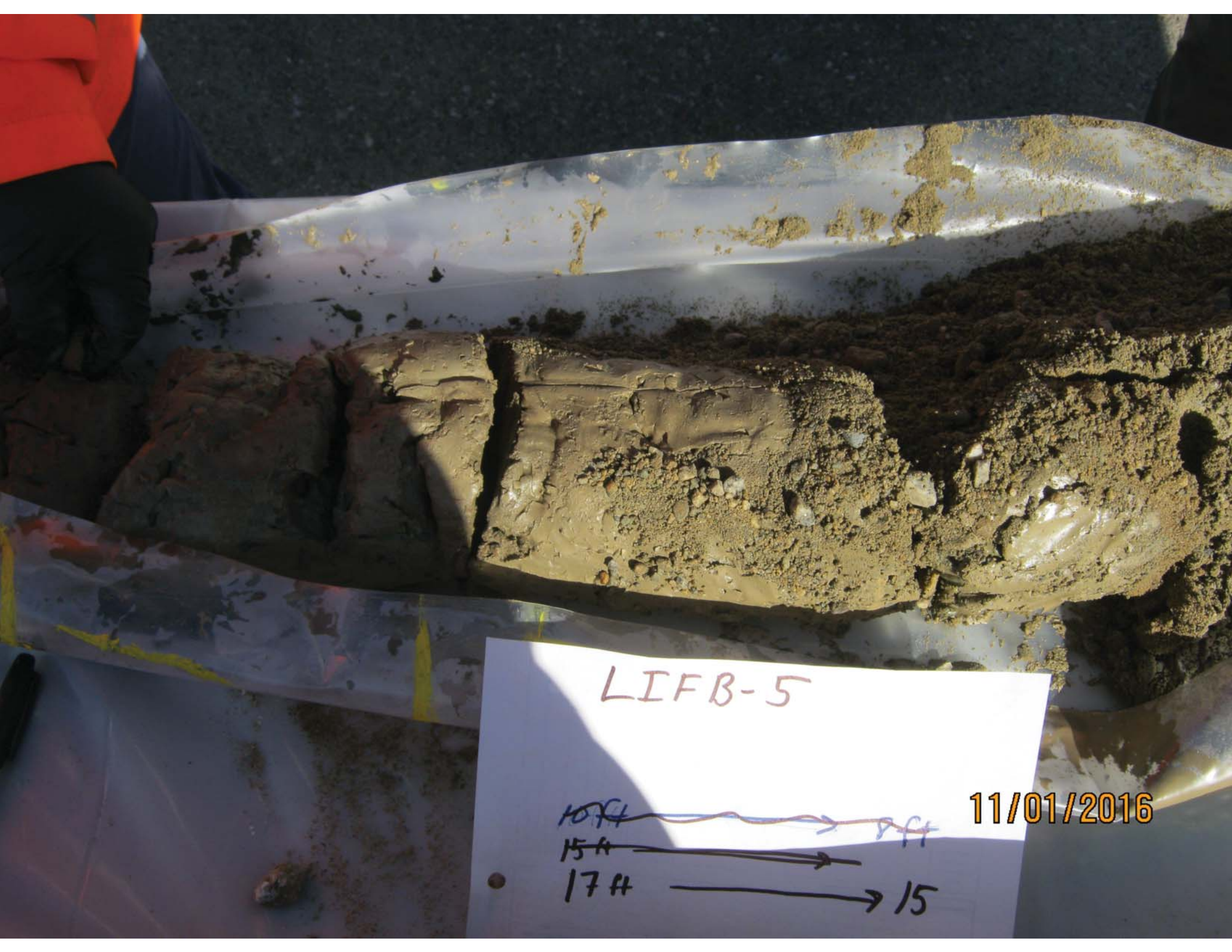
11/01/2016



LIFB-5
15ft → 12.5ft
~~12.5ft → 10ft~~
10ft → 8ft
15ft →

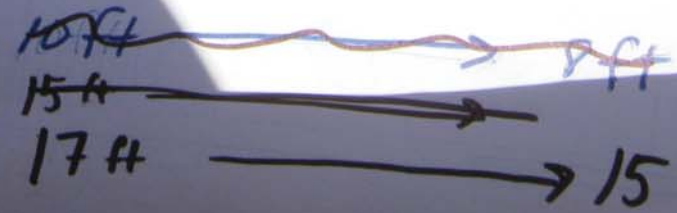
11/01/2016





LIFB-5

11/01/2016





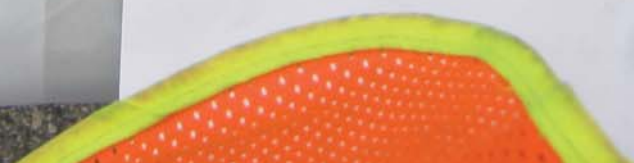
10 ft → 8 ft
15 ft →
● 17 ft → 15
17 ft → 20 ft

11/01/2016



LIFB-1
10 ft → 8 ft

11/01/2016





LIFB-1

10 ft → 8 ft

12.5 ft → 10 ft

11/01/2016



LIFB-1

~~10 ft~~ → ~~8 ft~~

~~12.5 ft~~ → ~~10 ft~~

15 ft - 12.5 ft

11/01/2016

3-15

LIFB-6-8

LIFB-6-8

LIFB-6
10ft → 8ft



11/02/2016

LIFB-6

~~10 ft~~ → ~~8 ft~~

15 ft → 12.5 ft

15 ft → 10 ft

11/02/2016

10ft → 8ft



11/02/2016

LIFB-3-
10ft → 8ft

11/02/2016

LIFB-3-

~~10 ft~~ → ~~8 ft~~

12.5 ft → 10 ft

11/02/2016

LIFB-3-15

LIFB-3-15

LIFB-3-13

LIFB-3-

~~10 ft~~ → 8 ft

~~12.5 ft~~ → 10 ft

15 - 12.5 ft

11/02/2016

LIFB-3-15

LIFB-3-15

LIFB-3-13

LIFB-3-

~~10ft~~ → 8ft

~~12.5ft~~ → 10ft

15- 12.5ft

11/02/2016

LIFB-2

8 ft → 11 ft

11 ft → 8 ft

12 ft → 11 ft

11/03/2016

WET



LIFB-2-11

LIFB-2-12

LIFB-2-11

LIFB-2-12

LIFB-2

LIFB → 8 ft

LIFB-2-9

DATE
CONTENTS
LIFB-2-9

11/03/2016





LIFB-2
LIFB-2-11
LIFB-2 → 8 ft

11/03/2016

LIFB-2-12

LIFB-2-11

LIFB 4-12

LIFB-2
LIFB → 8 ft

DATE
CONTENTS
LIFB-2-9

11/03/2016

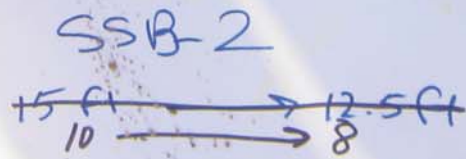
11/03/2016

SSB-2
15 ft → 12.5 ft



11/03/2016

SSB-2-9



213

11/03/2016

12.5

Shanri®

SSB-2
15 ft → 12.5 ft
10 → 8
12.5 → 10 ft

2





• SSB-1
15 ft → 12.5 ft

11/03/2016

B-1-9

SSB-1

~~15 ft~~ → ~~12.5 ft~~
~~12.5~~ → ~~10 ft~~
 10 → 8 ft

Dry ice

11/03/2016



MONITORING WELL BORING LOG
 BOREHOLE NO. SSB-21
 PAGE 2 of

PROJECT: 8888 Chelan, WA	DRILLER: Dakota Drilling	WELL DIAMETER:
LOCATION: 22 East Wood	DRILL METHOD: H	WELL DEPTH:
OWNER: Shanon EMC	SAMPLE METHOD: H	WELL CASING:
DATE: 11/3/16	HOLE DIAMETER:	WELL SCREEN:
LOGGED BY: K. Williams	HOLE DEPTH:	FILTER PACK:
		CASING ELEVATION:

Sample ID	Depth (ft)	Type	Lithology / Description	Well Completion Backfill Material

PROJECT: 8888 Chelan, WA
 LOCATION: 22 East Wood
 OWNER: Shanon EMC
 DATE: 11/3/16
 LOGGED BY: K. Williams

Scale: 0 10 20 30
 Major Division: 10 20 30
 Log Scale: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

MW-39
10 ft → 8 ft

11/04/2016



MW-39
10 ft → 8 ft
~~10 ft~~ → 12.5 ft
12.5 ft → 10 ft

11/04/2016

30 - 21.3

27.5 -

25 - 22.2

22.5 -



MW-39
~~10 ft~~ → 8 ft
~~10 ft~~ → 12.5 ft
12.5 ft → ~~10 ft~~
15.0 ft → 12.5 ft

11/04/2016



~~SEB 1~~
MW-39
17.5 ft → 15 ft

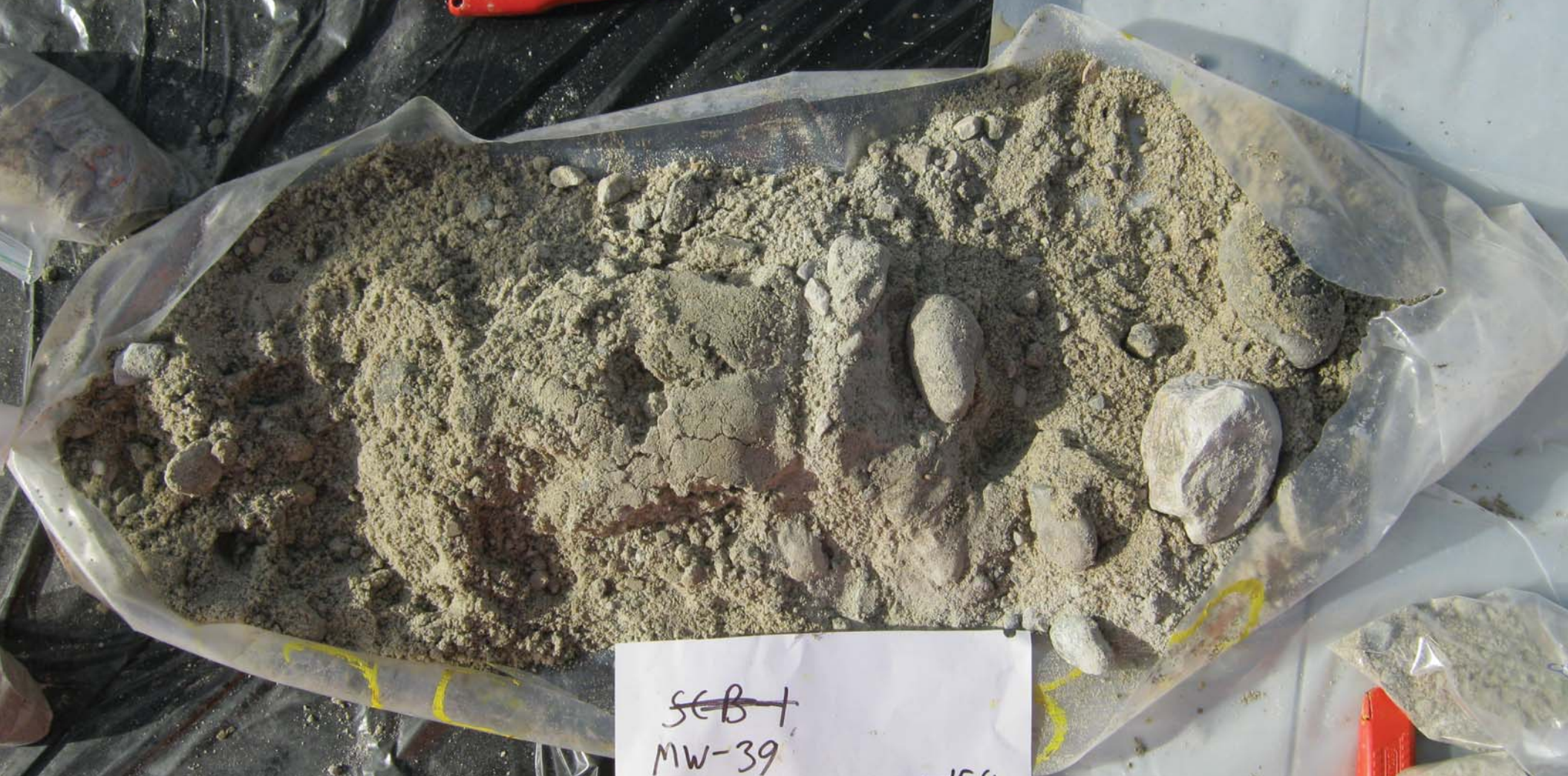
11/04/2016

R. Otman



~~SE 15~~
MW-39.
~~17.5 ft~~ → 15 ft
~~20~~ → 17.5 ft
22.5 ft → 20.0 ft •

11/04/2016



~~SEB 1~~
MW-39
17.5 ft → 15 ft
20 → 17.5 ft
~~22.5 ft~~ → 20 ft
25 ft → 22.5 ft

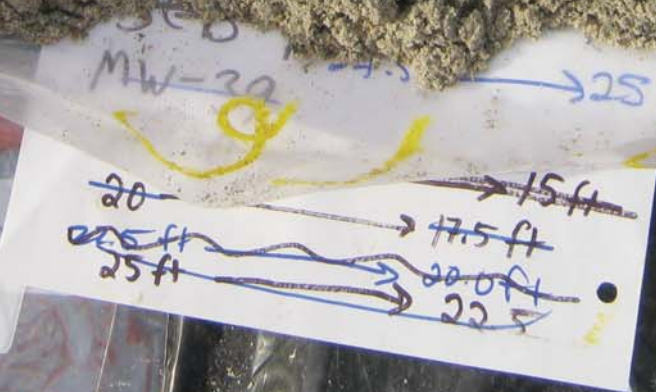
11/04/2016





MW-39-25
MW-39-25

MW-39-27



11/04/2016



~~SEB~~ MW-39
~~MW-39~~ 27.5 → 25
 30 → 27.5 ft
~~17.5 ft~~ → 15 ft
~~20~~ → 17.5 ft
~~22.5 ft~~ → 20 ft
~~25 ft~~ → 22.5 ft

DATE:
 CONTENTS:
 MW-39-28

DATE:
 CONTENTS:
 MW-39-28

11/04/2016

33-3



MW-39
35ft → 33ft

11/04/2016

11/04/2016



MW-39
~~35 ft~~ → ~~33 ft~~
33 ft → 31 ft

31

11/04/2016



MW-39
35 ft → ~~33 ft~~
~~33 ft~~ → 31 ft
30 → ~~31 ft~~ •
31 — 30 ft



MW-39
40 → 37.5
~~35 ft → 33 ft~~
~~33 ft → 31 ft~~
30 → 31 ft
31 → 30 ft

11/04/2016

MW-39

37.5 → 35 ft

11/04/2016



MW-39

~~37.5~~ → ~~35 ft~~
42 ft → 40 ft

11/04/2016

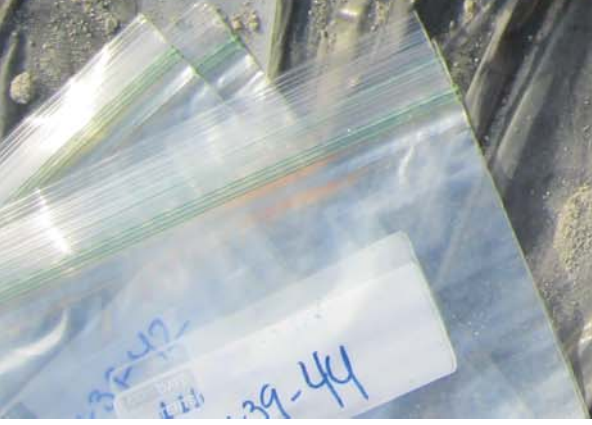




MW-39

37.5	→	35 ft
42 ft	→	40 ft
45 ft	→	42 ft

11/04/2016



SCB-2
11A → 8A

11/07/2016

SCB-2-11/2

SCB-2
HA → 8A
13ft → 11ft

11/07/2016



B-2-12



SCB-2
11 ft → 8 ft
13 ft → 11 ft
15 ft → 13 ft

SCB-2-14

11/07/2016

SCB-2

~~11A → 8A~~

~~13A → 11A~~

~~15A → 13A~~

~~17.5A → 15A~~

11/07/2016

4R-2-17
SCB-2-16
SCB-2-15



SCB-2

~~11 ft~~ → 8 ft

~~13 ft~~ → 11 ft

~~15 ft~~ → 13 ft

~~17.5 ft~~ → 15 ft

~~20 ft~~ → 17.5 ft

11/07/2016

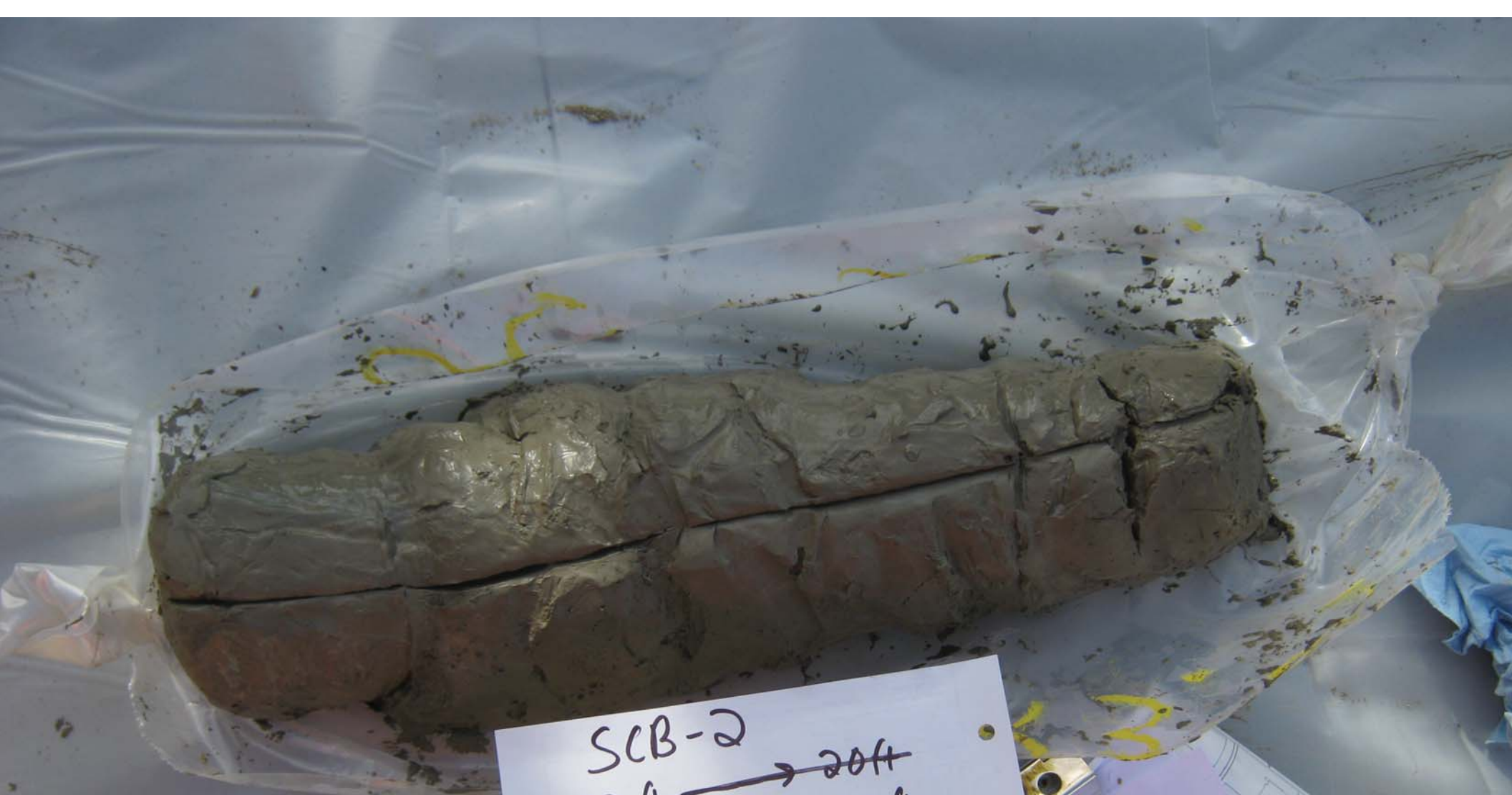
SCB-2
22A → 20ft

11/07/2016

11/07/2016

SCB-2
~~22 A~~ → 20 ft
23.5 → 22 ft

DATE: _____
CONTENTS: SCB-2-22 ft
SCB-2-22 ft



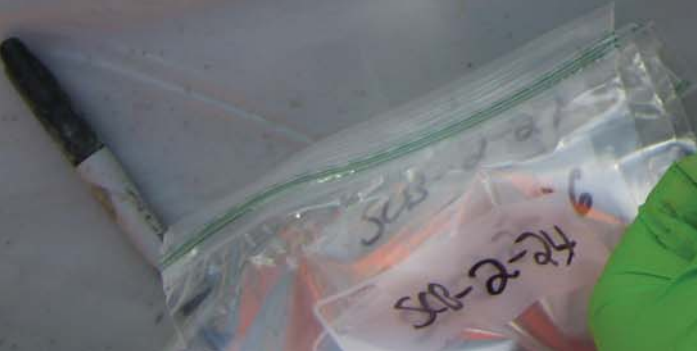
SCB-2
~~22 ft~~ → 20 ft
~~23.5~~ → 22 ft
25 ft → 23.5

Location		Genova
Drilling Company		Willis
Rig Manufacturer		Roth Ottomun
Rig Identification		Roth Ottomun
Operator		Roth Ottomun
Field Manager/Signature		Roth Ottomun
Field Manager/Signature		Roth Ottomun

1. Are emergency warning (W) switches in working order?
Location of kit switch #2: near Miller phase
Location of other kit switches: in the drive
Participating of fire extinguisher present, charged, and inspected?
Yes No NA

2. Have any of the manufacturer's specifications?
Have any of the manufacturer's specifications?
Have any of the manufacturer's specifications?
Have any of the manufacturer's specifications?

11/07/2016



11/07/2016

SCB-2
~~22 ft~~ → 20 ft
~~23.5~~ → 22 ft
~~25 ft~~ → 23.5
27 → 25 ft

Drilling Method	8140LS	
Signature	Ruth Otteman / Sonic	
Street Brown	Ruth Otteman	
1. Are emergency interrupt (kill) switches in working order?		
Location of kill switch #1:	near driller panel	
Location of kill switch #2:	above the engine	
Location of other kill switches:		
Yes	No	NA
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SCB-2

22A	→	20ft
23.5	→	22A
25ft	→	23.5
27	→	25ft
29	→	27ft

11/07/2016



SCB-2

22A	→	20ft
23.5	→	22A
25ft	→	23.5
27	→	25ft
29	→	27ft
32	→	29ft



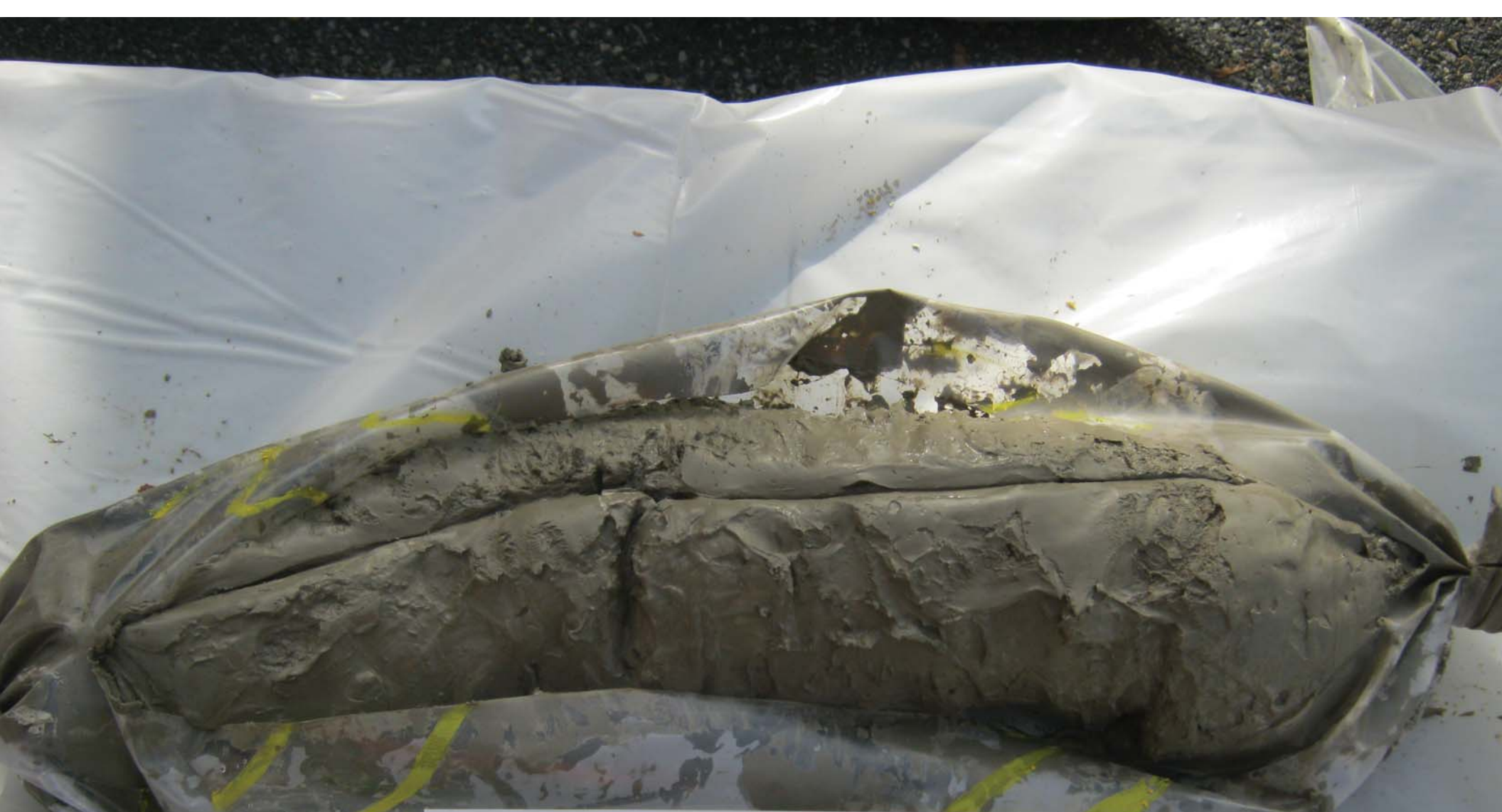
11/07/2016

Sample ID	
Location	
Depth (meters)	
Depth (feet)	
Sample Description	
Collector	
Date	
Time	
Weather	
Sea State	
Visibility	
Other Comments	

11/07/2016

SCB-2
33 → 32

CB-2



SCB-2
~~33 → 32~~
35 → 33

11/07/2016

11/07/2016



SCB-2
~~33 → 32~~
~~35 → 33~~
36 → 35



SCB-2

~~33 → 32~~

~~35 → 33~~

~~36 → 35~~

38 → 36

11/07/2016

11/07/2016



SCB-2
~~33 → 32~~ •
~~35 → 33~~
~~36 → 35~~
~~38 → 36~~
40 → 38

SCB-2

~~46~~ → ~~43~~ ft

~~40~~ 43 → 40 ft

11/07/2016

SCB-2

~~46~~ → 43 ft

~~40~~ 43 → ~~40~~ ft

46 → 43 ft

11/07/2016

SCB-2
~~33 → 32~~
~~35 → 33~~
~~36 → 35~~
~~38 → 36~~
~~40 → 38~~
~~48.5 → 46 "cleanout"~~

11/07/2016



SCB-2

46	→	43 ft
40 43	→	40 ft
46	→	43 ft
51 ft	→	48.5 ft

SCB-2-49
SCB-2-50



11/07/2016

SCB-2
59 ft → 56 ft

11/07/2016

11/07/2016

SCB-2-59



SCB-2
~~59 ft → 56 ft~~
61 → 59 ft



11/08/2016

SCB-3
10 ft → 8 ft





SCB-3
10 ft → 8ft
12 → 11.5ft

11/08/2016

SCB-3

10 ft → 8H

12 → 11.5 ft

22 → 19.5 ft

11/08/2016

11/08/2016



SCB-3
10 ft → 8 ft
12 → 11.5 ft
22 → 19.5 ft
24.5 → 22



11/08/2016

SCB-3
10 ft → 8H
12 → 11.5 ft
22 → 19.5 ft
~~24.5 → 22~~
27 → 24.5

DATE:
CONTENTS:
SCB-3-24



SAIC MONITORING WELL/ BORING LOG

PROJECT: _____ BORING/WELL No: _____
 LOCATION: _____ PAGE 3 of _____
 DATE: _____ DRILLER: _____
 DESIGNED BY: _____

DRILL METHOD: _____ DIAMETER: _____
 SAMPLE METHOD: _____ DEPTH: _____
 HOLE DIAMETER: **SCB-3** CASING: _____
 HOLE DEPTH: _____ WATER PACK: _____
 CASING ELEVATION: _____

Water Level	Moisture Content	PIU (ppm)	BLDG#	Sample Recovery Interval	DEPTH (ft)	SOIL TYPE	LITHOLOGY / DESCRIPTION	Well Completion Backfill Material
					40			
					48			
					50			
					52			

29.5 → 27'

11/08/2016



SCB-3
32 → 34.5#

11/08/2016

11/08/2016

SCB-3

~~32 → 34.5#~~

37 → 34.5'



SW-3

~~32~~ → ~~34.5A~~

~~37~~ → ~~34.5'~~

43' → 41.5

11/08/2016

11/08/2016

SCB-3

~~32 → 34.5 ft~~
~~37 → 34.5'~~
~~43' → 41.5~~
43 → 45 ft





SCB-3
48 → 45.5

11/08/2016

46

46

SCB-3
~~48~~ → 45.5
50 → 48

NOTES

11/08/2016



• SCB-1
10 → 8

11/09/2016



• SCB - 1
10 ~~—————→ 28~~
12.5 —————→ 10

11/09/2016



SCB - 1

- 10 ~~→ 8~~
- 12.5 ~~→ 10~~
- 15 → 12.5

11/09/2016

11/09/2016

SCB - 1

- 10 → 8
- 12.5 → 10
- 15 → 12.5
- 17.5 → 15

11/09/2016

SCB-1

• 10 → 8
12.5 → 10
15 → 12.5
17.5 → 15
20 → 17.5

SCB - 1

10 → 8

12.5 → 10

15 → 12.5

17.5 → 15

~~20 → 17.5~~

22.5 → 20 clean out

11/09/2016



SCB-1

- 27.5 —————→ 25 ft cleanout

11/09/2016

11/09/2016

SCB-1

- 27.5 \longrightarrow ~~25 ft~~ cleanout
- 32.5 \longrightarrow 30



SCB-1

- 32.5 → 35ft cleanout
- 32.5 → 30
- ~~32.5 to 35ft~~
- 35ft → 32.5 cleanout

11/09/2016

SCB-1

- ~~37.5~~ → ~~25ft cleanout~~
- ~~32.5~~ → 30
- 32.5 to 35 f
- ~~35ft~~ → ~~32.5 cleanout~~
- 35 ft → 37.5 clean out

11/09/2016

11/09/2016

SCB-1

- 42' ~~35 f~~ → 45
- ~~35 f~~ → 30
- 32.5 ~~35 f~~ → 32.5 clean out
- 35A → 37.5 clean out

SCB-1

47 → 45

11/14/2016

11/14/2016



SCB-1
• 47 → 45
50 → 47



SCB-1

~~47~~ → ~~45~~

~~50~~ → ~~47~~

~~52.5~~ → 50

11/14/2016

11/14/2016

SCB-1

~~47~~ → ~~45~~

~~50~~ → ~~47~~

~~25~~ → ~~50~~

5 → 52.5

SCB-1

47 → 45

50 → 47

52.5 → 50

55 → 52.5

57.5 → 55

11/14/2016

11/14/2016



NOTES

SCB-1

60 → 575

44	
42	
40	
38	
36	
34	
32	

SCB-1

NOTES

60
62.5



57.5
60

11/14/2016

11/14/2016

SCB-1

NOTES

60	→	57.5
62.5	→	60
65	→	62.5

44
42
40
38
36
34
32



11/14/2016



11/14/2016

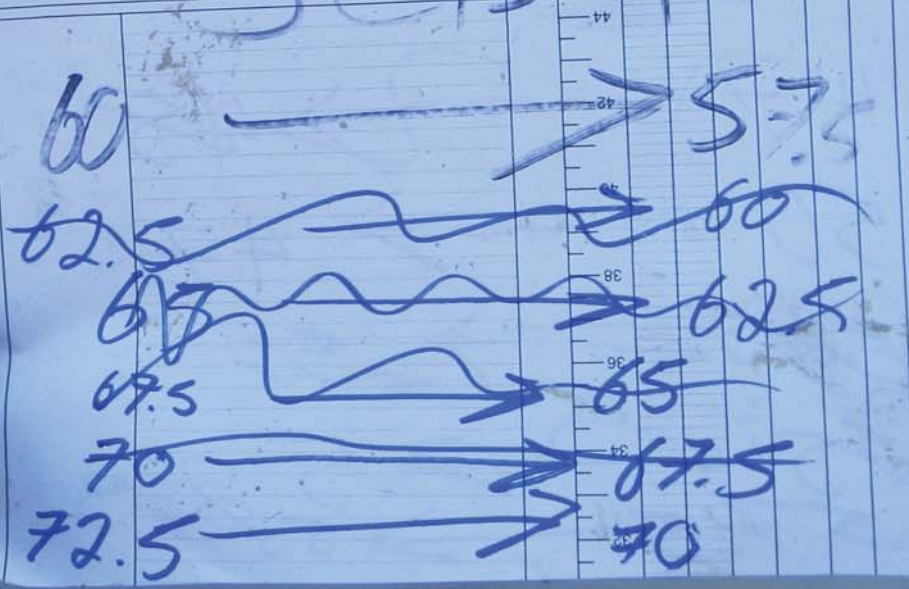
SCB-1



11/14/2016

SCB-1

NOTES



11/14/2016

SCB-1-
• 75A → 72.5

DATE:
CONTENTS:

74

11/14/2016



13 MV-38 -> 108

MV-38

13

15.5

→ 8

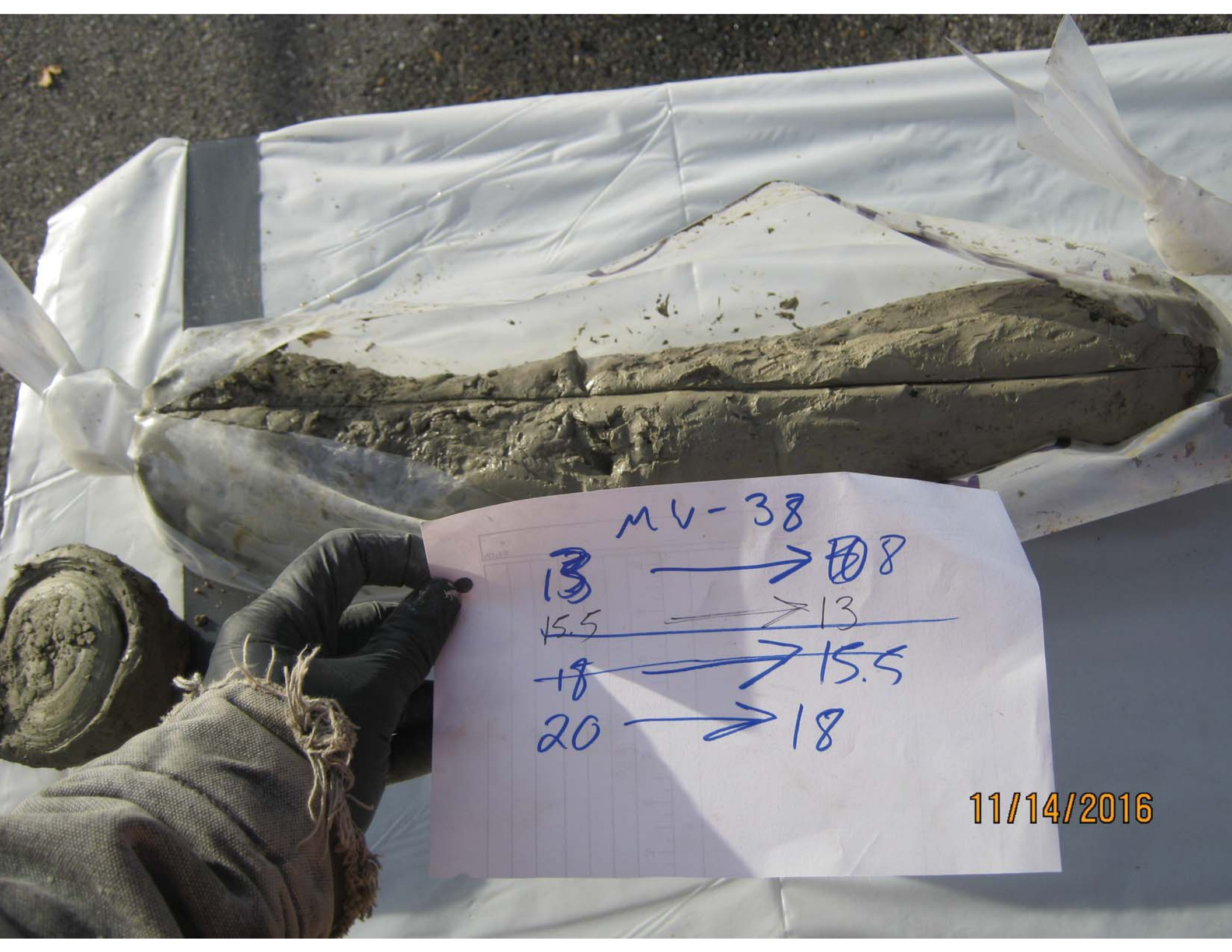
→ 13

11/14/2016

11/14/2016

MV-38

13	→	18
15.5	→	13
18	→	15.5



MV-38

13

→ 8

15.5

→ 13

~~18~~

~~→ 15.5~~

20

→ 18

11/14/2016

MV-38

~~13~~ → ~~18~~

~~15.5~~ → ~~13~~

~~18~~ → ~~15.5~~

~~20~~ → ~~18~~

~~22~~ → ~~20~~

11/14/2016

MV-38

13	→	18
15.5	→	13
18	→	15.5
20	→	18
22	→	20
26	→	22

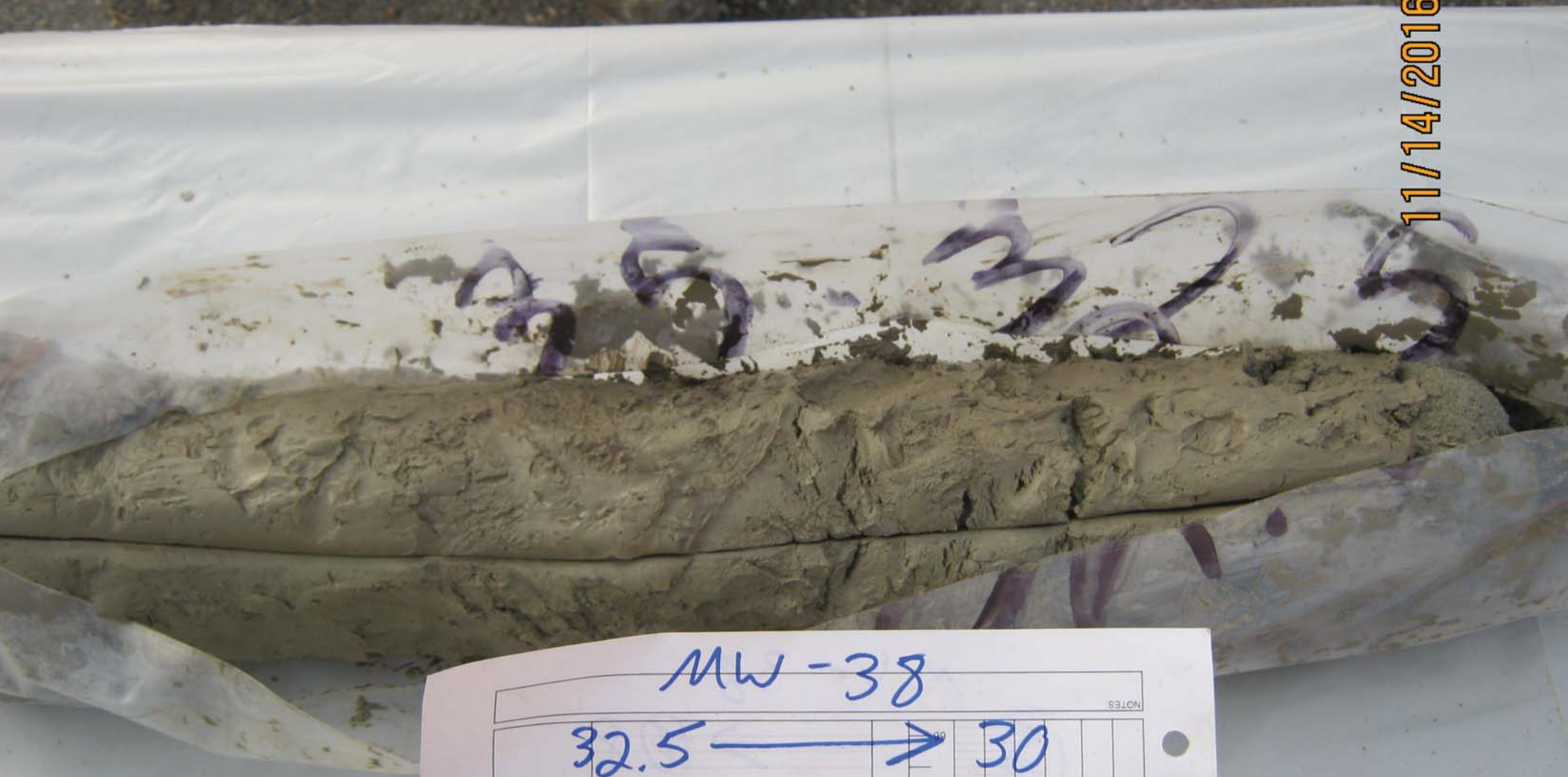
11/14/2016

MV-38

13	→	18
15.5	→	13
18	→	15.5
20	→	18
22	→	20
26	→	22
30	→	26

11/14/2016

11/14/2016



MW-38

32.5 → 30
35 → 32.5



NOTES:



MW-38

32.5	→	30
35	→	32.5
37.5	→	35

10
20
30
40
50

11/14/2016



MW-38

~~32.5~~ → ~~30~~

~~35~~ → ~~32.5~~

~~37.5~~ → ~~35~~

40 → 37.5

11/14/2016

11/14/2016

MW-38

NOTES	
32.5	→ 30
35	→ 32.5
37.5	→ 35
40	→ 37.5
42	→ 40



11/14/2016



MW-38

32.5	→	30
35	→	32.5
37.5	→	35
40	→	37.5
42	→	40
44	→	42

11/14/2016



MW-38

Start	End
32.5	30
35	32.5
37.5	35
40	37.5
42	40
44	42
46	44

Appendix D:
Final Data Package for UVOST Services

Final Data Package for UVOST Services

Site Location: 232 East Woodin Avenue, Chelan, WA

Project Number: 110.16.9486

Report Date: November 11, 2016



Prepared for:

Leidos, Inc.
Russell S. Shropshire, PE
18912 North Creek Parkway, Suite 101
Bothell, WA 98011
Tel. / 425.482.3323
E-Mail / russell.s.shropshire@leidos.com

Prepared by:

Cascade Technical Services
Daniel Caputo
13050 W 43rd Drive, Suite 100
Golden, Colorado 80403
Tel. / 303.423.2547
E-Mail / DCaputo@cascade-env.com

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UVOST Data Plots – Low Range Scales.....	5
UVOST Data Plots – High Range Scales	13
Reference Material	21
Cascade Personnel	21
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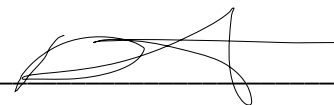
Project Narrative

Cascade Technical Services (Cascade) is pleased to present this data report Leidos, Inc. for the Ultra-Violent Optical Screening Tool (UVOST) services that were provided between the dates of November 2nd and November 4th, 2016 at your site located at 232 East Woodin Avenue in Chelan, Washington.

All field work and data management were completed by trained, scientific professionals and all quality assurance/quality control (QA/QC) measurements associated with these data were found to be within the tolerances set forth in the manufacture's specifications for these services. Reference emitter (RE) and background tests conducted previous to, and subsequent to the UVOST borings were found to be within acceptable tolerances and therefore the data are deemed acceptable for use. Exception/deviations regarding these QA/QC measurements and the related data are noted on the UVOST summary table that is part of this report.

This report contains two sets of plots for each of the UVOST locations; one set is scaled to show the lower level responses based on the responses in each individual boring and the second set is scaled to show the all show all responses on the same scale, based on the highest response observed across the site.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature:  _____

Daniel Caputo, Western Regional Manager of Site Characterization Services

Project Site Map and UVOST Locations

Approximate boring locations are provided below. Field staff estimated boring locations using reference points observed on site in relation to the same reference points visible in Google Earth map software.

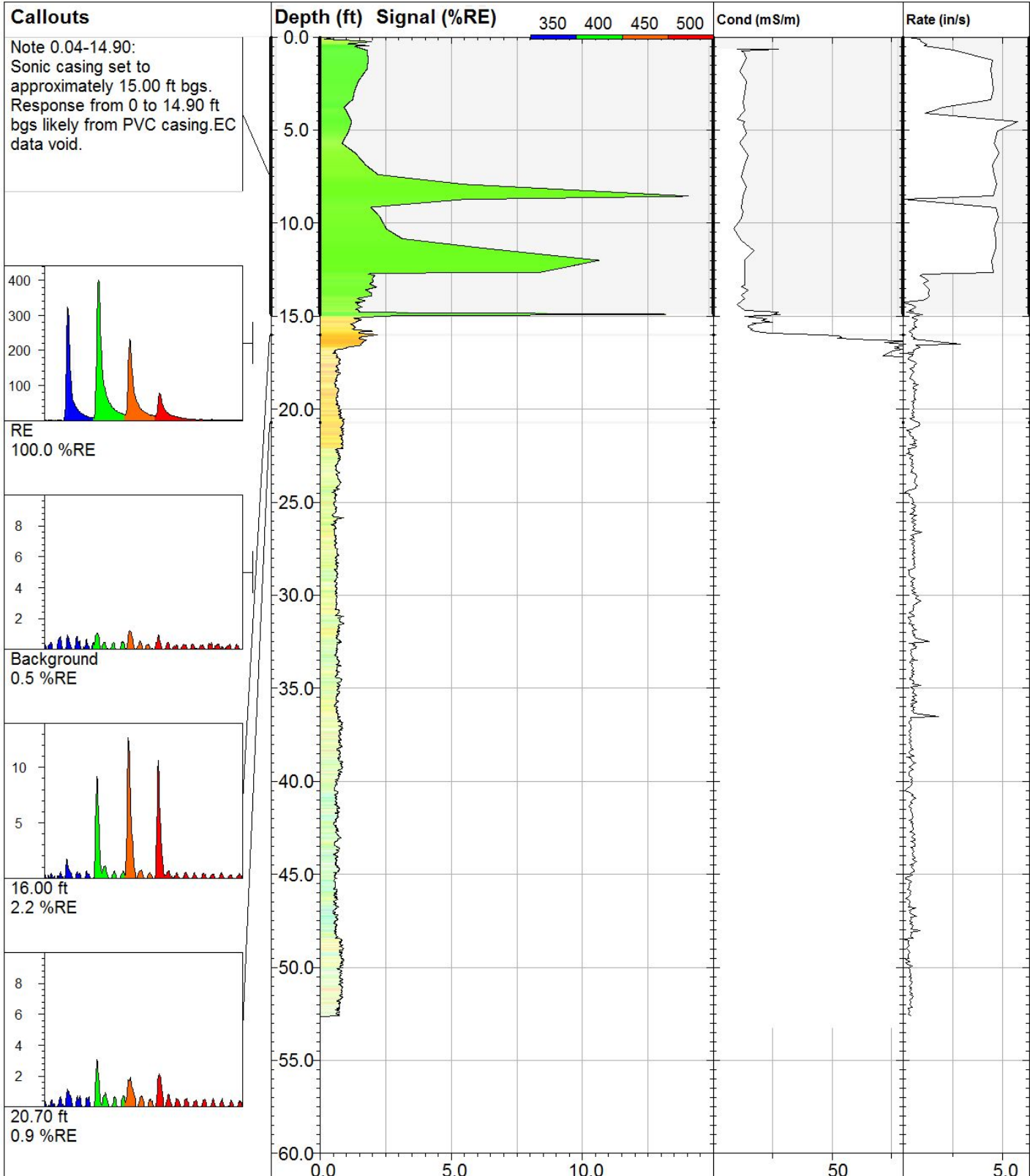


UVOST Data Summary Table

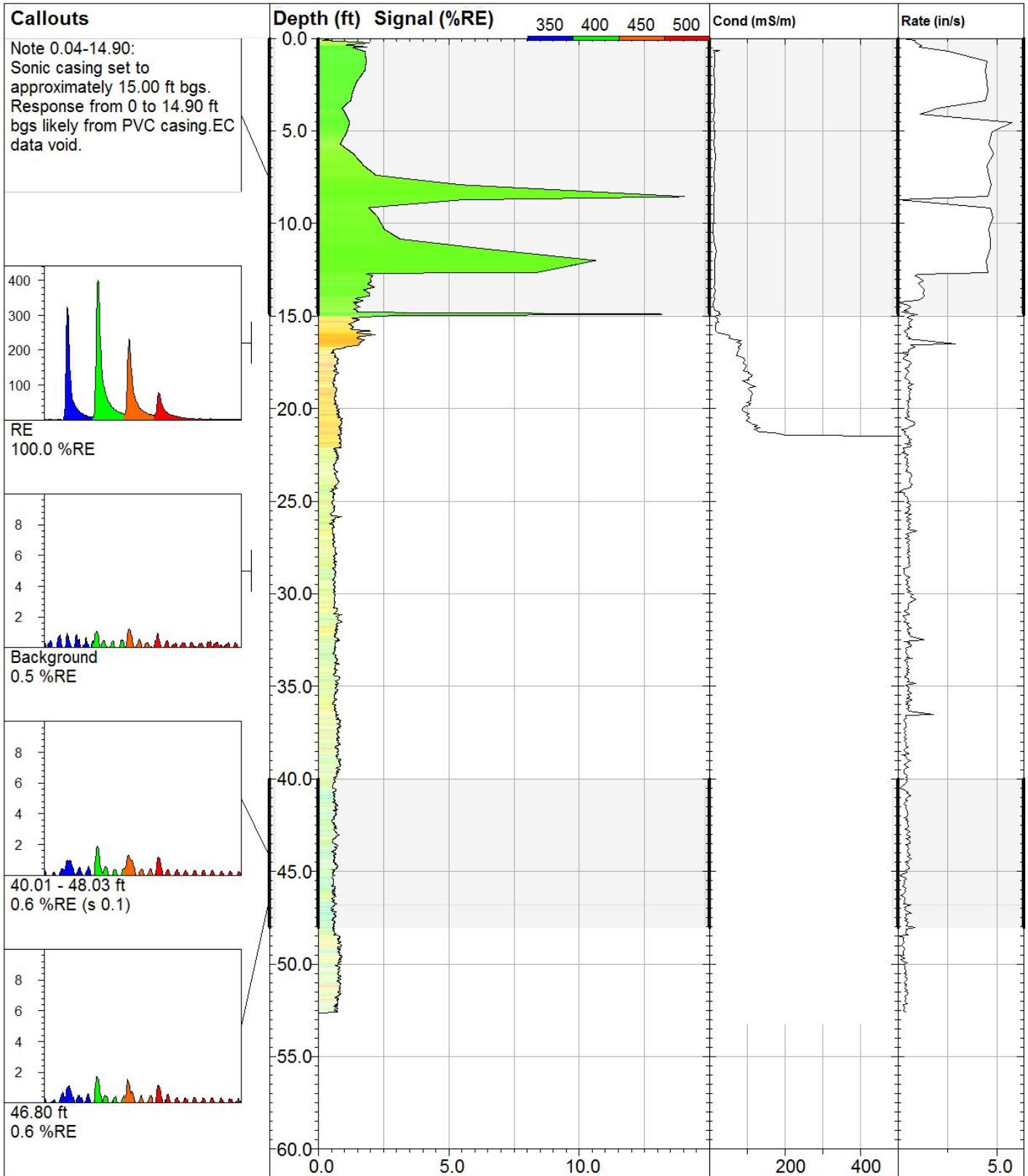
Provided below is a summary of UVOST information, including one hundred percent RE values and background RE information, callout depths and RE percentage values, and any deviations from the standard operating procedure that occurred during the field activities.

Depth Borings												
UVOST Location	Total Depth (ft bgs)	100% RE Value	Background Value	Callout 1 Depth (ft bgs)	Callout 1 Waveform Value	Callout 2 Depth (ft bgs)	Callout 2 Waveform Value	Notes				
LIFB-1	52.60	11872	0.5% RE	16.00	2.2% RE	20.70	0.9% RE	Sonic casing set to approximately 15.00 ft bgs. Response from 0 to 14.90 ft bgs likely from PVC casing. EC data void.				
LIFB-2	59.40	8646	0.2% RE	49.63	98.2% RE	50.69	99.0% RE	Sonic casing set to approximately 12.5 ft bgs. Response from 0 to 13.23 ft bgs is likely from PVC casing. 100% RE value slightly low, no impact to data quality.				
LIFB-3	60.10	9735	0.5% RE	17.58	13.2% RE	18.70	2.9% RE	Sonic casing set to approximately 17 ft bgs. Response from 0 to 17 ft bgs is likely from PVC.				
LIFB-4	48.30	9487	1.3% RE	21.11	69.0% RE	33.43	3.4% RE	Sonic casing set to approximately 20.00 ft bgs. Response from 0 to 19.79 ft bgs likely from PVC casing.				
LIFB-5	48.10	9072	8.4% RE	27.34	14.7% RE	39.25	13.7% RE	Sonic casing set to approximately 20 ft bgs. Response from 0 to 20.0 is likely from PVC casing.				
LIFB-6	52.00	13593	0.2% RE	35.23	0.3% RE	NA	NA	Sonic casing set to approximately 15.00 ft bgs. Response from 0 to approximately 15.00 feet bgs is likely from PVC casing. EC data void from 45.86 to 49.11. Likely due to a short circuit in EC wires.				
Emulation Boring												
UVOST ID	100% RE Value	Background Value	MW-9 Sample Callout 1 – Depth (ft)	MW-9 Sample Callout 1 Waveform Value - %RE	MW-10 Sample Callout 2 – Depth (ft)	MW-10 Sample Callout 2 Waveform Value - %RE	MW-12 Sample Callout 3 – Depth (ft)	MW-12 Sample Callout 3 Waveform Value - %RE	MW-16 Sample Callout 4 – Depth (ft)	MW-16 Sample Callout 4 Waveform Value - %RE	MW-21 Sample Callout 5 – Depth (ft)	MW-21 Sample Callout 5 Waveform Value - %RE
LIF-96590 LNAPL Samples	16564	0.4% RE	1.00 – 1.80	60.5% RE	3.00 – 3.80	33.4% RE	5.00 – 5.80	30.4% RE	7.00 – 7.80	35.1% RE	9.00 – 9.80	7.3% RE

UVOST Data Plots – Low Range Scales



LIFB-1		UVOST® By Dakota www.DakotaTechnologies.com
Site: Chevron 96590	Y Coord.(Lat-N) / System: Unavailable / NA	Final depth: 52.62 ft
Client / Job: Leidos / 110.16.9486	X Coord.(Lng-E) / Fix: Unavailable / NA	Max signal: 14.1 %RE @ 8.55 ft
Operator / Unit: DC / UVOST1314	Elevation: Unavailable	Date & Time: 2016-11-03 11:03 CDT



LIFB-1

UVOST® By Dakota
www.DakotaTechnologies.com

Site:
Chevron 96590

Y Coord.(Lat-N) / System:
Unavailable / NA

Final depth:
52.62 ft

Client / Job:
Leidos / 110.16.9486

X Coord.(Lng-E) / Fix:
Unavailable / NA

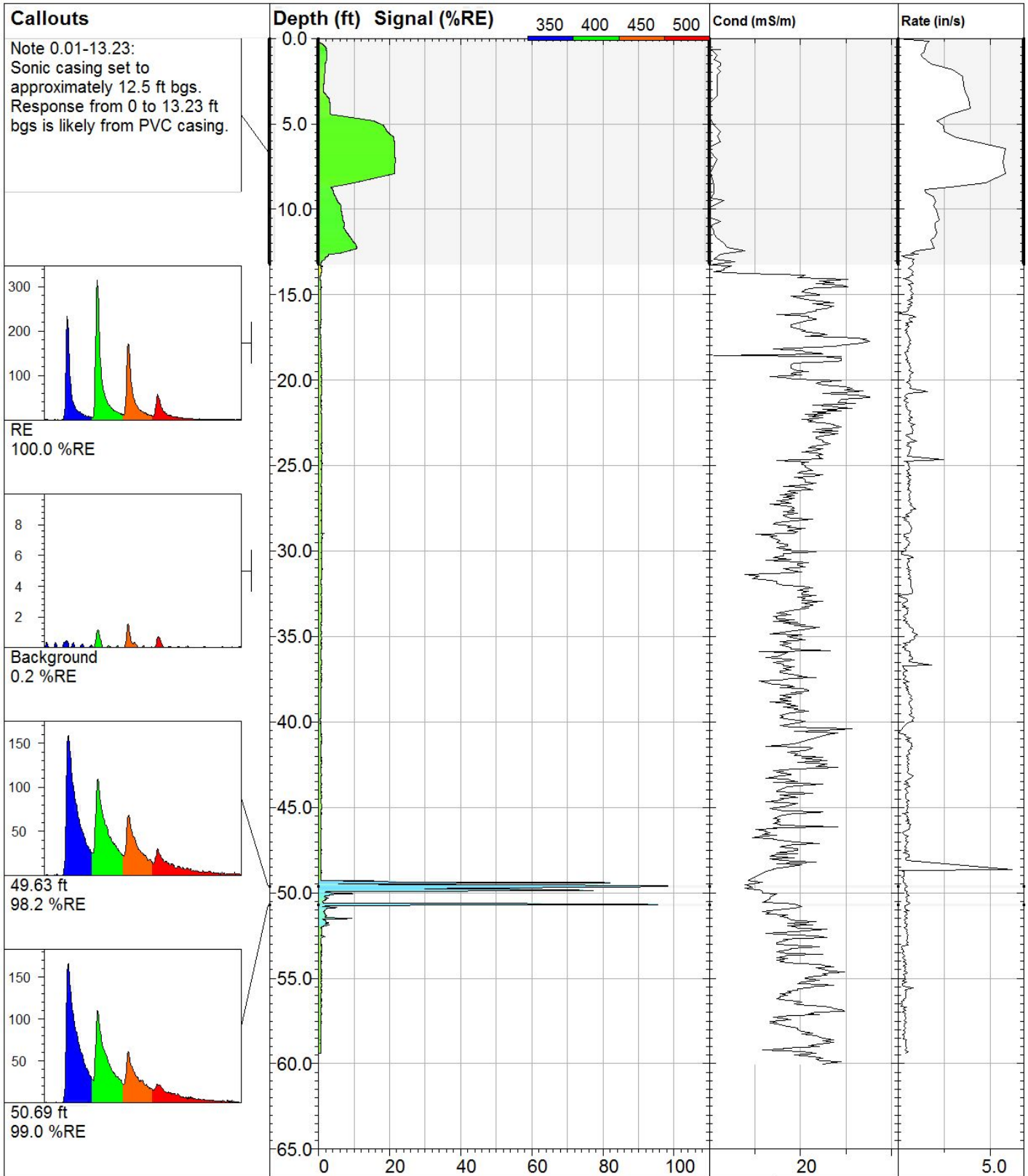
Max signal:
14.1 %RE @ 8.55 ft

Operator / Unit:
DC / UVOST1314

Elevation:
Unavailable

Date & Time:
2016-11-03 11:03 CDT

Revised log for LIFB-1 showing waveform callouts for depths of approximately 40 to 48 feet bgs.



LIFB-2

UVOST® By Dakota
www.DakotaTechnologies.com

Site:
Chevron 96590

Y Coord.(Lat-N) / System:
Unavailable / NA

Final depth:
59.38 ft

Client / Job:
Leidos / 110.16.9486

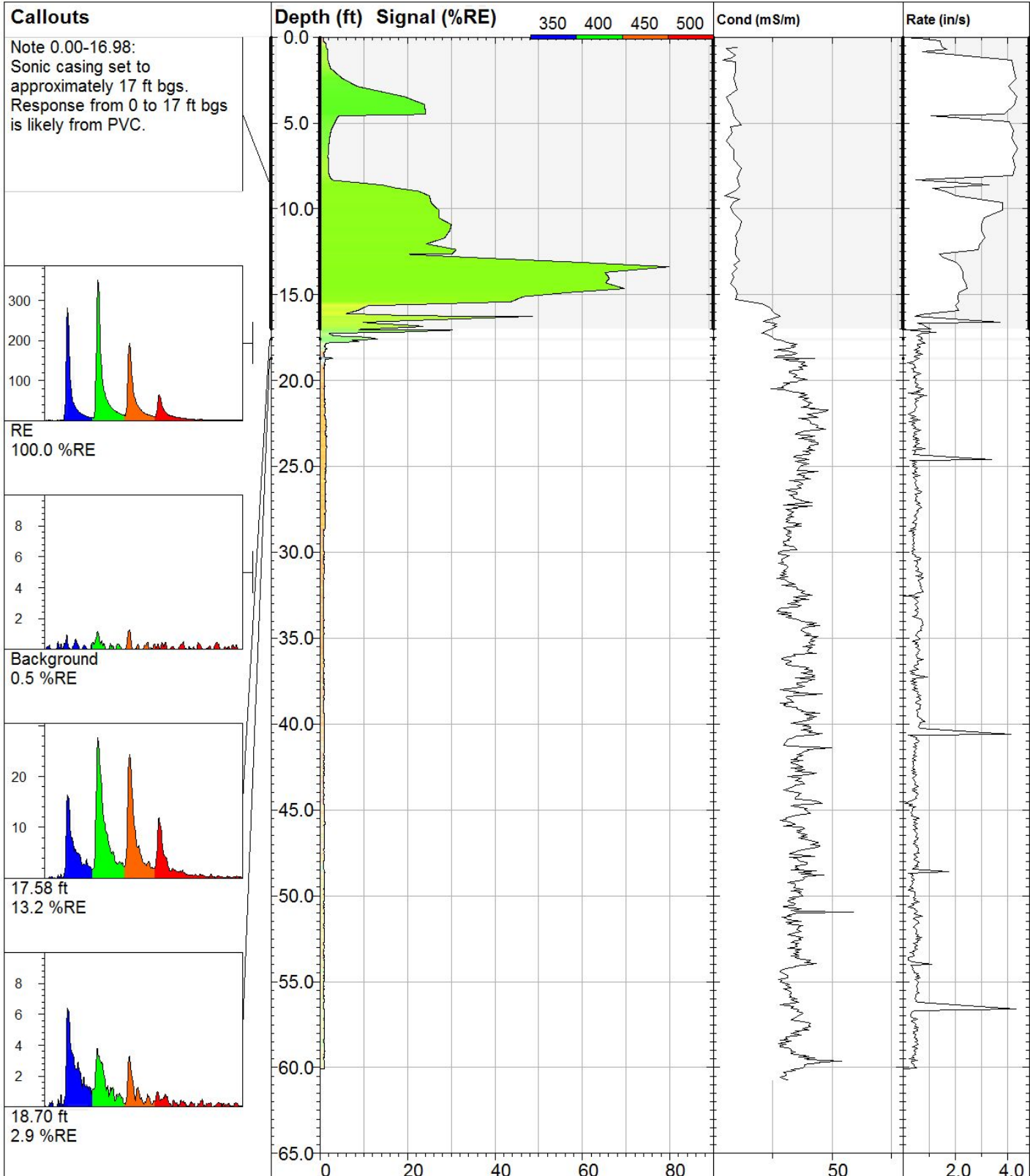
X Coord.(Lng-E) / Fix:
Unavailable / NA

Max signal:
99.0 %RE @ 50.69 ft

Operator / Unit:
DC / UVOST1314

Elevation:
Unavailable

Date & Time:
2016-11-03 18:36 CDT



LIFB-3

UVOST® By Dakota
www.DakotaTechnologies.com

Site:
Chevron 96590

Y Coord.(Lat-N) / System:
Unavailable / NA

Final depth:
60.07 ft

Client / Job:
Leidos / 110.16.9486

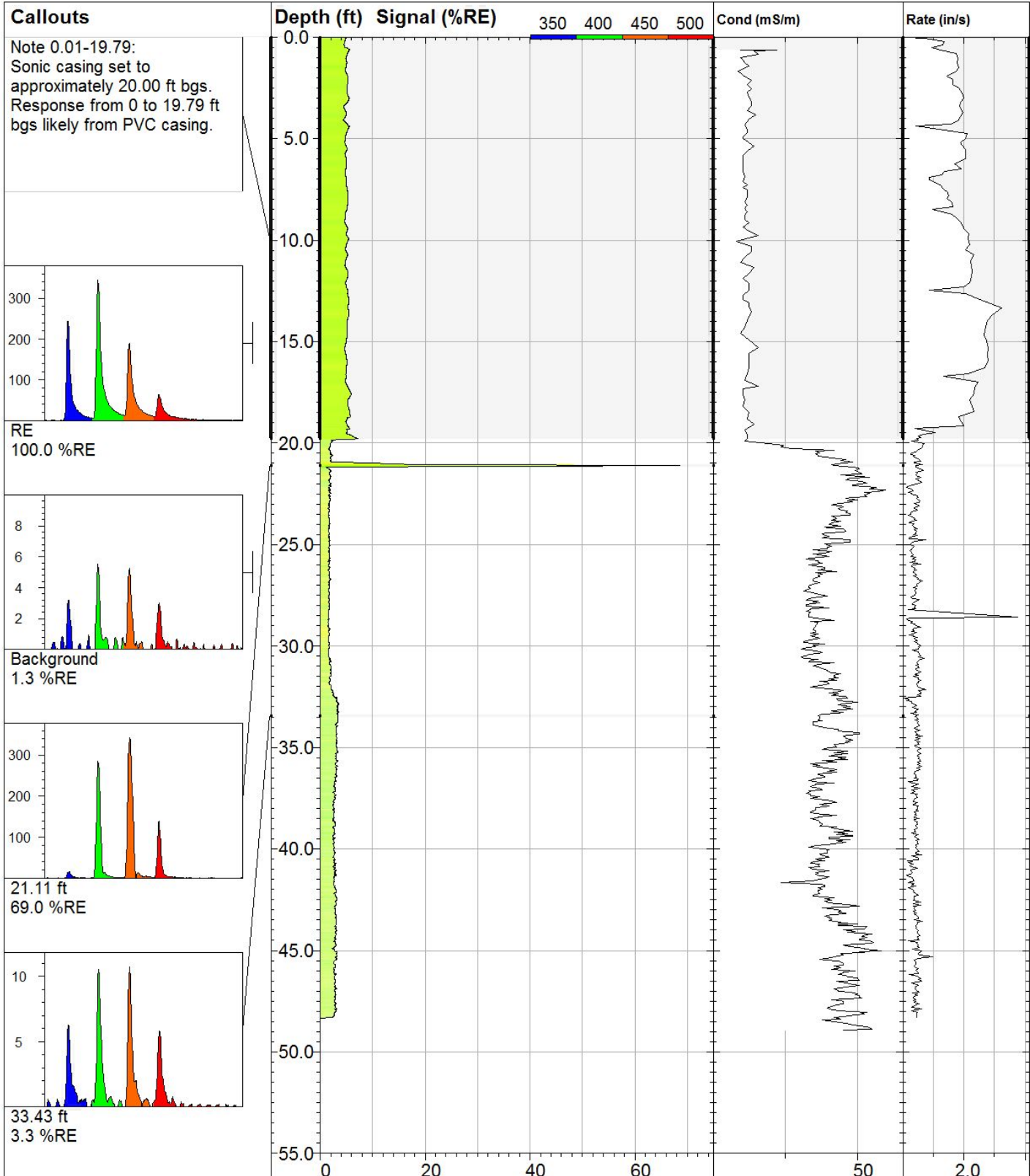
X Coord.(Lng-E) / Fix:
Unavailable / NA

Max signal:
79.9 %RE @ 13.37 ft

Operator / Unit:
DC / UVOST1314

Elevation:
Unavailable

Date & Time:
2016-11-04 11:06 CDT



LIFB-4

UVOST® By Dakota
www.DakotaTechnologies.com

Site:
Chevron 96590

Y Coord.(Lat-N) / System:
Unavailable / NA

Final depth:
48.32 ft

Client / Job:
Leidos / 110.16.9486

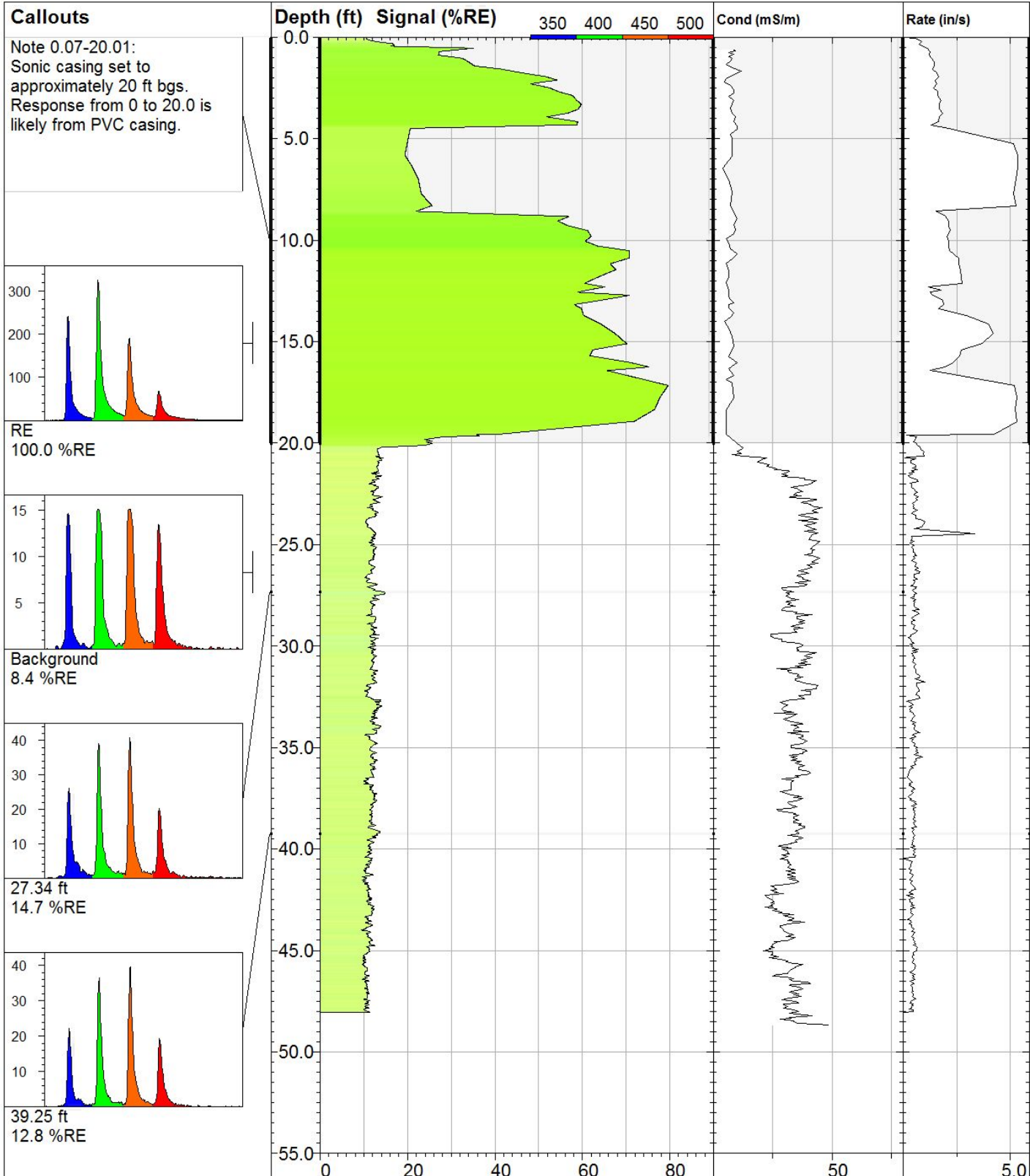
X Coord.(Lng-E) / Fix:
Unavailable / NA

Max signal:
69.0 %RE @ 21.11 ft

Operator / Unit:
DC / UVOST1314

Elevation:
Unavailable

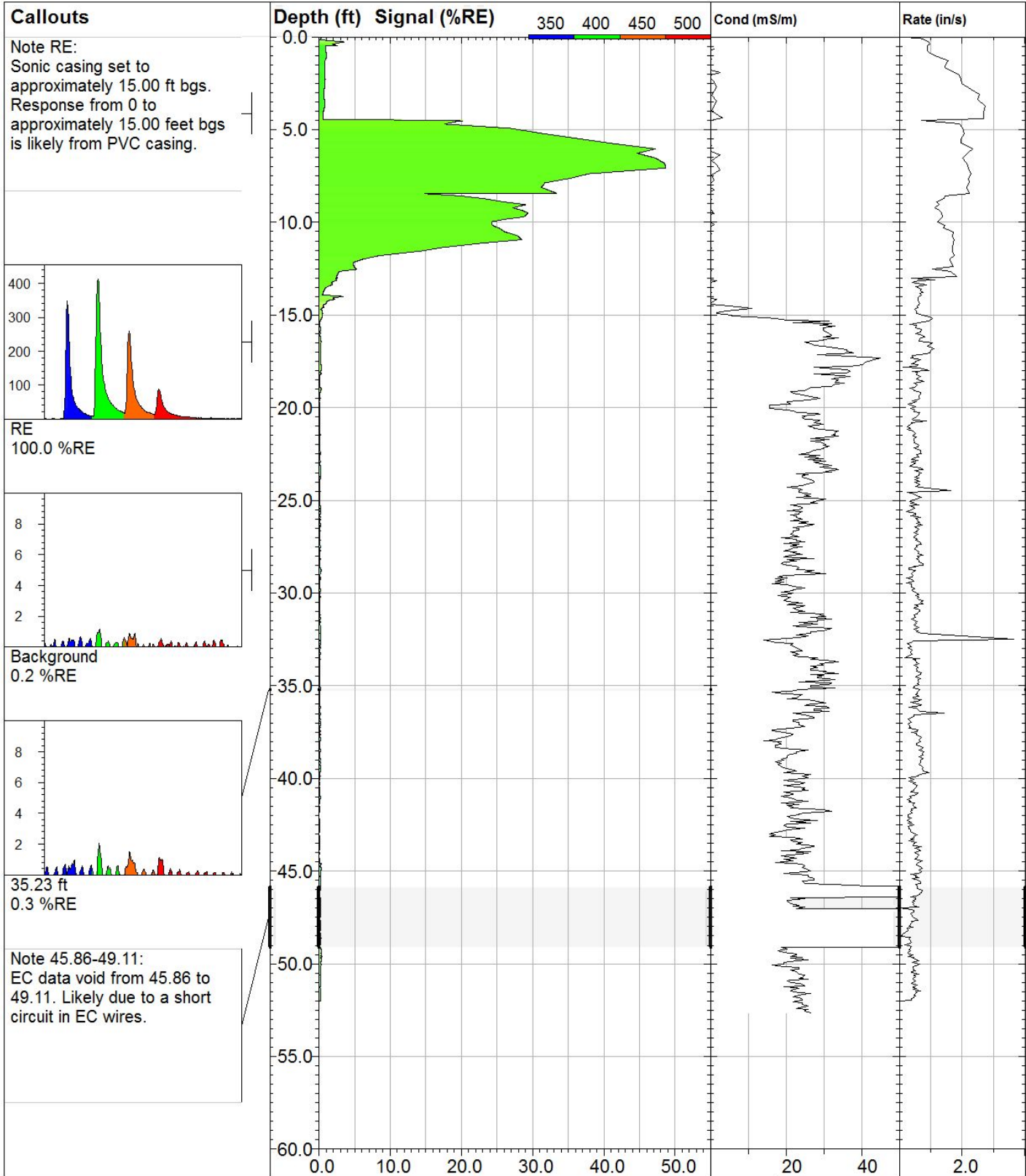
Date & Time:
2016-11-02 13:04 CDT



LIFB-5

UVOST® By Dakota
www.DakotaTechnologies.com

Site: Chevron 96590	Y Coord.(Lat-N) / System: Unavailable / NA	Final depth: 48.05 ft
Client / Job: Leidos / 110.16.9486	X Coord.(Lng-E) / Fix: Unavailable / NA	Max signal: 79.6 %RE @ 17.16 ft
Operator / Unit: DC / UVOST1314	Elevation: Unavailable	Date & Time: 2016-11-02 16:53 CDT



LIFB-6

UVOST® By Dakota
www.DakotaTechnologies.com

Site:
Chevron 96590

Y Coord.(Lat-N) / System:
Unavailable / NA

Final depth:
52.00 ft

Client / Job:
Leidos / 110.16.9486

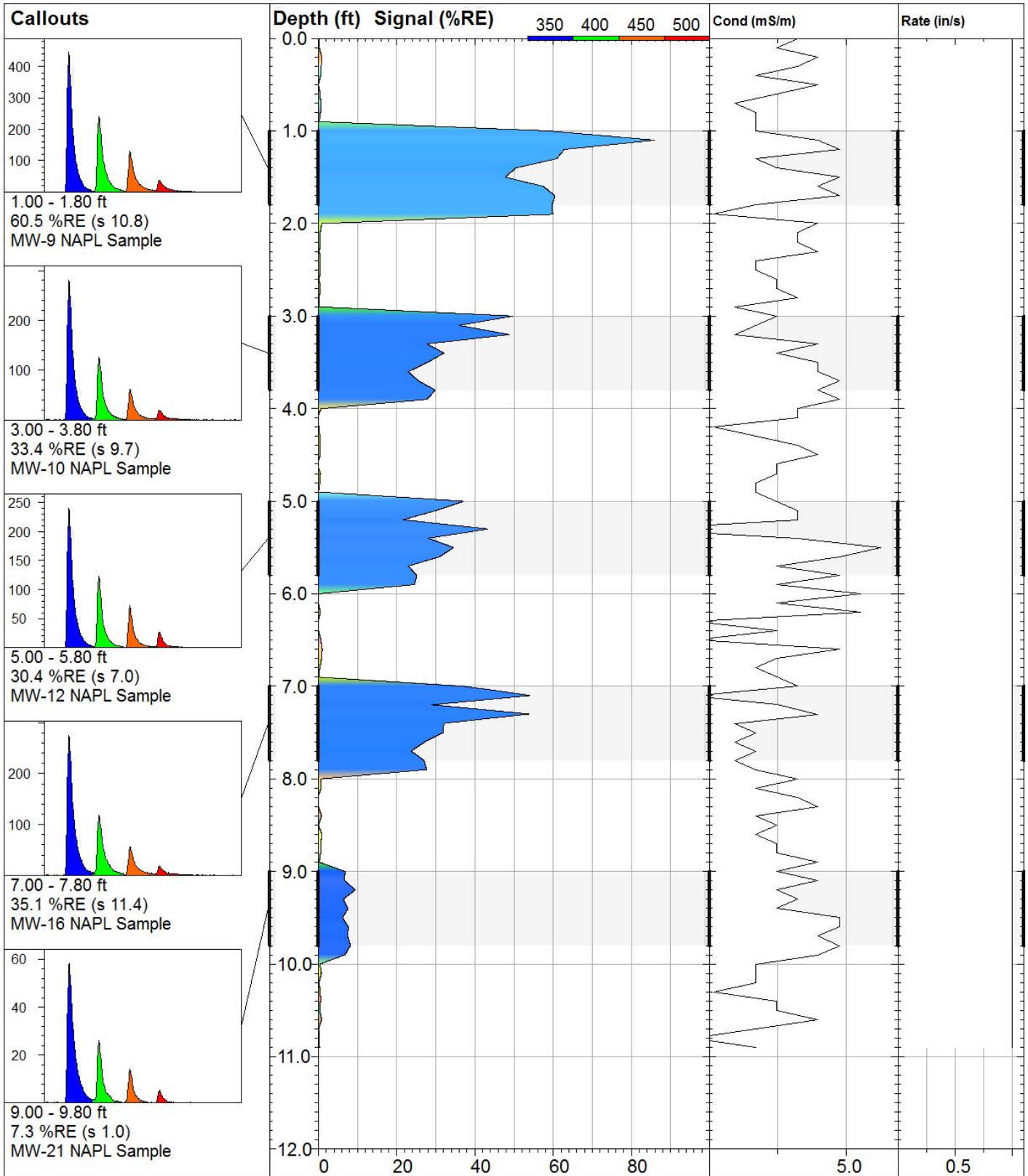
X Coord.(Lng-E) / Fix:
Unavailable / NA

Max signal:
48.7 %RE @ 7.08 ft

Operator / Unit:
DC / UVOST1314

Elevation:
Unavailable

Date & Time:
2016-11-03 15:09 CDT



LIF-96590 LNAPL Samples

UVOST® By Dakota
www.DakotaTechnologies.com

Site:
Chevron 96590

Y Coord.(Lat-N) / System:
Unavailable / NA

Final depth:
10.90 ft

Client / Job:
Leidos / 110.16.9486

X Coord.(Lng-E) / Fix:
Unavailable / NA

Max signal:
85.9 %RE @ 1.10 ft

Operator / Unit:
DC / UVOST1314

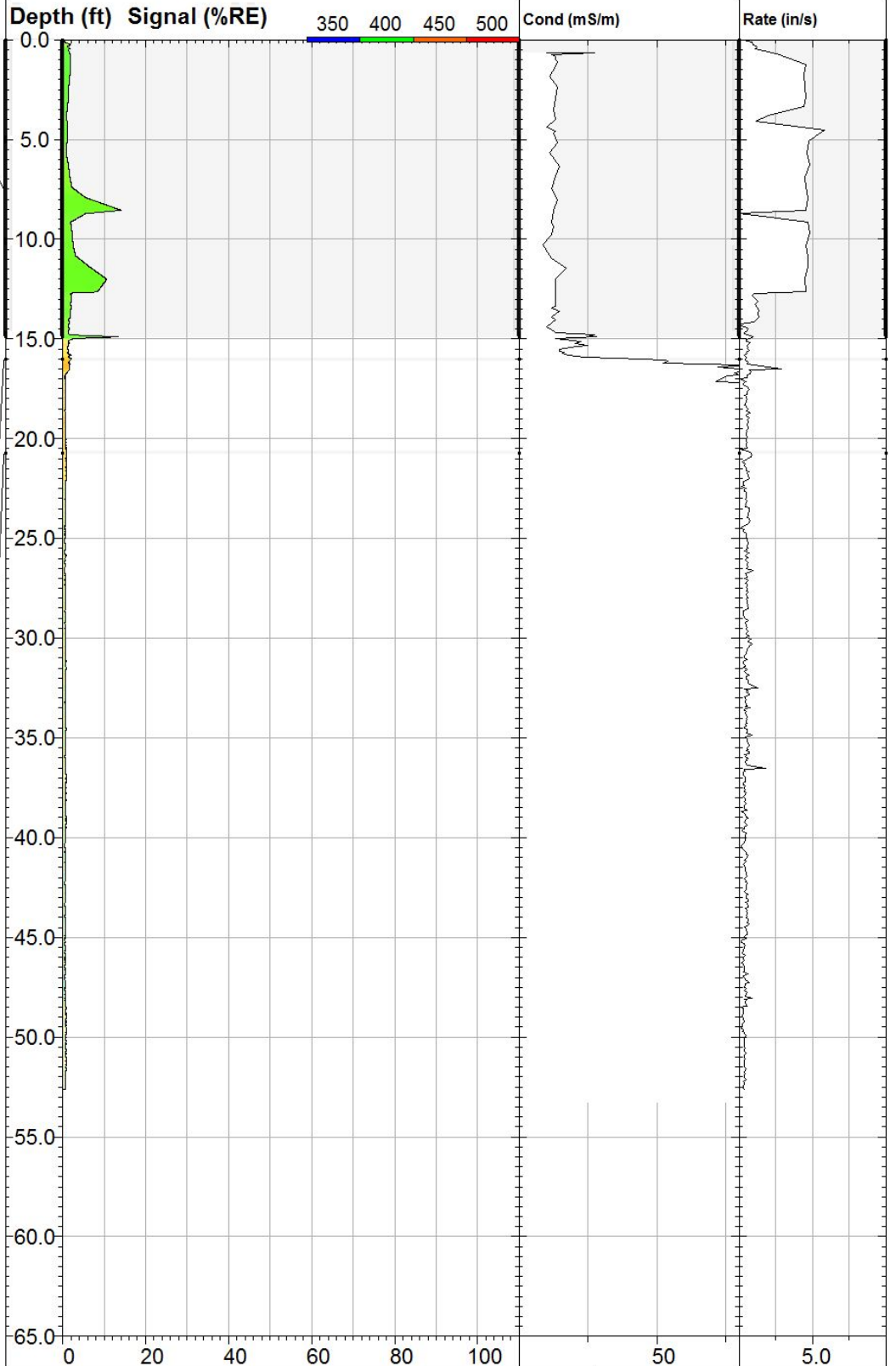
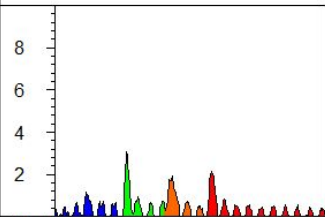
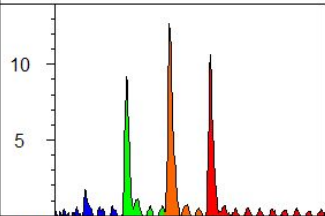
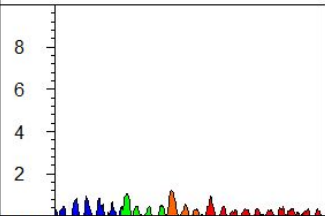
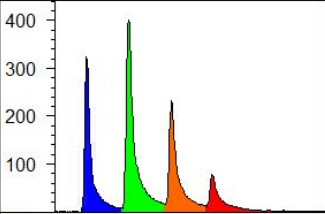
Elevation:
Unavailable

Date & Time:
2016-11-04 13:27 CDT

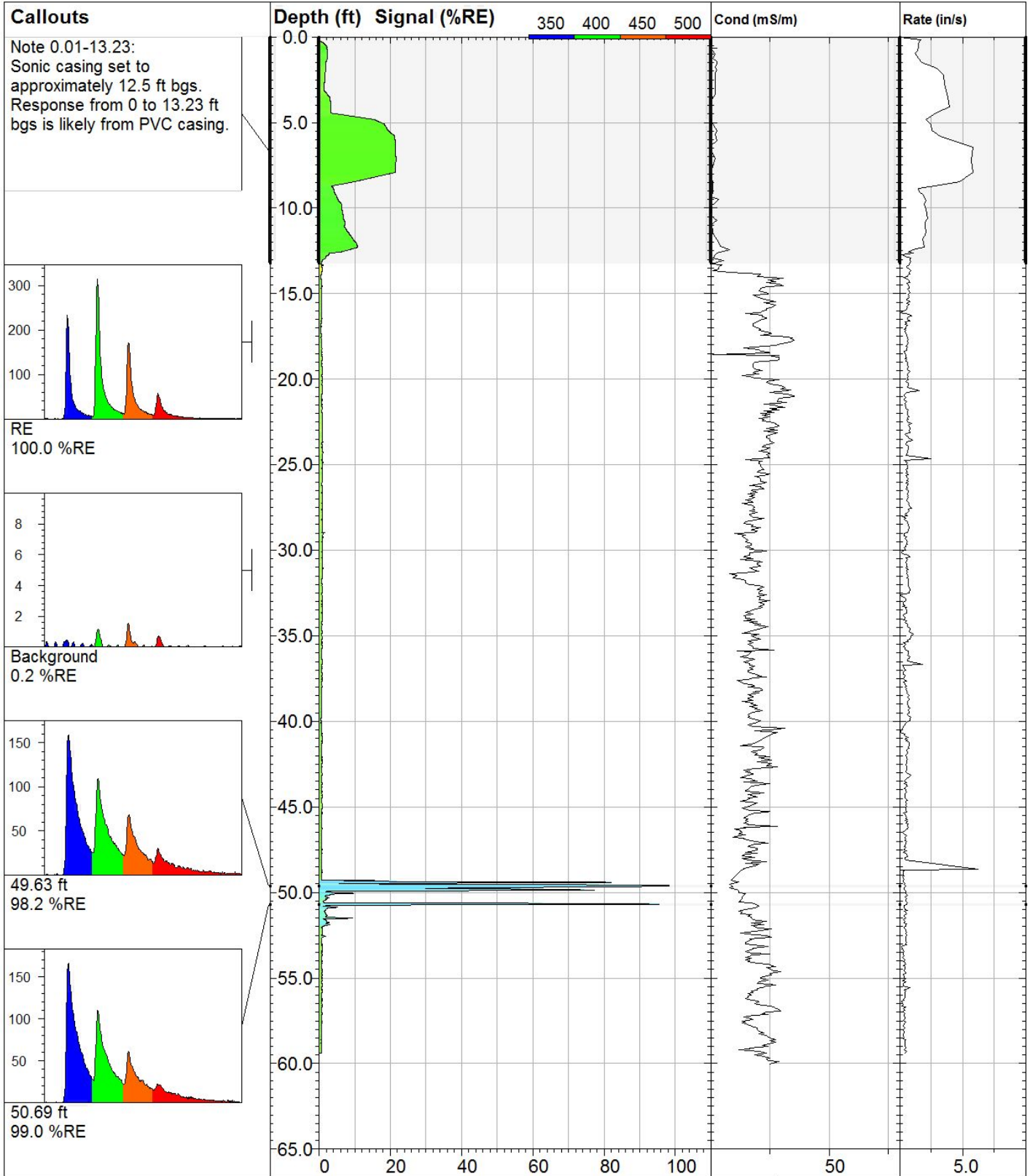
UVOST Data Plots – High Range Scales

Callouts

Note 0.04-14.90:
Sonic casing set to
approximately 15.00 ft bgs.
Response from 0 to 14.90 ft
bgs likely from PVC casing. EC
data void.



	LIFB-1		UVOST® By Dakota www.DakotaTechnologies.com
	Site: Chevron 96590	Y Coord.(Lat-N) / System: Unavailable / NA	Final depth: 52.62 ft
	Client / Job: Leidos / 110.16.9486	X Coord.(Lng-E) / Fix: Unavailable / NA	Max signal: 14.1 %RE @ 8.55 ft
	Operator / Unit: DC / UVOST1314	Elevation: Unavailable	Date & Time: 2016-11-03 11:03 CDT

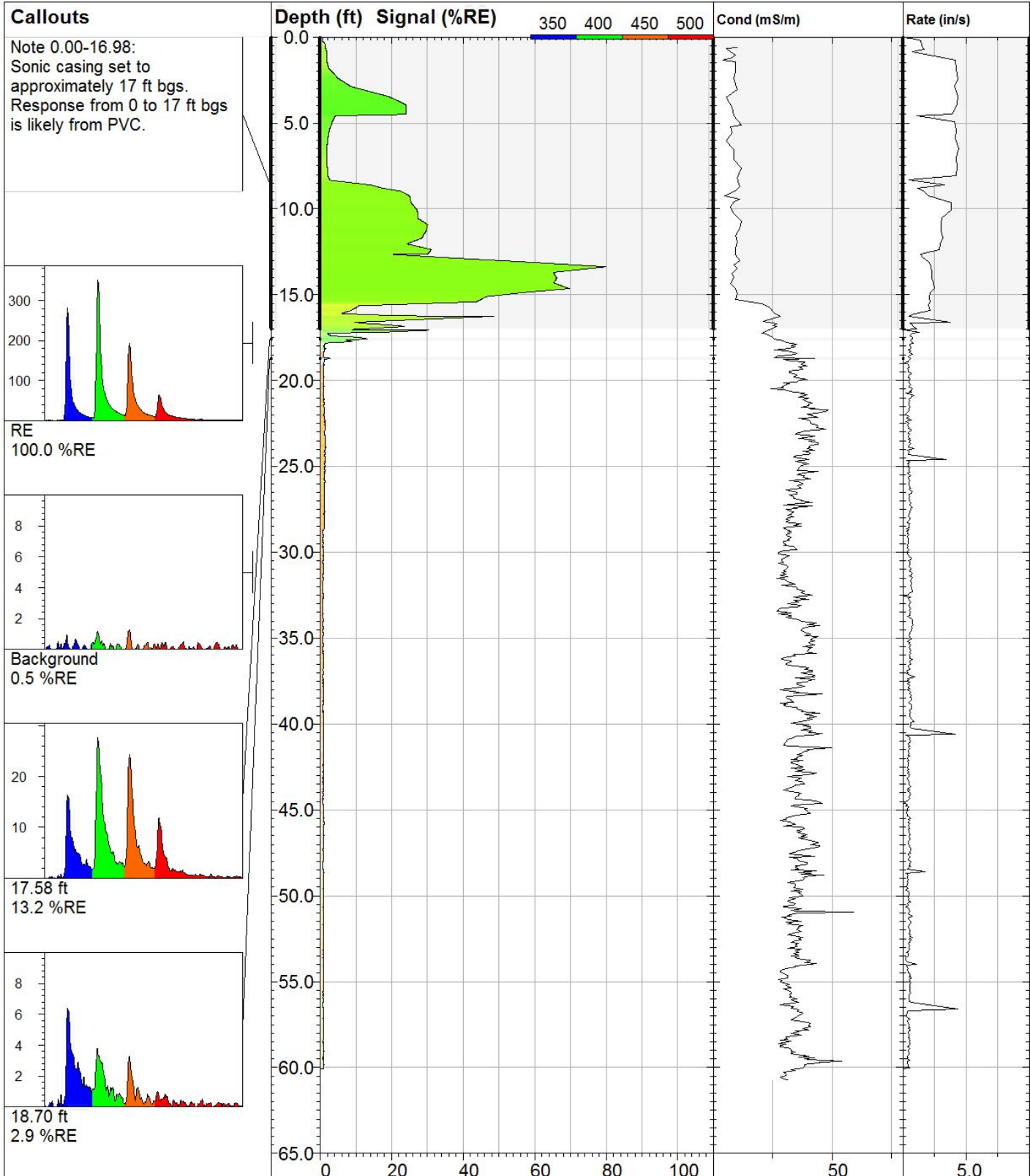


LIFB-2

UVOST® By Dakota
www.DakotaTechnologies.com

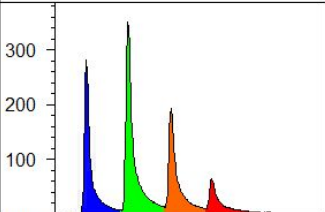


Site: Chevron 96590	Y Coord.(Lat-N) / System: Unavailable / NA	Final depth: 59.38 ft
Client / Job: Leidos / 110.16.9486	X Coord.(Lng-E) / Fix: Unavailable / NA	Max signal: 99.0 %RE @ 50.69 ft
Operator / Unit: DC / UVOST1314	Elevation: Unavailable	Date & Time: 2016-11-03 18:36 CDT

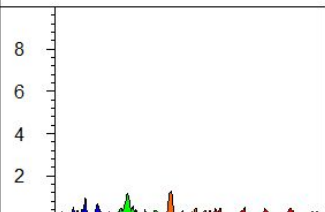


Callouts

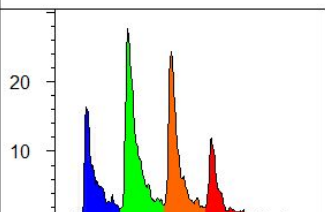
Note 0.00-16.98:
Sonic casing set to
approximately 17 ft bgs.
Response from 0 to 17 ft bgs
is likely from PVC.



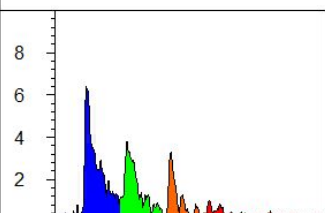
RE
100.0 %RE



Background
0.5 %RE

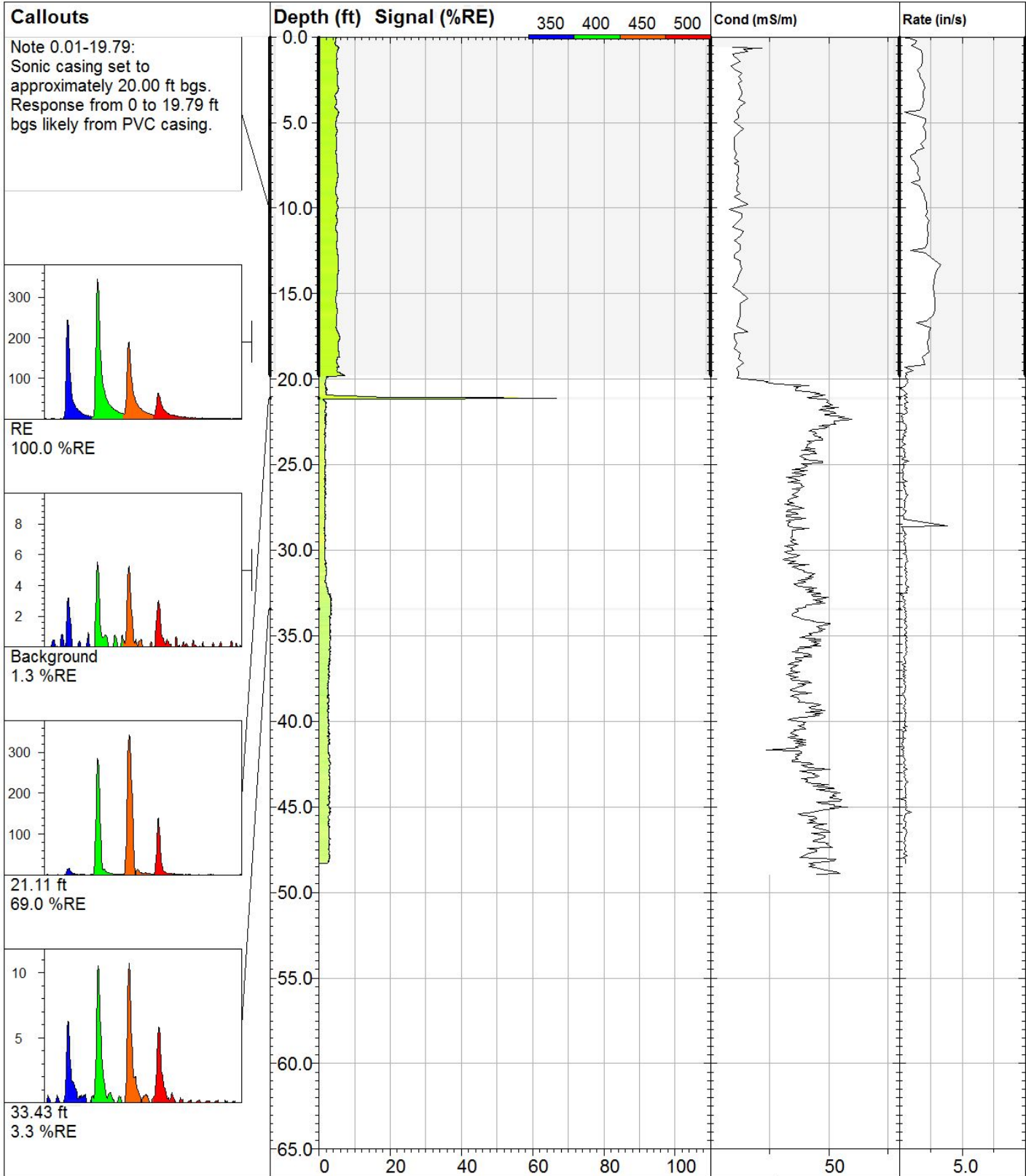


17.58 ft
13.2 %RE



18.70 ft
2.9 %RE

	LIFB-3		UVOST® By Dakota www.DakotaTechnologies.com	
	Site: Chevron 96590	Y Coord.(Lat-N) / System: Unavailable / NA	Final depth: 60.07 ft	
	Client / Job: Leidos / 110.16.9486	X Coord.(Lng-E) / Fix: Unavailable / NA	Max signal: 79.9 %RE @ 13.37 ft	
	Operator / Unit: DC / UVOST1314	Elevation: Unavailable	Date & Time: 2016-11-04 11:06 CDT	



LIFB-4

UVOST® By Dakota
www.DakotaTechnologies.com

Site:
Chevron 96590

Y Coord.(Lat-N) / System:
Unavailable / NA

Final depth:
48.32 ft

Client / Job:
Leidos / 110.16.9486

X Coord.(Lng-E) / Fix:
Unavailable / NA

Max signal:
69.0 %RE @ 21.11 ft

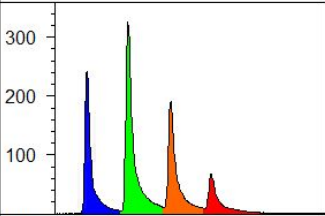
Operator / Unit:
DC / UVOST1314

Elevation:
Unavailable

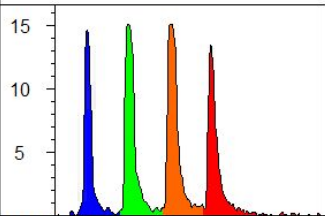
Date & Time:
2016-11-02 13:04 CDT

Callouts

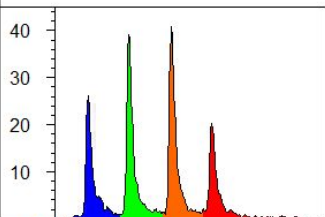
Note 0.07-20.01:
Sonic casing set to
approximately 20 ft bgs.
Response from 0 to 20.0 is
likely from PVC casing.



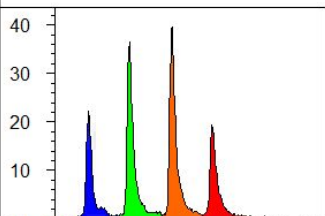
RE
100.0 %RE



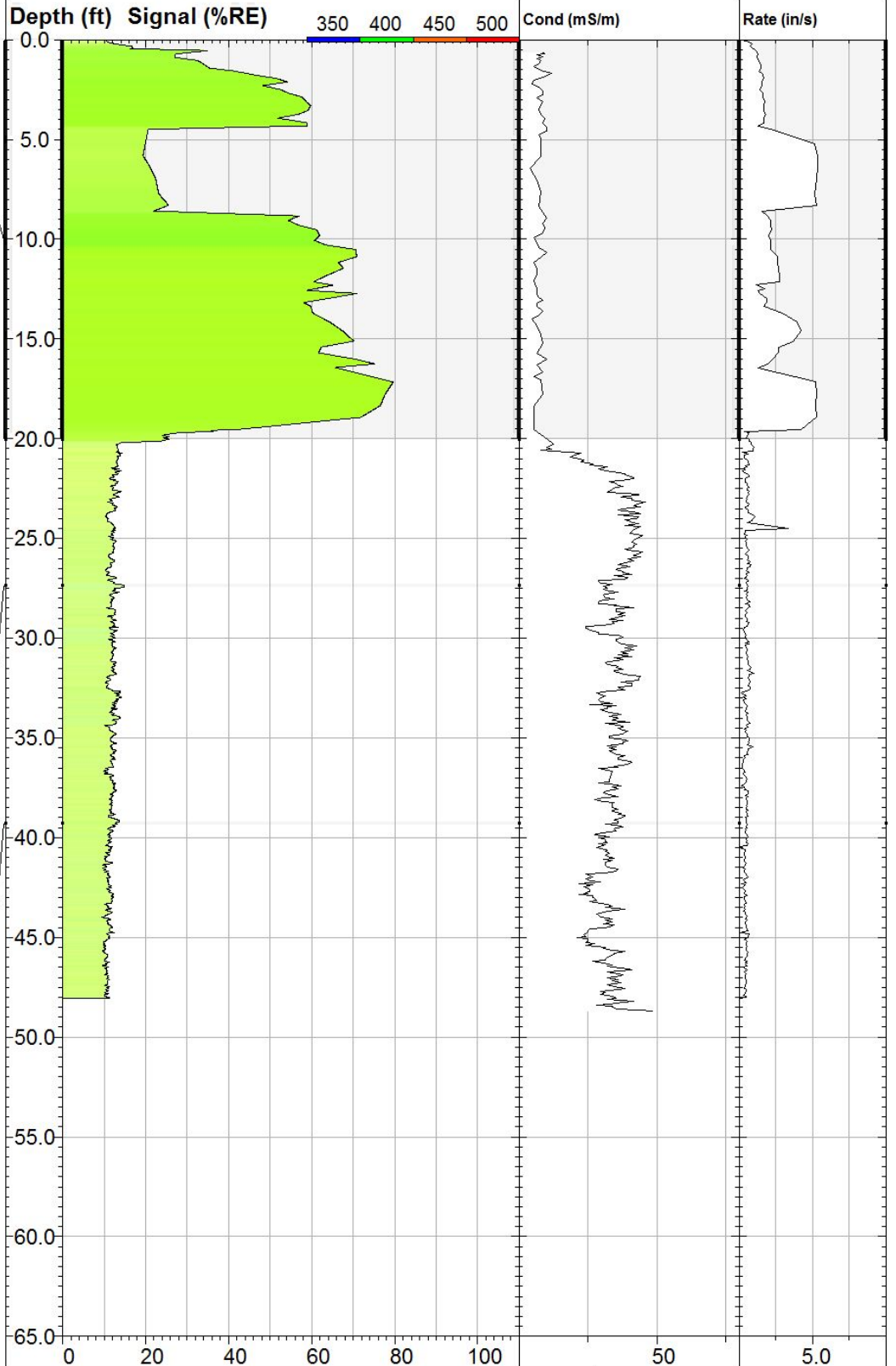
Background
8.4 %RE



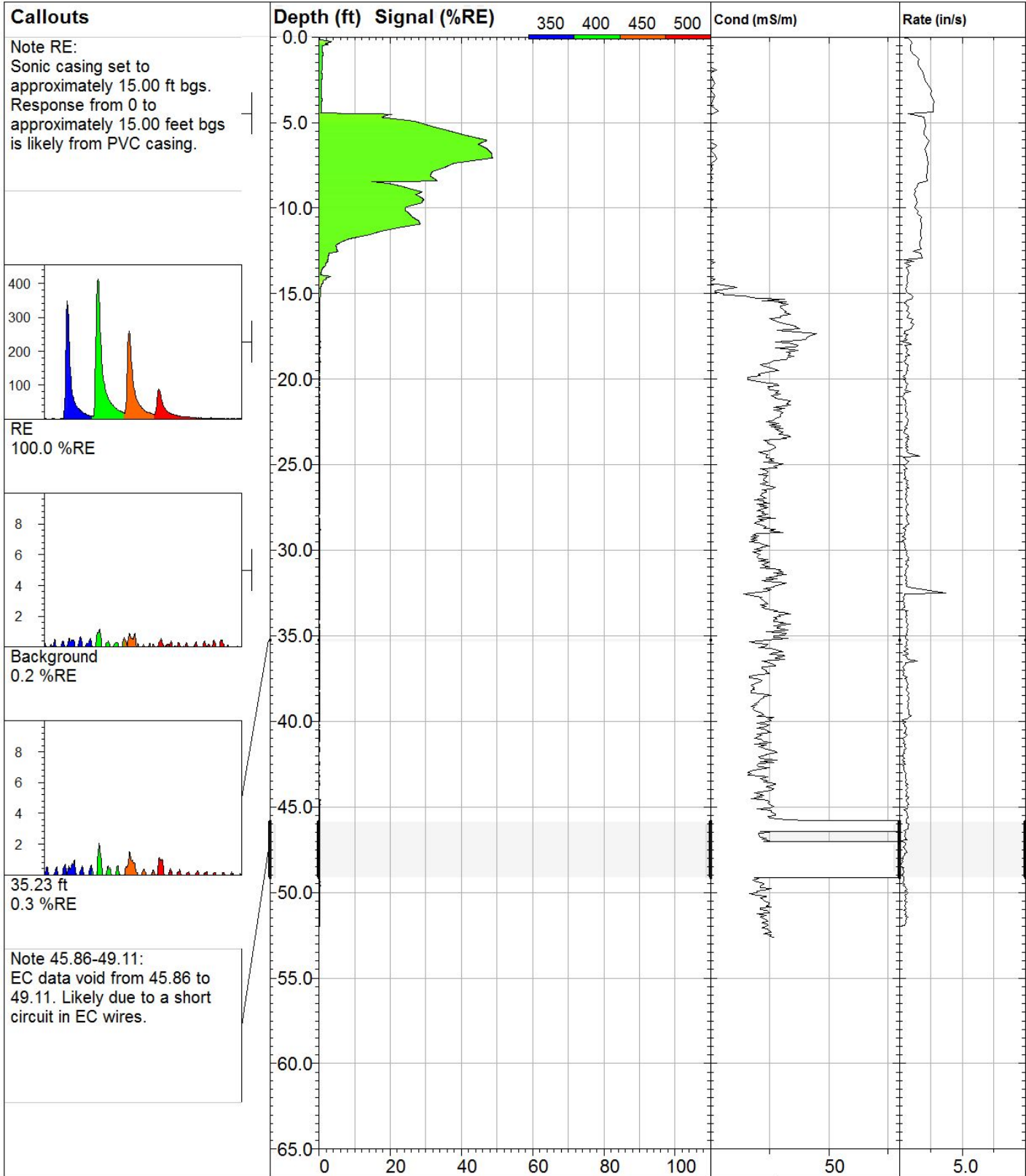
27.34 ft
14.7 %RE



39.25 ft
12.8 %RE



	LIFB-5		UVOST® By Dakota www.DakotaTechnologies.com
	Site: Chevron 96590	Y Coord.(Lat-N) / System: Unavailable / NA	Final depth: 48.05 ft
	Client / Job: Leidos / 110.16.9486	X Coord.(Lng-E) / Fix: Unavailable / NA	Max signal: 79.6 %RE @ 17.16 ft
	Operator / Unit: DC / UVOST1314	Elevation: Unavailable	Date & Time: 2016-11-02 16:53 CDT



LIFB-6

UVOST® By Dakota
www.DakotaTechnologies.com

Site:
Chevron 96590

Y Coord.(Lat-N) / System:
Unavailable / NA

Final depth:
52.00 ft

Client / Job:
Leidos / 110.16.9486

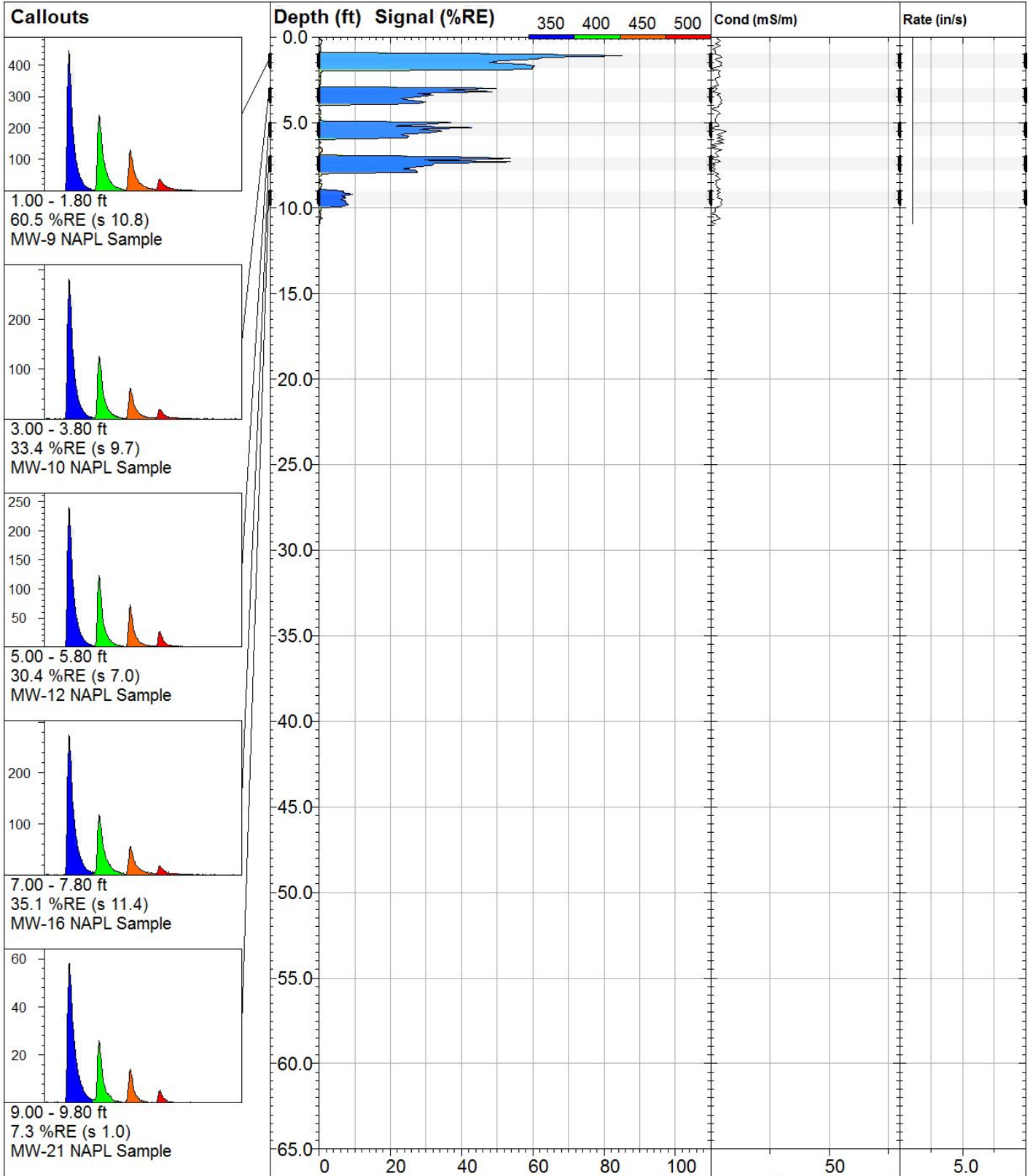
X Coord.(Lng-E) / Fix:
Unavailable / NA

Max signal:
48.7 %RE @ 7.08 ft

Operator / Unit:
DC / UVOST1314

Elevation:
Unavailable

Date & Time:
2016-11-03 15:09 CDT



LIF-96590 LNAPL Samples

UVOST® By Dakota
www.DakotaTechnologies.com



Site: Chevron 96590	Y Coord.(Lat-N) / System: Unavailable / NA	Final depth: 10.90 ft
Client / Job: Leidos / 110.16.9486	X Coord.(Lng-E) / Fix: Unavailable / NA	Max signal: 85.9 %RE @ 1.10 ft
Operator / Unit: DC / UVOST1314	Elevation: Unavailable	Date & Time: 2016-11-04 13:27 CDT

Reference Material

The sections below provide information regarding the Cascade Personnel present at the site during the field activities, the specific equipment used during field activities, and background information on the UVOST system.

Cascade Personnel

The following personnel were present during field activities at the Site:

- Mr. Jamie Hoffman, Cascade Technical Services (HRSC Specialist)
- Mr. Frank Scott, Cascade Technical Services (DPT Operator)

Equipment

The following equipment was utilized during field activities at the Site:

- Geoprobe 77 Series Direct Push Drill Rig
- Dakota Technologies UVOST System # 1314
- Geoprobe Electrical Conductivity Tip
- 40 meter UVOST optical fiber
- 1.50 inch O.D. UVOST SPOC
- 1.75inch O.D. Drive Rods

UVOST System Overview

UVOST is a direct push system that produces semi-quantitative vertical profiles of fuel-related NAPL in the subsurface. Multiple vertical profiles, or borings, may be advanced to develop more complex visual representations of NAPL distribution, such as transects, three dimensional models, and interactive maps. This system provides real-time information which allows users to make timely decisions during the mobilization of equipment.

The UVOST system utilizes an Excimer laser to generate UV light. The UV light is transmitted down a fiber optic cable and reflected into the subsurface through a sapphire window located on the lowermost portion of a direct push rod string. Petroleum hydrocarbons contain significant amounts of naturally fluorescent PAHs. If PAHs are encountered in sufficient quantities, those similar to that found in NAPL, the resulting fluorescence is transmitted to an oscilloscope via a second fiber optic cable. The fluoresced light is processed through four wavelength-based channels. More volatile PAHs will show response on the shorter wavelength channels. Larger and less volatile PAHs will produce response on the longer wavelength channels. The intensity and resonance time, across each channel, and in relation to one another, will provide indication of quantity and type of NAPL that is being detected. Each data depth has a specific waveform which may be called out and reviewed. The vertical UVOST log is composed of the data from the four channels at each data depth. The color of the vertical UVOST log provides an indication of the waveform shape.

Before each boring the UVOST system is calibrated against a reference emitter (RE). The RE is a blend of fuels developed by the manufacturer for standardizing the tool. Because the tool is standardized against the RE before each boring, responses from different borings can be compared with confidence. All UVOST response is displayed in %RE, where the original RE calibration is always 100%. It is common to have a background soil fluorescence between 0.1 and 10%RE. It is also possible to have positive NAPL responses higher than 100%RE.

Additionally, a background %RE is always collected prior to the advancement of each boring. The background %RE is collected with the clean sapphire window exposed to ambient conditions. The background %RE defines background noise from the system and notifies the operator if there are any problems with the system.

Appendix E:
Free Product Mobility Analysis Report

Free Product Mobility Analysis

Chevron 96590

Chelan, WA

Performed for:

Leidos, Inc.

18912 N. Creek Parkway Ste101
Bothell, WA 98011

January 2017

File: 160728EN

Performed by:

Core Laboratories LP

3437 Landco Drive
Bakersfield, California 93308
(661) 325-5657



Petroleum Services Division
3437 Landco Dr.
Bakersfield, California 93308
Tel: 661-325-5657
Fax: 661-325-5808
www.corelab.com

January 28, 2017

Russell Shropshire
Leidos, Inc.
18912 N. Creek Parkway Ste101
Bothell, WA 98011

Re: Free Product Mobility
CL File No: 160728

Dear Mr. Shropshire:

Enclosed are final Free Product Mobility data and Digital Imaging for preserved cores submitted from Chevron 96590, Chelan, WA.

Cryogenically preserved core was digitally imaged under white and UV light. Ten locations were selected for Free Product Mobility analysis by ASTM D425M. NAPL saturations ranged from 0.88 to 8.17% of the pore volume. The SCB-3C sample at 17.3ft had an initial NAPL saturation of 8.17% and produced 1.84% mobile NAPL. The remaining nine samples produced no mobile NAPL. The following report contains a summary of findings, tabular data and core images.

Thank you for this opportunity to be of service to Leidos, Inc. Please do not hesitate to contact us (661-325-5657) if you have any questions regarding these results, or if we can be of any additional service.

Yours Sincerely,
Core Laboratories LP

Larry Kunkel
Area Manager - Western



Petroleum Services Division
3437 Landco Dr.
Bakersfield, California 93308
Tel: 661-325-5657
Fax: 661-325-5808
www.corelab.com

Company: Leidos, inc.
Project Name: Chevron 96590
Location: Chelan, WA

Core Lab File No: 160728
January 2017

Summary

A total of ~26ft of cryogenically preserved core from borings SCB-1, SCB-2 and SCB-3 were submitted from Leidos, Inc. Chevron 96590 site located in Chelan, WA to determine mobility of entrained NAPL.

Ten locations were selected for Free Product Mobility analysis (ASTM D425M) where samples are subjected to a centrifugal force of 1000G (~3760cm water) for 1hr. Initial NAPL saturations ranged from 0.88 to 8.17% of the total pore volume. SCB-3C sample at 17.3ft had an initial NAPL saturation of 8.17% and produced 1.84% of mobile NAPL leaving a residual of 6.33%. The remaining nine samples produced no mobile NAPL during testing and can be considered at a residual saturation.

Procedure

Preserved core sections were cut lengthwise using a vertical band saw with a diamond blade that was cooled using liquid nitrogen (LN₂) vent gas. Bulk core was digitally imaged at 0.5ft intervals under white and ultraviolet (UV) lighting. UV lights are long wave at 365nm to minimize mineral interference. Images were transmitted to Leidos and 10 locations were selected for mobility testing along with 20 locations for sampling and shipping to Eurofins Lancaster Laboratories in Lancaster, PA.

The ten, 1.5" diameter by ~2" long, plug samples were drilled from frozen bulk core sections and sleeved using nickel foil with 200 mesh stainless steel end screens. Bulk core sections were returned to frozen storage to preserve saturations for future testing. Samples were confined in a Core Lab overburden centrifuge and allowed to equilibrate to ambient temperature. Centrifuge rotor speed was set to achieve 1000G (~3760cm water) and maintained for 1 hour. Produced fluids were collected in calibrated drainage tubes.

$$N, \text{ rpm} = \sqrt{1000\text{G}/1.11\text{E-}05 \times \text{rotor radius to center of sample, cm} \times \text{mass of sample (unity)}}$$

Samples were removed from the centrifuge, weighed, and placed in individual Dean-Stark solvent distillation units (API RP40) where residual water was extracted and recorded. Samples were removed when water distillation stabilized and dried to a stable weight. Residual NAPL volume was calculated by the following equation.

$$\text{NAPL (residual), ml} = (\text{Sample initial wt, gm} - \text{Sample dry wt, gm} - \text{Extracted water, gm}) \times \text{NAPL density, gm}$$

Initial NAPL volume is calculated by adding produced NAPL volume to residual NAPL volume. Initial water is calculated by adding produced water volume to extracted water volume.



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Procedure

Basic sample properties were determined and both NAPL and water volumes were converted to saturations expressed as a percent of pore volume.

Pore Volume, cc = Bulk (total) Volume, cc – Grain Volume, cc

Bulk Density, gm/cc = Sample dry weight, gm / Bulk (total) volume, cc

Porosity, percent = (Pore Volume, cc / Bulk Volume, cc) x 100

NAPL Saturation, %Pv = (NAPL Volume, cc / Pore Volume, cc) x 100

Water Saturation, %Pv = (Water Volume, cc / Pore Volume, cc) x 100

Deliverables

- Table 1: Sample properties, initial and residual saturations.
- Figures 1 - 3: white and UV images for the three borings. Approximately 2.5ft of core is presented on each side of the page with white light image is on the left and UV on the right of each image pair.
- Figures 4 – 15: Expanded images with annotations, sample locations and mobility data.
- Signed COC copies for Leidos and Eurofins.



Table 1

Free Product Mobility Summary

Centrifugal Method

Petroleum Services

Leidos, Inc.

Core Lab File No: 160728EN

Project Name: Chevron 96590

Project No: 96590 Chelan

Sample ID.	Depth ft.	Sample Orientation ⁽¹⁾	METHODS: API RP 40		API RP 40	ASTM D425M, DEAN-STARK					
			Density		Total Porosity %Vb	Applied Force		Pore Fluid Saturations, % pore volume			
			Bulk (Dry) g/cc	Grain g/cc		G	cm water	Initial Fluid Saturations ⁽²⁾		Final - After Centrifuge at 1000xG ⁽²⁾	
								Water	NAPL	Water	NAPL
SCB-1A	24.5	H	1.32	2.72	51.4	1000	3854	89.0	1.50	25.2	1.50
SCB-1D	39.9	H	1.35	2.72	50.4	1000	3957	92.0	0.88	40.9	0.88
SCB-2A	47.1	H	1.34	2.73	50.9	1000	3720	92.5	1.28	66.0	1.28
SCB-2B	50.5	H	1.41	2.72	48.0	1000	3863	89.3	0.99	36.2	0.99
SCB-2C	51.3	H	1.30	2.73	52.1	1000	4005	87.5	2.34	38.5	2.34
SCB-3A	13.8	H	1.37	2.72	49.8	1000	4012	83.9	2.35	42.7	2.35
SCB-3B	15.0	H	1.86	2.70	31.1	1000	2907	36.9	2.80	21.0	2.80
SCB-3C	17.3	H	1.50	2.73	44.9	1000	3731	75.3	8.17	21.3	6.33
SCB-3C	19.1	H	1.40	2.74	48.8	1000	3828	83.0	2.97	16.2	2.97
SCB-3D	19.6	H	1.49	2.72	45.2	1000	3678	76.1	4.05	34.4	4.05

(1) H = horizontal, V = vertical

(2) Assumed NAPL density = 0.8000 g/cc. Water density = 0.9996 g/cc

Figure 1

Leidos, Inc.

Project Name: Chevron #96590

Project Number 96590 Chelan

Sample: SCB-1



Figure 1

Leidos, Inc.

Project Name: Chevron #96590

Project Number 96590 Chelan

Sample: SCB-1



33

34

38

39

Figure 2

Leidos, Inc.

Project Name: Chevron #96590

Project Number 96590 Chelan

Sample: SCB-2

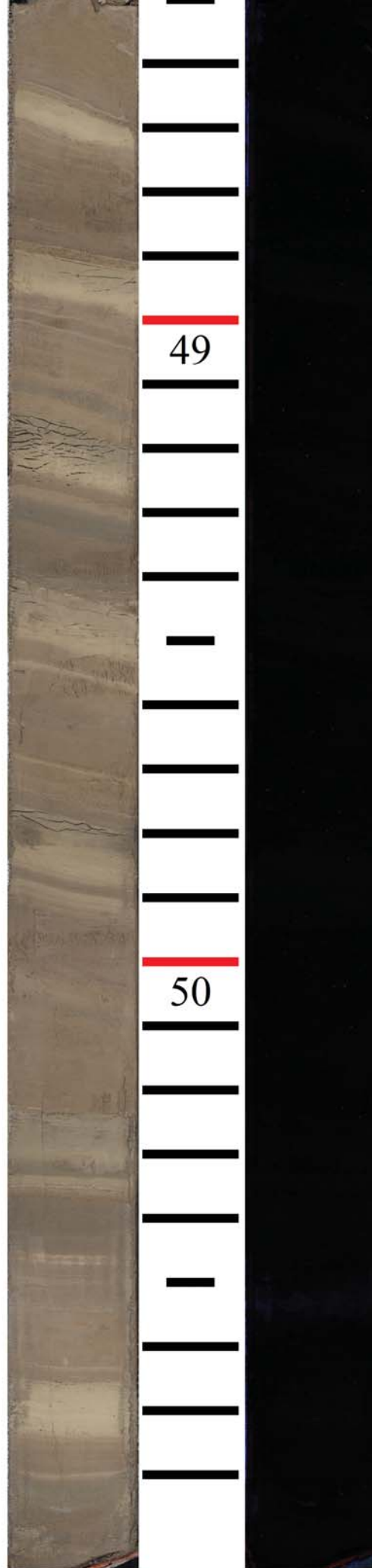
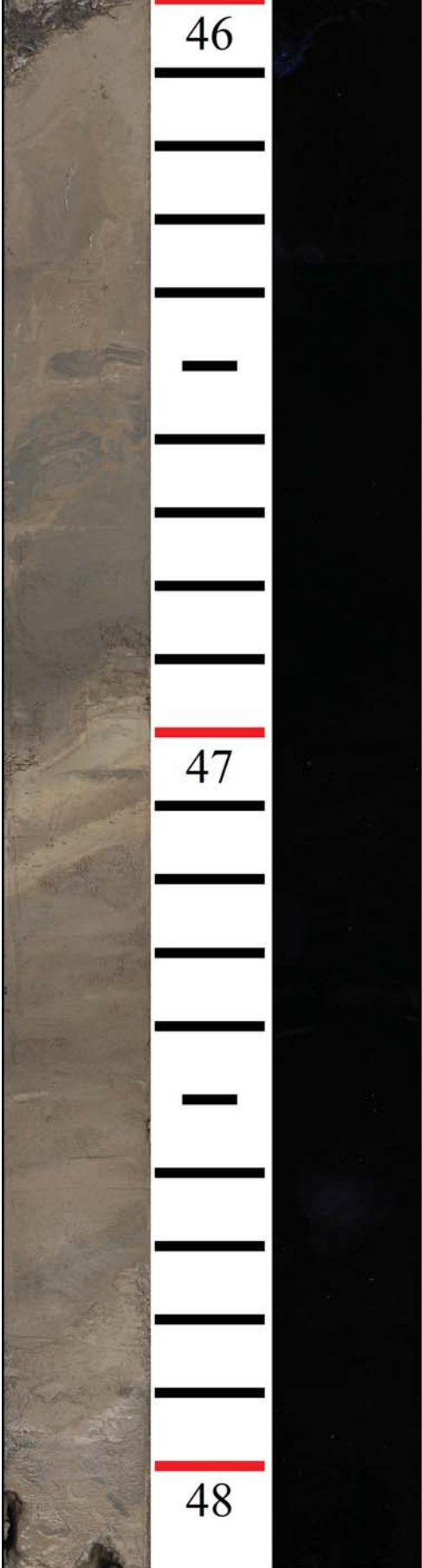


Figure 2

Leidos, Inc.

Project Name: Chevron #96590

Project Number 96590 Chelan

Sample: SCB-2



51

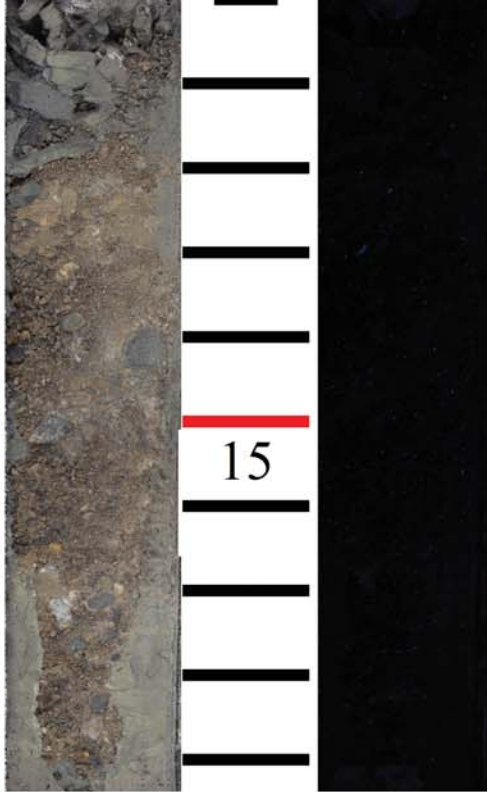
52

53

54

55

Figure 3



Leidos, Inc.

Project Name: Chevron #96590

Project Number 96590 Chelan

Sample: SCB-3



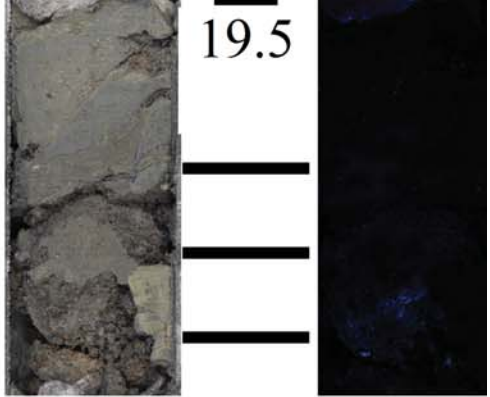


Figure 3

Leidos, Inc.

Project Name: Chevron #96590

Project Number 96590 Chelam

Sample: SCB-3

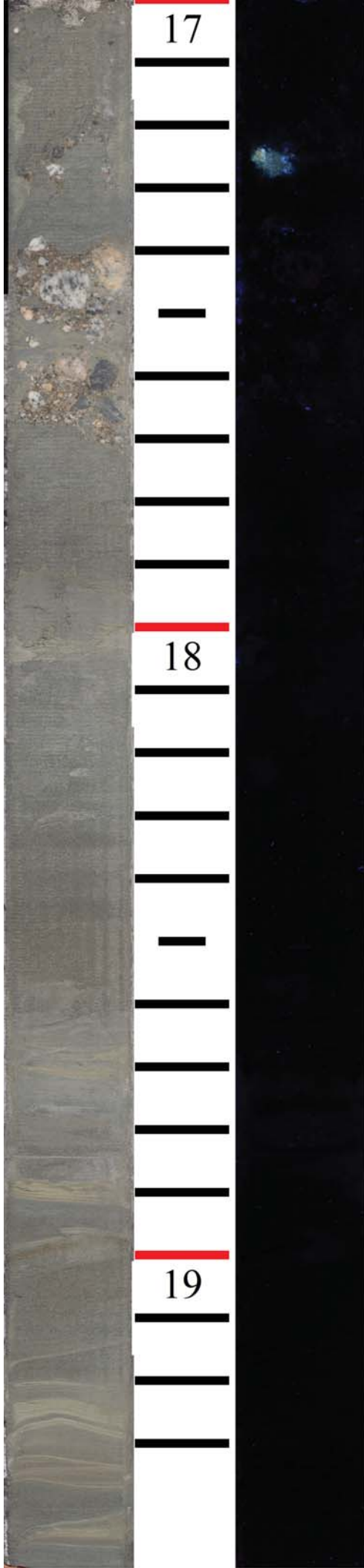


Figure 4: SCB - 1A 22.5-25 ft.

Comments:

22.5' to 25': No odor

22.5' to 25': No UV response

Fill material - Plastic film

Blue "flecks" on expanded UV image are typically dust particles or camera image sensor artifacts



Sample ID.	Depth ft.	API RP 40		Total Porosity %Vb	API RP 40		ASTM D425M, DEAN-STARK			
		Density			Applied Force G	Pore Fluid Saturations, % pore volume				
		Bulk (Dry) g/cc	Grain g/cc			Initial Fluid Saturations ⁽²⁾		Final - After Centrifuge at 1000xG ⁽²⁾		
					cm water	Water	NAPL	Water	NAPL	
SCB-1A	24.5	1.32	2.72	51.4	1000	3854	89.0	1.50	25.2	1.50

Figure 5: SCB - 1B 27.5 - 30.0 ft.

Comments:

27.5' to 30.0': No odor

27.5' to 30.0': No UV response

Fill material - Plastic film

Blue "flecks" on expanded UV image are typically dust particles or camera image sensor artifacts

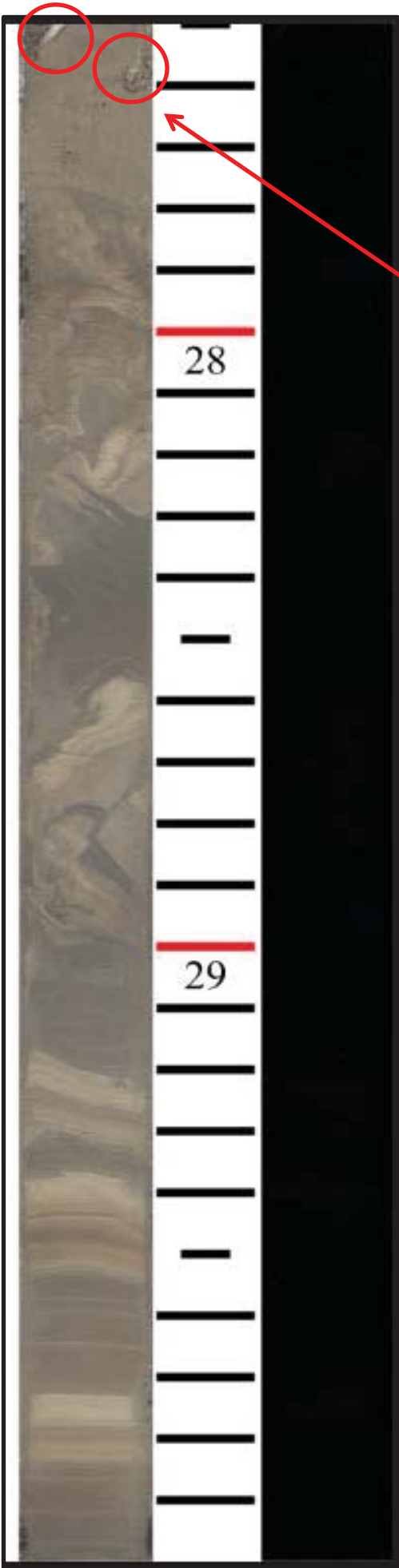
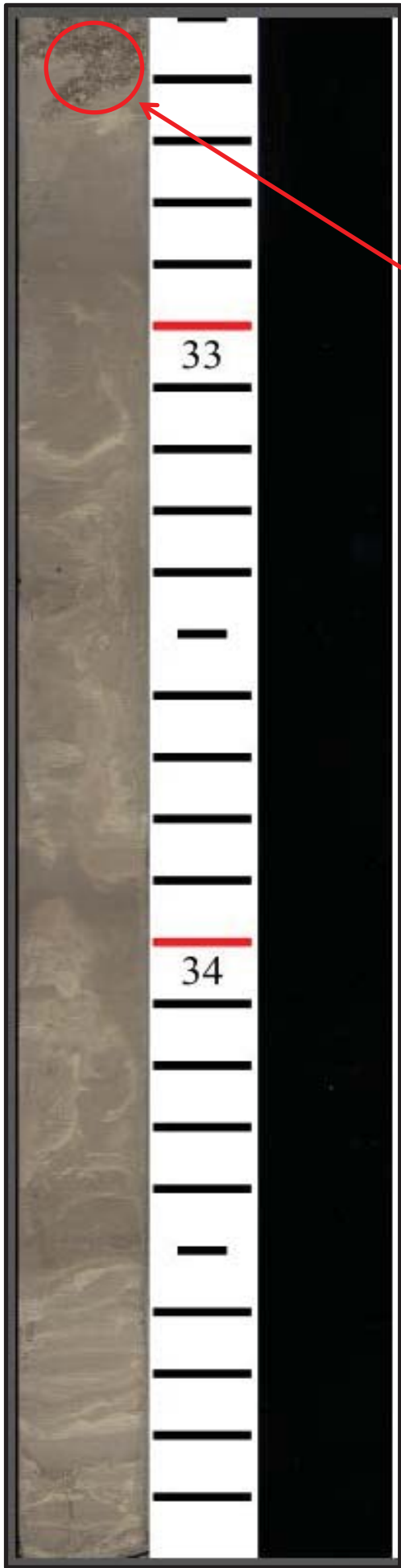


Figure 6: SCB - 1C 32.5 - 35.0 ft.



Comments:

32.5' to 35.0': No odor

32.5' to 35.0': No UV response

Fill material - Plastic film

Blue "flecks" on expanded UV image are typically dust particles or camera image sensor artifacts

Figure 7: SCB - 1D 37.5 - 40.0 ft.

Comments:

37.5' to 40.0': No odor

37.5' to 40.0': No UV response

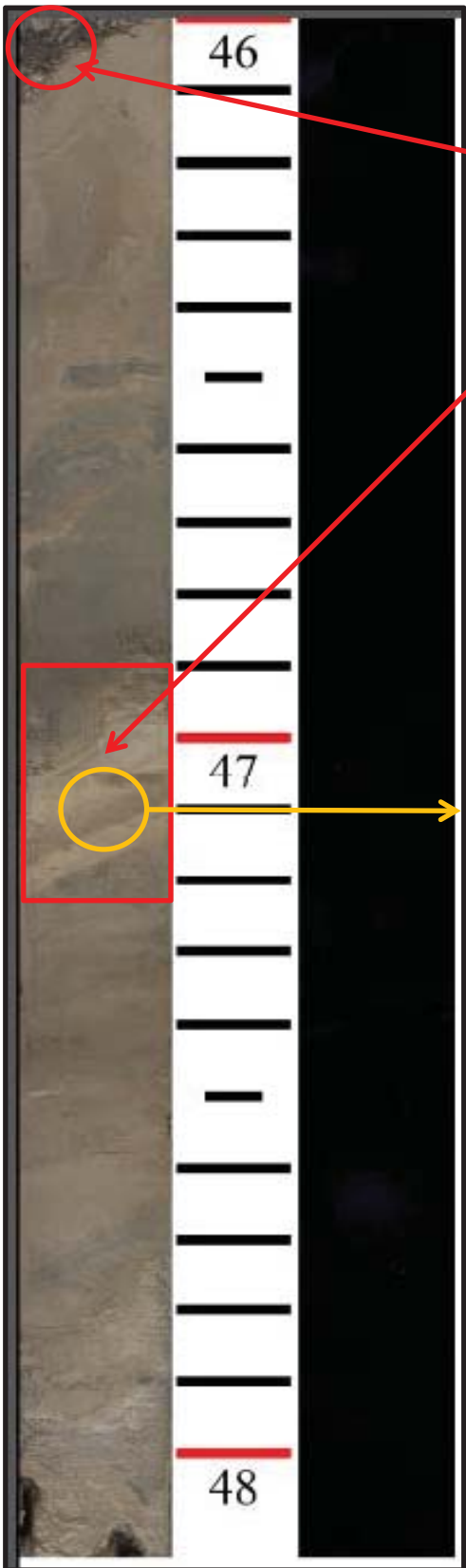
Fill material - Plastic film

Blue "flecks" on expanded UV image are typically dust particles or camera image sensor artifacts



Sample ID.	Depth ft.	API RP 40		API RP 40		ASTM D425M, DEAN-STARK				
		Density		Total Porosity %Vb	Applied Force		Pore Fluid Saturations, % pore volume			
		Bulk (Dry) g/cc	Grain g/cc		G	cm water	Initial Fluid Saturations ⁽²⁾		Final - After Centrifuge at 1000xG ⁽²⁾	
						Water	NAPL	Water	NAPL	
SCB-1D	39.9	1.35	2.72	50.4	1000	3957	92.0	0.88	40.9	0.88

Figure 8: SCB - 2A 46.0 - 48.5 ft.



Comments:

Fill material - Plastic film

46.0' to 48.5': Faint odor at 46.9' - 47.2'

46.0' to 48.5': No UV response

Blue "flecks" on expanded UV image are typically dust particles or camera image sensor artifacts

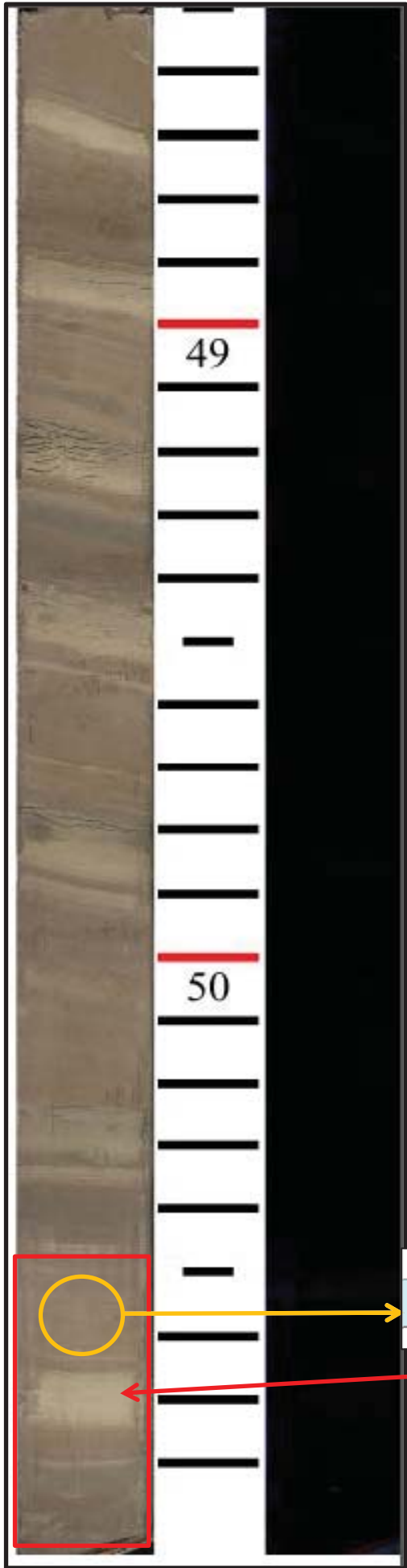
Sample ID.	Depth ft.	API RP 40		Total Porosity %Vb	API RP 40		ASTM D4253, DEAN-STARK			
		Density			Applied Force		Pore Fluid Saturations, % pore volume			
		Bulk (Dry) g/cc	Grain g/cc		G	cm water	Initial Fluid Saturations ⁽²⁾		Final - After Centrifuge at 1000xG ⁽²⁾	
						Water	NAPL	Water	NAPL	
SCB-2A	47.1	1.34	2.73	50.9	1000	3720	92.5	1.28	66.0	1.28

Figure 9: SCB - 2B 48.5 - 51.0 ft.

48.5' to 51.0': Faint odor at 50.5' to 51.0'

48.5' to 51.0': No UV response

Blue "flecks" on expanded UV image are typically dust particles or camera image sensor artifacts

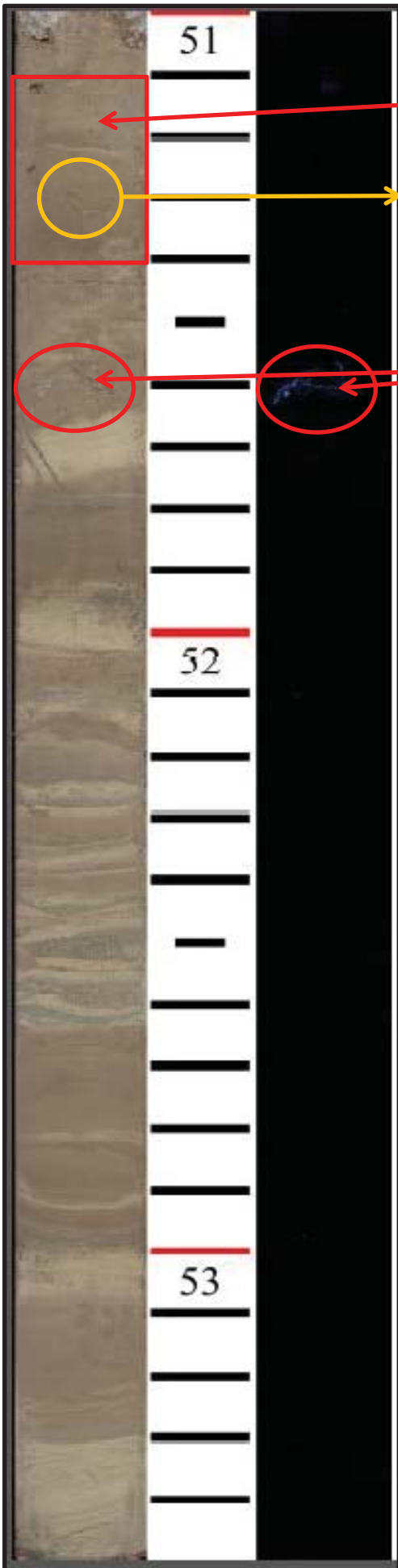


Sample ID.	Depth ft.	API RP 40		Total Porosity %Vb	API RP 40		ASTM D425M, DEAN-STARK			
		Density			Applied Force		Pore Fluid Saturations, % pore volume			
		Bulk (Dry) g/cc	Grain g/cc		G	cm water	Initial Fluid Saturations ⁽²⁾		Final - After Centrifuge at 1000xG ⁽²⁾	
						Water	NAPL	Water	NAPL	
SCB-2B	50.5	1.41	2.72	48.0	1000	3863	89.3	0.99	36.2	0.99

Faint odor

Figure 10: SCB - 2C 51.0 - 53.5 ft.

51.0' to 53.5': Faint odor at 51.1' to 51.4'
 51.0' to 53.5': No UV response



Sample ID.	Depth ft.	API RP 40		Total Porosity %Vb	API RP 40		ASTM D425M, DEAN-STARK			
		Density			Applied Force		Pore Fluid Saturations, % pore volume			
		Bulk (Dry) g/cc	Grain g/cc		G	cm water	Initial Fluid Saturations ⁽¹⁾		Final - After Centrifuge at 1000xG ⁽²⁾	
						Water	NAPL	Water	NAPL	
SCB-2C	51.3	1.30	2.73	52.1	1000	4005	87.5	2.34	38.5	2.34

51.6' UV response is Duct Tape

Blue "flecks" on expanded UV image are typically dust particles or camera image sensor artifacts

Figure 11: SCB - 2D 53.5 - 56.0 ft.

53.5' to 56.0': No odor

53.5' to 56.0': No UV response

Blue "flecks" on expanded UV image are typically dust particles or camera image sensor artifacts

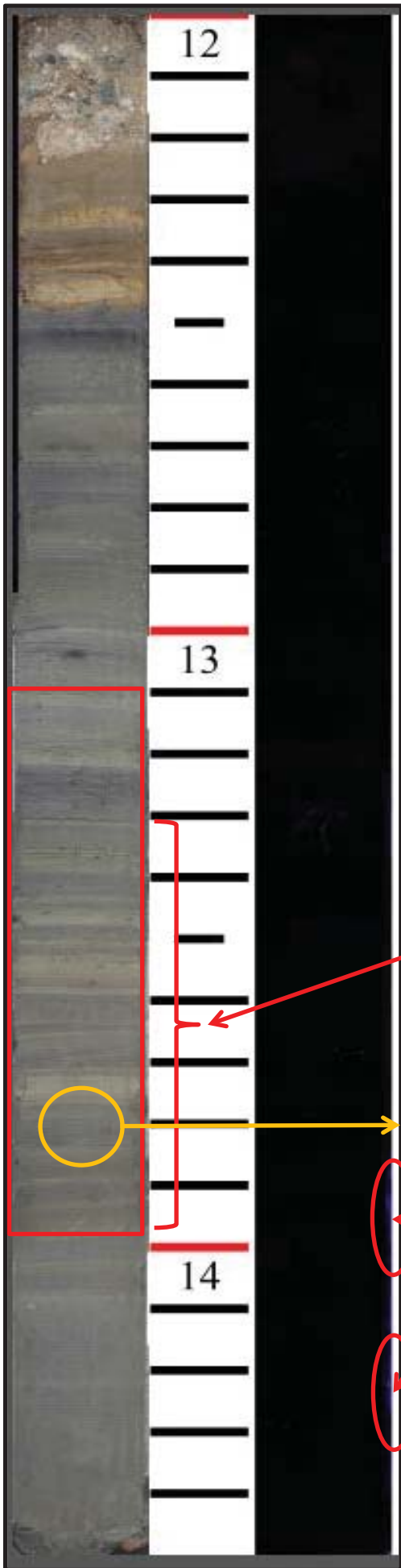


Figure 12: SCB - 3A 12.0 - 14.5 ft.

12.5' to 14.5': Medium to Strong odor

13.1' to 13.2': Very faint UV response

Blue "flecks" on expanded UV image are typically dust particles or camera image sensor artifacts



Very faint UV response at silt / mud layer interfaces

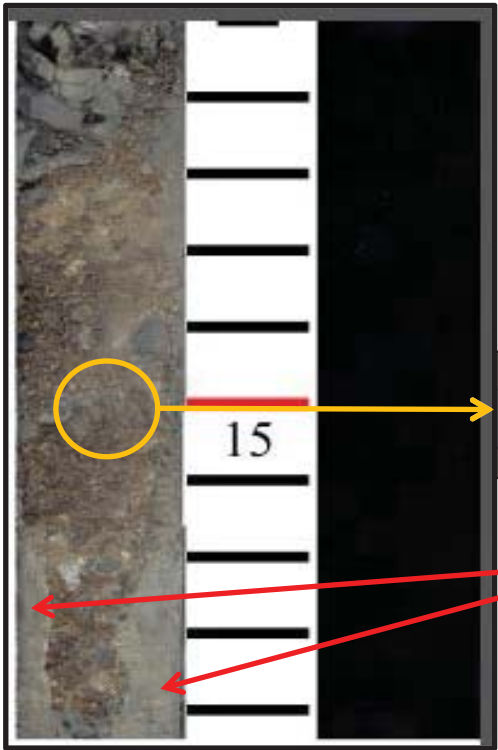
Sample ID.	Depth ft.	API RP 40		Total Porosity %Vb	API RP 40		ASTM D425M, DEAN-STARK			
		Density			Applied Force		Pore Fluid Saturations, % pore volume			
		Bulk (Dry) g/cc	Grain g/cc		G	cm water	Initial Fluid Saturations ⁽²⁾		Final - After Centrifuge at 1000xG ⁽²⁾	
SCB-3A	13.8	1.37	2.72	49.8	1000	4012	83.9	2.35	42.7	2.35

UV response on edge is Duct Tape

Figure 13: SCB - 3B 14.5 - 16.0 ft.

14.5' to 16.0': Medium to Strong odor

14.5' to 16.0': No UV response



Sample ID.	Depth ft.	API RP 40		API RP 40		ASTM D425M, DEAN-STARK				
		Density		Total Porosity %Vb	Applied Force		Pore Fluid Saturations, % pore volume			
		Bulk (Dry) g/cc	Grain g/cc		G	cm water	Initial Fluid Saturations ⁽²⁾		Final - After Centrifuge at 1000xG ⁽²⁾	
						Water	NAPL	Water	NAPL	
SCB-3B	15.0	1.86	2.70	31.1	1000	2907	36.9	2.80	21.0	2.80

Mud(?)

Blue "flecks" on expanded UV image are typically dust particles or camera image sensor artifacts

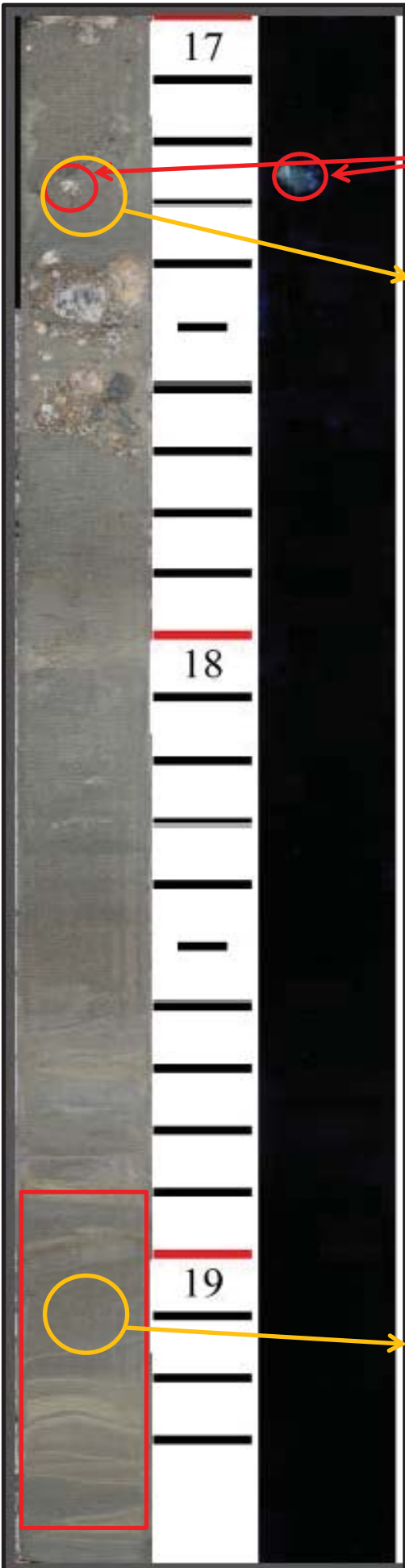
Figure 14: SCB - 3C 17.0 to 19.5ft

17.0' to 19.5': Medium to Strong odor

17.0' to 19.5': No UV response

17.25': Pebble is showing UV response

Probably a combination mineral and NAPL



Sample ID.	Depth ft.	Density		Total Porosity %Vb	Applied Force		ASTM D425M, DEAN-STARK Pore Fluid Saturations, % pore volume			
		Bulk (Dry) g/cc	Grain g/cc		G	cm water	Initial Fluid Saturations ⁽²⁾		Final - After Centrifuge at 1000xG ⁽²⁾	
							Water	NAPL	Water	NAPL
SCB-3C	17.3	1.50	2.73	44.9	1000	3731	75.3	8.17	21.3	6.33

Initial NAPL saturation, %PV = 8.17

Final NAPL saturation, %PV = 6.33

Sample ID.	Depth ft.	Density		Total Porosity %Vb	Applied Force		ASTM D425M, DEAN-STARK Pore Fluid Saturations, % pore volume			
		Bulk (Dry) g/cc	Grain g/cc		G	cm water	Initial Fluid Saturations ⁽²⁾		Final - After Centrifuge at 1000xG ⁽²⁾	
							Water	NAPL	Water	NAPL
SCB-3C	19.1	1.40	2.74	48.8	1000	3828	83.0	2.97	16.2	2.97

Blue "flecks" on expanded UV image are typically dust particles or camera image sensor artifacts

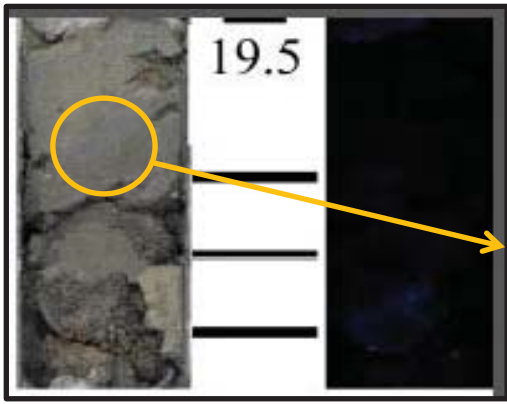


Figure 15: SCB - 3D 19.5 to 20.0ft

19.5' to 20.0': Medium to Strong odor

19.5' to 20.0': No UV response

Sample ID.	Depth ft.	API RP 40		API RP 40		ASTM D428M, DEAN-STARK				
		Density		Total Porosity %Vb	Applied Force		Pore Fluid Saturations, % pore volume			
		Bulk (Dry) g/cc	Grain g/cc		G	cm water	Initial Fluid Saturations ⁽²⁾		Final - After Centrifuge at 1000xG ⁽²⁾	
						Water	NAPL	Water	NAPL	
SCB-3D	19.6	1.49	2.72	45.2	1000	3678	76.1	4.05	34.4	4.05

Blue "flecks" on expanded UV image are typically dust particles or camera image sensor artifacts

CHAIN OF CUSTODY RECORD

CL# 160728

ANALYSIS REQUEST				PO#
SOIL				FLUID
Company	Address	Project Manager	Project Name	Turnaround Time
Leidos	18912 North Creek Pkwy, Suite 19 Bothell, WA 98011	Russ Sharpshire Phone 425-482-3323 Fax 425-485-5566	Chewon #96590 Email	<input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input type="checkbox"/> 5 Day <input type="checkbox"/> Normal
Project No.	96590 Chelan	Site Location	232 E. Woodin Ave, Chelan, WA	CL Bid No.
Sampler Signature	<i>[Signature]</i>	Sampler ID	Sample ID	CL File No.
		Date	Time	Depth, ft.
		11/8/16	1005	12-14.5ft
		11/8/16	1015	14.5 to 16ft
		11/8/16	1025	17-19.5ft
		11/8/16	1030	19.5 to 20ft
		11/7/16	1315	46-48.5ft
		11/7/16	1450	48.5-51ft
		11/7/16	1555	51-53.5ft
		11/7/16	1615	53.5-56ft
1. Relinquished By: <i>[Signature]</i> Company: Leidos				2. Received By:
Date: 11/8/16 Time: 7:00				Date: 11-10-16 Time: 1:02pm
2. Relinquished By: <i>[Signature]</i> Company: Core Lab				2. Received By:
Date: 11-10-16 Time: 1:02pm				Date: Company:
Fluid Properties Suite Viscosity: ASTM D445 Density/Gravity: ASTM D1481 Pyro-Chromatography (Fingerprinting)				Comments: hold cores for further instructions regarding mobility analysis REC. 3/A-3/D 11/9/16 REC. 2/A-2/D 11/9/16 J. Brachof



CL # 160728

CHAIN OF CUSTODY RECORD

ANALYSIS REQUEST				PO#	
SOIL				Turnaround Time 24 HR 48 HR 72 HR 5 Day Normal	
FLUID					
Company Leidos	Address 18912 North Creek Parkway, Suite 101 Bothell, WA 98011	Project Manager Russ Shropshire	Phone 425-482-3323	CL Bid No.	
Project Name Chelon Site # 96590	Project No. 96590	Site Location 232 E. Wadwin Ave, Chelon, WA	Sampler Signature <i>Mutthk</i>		CL File No.
Project No. 96590	Site Location Chelon / russell.s.shropshire@leidos.com	Sampler Signature <i>Mutthk</i>	Number of Samples 35A	Comments	
Sample ID	Date	Time	Depth, ft.		Fluid Properties Suite Viscosity: ASTM D445 Density/Gravity: ASTM D1481 Pyro-Chromatography (Fingerprinting)
SCB-1A	11/9/16	1115	27.5-30.4		
SCB-1B	11/9/16	1240	32.5-35		
SCB-1C	11/9/16	1345	37.5-40A		
SCB-1D	11/9/16	1450	37.5-40A		
Digital Core Imaging with TOC: Walkley-Black Aterberg Limits: ASTM D4318 Grain Size Distribution: ASTM D422/D464M Hydraulic Conductivity: API RP40 Bulk Density: API RP40 / ASTM D2937 Porosity: Effective, ASTM D425M Porosity: Total, API RP40 Moisture Content: ASTM D2216 Pore Fluid Saturation Suite Saturated Zone Suite Vadose Zone Suite				hold cores for further analysis regarding mobility analysis	
Relinquished By: <i>Mutthk</i>					2. Received By: Company Date Time
Relinquished By: <i>Mutthk</i>					
Relinquished By: Company Date Time					
Relinquished By: Company Date Time					
Relinquished By: Company Date Time					

CORE LABORATORIES - 3437 Landco Dr. - Bakersfield, CA 93308 • Phone 661-325-5657 • Fax 661-325-5808



Chevron California Region Analysis Request/Chain of Custody



Lancaster Laboratories

Acct. # _____ Group # _____
 For Lancaster Laboratories use only
 Sample # _____
 Instructions on reverse side correspond with circled numbers.

SCR #: 199163

Client Information: WBS 96590 Core Laboratories Bakersfield CA
 Site Address: 663437 Landco Drive 93307 Chelan, WA
 Chevron PM: Lead Consultant: Russ Leidos
 Consultant/Office: _____
 Consultant Project Mgr.: _____
 Consultant Phone #: _____
 Sampler: Crystal Givinstead

Analyses Requested (5):
 TPH GRO 8015 8260
 TPH 8015 MOD DRO
 Silica Gel Cleanup
 8260 Full Scan
 Oxygenates
 Total Lead Method _____
 Dissolved Lead Method _____
 50mL vial
 Soil VOA Sampling Kit

Matrix (4):
 Sediment
 Soil
 Potable
 NPDES
 Surface
 Air
 Oil

Sample Identification (2):
 Date Time Collected
 SCB-2B-50.6' 12/27 4:00 pm X
 SCB-2C-51.3' 12/28 9:20 a X
 SCB-3A-13.8' 12/28 9:55 a X
 SCB-3B-15.0' 12/28 10:47 a X
 SCB-3C-17.3' 12/28 11:15 a X
 SCB-3C-19.1' 12/28 11:35 a X
 SCB-3D-19.6' 12/28 11:56 a X

Remarks (6):
 One 50mL vial +
 One VOA kit per
 sample.
 CU File # 160728
 * Contact Russ
 Shropshire for
 analysis requested
 425-462-3323
 russell.s.shropshire@
 leidos.com

Turnaround Time Requested (TAT) (7):
 Standard (please circle): 5 day, 48 hour, 24 hour, 72 hour
 Relinquished by: Crystal Givinstead
 Date: 12/29/16
 Time: _____

Data Package Options (8):
 Type I - Full (Type VI (Raw Data) if required)
 Relinquished by Commercial Carrier: UPS, FedEx, Other
 Temperature Upon Receipt: _____ °C
 Custody Seals Intact? Yes No

Chevron California Region Analysis Request/Chain of Custody



Lancaster Laboratories

Acct. # _____ Group # _____
 For Lancaster Laboratories use only
 Sample # _____
 Instructions on reverse side correspond with circled numbers.

SCR #: 199163

1 Client Information		2 Sample Identification		3 Matrix		4 Analyses Requested							5			6										
Facility #	96590	WBS		Sample	Time	Soil	Potable	NPDES	Oil	Total Number of Containers	BTEX + MTBE	TPH GRO	TPH 8015 MOD DRO	Silica Gel Cleanup	8260 Full Scan	Oxygenates	Total Lead	Dissolved Lead	Method	Method	Remarks	Date	Time	Date	Time	
Site Address	Core Laboratories Bakersfield CA 232 E. Woodin Ave. Shatin, WA CA 3437 Landow Drive 93308			SCB-1A	5 PM	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>								One 50mL vial + One VOA set per sample. UL File # 160728					
Chevron PM	Lead Consultant heidos			SCB-1D	4:25P	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
Consultant/Office	Russ Shropshire			SCB-2A	3:20P	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
Consultant Project Mgr.	CG Larry Humbert			SCB-2B	4:00P	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
Consultant Phone #	CG 661-325-5657 425-482-3323			SCB-2C	9:05a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
Sampler	Crystal Gimstead			SCB-3A	9:50a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
				SCB-3B	10:35a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
				SCB-3C	11:09a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
				SCB-3D	11:25a	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
				SCB-1A	5 pm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
				SCB-1D	4:40p	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													
				SCB-2A	3:20p	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>													

**Appendix F:
Laboratory Analytical Reports**

ANALYTICAL RESULTS

Prepared by:

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

Prepared for:

Chevron
L4310
6001 Bollinger Canyon Road
San Ramon CA 94583

Report Date: December 08, 2016

Project: 96590

Submittal Date: 11/11/2016

Group Number: 1732689

PO Number: 0015194335

Release Number: HETRICK

State of Sample Origin: WA

Client Sample Description

	Lancaster Labs (LL) #
SCB-3-S-11.5-161108 Grab Soil	8694810
SCB-3-S-32-161108 Grab Soil	8694811
SCB-3-S-29-161108 Grab Soil	8694812
SCB-3-S-46-161108 Grab Soil	8694813
SCB-3-S-49.5-161108 Grab Soil	8694814
SCB-1-S-15-161109 Grab Soil	8694815
SCB-1-S-19-161109 Grab Soil	8694816
SCB-1-S-27.5-161109 Grab Soil	8694817
DUP1-SD-161109 Grab Soil	8694818
SCB-1-S-44-161109 Grab Soil	8694819
QA-T-161110 NA Water	8694820
QA-T-161110 NA Water	8694821

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

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Leidos

Attn: Russ Shropshire

Respectfully Submitted,

A handwritten signature in black ink that reads "Amek Carter". The signature is written in a cursive style.

Amek Carter
Specialist

(717) 556-7252

Sample Description: SCB-3-S-11.5-161108 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694810
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/08/2016 10:00 by RO Chevron
 L4310
 Submitted: 11/11/2016 09:25 6001 Bollinger Canyon Road
 Reported: 12/08/2016 14:08 San Ramon CA 94583

EW311

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.0004	0.85
10237	1,2-Dibromoethane	106-93-4	N.D.	0.0009	0.85
10237	1,2-Dichloroethane	107-06-2	N.D.	0.0009	0.85
10237	Ethylbenzene	100-41-4	N.D.	0.0009	0.85
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0004	0.85
10237	Toluene	108-88-3	N.D.	0.0009	0.85
10237	Xylene (Total)	1330-20-7	N.D.	0.0009	0.85
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.9	21.78
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.1	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	10	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.1	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	10	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	2.31	0.513	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	3.5	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	X163212AA	11/17/2016 02:58	Patrick T Herres	0.85
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201631943421	11/08/2016 10:00	Client Supplied	1

Sample Description: SCB-3-S-11.5-161108 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694810
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/08/2016 10:00 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW311

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631943421	11/08/2016 10:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631943421	11/08/2016 10:00	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16323A34A	11/21/2016 15:29	Jeremy C Giffin	21.78
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631943421	11/08/2016 10:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163230006A	11/22/2016 00:37	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163230007A	12/06/2016 19:53	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163230007A	11/19/2016 15:20	JoElla L Rice	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163230006A	11/19/2016 15:20	JoElla L Rice	1
06955	Lead	SW-846 6010B	1	163225708001	11/19/2016 00:46	Matthew R Machtinger	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163225708001	11/17/2016 18:20	Barbara A Kane	1
00111	Moisture	SM 2540 G-1997	1	16322820015B	11/18/2016 11:49	Larry E Bevins	1

Sample Description: SCB-3-S-32-161108 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694811
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/08/2016 13:50 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW332

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	4.1	0.48	623.61
10237	1,2-Dibromoethane	106-93-4	N.D.	0.96	623.61
10237	1,2-Dichloroethane	107-06-2	1.1	0.96	623.61
10237	Ethylbenzene	100-41-4	11	0.96	623.61
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.48	623.61
10237	Toluene	108-88-3	22	0.96	623.61
10237	Xylene (Total)	1330-20-7	67	0.96	623.61
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	2,100	360	5802.91
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	48	4.6	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	15	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	54	4.6	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	15	1
Due to the presence of fuel in the sample extract, capric acid recovery can not be determined.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	7.50	0.773	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	35.3	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q163271AA	11/22/2016 13:51	Jennifer K Howe	623.61

Sample Description: SCB-3-S-32-161108 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694811
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/08/2016 13:50 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW332

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	201631943421	11/08/2016 13:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631943421	11/08/2016 13:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631943421	11/08/2016 13:50	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16323A34A	11/21/2016 22:31	Jeremy C Giffin	5802.91
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631943421	11/08/2016 13:50	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163230006A	11/21/2016 21:38	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163230007A	12/06/2016 20:14	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163230007A	11/19/2016 15:20	JoElla L Rice	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163230006A	11/19/2016 15:20	JoElla L Rice	1
06955	Lead	SW-846 6010B	1	163225708001	11/19/2016 00:49	Matthew R Machtinger	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163225708001	11/17/2016 18:20	Barbara A Kane	1
00111	Moisture	SM 2540 G-1997	1	16322820015B	11/18/2016 11:49	Larry E Bevins	1

Sample Description: SCB-3-S-29-161108 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694812
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/08/2016 14:50 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW329

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	0.11	0.0006	0.8
10237	1,2-Dibromoethane	106-93-4	N.D.	0.001	0.8
10237	1,2-Dichloroethane	107-06-2	N.D.	0.001	0.8
10237	Ethylbenzene	100-41-4	0.005	0.001	0.8
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0006	0.8
10237	Toluene	108-88-3	0.005	0.001	0.8
10237	Xylene (Total)	1330-20-7	0.015	0.001	0.8
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	2.4	1.6	28.52
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	14	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.2	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	14	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	5.71	0.755	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	30.0	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	X163262AA	11/22/2016 00:55	Patrick T Herres	0.8
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201631943421	11/08/2016 14:50	Client Supplied	1

Sample Description: SCB-3-S-29-161108 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694812
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/08/2016 14:50 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW329

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631943421	11/08/2016 14:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631943421	11/08/2016 14:50	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16323A34B	11/22/2016 15:00	Marie D Beamenderfer	28.52
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631943421	11/08/2016 14:50	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163230006A	11/21/2016 21:58	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163230007A	12/06/2016 20:36	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163230007A	11/19/2016 15:20	JoElla L Rice	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163230006A	11/19/2016 15:20	JoElla L Rice	1
06955	Lead	SW-846 6010B	1	163225708001	11/19/2016 00:53	Matthew R Machtinger	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163225708001	11/17/2016 18:20	Barbara A Kane	1
00111	Moisture	SM 2540 G-1997	1	16322820015B	11/18/2016 11:49	Larry E Bevins	1

Sample Description: SCB-3-S-46-161108 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694813
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/08/2016 15:45 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW346

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	0.31	0.038	53.85
10237	1,2-Dibromoethane	106-93-4	N.D.	0.001	0.8
10237	1,2-Dichloroethane	107-06-2	N.D.	0.001	0.8
10237	Ethylbenzene	100-41-4	0.019	0.001	0.8
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0006	0.8
10237	Toluene	108-88-3	0.006	0.001	0.8
10237	Xylene (Total)	1330-20-7	0.014	0.001	0.8
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	2.3	1.6	27.94
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	14	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.2	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	14	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	4.44	0.715	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	28.8	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	X163212AA	11/17/2016 03:21	Patrick T Herres	0.8
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	R163251AA	11/20/2016 10:05	Jennifer K Howe	53.85

Sample Description: SCB-3-S-46-161108 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694813
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/08/2016 15:45 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW346

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	201631943421	11/08/2016 15:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631943421	11/08/2016 15:45	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631943421	11/08/2016 15:45	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16323A34A	11/21/2016 16:11	Jeremy C Giffin	27.94
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631943421	11/08/2016 15:45	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163230006A	11/21/2016 22:18	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163230007A	12/06/2016 20:57	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163230007A	11/19/2016 15:20	JoElla L Rice	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163230006A	11/19/2016 15:20	JoElla L Rice	1
06955	Lead	SW-846 6010B	1	163225708001	11/19/2016 00:56	Matthew R Machtinger	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163225708001	11/17/2016 18:20	Barbara A Kane	1
00111	Moisture	SM 2540 G-1997	1	16322820015B	11/18/2016 11:49	Larry E Bevins	1

Sample Description: SCB-3-S-49.5-161108 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694814
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/08/2016 15:55 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW349

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	0.73	0.033	49.84
10237	1,2-Dibromoethane	106-93-4	N.D.	0.001	0.78
10237	1,2-Dichloroethane	107-06-2	N.D.	0.001	0.78
10237	Ethylbenzene	100-41-4	0.015	0.001	0.78
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0005	0.78
10237	Toluene	108-88-3	0.006	0.001	0.78
10237	Xylene (Total)	1330-20-7	0.032	0.001	0.78
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	5.6	1.3	24.78
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.0	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.0	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	13	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	6.80	0.619	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	24.7	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	X163212AA	11/17/2016 04:54	Patrick T Herres	0.78
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	R163251AA	11/20/2016 10:27	Jennifer K Howe	49.84

Sample Description: SCB-3-S-49.5-161108 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694814
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/08/2016 15:55 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW349

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	201631943421	11/08/2016 15:55	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631943421	11/08/2016 15:55	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631943421	11/08/2016 15:55	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16323A34A	11/21/2016 16:53	Jeremy C Giffin	24.78
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631943421	11/08/2016 15:55	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163230006A	11/21/2016 22:38	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163230007A	12/06/2016 21:19	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163230007A	11/19/2016 15:20	JoElla L Rice	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163230006A	11/19/2016 15:20	JoElla L Rice	1
06955	Lead	SW-846 6010B	1	163235708002	11/23/2016 09:22	Joanne M Gates	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163235708002	11/22/2016 20:30	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-1997	1	16322820015B	11/18/2016 11:49	Larry E Bevins	1

Sample Description: SCB-1-S-15-161109 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694815
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/09/2016 10:25 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW115

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	0.066	0.0006	0.84
10237	1,2-Dibromoethane	106-93-4	N.D.	0.001	0.84
10237	1,2-Dichloroethane	107-06-2	N.D.	0.001	0.84
10237	Ethylbenzene	100-41-4	0.030	0.001	0.84
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0006	0.84
10237	Toluene	108-88-3	0.036	0.001	0.84
10237	Xylene (Total)	1330-20-7	0.11	0.001	0.84
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	10	1.7	30.87
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	5.6	4.1	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	14	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	8.1	4.1	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	14	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	3.69	0.571	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	28.1	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	X163212AA	11/17/2016 03:44	Patrick T Herres	0.84
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201631943421	11/09/2016 10:25	Client Supplied	1

Sample Description: SCB-1-S-15-161109 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694815
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/09/2016 10:25 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW115

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631943421	11/09/2016 10:25	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631943421	11/09/2016 10:25	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16323A34A	11/21/2016 17:36	Jeremy C Giffin	30.87
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631943421	11/09/2016 10:25	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163270034A	11/29/2016 10:52	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163270035A	12/05/2016 18:55	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163270035A	11/23/2016 09:00	Michelle A Newswanger	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163270034A	11/23/2016 09:00	Michelle A Newswanger	1
06955	Lead	SW-846 6010B	1	163235708002	11/23/2016 10:37	Joanne M Gates	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163235708002	11/22/2016 20:30	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-1997	1	16322820015B	11/18/2016 11:49	Larry E Bevins	1

Sample Description: SCB-1-S-19-161109 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694816
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/09/2016 10:30 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW119

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	0.13	0.0006	0.82
10237	1,2-Dibromoethane	106-93-4	N.D.	0.001	0.82
10237	1,2-Dichloroethane	107-06-2	0.003	0.001	0.82
10237	Ethylbenzene	100-41-4	0.044	0.001	0.82
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0006	0.82
10237	Toluene	108-88-3	0.005	0.001	0.82
10237	Xylene (Total)	1330-20-7	0.004	0.001	0.82
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	7.2	1.6	29.11
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	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.	14	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.1	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	14	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	4.58	0.532	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	27.2	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	X163262AA	11/22/2016 01:18	Patrick T Herres	0.82
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201631943421	11/09/2016 10:30	Client Supplied	1

Sample Description: SCB-1-S-19-161109 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694816
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/09/2016 10:30 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW119

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631943421	11/09/2016 10:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631943421	11/09/2016 10:30	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16323A34A	11/21/2016 18:18	Jeremy C Giffin	29.11
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631943421	11/09/2016 10:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163270034A	11/29/2016 11:12	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163270035A	12/05/2016 19:15	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163270035A	11/23/2016 09:00	Michelle A Newswanger	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163270034A	11/23/2016 09:00	Michelle A Newswanger	1
06955	Lead	SW-846 6010B	1	163235708002	11/23/2016 10:40	Joanne M Gates	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163235708002	11/22/2016 20:30	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-1997	1	16322820015B	11/18/2016 11:49	Larry E Bevins	1

Sample Description: SCB-1-S-27.5-161109 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694817
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/09/2016 11:47 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW127

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	7.0	0.042	60.31
10237	1,2-Dibromoethane	106-93-4	0.097	0.085	60.31
10237	1,2-Dichloroethane	107-06-2	0.19	0.085	60.31
10237	Ethylbenzene	100-41-4	0.71	0.085	60.31
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.042	60.31
10237	Toluene	108-88-3	0.74	0.085	60.31
10237	Xylene (Total)	1330-20-7	2.3	0.085	60.31
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	61	6.2	110.82
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	14	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.2	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	14	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	6.38	0.514	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	28.7	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q163252AA	11/20/2016 13:47	Jennifer K Howe	60.31
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201631943421	11/09/2016 11:47	Client Supplied	1

Sample Description: SCB-1-S-27.5-161109 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694817
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/09/2016 11:47 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW127

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631943421	11/09/2016 11:47	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631943421	11/09/2016 11:47	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16323A34A	11/21/2016 19:42	Jeremy C Giffin	110.82
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631943421	11/09/2016 11:47	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163270034A	11/29/2016 11:32	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163270035A	12/05/2016 19:35	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163270035A	11/23/2016 09:00	Michelle A Newswanger	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163270034A	11/23/2016 09:00	Michelle A Newswanger	1
06955	Lead	SW-846 6010B	1	163235708002	11/23/2016 10:44	Joanne M Gates	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163235708002	11/22/2016 20:30	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-1997	1	16322820015B	11/18/2016 11:49	Larry E Bevins	1

Sample Description: DUP1-SD-161109 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694818
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/09/2016 11:55 by RO Chevron
 L4310
 Submitted: 11/11/2016 09:25 6001 Bollinger Canyon Road
 Reported: 12/08/2016 14:08 San Ramon CA 94583

EWDU1

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	5.1	0.036	53.95
10237	1,2-Dibromoethane	106-93-4	N.D.	0.073	53.95
10237	1,2-Dichloroethane	107-06-2	N.D.	0.073	53.95
10237	Ethylbenzene	100-41-4	1.3	0.073	53.95
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.036	53.95
10237	Toluene	108-88-3	0.75	0.073	53.95
10237	Xylene (Total)	1330-20-7	4.2	0.073	53.95
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	160	15	281.93
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	5.1	4.0	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.0	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	13	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	5.30	0.612	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	25.7	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q163271AA	11/22/2016 13:05	Jennifer K Howe	53.95
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201631943421	11/09/2016 11:55	Client Supplied	1

Sample Description: DUP1-SD-161109 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694818
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/09/2016 11:55 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EWDU1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631943421	11/09/2016 11:55	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631943421	11/09/2016 11:55	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16323A34A	11/21/2016 20:25	Jeremy C Giffin	281.93
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631943421	11/09/2016 11:55	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163270034A	11/29/2016 11:52	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163270035A	12/05/2016 19:56	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163270035A	11/23/2016 09:00	Michelle A Newswanger	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163270034A	11/23/2016 09:00	Michelle A Newswanger	1
06955	Lead	SW-846 6010B	1	163235708002	11/23/2016 10:47	Joanne M Gates	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163235708002	11/22/2016 20:30	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-1997	1	16322820015B	11/18/2016 11:49	Larry E Bevins	1

Sample Description: SCB-1-S-44-161109 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694819
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/09/2016 15:40 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW144

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	6.7	0.040	55.88
10237	1,2-Dibromoethane	106-93-4	N.D.	0.079	55.88
10237	1,2-Dichloroethane	107-06-2	0.61	0.079	55.88
10237	Ethylbenzene	100-41-4	0.74	0.079	55.88
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.040	55.88
10237	Toluene	108-88-3	11	0.079	55.88
10237	Xylene (Total)	1330-20-7	6.7	0.079	55.88
GC Volatiles			ECY 97-602 NWT PH-Gx	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	62	6.6	115.91
GC Petroleum Hydrocarbons			ECY 97-602 NWT PH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	14	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWT PH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.2	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	14	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	6.62	0.589	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	29.3	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q163271AA	11/22/2016 13:29	Jennifer K Howe	55.88
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201631943421	11/09/2016 15:40	Client Supplied	1

Sample Description: SCB-1-S-44-161109 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8694819
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/09/2016 15:40 by RO

Chevron

L4310

Submitted: 11/11/2016 09:25

6001 Bollinger Canyon Road

Reported: 12/08/2016 14:08

San Ramon CA 94583

EW144

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631943421	11/09/2016 15:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631943421	11/09/2016 15:40	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16323A34B	11/22/2016 17:50	Marie D Beamenderfer	115.91
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631943421	11/09/2016 15:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163270034A	11/29/2016 12:12	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163270035A	12/05/2016 22:18	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163270035A	11/23/2016 09:00	Michelle A Newswanger	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163270034A	11/23/2016 09:00	Michelle A Newswanger	1
06955	Lead	SW-846 6010B	1	163235708002	11/23/2016 10:51	Joanne M Gates	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163235708002	11/22/2016 20:30	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-1997	1	16322820016A	11/18/2016 13:27	Larry E Bevins	1

Sample Description: QA-T-161110 NA Water
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # WW 8694820
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/10/2016 11:40

Chevron

Submitted: 11/11/2016 09:25

L4310

Reported: 12/08/2016 14:08

6001 Bollinger Canyon Road
San Ramon CA 94583

EWTB2

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles SW-846 8260B			ug/l	ug/l	
10945	Benzene	71-43-2	N.D.	0.5	1
10945	1,2-Dibromoethane	106-93-4	N.D.	0.5	1
10945	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Volatiles ECY 97-602 NWTPH-Gx			ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST VOCs + GRO by 8260B-Water	SW-846 8260B	1	P163272AA	11/22/2016 11:06	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P163272AA	11/22/2016 11:06	Brett W Kenyon	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16323A53A	11/18/2016 17:03	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	16323A53A	11/18/2016 17:03	Brett W Kenyon	1

Sample Description: QA-T-161110 NA Water
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # WW 8694821
LL Group # 1732689
Account # 11255

Project Name: 96590

Collected: 11/10/2016 11:45

Chevron

Submitted: 11/11/2016 09:25

L4310

Reported: 12/08/2016 14:08

6001 Bollinger Canyon Road
San Ramon CA 94583

EWTB3

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260B	ug/l	ug/l	
10945	Benzene	71-43-2	N.D.	0.5	1
10945	1,2-Dibromoethane	106-93-4	N.D.	0.5	1
10945	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST VOCs + GRO by 8260B-Water	SW-846 8260B	1	P163272AA	11/22/2016 11:29	Brett W Kenyon	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P163272AA	11/22/2016 11:29	Brett W Kenyon	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16323A53A	11/18/2016 17:31	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	16323A53A	11/18/2016 17:31	Brett W Kenyon	1

Quality Control Summary

Client Name: Chevron
Reported: 12/08/2016 14:08

Group Number: 1732689

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: Q163252AA	Sample number(s): 8694817	
Benzene	N.D.	0.025
1,2-Dibromoethane	N.D.	0.050
1,2-Dichloroethane	N.D.	0.050
Ethylbenzene	N.D.	0.050
Methyl Tertiary Butyl Ether	N.D.	0.025
Toluene	N.D.	0.050
Xylene (Total)	N.D.	0.050
Batch number: Q163271AA	Sample number(s): 8694811,8694818-8694819	
Benzene	N.D.	0.025
1,2-Dibromoethane	N.D.	0.050
1,2-Dichloroethane	N.D.	0.050
Ethylbenzene	N.D.	0.050
Methyl Tertiary Butyl Ether	N.D.	0.025
Toluene	N.D.	0.050
Xylene (Total)	N.D.	0.050
Batch number: R163251AA	Sample number(s): 8694813-8694814	
Benzene	N.D.	0.025
Batch number: X163212AA	Sample number(s): 8694810,8694813-8694815	
Benzene	N.D.	0.0005
1,2-Dibromoethane	N.D.	0.001
1,2-Dichloroethane	N.D.	0.001
Ethylbenzene	N.D.	0.001
Methyl Tertiary Butyl Ether	N.D.	0.0005
Toluene	N.D.	0.001
Xylene (Total)	N.D.	0.001
Batch number: X163262AA	Sample number(s): 8694812,8694816	
Benzene	N.D.	0.0005
1,2-Dibromoethane	N.D.	0.001
1,2-Dichloroethane	N.D.	0.001
Ethylbenzene	N.D.	0.001
Methyl Tertiary Butyl Ether	N.D.	0.0005
Toluene	N.D.	0.001
Xylene (Total)	N.D.	0.001
	ug/l	ug/l
Batch number: P163272AA	Sample number(s): 8694820-8694821	
Benzene	N.D.	0.5
1,2-Dibromoethane	N.D.	0.5

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/08/2016 14:08

Group Number: 1732689

Method Blank (continued)

Analysis Name	Result	MDL
	ug/l	ug/l
1,2-Dichloroethane	N.D.	0.5
Ethylbenzene	N.D.	0.5
Methyl Tertiary Butyl Ether	N.D.	0.5
Toluene	N.D.	0.5
Xylene (Total)	N.D.	0.5
	mg/kg	mg/kg
Batch number: 16323A34A	Sample number(s): 8694810-8694811,8694813-8694818	
NWTPH-GX Soil C7-C12	N.D.	1.0
Batch number: 16323A34B	Sample number(s): 8694812,8694819	
NWTPH-GX Soil C7-C12	N.D.	1.0
	ug/l	ug/l
Batch number: 16323A53A	Sample number(s): 8694820-8694821	
NWTPH-Gx water C7-C12	N.D.	50
	mg/kg	mg/kg
Batch number: 163230006A	Sample number(s): 8694810-8694814	
Diesel Range Organics C12-C24	N.D.	3.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 163270034A	Sample number(s): 8694815-8694819	
Diesel Range Organics C12-C24	N.D.	3.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 163230007A	Sample number(s): 8694810-8694814	
DRO C12-C24 w/Si Gel	N.D.	3.0
HRO C24-C40 w/Si Gel	N.D.	10
Batch number: 163270035A	Sample number(s): 8694815-8694819	
DRO C12-C24 w/Si Gel	N.D.	3.0
HRO C24-C40 w/Si Gel	N.D.	10
Batch number: 163225708001	Sample number(s): 8694810-8694813	
Lead	N.D.	0.550
Batch number: 163235708002	Sample number(s): 8694814-8694819	
Lead	N.D.	0.550

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: Q163252AA	Sample number(s): 8694817								
Benzene	1.00	0.968	1.00	0.973	97	97	80-120	1	30
1,2-Dibromoethane	1.00	1.02	1.00	1.01	102	101	80-120	1	30

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/08/2016 14:08

Group Number: 1732689

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
1,2-Dichloroethane	1.00	0.992	1.00	0.968	99	97	70-133	2	30
Ethylbenzene	1.00	0.968	1.00	0.976	97	98	80-120	1	30
Methyl Tertiary Butyl Ether	1.00	0.962	1.00	0.946	96	95	72-120	2	30
Toluene	1.00	0.995	1.00	0.997	99	100	80-120	0	30
Xylene (Total)	3.00	2.99	3.00	2.98	100	99	80-120	0	30
Batch number: Q163271AA	Sample number(s): 8694811,8694818-8694819								
Benzene	1.00	1.00	1.00	1.02	100	102	80-120	2	30
1,2-Dibromoethane	1.00	1.02	1.00	1.01	102	101	80-120	1	30
1,2-Dichloroethane	1.00	1.00	1.00	1.01	100	101	70-133	1	30
Ethylbenzene	1.00	0.974	1.00	0.983	97	98	80-120	1	30
Methyl Tertiary Butyl Ether	1.00	0.993	1.00	0.981	99	98	72-120	1	30
Toluene	1.00	0.996	1.00	1.02	100	102	80-120	3	30
Xylene (Total)	3.00	2.99	3.00	2.99	100	100	80-120	0	30
Batch number: R163251AA	Sample number(s): 8694813-8694814								
Benzene	1.00	1.01	1.00	1.10	101	110	80-120	8	30
Batch number: X163212AA	Sample number(s): 8694810,8694813-8694815								
Benzene	0.0200	0.0197	0.0200	0.0174	98	87	80-120	13	30
1,2-Dibromoethane	0.0200	0.0197	0.0200	0.0171	98	86	80-120	14	30
1,2-Dichloroethane	0.0200	0.0180	0.0200	0.0155	90	78	70-133	15	30
Ethylbenzene	0.0200	0.0189	0.0200	0.0166	95	83	80-120	13	30
Methyl Tertiary Butyl Ether	0.0200	0.0179	0.0200	0.0157	89	78	72-120	13	30
Toluene	0.0200	0.0194	0.0200	0.0170	97	85	80-120	13	30
Xylene (Total)	0.0600	0.0574	0.0600	0.0501	96	83	80-120	14	30
Batch number: X163262AA	Sample number(s): 8694812,8694816								
Benzene	0.0200	0.0196	0.0200	0.0192	98	96	80-120	2	30
1,2-Dibromoethane	0.0200	0.0181	0.0200	0.0187	90	93	80-120	3	30
1,2-Dichloroethane	0.0200	0.0189	0.0200	0.0190	95	95	70-133	1	30
Ethylbenzene	0.0200	0.0192	0.0200	0.0188	96	94	80-120	2	30
Methyl Tertiary Butyl Ether	0.0200	0.0183	0.0200	0.0188	91	94	72-120	3	30
Toluene	0.0200	0.0193	0.0200	0.0187	97	94	80-120	3	30
Xylene (Total)	0.0600	0.0581	0.0600	0.0567	97	95	80-120	2	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: P163272AA	Sample number(s): 8694820-8694821								
Benzene	20	18.76			94		78-120		
1,2-Dibromoethane	20	17.74			89		80-120		
1,2-Dichloroethane	20	18.73			94		66-128		
Ethylbenzene	20	18.71			94		78-120		
Methyl Tertiary Butyl Ether	20	19.46			97		75-120		
Toluene	20	18.7			93		80-120		
Xylene (Total)	60	56.49			94		80-120		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 16323A34A	Sample number(s): 8694810-8694811,8694813-8694818								
NWTPH-GX Soil C7-C12	11	11.08	11	11.31	101	103	71-120	2	30

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/08/2016 14:08

Group Number: 1732689

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: 16323A34B NWTPH-GX Soil C7-C12	Sample number(s): 8694812,8694819 11	11.08	11	11.31	101	103	71-120	2	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 16323A53A NWTPH-Gx water C7-C12	Sample number(s): 8694820-8694821 1100	1080.63	1100	1083.24	98	98	79-120	0	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 163230006A Diesel Range Organics C12-C24	Sample number(s): 8694810-8694814 133	98.52			74		61-115		
Batch number: 163270034A Diesel Range Organics C12-C24	Sample number(s): 8694815-8694819 133	103.63			78		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 163230007A DRO C12-C24 w/Si Gel	Sample number(s): 8694810-8694814 133	68.66			52		50-133		
Batch number: 163270035A DRO C12-C24 w/Si Gel	Sample number(s): 8694815-8694819 133	84.04			63		50-133		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 163225708001 Lead	Sample number(s): 8694810-8694813 15	15.57			104		80-120		
Batch number: 163235708002 Lead	Sample number(s): 8694814-8694819 15	15.07			100		80-120		
	%	%	%	%					
Batch number: 16322820015B Moisture	Sample number(s): 8694810-8694818 89.5	89.39			100		99-101		
Batch number: 16322820016A Moisture	Sample number(s): 8694819 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: X163262AA Benzene	Sample number(s): 8694812,8694816 N.D.	0.0147	0.0156	UNSPK: P704284		106		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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/08/2016 14:08

Group Number: 1732689

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
1,2-Dibromoethane	N.D.	0.0147	0.0158			107		80-120		
1,2-Dichloroethane	N.D.	0.0147	0.0156			106		70-133		
Ethylbenzene	N.D.	0.0147	0.0144			98		80-120		
Methyl Tertiary Butyl Ether	N.D.	0.0147	0.0161			109		72-120		
Toluene	N.D.	0.0147	0.0155			105		80-120		
Xylene (Total)	N.D.	0.0441	0.0430			98		80-120		
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: P163272AA	Sample number(s): 8694820-8694821 UNSPK: P694830									
Benzene	N.D.	20	20.71	20	20.7	104	103	78-120	0	30
1,2-Dibromoethane	N.D.	20	19.22	20	19.04	96	95	80-120	1	30
1,2-Dichloroethane	N.D.	20	19.74	20	20.23	99	101	66-128	2	30
Ethylbenzene	N.D.	20	20.69	20	20.58	103	103	78-120	1	30
Methyl Tertiary Butyl Ether	N.D.	20	20.75	20	20.89	104	104	75-120	1	30
Toluene	N.D.	20	20.69	20	20.64	103	103	80-120	0	30
Xylene (Total)	N.D.	60	62.48	60	61.92	104	103	80-120	1	30
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 163270034A	Sample number(s): 8694815-8694819 UNSPK: 8694819									
Diesel Range Organics C12-C24	N.D.	131	106.15			81		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 163270035A	Sample number(s): 8694815-8694819 UNSPK: 8694819									
DRO C12-C24 w/Si Gel	N.D.	131	30.34			23*		50-133		
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 163225708001	Sample number(s): 8694810-8694813 UNSPK: P695064									
Lead	23.87	13.04	32.64	12.93	34	67*	78	75-125	4	20
Batch number: 163235708002	Sample number(s): 8694814-8694819 UNSPK: 8694814									
Lead	5.12	12.3	15.61	10.87	13.89	85	81	75-125	12	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: 163230006A	Sample number(s): 8694810-8694814 BKG: P689221			
Diesel Range Organics C12-C24	N.D.	N.D.	0 (1)	20
Heavy Range Organics C24-C40	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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/08/2016 14:08

Group Number: 1732689

Laboratory Duplicate (continued)

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: 163270034A Diesel Range Organics C12-C24 Heavy Range Organics C24-C40	Sample number(s): 8694815-8694819 N.D. N.D.	BKG: 8694819 N.D. N.D.	0 (1) 0 (1)	20 20
Batch number: 163230007A DRO C12-C24 w/Si Gel HRO C24-C40 w/Si Gel	Sample number(s): 8694810-8694814 N.D. N.D.	BKG: P689221 N.D. N.D.	0 (1) 0 (1)	20 20
Batch number: 163270035A DRO C12-C24 w/Si Gel HRO C24-C40 w/Si Gel	Sample number(s): 8694815-8694819 N.D. N.D.	BKG: 8694819 N.D. N.D.	0 (1) 0 (1)	20 20
Batch number: 163225708001 Lead	Sample number(s): 8694810-8694813 23.87	BKG: P695064 18.69	24* (1)	20
Batch number: 163235708002 Lead	Sample number(s): 8694814-8694819 5.12	BKG: 8694814 4.36	16 (1)	20
Batch number: 16322820015B Moisture	Sample number(s): 8694810-8694818 28.84	BKG: 8694813 30.2	5	5
Batch number: 16322820016A Moisture	Sample number(s): 8694819 83.31	BKG: P695472 83.78	1	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: UST VOCs + GRO by 8260B-Water
Batch number: P163272AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8694820	98	96	101	97
8694821	98	96	102	99
Blank	99	97	101	99
LCS	98	100	101	100
MS	98	98	101	100
MSD	98	99	100	100
Limits:	80-116	77-113	80-113	78-113

*- 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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/08/2016 14:08

Group Number: 1732689

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/MTBE/EDC/EDB 8260
Batch number: Q163252AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8694817	65	72	69	71
Blank	84	92	89	85
LCS	88	92	92	92
LCSD	88	92	91	90
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX/MTBE/EDC/EDB 8260
Batch number: Q163271AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8694811	59	60	72	101
8694818	70	77	77	78
8694819	66	74	70	71
Blank	84	89	89	87
LCS	102	106	104	97
LCSD	104	110	106	97
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX/MTBE/EDC/EDB 8260
Batch number: X163212AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8694810	101	107	96	91
8694813	97	102	98	94
8694814	98	106	98	95
8694815	97	104	102	102
Blank	99	100	97	91
LCS	97	101	98	96
LCSD	98	101	98	97
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX/MTBE/EDC/EDB 8260
Batch number: X163262AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8694812	102	108	99	101
8694816	101	108	96	100
Blank	103	105	97	94
LCS	101	101	98	98
LCSD	101	102	98	98
MS	102	109	98	99
Limits:	50-141	54-135	52-141	50-131

*- 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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/08/2016 14:08

Group Number: 1732689

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: 16323A34A

Trifluorotoluene-F	
8694810	125
8694811	373*
8694813	89
8694814	82
8694815	94
8694816	87
8694817	118
8694818	153*
Blank	102
LCS	99
LCSD	101

Limits: 50-142

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 16323A34B

Trifluorotoluene-F	
8694812	88
8694819	98
Blank	108
LCS	99
LCSD	101

Limits: 50-142

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 16323A53A

Trifluorotoluene-F	
8694820	101
8694821	101
Blank	101
LCS	110
LCSD	109

Limits: 63-135

Analysis Name: NWTPH-Dx soil
Batch number: 163230006A

Orthoterphenyl	
8694810	108
8694811	89
8694812	92
8694813	97
8694814	86
Blank	105

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
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Quality Control Summary

Client Name: Chevron
Reported: 12/08/2016 14:08

Group Number: 1732689

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: 163230006A

	Orthoterphenyl
DUP	63
LCS	95

Limits: 50-150

Analysis Name: NWTPH-Dx soil w/ 10g Si Gel
Batch number: 163230007A

	Orthoterphenyl
8694810	86
8694811	103
8694812	81
8694813	95
8694814	69
Blank	113
DUP	58
LCS	83

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 163270034A

	Orthoterphenyl
8694815	102
8694816	103
8694817	101
8694818	101
8694819	104
Blank	99
DUP	99
LCS	101
MS	99

Limits: 50-150

Analysis Name: NWTPH-Dx soil w/ 10g Si Gel
Batch number: 163270035A

	Orthoterphenyl
8694815	74
8694816	71
8694817	81
8694818	72
8694819	79
Blank	67
DUP	83
LCS	81

*- 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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/08/2016 14:08

Group Number: 1732689

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 w/ 10g Si Gel
Batch number: 163270035A

	Orthoterphenyl
MS	58
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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories

Acct. # 11255

For Lancaster Laboratories use only
 Group # 1732689 Sample # 8694810-21

Instructions on reverse side correspond with circled numbers.

1 Client Information			4 Matrix			5 Analyses Requested										6 Remarks					
Facility # <u>96590</u> WBS <u>08.04</u> Site Address <u>232 East Woodin Ave, Chelam, WA</u> Chevron PM <u>Eric Hetrick</u> Lead Consultant Consultant/Office <u>Leidas/Bothell, WA</u> Consultant Project Mgr. <u>Ross Shropshire</u> Consultant Phone # <u>425-482-3323</u> Sampler <u>R. Otteman and S. Brown</u>			<input type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> Ground <input type="checkbox"/> NPDES <input type="checkbox"/> Surface <input type="checkbox"/> Oil <input type="checkbox"/> Air			Total Number of Containers <input checked="" type="checkbox"/> BTEX + MTBE 8021 <input type="checkbox"/> 8260 <input type="checkbox"/> Naphth <input type="checkbox"/> 8260 full scan Oxygenates NWTPH GX NWTPH DX <input checked="" type="checkbox"/> Silica Gel Cleanup Lead Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>COB</u> WAVPH <input type="checkbox"/> WAEPH <input type="checkbox"/> <u>NWTPH-DX</u> <u>FDB/EX 8260B</u>										SCR #: _____ <input type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits					
2 Sample Identification		3 Collected		Grab	Composite	Soil	Water	Oil	Total Number of Containers	BTEX + MTBE 8021	8260 full scan	Oxygenates	NWTPH GX	NWTPH DX <input checked="" type="checkbox"/> Silica Gel Cleanup	Lead Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>COB</u>	WAVPH <input type="checkbox"/> WAEPH <input type="checkbox"/>	<u>NWTPH-DX</u>	<u>FDB/EX 8260B</u>	6 Remarks		
Date	Time																				
<u>SCB-3-11.5</u>	<u>11/8/16</u>	<u>1000</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<u>SCB-3-32</u>	<u>11/8/16</u>	<u>1350</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<u>SCB-3-29</u>	<u>11/8/16</u>	<u>1450</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<u>SCB-3-46</u>	<u>11/8/16</u>	<u>1545</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<u>SCB-3-49.5</u>	<u>11/8/16</u>	<u>1555</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<u>SCB-1-15</u>	<u>11/9/16</u>	<u>1025</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<u>SCB-1-19</u>	<u>11/9/16</u>	<u>1030</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<u>SCB-1-27.5</u>	<u>11/9/16</u>	<u>1147</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<u>SCB-1-32</u>	<u>11/9/16</u>	<u>1155</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<u>SCB-1-32 RD</u>	<u>11/9/16</u>	<u>1325</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<u>SCB-1-47</u>	<u>11/9/16</u>	<u>1540</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>7</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<u>trip blank 2-111016</u>	<u>11/10/16</u>	<u>1140</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>4</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<u>trip blank 3-111016</u>	<u>11/10/16</u>	<u>1145</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>4</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
7 Turnaround Time Requested (TAT) (please circle) <input checked="" type="radio"/> Standard 5 day 4 day 72 hour 48 hour 24 hour			Relinquished by <u>[Signature]</u> Date <u>11/10/16</u> Time <u>1200</u>			Received by _____ Date _____ Time _____		Relinquished by _____ Date _____ Time _____		Received by _____ Date _____ Time _____		Relinquished by Commercial Carrier: UPS _____ FedEx <input checked="" type="checkbox"/> Other _____		Received by <u>[Signature]</u> Date <u>11/11/16</u> Time <u>0925</u>		Temperature Upon Receipt <u>0.4-16</u> °C		Custody Seals Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			
8 Data Package Options (please circle if required) Type I - Full Type VI (Raw Data)																					

Client: Chevron

Delivery and Receipt Information

Delivery Method: Fed Ex Arrival Timestamp: 11/11/2016 9:25
 Number of Packages: 4 Number of Projects: 1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	8
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Krista Abel (3058) at 12:43 on 11/11/2016

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle)* *IR = Infrared (Surface Temp)* *All Temperatures in °C.*

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	1.1	DT	Wet	Y	Bagged	N
2	DT146	1.2	DT	Wet	Y	Bagged	N
3	DT146	0.4	DT	Wet	Y	Bagged	N
4	DT146	0.6	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mg	milligram(s)
C	degrees Celsius	mL	milliliter(s)
cfu	colony forming units	MPN	Most Probable Number
CP Units	cobalt-chloroplatinate units	N.D.	none detected
F	degrees Fahrenheit	ng	nanogram(s)
g	gram(s)	NTU	nephelometric turbidity units
IU	International Units	pg/L	picogram/liter
kg	kilogram(s)	RL	Reporting Limit
L	liter(s)	TNTC	Too Numerous To Count
lb.	pound(s)	µg	microgram(s)
m3	cubic meter(s)	µL	microliter(s)
meq	milliequivalents	umhos/cm	micromhos/cm
<	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.		

Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
- 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.

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.

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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ANALYTICAL RESULTS

Prepared by:

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

Prepared for:

Chevron
L4310
6001 Bollinger Canyon Road
San Ramon CA 94583

Report Date: December 09, 2016

Project: 96590

Submittal Date: 11/09/2016
Group Number: 1731438
PO Number: 0015194335
Release Number: HETRICK
State of Sample Origin: WA

Client Sample Description

	Lancaster Labs (LL) #
LIFB-4-S-9-161031 Grab Soil	8689209
LIFB-6-S-14-161102 Grab Soil	8689210
LIFB-6-S-15-161102 Grab Soil	8689211
LIFB-3-S-11-161102 Grab Soil	8689212
LIFB-2-S-11-161103 Grab Soil	8689213
QA-O-161103 Grab Water	8689214
SSB-2-S-12.5-161103 Grab Soil	8689215
SSB-2-S-14.5-161103 Grab Soil	8689216
SSB-1-S-14.5-161103 Grab Soil	8689217
SSB-1-S-12.5-161103 Grab Soil	8689218
MW-39-S-18-161104 Grab Soil	8689219
MW-39-S-40-161104 Grab Soil	8689220
SCB-2-S-28-161107 Grab Soil	8689221
SCB-2-S-60.5-161107 Grab Soil	8689222
SCB-2-S-56-161107 Grab Soil	8689223
SCB-2-S-48.5-161107 Grab Soil	8689224
QA-1-O-161108 NA Water	8689225
QA-2-O-161108 NA Water	8689226
QA-3-O-161108 NA Water	8689227

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

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Leidos

Attn: Russ Shropshire

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

Sample Description: LIFB-4-S-9-161031 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689209
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 10/31/2016 13:00 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE01

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.0005	0.9
10237	1,2-Dibromoethane	106-93-4	N.D.	0.0009	0.9
10237	1,2-Dichloroethane	107-06-2	N.D.	0.0009	0.9
10237	Ethylbenzene	100-41-4	N.D.	0.0009	0.9
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0005	0.9
10237	Toluene	108-88-3	N.D.	0.0009	0.9
10237	Xylene (Total)	1330-20-7	N.D.	0.0009	0.9
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.9	22.19
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	7.1	3.1	1
08272	Heavy Range Organics C24-C40	n.a.	13	10	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.1	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	10	1
<p>Target analytes were detected in the method blank associated with the samples as noted on the QC Summary. The result for the sample duplicate is 25 mg/kg. The reverse surrogate, capric acid, is present at <1%.</p>					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	N.D.	2.31	5
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	3.4	0.50	1
<p>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.</p>					

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
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Sample Description: LIFB-4-S-9-161031 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689209
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 10/31/2016 13:00 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE01

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	X163163AA	11/12/2016 02:49	Patrick T Herres	0.9
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201631543386	10/31/2016 13:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631543386	10/31/2016 13:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631543386	10/31/2016 13:00	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16318B34A	11/14/2016 17:40	Jeremy C Giffin	22.19
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631543386	10/31/2016 13:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163170020A	11/21/2016 18:38	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163170021A	12/06/2016 23:06	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163170021A	11/14/2016 08:00	David S Schrum	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163170020A	11/14/2016 08:00	David S Schrum	1
06955	Lead	SW-846 6010B	1	163165708001	11/16/2016 15:50	Cindy M Gehman	5
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163165708001	11/14/2016 04:46	James L Mertz	1
00111	Moisture	SM 2540 G-1997	1	16321820008A	11/16/2016 19:15	Scott W Freisher	1

Sample Description: LIFB-6-S-14-161102 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689210
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/02/2016 15:55 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE02

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.032	46.13
10237	1,2-Dibromoethane	106-93-4	N.D.	0.065	46.13
10237	1,2-Dichloroethane	107-06-2	N.D.	0.065	46.13
10237	Ethylbenzene	100-41-4	N.D.	0.065	46.13
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.032	46.13
10237	Toluene	108-88-3	N.D.	0.065	46.13
10237	Xylene (Total)	1330-20-7	N.D.	0.065	46.13
Reporting limits were raised due to interference from the sample matrix.					
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	31	3.2	57.27
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	14	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.2	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	14	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	N.D.	2.74	5
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	28.9	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q163202AA	11/15/2016 23:32	Stephen C Nolte	46.13

Sample Description: LIFB-6-S-14-161102 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689210
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/02/2016 15:55 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE02

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	201631543386	11/02/2016 15:55	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631543386	11/02/2016 15:55	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631543386	11/02/2016 15:55	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16318B34A	11/15/2016 00:38	Jeremy C Giffin	57.27
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631543386	11/02/2016 15:55	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163170020A	11/21/2016 18:18	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163170021A	12/06/2016 23:49	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163170021A	11/14/2016 08:00	David S Schrum	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163170020A	11/14/2016 08:00	David S Schrum	1
06955	Lead	SW-846 6010B	1	163165708001	11/16/2016 16:28	Cindy M Gehman	5
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163165708001	11/14/2016 04:46	James L Mertz	1
00111	Moisture	SM 2540 G-1997	1	16321820008A	11/16/2016 19:15	Scott W Freisher	1

Sample Description: LIFB-6-S-15-161102 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689211
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/02/2016 16:00 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE03

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.026	40
10237	1,2-Dibromoethane	106-93-4	N.D.	0.051	40
10237	1,2-Dichloroethane	107-06-2	N.D.	0.051	40
10237	Ethylbenzene	100-41-4	N.D.	0.051	40
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.026	40
10237	Toluene	108-88-3	N.D.	0.051	40
10237	Xylene (Total)	1330-20-7	N.D.	0.051	40
Reporting limits were raised due to interference from the sample matrix.					
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	55	5.1	99.64
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.8	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.8	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	13	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	N.D.	2.55	5
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	21.8	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q163202AA	11/15/2016 23:55	Stephen C Nolte	40

Sample Description: LIFB-6-S-15-161102 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689211
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/02/2016 16:00 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE03

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	201631543386	11/02/2016 16:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631543386	11/02/2016 16:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631543386	11/02/2016 16:00	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16318B34A	11/15/2016 01:20	Jeremy C Giffin	99.64
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631543386	11/02/2016 16:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163170020A	11/21/2016 19:18	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163170021A	12/07/2016 00:11	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163170021A	11/14/2016 08:00	David S Schrum	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163170020A	11/14/2016 08:00	David S Schrum	1
06955	Lead	SW-846 6010B	1	163165708001	11/16/2016 16:31	Cindy M Gehman	5
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163165708001	11/14/2016 04:46	James L Mertz	1
00111	Moisture	SM 2540 G-1997	1	16321820008A	11/16/2016 19:15	Scott W Freisher	1

Sample Description: LIFB-3-S-11-161102 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689212
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/02/2016 17:40 by RO Chevron
 L4310
 Submitted: 11/09/2016 09:30 6001 Bollinger Canyon Road
 Reported: 12/09/2016 12:38 San Ramon CA 94583

CHE04

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.040	54.56
10237	1,2-Dibromoethane	106-93-4	N.D.	0.080	54.56
10237	1,2-Dichloroethane	107-06-2	N.D.	0.080	54.56
10237	Ethylbenzene	100-41-4	1.7	0.080	54.56
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.040	54.56
10237	Toluene	108-88-3	N.D.	0.080	54.56
10237	Xylene (Total)	1330-20-7	3.0	0.080	54.56
Reporting limits were raised due to interference from the sample matrix.					
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	6,800	1,400	24289.24
GC Petroleum			ECY 97-602 NWTPH-Dx	mg/kg	
Hydrocarbons			modified		
08272	Diesel Range Organics C12-C24	n.a.	160	4.4	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	15	1
GC Petroleum			ECY 97-602 NWTPH-Dx	mg/kg	
Hydrocarbons w/Si			modified		
12006	DRO C12-C24 w/Si Gel	n.a.	190	4.4	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	15	1
Due to the presence of fuel in the sample extract, capric acid recovery can not be determined.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	N.D.	3.55	5
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	31.4	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q163211AA	11/16/2016 12:55	Jennifer K Howe	54.56

Sample Description: LIFB-3-S-11-161102 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689212
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/02/2016 17:40 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE04

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	201631543386	11/02/2016 17:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631543386	11/02/2016 17:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631543386	11/02/2016 17:40	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16318B34A	11/14/2016 21:09	Jeremy C Giffin	24289.2 4
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631543386	11/02/2016 17:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163170020A	11/21/2016 19:38	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163170021A	12/07/2016 00:32	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163170021A	11/14/2016 08:00	David S Schrum	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163170020A	11/14/2016 08:00	David S Schrum	1
06955	Lead	SW-846 6010B	1	163165708001	11/16/2016 16:34	Cindy M Gehman	5
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163165708001	11/14/2016 04:46	James L Mertz	1
00111	Moisture	SM 2540 G-1997	1	16321820008A	11/16/2016 19:15	Scott W Freisher	1

Sample Description: LIFB-2-S-11-161103 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689213
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/03/2016 14:00 by RO Chevron
 L4310
 Submitted: 11/09/2016 09:30 6001 Bollinger Canyon Road
 Reported: 12/09/2016 12:38 San Ramon CA 94583

CHE05

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.021	39.76
10237	1,2-Dibromoethane	106-93-4	N.D.	0.043	39.76
10237	1,2-Dichloroethane	107-06-2	N.D.	0.043	39.76
10237	Ethylbenzene	100-41-4	N.D.	0.043	39.76
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.021	39.76
10237	Toluene	108-88-3	N.D.	0.043	39.76
10237	Xylene (Total)	1330-20-7	N.D.	0.043	39.76

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

GC Volatiles			ECY 97-602 NWT PH-Gx	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	11	0.9	21.15

GC Petroleum			ECY 97-602 NWT PH-Dx	mg/kg	
Hydrocarbons			modified		
08272	Diesel Range Organics C12-C24	n.a.	180	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	210	11	1

GC Petroleum			ECY 97-602 NWT PH-Dx	mg/kg	
Hydrocarbons w/Si			modified		
12006	DRO C12-C24 w/Si Gel	n.a.	170	3.2	1
12006	HRO C24-C40 w/Si Gel	n.a.	220	11	1

Due to the presence of fuel in the sample extract, capric acid recovery can not be determined.

Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	1.32	0.541	1

Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	6.8	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	R163222AA	11/17/2016 14:13	Jennifer K Howe	39.76

Sample Description: LIFB-2-S-11-161103 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689213
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/03/2016 14:00 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE05

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	201631543386	11/03/2016 14:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631543386	11/03/2016 14:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631543386	11/03/2016 14:00	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16318B34A	11/15/2016 02:44	Jeremy C Giffin	21.15
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631543386	11/03/2016 14:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163170020A	11/21/2016 19:58	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163170021A	12/07/2016 00:53	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163170021A	11/14/2016 08:00	David S Schrum	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163170020A	11/14/2016 08:00	David S Schrum	1
06955	Lead	SW-846 6010B	1	163165708001	11/15/2016 04:28	Matthew R Machtinger	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163165708001	11/14/2016 04:46	James L Mertz	1
00111	Moisture	SM 2540 G-1997	1	16321820008A	11/16/2016 19:15	Scott W Freisher	1

Sample Description: QA-O-161103 Grab Water
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # WW 8689214
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/03/2016 14:30 by RO Chevron
 L4310
 Submitted: 11/09/2016 09:30 6001 Bollinger Canyon Road
 Reported: 12/09/2016 12:38 San Ramon CA 94583

CHE06

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260B	ug/l	ug/l	
10945	Benzene	71-43-2	N.D.	0.5	1
10945	1,2-Dibromoethane	106-93-4	N.D.	0.5	1
10945	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST VOCs + GRO by 8260B-Water	SW-846 8260B	1	P163211AA	11/16/2016 18:51	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P163211AA	11/16/2016 18:51	Hu Yang	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16319A53A	11/14/2016 14:28	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	16319A53A	11/14/2016 14:28	Brett W Kenyon	1

Sample Description: SSB-2-S-12.5-161103 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689215
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/03/2016 15:40 by RO Chevron
 L4310
 Submitted: 11/09/2016 09:30 6001 Bollinger Canyon Road
 Reported: 12/09/2016 12:38 San Ramon CA 94583

CHE07

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles SW-846 8260B			mg/kg	mg/kg	
10237	Benzene	71-43-2	N.D.	0.0004	0.85
10237	1,2-Dibromoethane	106-93-4	N.D.	0.0009	0.85
10237	1,2-Dichloroethane	107-06-2	N.D.	0.0009	0.85
10237	Ethylbenzene	100-41-4	N.D.	0.0009	0.85
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0004	0.85
10237	Toluene	108-88-3	N.D.	0.0009	0.85
10237	Xylene (Total)	1330-20-7	N.D.	0.0009	0.85
GC Volatiles ECY 97-602 NWTPH-Gx			mg/kg	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1	22.67
Wet Chemistry SM 2540 G-1997			%	%	
00111	Moisture	n.a.	4.8	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	X163163AA	11/12/2016 03:12	Patrick T Herres	0.85
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201631543386	11/03/2016 15:40	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631543386	11/03/2016 15:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631543386	11/03/2016 15:40	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16318B34A	11/14/2016 12:44	Jeremy C Giffin	22.67
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631543386	11/03/2016 15:40	Client Supplied	n.a.
00111	Moisture	SM 2540 G-1997	1	16321820008A	11/16/2016 19:15	Scott W Freisher	1

Sample Description: SSB-2-S-14.5-161103 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689216
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/03/2016 15:45 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE08

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.0005	0.78
10237	1,2-Dibromoethane	106-93-4	N.D.	0.001	0.78
10237	1,2-Dichloroethane	107-06-2	N.D.	0.001	0.78
10237	Ethylbenzene	100-41-4	N.D.	0.001	0.78
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0005	0.78
10237	Toluene	108-88-3	N.D.	0.001	0.78
10237	Xylene (Total)	1330-20-7	N.D.	0.001	0.78
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.3	26.23
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	19.9	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	X163163AA	11/12/2016 03:35	Patrick T Herres	0.78
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201631543386	11/03/2016 15:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631543386	11/03/2016 15:45	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631543386	11/03/2016 15:45	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16318B34A	11/14/2016 13:27	Jeremy C Giffin	26.23
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631543386	11/03/2016 15:45	Client Supplied	n.a.
00111	Moisture	SM 2540 G-1997	2	16322820007A	11/17/2016 14:48	Larry E Bevins	1

Sample Description: SSB-1-S-14.5-161103 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689217
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/03/2016 16:30 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE09

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.0005	0.85
10237	1,2-Dibromoethane	106-93-4	N.D.	0.001	0.85
10237	1,2-Dichloroethane	107-06-2	N.D.	0.001	0.85
10237	Ethylbenzene	100-41-4	N.D.	0.001	0.85
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0005	0.85
10237	Toluene	108-88-3	N.D.	0.001	0.85
10237	Xylene (Total)	1330-20-7	N.D.	0.001	0.85
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.5	29.64
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	19.9	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	X163163AA	11/12/2016 03:58	Patrick T Herres	0.85
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201631543386	11/03/2016 16:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631543386	11/03/2016 16:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631543386	11/03/2016 16:30	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16318B34A	11/14/2016 14:09	Jeremy C Giffin	29.64
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631543386	11/03/2016 16:30	Client Supplied	n.a.
00111	Moisture	SM 2540 G-1997	2	16322820007B	11/17/2016 14:48	Larry E Bevins	1

Sample Description: SSB-1-S-12.5-161103 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689218
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/03/2016 16:50 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE10

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.0005	0.77
10237	1,2-Dibromoethane	106-93-4	N.D.	0.0009	0.77
10237	1,2-Dichloroethane	107-06-2	N.D.	0.0009	0.77
10237	Ethylbenzene	100-41-4	N.D.	0.0009	0.77
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0005	0.77
10237	Toluene	108-88-3	N.D.	0.0009	0.77
10237	Xylene (Total)	1330-20-7	N.D.	0.0009	0.77
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.1	22.32
Wet Chemistry			SM 2540 G-1997	%	
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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	X163181AA	11/13/2016 14:28	Angela D Sneeringer	0.77
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201631543386	11/03/2016 16:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631543386	11/03/2016 16:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631543386	11/03/2016 16:50	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16318B34A	11/14/2016 14:51	Jeremy C Giffin	22.32
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631543386	11/03/2016 16:50	Client Supplied	n.a.
00111	Moisture	SM 2540 G-1997	1	16321820008A	11/16/2016 19:15	Scott W Freisher	1

Sample Description: MW-39-S-18-161104 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689219
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/04/2016 14:55 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE11

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.0005	0.73
10237	1,2-Dibromoethane	106-93-4	N.D.	0.001	0.73
10237	1,2-Dichloroethane	107-06-2	N.D.	0.001	0.73
10237	Ethylbenzene	100-41-4	N.D.	0.001	0.73
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0005	0.73
10237	Toluene	108-88-3	N.D.	0.001	0.73
10237	Xylene (Total)	1330-20-7	N.D.	0.001	0.73
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.4	25.79
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.9	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	13	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.9	1
12006	HRO C24-C40 w/Si Gel	n.a.	14	13	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	N.D.	2.55	5
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	24.2	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	X163181AA	11/13/2016 14:51	Angela D Sneringer	0.73

Sample Description: MW-39-S-18-161104 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689219
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/04/2016 14:55 by RO Chevron
L4310
Submitted: 11/09/2016 09:30 6001 Bollinger Canyon Road
Reported: 12/09/2016 12:38 San Ramon CA 94583

CHE11

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	201631543386	11/04/2016 14:55	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631543386	11/04/2016 14:55	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631543386	11/04/2016 14:55	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16318B34A	11/14/2016 15:33	Jeremy C Giffin	25.79
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631543386	11/04/2016 14:55	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163170020A	11/21/2016 17:38	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163170021A	12/07/2016 01:15	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163170021A	11/14/2016 08:00	David S Schrum	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163170020A	11/14/2016 08:00	David S Schrum	1
06955	Lead	SW-846 6010B	1	163165708001	11/16/2016 16:37	Cindy M Gehman	5
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163165708001	11/14/2016 04:46	James L Mertz	1
00111	Moisture	SM 2540 G-1997	1	16321820008A	11/16/2016 19:15	Scott W Freisher	1

Sample Description: MW-39-S-40-161104 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689220
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/04/2016 15:00 by RO Chevron
 L4310
 Submitted: 11/09/2016 09:30 6001 Bollinger Canyon Road
 Reported: 12/09/2016 12:38 San Ramon CA 94583

CHE12

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles SW-846 8260B mg/kg mg/kg					
10237	1,2-Dibromoethane	106-93-4	N.D.	0.001	0.9
10237	1,2-Dichloroethane	107-06-2	N.D.	0.001	0.9
GC Volatiles ECY 97-602 NWTPH-Gx mg/kg mg/kg					
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.0	24.19
GC Petroleum Hydrocarbons ECY 97-602 NWTPH-Dx modified mg/kg mg/kg					
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
GC Petroleum Hydrocarbons w/Si ECY 97-602 NWTPH-Dx modified mg/kg mg/kg					
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.2	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	1
The reverse surrogate, capric acid, is present at <1%.					
Metals SW-846 6010B mg/kg mg/kg					
06955	Lead	7439-92-1	N.D.	2.01	5
Wet Chemistry SM 2540 G-1997 % %					
00111	Moisture	n.a.	6.3	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs- Solid by	SW-846 8260B	1	X163181AA	11/13/2016 19:53	Angela D Sneeringer	0.9
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201631543386	11/04/2016 15:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631543386	11/04/2016 15:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631543386	11/04/2016 15:00	Client Supplied	1

Sample Description: MW-39-S-40-161104 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689220
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/04/2016 15:00 by RO Chevron
L4310
Submitted: 11/09/2016 09:30 6001 Bollinger Canyon Road
Reported: 12/09/2016 12:38 San Ramon CA 94583

CHE12

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	16318B34A	11/14/2016 16:15	Jeremy C Giffin	24.19
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631543386	11/04/2016 15:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163170020A	11/21/2016 17:58	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163170021A	12/07/2016 01:36	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163170021A	11/14/2016 08:00	David S Schrum	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163170020A	11/14/2016 08:00	David S Schrum	1
06955	Lead	SW-846 6010B	1	163165708001	11/16/2016 16:40	Cindy M Gehman	5
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163165708001	11/14/2016 04:46	James L Mertz	1
00111	Moisture	SM 2540 G-1997	1	16321820008A	11/16/2016 19:15	Scott W Freisher	1

Sample Description: SCB-2-S-28-161107 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689221
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/07/2016 11:40 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE13

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.040	56.14
10237	1,2-Dibromoethane	106-93-4	N.D.	0.079	56.14
10237	1,2-Dichloroethane	107-06-2	N.D.	0.079	56.14
10237	Ethylbenzene	100-41-4	1.5	0.079	56.14
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.040	56.14
10237	Toluene	108-88-3	1.8	0.079	56.14
10237	Xylene (Total)	1330-20-7	13	0.079	56.14
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	29	3.1	55.59
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.2	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	14	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.2	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	14	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	N.D.	3.12	5
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	29.0	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q163234AA	11/19/2016 07:15	Stephen C Nolte	56.14
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201631543386	11/07/2016 11:40	Client Supplied	1

Sample Description: SCB-2-S-28-161107 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689221
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/07/2016 11:40 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE13

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631543386	11/07/2016 11:40	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631543386	11/07/2016 11:40	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16318B34A	11/15/2016 03:27	Jeremy C Giffin	55.59
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631543386	11/07/2016 11:40	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163230006A	11/21/2016 23:38	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163230007A	12/06/2016 18:02	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163230007A	11/19/2016 15:20	JoElla L Rice	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163230006A	11/19/2016 15:20	JoElla L Rice	1
06955	Lead	SW-846 6010B	1	163165708001	11/16/2016 16:44	Cindy M Gehman	5
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163165708001	11/14/2016 04:46	James L Mertz	1
00111	Moisture	SM 2540 G-1997	1	16321820008A	11/16/2016 19:15	Scott W Freisher	1

Sample Description: SCB-2-S-60.5-161107 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689222
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/07/2016 16:55 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE14

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.0006	1.02
10237	1,2-Dibromoethane	106-93-4	N.D.	0.001	1.02
10237	1,2-Dichloroethane	107-06-2	N.D.	0.001	1.02
10237	Ethylbenzene	100-41-4	N.D.	0.001	1.02
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0006	1.02
10237	Toluene	108-88-3	N.D.	0.001	1.02
10237	Xylene (Total)	1330-20-7	N.D.	0.001	1.02
GC Volatiles			ECY 97-602 NWT PH-Gx	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	1.2	26.4
GC Petroleum Hydrocarbons			ECY 97-602 NWT PH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWT PH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	8.0	3.3	1
12006	HRO C24-C40 w/Si Gel	n.a.	12	11	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	N.D.	0.566	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	10.0	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	X163181AA	11/13/2016 15:15	Angela D Sneringer	1.02

Sample Description: SCB-2-S-60.5-161107 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689222
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/07/2016 16:55 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE14

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	201631543386	11/07/2016 16:55	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631543386	11/07/2016 16:55	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631543386	11/07/2016 16:55	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16318B34A	11/14/2016 16:58	Jeremy C Giffin	26.4
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631543386	11/07/2016 16:55	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163230006A	11/22/2016 00:17	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163230007A	12/06/2016 18:45	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163230007A	11/19/2016 15:20	JoElla L Rice	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163230006A	11/19/2016 15:20	JoElla L Rice	1
06955	Lead	SW-846 6010B	1	163165708001	11/15/2016 04:48	Matthew R Machtinger	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163165708001	11/14/2016 04:46	James L Mertz	1
00111	Moisture	SM 2540 G-1997	1	16321820008A	11/16/2016 19:15	Scott W Freisher	1

Sample Description: SCB-2-S-56-161107 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689223
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/07/2016 17:00 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE15

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	0.047	0.040	57.87
10237	1,2-Dibromoethane	106-93-4	N.D.	0.079	57.87
10237	1,2-Dichloroethane	107-06-2	N.D.	0.079	57.87
10237	Ethylbenzene	100-41-4	0.71	0.079	57.87
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.040	57.87
10237	Toluene	108-88-3	1.6	0.079	57.87
10237	Xylene (Total)	1330-20-7	9.7	0.079	57.87
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	120	15	275.41
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	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.	14	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.1	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	14	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	N.D.	2.61	5
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	27.2	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q163241AA	11/19/2016 15:08	Jennifer K Howe	57.87
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201631543386	11/07/2016 17:00	Client Supplied	1

Sample Description: SCB-2-S-56-161107 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689223
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/07/2016 17:00 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE15

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631543386	11/07/2016 17:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631543386	11/07/2016 17:00	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16318B34A	11/15/2016 04:09	Jeremy C Giffin	275.41
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631543386	11/07/2016 17:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163230006A	11/21/2016 22:58	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163230007A	12/06/2016 19:06	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163230007A	11/19/2016 15:20	JoElla L Rice	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163230006A	11/19/2016 15:20	JoElla L Rice	1
06955	Lead	SW-846 6010B	1	163165708001	11/16/2016 16:50	Cindy M Gehman	5
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163165708001	11/14/2016 04:46	James L Mertz	1
00111	Moisture	SM 2540 G-1997	1	16321820008A	11/16/2016 19:15	Scott W Freisher	1

Sample Description: SCB-2-S-48.5-161107 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689224
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/07/2016 17:05 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE16

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.38	539.95
10237	1,2-Dibromoethane	106-93-4	N.D.	0.75	539.95
10237	1,2-Dichloroethane	107-06-2	N.D.	0.75	539.95
10237	Ethylbenzene	100-41-4	3.4	0.75	539.95
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.38	539.95
10237	Toluene	108-88-3	1.6	0.75	539.95
10237	Xylene (Total)	1330-20-7	47	0.75	539.95
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	3,000	290	5177.25
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	52	4.1	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	14	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	72	4.1	1
12006	HRO C24-C40 w/Si Gel	n.a.	38	14	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	N.D.	3.11	5
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	28.2	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q163241AA	11/19/2016 15:53	Jennifer K Howe	539.95
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201631543386	11/07/2016 17:05	Client Supplied	1

Sample Description: SCB-2-S-48.5-161107 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8689224
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/07/2016 17:05 by RO

Chevron

L4310

Submitted: 11/09/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/09/2016 12:38

San Ramon CA 94583

CHE16

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201631543386	11/07/2016 17:05	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201631543386	11/07/2016 17:05	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16318B34A	11/15/2016 04:51	Jeremy C Giffin	5177.25
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201631543386	11/07/2016 17:05	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163230006A	11/21/2016 23:18	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163230007A	12/06/2016 19:31	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163230007A	11/19/2016 15:20	JoElla L Rice	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163230006A	11/19/2016 15:20	JoElla L Rice	1
06955	Lead	SW-846 6010B	1	163165708001	11/16/2016 16:59	Cindy M Gehman	5
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163165708001	11/14/2016 04:46	James L Mertz	1
00111	Moisture	SM 2540 G-1997	1	16321820008A	11/16/2016 19:15	Scott W Freisher	1

Sample Description: QA-1-O-161108 NA Water
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # WW 8689225
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/08/2016 07:10

Chevron

Submitted: 11/09/2016 09:30

L4310

Reported: 12/09/2016 12:38

6001 Bollinger Canyon Road
 San Ramon CA 94583

CHE17

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260B	ug/l	ug/l	
10945	Benzene	71-43-2	N.D.	0.5	1
10945	1,2-Dibromoethane	106-93-4	N.D.	0.5	1
10945	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST VOCs + GRO by 8260B-Water	SW-846 8260B	1	P163211AA	11/16/2016 19:14	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P163211AA	11/16/2016 19:14	Hu Yang	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16319A53A	11/14/2016 17:15	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	16319A53A	11/14/2016 17:15	Brett W Kenyon	1

Sample Description: QA-2-O-161108 NA Water
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # WW 8689226
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/08/2016 07:15

Chevron

Submitted: 11/09/2016 09:30

L4310

Reported: 12/09/2016 12:38

6001 Bollinger Canyon Road
 San Ramon CA 94583

CHE18

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles SW-846 8260B			ug/l	ug/l	
10945	Benzene	71-43-2	N.D.	0.5	1
10945	1,2-Dibromoethane	106-93-4	N.D.	0.5	1
10945	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Volatiles ECY 97-602 NWTPH-Gx			ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST VOCs + GRO by 8260B-Water	SW-846 8260B	1	P163211AA	11/16/2016 19:37	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P163211AA	11/16/2016 19:37	Hu Yang	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16319A53A	11/14/2016 17:43	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	16319A53A	11/14/2016 17:43	Brett W Kenyon	1

Sample Description: QA-3-O-161108 NA Water
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # WW 8689227
LL Group # 1731438
Account # 11255

Project Name: 96590

Collected: 11/08/2016 07:20

Chevron

Submitted: 11/09/2016 09:30

L4310

Reported: 12/09/2016 12:38

6001 Bollinger Canyon Road
San Ramon CA 94583

CHE19

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260B	ug/l	ug/l	
10945	Benzene	71-43-2	N.D.	0.5	1
10945	1,2-Dibromoethane	106-93-4	N.D.	0.5	1
10945	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST VOCs + GRO by 8260B-Water	SW-846 8260B	1	P163211AA	11/16/2016 20:00	Hu Yang	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P163211AA	11/16/2016 20:00	Hu Yang	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16319A53A	11/14/2016 18:11	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	16319A53A	11/14/2016 18:11	Brett W Kenyon	1

Quality Control Summary

Client Name: Chevron
Reported: 12/09/2016 12:38

Group Number: 1731438

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: Q163202AA	Sample number(s): 8689210-8689211	
Benzene	N.D.	0.025
1,2-Dibromoethane	N.D.	0.050
1,2-Dichloroethane	N.D.	0.050
Ethylbenzene	N.D.	0.050
Methyl Tertiary Butyl Ether	N.D.	0.025
Toluene	N.D.	0.050
Xylene (Total)	N.D.	0.050
Batch number: Q163211AA	Sample number(s): 8689212	
Benzene	N.D.	0.025
1,2-Dibromoethane	N.D.	0.050
1,2-Dichloroethane	N.D.	0.050
Ethylbenzene	N.D.	0.050
Methyl Tertiary Butyl Ether	N.D.	0.025
Toluene	N.D.	0.050
Xylene (Total)	N.D.	0.050
Batch number: Q163234AA	Sample number(s): 8689221	
Benzene	N.D.	0.025
1,2-Dibromoethane	N.D.	0.050
1,2-Dichloroethane	N.D.	0.050
Ethylbenzene	N.D.	0.050
Methyl Tertiary Butyl Ether	N.D.	0.025
Toluene	N.D.	0.050
Xylene (Total)	N.D.	0.050
Batch number: Q163241AA	Sample number(s): 8689223-8689224	
Benzene	N.D.	0.025
1,2-Dibromoethane	N.D.	0.050
1,2-Dichloroethane	N.D.	0.050
Ethylbenzene	N.D.	0.050
Methyl Tertiary Butyl Ether	N.D.	0.025
Toluene	N.D.	0.050
Xylene (Total)	N.D.	0.050
Batch number: R163222AA	Sample number(s): 8689213	
Benzene	N.D.	0.025
1,2-Dibromoethane	N.D.	0.050
1,2-Dichloroethane	N.D.	0.050
Ethylbenzene	N.D.	0.050
Methyl Tertiary Butyl Ether	N.D.	0.025
Toluene	N.D.	0.050

*- 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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/09/2016 12:38

Group Number: 1731438

Method Blank (continued)

Analysis Name	Result	MDL
	mg/kg	mg/kg
Xylene (Total)	N.D.	0.050
Batch number: X163163AA	Sample number(s): 8689209,8689215-8689217	
Benzene	N.D.	0.0005
1,2-Dibromoethane	N.D.	0.001
1,2-Dichloroethane	N.D.	0.001
Ethylbenzene	N.D.	0.001
Methyl Tertiary Butyl Ether	N.D.	0.0005
Toluene	N.D.	0.001
Xylene (Total)	N.D.	0.001
Batch number: X163181AA	Sample number(s): 8689218-8689220,8689222	
Benzene	N.D.	0.0005
1,2-Dibromoethane	N.D.	0.001
1,2-Dichloroethane	N.D.	0.001
Ethylbenzene	N.D.	0.001
Methyl Tertiary Butyl Ether	N.D.	0.0005
Toluene	N.D.	0.001
Xylene (Total)	N.D.	0.001
	ug/l	ug/l
Batch number: P163211AA	Sample number(s): 8689214,8689225-8689227	
Benzene	N.D.	0.5
1,2-Dibromoethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Ethylbenzene	N.D.	0.5
Methyl Tertiary Butyl Ether	N.D.	0.5
Toluene	N.D.	0.5
Xylene (Total)	N.D.	0.5
	mg/kg	mg/kg
Batch number: 16318B34A	Sample number(s): 8689209-8689213,8689215-8689224	
NWTPH-GX Soil C7-C12	N.D.	1.0
	ug/l	ug/l
Batch number: 16319A53A	Sample number(s): 8689214,8689225-8689227	
NWTPH-Gx water C7-C12	N.D.	50
	mg/kg	mg/kg
Batch number: 163170020A	Sample number(s): 8689209-8689213,8689219-8689220	
Diesel Range Organics C12-C24	N.D.	3.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 163230006A	Sample number(s): 8689221-8689224	
Diesel Range Organics C12-C24	N.D.	3.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 163170021A	Sample number(s): 8689209-8689213,8689219-8689220	
DRO C12-C24 w/Si Gel	4.7	3.0
HRO C24-C40 w/Si Gel	N.D.	10

*- Outside of specification

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

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/09/2016 12:38

Group Number: 1731438

Method Blank (continued)

Analysis Name	Result	MDL
	mg/kg	mg/kg
Batch number: 163230007A	Sample number(s): 8689221-8689224	
DRO C12-C24 w/Si Gel	N.D.	3.0
HRO C24-C40 w/Si Gel	N.D.	10
Batch number: 163165708001	Sample number(s): 8689209-8689213,8689219-8689224	
Lead	N.D.	0.550

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: Q163202AA	Sample number(s): 8689210-8689211								
Benzene	1.00	1.06	1.00	1.05	106	105	80-120	1	30
1,2-Dibromoethane	1.00	0.979	1.00	1.02	98	102	80-120	4	30
1,2-Dichloroethane	1.00	1.03	1.00	1.04	103	104	70-133	1	30
Ethylbenzene	1.00	0.973	1.00	0.994	97	99	80-120	2	30
Methyl Tertiary Butyl Ether	1.00	1.03	1.00	1.02	103	102	72-120	0	30
Toluene	1.00	0.988	1.00	0.996	99	100	80-120	1	30
Xylene (Total)	3.00	2.96	3.00	2.97	99	99	80-120	0	30
Batch number: Q163211AA	Sample number(s): 8689212								
Benzene	1.00	1.04	1.00	1.05	104	105	80-120	1	30
1,2-Dibromoethane	1.00	1.00	1.00	1.02	100	102	80-120	1	30
1,2-Dichloroethane	1.00	1.04	1.00	1.07	104	107	70-133	2	30
Ethylbenzene	1.00	0.970	1.00	1.00	97	100	80-120	3	30
Methyl Tertiary Butyl Ether	1.00	1.03	1.00	1.04	103	104	72-120	1	30
Toluene	1.00	1.01	1.00	1.02	101	102	80-120	1	30
Xylene (Total)	3.00	2.96	3.00	3.03	99	101	80-120	3	30
Batch number: Q163234AA	Sample number(s): 8689221								
Benzene	1.00	0.989	1.00	0.975	99	98	80-120	1	30
1,2-Dibromoethane	1.00	1.00	1.00	0.969	100	97	80-120	3	30
1,2-Dichloroethane	1.00	0.999	1.00	0.977	100	98	70-133	2	30
Ethylbenzene	1.00	0.982	1.00	0.969	98	97	80-120	1	30
Methyl Tertiary Butyl Ether	1.00	0.964	1.00	0.952	96	95	72-120	1	30
Toluene	1.00	1.02	1.00	0.982	102	98	80-120	4	30
Xylene (Total)	3.00	2.99	3.00	2.93	100	98	80-120	2	30
Batch number: Q163241AA	Sample number(s): 8689223-8689224								
Benzene	1.00	0.965	1.00	0.956	97	96	80-120	1	30
1,2-Dibromoethane	1.00	1.00	1.00	0.994	100	99	80-120	1	30
1,2-Dichloroethane	1.00	0.966	1.00	0.967	97	97	70-133	0	30
Ethylbenzene	1.00	0.951	1.00	0.963	95	96	80-120	1	30
Methyl Tertiary Butyl Ether	1.00	0.954	1.00	0.957	95	96	72-120	0	30
Toluene	1.00	0.978	1.00	0.990	98	99	80-120	1	30

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/09/2016 12:38

Group Number: 1731438

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
Xylene (Total)	3.00	2.93	3.00	2.91	98	97	80-120	1	30
Batch number: R163222AA	Sample number(s): 8689213								
Benzene	1.00	0.966	1.00	0.987	97	99	80-120	2	30
1,2-Dibromoethane	1.00	0.919	1.00	0.945	92	95	80-120	3	30
1,2-Dichloroethane	1.00	1.05	1.00	1.08	105	108	70-133	2	30
Ethylbenzene	1.00	0.853	1.00	0.850	85	85	80-120	0	30
Methyl Tertiary Butyl Ether	1.00	0.990	1.00	1.03	99	103	72-120	4	30
Toluene	1.00	0.882	1.00	0.886	88	89	80-120	1	30
Xylene (Total)	3.00	2.54	3.00	2.56	85	85	80-120	1	30
Batch number: X163163AA	Sample number(s): 8689209,8689215-8689217								
Benzene	0.0200	0.0193	0.0200	0.0191	97	95	80-120	1	30
1,2-Dibromoethane	0.0200	0.0190	0.0200	0.0191	95	96	80-120	1	30
1,2-Dichloroethane	0.0200	0.0166	0.0200	0.0165	83	82	70-133	1	30
Ethylbenzene	0.0200	0.0191	0.0200	0.0187	95	93	80-120	2	30
Methyl Tertiary Butyl Ether	0.0200	0.0165	0.0200	0.0169	83	84	72-120	2	30
Toluene	0.0200	0.0196	0.0200	0.0192	98	96	80-120	2	30
Xylene (Total)	0.0600	0.0589	0.0600	0.0580	98	97	80-120	2	30
Batch number: X163181AA	Sample number(s): 8689218-8689220,8689222								
Benzene	0.0200	0.0193	0.0200	0.0192	97	96	80-120	1	30
1,2-Dibromoethane	0.0200	0.0189	0.0200	0.0191	95	96	80-120	1	30
1,2-Dichloroethane	0.0200	0.0171	0.0200	0.0168	85	84	70-133	2	30
Ethylbenzene	0.0200	0.0192	0.0200	0.0191	96	96	80-120	1	30
Methyl Tertiary Butyl Ether	0.0200	0.0164	0.0200	0.0167	82	83	72-120	2	30
Toluene	0.0200	0.0197	0.0200	0.0197	98	98	80-120	0	30
Xylene (Total)	0.0600	0.0595	0.0600	0.0597	99	99	80-120	0	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: P163211AA	Sample number(s): 8689214,8689225-8689227								
Benzene	20	17.71			89		78-120		
1,2-Dibromoethane	20	17.44			87		80-120		
1,2-Dichloroethane	20	17.78			89		66-128		
Ethylbenzene	20	17.94			90		78-120		
Methyl Tertiary Butyl Ether	20	17.92			90		75-120		
Toluene	20	17.9			90		80-120		
Xylene (Total)	60	53.49			89		80-120		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 16318B34A	Sample number(s): 8689209-8689213,8689215-8689224								
NWTPH-GX Soil C7-C12	11	11.06	11	11.4	101	104	71-120	3	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 16319A53A	Sample number(s): 8689214,8689225-8689227								
NWTPH-Gx water C7-C12	1100	1124.33			102		79-120		
	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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/09/2016 12:38

Group Number: 1731438

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: 163170020A Diesel Range Organics C12-C24	133	102.9	Sample number(s): 8689209-8689213, 8689219-8689220		77		61-115		
Batch number: 163230006A Diesel Range Organics C12-C24	133	98.52	Sample number(s): 8689221-8689224		74		61-115		
Batch number: 163170021A DRO C12-C24 w/Si Gel	133	94.27	Sample number(s): 8689209-8689213, 8689219-8689220		71		50-133		
Batch number: 163230007A DRO C12-C24 w/Si Gel	133	68.66	Sample number(s): 8689221-8689224		52		50-133		
Batch number: 163165708001 Lead	15	14.8	Sample number(s): 8689209-8689213, 8689219-8689224		99		80-120		
Batch number: 16321820008A Moisture	89.5	89.41	Sample number(s): 8689209-8689213, 8689215, 8689218-8689224		100		99-101		
Batch number: 16322820007A Moisture	89.5	89.41	Sample number(s): 8689216		100		99-101		
Batch number: 16322820007B Moisture	89.5	89.41	Sample number(s): 8689217		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: Q163202AA	Sample number(s): 8689210-8689211 UNSPK: P682049									
Benzene	3.04	8.14	11.71	8.14	11.34	106	102	80-120	3	30
1,2-Dibromoethane	N.D.	8.14	8.45	8.14	7.95	104	98	80-120	6	30
1,2-Dichloroethane	N.D.	8.14	8.55	8.14	8.42	105	103	70-133	2	30
Ethylbenzene	2.82	8.14	11.08	8.14	10.53	101	95	80-120	5	30
Methyl Tertiary Butyl Ether	N.D.	8.14	8.54	8.14	8.25	105	101	72-120	3	30
Toluene	0.820	8.14	9.23	8.14	8.74	103	97	80-120	5	30
Xylene (Total)	5.35	24.43	30.65	24.43	28.97	104	97	80-120	6	30
Batch number: Q163211AA	Sample number(s): 8689212 UNSPK: P682086									
Benzene	N.D.	0.952	0.913	0.952	0.926	96	97	80-120	1	30

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/09/2016 12:38

Group Number: 1731438

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc mg/kg	MS Spike Added mg/kg	MS Conc mg/kg	MSD Spike Added mg/kg	MSD Conc mg/kg	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
1,2-Dibromoethane	N.D.	0.952	0.950	0.952	0.947	100	99	80-120	0	30
1,2-Dichloroethane	N.D.	0.952	0.926	0.952	0.928	97	97	70-133	0	30
Ethylbenzene	0.111	0.952	1.06	0.952	1.08	100	102	80-120	2	30
Methyl Tertiary Butyl Ether	N.D.	0.952	0.908	0.952	0.893	95	94	72-120	2	30
Toluene	N.D.	0.952	0.967	0.952	0.976	102	102	80-120	1	30
Xylene (Total)	N.D.	2.86	2.85	2.86	2.92	100	102	80-120	2	30
Batch number: X163181AA	Sample number(s): 8689218-8689220,8689222 UNSPK: P684054									
Benzene	N.D.	0.0194	0.0218	0.0175	0.0190	112	109	80-120	14	30
1,2-Dibromoethane	N.D.	0.0194	0.0216	0.0175	0.0202	112	116	80-120	7	30
1,2-Dichloroethane	N.D.	0.0194	0.0191	0.0175	0.0171	98	98	70-133	11	30
Ethylbenzene	N.D.	0.0194	0.0205	0.0175	0.0178	106	102	80-120	14	30
Methyl Tertiary Butyl Ether	N.D.	0.0194	0.0184	0.0175	0.0177	95	101	72-120	4	30
Toluene	N.D.	0.0194	0.0221	0.0175	0.0192	114	110	80-120	14	30
Xylene (Total)	N.D.	0.0581	0.0626	0.0524	0.0541	108	103	80-120	14	30
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: P163211AA	Sample number(s): 8689214,8689225-8689227 UNSPK: P689829									
Benzene	1413.99	400	1796.94	400	1838.72	96	106	78-120	2	30
1,2-Dibromoethane	N.D.	400	372.24	400	379.75	93	95	80-120	2	30
1,2-Dichloroethane	N.D.	400	390.9	400	396.88	98	99	66-128	2	30
Ethylbenzene	3021.86	400	3357.59	400	3508.8	84 (2)	122 (2)	78-120	4	30
Methyl Tertiary Butyl Ether	43.49	400	432.32	400	429.21	97	96	75-120	1	30
Toluene	1828.07	400	2177.37	400	2269.61	87 (2)	110 (2)	80-120	4	30
Xylene (Total)	6823.64	1200	7839.67	1200	8146.89	85 (2)	110 (2)	80-120	4	30
	ug/l	ug/l	ug/l	ug/l	ug/l					
Batch number: 16319A53A	Sample number(s): 8689214,8689225-8689227 UNSPK: P689249									
NWTPH-Gx water C7-C12	1821.47	1100	3025.77	1100	2985.11	109	106	79-120	1	30
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 163165708001	Sample number(s): 8689209-8689213,8689219-8689224 UNSPK: 8689209									
Lead	N.D.	11.63	6.81	12.61	9.35	59*	74*	75-125	31*	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: 163170020A	Sample number(s): 8689209-8689213,8689219-8689220 BKG: 8689209			
Diesel Range Organics C12-C24	6.88	33.67	132* (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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/09/2016 12:38

Group Number: 1731438

Laboratory Duplicate (continued)

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
Heavy Range Organics C24-C40	12.08	104.99	159* (1)	20
Batch number: 163230006A	Sample number(s): 8689221-8689224 BKG: 8689221			
Diesel Range Organics C12-C24	N.D.	N.D.	0 (1)	20
Heavy Range Organics C24-C40	N.D.	N.D.	0 (1)	20
	mg/kg	mg/kg		
Batch number: 163170021A	Sample number(s): 8689209-8689213,8689219-8689220 BKG: 8689209			
DRO C12-C24 w/Si Gel	N.D.	25.08	200* (1)	20
HRO C24-C40 w/Si Gel	N.D.	109.51	200* (1)	20
Batch number: 163230007A	Sample number(s): 8689221-8689224 BKG: 8689221			
DRO C12-C24 w/Si Gel	N.D.	N.D.	0 (1)	20
HRO C24-C40 w/Si Gel	N.D.	N.D.	0 (1)	20
	mg/kg	mg/kg		
Batch number: 163165708001	Sample number(s): 8689209-8689213,8689219-8689224 BKG: 8689209			
Lead	N.D.	N.D.	0 (1)	20
	%	%		
Batch number: 16321820008A	Sample number(s): 8689209-8689213,8689215,8689218-8689224 BKG: 8689212			
Moisture	31.36	31.97	2	5
Batch number: 16322820007A	Sample number(s): 8689216 BKG: 8689216			
Moisture	19.87	19.62	1	5
Batch number: 16322820007B	Sample number(s): 8689217 BKG: 8689217			
Moisture	19.95	19.21	4	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: UST VOCs + GRO by 8260B-Water
Batch number: P163211AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8689214	99	100	100	98
8689225	99	98	100	99
8689226	99	99	100	98
8689227	99	98	100	98
Blank	98	97	101	100
LCS	99	100	101	100
MS	99	99	100	101
MSD	99	100	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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/09/2016 12:38

Group Number: 1731438

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: UST VOCs + GRO by 8260B-Water
Batch number: P163211AA

Limits: 80-116 77-113 80-113 78-113

Analysis Name: BTEX/MTBE/EDC/EDB 8260
Batch number: Q163202AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8689210	85	91	86	90
8689211	71	77	72	74
Blank	99	106	99	93
LCS	100	104	98	93
LCSD	100	104	98	94
MS	83	86	82	95
MSD	79	79	78	95

Limits: 50-141 54-135 52-141 50-131

Analysis Name: BTEX/MTBE/EDC/EDB 8260
Batch number: Q163211AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8689212	65	72	67	67
Blank	97	104	97	91
LCS	102	105	98	94
LCSD	100	104	100	96
MS	76	80	83	107
MSD	78	80	84	106

Limits: 50-141 54-135 52-141 50-131

Analysis Name: BTEX/MTBE/EDC/EDB 8260
Batch number: Q163234AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8689221	61	64	67	63
Blank	93	97	101	101
LCS	89	94	93	92
LCSD	86	90	90	90

Limits: 50-141 54-135 52-141 50-131

Analysis Name: BTEX/MTBE/EDC/EDB 8260
Batch number: Q163241AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8689223	68	73	74	76
8689224	54	58	68	82
Blank	83	90	88	86
LCS	87	91	90	90
LCSD	86	91	91	91

*- 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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/09/2016 12:38

Group Number: 1731438

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/MTBE/EDC/EDB 8260
Batch number: Q163241AA

Limits: 50-141 54-135 52-141 50-131

Analysis Name: BTEX/MTBE/EDC/EDB 8260
Batch number: R163222AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8689213	77	79	74	69
Blank	97	101	89	86
LCS	90	90	81	86
LCSD	88	91	80	85

Limits: 50-141 54-135 52-141 50-131

Analysis Name: BTEX/MTBE/EDC/EDB 8260
Batch number: X163163AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8689209	101	105	94	93
8689215	100	105	95	90
8689216	102	107	93	87
8689217	104	112	94	89
Blank	100	104	96	91
LCS	98	100	98	94
LCSD	99	101	97	95

Limits: 50-141 54-135 52-141 50-131

Analysis Name: BTEX/MTBE/EDC/EDB 8260
Batch number: X163181AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8689218	100	106	95	89
8689219	102	106	94	88
8689220	105	109	93	88
8689222	101	108	94	91
Blank	103	109	94	90
LCS	99	103	96	94
LCSD	100	103	97	95
MS	101	108	98	97
MSD	101	108	97	97

Limits: 50-141 54-135 52-141 50-131

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 16318B34A

	Trifluorotoluene-F
8689209	89
8689210	112

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
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Quality Control Summary

Client Name: Chevron
Reported: 12/09/2016 12:38

Group Number: 1731438

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: 16318B34A

Trifluorotoluene-F	
8689211	92
8689212	281*
8689213	86
8689215	84
8689216	70
8689217	81
8689218	70
8689219	70
8689220	82
8689221	81
8689222	82
8689223	119
8689224	1135*
Blank	103
LCS	103
LCSD	103

Limits: 50-142

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 16319A53A

Trifluorotoluene-F	
8689214	100
8689225	101
8689226	101
8689227	101
Blank	100
LCS	111
MS	110
MSD	112

Limits: 63-135

Analysis Name: NWTPH-Dx soil
Batch number: 163170020A

Orthoterphenyl	
8689209	100
8689210	96
8689211	97
8689212	97
8689213	96
8689219	97
8689220	99
Blank	103
DUP	94

*- Outside of specification

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Quality Control Summary

Client Name: Chevron
Reported: 12/09/2016 12:38

Group Number: 1731438

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: 163170020A

Orthoterphenyl	
LCS	95
Limits:	50-150

Analysis Name: NWTPH-Dx soil w/ 10g Si Gel
Batch number: 163170021A

Orthoterphenyl	
8689209	62
8689210	85
8689211	114
8689212	116
8689213	90
8689219	95
8689220	56
Blank	105
DUP	92
LCS	104
Limits:	50-150

Analysis Name: NWTPH-Dx soil
Batch number: 163230006A

Orthoterphenyl	
8689221	85
8689222	103
8689223	90
8689224	102
Blank	105
DUP	63
LCS	95
Limits:	50-150

Analysis Name: NWTPH-Dx soil w/ 10g Si Gel
Batch number: 163230007A

Orthoterphenyl	
8689221	78
8689222	88
8689223	134
8689224	99
Blank	113
DUP	58
LCS	83

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
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Quality Control Summary

Client Name: Chevron
Reported: 12/09/2016 12:38

Group Number: 1731438

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 w/ 10g Si Gel
Batch number: 163230007A

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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories

Acct. # 11255

For Lancaster Laboratories use only
 Group # 1731438 Sample # 8689209-27
Instructions on reverse side correspond with circled numbers.

1 Client Information				4 Matrix				5 Analyses Requested										6 Remarks	
Facility # <u>96590</u>		WBS <u>08.04</u>		<input type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> Ground <input type="checkbox"/> NPDES <input type="checkbox"/> Surface <input type="checkbox"/> Water <input type="checkbox"/> Oil <input type="checkbox"/> Air		Total Number of Containers <input type="checkbox"/> BTEX + MTBE <input checked="" type="checkbox"/> 8021 <input type="checkbox"/> 8260 <input type="checkbox"/> Naphth <input type="checkbox"/> 8260 full scan Oxygenates NWTPH GX NWTPH DX <input checked="" type="checkbox"/> Silica Gel Cleanup Lead Total <input checked="" type="checkbox"/> Method <u>COIG</u> WAVPH <input type="checkbox"/> WAEPH <input type="checkbox"/> NWTPH - DX EDB/EDC 8260		SCR #: _____ <input type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits										(6) Remarks	
Site Address <u>232 East Woodin Ave, Chelan, WA</u>		Chevron PM <u>Eric Hetrick</u>																	
Consultant/Office <u>Leidos/Bothell, WA</u>		Lead Consultant																	
Consultant Project Mgr. <u>Russ Shropshire</u>																			
Consultant Phone # <u>425-482-3323</u>																			
Sampler <u>R. Otteman</u>																			
2 Sample Identification				3 Composite															
		Collected		Grab	Composite														
		Date	Time																
<u>LIFB-4-9</u>		<u>10/3/16</u>	<u>1300</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>LIFB-6-14</u>		<u>11/2/16</u>	<u>1555</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>LIFB-6-15</u>		<u>11/2/16</u>	<u>1600</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>LIFB-3-11</u>		<u>11/2/16</u>	<u>1740</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>LIFB-2-11</u>		<u>11/3/16</u>	<u>1400</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>equipment blank-1103</u>		<u>11/3/16</u>	<u>1430</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>SSB-2-12.5</u>		<u>11/3/16</u>	<u>1540</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>SSB-2-14.5</u>		<u>11/3/16</u>	<u>1545</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>SSB-1-14.5</u>		<u>11/3/16</u>	<u>1630</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>SSB-1-12.5</u>		<u>11/3/16</u>	<u>1652</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>MW-39-18</u>		<u>11/4/16</u>	<u>1455</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>MW-39-40</u>		<u>11/4/16</u>	<u>1500</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
<u>SCB-2-28</u>		<u>11/7/16</u>	<u>1140</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>														
7 Turnaround Time Requested (TAT) (please circle) <input checked="" type="radio"/> Standard 5 day 4 day 72 hour 48 hour 24 hour				Relinquished by <u>Marta etc</u>		Date <u>11/8/16</u>	Time <u>0800</u>	Received by		Date	Time	9							
				Relinquished by		Date	Time	Received by		Date	Time								
8 Data Package Options (please circle if required) Type I - Full Type VI (Raw Data)				Relinquished by Commerical Carrier: UPS _____ FedEx <input checked="" type="checkbox"/> Other _____				Received by <u>Marta etc</u>		Date <u>11/9/16</u>	Time <u>0930</u>	Temperature Upon Receipt <u>0.6-2</u> °C Custody Seals Intact? <input checked="" type="radio"/> Yes No							
				Temperature Upon Receipt <u>0.6-2</u> °C				Custody Seals Intact?		<input checked="" type="radio"/> Yes	No								

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories

Acct. # 11255

For Lancaster Laboratories use only
 Group # 1731438 Sample # 8689209-27
Instructions on reverse side correspond with circled numbers.

1 Client Information			4 Matrix			5 Analyses Requested										6 Remarks	
Facility # <u>96590</u> WBS <u>08.04</u> Site Address <u>232 East Woodin Ave, Chelan, WA</u> Chevron PM <u>Eric Hetrick</u> Lead Consultant <u>leidos</u> Consultant/Office <u>leidos / Bothell, WA</u> Consultant Project Mgr. <u>Russ. Shropshire</u> Consultant Phone # <u>425-482-3323</u> Sampler <u>R. Otterman</u>			<input type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> Ground <input type="checkbox"/> NPDES <input type="checkbox"/> Surface <input type="checkbox"/> Water <input type="checkbox"/> Oil <input type="checkbox"/> Air			Total Number of Containers <input checked="" type="checkbox"/> BTEX + MTBE <input type="checkbox"/> 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphth 8260 full scan Oxygenates NWTPH GX NWTPH DX <input checked="" type="checkbox"/> Silica Gel Cleanup <input checked="" type="checkbox"/> Lead Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>6010B</u> WAVPH <input type="checkbox"/> WAEPH <input type="checkbox"/> <u>NUTPH-Dx</u> <u>EDB/EDC 8260B</u>										SCR #: _____ <input type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits	
2 Sample Identification		3 Composite												6			
		Grab	Composite														
		Collected															
		Date	Time														
<u>SCB-2-60.5</u>		<u>11/7/16</u>	<u>1655</u>														
<u>SCB-2-56</u>		<u>11/7/16</u>	<u>1700</u>														
<u>SCB-2-48.5</u>		<u>11/7/16</u>	<u>1705</u>														
<u>trip blank 1-110816</u>		<u>11/8/16</u>	<u>0710</u>														
<u>trip blank 2-110816</u>		<u>11/8/16</u>	<u>0715</u>														
<u>trip blank 3-110816</u>		<u>11/8/16</u>	<u>0720</u>														
7 Turnaround Time Requested (TAT) (please circle) <input checked="" type="radio"/> Standard 5 day 4 day 72 hour 48 hour 24 hour			Relinquished by <u>[Signature]</u> Date <u>11/8/16</u> Time <u>0800</u>		Received by _____ Date _____ Time _____												
			Relinquished by _____ Date _____ Time _____		Received by _____ Date _____ Time _____												
8 Data Package Options (please circle if required) Type I - Full Type VI (Raw Data)			Relinquished by Commercial Carrier: UPS _____ FedEx <input checked="" type="checkbox"/> Other _____		Received by <u>[Signature]</u> Date <u>11/9/16</u> Time <u>0930</u>												
			Temperature Upon Receipt <u>0.6</u> °C		Custody Seals Intact? <input checked="" type="radio"/> Yes <input type="radio"/> No												

Client: Chevron

Delivery and Receipt Information

Delivery Method: Fed Ex Arrival Timestamp: 11/09/2016 9:30
 Number of Packages: 3 Number of Projects: 1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	12
Paperwork Enclosed:	Yes	Trip Blank Type:	HCL
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Krista Abel (3058) at 12:55 on 11/09/2016

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp)* All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	DT146	0.6	DT	Wet	Y	Bagged	N
2	DT146	1.2	DT	Wet	Y	Bagged	N
3	DT146	0.9	DT	Wet	Y	Bagged	N

Amek Carter

From: US19_USR_AutomatedChangeForms
Sent: Friday, November 11, 2016 10:50 AM
To: Amek Carter
Subject: Change Form for Group 1731438 (Chevron - 11255)

Group Number:1731438

Client: Chevron

Account: 11255

Project: 96590

CSR: Loran Carter

Entry Date: 11/10/16 15:37

Change Reasons:

SDGs:

Change Dates: 11/11/16 09:47 - 11/11/16 09:52 Changing Employee: Loran Carter; Changed Samples: 8689215-8689218; 8689220 Standard Group Forms:

Standard Sample Forms:

Recipients: DP22Contacts@eurofinsus.com; ChadwickHershey@eurofinsus.com; DP21Contacts@eurofinsus.com;

Analysis Changes

Sample = 8689215-8689218

Master Analysis = 00390;05708;05900;06955;

Deleted

Sample = 8689220

Master Analysis = 10237;

List Index Old = 8509 New = 8470

Amek Carter

From: US19_USR_AutomatedChangeForms
Sent: Thursday, November 10, 2016 7:51 PM
To: Amek Carter
Subject: Change Form for Group 1731438 (Chevron - 11255)

Group Number:1731438

Client: Chevron

Account: 11255

Project: 96590

CSR: Loran Carter

Entry Date: 11/10/16 15:37

Change Reasons: SA: Revision at Audit; SA: Entry or Typo Oversight

SDGs:

Change Dates: 11/10/16 19:13

Changing Employee: Jesse Mertz;

Changed Samples: 8689214

Standard Group Forms:

Standard Sample Forms:

Recipients: DP55Contacts@eurofinsus.com; ChadwickHershey@eurofinsus.com;

Analysis Changes

Sample = 8689214

Master Analysis = 07356;

Deleted

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mg	milligram(s)
C	degrees Celsius	mL	milliliter(s)
cfu	colony forming units	MPN	Most Probable Number
CP Units	cobalt-chloroplatinate units	N.D.	none detected
F	degrees Fahrenheit	ng	nanogram(s)
g	gram(s)	NTU	nephelometric turbidity units
IU	International Units	pg/L	picogram/liter
kg	kilogram(s)	RL	Reporting Limit
L	liter(s)	TNTC	Too Numerous To Count
lb.	pound(s)	µg	microgram(s)
m3	cubic meter(s)	µL	microliter(s)
meq	milliequivalents	umhos/cm	micromhos/cm
<	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.		

Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
- 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.

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.

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.

ANALYTICAL RESULTS

Prepared by:

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

Prepared for:

Chevron
L4310
6001 Bollinger Canyon Road
San Ramon CA 94583

Report Date: December 16, 2016

Project: 96590

Submittal Date: 11/17/2016

Group Number: 1734587

PO Number: 0015194335

Release Number: HETRICK

State of Sample Origin: WA

Client Sample Description

	Lancaster Labs (LL) #
SCB-1-S-48-161114 Grab Soil	8702657
SCB-1-S-52-161114 Grab Soil	8702658
SCB-1-S-74.5-161114 Grab Soil	8702659
MW-38-S-21-161114 Grab Soil	8702660
MW-38-S-30-161114 Grab Soil	8702661
MW-38-S-45-161114 Grab Soil	8702662
QA-O-161115 Grab Water	8702663
QA-T-161115 NA Water	8702664

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

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Leidos

Attn: Russ Shropshire

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

Sample Description: SCB-1-S-48-161114 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8702657
LL Group # 1734587
Account # 11255

Project Name: 96590

Collected: 11/14/2016 08:15 by RO

Chevron

L4310

Submitted: 11/17/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/16/2016 11:54

San Ramon CA 94583

EW148

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	7.7	0.044	59.55
10237	1,2-Dibromoethane	106-93-4	N.D.	0.088	59.55
10237	1,2-Dichloroethane	107-06-2	0.71	0.088	59.55
10237	Ethylbenzene	100-41-4	1.3	0.088	59.55
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.032	59.55
10237	Toluene	108-88-3	14	0.088	59.55
10237	Xylene (Total)	1330-20-7	9.1	0.088	59.55
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	85	6.7	113.18
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	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.	15	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.4	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	15	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	15.7	0.633	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	32.1	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q163302AA	11/25/2016 14:05	Kevin A Sposito	59.55
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201632343475	11/14/2016 08:15	Client Supplied	1

Sample Description: SCB-1-S-48-161114 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8702657
LL Group # 1734587
Account # 11255

Project Name: 96590

Collected: 11/14/2016 08:15 by RO

Chevron

L4310

Submitted: 11/17/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/16/2016 11:54

San Ramon CA 94583

EW148

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201632343475	11/14/2016 08:15	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201632343475	11/14/2016 08:15	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16323A34C	11/27/2016 13:40	Marie D Beamenderfer	113.18
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201632343475	11/14/2016 08:15	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163270034A	11/29/2016 13:51	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163270035A	12/05/2016 20:16	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163270035A	11/23/2016 09:00	Michelle A Newswanger	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163270034A	11/23/2016 09:00	Michelle A Newswanger	1
06955	Lead	SW-846 6010B	1	163335708001	11/30/2016 02:06	Matthew R Machtinger	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163335708001	11/29/2016 05:40	Lisa J Cooke	1
00111	Moisture	SM 2540 G-1997	1	16327820003A	11/22/2016 13:00	Larry E Bevins	1

Sample Description: SCB-1-S-52-161114 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8702658
LL Group # 1734587
Account # 11255

Project Name: 96590

Collected: 11/14/2016 08:30 by RO

Chevron

L4310

Submitted: 11/17/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/16/2016 11:54

San Ramon CA 94583

EW152

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	4.2	0.037	54.13
10237	1,2-Dibromoethane	106-93-4	N.D.	0.075	54.13
10237	1,2-Dichloroethane	107-06-2	0.17	0.075	54.13
10237	Ethylbenzene	100-41-4	0.71	0.075	54.13
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.037	54.13
10237	Toluene	108-88-3	7.2	0.075	54.13
10237	Xylene (Total)	1330-20-7	4.3	0.075	54.13
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	44	2.9	52.62
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	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.	14	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.1	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	14	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	19.8	0.642	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	27.4	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q163302AA	11/25/2016 14:28	Kevin A Sposito	54.13
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201632343475	11/14/2016 08:30	Client Supplied	1

Sample Description: SCB-1-S-52-161114 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8702658
LL Group # 1734587
Account # 11255

Project Name: 96590

Collected: 11/14/2016 08:30 by RO

Chevron

L4310

Submitted: 11/17/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/16/2016 11:54

San Ramon CA 94583

EW152

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201632343475	11/14/2016 08:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201632343475	11/14/2016 08:30	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16323A34C	11/27/2016 14:23	Marie D Beamenderfer	52.62
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201632343475	11/14/2016 08:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163270034A	11/29/2016 14:12	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163270035A	12/05/2016 20:36	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163270035A	11/23/2016 09:00	Michelle A Newswanger	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163270034A	11/23/2016 09:00	Michelle A Newswanger	1
06955	Lead	SW-846 6010B	1	163335708001	11/30/2016 02:09	Matthew R Machtinger	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163335708001	11/29/2016 05:40	Lisa J Cooke	1
00111	Moisture	SM 2540 G-1997	1	16327820003A	11/22/2016 13:00	Larry E Bevins	1

Sample Description: SCB-1-S-74.5-161114 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8702659
LL Group # 1734587
Account # 11255

Project Name: 96590

Collected: 11/14/2016 10:35 by RO

Chevron

L4310

Submitted: 11/17/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/16/2016 11:54

San Ramon CA 94583

EW174

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	6.3	0.035	51.43
10237	1,2-Dibromoethane	106-93-4	N.D.	0.071	51.43
10237	1,2-Dichloroethane	107-06-2	0.91	0.071	51.43
10237	Ethylbenzene	100-41-4	N.D.	0.071	51.43
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.035	51.43
10237	Toluene	108-88-3	N.D.	0.071	51.43
10237	Xylene (Total)	1330-20-7	N.D.	0.071	51.43
GC Volatiles			ECY 97-602 NWT PH-Gx	mg/kg	
02005	NWT PH-GX Soil C7-C12	n.a.	N.D.	1.4	25.98
GC Petroleum Hydrocarbons			ECY 97-602 NWT PH-Dx modified	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.	14	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWT PH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.1	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	14	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	25.0	0.740	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	27.1	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q163302AA	11/25/2016 14:50	Kevin A Sposito	51.43
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201632343475	11/14/2016 10:35	Client Supplied	1

Sample Description: SCB-1-S-74.5-161114 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8702659
LL Group # 1734587
Account # 11255

Project Name: 96590

Collected: 11/14/2016 10:35 by RO

Chevron

L4310

Submitted: 11/17/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/16/2016 11:54

San Ramon CA 94583

EW174

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201632343475	11/14/2016 10:35	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201632343475	11/14/2016 10:35	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16323A34B	11/22/2016 20:39	Marie D Beamenderfer	25.98
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201632343475	11/14/2016 10:35	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163270034A	11/29/2016 14:31	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163270035A	12/05/2016 20:57	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163270035A	11/23/2016 09:00	Michelle A Newswanger	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163270034A	11/23/2016 09:00	Michelle A Newswanger	1
06955	Lead	SW-846 6010B	1	163335708001	11/30/2016 02:13	Matthew R Machtinger	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163335708001	11/29/2016 05:40	Lisa J Cooke	1
00111	Moisture	SM 2540 G-1997	1	16327820003A	11/22/2016 13:00	Larry E Bevins	1

Sample Description: MW-38-S-21-161114 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8702660
LL Group # 1734587
Account # 11255

Project Name: 96590

Collected: 11/14/2016 16:00 by RO Chevron
 Submitted: 11/17/2016 09:30 L4310
 Reported: 12/16/2016 11:54 6001 Bollinger Canyon Road
 San Ramon CA 94583

E3821

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.0004	0.81
10237	1,2-Dibromoethane	106-93-4	N.D.	0.0009	0.81
10237	1,2-Dichloroethane	107-06-2	N.D.	0.0009	0.81
10237	Ethylbenzene	100-41-4	N.D.	0.0009	0.81
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0004	0.81
10237	Toluene	108-88-3	N.D.	0.0009	0.81
10237	Xylene (Total)	1330-20-7	N.D.	0.0009	0.81
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1	22.65
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	4.6	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	12	11	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.2	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	13.0	0.474	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	8.6	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	X163271AA	11/22/2016 14:15	Angela D Sneringer	0.81

Sample Description: MW-38-S-21-161114 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8702660
LL Group # 1734587
Account # 11255

Project Name: 96590

Collected: 11/14/2016 16:00 by RO

Chevron

L4310

Submitted: 11/17/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/16/2016 11:54

San Ramon CA 94583

E3821

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	201632343475	11/14/2016 16:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201632343475	11/14/2016 16:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201632343475	11/14/2016 16:00	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16323A34B	11/22/2016 15:44	Marie D Beamenderfer	22.65
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201632343475	11/14/2016 16:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163270034A	11/29/2016 14:51	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163270035A	12/05/2016 21:17	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163270035A	11/23/2016 09:00	Michelle A Newswanger	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163270034A	11/23/2016 09:00	Michelle A Newswanger	1
06955	Lead	SW-846 6010B	1	163335708001	11/30/2016 02:16	Matthew R Machtinger	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163335708001	11/29/2016 05:40	Lisa J Cooke	1
00111	Moisture	SM 2540 G-1997	1	16327820003A	11/22/2016 13:00	Larry E Bevins	1

Sample Description: MW-38-S-30-161114 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8702661
LL Group # 1734587
Account # 11255

Project Name: 96590

Collected: 11/14/2016 16:05 by RO

Chevron

L4310

Submitted: 11/17/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/16/2016 11:54

San Ramon CA 94583

E3830

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.0006	0.83
10237	1,2-Dibromoethane	106-93-4	N.D.	0.001	0.83
10237	1,2-Dichloroethane	107-06-2	N.D.	0.001	0.83
10237	Ethylbenzene	100-41-4	N.D.	0.001	0.83
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0006	0.83
10237	Toluene	108-88-3	N.D.	0.001	0.83
10237	Xylene (Total)	1330-20-7	N.D.	0.001	0.83
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.7	30.21
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	4.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	14	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	4.3	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	14	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	22.7	0.744	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	30.3	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	X163271AA	11/22/2016 14:38	Angela D Sneringer	0.83

Sample Description: MW-38-S-30-161114 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8702661
LL Group # 1734587
Account # 11255

Project Name: 96590

Collected: 11/14/2016 16:05 by RO

Chevron

L4310

Submitted: 11/17/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/16/2016 11:54

San Ramon CA 94583

E3830

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	201632343475	11/14/2016 16:05	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201632343475	11/14/2016 16:05	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201632343475	11/14/2016 16:05	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16323A34B	11/22/2016 21:21	Marie D Beamenderfer	30.21
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201632343475	11/14/2016 16:05	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163330008A	12/05/2016 16:13	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163290025A	12/13/2016 11:15	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163290025A	11/28/2016 00:35	Denise L Trimby	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163330008A	11/28/2016 23:45	Sherry L Morrow	1
06955	Lead	SW-846 6010B	1	163335708001	11/30/2016 02:20	Matthew R Machtinger	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163335708001	11/29/2016 05:40	Lisa J Cooke	1
00111	Moisture	SM 2540 G-1997	1	16327820003A	11/22/2016 13:00	Larry E Bevins	1

Sample Description: MW-38-S-45-161114 Grab Soil
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # SW 8702662
LL Group # 1734587
Account # 11255

Project Name: 96590

Collected: 11/14/2016 16:10 by RO

Chevron

L4310

Submitted: 11/17/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/16/2016 11:54

San Ramon CA 94583

E3845

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.0004	0.81
10237	1,2-Dibromoethane	106-93-4	N.D.	0.0008	0.81
10237	1,2-Dichloroethane	107-06-2	N.D.	0.0008	0.81
10237	Ethylbenzene	100-41-4	N.D.	0.0008	0.81
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0004	0.81
10237	Toluene	108-88-3	N.D.	0.0008	0.81
10237	Xylene (Total)	1330-20-7	N.D.	0.0008	0.81
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	0.8	20.45
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	3.1	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	10	1
GC Petroleum Hydrocarbons w/Si			ECY 97-602 NWTPH-Dx modified	mg/kg	
12006	DRO C12-C24 w/Si Gel	n.a.	N.D.	3.1	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	10	1
The reverse surrogate, capric acid, is present at <1%.					
Metals			SW-846 6010B	mg/kg	
06955	Lead	7439-92-1	5.49	0.399	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	3.6	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	X163271AA	11/22/2016 15:01	Angela D Sneringer	0.81

Sample Description: MW-38-S-45-161114 Grab Soil
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # SW 8702662
LL Group # 1734587
Account # 11255

Project Name: 96590

Collected: 11/14/2016 16:10 by RO

Chevron

L4310

Submitted: 11/17/2016 09:30

6001 Bollinger Canyon Road

Reported: 12/16/2016 11:54

San Ramon CA 94583

E3845

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	201632343475	11/14/2016 16:10	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201632343475	11/14/2016 16:10	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201632343475	11/14/2016 16:10	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	16323A34B	11/22/2016 22:04	Marie D Beamenderfer	20.45
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201632343475	11/14/2016 16:10	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	163330008A	12/05/2016 17:14	Thomas C Wildermuth	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	163290025A	12/13/2016 11:35	Thomas C Wildermuth	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	163290025A	11/28/2016 00:35	Denise L Trimby	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	163330008A	11/28/2016 23:45	Sherry L Morrow	1
06955	Lead	SW-846 6010B	1	163335708001	11/30/2016 02:23	Matthew R Machtinger	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	163335708001	11/29/2016 05:40	Lisa J Cooke	1
00111	Moisture	SM 2540 G-1997	1	16327820003A	11/22/2016 13:00	Larry E Bevins	1

Sample Description: QA-O-161115 Grab Water
Facility# 96590
232 East Woodin Ave - Chelan, WA

LL Sample # WW 8702663
LL Group # 1734587
Account # 11255

Project Name: 96590

Collected: 11/15/2016 08:15 by RO Chevron
L4310
Submitted: 11/17/2016 09:30 6001 Bollinger Canyon Road
Reported: 12/16/2016 11:54 San Ramon CA 94583

EWEQB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles SW-846 8260B			ug/l	ug/l	
10945	Benzene	71-43-2	N.D.	0.5	1
10945	1,2-Dibromoethane	106-93-4	N.D.	0.5	1
10945	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Volatiles ECY 97-602 NWTPH-Gx			ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST VOCs + GRO by 8260B-Water	SW-846 8260B	1	P163282AA	11/23/2016 11:01	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P163282AA	11/23/2016 11:01	Daniel H Heller	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16328B20A	11/23/2016 20:05	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	16328B20A	11/23/2016 20:05	Brett W Kenyon	1

Sample Description: QA-T-161115 NA Water
Facility# 96590
 232 East Woodin Ave - Chelan, WA

LL Sample # WW 8702664
LL Group # 1734587
Account # 11255

Project Name: 96590

Collected: 11/15/2016 08:30

Chevron

Submitted: 11/17/2016 09:30

L4310

Reported: 12/16/2016 11:54

6001 Bollinger Canyon Road
 San Ramon CA 94583

EWTRB

CAT No.	Analysis Name	CAS Number	Result	Method Detection Limit	Dilution Factor
GC/MS Volatiles		SW-846 8260B	ug/l	ug/l	
10945	Benzene	71-43-2	N.D.	0.5	1
10945	1,2-Dibromoethane	106-93-4	N.D.	0.5	1
10945	1,2-Dichloroethane	107-06-2	N.D.	0.5	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC Volatiles		ECY 97-602 NWTPH-Gx	ug/l	ug/l	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10945	UST VOCs + GRO by 8260B-Water	SW-846 8260B	1	P163282AA	11/23/2016 11:24	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P163282AA	11/23/2016 11:24	Daniel H Heller	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	16328B20A	11/23/2016 20:32	Brett W Kenyon	1
01146	GC VOA Water Prep	SW-846 5030B	1	16328B20A	11/23/2016 20:32	Brett W Kenyon	1

Quality Control Summary

Client Name: Chevron
Reported: 12/16/2016 11:54

Group Number: 1734587

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: Q163302AA	Sample number(s): 8702657-8702659	
Benzene	N.D.	0.025
1,2-Dibromoethane	N.D.	0.050
1,2-Dichloroethane	N.D.	0.050
Ethylbenzene	N.D.	0.050
Methyl Tertiary Butyl Ether	N.D.	0.025
Toluene	N.D.	0.050
Xylene (Total)	N.D.	0.050
Batch number: X163271AA	Sample number(s): 8702660-8702662	
Benzene	N.D.	0.0005
1,2-Dibromoethane	N.D.	0.001
1,2-Dichloroethane	N.D.	0.001
Ethylbenzene	N.D.	0.001
Methyl Tertiary Butyl Ether	N.D.	0.0005
Toluene	N.D.	0.001
Xylene (Total)	N.D.	0.001
	ug/l	ug/l
Batch number: P163282AA	Sample number(s): 8702663-8702664	
Benzene	N.D.	0.5
1,2-Dibromoethane	N.D.	0.5
1,2-Dichloroethane	N.D.	0.5
Ethylbenzene	N.D.	0.5
Methyl Tertiary Butyl Ether	N.D.	0.5
Toluene	N.D.	0.5
Xylene (Total)	N.D.	0.5
	mg/kg	mg/kg
Batch number: 16323A34B	Sample number(s): 8702659-8702662	
NWTPH-GX Soil C7-C12	N.D.	1.0
Batch number: 16323A34C	Sample number(s): 8702657-8702658	
NWTPH-GX Soil C7-C12	N.D.	1.0
	ug/l	ug/l
Batch number: 16328B20A	Sample number(s): 8702663-8702664	
NWTPH-Gx water C7-C12	N.D.	50
	mg/kg	mg/kg
Batch number: 163270034A	Sample number(s): 8702657-8702660	
Diesel Range Organics C12-C24	N.D.	3.0
Heavy Range Organics C24-C40	N.D.	10

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/16/2016 11:54

Group Number: 1734587

Method Blank (continued)

Analysis Name	Result mg/kg	MDL mg/kg
Batch number: 163330008A	Sample number(s): 8702661-8702662	
Diesel Range Organics C12-C24	N.D.	3.0
Heavy Range Organics C24-C40	N.D.	10
Batch number: 163270035A	Sample number(s): 8702657-8702660	
DRO C12-C24 w/Si Gel	N.D.	3.0
HRO C24-C40 w/Si Gel	N.D.	10
Batch number: 163290025A	Sample number(s): 8702661-8702662	
DRO C12-C24 w/Si Gel	N.D.	3.0
HRO C24-C40 w/Si Gel	N.D.	10
Batch number: 163335708001	Sample number(s): 8702657-8702662	
Lead	N.D.	0.550

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: Q163302AA	Sample number(s): 8702657-8702659								
Benzene	1.00	1.03	1.00	1.03	103	103	80-120	0	30
1,2-Dibromoethane	1.00	1.01	1.00	1.03	101	103	80-120	2	30
1,2-Dichloroethane	1.00	1.01	1.00	1.02	101	102	70-133	1	30
Ethylbenzene	1.00	0.991	1.00	1.01	99	101	80-120	2	30
Methyl Tertiary Butyl Ether	1.00	0.971	1.00	0.989	97	99	72-120	2	30
Toluene	1.00	1.02	1.00	1.04	102	104	80-120	2	30
Xylene (Total)	3.00	2.98	3.00	3.05	99	102	80-120	2	30
Batch number: X163271AA	Sample number(s): 8702660-8702662								
Benzene	0.0200	0.0195	0.0200	0.0189	97	94	80-120	3	30
1,2-Dibromoethane	0.0200	0.0182	0.0200	0.0176	91	88	80-120	4	30
1,2-Dichloroethane	0.0200	0.0190	0.0200	0.0181	95	90	70-133	5	30
Ethylbenzene	0.0200	0.0190	0.0200	0.0183	95	92	80-120	4	30
Methyl Tertiary Butyl Ether	0.0200	0.0187	0.0200	0.0180	93	90	72-120	4	30
Toluene	0.0200	0.0190	0.0200	0.0183	95	91	80-120	4	30
Xylene (Total)	0.0600	0.0574	0.0600	0.0552	96	92	80-120	4	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: P163282AA	Sample number(s): 8702663-8702664								
Benzene	20	18.86			94		78-120		
1,2-Dibromoethane	20	18.04			90		80-120		
1,2-Dichloroethane	20	18.71			94		66-128		
Ethylbenzene	20	18.81			94		78-120		
Methyl Tertiary Butyl Ether	20	19.55			98		75-120		
Toluene	20	18.91			95		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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/16/2016 11:54

Group Number: 1734587

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
Xylene (Total)	60	56.61			94		80-120		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 16323A34B NWTPH-GX Soil C7-C12	11	11.08	11	11.31	101	103	71-120	2	30
Batch number: 16323A34C NWTPH-GX Soil C7-C12	11	11.08	11	11.31	101	103	71-120	2	30
	ug/l	ug/l	ug/l	ug/l					
Batch number: 16328B20A NWTPH-Gx water C7-C12	1100	1082.17	1100	1084.74	98	99	79-120	0	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 163270034A Diesel Range Organics C12-C24	133	103.63			78		61-115		
Batch number: 163330008A Diesel Range Organics C12-C24	133	114.07			86		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 163270035A DRO C12-C24 w/Si Gel	133	84.04			63		50-133		
Batch number: 163290025A DRO C12-C24 w/Si Gel	133	90.92			68		50-133		
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 163335708001 Lead	15	15.74			105		80-120		
	%	%	%	%					
Batch number: 16327820003A 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 ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
Batch number: P163282AA Benzene	N.D.	20	20.43	20	20.37	102	102	78-120	0	30
				UNSPK: P702365						

*- 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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/16/2016 11:54

Group Number: 1734587

MS/MSD (continued)

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Analysis Name	Unspiked Conc ug/l	MS Spike Added ug/l	MS Conc ug/l	MSD Spike Added ug/l	MSD Conc ug/l	MS %Rec	MSD %Rec	MS/MSD Limits	RPD	RPD Max
1,2-Dibromoethane	N.D.	20	19	20	19.36	95	97	80-120	2	30
1,2-Dichloroethane	N.D.	20	19.74	20	19.47	99	97	66-128	1	30
Ethylbenzene	0.581	20	20.28	20	18.9	98	92	78-120	7	30
Methyl Tertiary Butyl Ether	3.51	20	23.16	20	22.96	98	97	75-120	1	30
Toluene	N.D.	20	19.54	20	18.98	98	95	80-120	3	30
Xylene (Total)	1.23	60	59.97	60	55.56	98	91	80-120	8	30
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 163270034A	Sample number(s): 8702657-8702660 UNSPK: P694819									
Diesel Range Organics C12-C24	N.D.	131	106.15			81		61-115		
Batch number: 163330008A	Sample number(s): 8702661-8702662 UNSPK: 8702661									
Diesel Range Organics C12-C24	N.D.	133	118.6			89		61-115		
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 163270035A	Sample number(s): 8702657-8702660 UNSPK: P694819									
DRO C12-C24 w/Si Gel	N.D.	131	30.34			23*		50-133		
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 163335708001	Sample number(s): 8702657-8702662 UNSPK: P707395									
Lead	18.38	14.15	31.37	14.71	32.45	92	96	75-125	3	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: 163270034A	Sample number(s): 8702657-8702660 BKG: P694819			
Diesel Range Organics C12-C24	N.D.	N.D.	0 (1)	20
Heavy Range Organics C24-C40	N.D.	N.D.	0 (1)	20
Batch number: 163330008A	Sample number(s): 8702661-8702662 BKG: 8702661			
Diesel Range Organics C12-C24	N.D.	N.D.	0 (1)	20
Heavy Range Organics C24-C40	N.D.	N.D.	0 (1)	20
	mg/kg	mg/kg		
Batch number: 163270035A	Sample number(s): 8702657-8702660 BKG: P694819			
DRO C12-C24 w/Si Gel	N.D.	N.D.	0 (1)	20
HRO C24-C40 w/Si Gel	N.D.	N.D.	0 (1)	20
Batch number: 163290025A	Sample number(s): 8702661-8702662 BKG: 8702661			

*- 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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/16/2016 11:54

Group Number: 1734587

Laboratory Duplicate (continued)

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
DRO C12-C24 w/Si Gel	N.D.	N.D.	0 (1)	20
HRO C24-C40 w/Si Gel	N.D.	N.D.	0 (1)	20
	mg/kg	mg/kg		
Batch number: 163335708001	Sample number(s): 8702657-8702662 BKG: P707395			
Lead	18.38	18.36	0	20
	%	%		
Batch number: 16327820003A	Sample number(s): 8702657-8702662 BKG: P700077			
Moisture	16.13	16.11	0	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: UST VOCs + GRO by 8260B-Water
Batch number: P163282AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8702663	97	97	101	98
8702664	98	98	100	99
Blank	98	96	100	98
LCS	97	98	102	99
MS	99	98	99	106
MSD	97	98	99	109
Limits:	80-116	77-113	80-113	78-113

Analysis Name: BTEX/MTBE/EDC/EDB 8260
Batch number: Q163302AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8702657	73	77	74	77
8702658	72	77	74	72
8702659	72	76	75	69
Blank	110	117	113	102
LCS	104	111	105	97
LCSD	105	112	107	96
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX/MTBE/EDC/EDB 8260
Batch number: X163271AA

*- 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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/16/2016 11:54

Group Number: 1734587

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/MTBE/EDC/EDB 8260
Batch number: X163271AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8702660	101	103	96	95
8702661	105	111	95	92
8702662	106	108	95	92
Blank	103	109	95	93
LCS	102	101	98	100
LCSD	100	100	98	99
Limits:	50-141	54-135	52-141	50-131

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 16323A34B

	Trifluorotoluene-F
8702659	73
8702660	102
8702661	62
8702662	111
Blank	108
LCS	99
LCSD	101
Limits:	50-142

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 16323A34C

	Trifluorotoluene-F
8702657	81
8702658	72
Blank	99
LCS	99
LCSD	101
Limits:	50-142

Analysis Name: NWTPH-Gx water C7-C12
Batch number: 16328B20A

	Trifluorotoluene-F
8702663	90
8702664	78
Blank	76
LCS	98
LCSD	86
Limits:	63-135

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 12/16/2016 11:54

Group Number: 1734587

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: 163270034A

Orthoterphenyl	
8702657	99
8702658	101
8702659	101
8702660	96
Blank	99
DUP	99
LCS	101
MS	99

Limits: 50-150

Analysis Name: NWTPH-Dx soil w/ 10g Si Gel
Batch number: 163270035A

Orthoterphenyl	
8702657	56
8702658	87
8702659	68
8702660	69
Blank	67
DUP	83
LCS	81
MS	58

Limits: 50-150

Analysis Name: NWTPH-Dx soil w/ 10g Si Gel
Batch number: 163290025A

Orthoterphenyl	
8702661	85
8702662	85
Blank	96
DUP	93
LCS	91

Limits: 50-150

Analysis Name: NWTPH-Dx soil
Batch number: 163330008A

Orthoterphenyl	
8702661	97
8702662	106
Blank	104
DUP	97
LCS	106
MS	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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control SummaryClient Name: Chevron
Reported: 12/16/2016 11:54

Group Number: 1734587

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: 163330008A

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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Chevron Northwest Region Analysis Request/Chain of Custody



Lancaster Laboratories

Acct. # 11255

For Lancaster Laboratories use only
 Group # 1734587 Sample # 8702657-64
Instructions on reverse side correspond with circled numbers.

1 Client Information				4 Matrix			5 Analyses Requested											6 Remarks	
Facility # <u>96590</u>		WBS <u>08.04</u>		<input type="checkbox"/> Sediment <input type="checkbox"/> Ground <input type="checkbox"/> Surface <input type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Air <input type="checkbox"/> Soil <input type="checkbox"/> Water <input type="checkbox"/> Oil	Total Number of Containers <input type="checkbox"/> BTEX + MTBE <input type="checkbox"/> 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Naphth	<input type="checkbox"/> 8260 full scan Oxygenates NWTPH GX NWTPH DX <input checked="" type="checkbox"/> Silica Gel Cleanup Lead Total <input checked="" type="checkbox"/> Diss. <input type="checkbox"/> Method <u>COJOB</u> WAVPH <input type="checkbox"/> WAEPH <input type="checkbox"/> NWTPH - DX EDB/EDC 8260B	SCR #: _____ <input type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Naphthalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits											8 Remarks	
Site Address <u>232 East Woodin Ave, Chelan, WA</u>																			
Chevron PM <u>Eric Hetrick</u>																			
Consultant/Office <u>Leidos/Bothell, WA</u>																			
Consultant Project Mgr. <u>Russ Shropshire</u>																			
Consultant Phone # <u>425-482-3323</u>																			
Sampler <u>R. Otteman and S. Brown</u>		3 Composite																	
2 Sample Identification		Collected																	
		Date	Time																
<u>SCB-1-48</u>		<u>11/14/16</u>	<u>0815</u>																
<u>SCB-1-52</u>		<u>11/14/16</u>	<u>0830</u>																
<u>SCB-1-74.5</u>		<u>11/14/16</u>	<u>1035</u>																
<u>MW-38-21</u>		<u>11/14/16</u>	<u>1600</u>																
<u>MW-38-30</u>		<u>11/14/16</u>	<u>1605</u>																
<u>MW-38-45</u>		<u>11/14/16</u>	<u>1610</u>																
<u>Equipment blank-1115</u>		<u>11/15/16</u>	<u>0815</u>																
<u>+ Pip blank 1-1115/16</u>		<u>11/15/16</u>	<u>0830</u>																
7 Turnaround Time Requested (TAT) (please circle)				Relinquished by			Date		Time		Received by			Date		Time			
Standard <input checked="" type="radio"/> 5 day 4 day 72 hour 48 hour 24 hour				<u>[Signature]</u>			<u>11-16-16</u>		<u>1100</u>		<u>[Signature]</u>					9			
8 Data Package Options (please circle if required)				Relinquished by Commerical Carrier:			Date		Time		Received by			Date		Time			
Type I - Full Type VI (Raw Data)				UPS _____ FedEx _____ Other _____			<u>11-17-16</u>		<u>930</u>		<u>[Signature]</u>			<u>11-17-16</u>		<u>930</u>			
				Temperature Upon Receipt <u>1.9</u> °C			Custody Seals Intact? <input checked="" type="radio"/> Yes <input type="radio"/> No												

Client: Chevron
Delivery and Receipt Information

Delivery Method:	<u>Fed Ex</u>	Arrival Timestamp:	<u>11/17/2016 9:30</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>1</u>
State/Province of Origin:	<u>WA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace \geq 6mm:	No
Samples Chilled:	Yes	Total Trip Blank Qty:	4
Paperwork Enclosed:	Yes	Trip Blank Type:	HCl
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Unpacked by Melvin Sanchez (8943) at 17:25 on 11/17/2016

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

<u>Cooler #</u>	<u>Thermometer ID</u>	<u>Corrected Temp</u>	<u>Therm. Type</u>	<u>Ice Type</u>	<u>Ice Present?</u>	<u>Ice Container</u>	<u>Elevated Temp?</u>
1	DT146	1.9	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mg	milligram(s)
C	degrees Celsius	mL	milliliter(s)
cfu	colony forming units	MPN	Most Probable Number
CP Units	cobalt-chloroplatinate units	N.D.	none detected
F	degrees Fahrenheit	ng	nanogram(s)
g	gram(s)	NTU	nephelometric turbidity units
IU	International Units	pg/L	picogram/liter
kg	kilogram(s)	RL	Reporting Limit
L	liter(s)	TNTC	Too Numerous To Count
lb.	pound(s)	µg	microgram(s)
m3	cubic meter(s)	µL	microliter(s)
meq	milliequivalents	umhos/cm	micromhos/cm
<	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.		

Laboratory Data Qualifiers:

- B - Analyte detected in the blank
- C - Result confirmed by reanalysis
- E - Concentration exceeds the calibration range
- J (or G, I, X) - estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
- P - Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
- 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.

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.

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.

ANALYTICAL RESULTS

Prepared by:

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

Prepared for:

Chevron
L4310
6001 Bollinger Canyon Road
San Ramon CA 94583

Report Date: January 25, 2017

Project: 96590

Submittal Date: 12/30/2016

Group Number: 1749557

PO Number: 0015194335

Release Number: HETRICK

State of Sample Origin: WA

Lancaster Labs

Client Sample Description

	(LL) #
SCB-1A-S-24.5'-161227 Grab Soil	8767678
SCB-1D-S-39.9'-161227 Grab Soil	8767679
SCB-2A-S-47.1'-161227 Grab Soil	8767680
SCB-2B-S-50.5'-161227 Grab Soil	8767681
SCB-2C-S-51.3'-161228 Grab Soil	8767682
SCB-3A-S-13.8'-161228 Grab Soil	8767683
SCB-3B-S-15.0'-161228 Grab Soil	8767684
SCB-3C-S-17.3'-161228 Grab Soil	8767685
SCB-3C-S-19.1'-161228 Grab Soil	8767686
SCB-3D-S-19.6'-161228 Grab Soil	8767687

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

Regulatory agencies do not accredit laboratories for all methods, analytes, and matrices. Our current scopes of accreditation can be viewed at <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>. To request copies of prior scopes of accreditation, contact your project manager.

Electronic Copy To Leidos

Attn: Russ Shropshire

Respectfully Submitted,



Amek Carter
Specialist

(717) 556-7252

Sample Description: SCB-1A-S-24.5'-161227 Grab Soil
Facility# 96590
232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767678
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/27/2016 17:00 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96501

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	5.0	0.045	63.21
10237	1,2-Dibromoethane	106-93-4	N.D.	0.090	63.21
10237	1,2-Dichloroethane	107-06-2	N.D.	0.090	63.21
10237	Ethylbenzene	100-41-4	0.69	0.090	63.21
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.045	63.21
10237	Toluene	108-88-3	0.18	0.090	63.21
10237	Xylene (Total)	1330-20-7	0.61	0.090	63.21
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	11	1.9	33.74
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	6.4	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	21	1
Reporting limits were raised due to limited sample volume.					
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	29.7	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q170052AA	01/06/2017 02:37	Stephen C Nolte	63.21
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201700243941	12/27/2016 17:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201700243941	12/27/2016 17:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201700243937	12/27/2016 17:00	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	17008A31A	01/09/2017 15:38	Marie D Beamenderfer	33.74
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201700243937	12/27/2016 17:00	Client Supplied	n.a.

Sample Description: SCB-1A-S-24.5'-161227 Grab Soil
Facility# 96590
232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767678
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/27/2016 17:00 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96501

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	170090026A	01/19/2017 21:40	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	170090026A	01/10/2017 15:45	Elizabeth E Donovan	1
00111	Moisture	SM 2540 G-1997	1	17006820002B	01/06/2017 14:51	Larry E Bevins	1

Sample Description: SCB-1D-S-39.9'-161227 Grab Soil
Facility# 96590
 232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767679
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/27/2016 16:25 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96502

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	6.4	0.039	59.64
10237	1,2-Dibromoethane	106-93-4	0.080	0.079	59.64
10237	1,2-Dichloroethane	107-06-2	0.50	0.079	59.64
10237	Ethylbenzene	100-41-4	0.85	0.079	59.64
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.039	59.64
10237	Toluene	108-88-3	8.3	0.079	59.64
10237	Xylene (Total)	1330-20-7	6.5	0.079	59.64
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	54	6.2	117.34
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	5.9	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	20	1
Reporting limits were raised due to limited sample volume.					
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	24.2	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q170052AA	01/06/2017 03:00	Stephen C Nolte	59.64
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201700243941	12/27/2016 16:25	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201700243941	12/27/2016 16:25	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201700243937	12/27/2016 16:25	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	17008A31A	01/09/2017 16:14	Marie D Beamenderfer	117.34
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201700243937	12/27/2016 16:25	Client Supplied	n.a.

Sample Description: SCB-1D-S-39.9'-161227 Grab Soil
Facility# 96590
232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767679
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/27/2016 16:25 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96502

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	170090026A	01/19/2017 19:59	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	170090026A	01/10/2017 15:45	Elizabeth E Donovan	1
00111	Moisture	SM 2540 G-1997	1	17006820002B	01/06/2017 14:51	Larry E Bevins	1

Sample Description: SCB-2A-S-47.1'-161227 Grab Soil
Facility# 96590
232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767680
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/27/2016 15:20 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96503

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.053	68.16
10237	1,2-Dibromoethane	106-93-4	N.D.	0.11	68.16
10237	1,2-Dichloroethane	107-06-2	N.D.	0.11	68.16
10237	Ethylbenzene	100-41-4	0.82	0.11	68.16
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.053	68.16
10237	Toluene	108-88-3	0.28	0.11	68.16
10237	Xylene (Total)	1330-20-7	11	0.11	68.16
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	260	21	342.88
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	6.9	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	23	1
Reporting limits were raised due to limited sample volume.					
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	35.1	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q170052AA	01/06/2017 03:46	Stephen C Nolte	68.16
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201700243941	12/27/2016 15:20	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201700243941	12/27/2016 15:20	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201700243937	12/27/2016 15:20	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	17008A31B	01/10/2017 17:16	Marie D Beamenderfer	342.88
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201700243937	12/27/2016 15:20	Client Supplied	n.a.

Sample Description: SCB-2A-S-47.1'-161227 Grab Soil
Facility# 96590
232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767680
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/27/2016 15:20 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96503

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	170090026A	01/19/2017 20:19	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	170090026A	01/10/2017 15:45	Elizabeth E Donovan	1
00111	Moisture	SM 2540 G-1997	1	17006820002B	01/06/2017 14:51	Larry E Bevins	1

Sample Description: SCB-2B-S-50.5'-161227 Grab Soil
Facility# 96590
232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767681
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/27/2016 16:00 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96504

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	0.047	0.039	60.16
10237	1,2-Dibromoethane	106-93-4	N.D.	0.078	60.16
10237	1,2-Dichloroethane	107-06-2	N.D.	0.078	60.16
10237	Ethylbenzene	100-41-4	0.37	0.078	60.16
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.039	60.16
10237	Toluene	108-88-3	1.7	0.078	60.16
10237	Xylene (Total)	1330-20-7	5.3	0.078	60.16
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	37	3.2	62.45
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	N.D.	5.8	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	19	1
Reporting limits were raised due to limited sample volume.					
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	22.6	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q170052AA	01/06/2017 04:32	Stephen C Nolte	60.16
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201700243941	12/27/2016 16:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201700243941	12/27/2016 16:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201700243937	12/27/2016 16:00	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	17008A31B	01/10/2017 16:40	Marie D Beamenderfer	62.45
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201700243937	12/27/2016 16:00	Client Supplied	n.a.

Sample Description: SCB-2B-S-50.5'-161227 Grab Soil
Facility# 96590
232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767681
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/27/2016 16:00 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96504

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	170090026A	01/19/2017 20:59	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	170090026A	01/10/2017 15:45	Elizabeth E Donovan	1
00111	Moisture	SM 2540 G-1997	1	17006820002B	01/06/2017 14:51	Larry E Bevins	1

Sample Description: SCB-2C-S-51.3'-161228 Grab Soil
Facility# 96590
232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767682
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/28/2016 09:05 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96505

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	0.063	0.045	63.96
10237	1,2-Dibromoethane	106-93-4	N.D.	0.090	63.96
10237	1,2-Dichloroethane	107-06-2	N.D.	0.090	63.96
10237	Ethylbenzene	100-41-4	2.4	0.090	63.96
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.045	63.96
10237	Toluene	108-88-3	4.5	0.090	63.96
10237	Xylene (Total)	1330-20-7	25	0.090	63.96
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	880	72	1279.08
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	44	6.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	21	1
Reporting limits were raised due to limited sample volume.					
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	28.7	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q170052AA	01/06/2017 05:18	Stephen C Nolte	63.96
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201700243941	12/28/2016 09:05	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201700243941	12/28/2016 09:05	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201700243937	12/28/2016 09:05	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	17008A31B	01/10/2017 17:52	Marie D Beamenderfer	1279.08
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201700243937	12/28/2016 09:05	Client Supplied	n.a.

Sample Description: SCB-2C-S-51.3'-161228 Grab Soil
Facility# 96590
 232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767682
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/28/2016 09:05 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96505

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	170090026A	01/19/2017 20:39	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	170090026A	01/10/2017 15:45	Elizabeth E Donovan	1
00111	Moisture	SM 2540 G-1997	1	17006820002B	01/06/2017 14:51	Larry E Bevins	1

Sample Description: SCB-3A-S-13.8'-161228 Grab Soil
Facility# 96590
232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767683
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/28/2016 09:50 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96506

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.072	112.54
10237	1,2-Dibromoethane	106-93-4	N.D.	0.14	112.54
10237	1,2-Dichloroethane	107-06-2	N.D.	0.14	112.54
10237	Ethylbenzene	100-41-4	5.1	0.14	112.54
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.072	112.54
10237	Toluene	108-88-3	0.17	0.14	112.54
10237	Xylene (Total)	1330-20-7	12	0.14	112.54
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	1,700	110	2169.32
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	25	5.6	1
08272	Heavy Range Organics C24-C40	n.a.	27	19	1
Reporting limits were raised due to limited sample volume.					
Wet Chemistry			SM 2540 G-1997	%	
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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	R170062AA	01/07/2017 00:42	Stephen C Nolte	112.54
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201700243941	12/28/2016 09:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201700243941	12/28/2016 09:50	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201700243937	12/28/2016 09:50	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	17008A31B	01/10/2017 18:28	Marie D Beamenderfer	2169.32
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201700243937	12/28/2016 09:50	Client Supplied	n.a.

Sample Description: SCB-3A-S-13.8'-161228 Grab Soil
 Facility# 96590
 232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767683
 LL Group # 1749557
 Account # 11255

Project Name: 96590

Collected: 12/28/2016 09:50 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96506

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	170090026A	01/19/2017 22:00	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	170090026A	01/10/2017 15:45	Elizabeth E Donovan	1
00111	Moisture	SM 2540 G-1997	1	17006820002B	01/06/2017 14:51	Larry E Bevins	1

Sample Description: SCB-3B-S-15.0'-161228 Grab Soil
Facility# 96590
232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767684
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/28/2016 10:38 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96507

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	N.D.	0.028	53.25
10237	1,2-Dibromoethane	106-93-4	N.D.	0.055	53.25
10237	1,2-Dichloroethane	107-06-2	N.D.	0.055	53.25
10237	Ethylbenzene	100-41-4	1.5	0.055	53.25
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.028	53.25
10237	Toluene	108-88-3	0.40	0.055	53.25
10237	Xylene (Total)	1330-20-7	5.4	0.055	53.25
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	140	20	488.6
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	7.6	4.5	1
08272	Heavy Range Organics C24-C40	n.a.	29	15	1
Reporting limits were raised due to limited sample volume.					
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	3.2	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	R170062AA	01/07/2017 00:19	Stephen C Nolte	53.25
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201700243941	12/28/2016 10:38	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201700243941	12/28/2016 10:38	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201700243937	12/28/2016 10:38	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	17008A31B	01/10/2017 19:04	Marie D Beamenderfer	488.6
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201700243937	12/28/2016 10:38	Client Supplied	n.a.

Sample Description: SCB-3B-S-15.0'-161228 Grab Soil
Facility# 96590
232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767684
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/28/2016 10:38 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96507

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	170090026A	01/23/2017 16:16	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	170090026A	01/10/2017 15:45	Elizabeth E Donovan	1
00111	Moisture	SM 2540 G-1997	1	17006820002B	01/06/2017 14:51	Larry E Bevins	1

Sample Description: SCB-3C-S-17.3'-161228 Grab Soil
Facility# 96590
232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767685
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/28/2016 11:09 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96508

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	8.8	0.20	304.05
10237	1,2-Dibromoethane	106-93-4	N.D.	0.41	304.05
10237	1,2-Dichloroethane	107-06-2	N.D.	0.41	304.05
10237	Ethylbenzene	100-41-4	35	0.41	304.05
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.20	304.05
10237	Toluene	108-88-3	56	0.41	304.05
10237	Xylene (Total)	1330-20-7	170	0.41	304.05

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

GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	6,300	330	6098.49

GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	390	7.8	1
08272	Heavy Range Organics C24-C40	n.a.	27	26	1

Reporting limits were raised due to limited sample volume.

Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	25.4	0.50	1

Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.

Sample Comments

State of Washington Lab Certification No. C457

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	R170061AA	01/06/2017 17:43	Jennifer K Howe	304.05
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201700243941	12/28/2016 11:09	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201700243941	12/28/2016 11:09	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201700243937	12/28/2016 11:09	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	17008A31B	01/10/2017 19:47	Marie D Beamenderfer	6098.49
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201700243937	12/28/2016 11:09	Client Supplied	n.a.

Sample Description: SCB-3C-S-17.3'-161228 Grab Soil
Facility# 96590
232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767685
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/28/2016 11:09 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96508

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	170090026A	01/23/2017 16:36	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	170090026A	01/10/2017 15:45	Elizabeth E Donovan	1
00111	Moisture	SM 2540 G-1997	1	17006820002B	01/06/2017 14:51	Larry E Bevins	1

Sample Description: SCB-3C-S-19.1'-161228 Grab Soil
Facility# 96590
232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767686
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/28/2016 11:25 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96509

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	9.7	0.41	637.55
10237	1,2-Dibromoethane	106-93-4	N.D.	0.83	637.55
10237	1,2-Dichloroethane	107-06-2	N.D.	0.83	637.55
10237	Ethylbenzene	100-41-4	2.8	0.83	637.55
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.41	637.55
10237	Toluene	108-88-3	5.3	0.83	637.55
10237	Xylene (Total)	1330-20-7	12	0.83	637.55
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	6,500	660	12706.42
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	230	5.8	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	19	1
Reporting limits were raised due to limited sample volume.					
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	22.9	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q170062AA	01/07/2017 02:55	Stephen C Nolte	637.55
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201700243941	12/28/2016 11:25	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201700243941	12/28/2016 11:25	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201700243937	12/28/2016 11:25	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	17008A31B	01/10/2017 20:23	Marie D Beamenderfer	12706.4 2
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201700243937	12/28/2016 11:25	Client Supplied	n.a.

Sample Description: SCB-3C-S-19.1'-161228 Grab Soil
Facility# 96590
232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767686
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/28/2016 11:25 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96509

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	170090026A	01/23/2017 16:56	Thomas C Wildermuth	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	170090026A	01/10/2017 15:45	Elizabeth E Donovan	1
00111	Moisture	SM 2540 G-1997	1	17006820002B	01/06/2017 14:51	Larry E Bevins	1

Sample Description: SCB-3D-S-19.6'-161228 Grab Soil
Facility# 96590
232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767687
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/28/2016 11:45 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96510

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	
10237	Benzene	71-43-2	8.4	0.043	63.55
10237	1,2-Dibromoethane	106-93-4	N.D.	0.086	63.55
10237	1,2-Dichloroethane	107-06-2	N.D.	0.086	63.55
10237	Ethylbenzene	100-41-4	10	0.086	63.55
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.043	63.55
10237	Toluene	108-88-3	20	0.086	63.55
10237	Xylene (Total)	1330-20-7	53	0.086	63.55
GC Volatiles			ECY 97-602 NWTPH-Gx	mg/kg	
02005	NWTPH-GX Soil C7-C12	n.a.	7,500	660	12316.55
GC Petroleum Hydrocarbons			ECY 97-602 NWTPH-Dx modified	mg/kg	
08272	Diesel Range Organics C12-C24	n.a.	410	4.0	1
08272	Heavy Range Organics C24-C40	n.a.	36	13	1
Wet Chemistry			SM 2540 G-1997	%	
00111	Moisture	n.a.	25.9	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

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	BTEX/MTBE/EDC/EDB 8260	SW-846 8260B	1	Q170062AA	01/07/2017 02:09	Stephen C Nolte	63.55
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201700243941	12/28/2016 11:45	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201700243941	12/28/2016 11:45	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201700243937	12/28/2016 11:45	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	17008A31B	01/10/2017 20:59	Marie D Beamenderfer	12316.55
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201700243937	12/28/2016 11:45	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	170090026A	01/19/2017 21:19	Thomas C Wildermuth	1

Sample Description: SCB-3D-S-19.6'-161228 Grab Soil
Facility# 96590
 232 E. Woodin Ave - Chelan, WA

LL Sample # SW 8767687
LL Group # 1749557
Account # 11255

Project Name: 96590

Collected: 12/28/2016 11:45 by CG

Chevron

L4310

Submitted: 12/30/2016 09:45

6001 Bollinger Canyon Road

Reported: 01/25/2017 11:26

San Ramon CA 94583

96510

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	170090026A	01/10/2017 15:45	Elizabeth E Donovan	1
00111	Moisture	SM 2540 G-1997	1	17006820002B	01/06/2017 14:51	Larry E Bevins	1

Quality Control Summary

Client Name: Chevron
Reported: 01/25/2017 11:26

Group Number: 1749557

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: Q170052AA	Sample number(s): 8767678-8767682	
Benzene	N.D.	0.025
1,2-Dibromoethane	N.D.	0.050
1,2-Dichloroethane	N.D.	0.050
Ethylbenzene	N.D.	0.050
Methyl Tertiary Butyl Ether	N.D.	0.025
Toluene	N.D.	0.050
Xylene (Total)	N.D.	0.050
Batch number: Q170062AA	Sample number(s): 8767686-8767687	
Benzene	N.D.	0.025
1,2-Dibromoethane	N.D.	0.050
1,2-Dichloroethane	N.D.	0.050
Ethylbenzene	N.D.	0.050
Methyl Tertiary Butyl Ether	N.D.	0.025
Toluene	N.D.	0.050
Xylene (Total)	N.D.	0.050
Batch number: R170061AA	Sample number(s): 8767685	
Benzene	N.D.	0.025
1,2-Dibromoethane	N.D.	0.050
1,2-Dichloroethane	N.D.	0.050
Ethylbenzene	N.D.	0.050
Methyl Tertiary Butyl Ether	N.D.	0.025
Toluene	N.D.	0.050
Xylene (Total)	N.D.	0.050
Batch number: R170062AA	Sample number(s): 8767683-8767684	
Benzene	N.D.	0.025
1,2-Dibromoethane	N.D.	0.050
1,2-Dichloroethane	N.D.	0.050
Ethylbenzene	N.D.	0.050
Methyl Tertiary Butyl Ether	N.D.	0.025
Toluene	N.D.	0.050
Xylene (Total)	N.D.	0.050
Batch number: 17008A31A	Sample number(s): 8767678-8767679	
NWTPH-GX Soil C7-C12	N.D.	1.0
Batch number: 17008A31B	Sample number(s): 8767680-8767687	
NWTPH-GX Soil C7-C12	N.D.	1.0
Batch number: 170090026A	Sample number(s): 8767678-8767687	
Diesel Range Organics C12-C24	N.D.	3.0

*- 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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 01/25/2017 11:26

Group Number: 1749557

Method Blank (continued)

Analysis Name	Result	MDL
	mg/kg	mg/kg
Heavy Range Organics C24-C40	N.D.	10

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: Q170052AA Sample number(s): 8767678-8767682									
Benzene	1.00	1.03	1.00	1.02	103	102	80-120	1	30
1,2-Dibromoethane	1.00	1.04	1.00	1.02	104	102	80-120	3	30
1,2-Dichloroethane	1.00	1.19	1.00	1.17	119	117	70-133	2	30
Ethylbenzene	1.00	1.04	1.00	1.03	104	103	80-120	1	30
Methyl Tertiary Butyl Ether	1.00	1.08	1.00	1.07	108	107	72-120	0	30
Toluene	1.00	1.04	1.00	1.03	104	103	80-120	2	30
Xylene (Total)	3.00	3.05	3.00	3.02	102	101	80-120	1	30
Batch number: Q170062AA Sample number(s): 8767686-8767687									
Benzene	1.00	1.16	1.00	1.06	116	106	80-120	9	30
1,2-Dibromoethane	1.00	1.06	1.00	1.07	106	107	80-120	1	30
1,2-Dichloroethane	1.00	1.21	1.00	1.20	121	120	70-133	1	30
Ethylbenzene	1.00	1.04	1.00	1.05	104	105	80-120	1	30
Methyl Tertiary Butyl Ether	1.00	1.17	1.00	1.07	117	107	72-120	9	30
Toluene	1.00	1.07	1.00	0.987	107	99	80-120	8	30
Xylene (Total)	3.00	2.80	3.00	3.12	93	104	80-120	11	30
Batch number: R170061AA Sample number(s): 8767685									
Benzene	1.00	0.977	1.00	1.01	98	101	80-120	4	30
1,2-Dibromoethane	1.00	0.988	1.00	1.04	99	104	80-120	5	30
1,2-Dichloroethane	1.00	0.927	1.00	0.965	93	96	70-133	4	30
Ethylbenzene	1.00	0.910	1.00	0.959	91	96	80-120	5	30
Methyl Tertiary Butyl Ether	1.00	0.990	1.00	1.01	99	101	72-120	2	30
Toluene	1.00	0.947	1.00	0.996	95	100	80-120	5	30
Xylene (Total)	3.00	2.81	3.00	2.89	94	96	80-120	3	30
Batch number: R170062AA Sample number(s): 8767683-8767684									
Benzene	1.00	1.04	1.00	1.00	104	100	80-120	4	30
1,2-Dibromoethane	1.00	1.07	1.00	0.994	107	99	80-120	7	30
1,2-Dichloroethane	1.00	0.998	1.00	0.935	100	93	70-133	7	30
Ethylbenzene	1.00	1.00	1.00	0.939	100	94	80-120	6	30
Methyl Tertiary Butyl Ether	1.00	1.00	1.00	0.978	100	98	72-120	3	30
Toluene	1.00	1.08	1.00	0.977	108	98	80-120	10	30
Xylene (Total)	3.00	3.04	3.00	2.88	101	96	80-120	5	30
Batch number: 17008A31A Sample number(s): 8767678-8767679									
NWTPH-GX Soil C7-C12	11	12.03	11	12.15	109	110	71-120	1	30

*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 01/25/2017 11:26

Group Number: 1749557

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: 17008A31B NWTPH-GX Soil C7-C12	11	12.03	11	12.15	109	110	71-120	1	30
Sample number(s): 8767680-8767687	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 170090026A Diesel Range Organics C12-C24	133	119.78	133	119.08	90	90	61-115	1	20
Sample number(s): 8767678-8767687	%	%	%	%					
Batch number: 17006820002B Moisture	89.5	89.4			100		99-101		
Sample number(s): 8767678-8767687									

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: 17006820002B Moisture	21.96	24.67	12*	5
Sample number(s): 8767678-8767687 BKG: 8767683				

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/MTBE/EDC/EDB 8260
Batch number: Q170052AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8767678	78	79	73	62
8767679	67	77	74	78
8767680	69	69	56	73
8767681	82	78	86	86
8767682	88	91	101	83
Blank	81	84	84	89
LCS	89	87	89	96
LCSD	88	89	89	97
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX/MTBE/EDC/EDB 8260
Batch number: Q170062AA

*- 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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 01/25/2017 11:26

Group Number: 1749557

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/MTBE/EDC/EDB 8260
Batch number: Q170062AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8767686	73	90	94	73
8767687	105	109	74	88
Blank	82	83	86	89
LCS	81	81	76	82
LCSD	76	76	71	90
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX/MTBE/EDC/EDB 8260
Batch number: R170061AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8767685	100	108	109	98
Blank	102	103	103	93
LCS	92	95	88	95
LCSD	93	93	90	95
Limits:	50-141	54-135	52-141	50-131

Analysis Name: BTEX/MTBE/EDC/EDB 8260
Batch number: R170062AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
8767683	117	122	117	102
8767684	163*	162*	153*	145*
Blank	103	107	101	101
LCS	96	96	97	97
LCSD	95	96	90	95
Limits:	50-141	54-135	52-141	50-131

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 17008A31A

	Trifluorotoluene-F
8767678	85
8767679	100
Blank	93
LCS	93
LCSD	94
Limits:	50-142

Analysis Name: NWTPH-GX Soil C7-C12
Batch number: 17008A31B

*- 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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Quality Control Summary

Client Name: Chevron
Reported: 01/25/2017 11:26

Group Number: 1749557

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: 17008A31B

Trifluorotoluene-F	
8767680	101
8767681	107
8767682	354*
8767683	462*
8767684	139
8767685	767*
8767686	739*
8767687	504*
Blank	83
LCS	93
LCSD	94

Limits: 50-142

Analysis Name: NWTPH-Dx soil
Batch number: 170090026A

Orthoterphenyl	
8767678	96
8767679	98
8767680	100
8767681	97
8767682	108
8767683	104
8767684	125
8767685	113
8767686	112
8767687	106
Blank	105
LCS	105
LCSD	104

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.

P##### is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

Chevron California Region Analysis Request/Chain of Custody



Lancaster Laboratories

Acct. # 11255

For Lancaster Laboratories use only
 Group # 1749557 Sample # 8767678-67
 Instructions on reverse side correspond with circled numbers.

SCR #: 199163

① Client Information			④ Matrix			⑤ Analyses Requested									
Facility # <u>96570</u> WBS <u>Core Laboratories Bakersfield CA</u>			Sediment <input type="checkbox"/> Ground <input type="checkbox"/> Surface Potable <input type="checkbox"/> Water NPDES <input type="checkbox"/> Oil <input type="checkbox"/> Air <input type="checkbox"/>	Total Number of Containers	BTEX + MTBE 8021 <input type="checkbox"/> 8260 <input type="checkbox"/> 8015 <input type="checkbox"/> 8260 <input type="checkbox"/>										
Site Address <u>232 E. Woodin Ave, Chekin, WA</u> <u>CA 93437 Lando Drive 93308</u>					TPH GRO 8015 <input type="checkbox"/> 8260 <input type="checkbox"/>										
Chevron PM _____ Lead Consultant <u>Leidos</u>					TPH 8015 MOD DRO										
Consultant/Office _____					Silica Gel Cleanup										
Consultant Project Mgr. <u>CG Larry Kumbel Russ Shropshire</u>					8260 Full Scan										
Consultant Phone # <u>CG 661-325-5657 425-482-3323</u>			Oxygenates												
Sampler <u>Crystal Grinstead</u>			Total Lead Method _____												
			Dissolved Lead Method _____												
			50mL vial												
			Soil VOA Sampling Kit												

- Results in Dry Weight
- J value reporting needed
- Must meet lowest detection limits possible for 8260 compounds
- 8021 MTBE Confirmation
- Confirm highest hit by 8260
- Confirm all hits by 8260
- Run _____ oxy's on highest hit
- Run _____ oxy's on all hits

② Sample Identification	Collected		Grab	Composite	Soil	Water	Oil	Total Number of Containers	BTEX + MTBE	8021	8260	TPH GRO	8015	8260	TPH 8015 MOD DRO	Silica Gel Cleanup	8260 Full Scan	Oxygenates	Total Lead	Method	Dissolved Lead	Method	50mL vial	Soil VOA Sampling Kit
	Date	Time																						
SCB-1A-24.5'	12/27	5 PM	X		S			1															X	
SCB-1D-39.9'	12/27	4:25p	X		S			1															X	
SCB-2A-47.1'	12/27	3:20p	X		S			1															X	
SCB-2B-50.5'	12/27	4:00p	X		S			1															X	
SCB-2C-51.3'	12/28	9:05a	X		S			1															X	
SCB-3A-13.8'	12/28	9:50a	X		S			1															X	
SCB-3B-15.0'	12/28	10:35a	X		S			1															X	
SCB-3C-17.3'	12/28	11:08a	X		S			1															X	
SCB-3C-19.1'	12/28	11:25a	X		S			1															X	
SCB-3D-19.6'	12/28	11:45a	X		S			1															X	
SCB-1A-24.5'	12/27	5 PM	X		S			5															X	
SCB-1D-39.9'	12/27	4:40p	X		S			5															X	
SCB-2A-47.1'	12/27	3:20p	X		S			5															X	

⑥ Remarks
 One 50mL vial +
 One VOA set per
 sample
 CL File # 160728
 * Contact Russ
 Shropshire for
 analysis requested.

⑦ Turnaround Time Requested (TAT) (please circle)

Standard 5 day 4 day

72 hour 48 hour 24 hour

Relinquished by <u>Crystal Grinstead</u>	Date <u>12/29/16</u>	Time <u>10:15 AM</u>	Received by _____	Date _____	Time _____
Relinquished by _____	Date _____	Time _____	Received by _____	Date _____	Time _____

⑧ Data Package Options (please circle if required)

Type I - Full Type VI (Raw Data)

Relinquished by Commerical Carrier:	Received by <u>3</u>	Date <u>12-30-16</u>	Time <u>9:45</u>
UPS _____ FedEx <u>X</u> Other _____	Custody Seals Intact? <u>Yes</u> No		
Temperature Upon Receipt <u>4.6</u> °C	Custody Seals Intact? <u>Yes</u> No		

Chevron California Region Analysis Request/Chain of Custody



Lancaster Laboratories

Acct. # 11255

For Lancaster Laboratories use only
 Group # 1749557 Sample # 8767678-87
 Instructions on reverse side correspond with circled numbers.

SCR #: 199163

1 Client Information				4 Matrix				5 Analyses Requested										6 Remarks													
2 Sample Identification																															
Facility # <u>96590</u> <u>Core Laboratories Bakersfield CA</u>		WBS <u>232 E. Woodin Ave Chelan, WA</u>																Sediment <input type="checkbox"/> Ground <input type="checkbox"/> Surface <input type="checkbox"/>		Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Air <input type="checkbox"/>		Total Number of Containers		BTEX + MTBE 8021 <input type="checkbox"/> 8260 <input type="checkbox"/> TPH GRO 8015 <input type="checkbox"/> 8260 <input type="checkbox"/> TPH 8015 MOD DRO Silica Gel Cleanup 8260 Full Scan Oxygenates Total Lead Method Dissolved Lead Method 50mL vial Soil VOA Sampling Kit							
Site Address <u>CG 3437 Landco Drive 93306</u>		Chevron PM <u>Russ Leidos</u>		Lead Consultant		Consultant/Office		Consultant Project Mgr. <u>CG Larry Kunkel Russ Shropshire</u>		Consultant Phone # <u>10661-325-5657 425-482-3323</u>		Sampler <u>Crystal Grinstead</u>		Collected		Grab															
Date		Time		Soil		Water		Oil		BTEX + MTBE		TPH GRO		TPH 8015 MOD DRO		Silica Gel Cleanup		8260 Full Scan		Oxygenates		Total Lead		Dissolved Lead		50mL vial		Soil VOA Sampling Kit			
<u>SLB-2B-50.5'</u>		<u>12/27 4:00 pm</u>		<u>X</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		One 50mL vial + One VOA kit per sample. CL File # 160728 *Contact Russ Shropshire for analysis requested 425-482-3323 russell.s.shropshire@ leidos.com	
<u>SLB-2C-51.3'</u>		<u>12/28 9:20a</u>		<u>X</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>			
<u>SCB-3A-13.8'</u>		<u>12/28 9:55a</u>		<u>X</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>			
<u>SCB-3B-15.0'</u>		<u>12/28 10:47a</u>		<u>X</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>			
<u>SCB-3C-17.3'</u>		<u>12/28 11:15a</u>		<u>X</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>			
<u>SCB-3C-19.1'</u>		<u>12/28 11:35a</u>		<u>X</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>			
<u>SCB-3D-19.6'</u>		<u>12/28 11:50a</u>		<u>X</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>		<u>S</u>			

- Results in Dry Weight
- J value reporting needed
- Must meet lowest detection limits possible for 8260 compounds
- 8021 MTBE Confirmation
- 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

Relinquished by Crystal Grinstead Date 12/29/16 Time 2:30pm Received by _____ Date _____ Time _____

Relinquished by _____ Date _____ Time _____ Received by _____ Date _____ Time _____

8 Data Package Options (please circle if required)

Type I - Full Type VI (Raw Data)

Relinquished by Commerical Carrier: Received by 3

UPS _____ FedEx X Other _____ Date 12-30-16 Time 945

Temperature Upon Receipt 4.6 °C Custody Seals Intact? Yes No

Client: Chevron

Delivery and Receipt Information

Delivery Method: Fed Ex Arrival Timestamp: 12/30/2016 9:45
 Number of Packages: 1 Number of Projects: 1

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace ≥ 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	0
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 Timothy Cubberley (6520) at 13:19 on 12/30/2016

Samples Chilled Details

Thermometer Types: *DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp)* All Temperatures in °C.

<u>Cooler #</u>	<u>Thermometer ID</u>	<u>Corrected Temp</u>	<u>Therm. Type</u>	<u>Ice Type</u>	<u>Ice Present?</u>	<u>Ice Container</u>	<u>Elevated Temp?</u>
1	DT131	4.6	DT	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mg	milligram(s)
C	degrees Celsius	mL	milliliter(s)
cfu	colony forming units	MPN	Most Probable Number
CP Units	cobalt-chloroplatinate units	N.D.	none detected
F	degrees Fahrenheit	ng	nanogram(s)
g	gram(s)	NTU	nephelometric turbidity units
IU	International Units	pg/L	picogram/liter
kg	kilogram(s)	RL	Reporting Limit
L	liter(s)	TNTC	Too Numerous To Count
lb.	pound(s)	µg	microgram(s)
m3	cubic meter(s)	µL	microliter(s)
meq	milliequivalents	umhos/cm	micromhos/cm
<	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.		

Laboratory Data Qualifiers:

C - Result confirmed by reanalysis

E - Concentration exceeds the calibration range

J (or G, I, X) - estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)

P - Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.

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.

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.

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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