

**CLEANUP ACTION PLAN  
FORMER CHEVRON BULK TERMINAL NO. 207407  
612 SE Union Street  
Camas, Washington**

**February 2019**



**Washington State Department of Ecology  
300 Desmond Drive  
Lacey, Washington 98503**

**CLEANUP ACTION PLAN  
FORMER CHEVRON BULK TERMINAL NO. 207407  
612 SE Union Avenue  
Camas, Washington**

**February 2019**

Washington State Department of Ecology  
300 Desmond Drive  
Lacey, Washington 98503

---

## TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
2.0	BACKGROUND.....	1
2.1	Site Description .....	1
2.2	Site and Remediation History .....	1
3.0	REMEDIAL INVESTIGATION RESULTS .....	2
3.1	Subsurface Conditions.....	3
3.1.1	Geology.....	3
3.1.2	Hydrogeology .....	3
4.0	CLEANUP STANDARDS .....	3
4.1	Cleanup Levels and Points of Compliance.....	4
4.1.1	Groundwater .....	4
4.1.2	Soil.....	5
4.2	Terrestrial Ecological Evaluation .....	7
4.3	Clean Site Determination.....	7
5.0	Selected Cleanup Action .....	7
5.1	Compliance Monitoring.....	8
5.2	Institutional Controls .....	8
6.0	JUSTIFICATION FOR SELECTED CLEANUP ACTION .....	8
6.1	Threshold Requirements.....	8
6.2	Other Model Toxics Control Act Requirements.....	9
7.0	CONCLUSIONS .....	9
8.0	REFERENCES.....	9

## FIGURES

- 1 Site Vicinity Map
- 2 Site Map

## APPENDICES

- A. Historical Reports (on attached CD)
- B. MTCA Method B Calculation Sheets
- C. Terrestrial Ecological Evaluation Documentation

# CLEANUP ACTION PLAN

## 1.0 INTRODUCTION

The purpose of this Cleanup Action Plan (CAP) is to identify the cleanup actions selected by the Washington State Department of Ecology (Ecology) for the former Chevron bulk terminal located at 612 SE Union Avenue in Camas, Washington (the site). This CAP has been developed in accordance with the Model Toxics Control Act (MTCA; Ecology, 2007), RCW 70.105D, and Chapter 173-340 of the Washington Administrative Code (WAC). Components of this CAP follow the criteria defined in MTCA [WAC 173-340-380(1)].

Ecology issued Agreed Order No. 02TCPSR-3991 between Ecology and Chevron Products Company (Chevron) on August 18, 2003. This Agreed Order required Chevron to conduct a remedial investigation (RI) and feasibility study (FS) for the site, and implement the recommendations of the FS.

Based on site-specific data results provided in the RI Report (Leidos, 2015), Ecology has determined that no further action is required for the site. In accordance with MTCA [WAC 173-340-360(2)], the site meets all the threshold requirements and other requirements at the defined points of compliance. This includes being protective of human health and the environment, complying with selected remedial action levels, complying with applicable state and federal laws, and consideration of public concerns.

To review or obtain copies of the above document, contact Ecology's Public Records Officer via email at [PublicRecordsOfficer@ecy.wa.gov](mailto:PublicRecordsOfficer@ecy.wa.gov) or via mail addressed to Public Records Officer, WA Department of Ecology, PO Box 47600, Olympia, Washington 98504.

## 2.0 BACKGROUND

### 2.1 SITE DESCRIPTION

Former Chevron Bulk Terminal No. 207407 is a decommissioned bulk fuel facility located on a 1.5-acre irregularly shaped lot at the southeast corner of the intersection of SE Sixth Avenue and SE Union Street in Camas, Washington. The site is bounded to the north by a railroad mainline. The east side of the site was formerly bordered by a railroad spur, and is currently bordered by a post office. The site is bounded to the south by the Tidland Corporation a light-industrial company, and land use to the west of the site across Union Avenue is residential. The site is located approximately 800 feet southeast of the Washougal River and 1,700 feet north of the Columbia River.

Based on City zoning, the site is located in an area designated as Heavy Industrial (HI). This zone provides for a wide range of industrial and manufacturing uses. Types of activities in this zone include assembly, manufacturing, fabrication, processing, bulk handling and storage, research facilities, associated warehousing, and heavy trucking. A site vicinity map is presented on Figure 1 and a layout of the facility with current and former features is presented on Figure 2.

### 2.2 SITE AND REMEDIATION HISTORY

The former facility operated as a bulk fuel storage plant from the 1920s to 1983. The site was decommissioned in 1983 and all aboveground storage tanks (ASTs) and associated piping were removed. All site buildings and warehouses were removed in 1984 except for the office building

located in the southern portion of the site. Chevron sold the property in November 1994 to Triangle Resources who uses the property for wood recycling.

In November 1994, a remedial excavation was completed at the site to depths ranging from approximately 2 to 16 feet below ground surface (bgs). Approximately 830 cubic yards of petroleum-impacted soil were excavated.

### **3.0 REMEDIAL INVESTIGATION RESULTS**

Between 1987 and 1994, several rounds of site investigations were conducted. The results of the investigations were reported by Rittenhouse-Zeman & Associates, Inc. (RZA) in 1987, 1988, and 1991 and by Hart Crowser in 1994. All historical reports are provided on a CD (Appendix A).

In December 1987, two soil borings (B-1 and B-2) were completed to approximately 20 to 23 feet below ground surface (bgs; RZA, 1987).

In September 1988, four monitoring wells (MW-1 through MW-4) were completed to approximately 20 to 23 feet bgs (RZA, 1988).

Between January and February 1990, three monitoring wells (MW-5 through MW-7) were completed to approximately 45 feet bgs (RZA, 1991).

In February 1990, a heating-oil underground storage tank (UST) located in the southern corner of the site was removed (RZA, 1991).

In September 1994, 19 test pits (TP-1 through TP-19) were completed at the site at depths varying from 1.5 to 14.5 feet bgs. One sump, containing an oil/water mixture, was discovered at that time (Hart Crowser, 1994a).

In November 1994, a remedial excavation was completed at the site to depths ranging from approximately 2 to 16 feet bgs. Approximately 830 cubic yards of petroleum impacted soil were excavated. The previously discovered sump was also excavated. Monitoring wells MW-1 through MW-4 were abandoned (Hart Crowser, 1994b).

Following issuance of the Agreed Order, Chevron formally began a RI of the site in July 2004. A timeline of site investigation activities completed under the Agreed Order is detailed below.

Between July and August, 2004, three soil borings (SB-1 through SB-3) to depths of approximately 25 feet bgs and seven groundwater monitoring wells (MW-8 through MW-14) to depths between approximately 49.7 and 53 feet bgs were completed at the site. Monitoring well MW-7 was abandoned at this time. During this site investigation, total petroleum hydrocarbons (TPH) as gasoline (TPH-G) was detected in soil borings SB-1 between 6 and 14 feet bgs and SB-2 between 19 and 24 feet bgs. TPH as diesel (TPH-D) was also detected in soil boring SB-2 at a depth of 19 feet bgs (SAIC Energy, Environment & Infrastructure, LLC [SAIC], 2012).

In July 2008, two groundwater monitoring wells (MW-15 and MW-16) were completed to approximately 49.2 feet bgs. During this site investigation, no contaminants of concern were detected at concentrations above MTCA Method A cleanup levels (CULs) in any of the soil samples (SAIC, 2012).

Between August and September 2014, three soil borings (SB-4, SB-5, and SB-6) were completed to approximately 22 and 36 feet bgs. The objective of this investigation was to determine the magnitude of petroleum-impacted soil remaining in the vadose zone from areas previously

identified as having the highest contaminant concentrations on site and to assess the extent of natural attenuation in these areas over time. In addition, MTCA Method B site-specific TPH CULs were recalculated using analytical results from soil samples collected during this investigation. No contaminants of concern were detected at concentrations above the newly recalculated site-specific MTCA Method B CULs in any of the soil samples (Leidos, 2014).

Groundwater monitoring was performed at the site from February 1990 through November 1995 and was resumed in 2004. The most recent groundwater monitoring event was conducted in June 2015.

### **3.1 SUBSURFACE CONDITIONS**

#### **3.1.1 Geology**

Soil borings indicate that lithology is consistent across the site. The site subsurface soil typically consists of gravelly silt between ground surface and 3 to 5 feet bgs. Underlying this layer is very dense gravelly silt and sandy gravel with cobbles and boulders (up to 4 feet in diameter) to approximately 20 feet bgs. The cobble and boulder content decreases as the sand content increases from approximately 20 to 50 feet bgs.

The City of Camas (City) municipal well No. 6 is located approximately 250 feet north of the site. The City municipal well No. 5 is located approximately 1,000 feet southeast of the site. Well logs for City municipal water wells in the vicinity of the site show that the gravel layer continues to about 80 to 85 feet bgs where a harder rock layer is encountered. This layer is likely weathered basalt.

#### **3.1.2 Hydrogeology**

Regional groundwater occurs in a relatively shallow aquifer that is used in the area as a source of irrigation and drinking water. Site groundwater depths range between approximately 26 and 45 feet bgs with historical groundwater flow direction to the northeast, northwest, and south-southwest. Results from a rose diagram created using historical groundwater flow direction data and municipal well No. 6 operation records; indicate that operations of the municipal well No. 6 have influenced groundwater flow direction at the site. During the municipal well No. 6 operations the groundwater flow at the site trends in a north-northeast direction. In contrast, when the well is not operating, the groundwater flow trends in a westerly direction.

An analysis of groundwater flow was conducted by Ecology and it states: “The five-year (2007-2011) prevailing groundwater flow direction-including times when No. 6 well was operating-is towards the west (azimuth bearing of 275°)”. The evaluation concluded that “Clearly, the probability of groundwater beneath the source area transporting contaminants to the Camas City Well No. 6 is minimal.” (Ecology, 2013).

## **4.0 CLEANUP STANDARDS**

Cleanup standards in MTCA are defined for each hazardous substance present in each environmental media and for each pathway through which humans and/or environment receptors may be exposed [WAC 173-340-700(4)]. Each cleanup standard addresses the CULs for hazardous substances, the point of compliance where these levels must be met, and other applicable regulatory requirements [WAC 173-340-700(3)]. Under MTCA, a point of compliance specific to each medium and exposure pathway must be established. Potential

exposure pathways and corresponding points of compliance for each medium are discussed in section 4.1.

MTCA Method A and B cleanup standards are appropriate to establish CULs for this site because hazardous substances are limited to petroleum constituents, because numerical cleanup standards are available for each of the hazardous substances present, and because the site is undergoing a routine cleanup action.

Based on WAC 173-340-700(8)(b)(i) and Ecology's Implementation Memorandum No. 15 (Ecology, 2016), when sufficient information is provided to document that an empirical demonstration has been made, Method A can be used for some substances or media, and Method B or C for others.

#### **4.1 CLEANUP LEVELS AND POINTS OF COMPLIANCE**

The following sections include an evaluation that applies CULs and points of compliance to the various environmental media and exposure pathways.

##### **4.1.1 Groundwater**

MTCA requires that groundwater CULs be based on the highest beneficial use and reasonable maximum exposure under both current and future land use at a site. For groundwater, MTCA specifies that drinking water is the highest beneficial use and that ingestion of drinking water represents the reasonable maximum exposure [WAC 173-340-720]. The Method A CULs for groundwater are applicable to this site.

MTCA states that groundwater CULs shall be attained in all groundwater from the point of compliance to the outer boundary of the hazardous substance plume. The standard point of compliance as defined by MTCA is throughout a site from the uppermost level of the saturated zone extending vertically to the lowest depth that could potentially be affected by a site.

Potential pathways for exposure to contaminants in groundwater are discussed below.

**Groundwater Ingestion/Inhalation.** Groundwater beneath the site meets drinking water standards. Concentrations of contaminants of concern (COCs) in groundwater have consistently been below MTCA Method A CULs (8 or more quarters) and in most instances concentrations have been below laboratory method detection limits. Regionally the shallow aquifer is used as a source of drinking water. However, the proximity of the municipal water wells to the site combined with a very low groundwater gradient limits the possibility of site groundwater reaching the water supply. Ecology's assessment of site groundwater flow direction (Ecology, 2013) indicated that the probability of groundwater transporting contaminants of concern to City wells is minimal.

**Direct Contact with Groundwater.** Concentrations of COCs in groundwater have consistently been below MTCA Method A CULs (8 or more quarters) and in most instances concentrations have been below laboratory method detection limits. In addition, groundwater is encountered at depths below 26 feet bgs and therefore could not be encountered during routine site development or utility construction activities.

**Groundwater to Surface Water.** Concentrations of COCs in groundwater have consistently been below MTCA Method A CULs (8 or more quarters). In addition, the site is located approximately 800 feet southeast of the Washougal River and 1,700 feet north of the Columbia River (Figure 1). The distance of these rivers from the site eliminates the possibility of the site

groundwater reaching to surface water bodies and sediments. Therefore, surface water is not considered to be a receptor of concern.

***Groundwater to Vapor.*** Concentrations of COCs in groundwater have consistently been below MTCA Method A CULs (8 or more quarters) and in most instances concentrations have been below laboratory method detection limits. In addition, groundwater depths at the site range between approximately 26 and 45 feet bgs which provide a vertical separation between ground surface and groundwater of more than 15 feet.

#### **4.1.2 Soil**

MTCA states that CULs shall be based on the reasonable maximum exposure expected to occur during both current and future land use. Method B is the universal method for determining CULs at all sites. For sites contaminated with TPH, Method B CULs are determined by using the fractionated analytical approach for petroleum. This approach involves testing of the samples to determine the light non-aqueous phase liquid composition. CULs must consider the measured or predicted ability of the fractions to migrate from one medium to other media. When multiple exposure pathways are identified for a single media, the most stringent CUL is selected.

For this site MTCA Method B has been selected for determining CULs. As detailed below Method B soil CULs were calculated for the direct contact and protection of groundwater (leaching) pathways. Because protection of groundwater is the most stringent this cleanup level has been selected.

The site-specific MTCA Method B CUL for TPH in soil was calculated for the site using data collected during the 2014 investigation (Leidos, 2014). Method B CULs were calculated individually from soil data collected from borings SB-4-15, SB-5-16, and SB-6-19. Petroleum hydrocarbons were analyzed using United States Environmental Protection Agency (USEPA) methods 8260B, EPH, and VPH. The highest detected results were used in the calculations. In addition, when a compound was detected below the laboratory method detection limit, half of the method detection limit was used in the calculation. Calculated results for the direct contact pathway from each sample location are listed below.

- SB-4-15: 2,453 milligrams per kilogram (mg/kg).
- SB-5-16: 2,603 mg/kg.
- SB-6-19: 2,840 mg/kg.

As recommended in the Ecology *Guidance for Remediation of Petroleum Contaminated Sites* September 2001, the median value of these results, 2,603 mg/kg, was used as the site-specific MTCA Method B CUL for direct contact with TPH in soil (Ecology, 2001).

The site-specific Method B CULs for TPH for protection of groundwater quality (leaching) pathway was also calculated from the same sample data and are listed below.

- SB-4-15: 72,000 mg/kg (100-percent non-aqueous phase liquid [NAPL]).
- SB-5-16: 72,000 mg/kg (100-percent NAPL).
- SB-6-19: 2,006 mg/kg.

TPH concentrations in samples SB-4-15 and SB-5-16 do not pose a leaching hazard from soil to groundwater (Soil-to-Groundwater is not a critical pathway). A more conservative cleanup level



protective of groundwater was calculated from sample SB-6-19 at 2006 mg/kg. Protection of groundwater is also supported in that contaminants in sampled monitoring wells have been below the MTCA Method A CULs for 8 or more quarters.

The 2014 investigation data support the fact that natural attenuation has occurred at locations where soil data were collected in the past. As stated in Ecology letter *Chevron Camas Cleanup site (FSID: #1043). Acceptance of Supplemental Vadose-Zone Investigation. Path-forward Milestones* dated April 9, 2015 “During the ten-year period from 2004 to 2014 the concentrations have diminished by an average of 83% (median: 90%; range: 52-100%). These data indicate the threat to underlying groundwater is essentially negligible, and that natural attenuation has occurred at a reasonable rate” (Ecology, 2015).

The MTCA Method B calculation sheets and associated analytical data from the 2014 soil sampling activities are presented as Appendix B.

The soil CULs combined with the point of compliance determines the cleanup standard for a site. Under MTCA, the point of compliance is pathway dependent. The point of compliance for protection of human exposure via direct contact/incidental ingestion is in the soils throughout the site to a reasonable estimate of the depth of soil that could be excavated and distributed at the soil surface during site development activities (i.e., ground surface to 15 feet bgs).

The standard point of compliance for protection of ecological receptors is in the soils throughout the site from ground surface to 15 feet bgs (the reasonable depth of soil that could be excavated during site development and could result in exposure to ecological organisms).

The point of compliance for protection of groundwater is throughout the site.

Potential pathways for exposure to contaminants in the soil are discussed below.

***Protection of Direct Contact or Incidental Ingestion.*** Concentrations of COCs in soil are below the calculated MTCA Method B soil CUL for total TPH protection of groundwater and direct contact.

***Protection of Groundwater.*** Empirical data from current groundwater conditions (which are below Method A cleanup levels) and recent soil analytical data (which are below the site-specific MTCA Method B CULs for protection of groundwater) demonstrate that soil conditions are protective of groundwater.

***Protection from Vapors.*** Currently the site is used as a wood recycling facility with a temporary trailer being the only building on the property. Therefore there is no vapor intrusion risk to current receptors. Zoning for the site is Heavy Industrial so any potential future use will be industrial in nature. A remedial excavation completed at the site in November 1994 removed the majority of petroleum impacted soil to approximately 15 feet bgs. Based on confirmation soil samples collected at the site in 2008 and 2014, concentrations of COCs are below the MTCA Method B CULs. In addition, the vertical separation between ground surface and petroleum-impacted soil is at least 15 feet. The current site use and zoning as well as the COC concentrations below the MTCA Method B CULs indicate that site soil does not pose a risk to human health or the environment.

***Protection of Ecological Receptors.*** Results of a terrestrial ecological evaluation show there is no risk of direct contact for ecological receptors.

## **4.2 TERRESTRIAL ECOLOGICAL EVALUATION**

In addition to evaluation of human health risk, MTCA (WAC 173-340-7490) requires that one of the following actions be taken after the release of hazardous substances to the soil at a site to determine the potential impacts to terrestrial organisms at the site:

- Documentation of an exclusion from any further terrestrial ecological evaluation (TEE) using the criteria outlined in WAC 173-340-7491.
- Completion of a simplified TEE as specified in WAC 173-340-7492.
- Completion of a site-specific TEE as specified in WAC 173-340-7493.

A site may be excluded from the requirement for a TEE if any of the following criteria are met at the site:

- All soil contaminated with hazardous substance is, or will be located below the point of compliance established under WAC 173-340-7490(4).
- All soil contaminated with hazardous substance is, or will be, covered by buildings, paved roads, pavement, or other physical barriers that will prevent plants or wildlife from being exposed to the soil contamination.
- There is less than 0.25 acre of contiguous undeveloped land on or within 500 feet of any area of the site contaminated with chlorinated dioxins or furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, heptachlor epoxide, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene.
- There is less than 1.5 acres of contiguous undeveloped land on the site or within 500 feet of any area of the site and the contamination at the site does not include any of the contaminants listed in the preceding bullet.

The site is not excluded from the simplified TEE requirement (WAC 173-340-7490) based on the following:

- There are greater than 4 acres of contiguous undeveloped land within 500 feet of the site.

The simplified TEE was ended based on WAC 173-340-7492 2(a)(i). The total area of contamination above the point of compliance is less than 350 square feet. TEE Documentation Form and Table 749-1 are included as Appendix C.

## **4.3 CLEAN SITE DETERMINATION**

The site shall be considered clean when MTCA CULs, as defined in WAC 173-340-720 for groundwater and WAC 173-340-740 for soil, are met at the site for these media at all established points of compliance. As discussed above, the site meets all required criteria for achieving a clean site determination.

## **5.0 SELECTED CLEANUP ACTION**

An evaluation of site conditions compared to established CULs and points of compliance shows that the site meets MTCA requirements because all exposure pathways have been eliminated and soil and groundwater concentrations do not exceed established CULs. Therefore, there are no

feasible cleanup actions for the Site. Based on this conclusion the selected cleanup action for the site is No Further Action.

## 5.1 COMPLIANCE MONITORING

Under MTCA, compliance monitoring is required for all cleanup actions (WAC 173-340-410). The following three categories of compliance monitoring are defined under MTCA: protection monitoring, performance monitoring, and conformational monitoring. Because concentrations of constituents of concern in soil and groundwater are below CULs, compliance monitoring is not required for this site.

## 5.2 INSTITUTIONAL CONTROLS

MTCA requires a summary of any institutional controls required as part of the cleanup action [WAC 173-340-380(1)(a)(vi)]. Institutional controls are measures undertaken to limit or prohibit activities that may interfere with the integrity of a cleanup action or result in exposure to hazardous substances at the site [WAC 173-340-440(1)]. Because all exposure pathways have been eliminated and soil and groundwater concentrations do not exceed CULs, institutional controls are not required for this site.

## 6.0 JUSTIFICATION FOR SELECTED CLEANUP ACTION

MTCA specifies the minimum requirements that any selected cleanup action must meet and the procedures for selecting a cleanup action (WAC 173-340-360). These include both “threshold requirements” (as discussed below) and “other requirements.” The other requirements of MTCA include, for the use of permanent solutions to the maximum extent practicable, a cost-benefit analysis, an estimate of the relative restoration time frame, and provisions for addressing public concerns.

### 6.1 THRESHOLD REQUIREMENTS

Threshold requirements are specified in WAC 173-340-360(2)(a) and include the following four components:

**Protection of Human Health and the Environment.** According to Ecology’s guidance on natural attenuation (Ecology, 2005): “The cleanup action selected must either reduce or remove (or destroy) the contamination, restoring the Site to cleanup levels, or contain the contamination in such a way that will minimize future exposure of humans and ecological receptors.” The selected cleanup action meets this requirement because all exposure pathways have been eliminated and soil and groundwater concentrations do not exceed established CULs.

**Compliance with Cleanup Standards.** The selected cleanup action is compliant with MTCA Method A and B CULs and points of compliance for groundwater and soil.

**Compliance with Applicable State and Federal Laws.** The selected cleanup action is consistent with current MTCA regulations and is compliant with all applicable state and federal laws, including those that Ecology determines to be relevant and appropriate [WAC 173-340-700(6)(a) and 173-340-710].

**Provision for Compliance Monitoring.** The selected cleanup action does not require a provision for compliance monitoring because all exposure pathways have been eliminated and soil and groundwater concentrations do not exceed established CULs.

## 6.2 OTHER MODEL TOXICS CONTROL ACT REQUIREMENTS

Other MTCA requirements are specified in WAC 173-340-360(2)(b) and include the following three components:

**Use of Permanent Solutions and Disproportionate Cost Analysis.** Under MTCA, a permanent solution or permanent cleanup action is one in which the cleanup standards “can be met without further action being required” (WAC 173-340-200). The selected cleanup action meets this requirement because all exposure pathways have been eliminated and soil and groundwater concentrations do not exceed established CULs. A disproportionate cost analysis is not required because there are no costs to analyze.

**Provide Reasonable Restoration Time Frame.** The selected cleanup action meets this requirement because there are no additional actions to perform.

**Consider Public Concerns.** In accordance with MTCA WAC 173-340-600 this CAP and the RI Report are being provided for public review and comment.

## 7.0 CONCLUSIONS

Soil and groundwater beneath the site were historically impacted by the former bulk plant operations. The remedial investigation delineated the nature and extent of soil and groundwater impacts and evaluated the potential of risk to current and likely future receptors. Site soil and groundwater conditions were evaluated compared against the proposed CULs and points of compliance established in the RI. This comparison shows that the site meets MTCA requirements because all exposure pathways have been eliminated and soil and groundwater concentrations do not exceed established CULs.

Because there are no exceedances of applicable cleanup standards and additional cleanup of the site is not necessary, there are no additional cleanup actions to evaluate. In addition, based on these results and conclusions, a No Further Action determination for the site is proposed.

Public comments received during the 30-day comment period will be considered and addressed by Ecology. Following public review of these documents and consideration of any comments provided, Ecology will complete a Final CAP and finalize site closure through issuance of a No Further Action determination.

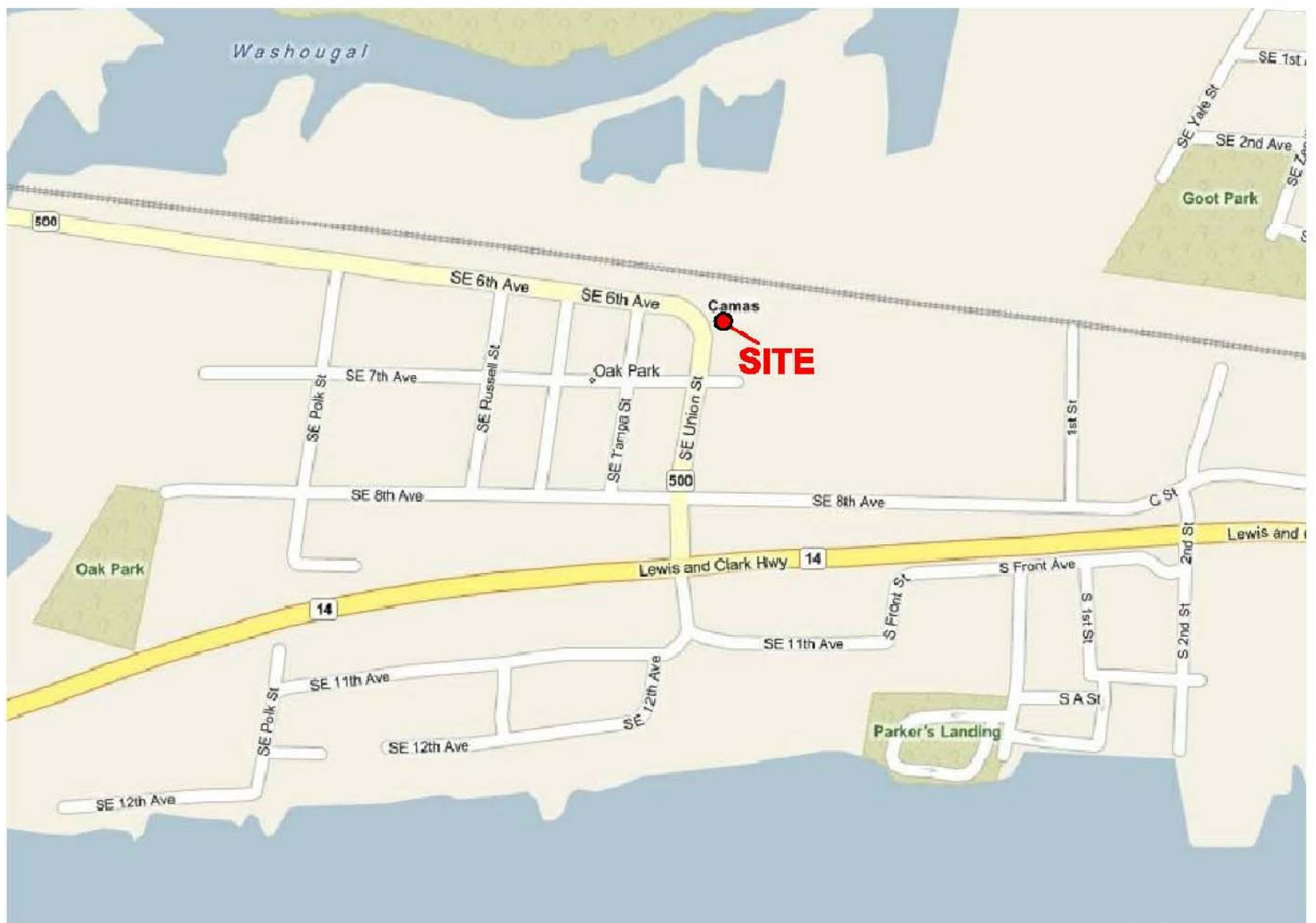
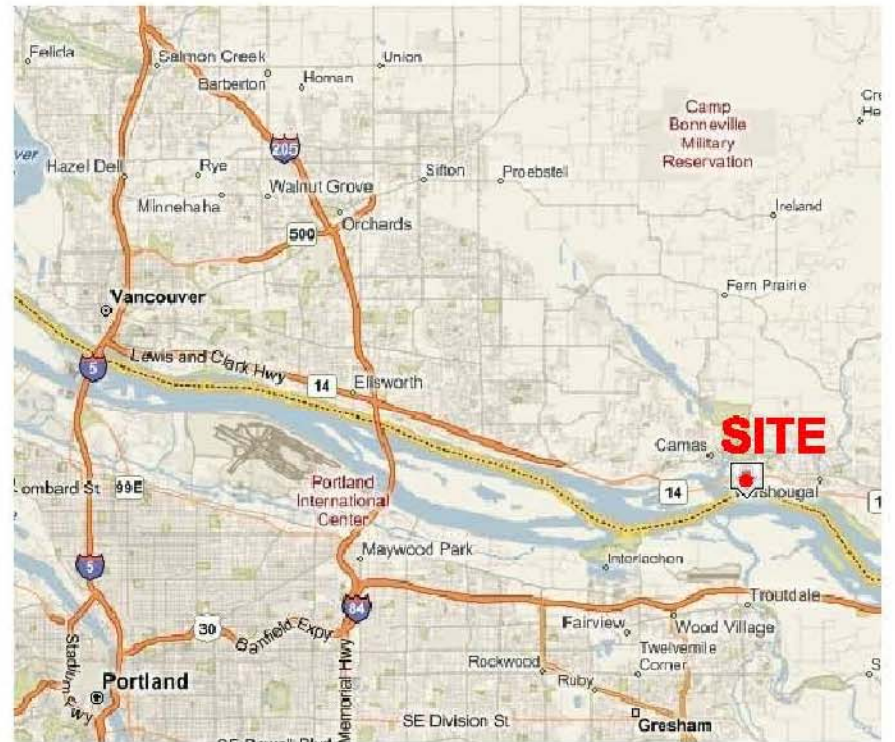
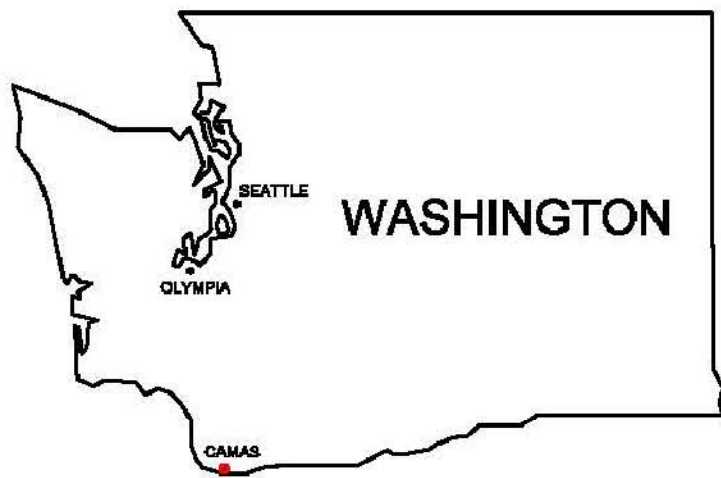
## 8.0 REFERENCES

- Ecology, 2001. *Guidance for Remediation of Petroleum Contaminated Sites*. September.
- \_\_\_\_\_, 2005. *Guidance on Remediation of Petroleum-Contaminated Ground Water by Natural Attenuation*. July.
- \_\_\_\_\_, 2007. *Model Toxics Control Act Cleanup Regulation, Chapter 173-340 WAC*. Revised November 2007.
- \_\_\_\_\_, 2013. *Agency Comments on July 26, 2012 Draft Final Remedial Investigation/Feasibility Study Report*. June 24.
- \_\_\_\_\_, 2015. *Chevron Camas Cleanup site (FSID: #1043). Acceptance of Supplemental Vadose-Zone Investigation. Path-forward Milestones*. April 9.

- \_\_\_\_\_, 2016. *Frequently Asked Questions (FAQs) Regarding Empirical Demonstrations and Related Issues. Implementation Memorandum No. 15.* June 21.
- Hart Crowser, 1994a. *Subsurface Soil Characterization Report, Former Chevron Bulk Terminal, No. 100-1840, SE 6<sup>th</sup> and Union Avenues, Camas, Washington.* December 14.
- \_\_\_\_\_, 1994b. *Soil Remediation Report, Former Chevron Bulk Terminal, No. 100-1840, SE 6<sup>th</sup> and Union Avenues, Camas, Washington.* December 28.
- Leidos, 2014. *Additional Soil Investigation Report, Former Chevron Bulk Terminal No. 207407, 612 SE Union Street, Camas, Washington.* December 3.
- \_\_\_\_\_, 2015. *Remedial Investigation Report, Former Chevron Bulk Terminal, No. 207407, 612 Union Street, Camas, Washington.* August 19.
- RZA, 1987. *Subsurface Petroleum Hydrocarbon Contamination Evaluation, Chevron Bulk Plant, Camas, Washington.* November.
- \_\_\_\_\_, 1988. *Subsurface Petroleum Hydrocarbon Evaluation, Former Chevron Bulk Fuels Terminal, Camas, Washington.* November.
- \_\_\_\_\_, 1991. *Additional Subsurface Petroleum Hydrocarbon Evaluation, Former Chevron Bulk Fuel Terminal, Camas, Washington.* January.
- SAIC, 2012. *Remedial Investigation/Feasibility Study Report, Chevron Site No. 207407, Former Chevron Bulk Plant, 612 Union Street, Camas, Washington.* July 25.

## **Figures**

---



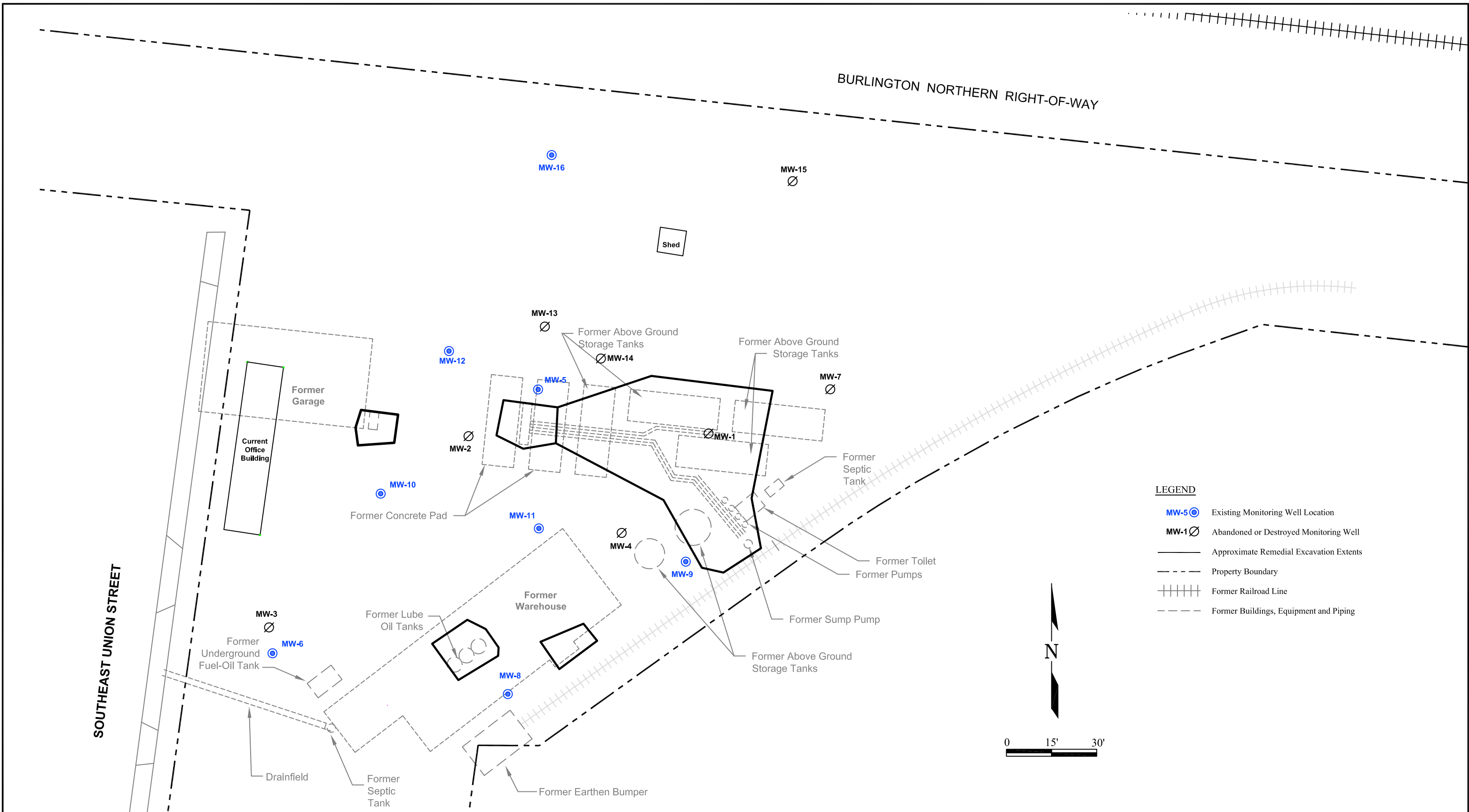
Maps Provided by Seattle.gov



Former Chevron Bulk Terminal No. 207407  
612 SE Union Street  
Camas, Washington

FIGURE 1  
Vicinity Map

FILE NAME: 207407 Vicinity Map.dwg	DATE: 9/27/2017
---------------------------------------	--------------------



	Site Map	<b>FIGURE</b>  <span style="font-size: 2em;">2</span>
	Former Chevron Bulk Terminal No. 20-7407 612 SE Union Street Camas, Washington	
207407 Site Map 2014.dwg	Date: 9/27/2017	Revised By: CW



**Appendix A:**  
**MTCA Method B Calculation Sheets**

---

## A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

### 1. Enter Site Information

Date: 10/03/14

Site Name: 207407 Camas, WA

Sample Name: SB-4-15

### 2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
<b><u>Petroleum EC Fraction</u></b>		
AL_EC >5-6	0	0.00%
AL_EC >6-8	1.525	0.26%
AL_EC >8-10	8.56	1.44%
AL_EC >10-12	35	5.91%
AL_EC >12-16	260	43.88%
AL_EC >16-21	150	25.32%
AL_EC >21-34	12	2.03%
AR_EC >8-10	8.819	1.49%
AR_EC >10-12	1.4982	0.25%
AR_EC >12-16	21.9911	3.71%
AR_EC >16-21	83	14.01%
AR_EC >21-34	9.9961	1.69%
Benzene	0	0.00%
Toluene	0	0.00%
Ethylbenzene	0.0305	0.01%
Total Xylenes	0.0305	0.01%
Naphthalene	0.0018	0.00%
1-Methyl Naphthalene	0.0036	0.00%
2-Methyl Naphthalene	0.0053	0.00%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0.00038	0.00%
Benzo(b)fluoranthene	0.00038	0.00%
Benzo(k)fluoranthene	0.00038	0.00%
Benzo(a)pyrene	0.00038	0.00%
Chrysene	0.002	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0.00038	0.00%
<b>Sum</b>	592.465	100.00%

### 3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.00112	Unitless
Dilution Factor:	20	Unitless

### 4. Target TPH Ground Water Concentration (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:  ug/L

Notes for Data Entry

Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

#### REMARK:

- 1) Half detection limits used for AL\_EC>6-8, total xylenes, ethylbenzene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, and benzo(a)pyrene.
- 2) The following parameters have never been detected on the site so a value of zero was entered: benzene, MTBE, toluene, n-hexane, EDB, EDC, AL\_EC>5-6, and dibenz(a,h)anthracene.
- 3) double counting was avoided for E-C fractions
- 4) default value were used for total porosity and soil bulk density.
- 5) A dilution factor of 20 was entered for unsaturated soil zones.

**A2 Soil Cleanup Levels: Calculation and Summary of Results.** Refer to WAC 173-340-720, 740, 745, 747, 750

**Site Information**

Date: 10/3/2014
Site Name: 207407 Camas, WA
Sample Name: SB-4-15
Measured Soil TPH Concentration, mg/kg: <b>592.465</b>

**1. Summary of Calculation Results**

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,453	5.32E-09	2.42E-01	Pass
	Method C	30,511	1.32E-09	1.94E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	100% NAPL	6.61E-12	1.33E-01	Pass
	NA	NA	NA	NA	NA

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

**2. Results for Protection of Soil Direct Contact Pathway: Human Health**

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	<b>2,452.61</b>	<b>30,510.68</b>
Most Stringent Criterion	<b>HI =1</b>	<b>HI =1</b>

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.45E+03	2.20E-08	1.00E+00	YES	3.05E+04	6.81E-08	1.00E+00
Total Risk=1E-5	NO	1.11E+06	1.00E-05	4.54E+02	NO	4.48E+06	1.00E-05	1.47E+02
Risk of Benzene= 1E-6	NA	NA	NA	NA	<b>NA</b>			
Risk of cPAHs mixture= 1E-6	NO	1.11E+05	1.00E-06	4.54E+01				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

**3. Results for Protection of Ground Water Quality (Leaching Pathway)**

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	<b>NA</b>
Protective Ground Water Concentration, ug/L	<b>NA</b>
Protective Soil Concentration, mg/kg	<b>Soil-to-Ground Water is not a critical pathway!</b>

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	1.10E+02	6.48E-12	1.65E-01	100% NAPL
Total Risk = 1E-5	YES	1.10E+02	6.48E-12	1.65E-01	100% NAPL
Total Risk = 1E-6	YES	1.10E+02	6.48E-12	1.65E-01	100% NAPL
Risk of cPAHs mixture= 1E-5	YES	1.10E+02	6.48E-12	1.65E-01	100% NAPL
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 71000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
NA	NA	NA	NA	<b>NA</b>

**A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750**

**1. Enter Site Information**

Date: 10/06/14

Site Name: 207407 Camas, WA

Sample Name: SB-5-16

**2. Enter Soil Concentration Measured**

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
<b><u>Petroleum EC Fraction</u></b>		
AL_EC >5-6	0	0.00%
AL_EC >6-8	6.63	0.37%
AL_EC >8-10	106	5.85%
AL_EC >10-12	110	6.08%
AL_EC >12-16	540	29.82%
AL_EC >16-21	440	24.30%
AL_EC >21-34	41	2.26%
AR_EC >8-10	103.839	5.73%
AR_EC >10-12	39.88	2.20%
AR_EC >12-16	113.5	6.27%
AR_EC >16-21	260	14.36%
AR_EC >21-34	40.97764	2.26%
Benzene	0	0.00%
Toluene	0	0.00%
Ethylbenzene	0.061	0.00%
Total Xylenes	2.1	0.12%
Naphthalene	0.12	0.01%
1-Methyl Naphthalene	2.7	0.15%
2-Methyl Naphthalene	3.8	0.21%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0.0057	0.00%
Benzo(b)fluoranthene	0.0023	0.00%
Benzo(k)fluoranthene	0.00038	0.00%
Benzo(a)pyrene	0.0016	0.00%
Chrysene	0.012	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0.00038	0.00%
<b>Sum</b>	<b>1810.63</b>	<b>100.00%</b>

Notes for Data Entry

Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:

- 1) half detection limits used for Benzo(k)fluoranthene and Indeno(1,2,3-cd)pyrene.
- 2) The following parameters have never been detected on the site so a value of zero was entered: benzene, MTBE, toluene, n-hexane, EDB, EDC, AL\_EC>5-6, and dibenz(a,h)anthracene.
- 3) double counting was avoided for E-C fractions
- 4) default value were used for total porosity and soil bulk density.
- 5) A dilution factor of 20 was entered for unsaturated soil zones.

**3. Enter Site-Specific Hydrogeological Data**

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.00112	Unitless
Dilution Factor:	20	Unitless

**4. Target TPH Ground Water Concentration (if adjusted)**

If you adjusted the target TPH ground water concentration, enter adjusted value here:  ug/L

**A2 Soil Cleanup Levels: Calculation and Summary of Results.** Refer to WAC 173-340-720, 740, 745, 747, 750

**Site Information**

Date: 10/6/2014
Site Name: 207407 Camas, WA
Sample Name: SB-5-16
Measured Soil TPH Concentration, mg/kg: <b>1,810.630</b>

**1. Summary of Calculation Results**

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,603	2.50E-08	6.95E-01	Pass
	Method C	34,200	6.22E-09	5.29E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	100% NAPL	1.60E-11	7.43E-01	Pass
	NA	NA	NA	NA	NA

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

**2. Results for Protection of Soil Direct Contact Pathway: Human Health**

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	<b>2,603.23</b>	<b>34,200.41</b>
Most Stringent Criterion	<b>HI =1</b>	<b>HI =1</b>

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.60E+03	3.60E-08	1.00E+00	YES	3.42E+04	1.17E-07	1.00E+00
Total Risk=1E-5	NO	7.23E+05	1.00E-05	2.78E+02	NO	2.91E+06	1.00E-05	8.51E+01
Risk of Benzene= 1E-6	NA	NA	NA	NA	<b>NA</b>			
Risk of cPAHs mixture= 1E-6	NO	7.23E+04	1.00E-06	2.78E+01				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

**3. Results for Protection of Ground Water Quality (Leaching Pathway)**

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	<b>NA</b>
Protective Ground Water Concentration, ug/L	<b>NA</b>
Protective Soil Concentration, mg/kg	<b>Soil-to-Ground Water is not a critical pathway!</b>

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	3.89E+02	1.58E-11	7.90E-01	100% NAPL
Total Risk = 1E-5	YES	3.89E+02	1.58E-11	7.90E-01	100% NAPL
Total Risk = 1E-6	YES	3.89E+02	1.58E-11	7.90E-01	100% NAPL
Risk of cPAHs mixture= 1E-5	YES	3.89E+02	1.58E-11	7.90E-01	100% NAPL
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 72000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
NA	NA	NA	NA	<b>NA</b>

**A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750**

**1. Enter Site Information**

Date: 10/06/14

Site Name: 207407 Camas, WA

Sample Name: SB-6-19

**2. Enter Soil Concentration Measured**

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
<b><u>Petroleum EC Fraction</u></b>		
AL_EC >5-6	0	0.00%
AL_EC >6-8	8.52	1.47%
AL_EC >8-10	127	21.95%
AL_EC >10-12	72	12.44%
AL_EC >12-16	81	14.00%
AL_EC >16-21	68	11.75%
AL_EC >21-34	39	6.74%
AR_EC >8-10	86.021	14.87%
AR_EC >10-12	6.957	1.20%
AR_EC >12-16	16.73	2.89%
AR_EC >16-21	46	7.95%
AR_EC >21-34	25.9757	4.49%
Benzene	0	0.00%
Toluene	0	0.00%
Ethylbenzene	0.053	0.01%
Total Xylenes	0.026	0.00%
Naphthalene	0.043	0.01%
1-Methyl Naphthalene	0.51	0.09%
2-Methyl Naphthalene	0.76	0.13%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0.0035	0.00%
Benzo(b)fluoranthene	0.0051	0.00%
Benzo(k)fluoranthene	0.0017	0.00%
Benzo(a)pyrene	0.0033	0.00%
Chrysene	0.009	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0.0017	0.00%
<b>Sum</b>	<b>578.62</b>	<b>100.00%</b>

**3. Enter Site-Specific Hydrogeological Data**

Total soil porosity:	0.43	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.13	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.00112	Unitless
Dilution Factor:	20	Unitless

**4. Target TPH Ground Water Concentration (if adjusted)**

If you adjusted the target TPH ground water concentration, enter adjusted value here:  ug/L

Notes for Data Entry

Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:

- 1) Half detection limits used for Total Xylenes.
- 2) The following parameters have never been detected on the site so a value of zero was entered: benzene, MTBE, toluene, n-hexane, EDB, EDC, AL\_EC>5-6, and dibenz(a,h)anthracene.
- 3) double counting was avoided for E-C fractions
- 4) default value were used for total porosity and soil bulk density.
- 5) A dilution factor of 20 was entered for unsaturated soil zones.

**A2 Soil Cleanup Levels: Calculation and Summary of Results.** Refer to WAC 173-340-720, 740, 745, 747, 750

**Site Information**

Date: 10/6/2014
Site Name: 207407 Camas, WA
Sample Name: SB-6-19
Measured Soil TPH Concentration, mg/kg: <b>578.620</b>

**1. Summary of Calculation Results**

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,840	4.43E-08	2.04E-01	Pass
	Method C	43,128	1.10E-08	1.34E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	2,006	5.10E-11	8.83E-01	Pass
	NA	NA	NA	NA	NA

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

**2. Results for Protection of Soil Direct Contact Pathway: Human Health**

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	<b>2,839.86</b>	<b>43,128.01</b>
Most Stringent Criterion	<b>HI =1</b>	<b>HI =1</b>

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.84E+03	2.17E-07	1.00E+00	YES	4.31E+04	8.19E-07	1.00E+00
Total Risk=1E-5	NO	1.31E+05	1.00E-05	4.60E+01	NO	5.26E+05	1.00E-05	1.22E+01
Risk of Benzene= 1E-6	NA	NA	NA	NA	<b>NA</b>			
Risk of cPAHs mixture= 1E-6	NO	1.31E+04	1.00E-06	4.60E+00				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

**3. Results for Protection of Ground Water Quality (Leaching Pathway)**

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	<b>HI=1</b>
Protective Ground Water Concentration, ug/L	<b>670.40</b>
Protective Soil Concentration, mg/kg	<b>2005.63</b>

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	6.70E+02	4.84E-11	1.00E+00	2.01E+03
Total Risk = 1E-5	NO	7.11E+02	4.74E-11	1.05E+00	100% NAPL
Total Risk = 1E-6	NO	7.11E+02	4.74E-11	1.05E+00	100% NAPL
Risk of cPAHs mixture= 1E-5	NO	7.11E+02	4.74E-11	1.05E+00	100% NAPL
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 70000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
NA	NA	NA	NA	NA

## 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

October 03, 2014

Project: 207407

Submittal Date: 09/23/2014

Group Number: 1505510

PO Number: 0015143985

Release Number: ROEHL

State of Sample Origin: WA

<u>Client Sample Description</u>	<u>Lancaster Labs (LL) #</u>
SB-4-15 Grab Soil	7610669
SB-4-20 Grab Soil	7610670
SB-5-16 Grab Soil	7610671
SB-5-36 Grab Soil	7610672
SB-6-19 Grab Soil	7610673
SB-6-25 Grab Soil	7610674
TB-092114 Water	7610675

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

ELECTRONIC      Leidos  
COPY TO

Attn: Alex Shook



Respectfully Submitted,



Lynn M. Frederiksen  
Principal Specialist Group Leader

(717) 556-7255

Sample Description: SB-4-15 Grab Soil  
Facility# 207407  
612 SE Union St-Camas, WA

LL Sample # SW 7610669  
LL Group # 1505510  
Account # 11255

Project Name: 207407

Collected: 09/21/2014 11:00 by JW

Chevron

L4310

Submitted: 09/23/2014 09:20

6001 Bollinger Canyon Road

Reported: 10/03/2014 14:10

San Ramon CA 94583

41507

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>			<b>mg/kg</b>	<b>mg/kg</b>	
10237	Benzene	71-43-2	N.D.	0.030	53.05
10237	1,2-Dibromoethane	106-93-4	N.D.	0.061	53.05
10237	1,2-Dichloroethane	107-06-2	N.D.	0.061	53.05
10237	Ethylbenzene	100-41-4	N.D.	0.061	53.05
10237	n-Hexane	110-54-3	N.D.	0.061	53.05
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.030	53.05
10237	Toluene	108-88-3	N.D.	0.061	53.05
10237	Xylene (Total)	1330-20-7	N.D.	0.061	53.05

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

<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	N.D.	0.00076	1
10725	Benzo(a)pyrene	50-32-8	N.D.	0.00076	1
10725	Benzo(b)fluoranthene	205-99-2	N.D.	0.00076	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00076	1
10725	Chrysene	218-01-9	0.0020	0.00038	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00076	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00076	1
10725	1-Methylnaphthalene	90-12-0	0.0036	0.00076	1
10725	2-Methylnaphthalene	91-57-6	0.0053	0.00076	1
10725	Naphthalene	91-20-3	0.0018	0.00076	1

<b>GC Volatiles ECY 97-602 NWT PH-Gx</b>			<b>mg/kg</b>	<b>mg/kg</b>	
02005	NWT PH-GX Soil C7-C12	n.a.	150	10	220.96

<b>GC Petroleum ECY 97-602 NWT PH-Dx</b>			<b>mg/kg</b>	<b>mg/kg</b>	
<b>Hydrocarbons modified</b>					
08272	Diesel Range Organics C12-C24	n.a.	460	3.4	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1

<b>GC Petroleum ECY 97-602 WA EPH</b>			<b>mg/kg</b>	<b>mg/kg</b>	
<b>Hydrocarbons</b>					
05970	>C10-C12 Aliphatic	n.a.	35	1.1	1
05970	>C10-C12 Aromatic	n.a.	1.5	1.1	1
05970	>C12-C16 Aliphatic	n.a.	260	1.1	1
05970	>C12-C16 Aromatic	n.a.	22	1.1	1
05970	>C16-C21 Aliphatic	n.a.	150	3.3	1
05970	>C16-C21 Aromatic	n.a.	83	2.2	1
05970	>C21-C34 Aliphatic	n.a.	12	6.6	1
05970	>C21-C34 Aromatic	n.a.	10	2.2	1

<b>GC Petroleum ECY 97-602 WA VPH</b>			<b>mg/kg</b>	<b>mg/kg</b>	
<b>Hydrocarbons</b>					
05666	Benzene	71-43-2	N.D.	0.0610	53.34
05666	C5-C6 Aliphatic Hydrocarbons	n.a.	N.D.	3.05	53.34
05666	C6-C8 Aliphatic Hydrocarbons	n.a.	N.D.	3.05	53.34
05666	C8-C10 Aliphatic Hydrocarbons	n.a.	8.56	3.05	53.34
05666	C8-C10 Aromatic Hydrocarbons	n.a.	8.88	3.05	53.34

Sample Description: SB-4-15 Grab Soil  
Facility# 207407  
612 SE Union St-Camas, WA

LL Sample # SW 7610669  
LL Group # 1505510  
Account # 11255

Project Name: 207407

Collected: 09/21/2014 11:00 by JW Chevron  
L4310  
Submitted: 09/23/2014 09:20 6001 Bollinger Canyon Road  
Reported: 10/03/2014 14:10 San Ramon CA 94583

41507

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>GC Petroleum Hydrocarbons</b>		<b>ECY 97-602 WA VPH</b>	<b>mg/kg</b>	<b>mg/kg</b>	
05666	Ethylbenzene	100-41-4	N.D.	0.0610	53.34
05666	Methyl t-butyl ether	1634-04-4	N.D.	0.0610	53.34
05666	Toluene	108-88-3	N.D.	0.0610	53.34
05666	o-Xylene	95-47-6	N.D.	0.0610	53.34
05666	m,p-Xylenes	179601-23-1	N.D.	0.122	53.34
<b>GC Petroleum Hydrocarbons w/Si</b>		<b>ECY 97-602 NWTPH-Dx modified</b>	<b>mg/kg</b>	<b>mg/kg</b>	
12006	DRO C12-C24 w/Si Gel	n.a.	360	3.4	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	1
The reverse surrogate, capric acid, is present at <1%.					
<b>Wet Chemistry</b>		<b>SM 2540 G-1997</b>	<b>%</b>	<b>%</b>	
00111	Moisture	n.a.	12.6	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.					

### General Sample Comments

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

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 8260B	SW-846 8260B	1	Q142691AA	09/26/2014 23:51	Andrea E Lando	53.05
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201426735702	09/21/2014 11:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201426735702	09/21/2014 11:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201426835706	09/21/2014 11:00	Client Supplied	1
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	14273SLC026	10/02/2014 04:09	Mark A Clark	1
10811	BNA Soil Microwave SIM	SW-846 3546	1	14273SLC026	09/30/2014 18:40	Sally L Appleyard	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	14267A31A	09/25/2014 22:29	Marie D Beamenderfer	220.96
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201426735702	09/21/2014 11:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	142720027A	09/30/2014 19:37	Glorines Suarez-Rivera	1

Sample Description: SB-4-15 Grab Soil  
Facility# 207407  
612 SE Union St-Camas, WA

LL Sample # SW 7610669  
LL Group # 1505510  
Account # 11255

Project Name: 207407

Collected: 09/21/2014 11:00 by JW

Chevron

L4310

Submitted: 09/23/2014 09:20

6001 Bollinger Canyon Road

Reported: 10/03/2014 14:10

San Ramon CA 94583

41507

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	142720020A	10/02/2014 00:02	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	142720020A	10/02/2014 00:42	Heather E Williams	1
05666	WA- VPH soils	ECY 97-602 WA VPH	1	14274A54A	10/01/2014 14:08	Nicholas R Rossi	53.34
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	142690015A	09/29/2014 14:33	Glorines Suarez-Rivera	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	142690015A	09/27/2014 11:15	Olivia Arosemena	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	142720027A	09/30/2014 10:20	Denise L Trimby	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	1	142720020A	09/30/2014 05:10	Roman Kuropatkin	1
00388	GC - Field Preserved (MA-VPH)	MA DEP VPH modified	1	201426735702	09/21/2014 11:00	Client Supplied	1
00497	Silica Gel Fractionation	SW-846 3630C modified	1	142720020A	09/30/2014 09:45	Roman Kuropatkin	1
00111	Moisture	SM 2540 G-1997	1	14269820003A	09/26/2014 17:41	Scott W Freisher	1

Sample Description: SB-4-20 Grab Soil  
Facility# 207407  
612 SE Union St-Camas, WA

LL Sample # SW 7610670  
LL Group # 1505510  
Account # 11255

Project Name: 207407

Collected: 09/21/2014 11:50 by JW Chevron  
L4310  
Submitted: 09/23/2014 09:20 6001 Bollinger Canyon Road  
Reported: 10/03/2014 14:10 San Ramon CA 94583

42007

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>					
10237	Benzene	71-43-2	N.D.	0.0005	0.98
10237	Ethylbenzene	100-41-4	N.D.	0.001	0.98
10237	Toluene	108-88-3	N.D.	0.001	0.98
10237	Xylene (Total)	1330-20-7	N.D.	0.001	0.98
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>					
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.5	32.52
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>					
<b>Hydrocarbons modified</b>					
08272	Diesel Range Organics C12-C24	n.a.	46	3.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>					
<b>Hydrocarbons w/Si modified</b>					
12006	DRO C12-C24 w/Si Gel	n.a.	38	3.3	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	1
The reverse surrogate, capric acid, is present at <1%.					
<b>Wet Chemistry SM 5310 B</b>					
<b>modified-2000</b>					
02079	TOC Solids/Sludges Combustion	n.a.	N.D.	0.0112	1
<b>Wet Chemistry SM 2540 G-1997</b>					
00111	Moisture	n.a.	10.5	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

### General 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 8260 Soil	SW-846 8260B	1	X142681AA	09/25/2014 16:44	Chelsea B Stong	0.98
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201426735702	09/21/2014 11:50	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201426735702	09/21/2014 11:50	Client Supplied	1

Sample Description: SB-4-20 Grab Soil  
Facility# 207407  
612 SE Union St-Camas, WA

LL Sample # SW 7610670  
LL Group # 1505510  
Account # 11255

Project Name: 207407

Collected: 09/21/2014 11:50 by JW

Chevron

L4310

Submitted: 09/23/2014 09:20

6001 Bollinger Canyon Road

Reported: 10/03/2014 14:10

San Ramon CA 94583

42007

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201426735702	09/21/2014 11:50	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	14267A31A	09/25/2014 18:36	Marie D Beamenderfer	32.52
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201426735702	09/21/2014 11:50	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	142720027A	09/30/2014 18:07	Christine E Dolman	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	142690015A	09/29/2014 16:08	Glorines Suarez-Rivera	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	142690015A	09/27/2014 11:15	Olivia Arosemena	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	142720027A	09/30/2014 10:20	Denise L Trimby	1
02079	TOC Solids/Sludges Combustion	SM 5310 B modified-2000	1	14273049531A	10/01/2014 00:39	James S Mathiot	1
00111	Moisture	SM 2540 G-1997	1	14269820003A	09/26/2014 17:41	Scott W Freisher	1

Sample Description: SB-5-16 Grab Soil  
Facility# 207407  
612 SE Union St-Camas, WA

LL Sample # SW 7610671  
LL Group # 1505510  
Account # 11255

Project Name: 207407

Collected: 09/21/2014 13:00 by JW

Chevron

L4310

Submitted: 09/23/2014 09:20

6001 Bollinger Canyon Road

Reported: 10/03/2014 14:10

San Ramon CA 94583

51607

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>			<b>mg/kg</b>	<b>mg/kg</b>	
10237	Benzene	71-43-2	N.D.	0.028	49.33
10237	1,2-Dibromoethane	106-93-4	N.D.	0.056	49.33
10237	1,2-Dichloroethane	107-06-2	N.D.	0.056	49.33
10237	Ethylbenzene	100-41-4	0.061	0.056	49.33
10237	n-Hexane	110-54-3	N.D.	0.056	49.33
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.028	49.33
10237	Toluene	108-88-3	N.D.	0.056	49.33
10237	Xylene (Total)	1330-20-7	2.1	0.056	49.33
<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.0057	0.00076	1
10725	Benzo(a)pyrene	50-32-8	0.0016	0.00076	1
10725	Benzo(b)fluoranthene	205-99-2	0.0023	0.00076	1
10725	Benzo(k)fluoranthene	207-08-9	N.D.	0.00076	1
10725	Chrysene	218-01-9	0.012	0.00038	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00076	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	N.D.	0.00076	1
10725	1-Methylnaphthalene	90-12-0	2.7	0.038	50
10725	2-Methylnaphthalene	91-57-6	3.8	0.038	50
10725	Naphthalene	91-20-3	0.12	0.00076	1
The surrogate data is outside the QC limits due to unresolvable matrix problems evident in the sample chromatogram.					
<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			<b>mg/kg</b>	<b>mg/kg</b>	
02005	NWTPH-GX Soil C7-C12	n.a.	540	22	493.35
<b>GC Petroleum ECY 97-602 NWTPH-Dx</b>			<b>mg/kg</b>	<b>mg/kg</b>	
<b>Hydrocarbons modified</b>					
08272	Diesel Range Organics C12-C24	n.a.	570	6.8	2
08272	Heavy Range Organics C24-C40	n.a.	N.D.	23	2
<b>GC Petroleum ECY 97-602 WA EPH</b>			<b>mg/kg</b>	<b>mg/kg</b>	
<b>Hydrocarbons</b>					
05970	>C10-C12 Aliphatic	n.a.	110	2.2	2
05970	>C10-C12 Aromatic	n.a.	40	1.1	1
05970	>C12-C16 Aliphatic	n.a.	540	2.2	2
05970	>C12-C16 Aromatic	n.a.	120	1.1	1
05970	>C16-C21 Aliphatic	n.a.	440	6.7	2
05970	>C16-C21 Aromatic	n.a.	260	2.2	1
05970	>C21-C34 Aliphatic	n.a.	41	13	2
05970	>C21-C34 Aromatic	n.a.	27	2.2	1
<b>GC Petroleum ECY 97-602 WA VPH</b>			<b>mg/kg</b>	<b>mg/kg</b>	
<b>Hydrocarbons</b>					
05666	Benzene	71-43-2	N.D.	0.0598	52.72
05666	C5-C6 Aliphatic Hydrocarbons	n.a.	N.D.	2.99	52.72
05666	C6-C8 Aliphatic Hydrocarbons	n.a.	6.63	2.99	52.72
05666	C8-C10 Aliphatic Hydrocarbons	n.a.	106	15.0	263.6

Sample Description: SB-5-16 Grab Soil  
Facility# 207407  
612 SE Union St-Camas, WA

LL Sample # SW 7610671  
LL Group # 1505510  
Account # 11255

Project Name: 207407

Collected: 09/21/2014 13:00 by JW Chevron  
L4310  
Submitted: 09/23/2014 09:20 6001 Bollinger Canyon Road  
Reported: 10/03/2014 14:10 San Ramon CA 94583

51607

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>GC Petroleum Hydrocarbons</b>		<b>ECY 97-602 WA VPH</b>	<b>mg/kg</b>	<b>mg/kg</b>	
05666	C8-C10 Aromatic Hydrocarbons	n.a.	105	15.0	263.6
05666	Ethylbenzene	100-41-4	N.D.	0.0598	52.72
05666	Methyl t-butyl ether	1634-04-4	N.D.	0.0598	52.72
05666	Toluene	108-88-3	N.D.	0.0598	52.72
05666	o-Xylene	95-47-6	N.D.	0.0598	52.72
05666	m,p-Xylenes	179601-23-1	2.30	0.120	52.72
<b>GC Petroleum Hydrocarbons w/Si</b>		<b>ECY 97-602 NWTPh-Dx modified</b>	<b>mg/kg</b>	<b>mg/kg</b>	
12006	DRO C12-C24 w/Si Gel	n.a.	480	3.3	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	1
The reverse surrogate, capric acid, is present at <1%.					
<b>Wet Chemistry</b>		<b>SM 2540 G-1997</b>	<b>%</b>	<b>%</b>	
00111	Moisture	n.a.	11.9	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.					

### General Sample Comments

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

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 8260B	SW-846 8260B	1	Q142691AA	09/27/2014 00:15	Andrea E Lando	49.33
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201426735702	09/21/2014 13:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201426735702	09/21/2014 13:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201426735702	09/21/2014 13:00	Client Supplied	1
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	14273SLC026	10/02/2014 05:49	Mark A Clark	1
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	14273SLC026	10/02/2014 06:55	Mark A Clark	50
10811	BNA Soil Microwave SIM	SW-846 3546	1	14273SLC026	09/30/2014 18:40	Sally L Appleyard	1
02005	NWTPh-GX Soil C7-C12	ECY 97-602 NWTPh-Gx	1	14267A31A	09/25/2014 23:05	Marie D Beamenderfer	493.35
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201426735702	09/21/2014 13:00	Client Supplied	n.a.



Sample Description: SB-5-16 Grab Soil  
Facility# 207407  
612 SE Union St-Camas, WA

LL Sample # SW 7610671  
LL Group # 1505510  
Account # 11255

Project Name: 207407

Collected: 09/21/2014 13:00 by JW

Chevron

L4310

Submitted: 09/23/2014 09:20

6001 Bollinger Canyon Road

Reported: 10/03/2014 14:10

San Ramon CA 94583

51607

### 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	142720027A	10/02/2014 19:58	Christine E Dolman	2
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	142720020A	10/02/2014 05:21	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	142720020A	10/02/2014 13:16	Heather E Williams	2
05666	WA- VPH soils	ECY 97-602 WA VPH	1	14274A54A	10/01/2014 14:48	Nicholas R Rossi	52.72
05666	WA- VPH soils	ECY 97-602 WA VPH	1	14274A54A	10/01/2014 16:08	Nicholas R Rossi	263.6
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	142690015A	09/29/2014 16:30	Glorines Suarez-Rivera	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	142690015A	09/27/2014 11:15	Olivia Arosemena	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	142720027A	09/30/2014 10:20	Denise L Trimby	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	1	142720020A	09/30/2014 05:10	Roman Kuropatkin	1
00388	GC - Field Preserved (MA-VPH)	MA DEP VPH modified	1	201426735702	09/21/2014 13:00	Client Supplied	1
00497	Silica Gel Fractionation	SW-846 3630C modified	1	142720020A	09/30/2014 09:45	Roman Kuropatkin	1
00111	Moisture	SM 2540 G-1997	1	14269820003A	09/26/2014 17:41	Scott W Freisher	1

Sample Description: SB-5-36 Grab Soil  
Facility# 207407  
612 SE Union St-Camas, WA

LL Sample # SW 7610672  
LL Group # 1505510  
Account # 11255

Project Name: 207407

Collected: 09/21/2014 15:00 by JW Chevron  
L4310  
Submitted: 09/23/2014 09:20 6001 Bollinger Canyon Road  
Reported: 10/03/2014 14:10 San Ramon CA 94583

53607

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles</b>			<b>SW-846 8260B</b>	<b>mg/kg</b>	
10237	Benzene	71-43-2	N.D.	0.0005	0.96
10237	Ethylbenzene	100-41-4	N.D.	0.001	0.96
10237	Toluene	108-88-3	N.D.	0.001	0.96
10237	Xylene (Total)	1330-20-7	N.D.	0.001	0.96
<b>GC Volatiles</b>			<b>ECY 97-602 NWTPH-Gx</b>	<b>mg/kg</b>	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.1	23.95
<b>GC Petroleum Hydrocarbons</b>			<b>ECY 97-602 NWTPH-Dx modified</b>	<b>mg/kg</b>	
08272	Diesel Range Organics C12-C24	n.a.	120	3.4	1
08272	Heavy Range Organics C24-C40	n.a.	19	11	1
<b>GC Petroleum Hydrocarbons w/Si</b>			<b>ECY 97-602 NWTPH-Dx modified</b>	<b>mg/kg</b>	
12006	DRO C12-C24 w/Si Gel	n.a.	83	3.3	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	1
The reverse surrogate, capric acid, is present at <1%.					
<b>Wet Chemistry</b>			<b>SM 2540 G-1997</b>	<b>%</b>	
00111	Moisture	n.a.	11.2	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

### General 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 8260 Soil	SW-846 8260B	1	X142681AA	09/25/2014 17:30	Chelsea B Stong	0.96
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201426735702	09/21/2014 15:00	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201426735702	09/21/2014 15:00	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201426735702	09/21/2014 15:00	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	14267A31A	09/25/2014 19:13	Marie D Beamenderfer	23.95

Sample Description: SB-5-36 Grab Soil  
Facility# 207407  
612 SE Union St-Camas, WA

LL Sample # SW 7610672  
LL Group # 1505510  
Account # 11255

Project Name: 207407

Collected: 09/21/2014 15:00 by JW

Chevron

L4310

Submitted: 09/23/2014 09:20

6001 Bollinger Canyon Road

Reported: 10/03/2014 14:10

San Ramon CA 94583

53607

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201426735702	09/21/2014 15:00	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	142720027A	09/30/2014 19:59	Christine E Dolman	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	142690015A	09/29/2014 16:52	Glorines Suarez-Rivera	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	142690015A	09/27/2014 11:15	Olivia Arosemena	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	142720027A	09/30/2014 10:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	14269820003A	09/26/2014 17:41	Scott W Freisher	1

Sample Description: SB-6-19 Grab Soil  
Facility# 207407  
612 SE Union St-Camas, WA

LL Sample # SW 7610673  
LL Group # 1505510  
Account # 11255

Project Name: 207407

Collected: 09/21/2014 16:15 by JW

Chevron

L4310

Submitted: 09/23/2014 09:20

6001 Bollinger Canyon Road

Reported: 10/03/2014 14:10

San Ramon CA 94583

61907

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>			<b>mg/kg</b>	<b>mg/kg</b>	
10237	Benzene	71-43-2	N.D.	0.026	48.34
10237	1,2-Dibromoethane	106-93-4	N.D.	0.052	48.34
10237	1,2-Dichloroethane	107-06-2	N.D.	0.052	48.34
10237	Ethylbenzene	100-41-4	0.053	0.052	48.34
10237	n-Hexane	110-54-3	N.D.	0.052	48.34
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.026	48.34
10237	Toluene	108-88-3	N.D.	0.052	48.34
10237	Xylene (Total)	1330-20-7	N.D.	0.052	48.34

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

<b>GC/MS Semivolatiles SW-846 8270C SIM</b>			<b>mg/kg</b>	<b>mg/kg</b>	
10725	Benzo(a)anthracene	56-55-3	0.0035	0.00072	1
10725	Benzo(a)pyrene	50-32-8	0.0033	0.00072	1
10725	Benzo(b)fluoranthene	205-99-2	0.0051	0.00072	1
10725	Benzo(k)fluoranthene	207-08-9	0.0017	0.00072	1
10725	Chrysene	218-01-9	0.0090	0.00036	1
10725	Dibenz(a,h)anthracene	53-70-3	N.D.	0.00072	1
10725	Indeno(1,2,3-cd)pyrene	193-39-5	0.0017	0.00072	1
10725	1-Methylnaphthalene	90-12-0	0.51	0.0072	10
10725	2-Methylnaphthalene	91-57-6	0.76	0.0072	10
10725	Naphthalene	91-20-3	0.043	0.00072	1

<b>GC Volatiles ECY 97-602 NWTPH-Gx</b>			<b>mg/kg</b>	<b>mg/kg</b>	
02005	NWTPH-GX Soil C7-C12	n.a.	310	25	565.93

<b>GC Petroleum ECY 97-602 NWTPH-Dx modified</b>			<b>mg/kg</b>	<b>mg/kg</b>	
08272	Diesel Range Organics C12-C24	n.a.	230	3.2	1
08272	Heavy Range Organics C24-C40	n.a.	88	11	1

<b>GC Petroleum ECY 97-602 WA EPH</b>			<b>mg/kg</b>	<b>mg/kg</b>	
<b>Hydrocarbons</b>					
05970	>C10-C12 Aliphatic	n.a.	72	1.1	1
05970	>C10-C12 Aromatic	n.a.	7.0	1.1	1
05970	>C12-C16 Aliphatic	n.a.	81	1.1	1
05970	>C12-C16 Aromatic	n.a.	18	1.1	1
05970	>C16-C21 Aliphatic	n.a.	68	3.2	1
05970	>C16-C21 Aromatic	n.a.	46	2.1	1
05970	>C21-C34 Aliphatic	n.a.	39	6.3	1
05970	>C21-C34 Aromatic	n.a.	26	2.1	1

<b>GC Petroleum ECY 97-602 WA VPH</b>			<b>mg/kg</b>	<b>mg/kg</b>	
<b>Hydrocarbons</b>					
05666	Benzene	71-43-2	N.D.	0.0562	51.83
05666	C5-C6 Aliphatic Hydrocarbons	n.a.	N.D.	2.81	51.83
05666	C6-C8 Aliphatic Hydrocarbons	n.a.	8.52	2.81	51.83
05666	C8-C10 Aliphatic Hydrocarbons	n.a.	127	14.0	259.17
05666	C8-C10 Aromatic Hydrocarbons	n.a.	86.1	2.81	51.83

Sample Description: SB-6-19 Grab Soil  
Facility# 207407  
612 SE Union St-Camas, WA

LL Sample # SW 7610673  
LL Group # 1505510  
Account # 11255

Project Name: 207407

Collected: 09/21/2014 16:15 by JW

Chevron

L4310

Submitted: 09/23/2014 09:20

6001 Bollinger Canyon Road

Reported: 10/03/2014 14:10

San Ramon CA 94583

61907

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>GC Petroleum Hydrocarbons</b>		<b>ECY 97-602 WA VPH</b>	<b>mg/kg</b>	<b>mg/kg</b>	
05666	Ethylbenzene	100-41-4	N.D.	0.0562	51.83
05666	Methyl t-butyl ether	1634-04-4	N.D.	0.0562	51.83
05666	Toluene	108-88-3	N.D.	0.0562	51.83
05666	o-Xylene	95-47-6	N.D.	0.0562	51.83
05666	m,p-Xylenes	179601-23-1	N.D.	0.112	51.83
<b>GC Petroleum Hydrocarbons w/Si</b>		<b>ECY 97-602 NWTPH-Dx modified</b>	<b>mg/kg</b>	<b>mg/kg</b>	
12006	DRO C12-C24 w/Si Gel	n.a.	210	3.2	1
12006	HRO C24-C40 w/Si Gel	n.a.	56	11	1
The reverse surrogate, capric acid, is present at <1%.					
<b>Wet Chemistry</b>		<b>SM 2540 G-1997</b>	<b>%</b>	<b>%</b>	
00111	Moisture	n.a.	7.7	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

### General Sample Comments

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

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 8260B	SW-846 8260B	1	Q142691AA	09/27/2014 00:38	Andrea E Lando	48.34
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201426735702	09/21/2014 16:15	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201426735702	09/21/2014 16:15	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201426735702	09/21/2014 16:15	Client Supplied	1
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	14273SLC026	10/02/2014 06:22	Mark A Clark	1
10725	SIM SVOA (microwave)	SW-846 8270C SIM	1	14273SLC026	10/03/2014 03:45	Mark A Clark	10
10811	BNA Soil Microwave SIM	SW-846 3546	1	14273SLC026	09/30/2014 18:40	Sally L Appleyard	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	14267A31A	09/26/2014 16:02	Marie D Beamenderfer	565.93
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201426735702	09/21/2014 16:15	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	142720027A	09/30/2014 20:43	Christine E Dolman	1

Sample Description: SB-6-19 Grab Soil  
Facility# 207407  
612 SE Union St-Camas, WA

LL Sample # SW 7610673  
LL Group # 1505510  
Account # 11255

Project Name: 207407

Collected: 09/21/2014 16:15 by JW

Chevron

L4310

Submitted: 09/23/2014 09:20

6001 Bollinger Canyon Road

Reported: 10/03/2014 14:10

San Ramon CA 94583

61907

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	142720020A	10/02/2014 06:41	Heather E Williams	1
05970	WA EPH in Soil	ECY 97-602 WA EPH	1	142720020A	10/02/2014 07:20	Heather E Williams	1
05666	WA- VPH soils	ECY 97-602 WA VPH	1	14274A54A	10/01/2014 15:28	Nicholas R Rossi	51.83
05666	WA- VPH soils	ECY 97-602 WA VPH	1	14274A54A	10/02/2014 08:49	Nicholas R Rossi	259.17
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	142690015A	09/29/2014 18:07	Glorines Suarez-Rivera	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	142690015A	09/27/2014 11:15	Olivia Arosemena	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	142720027A	09/30/2014 10:20	Denise L Trimby	1
11213	WA EPH Soils Extraction	ECY 97-602 WA EPH	1	142720020A	09/30/2014 05:10	Roman Kuropatkin	1
00388	GC - Field Preserved (MA-VPH)	MA DEP VPH modified	1	201426735702	09/21/2014 16:15	Client Supplied	1
00497	Silica Gel Fractionation	SW-846 3630C modified	1	142720020A	09/30/2014 09:45	Roman Kuropatkin	1
00111	Moisture	SM 2540 G-1997	1	14269820003A	09/26/2014 17:41	Scott W Freisher	1

Sample Description: SB-6-25 Grab Soil  
Facility# 207407  
612 SE Union St-Camas, WA

LL Sample # SW 7610674  
LL Group # 1505510  
Account # 11255

Project Name: 207407

Collected: 09/21/2014 16:30 by JW

Chevron

L4310

Submitted: 09/23/2014 09:20

6001 Bollinger Canyon Road

Reported: 10/03/2014 14:10

San Ramon CA 94583

62507

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles</b>			<b>SW-846 8260B</b>	<b>mg/kg</b>	
10237	Benzene	71-43-2	N.D.	0.0005	0.9
10237	Ethylbenzene	100-41-4	N.D.	0.001	0.9
10237	Toluene	108-88-3	N.D.	0.001	0.9
10237	Xylene (Total)	1330-20-7	N.D.	0.001	0.9
<b>GC Volatiles</b>			<b>ECY 97-602 NWTPH-Gx</b>	<b>mg/kg</b>	
02005	NWTPH-GX Soil C7-C12	n.a.	N.D.	1.1	23.93
<b>GC Petroleum Hydrocarbons</b>			<b>ECY 97-602 NWTPH-Dx modified</b>	<b>mg/kg</b>	
08272	Diesel Range Organics C12-C24	n.a.	4.8	3.3	1
08272	Heavy Range Organics C24-C40	n.a.	N.D.	11	1
<b>GC Petroleum Hydrocarbons w/Si</b>			<b>ECY 97-602 NWTPH-Dx modified</b>	<b>mg/kg</b>	
12006	DRO C12-C24 w/Si Gel	n.a.	6.1	3.3	1
12006	HRO C24-C40 w/Si Gel	n.a.	N.D.	11	1
The reverse surrogate, capric acid, is present at <1%.					
<b>Wet Chemistry</b>			<b>SM 2540 G-1997</b>	<b>%</b>	
00111	Moisture	n.a.	10.2	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

### General 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 8260 Soil	SW-846 8260B	1	X142681AA	09/25/2014 17:07	Chelsea B Stong	0.9
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	1	201426735702	09/21/2014 16:30	Client Supplied	1
02392	GC/MS - Field Preserved NaHSO4	SW-846 5035A	2	201426735702	09/21/2014 16:30	Client Supplied	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201426735702	09/21/2014 16:30	Client Supplied	1
02005	NWTPH-GX Soil C7-C12	ECY 97-602 NWTPH-Gx	1	14267A31A	09/25/2014 19:49	Marie D Beamenderfer	23.93

Sample Description: SB-6-25 Grab Soil  
Facility# 207407  
612 SE Union St-Camas, WA

LL Sample # SW 7610674  
LL Group # 1505510  
Account # 11255

Project Name: 207407

Collected: 09/21/2014 16:30 by JW

Chevron

L4310

Submitted: 09/23/2014 09:20

6001 Bollinger Canyon Road

Reported: 10/03/2014 14:10

San Ramon CA 94583

62507

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06647	GC-5g Field Preserved MeOH	SW-846 5035A	1	201426735702	09/21/2014 16:30	Client Supplied	n.a.
08272	NWTPH-Dx soil	ECY 97-602 NWTPH-Dx modified	1	142720027A	09/30/2014 18:52	Christine E Dolman	1
12006	NWTPH-Dx soil w/ 10g Si Gel	ECY 97-602 NWTPH-Dx modified	1	142690015A	09/29/2014 17:15	Glorines Suarez-Rivera	1
12008	NW Dx soil w/ 10g column	ECY 97-602 NWTPH-Dx 06/97	1	142690015A	09/27/2014 11:15	Olivia Arosemena	1
11234	WA DRO NW DX Soils (Non SG)	ECY 97-602 NWTPH-Dx 06/97	1	142720027A	09/30/2014 10:20	Denise L Trimby	1
00111	Moisture	SM 2540 G-1997	1	14269820003A	09/26/2014 17:41	Scott W Freisher	1



Sample Description: TB-092114 Water  
Facility# 207407  
612 SE Union St-Camas, WA

LL Sample # WW 7610675  
LL Group # 1505510  
Account # 11255

Project Name: 207407

Collected: 09/21/2014 17:50

Chevron

L4310

Submitted: 09/23/2014 09:20

6001 Bollinger Canyon Road

Reported: 10/03/2014 14:10

San Ramon CA 94583

TBL07

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles</b>			<b>SW-846 8260B</b>	<b>ug/l</b>	
10945	Benzene	71-43-2	N.D.	0.5	1
10945	Ethylbenzene	100-41-4	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
<b>GC Volatiles</b>			<b>ECY 97-602 NWTPH-Gx</b>	<b>ug/l</b>	
08273	NWTPH-Gx water C7-C12	n.a.	N.D.	50	1

### General 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	BTEX 8260B Water	SW-846 8260B	1	Z142672AA	09/24/2014 13:51	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z142672AA	09/24/2014 13:51	Daniel H Heller	1
08273	NWTPH-Gx water C7-C12	ECY 97-602 NWTPH-Gx	1	14268B53A	09/26/2014 12:49	Miranda P Tillinghast	1
01146	GC VOA Water Prep	SW-846 5030B	1	14268B53A	09/26/2014 12:49	Miranda P Tillinghast	1

## Quality Control Summary

Client Name: Chevron  
Reported: 10/03/14 at 02:10 PM

Group Number: 1505510

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.

### Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: Q142691AA	Sample number(s): 7610669,7610671,7610673							
Benzene	N.D.	0.025	mg/kg	109	100	80-120	9	30
1,2-Dibromoethane	N.D.	0.050	mg/kg	111	99	80-120	11	30
1,2-Dichloroethane	N.D.	0.050	mg/kg	110	100	77-130	10	30
Ethylbenzene	N.D.	0.050	mg/kg	109	98	80-120	10	30
n-Hexane	N.D.	0.050	mg/kg	94	88	42-134	6	30
Methyl Tertiary Butyl Ether	N.D.	0.025	mg/kg	110	99	76-122	10	30
Toluene	N.D.	0.050	mg/kg	110	100	80-120	10	30
Xylene (Total)	N.D.	0.050	mg/kg	110	99	80-120	11	30
Batch number: X142681AA	Sample number(s): 7610670,7610672,7610674							
Benzene	N.D.	0.0005	mg/kg	100	98	80-120	3	30
Ethylbenzene	N.D.	0.001	mg/kg	95	91	80-120	4	30
Toluene	N.D.	0.001	mg/kg	96	93	80-120	4	30
Xylene (Total)	N.D.	0.001	mg/kg	92	88	80-120	4	30
Batch number: Z142672AA	Sample number(s): 7610675							
Benzene	N.D.	0.5	ug/l	89		78-120		
Ethylbenzene	N.D.	0.5	ug/l	94		79-120		
Toluene	N.D.	0.5	ug/l	93		80-120		
Xylene (Total)	N.D.	0.5	ug/l	98		80-120		
Batch number: 14273SLC026	Sample number(s): 7610669,7610671,7610673							
Benzo(a)anthracene	N.D.	0.00067	mg/kg	103		84-126		
Benzo(a)pyrene	N.D.	0.00067	mg/kg	101		80-117		
Benzo(b)fluoranthene	N.D.	0.00067	mg/kg	113		87-135		
Benzo(k)fluoranthene	N.D.	0.00067	mg/kg	100		79-123		
Chrysene	N.D.	0.00033	mg/kg	102		82-122		
Dibenz(a,h)anthracene	N.D.	0.00067	mg/kg	101		83-123		
Indeno(1,2,3-cd)pyrene	N.D.	0.00067	mg/kg	98		82-123		
1-Methylnaphthalene	N.D.	0.00067	mg/kg	102		78-119		
2-Methylnaphthalene	N.D.	0.00067	mg/kg	101		78-121		
Naphthalene	N.D.	0.00067	mg/kg	101		79-113		
Batch number: 14267A31A	Sample number(s): 7610669-7610674							
NWTPH-GX Soil C7-C12	N.D.	1.0	mg/kg	87	76	65-120	13	30
Batch number: 14268B53A	Sample number(s): 7610675							
NWTPH-Gx water C7-C12	N.D.	50.	ug/l	102	103	75-135	1	30
Batch number: 142720020A	Sample number(s): 7610669,7610671,7610673							
>C10-C12 Aliphatic	N.D.	1.0	mg/kg	82		31-137		
>C10-C12 Aromatic	N.D.	1.0	mg/kg	96		22-119		
>C12-C16 Aliphatic	N.D.	1.0	mg/kg	88		42-146		

\*- Outside of specification

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

## Quality Control Summary

Client Name: Chevron Group Number: 1505510  
Reported: 10/03/14 at 02:10 PM

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
>C12-C16 Aromatic	N.D.	1.0	mg/kg	95		24-136		
>C16-C21 Aliphatic	N.D.	3.0	mg/kg	86		57-111		
>C16-C21 Aromatic	N.D.	2.0	mg/kg	103		34-143		
>C21-C34 Aliphatic	N.D.	6.0	mg/kg	92		50-124		
>C21-C34 Aromatic	N.D.	2.0	mg/kg	98		44-134		

Batch number: 142720027A	Sample number(s): 7610669-7610674
Diesel Range Organics C12-C24	N.D. 3.0 mg/kg 77
Heavy Range Organics C24-C40	N.D. 10. mg/kg

Batch number: 14274A54A	Sample number(s): 7610669, 7610671, 7610673
Benzene	N.D. 0.0500 mg/kg 99 94 70-130 5 50
C5-C6 Aliphatic Hydrocarbons	N.D. 2.50 mg/kg 103 100 70-130 3 50
C6-C8 Aliphatic Hydrocarbons	N.D. 2.50 mg/kg 100 97 70-130 3 50
C8-C10 Aliphatic Hydrocarbons	N.D. 2.50 mg/kg 87 89 70-130 3 50
C8-C10 Aromatic Hydrocarbons	N.D. 2.50 mg/kg 97 94 70-130 3 50
Ethylbenzene	N.D. 0.0500 mg/kg 96 92 70-130 4 50
Methyl t-butyl ether	N.D. 0.0500 mg/kg 98 93 70-130 6 50
Toluene	N.D. 0.0500 mg/kg 96 92 70-130 4 50
o-Xylene	N.D. 0.0500 mg/kg 100 97 70-130 3 50
m,p-Xylenes	N.D. 0.100 mg/kg 100 97 70-130 3 50

Batch number: 142690015A	Sample number(s): 7610669-7610674
DRO C12-C24 w/Si Gel	N.D. 3.0 mg/kg 65 50-133
HRO C24-C40 w/Si Gel	N.D. 10. mg/kg

Batch number: 14273049531A	Sample number(s): 7610670
TOC Solids/Sludges Combustion	N.D. 0.0100 % by wt. 114 47-143

Batch number: 14269820003A	Sample number(s): 7610669-7610674
Moisture	100 99-101

## Sample Matrix Quality Control

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

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: Z142672AA	Sample number(s): 7610675 UNSPK: P607919								
Benzene	100	99	72-134	1	30				
Ethylbenzene	104	106	71-134	2	30				
Toluene	105	106	80-125	1	30				
Xylene (Total)	106	108	79-125	2	30				
Batch number: 14273SLC026	Sample number(s): 7610669, 7610671, 7610673 UNSPK: 7610669								
Benzo(a)anthracene	96	101	54-149	4	30				
Benzo(a)pyrene	99	102	40-154	3	30				
Benzo(b)fluoranthene	116	118	26-142	2	30				
Benzo(k)fluoranthene	108	110	49-144	2	30				
Chrysene	93	100	43-141	7	30				
Dibenz(a,h)anthracene	67	69	24-138	4	30				

\*- Outside of specification

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

## Quality Control Summary

Client Name: Chevron Group Number: 1505510  
Reported: 10/03/14 at 02:10 PM

### Sample Matrix Quality Control

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

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Indeno (1,2,3-cd)pyrene	63	66	26-139	5	30				
1-Methylnaphthalene	74	68*	69-121	8	30				
2-Methylnaphthalene	93	93	63-130	0	30				
Naphthalene	107	104	44-148	2	30				
Batch number: 142720020A Sample number(s): 7610669,7610671,7610673 UNSPK: 7610669 BKG: 7610669									
>C10-C12 Aliphatic	108 (2)		31-137			31	44	36*	25
>C10-C12 Aromatic	88		22-119			1.3	1.2	5 (1)	25
>C12-C16 Aliphatic	237 (2)		42-146			230	300	27*	25
>C12-C16 Aromatic	104		42-122			19	19	0 (1)	25
>C16-C21 Aliphatic	50 (2)		57-111			130	160	17	25
>C16-C21 Aromatic	121		53-132			73	82	12	25
>C21-C34 Aliphatic	88		38-120			11	14	25 (1)	25
>C21-C34 Aromatic	96		55-126			9.1	9.6	6 (1)	25
Batch number: 142720027A Sample number(s): 7610669-7610674 BKG: 7610669									
Diesel Range Organics C12-C24						400	310	25*	20
Heavy Range Organics C24-C40						N.D.	N.D.	0 (1)	20
Batch number: 142690015A Sample number(s): 7610669-7610674 BKG: 7610669									
DRO C12-C24 w/Si Gel						320	450	35*	20
HRO C24-C40 w/Si Gel						N.D.	N.D.	0 (1)	20
Batch number: 14273049531A Sample number(s): 7610670 UNSPK: 7610670 BKG: 7610670									
TOC Solids/Sludges Combustion	104		22-155			N.D.	N.D.	0 (1)	13
Batch number: 14269820003A Sample number(s): 7610669-7610674 BKG: P610686									
Moisture						12.4	12.5	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: VOCs- Solid by 8260B

Batch number: Q142691AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7610669	86	94	93	93
7610671	82	88	86	91
7610673	96	101	100	101
Blank	95	99	99	98
LCS	110	109	110	111
LCSD	97	98	100	101
Limits:	50-141	54-135	52-141	50-131

Analysis Name: VOCs- Solid by 8260B

Batch number: X142681AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7610670	101	101	103	98

\*- Outside of specification

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

## Quality Control Summary

Client Name: Chevron  
Reported: 10/03/14 at 02:10 PM

Group Number: 1505510

### Surrogate Quality Control

7610672	99	101	103	97
7610674	100	101	102	99
Blank	100	101	102	99
LCS	99	97	102	103
LCSD	99	98	102	104
Limits:	50-141	54-135	52-141	50-131

Analysis Name: UST VOCs + GRO by 8260B-Water  
Batch number: Z142672AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7610675	99	98	99	97
Blank	99	96	98	97
LCS	96	97	98	102
MS	97	99	99	103
MSD	97	96	100	104
Limits:	80-116	77-113	80-113	78-113

Analysis Name: SIM SVOA (microwave)  
Batch number: 14273SLC026

	Fluoranthene-d10	Benzo(a)pyrene-d12	1-Methylnaphthalene-d10
7610669	132*	109	98
7610671	158*	110	121
7610673	117	114	111
Blank	97	105	96
LCS	100	110	100
MS	134*	108	111
MSD	120	111	105
Limits:	58-128	55-144	62-121

Analysis Name: NWTPH-GX Soil C7-C12  
Batch number: 14267A31A

	Trifluorotoluene-F
7610669	88
7610670	74
7610671	95
7610672	72
7610673	101
7610674	70
Blank	84
LCS	93
LCSD	79
Limits:	50-142

Analysis Name: NWTPH-Gx water C7-C12  
Batch number: 14268B53A

	Trifluorotoluene-F
7610675	65
Blank	65
LCS	72
LCSD	72
Limits:	63-135

Analysis Name: NWTPH-Dx soil w/ 10g Si Gel  
Batch number: 142690015A

\*- Outside of specification

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

## Quality Control Summary

Client Name: Chevron  
Reported: 10/03/14 at 02:10 PM

Group Number: 1505510

### Surrogate Quality Control

Orthoterphenyl	
7610669	64
7610670	79
7610671	76
7610672	74
7610673	93
7610674	77
Blank	73
DUP	63
LCS	80
Limits:	50-150

Analysis Name: WA EPH in Soil  
Batch number: 142720020A

	Orthoterphenyl	1-chlorooctadecane
7610669	101	70
7610671	107	112
7610673	93	46
Blank	84	57
DUP	91	76
LCS	90	56
MS	86	64
Limits:	50-142	33-122

Analysis Name: NWTPH-Dx soil  
Batch number: 142720027A

Orthoterphenyl	
7610669	70
7610670	83
7610671	96
7610672	86
7610673	97
7610674	88
Blank	81
DUP	70
LCS	88
Limits:	50-150

Analysis Name: WA- VPH soils  
Batch number: 14274A54A

	Trifluorotoluene-P	Trifluorotoluene-F
7610669	67	84
7610671	64	83
7610673	67	96
Blank	82	97
LCS	94	97
LCSD	91	96
Limits:	60-140	60-140

\*- Outside of specification

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

# Chevron Northwest Region Analysis Request/Chain of Custody



**Lancaster Laboratories**

Acct. # 11255 For Lancaster Laboratories use only Group # 1505570 Sample # 20100609-25  
 Instructions on reverse side correspond with circled numbers.

SCR #: \_\_\_\_\_

1 Client Information				4 Matrix				5 Analyses Requested												6 Remarks													
Facility # <u>207407</u> WBS				<input type="checkbox"/> Sediment <input type="checkbox"/> Potable <input type="checkbox"/> Ground <input type="checkbox"/> NPDES <input type="checkbox"/> Surface <input type="checkbox"/> Oil <input type="checkbox"/> Air Total Number of Containers _____				<input type="checkbox"/> BTEX + MTBE <input type="checkbox"/> 8021 <input type="checkbox"/> 8260 <input checked="" type="checkbox"/> Napthth <input type="checkbox"/> 8260 full scan <input checked="" type="checkbox"/> N Hexane, EDB, EDC, MTBE <input type="checkbox"/> Oxygenates <input type="checkbox"/> NWTPH GX <input checked="" type="checkbox"/> NWTPH DX <input checked="" type="checkbox"/> Silica Gel Cleanup Lead Total _____ Diss. _____ Method _____ <input checked="" type="checkbox"/> WAVPH <input checked="" type="checkbox"/> WAEPH <input type="checkbox"/> NWTPH-Dx without silica gel cleanup moisture C-PATHS / Napththene 8270 FOC												<input checked="" type="checkbox"/> Results in Dry Weight <input type="checkbox"/> J value reporting needed <input type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds <input type="checkbox"/> 8021 MTBE Confirmation <input type="checkbox"/> Confirm MTBE + Napththalene <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run _____ oxy's on highest hit <input type="checkbox"/> Run _____ oxy's on all hits													
Site Address <u>612 SE Union Street Camas, WA</u>								Total Number of Containers _____				(Matrix and Analyses Requested details from previous row)												(Remarks details from previous row)									
Chevron PM <u>Eric Roehl</u> Lead Consultant																																	
Consultant/Office <u>Portland OR</u>																																	
Consultant Project Mgr. <u>Alex Shock</u>																																	
Consultant Phone # <u>503 220 1646</u>																																	
Sampler <u>J. Wente / A. Lembrick</u>				3				(Matrix and Analyses Requested details from previous row)												(Remarks details from previous row)													
2 Sample Identification		Collected		Grab	Composite	Soil	Water	Oil	Total Number of Containers	BTEX + MTBE	8021	8260	Napthth	8260 full scan	N Hexane, EDB, EDC, MTBE	Oxygenates	NWTPH GX	NWTPH DX	Silica Gel Cleanup	Lead	Total	Diss.	Method	WAVPH	WAEPH	NWTPH-Dx without silica gel cleanup	moisture	C-PATHS / Napththene 8270	FOC	6 Remarks			
Date	Time																																
<u>SB-4-15</u>	<u>9/21/14</u>	<u>1100</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				<u>30</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Run and report TPH Dx with and without silica gel cleanup.  - Include analysis for methylnapthalene 1 and 2 in 8270 analysis. 9/22/14	
<u>SB-4-20</u>	<u>9/21/14</u>	<u>1150</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				<u>7</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
<u>SB-5-16</u>	<u>9/21/14</u>	<u>1300</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				<u>8</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
<u>SB-5-26</u>	<u>9/21/14</u>	<u>1500</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				<u>7</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
<u>SB-6-19</u>	<u>9/21/14</u>	<u>1615</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				<u>8</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
<u>SB-6-25</u>	<u>9/21/14</u>	<u>1630</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>				<u>7</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>
<u>TB-92114</u>	<u>9/21/14</u>	<u>1750</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>			<u>2</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
7 Turnaround Time Requested (TAT) (please circle)				Relinquished by				Date		Time		Received by				Date		Time															
Standard <u>5 day</u> 4 day 72 hour      48 hour      24 hour				<u>[Signature]</u>				<u>9/22/14</u>		<u>1340</u>		<u>[Signature]</u>																					
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 <input checked="" type="checkbox"/> FedEx _____      Other _____								<u>[Signature]</u>				<u>9/23/14</u>		<u>0920</u>															
				Temperature Upon Receipt				°C		Custody Seals Intact?				Yes		No																	
				<u>0.7</u>										<input checked="" type="checkbox"/>		<input type="checkbox"/>																	

The white copy should accompany samples to Lancaster Laboratories. The yellow copy should be retained by the client.

# Explanation of Symbols and Abbreviations

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

<b>RL</b>	Reporting Limit	<b>BMQL</b>	Below Minimum Quantitation Level
<b>N.D.</b>	none detected	<b>MPN</b>	Most Probable Number
<b>TNTC</b>	Too Numerous To Count	<b>CP Units</b>	cobalt-chloroplatinate units
<b>IU</b>	International Units	<b>NTU</b>	nephelometric turbidity units
<b>umhos/cm</b>	micromhos/cm	<b>ng</b>	nanogram(s)
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>meq</b>	milliequivalents	<b>lb.</b>	pound(s)
<b>g</b>	gram(s)	<b>kg</b>	kilogram(s)
<b>µg</b>	microgram(s)	<b>mg</b>	milligram(s)
<b>mL</b>	milliliter(s)	<b>L</b>	liter(s)
<b>m<sup>3</sup></b>	cubic meter(s)	<b>µL</b>	microliter(s)
		<b>pg/L</b>	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> 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.

*Data Qualifiers:*

**C** – result confirmed by reanalysis.

**J** - estimated value – The result is  $\geq$  the Method Detection Limit (MDL) and  $<$  the Limit of Quantitation (LOQ).

*U.S. EPA CLP Data Qualifiers:*

**Organic Qualifiers**

**Inorganic Qualifiers**

<b>A</b>	TIC is a possible aldol-condensation product	<b>B</b>	Value is $<$ CRDL, but $\geq$ IDL
<b>B</b>	Analyte was also detected in the blank	<b>E</b>	Estimated due to interference
<b>C</b>	Pesticide result confirmed by GC/MS	<b>M</b>	Duplicate injection precision not met
<b>D</b>	Compound quantitated on a diluted sample	<b>N</b>	Spike sample not within control limits
<b>E</b>	Concentration exceeds the calibration range of the instrument	<b>S</b>	Method of standard additions (MSA) used for calculation
<b>N</b>	Presumptive evidence of a compound (TICs only)	<b>U</b>	Compound was not detected
<b>P</b>	Concentration difference between primary and confirmation columns $>25\%$	<b>W</b>	Post digestion spike out of control limits
<b>U</b>	Compound was not detected	<b>*</b>	Duplicate analysis not within control limits
<b>X,Y,Z</b>	Defined in case narrative	<b>+</b>	Correlation coefficient for MSA $<0.995$

**Analytical test results meet all requirements of NELAC 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.



**Appendix B:**  
**Terrestrial Ecological Evaluation Documentation**

---

## Terrestrial Ecological Evaluation Process- Simplified Evaluation

### Documentation Form

Criteria # (Concern)	Criteria	Response (Circle One)
1 (exposure)	Is the total area of soil contamination at the site less than or equal to 350 square feet	<b>Yes (End TEE) / No</b>
2 (exposure)	Does land use at the site and surrounding area make substantial wildlife exposure unlikely based on completion of <a href="#">Table 749-1</a> ?	<b>Yes (End TEE) / No</b>
3 (pathway)	Is there a potential exposure pathway from soil contamination to soil biota, plants, or wildlife?	<b>Yes / No (End TEE)</b>
4 (contaminant)	Are the hazardous substances at your site listed in <a href="#">Table 749-2</a> and is (or will) their location in the soil at your site be at a depth not exceeding the point of compliance, and at concentrations that do not exceed the values provided in <a href="#">Table 749-2</a> .	<b>Yes (End TEE) / No</b>  <b>Note: You must perform bioassays for contaminants at your site if no table value is provided.</b>
5 (contaminant)	Will hazardous substances listed in <a href="#">Table 749-2</a> be present in the soil at your site within 6 feet of the ground surface at concentrations likely to be toxic, or with the potential to bioaccumulate, based on bioassays using methods approved by the department.	<b>Yes / No (End TEE)</b>

[\[Exclusions Main\]](#) [\[TEE Definitions\]](#) [\[Simplified or Site-Specific?\]](#) [\[Simplified Ecological Evaluation\]](#)  
[\[Site-Specific Ecological Evaluation\]](#) [\[WAC 173-340-7493\]](#) [\[Index of Tables\]](#)

[\[TEE Home\]](#)

**Table 749-1**

**Simplified Terrestrial Ecological Evaluation-Exposure Analysis Procedure**

Estimate the area of contiguous (connected) <u>undeveloped land</u> on the site or within 500 feet of any area of the site to the nearest 1/2 acre (1/4 acre if the area is less than 0.5 acre).																						
1) From the table below, find the number of points corresponding to the area and enter this number in the field to the right.																						
	<table border="1"> <thead> <tr> <th style="text-align: center;">Area (acres)</th> <th style="text-align: center;">Points</th> </tr> </thead> <tbody> <tr><td style="text-align: center;">0.25 or less</td><td style="text-align: center;">4</td></tr> <tr><td style="text-align: center;">0.5</td><td style="text-align: center;">5</td></tr> <tr><td style="text-align: center;">1.0</td><td style="text-align: center;">6</td></tr> <tr><td style="text-align: center;">1.5</td><td style="text-align: center;">7</td></tr> <tr><td style="text-align: center;">2.0</td><td style="text-align: center;">8</td></tr> <tr><td style="text-align: center;">2.5</td><td style="text-align: center;">9</td></tr> <tr><td style="text-align: center;">3.0</td><td style="text-align: center;">10</td></tr> <tr><td style="text-align: center;">3.5</td><td style="text-align: center;">11</td></tr> <tr><td style="text-align: center;">4.0 or more</td><td style="text-align: center;">12</td></tr> </tbody> </table>	Area (acres)	Points	0.25 or less	4	0.5	5	1.0	6	1.5	7	2.0	8	2.5	9	3.0	10	3.5	11	4.0 or more	12	12
Area (acres)	Points																					
0.25 or less	4																					
0.5	5																					
1.0	6																					
1.5	7																					
2.0	8																					
2.5	9																					
3.0	10																					
3.5	11																					
4.0 or more	12																					
2) Is this an <u>industrial</u> or <u>commercial</u> property? If yes, enter a score of 3. If no, enter a score of 1		3																				
3) <sup>a</sup> Enter a score in the box to the right for the habitat quality of the site, using the following rating system <sup>b</sup> . High=1, Intermediate=2, Low=3		3																				
4) Is the undeveloped land likely to attract wildlife? If yes, enter a score of 1 in the box to the right. If no, enter a score of 2. <sup>c</sup>		1																				
5) Are there any of the following soil contaminants present: Chlorinated dioxins/furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene? If yes, enter a score of 1 in the box to the right. If no, enter a score of 4.		4																				
6) Add the numbers in the boxes on lines 2-5 and enter this number in the box to the right. If this number is larger than the number in the box on line 1, the simplified evaluation may be ended.		11																				

**Notes for Table 749-1**

<sup>a</sup> It is expected that this habitat evaluation will be undertaken by an experienced field biologist. If this is not the case, enter a conservative score of (1) for questions 3 and 4.

<sup>b</sup> **Habitat rating system.** Rate the quality of the habitat as high, intermediate or low based on your professional judgment as a field biologist. The following are suggested factors to consider in making this evaluation:

**Low:** Early successional vegetative stands; vegetation predominantly noxious, nonnative, exotic plant species or weeds. Areas severely disturbed by human activity, including intensively cultivated croplands. Areas isolated from other habitat used by wildlife.

**High:** Area is ecologically significant for one or more of the following reasons: Late-[successional](#) native plant communities present; relatively high species diversity; used by an uncommon or rare species; [priority habitat](#) (as defined by the Washington Department of fish and Wildlife); part of a larger area of habitat where size or fragmentation may be important for the retention of some species.

**Intermediate:** Area does not rate as either high or low.

<sup>c</sup> Indicate "yes" if the area attracts wildlife or is likely to do so. Examples: Birds frequently visit the area to feed; evidence of high use b mammals (tracks, scat, etc.); habitat "island" in an industrial area; unusual features of an area that make it important for feeding animals; heavy use during seasonal migrations.

[\[Area Calculation Aid\]](#) [\[Aerial Photo with Area Designations\]](#) [\[TEE Table 749-1\]](#) [\[Index of Tables\]](#)

[\[Exclusions Main\]](#) [\[TEE Definitions\]](#) [\[Simplified or Site-Specific?\]](#) [\[Simplified Ecological Evaluation\]](#) [\[Site-Specific Ecological Evaluation\]](#) [\[WAC 173-340-7493\]](#)

[\[TEE Home\]](#)