Level 2
Preliminary Site Investigation

US97: J Street Intersection (Madras South Y) Sec. Project
Key #15409
The Dalles – California Hwy
MP 92.78 to 96.30
Madras, Jefferson County

April 11, 2014

Prepared by: Ryan Franklin, R.G.
Region 4 Interim HazMat Coordinator

Oregon Department of Transportation

Region 4 Geo/Hydro Unit 63055 N Hwy 97, Bldg. M
Hazardous Materials Bend, OR 97702

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Executive Summary

ODOT Region 4 HazMat (R4 HazMat) has completed this Level II Preliminary Site Investigation (PSI) in accordance with AASHTO Guidelines and ASTM E 1903-00 for the US97: J Street Intersection (Madras South Y) project corridor. Based on the soil sampling and analytical results presented in this report, low concentrations of petroleum hydrocarbons were encountered in ODOT and City of Madras right of way (R/W) at Prince's Automotive (755 SW Hwy 97), Madras Auto Body and Glass (728 SW 5th St) and the former Western Auto (717 SW 5th St). None of the reported hydrocarbon concentrations in the analyzed soil samples exceed Oregon Department of Environmental Quality (DEQ) Risk-Based Concentrations or Clean Fill Screening Values. Based on these results, no special handling requirements are necessary for the soils that will be excavated during construction from the investigated areas.

If the project scope changes to include additional excavation or ROW acquisition, please contact the Region 4 HazMat Coordinator to determine whether additional investigation is warranted.

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1 Introduction

The Oregon Department of Transportation (ODOT) Region 4 HazMat Unit (R4 HazMat) has conducted a Level 2 Preliminary Site Investigation (PSI) for the Project:

US97: J Street Intersection (Madras South Y) Sec.
Madras, Jefferson County
Key #15409

This PSI is intended to confirm the presence or absence of potential contamination that was identified in the Hazardous Materials Corridor Assessment for this Project. The presence of contamination could affect worker safety, property value, and construction costs.

1.1 Site Description

The project corridor consists of approximately 3.52 miles of highway, located in Madras, Oregon, as indicated on Figure 1. Proposed Project Corridor activities include:

- Realignment of US97 (5th St Couplet) east to S Adams Dr. Re-designate S Adams Drive to US97/5th St.
- Construction of new sidewalks and curbs.
- Installation of new storm water drainage catch basins and storm sewer pipes.
- Construction of a storm water detention pond adjacent and west of the existing US97 alignment between I St and J St.
- Acquisition of right-of-way (R/W) to accommodate construction.

1.2 Previous Assessments

1.2.1 Hazardous Materials Corridor Study

In January 14, 2008, GeoEngineers, under contract with ODOT, completed a Hazardous Materials Corridor Assessment Report of the project corridor to identify potential sources of contamination that could impact the project. The corridor assessment identified the following potential sources of hazardous materials:

- Hooker Creek Companies, LLC (915 SW Hwy 97)
- MotoSports Central Small Engine Repair (same building as Hooker Creek Companies, LLC)
- Madras J & L Truck Stop - Shell Service Station (992 SW Hwy 97)
- Wolfe Truck and Equipment (916 SW Hwy 97)
- South Side Texaco (838 SW Hwy 97)
- Former Jerry's Muffler (874 S Adams Dr)
- Jefferson County Fire Station #1 (765 S Adams Dr)
- Prince's Automotive (755 SW Hwy 97)
- Madras Body and Glass (728 SW 5th St)
- Western Auto - currently Outpost Bargain Connection (717 SW 5th St)
- Mark's Auto Repair (880 S Adams Dr)

1.2.2 Modified Phase I and Phase II Environmental Site Assessment (ESA)

R4 HazMat performed Phase I and Phase II ESA work on Tax Lot 11.13.11DD Lot 6901 from May 10 through June 15, 2012 because this property was being acquired for the realignment of SW 5th St.

The ESA identified soil that is contaminated with hydraulic fluid in the former hydraulic lift that is located in the on-site shop building. This contaminated soil will be removed prior to construction by ODOT personnel or by a contractor operating under a separate ODOT-administered contract.

The ESA also included a subsurface investigation with a push probe drilling machine along the eastern property line to check for off-site migration of contaminants from the adjacent former Jerry's Muffler property. Field screening and laboratory analyses on recovered soil samples did not detect any contamination in this area.

The combined Phase I and Phase II ESA report, dated August 1, 2012, is available from R4 HazMat.

2 Preliminary Site Assessment Activities

2.1 Scope of Work

Based on the proposed construction activities and available information from each site, R4 HazMat determined that five of the sites listed in Section 1.2.1 posed a potential risk to the project as follows:

- Madras J & L Truck Stop
- Wolfe Truck and Equipment
- Prince's Automotive
- Madras Body and Glass
- Western Auto

R4 HazMat prepared a Work Plan dated July 11, 2013 for the PSI activities, which included geophysical surveys and sonic drilling in ODOT and City of Madras R/W adjacent to the five above-listed locations. Appendix A contains representative photographs of the PSI activities and Appendix B contains the Work Plan.

R4 HazMat prepared a site-specific Health and Safety (HASP) plan for the PSI activities, a copy of which is available upon request. R4 HazMat also requested underground utility line making through Oregon's Call-Before-You-Dig program and met with Alan Wilm of Pacific Power prior to drilling.

2.2 Field Activities

Ryan Franklin, R.G. of ODOT Region 4 HazMat oversaw PSI assessment activities that occurred from July 15-25, 2013.

2.2.1 Geophysical Survey

On July 15-16, 2013, GeoPotential out of Brightwood, Oregon, conducted electromagnetic/ground-penetrating radar (EM/GPR) surveys as indicated on the maps included with the survey report in Appendix C. The purpose of these surveys was to confirm the locations of marked utilities, identify and locate unmarked utilities, and to determine the presence/absence of anomalies that are characteristic of underground storage tanks (USTs).

2.2.2 Soil Borings

On July 22-25, 2013, Cascade Drilling out of Clackamas, Oregon, advanced 26 borings with a sonic drill sampling system and collected soil samples continuously in four-foot long plastic bags. Figures 2a-2c indicate the drill hole locations. R4 HazMat screened the recovered soil samples using a photo-ionization detector (PID) and observed for field indications of contamination to select soil samples for laboratory analysis. Soil samples were collected in laboratory-prepared containers, labeled, placed in a cooler with ice and transported under chain-of-custody protocol to Environmental Sciences Corporation (ESC) for analysis. Appendix D contains boring logs, including geologic descriptions and field screening results.

2.3 Laboratory Analytical Methods

R4 HazMat submitted soil samples to ESC as follows:

July 24, 2013	26 samples
July 25, 2013	17 samples

All but four of the submitted samples were analyzed for one or more of the following:

- Gasoline range hydrocarbon quantification by NWTPH-Gx (if detected by NWTPH-HCID)
- Diesel range hydrocarbon quantification by NWTPH-Dx (if detected by NWTPH-HCID)
- Volatile organic compounds (VOCs) by EPA Method 8260B (if gasoline range hydrocarbons detected)

The analytical method(s) that were selected for each sample were based on contaminants that may have been released by the adjacent facilities. The four soil samples that were not initially analyzed were held by ESC pending the analytical results on the other soil samples. Based on the analytical results, no analyses were requested for any of the four held samples.

3 Results

3.1 Geophysical Survey Results

GeoPotential did not find any anomalies that are characteristic of USTs during the EM/GPR surveys.

3.2 Geology and Hydrogeology

Based on the sonic drill hole logs, the subsurface geology in the explored areas is characterized by interlayered alluvium, tuff, and sandstone to depths of up to 15 feet below ground surface (bgs), the maximum depth explored. R4 HazMat did not observe any petroleum hydrocarbon staining or odors in any of the recovered samples. Groundwater was not encountered in any of the sonic drill holes, so groundwater is likely greater than 15 feet bgs.

Elevated PID readings were observed in several of the recovered soil samples. The sonic drilling method heated many of the soil samples to the point of being too hot to touch. Experimentation by R4 HazMat determined that the elevated PID readings were the result of steam from the heated soil samples and not petroleum hydrocarbons.

3.3 Analytical Data

Where appropriate, analytical results presented in the following sections are compared to appropriate risk levels and regulatory limits for the contaminants and media of concern.

3.3.1 Soil Analytical Results

Laboratory analyses detected petroleum hydrocarbons at concentrations exceeding the laboratory method detection limit in the following locations:

- Prince's Automotive – benzene was detected at a concentration of 0.0052 mg/kg at a depth of five feet bgs in hole SD13-21.
- Madras Body and Glass – benzene was detected at a concentration of 0.0023 mg/kg at a depth of eight feet in hole SD13-11.
- Former Western Auto – gasoline-range hydrocarbons were detected at a concentration of 0.13 mg/kg at a depth of 6.5 feet bgs in hole SD-13-36.

Table 1 summarizes the target compounds detected in the soil samples and Appendix E contains the laboratory analytical reports.

3.3.2 Analytical Results Comparison with DEQ Risk-Based Concentrations

To carry out the proposed construction activities, construction and excavation workers will be working in and around soils with detectable concentrations of petroleum hydrocarbons in the locations described in Section 3.3.1. Therefore, the reported concentrations of petroleum hydrocarbons in the analyzed samples were compared to generic DEQ risk-based concentrations (RBCs) for construction and excavation worker exposure via soil ingestion, dermal contact and inhalation (Table 2). As shown in Table 2, none of the RBCs were exceeded by any of the reported constituent concentrations.

3.3.3 Analytical Results Comparison with DEQ Clean Fill Screening Values

The reported concentrations of petroleum hydrocarbons in the analyzed samples were compared with DEQ clean fill screening values to help determine reuse options for this soil after excavation. Table 2 summarizes the results of this comparison. As shown in

Table 2, none of the DEQ clean fill screening values were exceeded by any of the reported constituent concentrations. Based on these results, the soils that will be excavated during construction from the explored areas may be treated as clean fill.

3.4 Investigation Derived Waste Management

The cuttings, excess soil samples, and decontamination water were stored in labeled drums at the ODOT Madras Maintenance Yard. Based on the soil lab analytical results (Section 3.3), the drummed soil cuttings were given to ODOT Madras Maintenance for use as clean fill. The decontamination water was discharged to the ground in the ODOT Madras Maintenance yard.

4 Conclusions

ODOT Region 4 HazMat (R4 HazMat) has completed this Level II Preliminary Site Investigation (PSI) in accordance with AASHTO Guidelines and ASTM E 1903-00 for the US97: J Street Intersection (Madras South Y) project corridor. Based on the soil sampling and analytical results presented in this report, low concentrations of petroleum hydrocarbons were encountered in ODOT and City of Madras right of way (R/W) at Prince's Automotive (755 SW Hwy 97), Madras Auto Body and Glass (728 SW 5th St) and the former Western Auto (717 SW 5th St). None of the reported hydrocarbon concentrations in the analyzed soil samples exceed DEQ Risk-Based Concentrations or Clean Fill Screening Values. Based on these results, no special handling requirements are necessary for the soils that will be excavated during construction from the investigated areas.

If the project scope changes to include additional excavation or ROW acquisition, please contact the Region 4 HazMat Coordinator to determine whether additional investigation is warranted.

5 Limitations

R4 HazMat conducted the work for this PSI report according to generally accepted environmental procedures as outlined in the American Association of State Highway and Transportation Officials (AASHTO) "Hazardous Waste Guide for Project Development" (1990) and the American Society for Testing and Materials (ASTM) "Standard Guide for Environmental Site Assessments: Phase II Environmental Site Assessment Process (ASTM E1903-00). This assessment is for internal ODOT use only and may not be relied upon by any other entity without the written permission of an authorized ODOT representative. This PSI is based on the ASTM and AASHTO standards; however, no environmental site assessment can eliminate all uncertainty. Any environmental sample (i.e. soil and groundwater samples) collected for analysis may or may not be representative of general Project Site conditions. The observations, findings, and conclusions in this PSI report are based solely on the Project Site conditions at the time of assessment and do not imply a warrantee or guarantee for the Project Site. Nothing in this PSI report constitutes a legal opinion or service and should not be relied on as such. ODOT is not responsible for the accuracy of information provided by third parties, which may be contained in this PSI report.

6 Signatures of Environmental Professionals

Ryan Franklin, R.G., prepared this PSI Report

Signature _____ Date 4/11/14

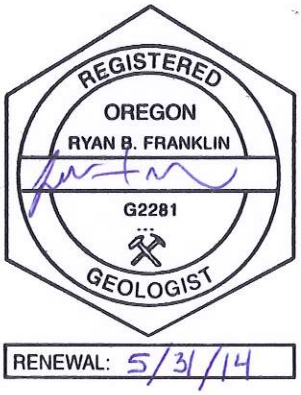
Curtis Ehlers, C.E.G., conducted a technical review of this PSI Report

Signature _____ Date 4/11/14

Jon Heacock, P.E., conducted a corporate review of this PSI Report

Signature _____ Date 4-14-14

Oregon Registered Professional Geologist stamp:



Figures

Figure 1 Project Vicinity Map

Figure 2 Drill Hole Locations and Analytical Results Summary

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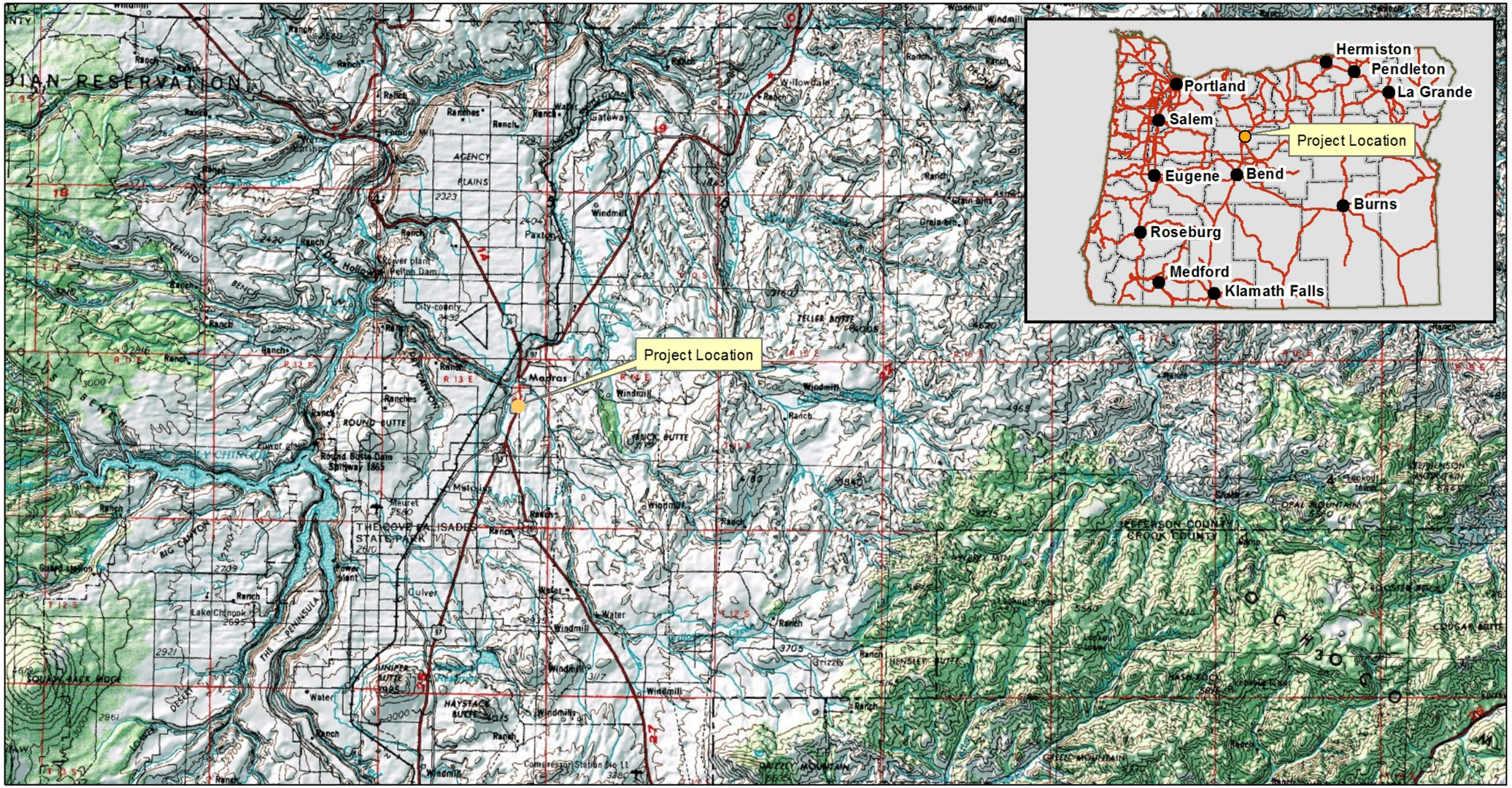

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Figure 1. Project Vicinity Map
US97 @ J St. Intersection (Madras South Y) Sec.
Key #15409
The Dalles - California Hwy
Madras, Jefferson County

0 2.5 5 10
Miles

N
W E
S

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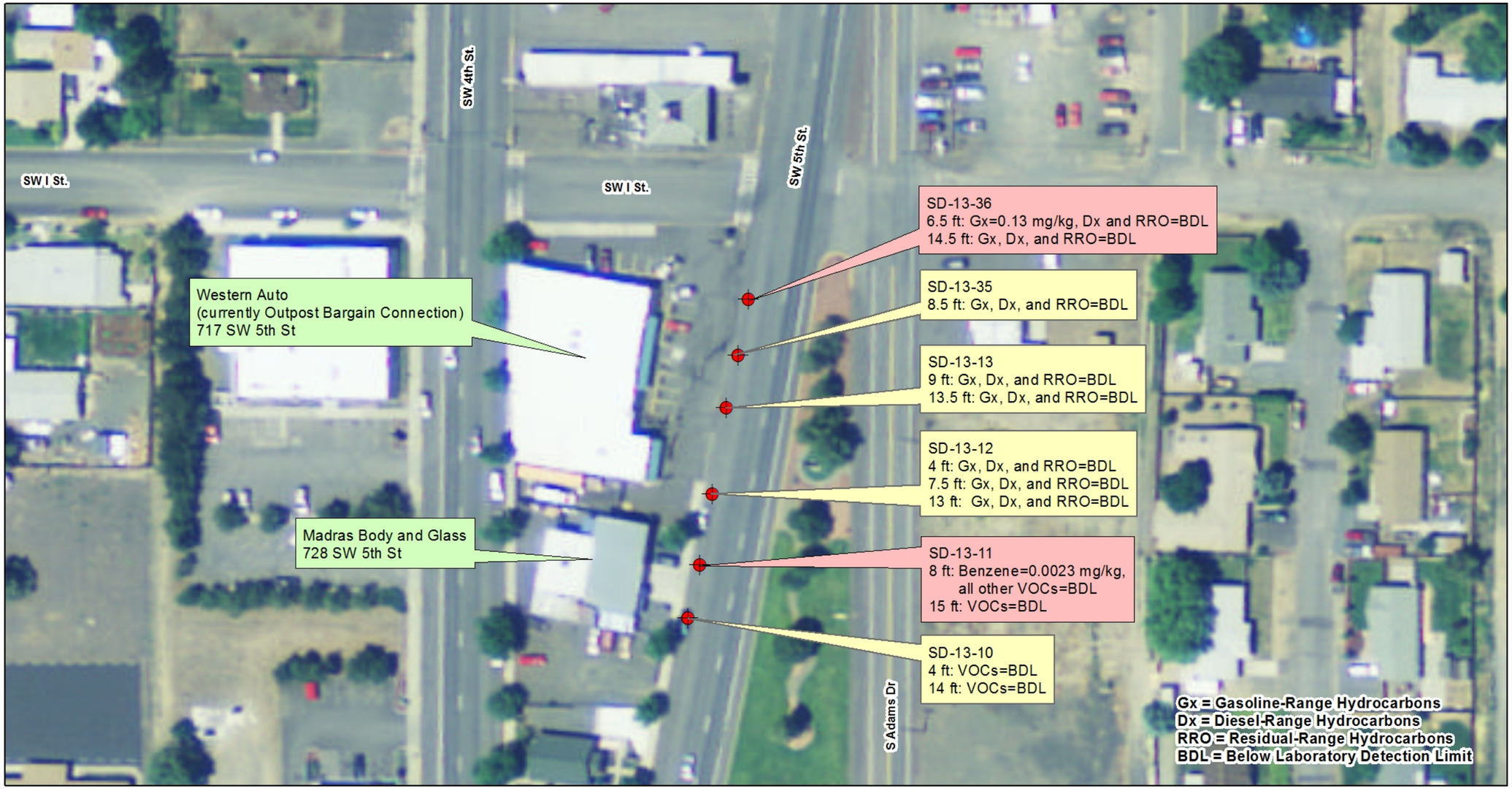

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Figure 2a - Drill Hole Locations and Analytical Results Summary
US97 @ J St. Intersection (Madras South Y)
Key #15409
The Dalles-California Hwy
Madras, Jefferson County

0 50 100 200
Feet

N W E S

Drill Hole

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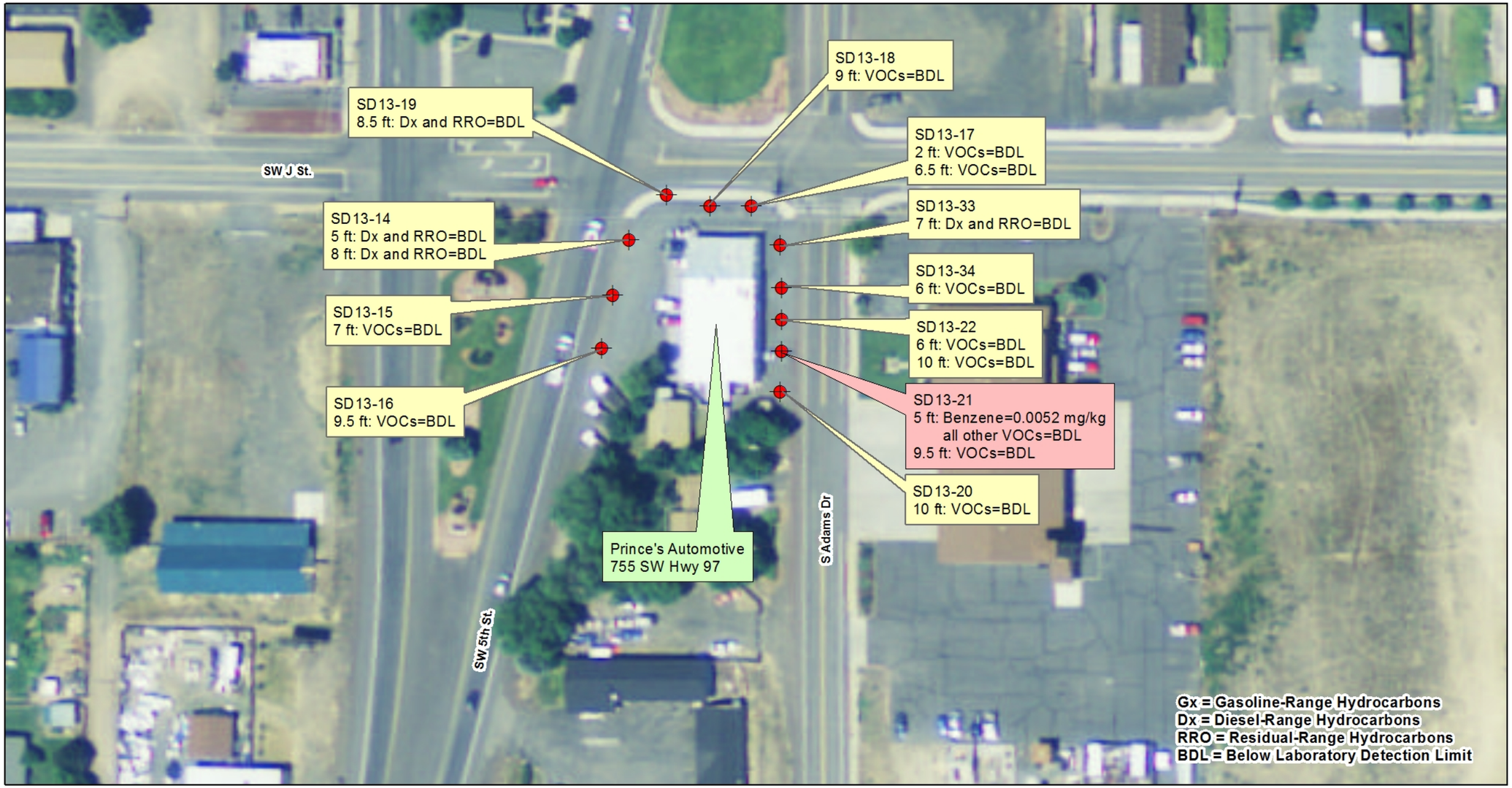

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Figure 2b - Drill Hole Locations and Analytical Results Summary
US97 @ J St. Intersection (Madras South Y)
Key #15409
The Dalles-California Hwy
Madras, Jefferson County

0 50 100 200
Feet

N W E S

Drill Hole

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Figure 2c - Drill Hole Locations and Analytical Results Summary
US97 @ J St. Intersection (Madras South Y)
Key #15409
The Dalles-California Hwy
Madras, Jefferson County

0 50 100 200
Feet

N W E S

Drill Hole

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Tables

Table 1 ***Soil Analytical Results***

Table 2 ***Comparison of Analytical Results to DEQ RBCs and Clean Fill Screening Concentrations***

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Table 1. Analytical Results Summary.

Boring ID#	Depth	Gx	Dx		Benzene**
		Gas	Diesel	Oil*	
	feet	mg/kg	mg/kg	mg/kg	mg/kg
SD13-10	4				<0.0012
SD13-10	14				<0.0012
SD13-11	8				**0.0023**
SD13-11	15				<0.0011
SD13-12	4	<0.11	<4.4	<11	
SD13-12	7.5	<0.12	<4.8	<12	
SD13-12	13	<0.12	<4.6	<12	
SD13-13	2.5	<0.14	<4.9	<12	
SD13-13	9	<0.13	<4.8	<12	
SD13-13	13.5	<0.57	<4.6	<11	
SD13-14	5		<4.6	<11	
SD13-14	8		<4.4	<11	
SD13-15	7				<0.0011
SD13-16	9.5				<0.0012
SD13-17	2				<0.0011
SD13-17	6.5				<0.0011
SD13-18	9				<0.0011
SD13-19	8.5		<4.5	<11	
SD13-20	10		<4.6	<11	<0.0011
SD-13-21	5		<4.4	<11	**0.0052**
SD-13-21	9.5		<4.4	<11	<0.0011
SD-13-22	6		<4.4	<11	<0.0011
SD-13-22	10		<4.4	<11	<0.0011
SD-13-23	4		<4.7	<12	
SD-13-23	7		<4.7	<12	

Notes for Table 1

* "Oil" is reported as "residual range" hydrocarbons by the laboratory (ESC).

** Benzene is the only VOC analyte that was detected at or above the laboratory detection limit in all of the analyzed samples.

BDL<0.12 - Analyte not detected at or above laboratory detection limit of 0.12 mg/kg

Not analyzed where shaded.

Yellow highlighted cells indicate the analyte was detected at or above the laboratory detection limit.

Table 1 Continued. Analytical Results Summary.

Boring ID#	Depth	Gx	Dx		Benzene**
		Gas	Diesel	Oil*	
	feet	mg/kg	mg/kg	mg/kg	mg/kg
SD13-24	5	<0.11	<4.5	<11	
SD13-25	4.5		<4.8	<12	
SD13-26	6	<0.12	<4.8	<12	
SD13-27	5.5	<0.12	<4.7	<12	
SD13-28	5	<0.12	<4.8	<12	
SD13-29	6	<0.12	<4.7	<12	
SD13-30	6		<4.7	<12	
SD13-31	5.5		<5.0	<12	
SD13-32	4.5		<4.8	<12	
SD13-33	7		<4.4	<11	
SD13-34	6		<4.3	<11	<0.0011
SD13-35	8.5	<0.13	<4.7	<12	
SD13-36	6.5	**0.13**	<4.8	<12	
SD13-36	14.5	<0.13	<5.1	<13	

Table 2. Comparison of soil analytical results to DEQ RBCs for construction and excavation workers and DEQ Clean Fill Screening Concentrations.

Constituent	Maximum Concentration Detected, mg/kg	Sample ID	DEQ RBC Construction Worker, mg/kg	DEQ RBC Excavation Worker, mg/kg	DEQ Clean Fill Screening Concentration
Generic Gasoline	0.13	SD13-36-6.5	9,700	>Max	1,200
Benzene	0.0052	SD13-21-5'	340	9,500 (>Csat)	0.08

Notes for Table 2:

>Max = The constituent RBC for this pathway is calculated as greater than 100,000 mg/kg or 100,000 mg/l. Therefore, this substance is deemed not to pose a risk in this scenario.

>Csat = This soil RBC exceeds the limit of three-phase equilibrium partitioning.

Appendix A

Representative Site Photographs

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Photo A-1. View of GeoPotential performing a GPR survey adjacent to the Madras J & L Truck Stop. Photo taken facing northwest.

Photo A-2. View of Cascade Drilling advancing a sonic borehole adjacent to the Madras Body and Glass facility. Photo taken facing west.

Photo A-3. View of Cascade Drilling advancing a sonic borehole adjacent to the Madras J & L Truck Stop. Photo taken facing south.

Photo A-4. View of Cascade Drilling placing a recovered soil sample into a plastic bag adjacent to the Madras J & L Truck Stop. Photo taken facing northwest.

Appendix B

Work Plan

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Site Specific Work Plan

Oregon Department of Transportation
Site Specific Health and Safety Plan
US97 at J Street Intersection (Madras South Y)
Madras, Oregon
Key Number: 15409

Prepared by Ryan Franklin on July 11, 2013

1. Introduction

The goal of this work is to determine the presence/absence of contamination in areas that will be impacted by project construction. The potentially contaminated areas are associated with automotive repair facilities and existing and former gasoline service stations adjacent to the project corridor.

2. Site Activities

Cascade Drilling, under contract with ODOT, will conduct subsurface sampling at the locations indicated on the attached Site Maps, as follows:

- Advance several borings to depths of approximately 10-15 feet below ground surface (bgs) using a sonic drill.
- Collect continuous subsurface soil samples using sonic drill tooling.

ODOT personnel will:

- Screen soil samples using a photo-ionization detector (PID) and observe soil for sheens, staining, and odor.
- Select soil samples for laboratory analysis based on field screening and at the soil/bedrock interface and submit for the analyses listed in Section 3.

Standard operating procedures for these activities are attached to the Generic HASP.

3. Sample Analysis

ODOT will submit soil samples to the Environmental Sciences Corporation (ESC) for one or more of the following analyses:

- NWTPH-HCID;
- NWTPH-Gx and –Dx
- VOCs by 8260B (if Gx positive)
- PAHs by 8270-SIM (if Dx positive)
- SVOCs by 8270

Groundwater is not anticipated, so this work plan does not include groundwater sampling.

4. Personnel Requirements

Proposed Site activities will require a contract drill crew and at least one fully trained ODOT HazMat specialist. A Limited Trained Buddy or additional HazMat Specialist may be required for soil and groundwater sampling.

5. Cost Estimate

The estimated cost for the proposed scope of work including the contract drill crew and Agency staff time is $ 25,000.

Work Plan Site Maps

OREGON DEPARTMENT OF TRANSPORTATION

Traffic Control Plan - US97 South
US97 @ J St. Intersection (Madras South Y)
Key #15409
Madras, Jefferson County

0 75 150 300
Feet

N W E S

RWA = Road Work Ahead

Proposed Drill Hole Location

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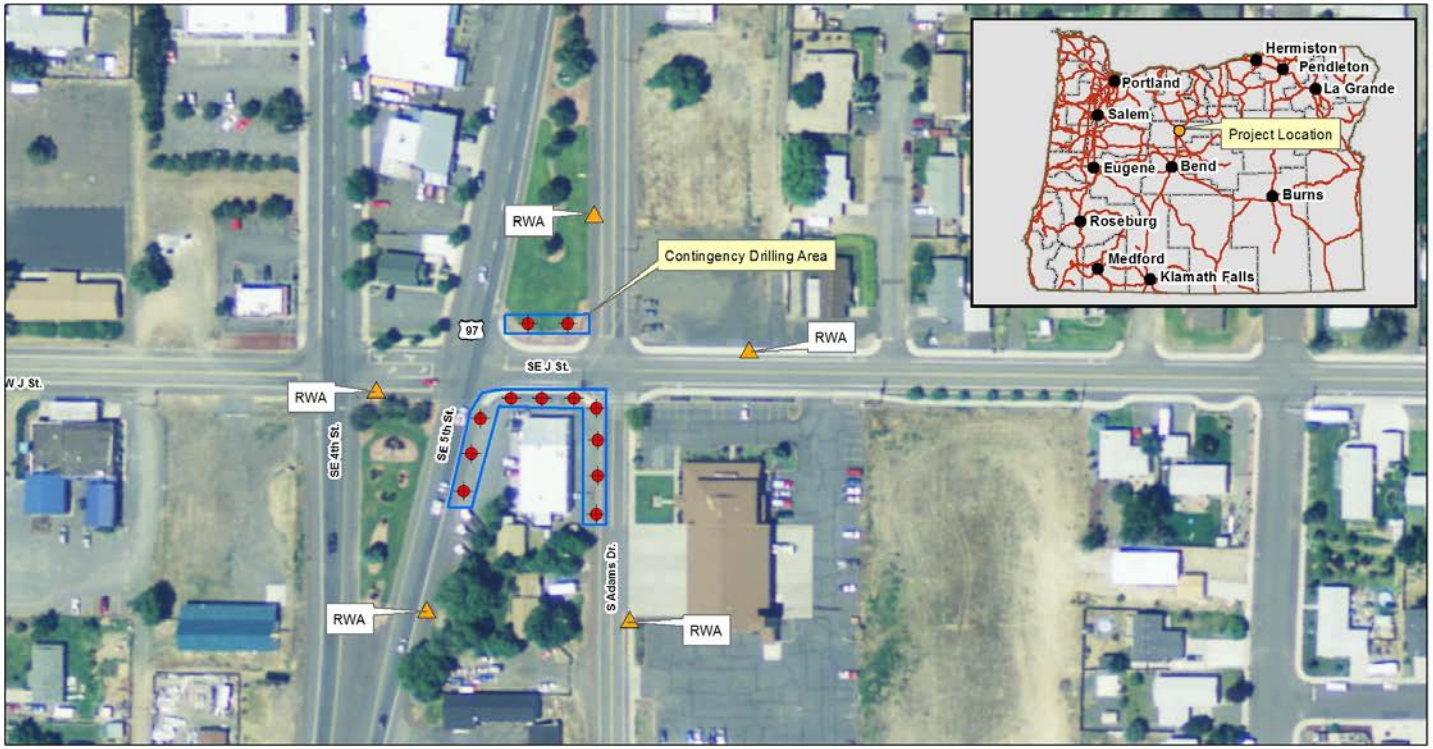
July 1, 2013



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Traffic Control Plan - J St Intersection
US97 @ J St. Intersection (Madras South Y)
Key #15409
Madras, Jefferson County

0 75 150 300
Feet

N W E S

RWA = Road Work Ahead

Proposed Drill Hole Location

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July 1, 2013

OREGON DEPARTMENT OF TRANSPORTATION

Traffic Control Plan - SE 5th St. Left Shoulder
US97 @ J St. Intersection (Madras South Y)
Key #15409
Madras, Jefferson County

0 75 150 300
Feet

N W E S

RWA = Road Work Ahead

Proposed Drill Hole Location

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July 1, 2013

OREGON DEPARTMENT OF TRANSPORTATION

Traffic Control Plan - SE 5th St. Right Shoulder and Right Lane Closure
US97 @ J St. Intersection (Madras South Y)
Key #15409
Madras, Jefferson County

RWA = Road Work Ahead

Proposed Drill Hole Location

Cones (shown for lane closure map only)

N W E S

0 75 150 300
Feet

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July 2, 2013

Appendix C

Geophysical Survey Report

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ENVIRONMENTAL & EXPLORATION GEOPHYSICS

22323 East Wild Fern Lane, Brightwood, Oregon 97011• PH (503) 622-0154• FAX (503) 622-0526
WEB http://www.geopotential.biz/ E-MAIL GeoPotential@geopotential.biz

SUMMARY REPORT

SUBSURFACE MAPPING SURVEY TO DETECT UNDERGROUND STORAGE TANKS

HWY 97 @ J STREET
STORM DRAIN INSTALL PROJECT
MADRAS, OREGON

CLIENT

ODOT
355 Capitol St. N.E.
Salem, OR 97301-3871

DATE OF SURVEY

July 15-16, 2013

GeoPotential Project Number: 9030

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SUMMARY

A Subsurface Mapping Survey (SMS) was conducted along 8 Areas of the shoulders of US Hwy 97 in Madras, Oregon for the purpose of detecting Underground Storage Tanks (USTs) and utilities and perform Bore Hole Clearance Surveys (BHCS).

Magnetic Surveys, Ground Penetrating Radar (GPR) Surveys and hand held magnetic and electromagnetic scanners were used for the project.

No USTs were detected in any of the Areas. BHCS were conducted over 38 proposed bore hole locations. Detected utilities were mapped.

INTRODUCTION

Anthony Bartruff and Fransisco Acosta of GeoPotential conducted the Subsurface Mapping Survey. Ryan Franklin was ODOT's on-site representative. Fieldwork was conducted on July 15-16, 2013. The report was completed and e-mailed to ODOT on July 21, 2013.

Subsurface mapping surveys are geophysical surveys utilizing geophysical methods and data to detect and locate natural and manmade subsurface features. Magnetic Surveys are used to detect and map the locations of buried **ferrous** (iron-bearing) objects (see Appendix A). Ground Penetrating Radar (GPR) Surveys are used to map both natural and manmade subsurface features such as USTs, utilities, backfilled pits, etc. (see Appendix B.). Pipe and cable locators are used to map the locations of buried utilities and piping.

Once subsurface ferrous objects are detected from a magnetic survey then hand held scanners and GPR surveys are used to map the locations, depths, sizes and shapes of the objects.

SURVEY OBJECTIVES

The objectives of this subsurface mapping survey are:

1. Search for UST's.
2. Map Utilities
3. Clear proposed Bore Hole locations.

SURVEY SITE

The survey locations are shown on Figure 1 and 2. There were 8 Areas designated as AREAS 1A, 1B, 2, 3A, 3B, 4A, 4B, and 5. Ryan Franklin was the ODOT representative onsite, a report (GeoPotential 9030) was made available to ODOT personnel on July 21, 2013. The Areas in general extended from the fog line along the roads and over the adjacent sidewalks. These Areas were selected by ODOT based on their historical research. Previous utility locators had marked known utilities prior to the Survey.

SURVEY EQUIPMENT

The following geophysical instruments were used to conduct the survey:

- GEOMETRICS 858G Cesium Vapor Magnetometer (Magnetic Survey).
- Mala RAMAC Ground Penetrating Radar System with a 500 MHz antenna (GPR Survey).
- Schonstedt GA52 Magnetic Gradiometer.
- Aqua-Tronics A6 Pipe & Cable locator.
- Heath Shurlock Pipe & Cable locator.

This equipment and the procedures used to meet the survey objectives of this project have been proven effective in detecting metallic objects and mapping non-metallic features such as disturbed soil from backfilled pits.

Geophysical techniques are excellent at detecting changes in the subsurface caused by natural and manmade objects; however, they are poor at actually identifying subsurface features. Complementary methods may be used to assist in the interpretation; however, the only sure way of identifying a buried feature is by excavation.

Brief descriptions of the magnetic method and the radar method are included in the Appendices.

PROCEDURE

Magnetic Survey

The Magnetic Survey consisted of acquiring magnetic readings along traverses using 2.5-foot spacing between traverses. Magnetic data were downloaded to a computer, processed and contoured to produce Figures 4 through 10 that are Magnetic Maps for each of the Areas. The Magnetic Maps are all plotted at a Contour Interval of 500 nT a Contour Interval sufficient to detect USTS. In general buried ferriferous objects will produce stronger positive magnetic anomalies that are shown as red contours on the Magnetic Map. Surface ferriferous objects such as signs or vehicles produce negative magnetic anomalies that are shown as blue contours on the magnetic map. Significant Magnetic Anomalies which could be caused by USTs are marked on the Maps as MA 1-8.

Ground Penetrating Radar Surveys

Over AREAS that contained suspect USTs GPR Profiles were acquired using a 500 MHz antenna. The data were processed and interpreted as discussed below. Also GPR data were acquired over all proposed bore holes and to map utilities.

Pipe and Cable Survey

Hand held magnetic and electromagnetic scanners were used to help identify USTs and utilities and clear proposed bore holes.

RESULTS

Results were marked on the Areas and are shown on the Figures for each Area.

Significant Magnetic Anomalies and observations are:

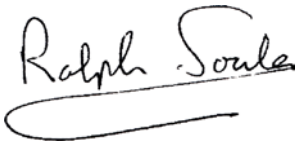
- MA1 – Figure 4, is interpreted to be a utility vault servicing a sanitary sewer line running parallel to the site.
- MA2 – Figure 6, is interpreted to be either an artifact reinforced sidewalk or a large abandoned utility.
- MA3 – Figure 7, extends further into the Northbound lane of HWY 97, radar data for this anomaly was inconclusive. This Anomaly is interpreted to be a possible buried reinforced sidewalk in association with MA 4-5.
- MA4 – Figure 8, negative Anomaly which extends into the Northbound lane of HWY 97 this anomaly is interpreted to be a possible buried sidewalk in association with MA3 and MA5.
- MA5- Figure 8, high Positive Anomaly at the North end of the Site and extending into the Northbound lane of HWY 97 and is interpreted to be a possible buried reinforced concrete sidewalk.

- MA6-8 Figures 9-11. Linear positive anomaly running though areas 4A, 4B and 5, adjacent to the Northbound lane of HWY 97. This anomaly is interpreted to be a buried iron pipe or a reinforced concrete sidewalk. Boreholes in Areas 4A and 4B are within close proximity to MA6-7, caution should be used when drilling in these areas.

LIMITATIONS

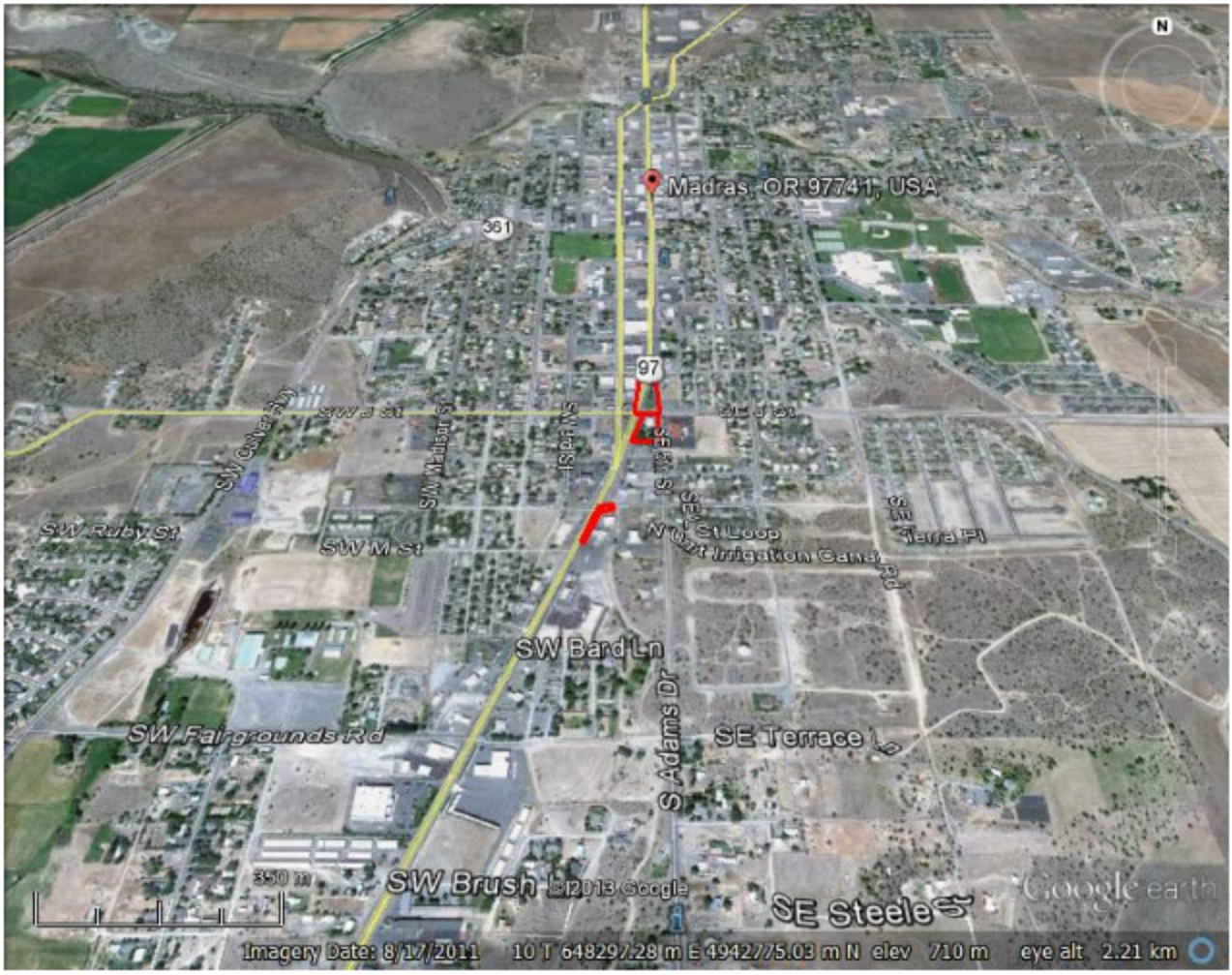
Limitations of magnetometer and GPR surveys can be seen in the Appendices.

Geophysical surveys consist of interpreting geophysical responses from subsurface features. Since a variety of subsurface features can produce identical geophysical responses, it is necessary to confirm the geophysical interpretation with intrusive investigations such as excavating or drilling. In addition, many subsurface features may produce no geophysical response.



Ralph Soule
GeoPotential

Anthony Bartruff
GeoPotential



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DATE: 7/17/2013 SUBSURFACE MAPPING SURVEY PROJECT No. 9030

LOCATION: US 97 @ J Street Intersection
Road Edge and Sidewalks
Key# 15409
Madras, Jefferson County,Oregon

CLIENT: ODOT

Figure 1
Location Map

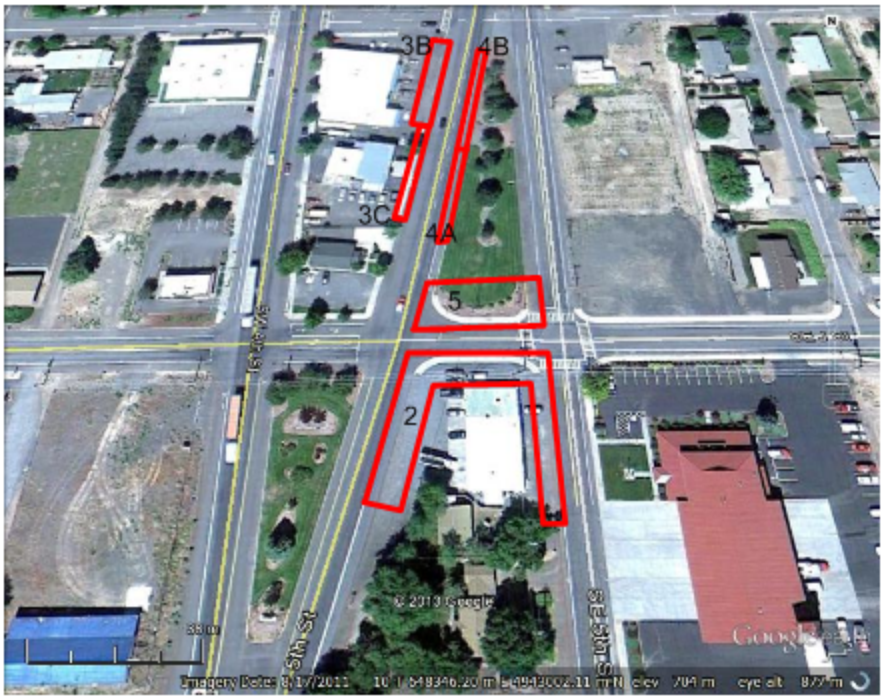

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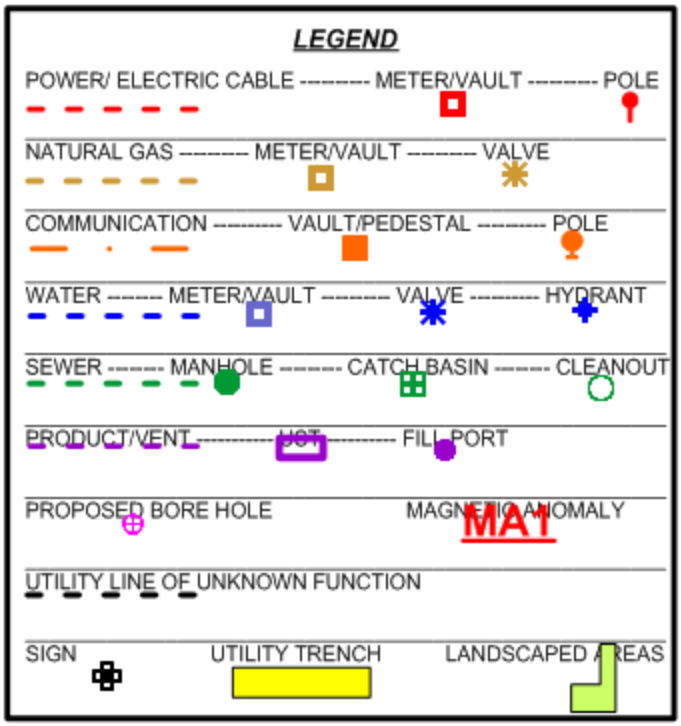
Figure 2
Site Map



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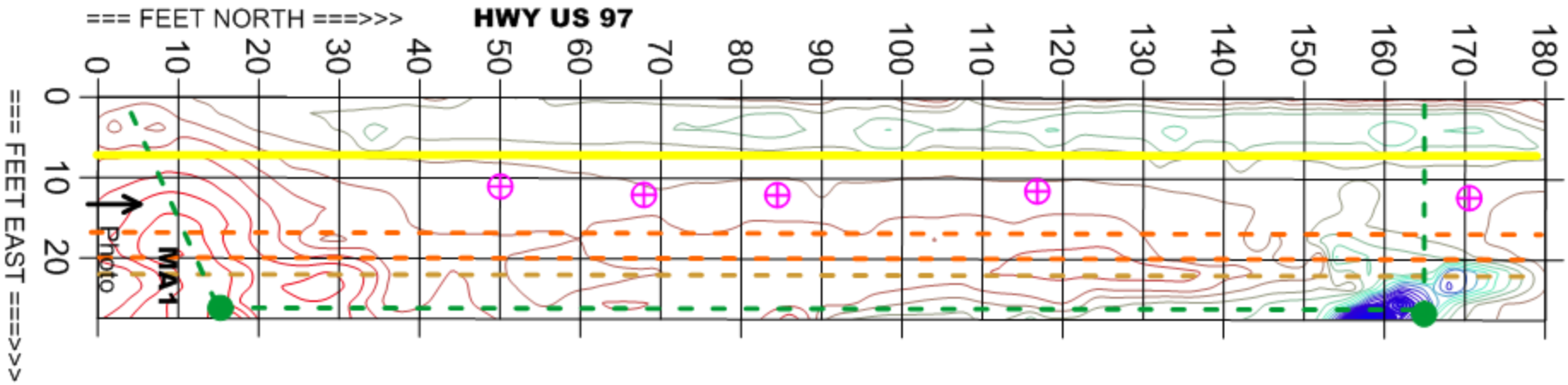
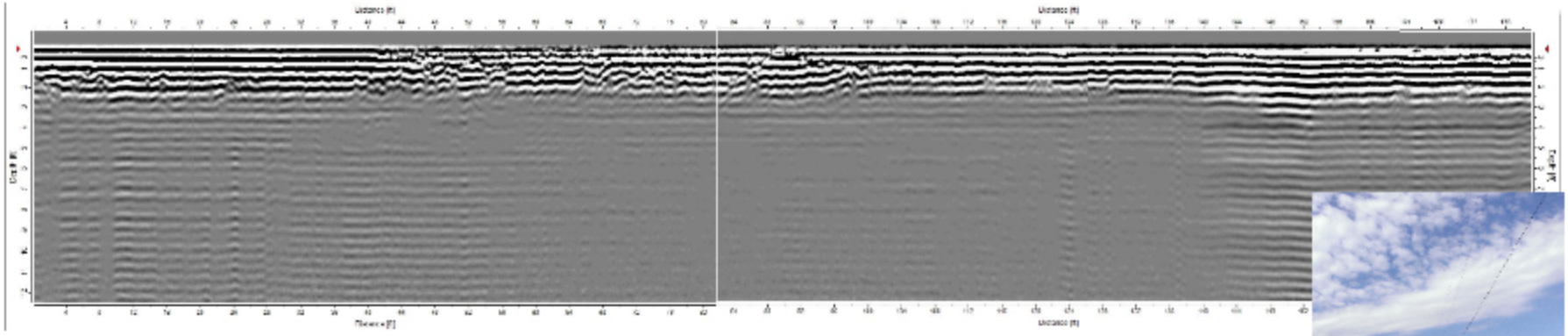
CLIENT: ODOT

Figure 3
Legend





MA: Magnetic Anomaly
Contour Interval: 500 nanoTeslas

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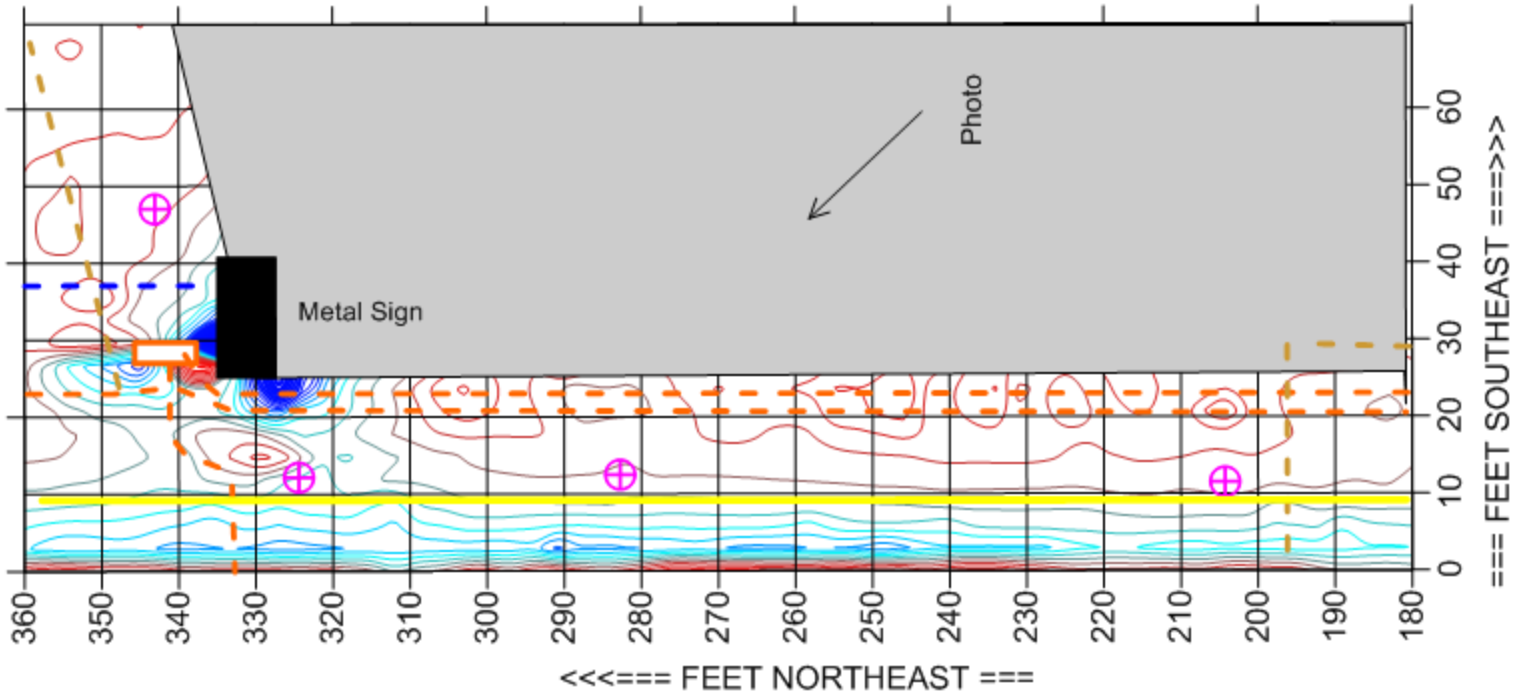
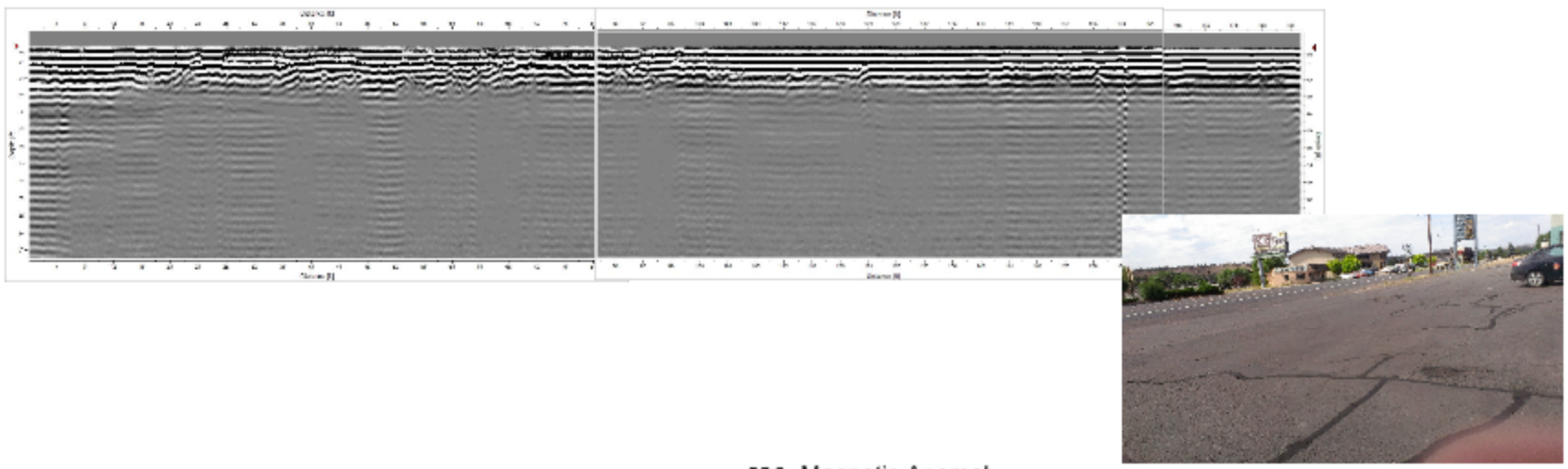
Figure 4
Area 1A
Magnetic Intensity Map
Contour Interval: 500 nanoTeslas





MA: Magnetic Anomaly

Contour Interval: 500 nanoTeslas

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Figure 5
Area 1B
Magnetic Intensity Map
Contour Interval: 500 nanoTeslas

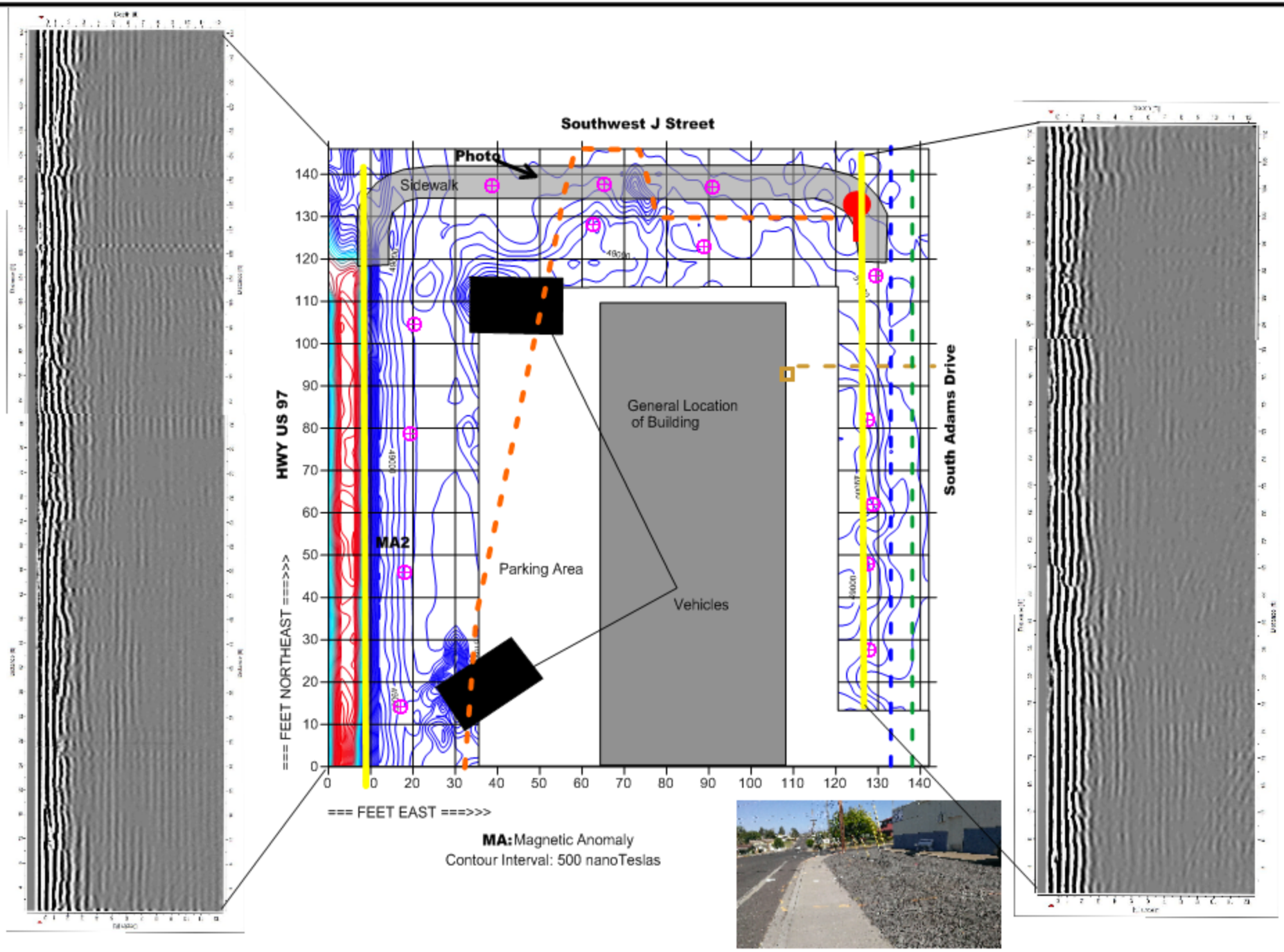

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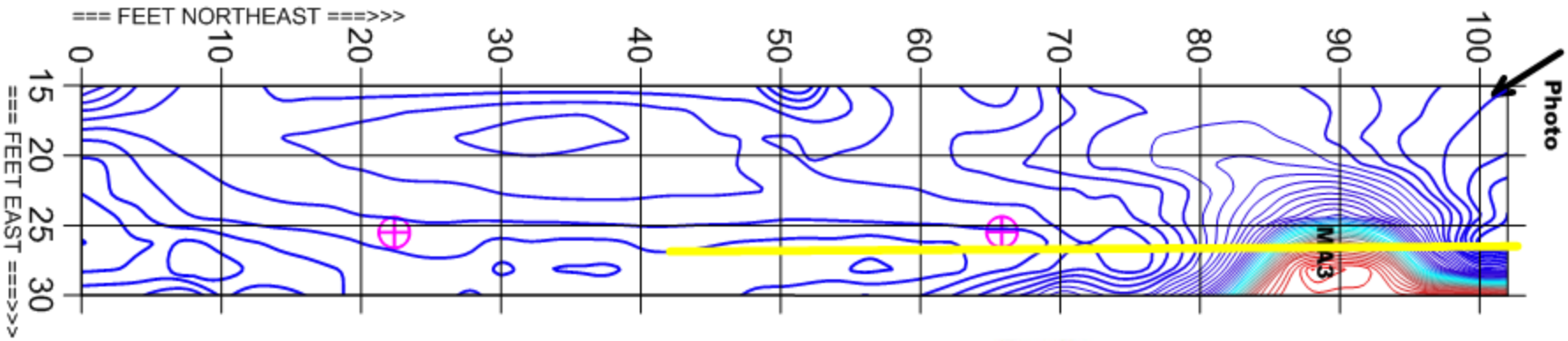
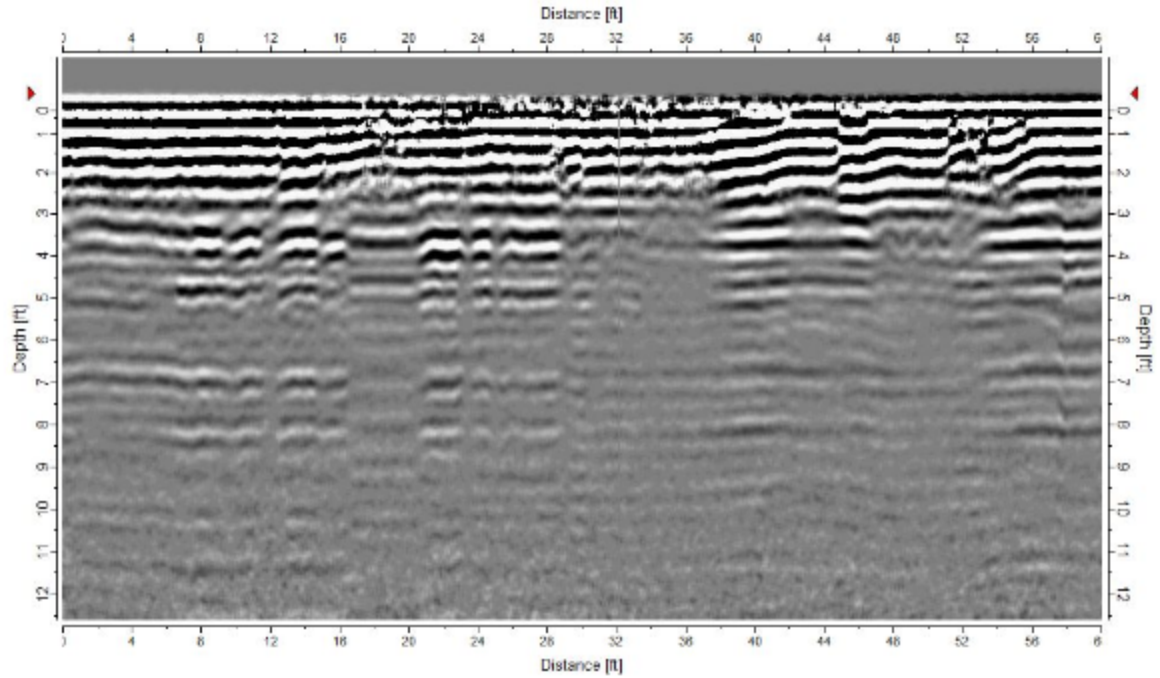
Figure 6
Area 2
Magnetic Intensity Map
Contour Interval: 500 nanoTeslas





MA: Magnetic Anomaly

Contour Interval: 500 nanoTeslas

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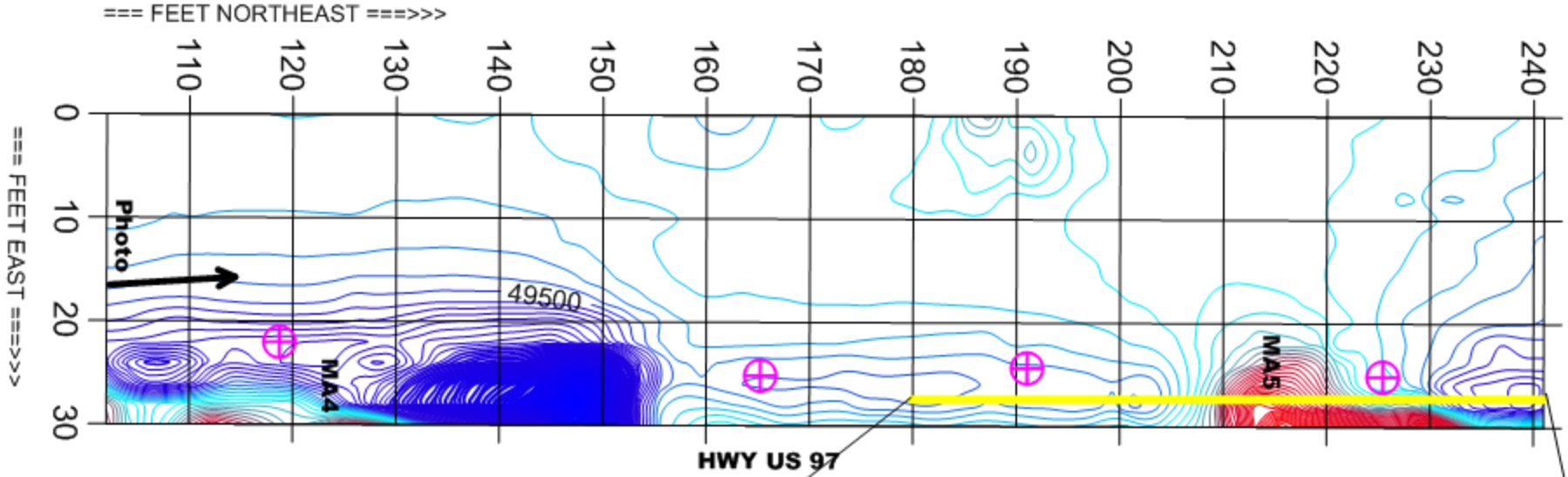
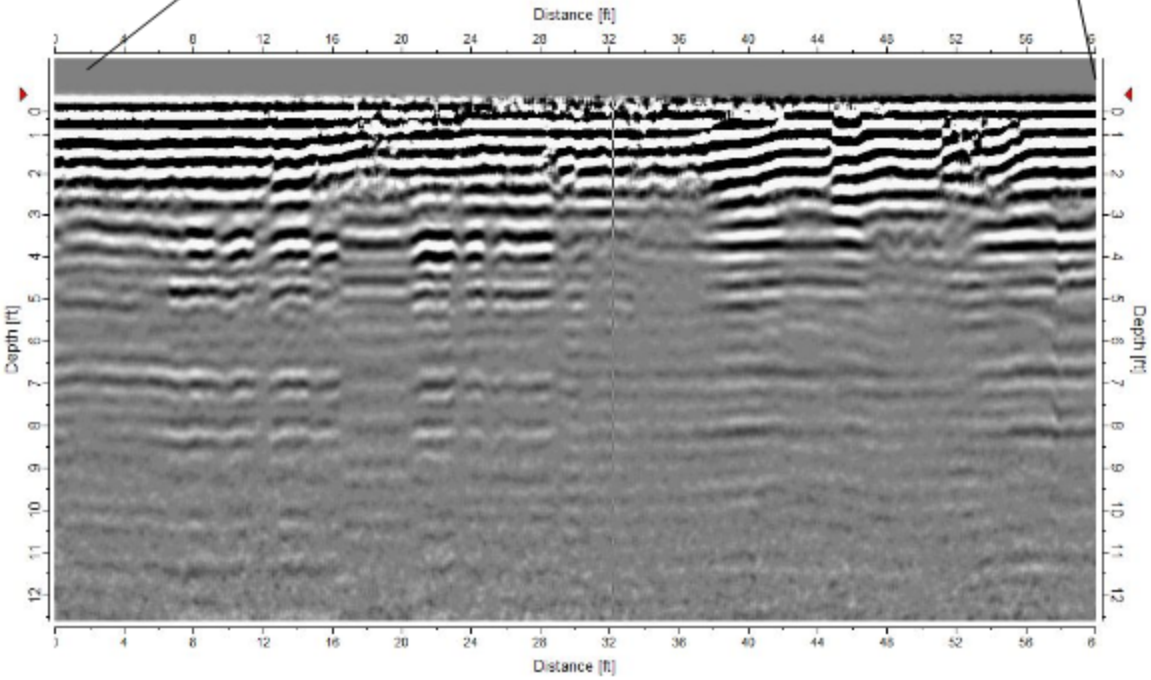
DATE: 7/17/2013 SUBSURFACE MAPPING SURVEY PROJECT No. 9030	CLIENT: ODOT	





MA: Magnetic Anomaly

Contour Interval: 500 nanoTeslas

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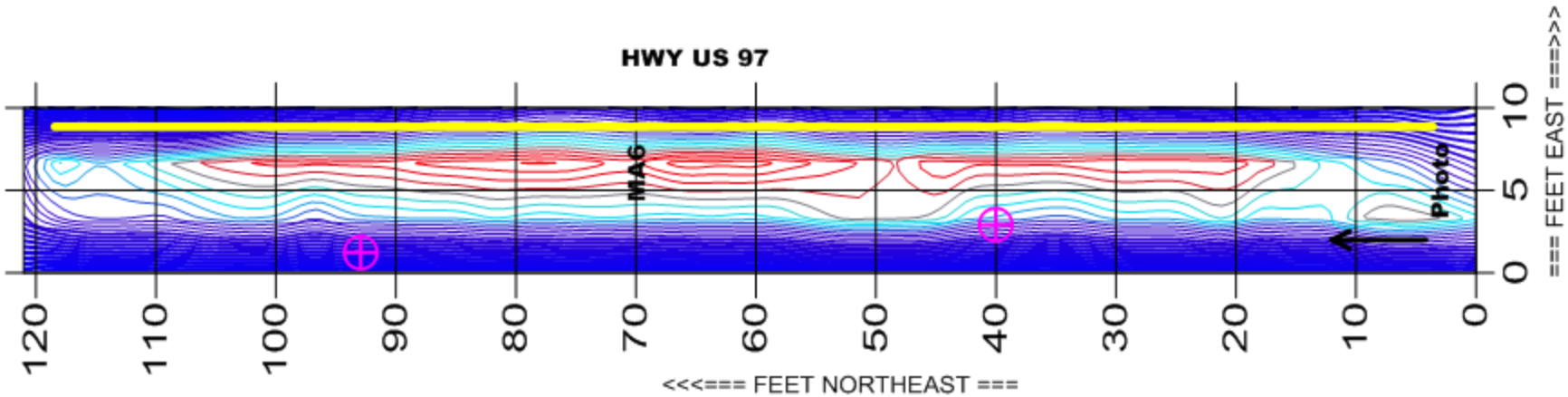
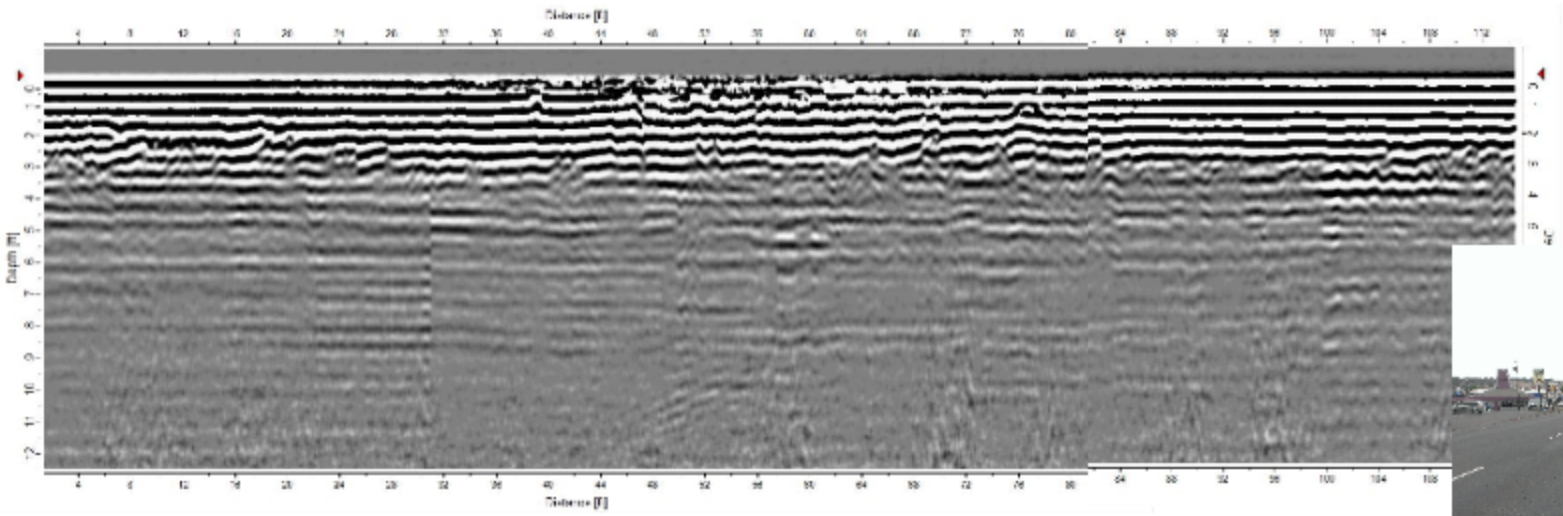
Figure 8
Area 3B
Magnetic Intensity Map
Contour Interval: 500 nanoTeslas





MA: Magnetic Anomaly
Contour Interval: 500 nanoTeslas

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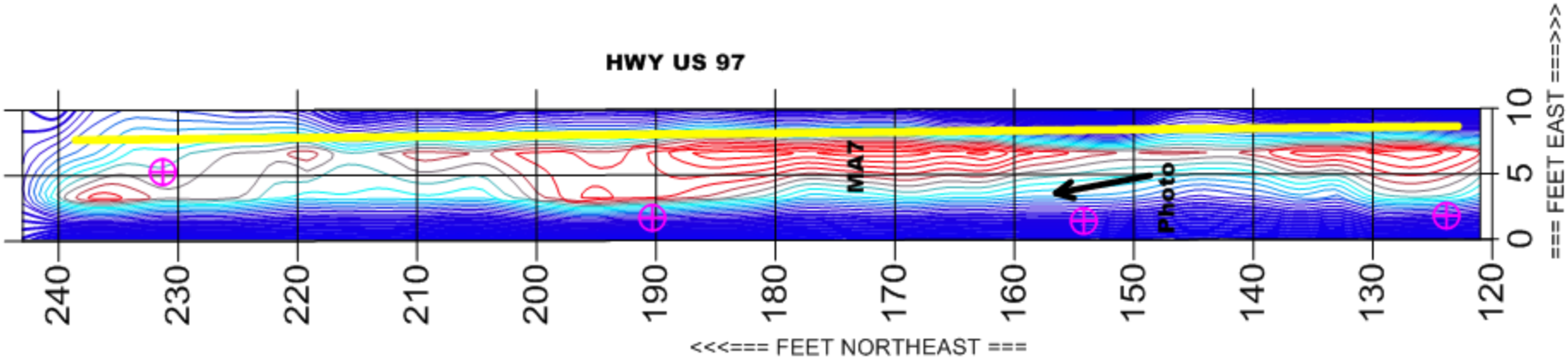
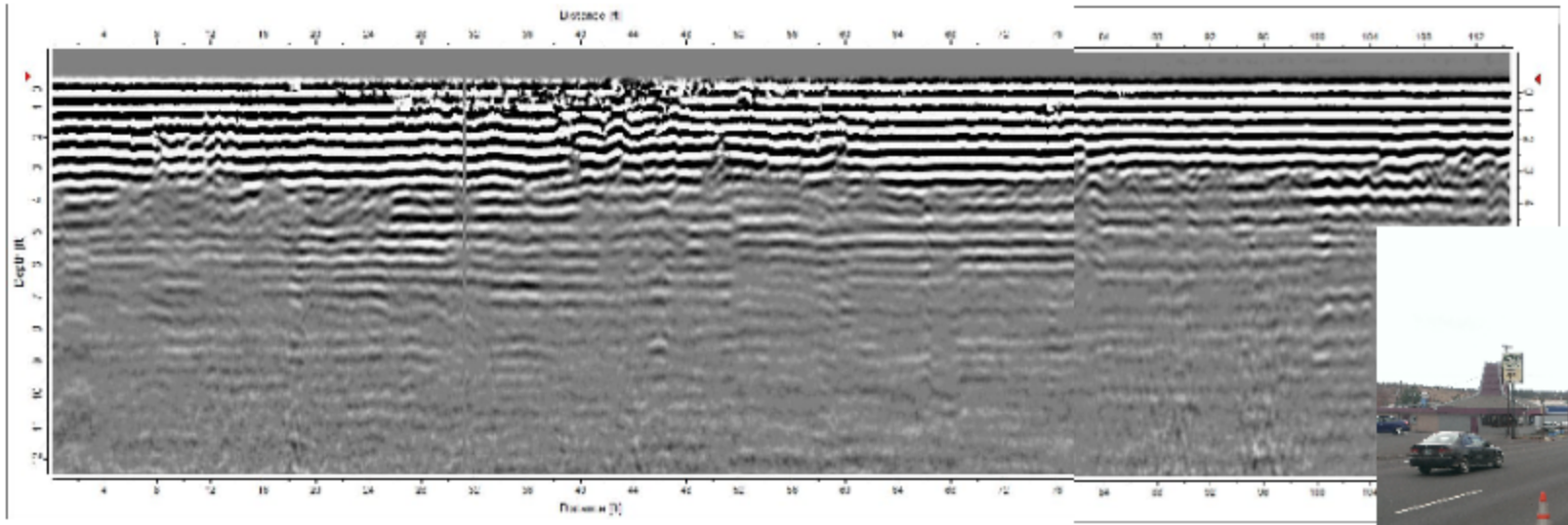
Figure 9
Area 4A
Magnetic Intensity Map
Contour Interval: 500 nanoTeslas





MA: Magnetic Anomaly
Contour Interval: 500 nanoTeslas

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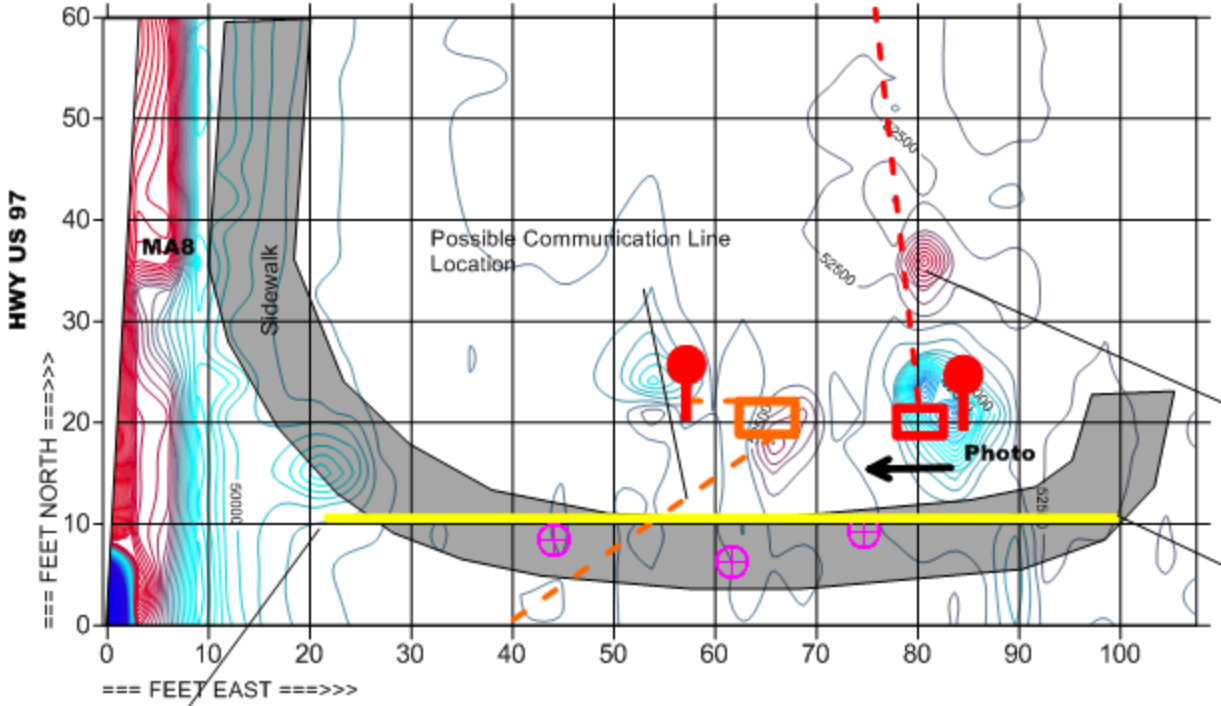
Figure 10
Area 4B
Magnetic Intensity Map
Contour Interval: 500 nanoTeslas



Support Wires for Utility Pole

Southwest J Street

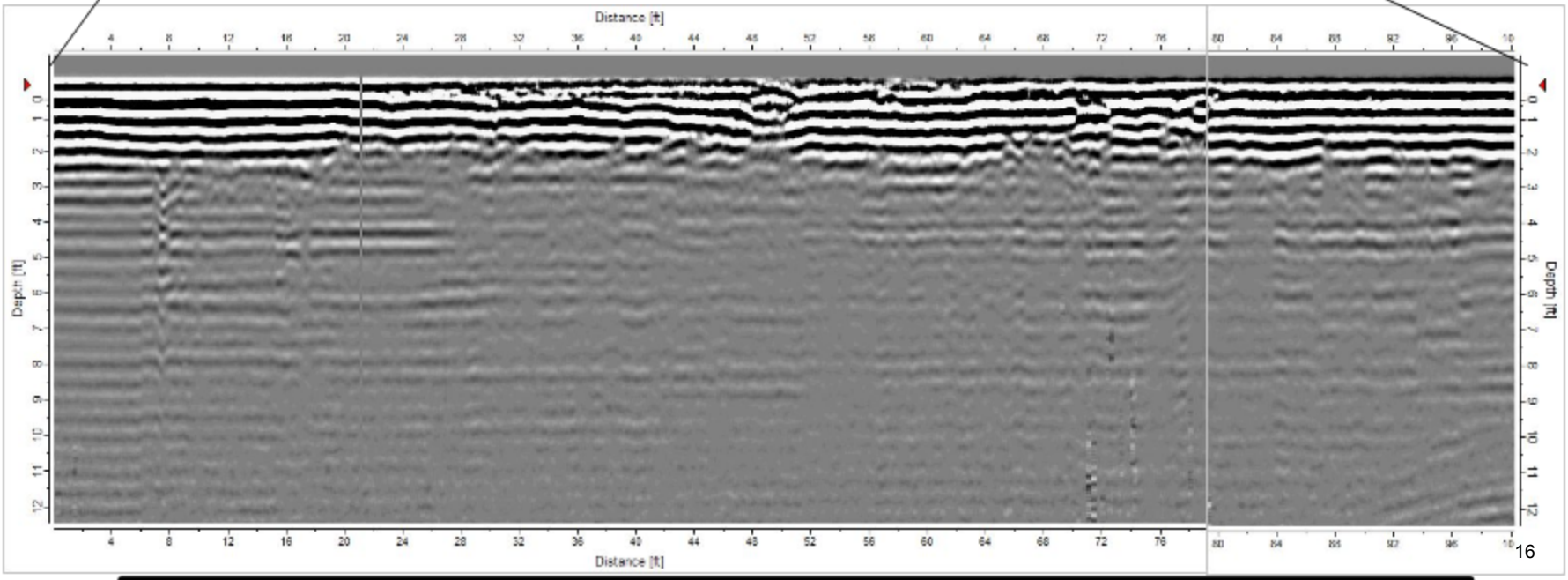


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Figure 11
Area 5
Magnetic Intensity Map
Contour Interval: 500 nanoTeslas

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APPENDIX A
MAGNETOMETER SURVEYS

The earth's magnetic field, measured in "nano Teslas" (nT), behaves like a bar magnet (a dipolar field), with the strongest magnetic field located at the poles, and the weakest field located near the equator. In the continental United States, the average field intensity varies widely, however, the average value is about 50,000 nT. Also, like the magnetic field around the bar magnet, the earth's magnetic field is inclined. This inclination in the continental United States varies between 60 and 75 degrees, generally depending upon the latitude of the measuring location. The earth's magnetic field varies constantly and, during sunspot activity, quite dramatically. A magnetometer is an electronic device that measures the intensity of the earth's magnetic field.

Naturally occurring geologic features and buried ferrous metal objects such as underground storage tanks, drums, ordnance, pipes and debris filled trenches produce both horizontal and vertical disturbances to the earth's local magnetic field. The objects causing these "anomalies" can be detected quickly and reliably using portable magnetometers.

The intensity of an anomaly is a function of the size, depth of burial and magnetic susceptibility of the object. As a rule of thumb, single drums buried several feet below the surface produce anomalies of about 200 nT relative to the normal undisturbed background and can be detected at a horizontal distance of about 15 feet, while large caches of drums can produce anomalies of many thousands of nT and may be detectable 50 feet away.

Magnetometers generally measure total intensity of the local magnetic field. A magnetic gradiometer is a variant of the magnetometer that measures both the horizontal and the vertical magnetic field at each survey point. It consists of two identical sensors located vertically on a staff and having a fixed separation. The intensity of the magnetic field caused by a buried metal object varies inversely with the distance between the object and the sensor. The relative intensities measured simultaneously at each sensor are used to determine the relative depth of burial of an object.

Relative depth estimates of buried metal objects can be made using a single sensor. In general, for a given object, the deeper the object is buried, the lower the amplitude and the wider the anomaly. Shallowly buried objects produce higher amplitude anomalies with closely spaced contour lines.

Magnetic surveys can only detect **ferrous metal** objects and cannot be used to identify the buried object. Estimates of the total mass of a buried object are difficult due to the physical properties of the object and other factors. Interference caused by observed surface metal objects limits the accuracy of the survey. The anomalies produced by fences, power lines, cars and buildings can easily mask the anomaly caused by an underground target.

Magnetic surveys are cost effective. Using the standard "step and wait" magnetometer, data from approximately 1000 points can be obtained in one field day corresponding to between 1 acre and about 5 acres depending on site conditions and survey goals. More modern cesium magnetometers collect up to 10 readings per second continuously, thus the operator can proceed without stopping. Many modern magnetometers use an audible signal to call attention to anomalous data as it is obtained. At some sites metallic objects can be detected and marked in the field at the time of the survey.

The use of a second, automatically recording "base station" magnetometer is highly recommended due to temporal variations in the earth's magnetic field. These changes must be removed from the field data before an accurate interpretation can be made, particularly when searching for small-buried objects.

Magnetic data are most commonly presented in two contour maps. The TOTAL MAGNETIC FIELD CONTOUR MAP shows the horizontal variation of the total intensity of the magnetic field and, therefore, the areal extent of anomalies. The GRADIOMETER CONTOUR MAPS show the horizontal variation of the vertical gradient of the magnetic field and indicate the relative depth of burial of the objects causing those anomalies. Color versions of these maps may be produced showing only the magnetic highs and lows.

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APPENDIX B
GROUND PENETRATING RADAR SURVEYS

Ground Penetrating Radar (GPR) can be a valuable tool to accurately locate both metallic and non-metallic UST's and utilities, buried drums and hazardous material at some sites. It may detect objects below reinforced concrete floors and slabs. GPR may delineate trenches and excavations and, under some conditions, it may be used to locate contaminant plumes. It has been used as an archaeological tool to look for buried artifacts. It may accurately profile fresh water lake bottoms either from a boat or from a frozen lake surface. GPR may be used to locate voids below roads and runways. GPR has numerous engineering applications. It can be used in non-destructive testing of engineering material, for example, locating rebar in concrete structures and determining the thickness of concrete and other structural material.

GPR uses short impulses of high frequency radio waves directed into the ground to acquire information about the subsurface. The energy radiated into the ground is reflected back to the antenna by features having different electrical properties to that of the surrounding material. The greater the contrast, the stronger the reflection. Typical reflectors include water table, bedrock, bedding, fractures, voids, contaminant plumes and man-made objects such as UST's and metal and plastic utilities. Materials having little electrical contrast like clay and concrete pipes may not produce strong reflections and may not be seen. Data are digitally recorded or downloaded to a laptop computer for filtering and processing.

The frequency of the radar signal used for a survey is a trade off. Low frequencies (250 MHz – 50 MHz) give better penetration but low resolution so that pipes and utilities may not be seen. Pipes and utilities may be seen using higher frequencies (500 MHz) but the depth of penetration may be limited to only a few feet especially in the wet, clayey soils found in many areas of the NW USA. The GPR frequency is dependent upon the antenna. Once an antenna is selected, nothing the operator can do can increase the depth of penetration.

Radar data is ambiguous. Many buried objects produce echoes that may be similar to the echo expected from the target object. Boulders and debris produce reflections that are similar to pipes and tanks. Subtle changes in the electrical properties along a traverse caused by changes in soil type, mineralogy, grain size, and moisture content all produce “noise” that can make interpretation difficult. Interpreting radargrams is an art as much as a science.

Under some conditions, although a UST itself may not be clearly visible in a GPR record, the excavation or trench in which the UST is buried is evident. Usually GPR data is used to compliment data from other “tools”. For example, a trench-like reflection but no clear UST reflection, combined with a “tank” shaped magnetic anomaly suggests the presence of a UST. Although the UST itself could not be seen using GPR, the radar showed a trench-like reflection. The magnetic data showed a large ferrous object. We would report a possible UST at that location.

GPR is often used in conjunction with magnetometer surveys. Magnetometer Surveys are very fast and large areas can be covered cost effectively. Magnetic anomalies are marked in the field, and then may be further investigated using radar.

GPR, like other geophysical tools, is excellent at detecting changes across a site, but it is poor at actually identifying the cause of the change. **The only definite way to identify buried objects is through excavation.**

ADVANTAGES - General

- When GPR data is properly interpreted subsurface objects can usually be confidently identified. This often requires the GPR data be combined with other geophysical data, surface features and historical information.
- GPR provides continuous records along traverses which, depending on the goal of the survey, may be interpreted in the field.
- At flat, open sites, for reconnaissance purposes, the antenna can be towed behind a vehicle at several mph.
- Many GPR antennas are shielded and are unaffected by surface and overhead objects and power lines.
- GPR can be used in conjunction with magnetic or EM surveys to accurately locate buried objects.

ADVANTAGES – Site specific

- With a low frequency antenna, in clean, dry, sandy soil, reflections from targets as deep as 100 feet are possible. Geologic features such as bedrock and cross bedding may be seen at some sites.
- The resolution of data is very high particularly for high frequency antennas.
- Shallow, man-made objects generally can be detected.
- Fiberglass UST's and plastic pipes can be detected using GPR.

LIMITATIONS - General

- To acquire the highest quality data, proper coupling between the antenna and the ground surface is necessary. Poor data may be obtained at sites covered with debris, an uneven surface, tall grass and brush. Objects located at curbs are difficult to see.
- Acquiring GPR data is slow. The antenna must be over the target. The signal from the antenna is cone-shaped. Reflections from objects to the side of the antenna may be seen, but their actual location relative to the antenna is not obvious.
- Penetration of the GPR signal is "site specific" and its depth of penetration at a particular site cannot be predicted ahead of time. Near surface conductive material, such as salty or contaminated ground water and wet, clay-rich soil, may attenuate the radar signal, limiting the effective depth of the survey to several feet. Reinforced concrete also can attenuate the signal. Rebar may produce reflections that look like pipes.

- GPR may not be cost-effective for some projects. For a detailed survey mapping underground storage tanks and utilities, it may be necessary to collect data in orthogonal directions at 5-foot line spacing.

LIMITATIONS – Interpretation

- Interpretation can be difficult. Radar data are ambiguous. Subsurface objects can be detected but, in general, they cannot be identified. USTs and utilities have a characteristic reflection, however, large rocks and boulders have a similar reflection.

- The reflection visible in a GPR record is very complex and may be caused by small changes in the electrical properties of the soil. The target in mind may not produce the reflection. Due to "noise", the target may be missed. USTs and deep utilities may be missed if they are under debris and/or other pipes.

- Other methods may be necessary to aid in the interpretation of the data (use a magnetometer to detect a large metallic mass, then GPR to determine if the object is tank-like, or a utility locator to determine if there are feed lines and fill pipes leading to the object).

- Adequate contrast between the ground and the target is required to obtain reflections. UST's may be missed if they are badly corroded. Utilities made of "earth" materials like clay and concrete may not be detected since their electrical properties are similar to the surrounding soil.

- To determine the depth to an object without "ground truth", assumptions must be made regarding soil properties. Even with ground truth at several locations on the same site, changes in material across a site (therefore changes in signal velocity) can cause errors in depth measurements at other locations.

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Appendix D

Boring Logs

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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-10**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,426.17** Easting: **350,313.55**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2309.1 ft**
Start Date **July 22, 2013** End Date **July 22, 2013**	Total Depth **15.0 ft**	Tube Height	**N/A**

Test Type
"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-0.3) ASPHALT	**0.0 - 0.8 ASPHALT/BASE ROCK**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples. SC-1: Slow, Steady DR. No HC Odor or Staining.	
	SC1b	100			SC- 1b (0.3-0.8) BASE ROCK				
	SC1c	100			SC- 1c (0.8-2.0) Silty SAND with Gravel; SM; Light Brown, Gray and Red; Nonplastic; Dry; Est. ~15% Coarse Gravel, 10% Fine Gravel, 10% Coarse Sand, 15% Medium Sand, 35% Fine Sand and 15% Fines; Gravel includes Rounded and Angular Silicified Tuff, Sandstone, and Basalt; (Alluvium)	**0.8 - 2.0 ALLUVIUM: Silty SAND with Gravel; SM; Brown, Gray and Red; Nonplastic**			
	SC2	100			SC- 2 (2.0-5.0) Silty SAND with Gravel; SM; Light Brown and Gray; Nonplastic; Dry; Est. ~20% Coarse to Fine Gravel, 65% Coarse to Fine Sand and 15% Fines; Gravel includes Rounded and Angular Silicified Tuff, Rhyolite, and Basalt; Some Cementation	**2.0 - 6.0 SANDSTONE: Brown and Gray; Fresh; R0-R1; Joint Spacing Unknown; No Discoloration; Some Cementation; Abundant Gravel**		PID-2.0'=14 ppm. 4.0 ft - VOCs=BDL; SC-2: No HC Odor or Staining. PID-4.5'=12.9 ppm.	
5	SC3a	100			SC- 3a (5.0-6.0) Silty SAND with Gravel; SM; Light Brown and Gray; Nonplastic; Dry; Est. ~20% Coarse to Fine Gravel, 65% Coarse to Fine Sand and 15% Fines; Primarily Rounded Gravel; Some Cementation			SC-3: No HC Odor or Staining. PID-6.0'-12.3 ppm.	
	SC3b	100			SC- 3b (6.0-9.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration on Intact Disks; Strong Cementation; Silty	**6.0 - 12.0 TUFF: Brown; Fresh; R1; Joint Spacing Unknown; No Discoloration; Strong Cementation; Silty**		PID-8.5'=7.2 ppm.	
	SC4	100			SC- 4 (9.0-12.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration on Intact Disks; Strong Cementation; Silty			SC-4: No HC Odor or Staining. PID-10.5'=10.5 ppm.	
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Depth (ft)	Test Type, No.	Percent Recovery	Soil / Rock: Driving Resistance / Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
10								
	SC5	100			SC- 5 (12.0-15.0) SANDSTONE; Brown and Red; Fresh; R1-R2; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Silty; Strong Cementation; Subangular, Coarse Gravel; Japser and Silicified Tuff Gravel; Primarily Fine to Medium Sand	**12.0 - 15.0 SANDSTONE: Brown and Red; Fresh; R1-R2; Joint Spacing Unknown; No Discoloration; Strong Cementation; Coarse Gravel**		SC-5: No HC Odor or Staining. PID-13.0'=6.3 ppm. 14.0 ft - VOCs=BDL	
15					(15.0) **Bottom of Hole**	**15.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Dyed Concrete to Abandon Boring. Note: VOCs=Volatile Organic Hydrocarbons; BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-11**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,434.02** Easting: **350,354.83**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2308.0 ft**
Start Date **July 22, 2013** End Date **July 22, 2013**	Total Depth **15.0 ft**	Tube Height	**N/A**

Test Type

"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-0.7) ASPHALT/BASE ROCK	**0.0 - 0.7 ASPHALT/BASE ROCK**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples. SC-1: No HC Odor or Staining. PID-2.0'=19.1 ppm. PID Value dropped very quickly. SC-2: No HC Odor or Staining. PID-3.1'=18.5 ppm.	
	SC1b	100			SC- 1b (0.7-2.0) Silty SAND with Gravel; SM; Light Brown; Nonplastic; Dry; Est. ~20% Coarse to Fine Gravel, 60% Coarse to Fine Sand and 20% Fines; Angular to Rounded Gravel; Silicified Tuff and Rhyolite Gravel	**0.7 - 2.0 ALLUVIUM: Silty SAND with Gravel; SM; Light Brown; Nonplastic; Dry;**			
	SC2a	100			SC- 2a (2.0-3.5) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Moderate Cementation of Intact Disks; Primarily Fine to Medium Sand	**2.0 - 5.0 SANDSTONE: Brown; Fresh; R1-R2; Joint Spacing Unknown; No Discoloration; Moderate to Strong Cementation**			
	SC2b	100			SC- 2b (3.5-5.0) SANDSTONE; Brown; Fresh; R1-R2; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Primarily Fine to Medium Sand			PID-4.5'=11.2 ppm.	
5	SC3	100			SC- 3 (5.0-8.0) TUFF; Brown and Tan; Fresh; R1-R2; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation on Intact Disks; Silty	**5.0 - 12.5 TUFF: Brown; Fresh; R1-R2; Joint Spacing Unknown; No Discoloration; Silty**		SC-3: No HC Odor or Staining. PID-5.4'=6.9 ppm. PID-7.7'=13.7 ppm.	
	SC4	83			SC- 4 (8.0-11.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample is mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty			8.0 ft - VOCs = Det (benzene only); SC-4: No HC Odor or Staining. PID-10.5'=8.2 ppm.	
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Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
10								
	SC5a	80			SC- 5a (11.0-12.5) TUFF; Brown; Fresh; R1-R2; Joint Spacing Unknown; Sample is mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty			SC-5: No HC Odor or Staining. PID-11.5'=13.5 ppm.
	SC5b	80			SC- 5b (12.5-14.5) Silty SAND with Gravel; SM; Brown; Nonplastic; Est. ~45% Coarse to Fine Gravel, 40% Coarse to Fine Sand and 15% Fines; Rounded to Subrounded Gravel; Basalt, Rhyolite, Tuff and Silicified Tuff Gravel; Moderate Cementation	**12.5 - 14.5 ALLUVIUM: Silty SAND with Gravel; SM; Brown; Nonplastic; Subrounded to Rounded Gravel**		PID-14.0'=16.6 ppm.	
	SC5c	80			SC- 5c (14.5-15.0) Silty SAND with Gravel; SM; Brown; Nonplastic; Est. ~45% Coarse to Fine Gravel, 40% Coarse to Fine Sand and 15% Fines; Rounded to Subrounded Gravel; Basalt, Rhyolite, Tuff and Silicified Tuff Gravel; Moderate Cementation; Some Intact, Cemented Gravel consisting of Angular, Coarse Sand-sized Basalt Clasts (15.0) **Bottom of Hole**	**14.5 - 15.0 COLLUVIUM: Silty SAND with Gravel** **15.0** Bottom of Hole		15 ft - VOCs = BDL **Bottom of Hole**	
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Used Bentonite Chips and Dyed Concrete to Abandon Boring.
Note: VOCs=Volatile Organic Hydrocarbons; Det=Detected at or above Laboratory Detection Limit; BDL=Below Laboratory Detection Limit.

DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-12**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,441.26** Easting: **350,397.39**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2307.0 ft**
Start Date **July 22, 2013** End Date **July 22, 2013**	Total Depth **15.0 ft**	Tube Height	**N/A**

Test Type
"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-1.0) ASPHALT/BASE ROCK	**0.0 - 1.0 ASPHALT/BASE ROCK**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples. SC-1: No HC Odor or Staining. PID-2.0'=22.4 ppm.	
	SC1b	100			SC- 1b (1.0-1.7) Silty SAND; SM; Brown; High Plasticity; Est. ~65% Medium to Fine Sand and 35% Fines; (Alluvium)	**1.0 - 2.5 ALLUVIUM: Silty SAND and Silty SAND with Gravel; SM; Brown; High to Low Plasticity; Rounded Gravel**			
	SC1c	100			SC- 1c (1.7-2.5) Silty SAND with Gravel; SM; Light Brown; Low Plasticity; Est. ~20% Coarse to Fine Gravel, 65% Coarse to Fine Sand and 15% Fines; Rounded Gravel consisting of Rhyolite and Silicified Tuff; (Alluvium)				
	SC2	100			SC- 2 (2.5-5.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Moderate Cementation on Intact Disks; Silty	**2.5 - 5.5 TUFF: Brown; Fresh; R1; Jointing Unknown; Moderate to Strong Cementation; Silty**		SC-2: No HC Odor or Staining. PID-3.5'=18.6 ppm. 4.0 ft - Gx, Dx, and RRO = BDL	
5	SC3a	100			SC- 3a (5.0-5.5) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation on Intact Disks; Silty			SC-3: No HC Odor or Staining. Moisture due to water used by drillers. PID-6.4'=11.7 ppm.	
	SC3b	100			SC- 3b (5.5-6.0) Silty SAND with Gravel; SM; Light Brown; Nonplastic; Est. ~30% Coarse to Fine Gravel, 55% Coarse to Fine Sand and 15% Fines; Rounded Gravel consisting of Rhyolite and Silicified Tuff; (Alluvium)	**5.5 - 6.0 ALLUVIUM**			
	SC3c	100			SC- 3c (6.0-8.0) TUFF; Brown; Slightly Weathered; R0; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Pumice Clast Discoloration; Weak Cementation on Intact Disks; Silty; Some Plasticity	**6.0 - 10.0 TUFF: Brown; Slightly Weathered; R0-R1; Jointing Unknown; No Discoloration; Weak Cementation; Silty; Some Plasticity**		7.5 ft - Gx, Dx, and RRO = BDL	
	SC4	100			SC- 4 (8.0-10.0) TUFF; Brown; Slightly Weathered; R0-R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Pumice Clast Discoloration and Friability; Weak Cementation on Intact Disks; Silty; Some Plasticity			SC-4: No HC Odor or Staining. PID-9.0'=15.5 ppm.	
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Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
10	SC5a	100			SC- 5a (10.0-13.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Weak to Moderate Cementation; Primarily Fine to Medium Sand	**10.0 - 13.0 SANDSTONE: Brown; Fresh; R1; Jointing Unknown; No Discoloration; Weak to Moderate Cementation**		SC-5: No HC Odor or Staining. PID-12.5'=13.0 ppm.	
	SC5b	100			SC- 5b (13.0-15.0) Silty SAND with Gravel and Cobbles; SM; Brown and Red; Low Plasticity; Est. ~45% Coarse to Fine Gravel, 40% Coarse to Fine Sand and 15% Fines; Angular to Rounded Gravel consisting of Rhyolite and Silicified Tuff; (Alluvium)	**13.0 - 15.0 ALLUVIUM: Silty SAND with Gravel and Cobbles; SM; Brown and Red; Low Plasticity; Angular to Rounded Gravel**		13.0 ft - Gx, Dx, and RRO = BDL PID-15.0'=13.5 ppm.	
15					(15.0) **Bottom of Hole**	**15.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Dyed Concrete to Abandon Boring. Note: Gx=Gasoline Range Hydrocarbons by NWTPH-Dx method, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-13**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,449.00** Easting: **350,441.78**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2305.9 ft**
Start Date **July 22, 2013** End Date **July 22, 2013**	Total Depth **15.0 ft**	Tube Height	**N/A**

Test Type
"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
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Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

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DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-1.0) ASPHALT/BASE ROCK	**0.0 - 1.0 ASPHALT/BASE ROCK**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples.	
	SC1b	100			SC- 1b (1.0-2.2) Silty SAND; SM; Brown; High Plasticity; Est. ~65% Fine to Medium Sand and 35% Fines; (Alluvium)	**1.0 - 3.8 ALLUVIUM: Silty SAND and Silty SAND with Gravel; SM; Light Brown and Gray; Nonplastic to Low Plasticity; Subrounded Gravel**			
	SC1c	100			SC- 1c (2.2-3.0) Silty SAND with Gravel; SM; Light Brown and Gray; Nonplastic to Low Plasticity; Est. ~30% Coarse to Fine Gravel, 55% Coarse to Fine Sand and 15% Fines; Subrounded Gravel consisting of Basalt and Rhyolite; (Alluvium)			SC-1: No HC Odor or Staining. PID-2.7'=15.1 ppm.	
	SC2a	100			SC- 2a (3.0-3.8) Silty SAND with Gravel; SM; Brown and Gray; Nonplastic to Low Plasticity; Est. ~30% Coarse to Fine Gravel, 55% Coarse to Fine Sand and 15% Fines; Subrounded Gravel consisting of Basalt and Rhyolite; (Alluvium)			SC-2: No HC Odor or Staining. PID-4.5'=22.3 ppm. Water used by Driller to cool drill bit and steel.	
	SC2b	100			SC- 2b (3.8-5.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty	**3.8 - 11.5 TUFF: Brown; Fresh; R1; Joint Spacing Unknown; No Discoloration; Strong Cementation of Intact Disks; Silty**		3.5 ft - Gx, Dx, and RRO=BDL	
5	SC3	100			SC- 3 (5.0-9.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty			SC-3: No HC Odor or Staining. PID-7.0'=15.0 ppm. Extremely hot sample.	
								PID-9.0'=9.0 ppm.	
	SC4	100			SC- 4 (9.0-11.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty			9 ft - Gx, Dx, and RRO = BDL; SC-4: No HC Odor or Staining. PID-10.5'=19.7 ppm.	
10									

ODOT DRILL LOG GINT EXPLORATION LOGS.GPJ ODOT_MAN.GDT 4/11/14

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
10								
	SC5a	100			SC- 5a (11.0-11.5) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty			SC-5: No HC Odor or Staining. PID-11.2'=17.1 ppm.	
	SC5b	100			SC- 5b (11.5-13.5) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Abundant Gravel; Sample Contains <30% Coarse to Fine Gravel	**11.5 - 13.5 SANDSTONE: Brown; Fresh; R1; Jointing Unknown; No Discoloration; Strong Cementation; Abundant Gravel**		PID-13.0'=12.8 ppm.	
	SC5c	100			SC- 5c (13.5-15.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty	**13.5 - 15.0 TUFF: Brown; Fresh; R1; Joint Spacing Unknown; No Discoloration; Strong Cementation; Silty**		13.5 ft - Gx, Dx, and RRO=BDL PID-15.0'=13.2 ppm.	
15					(15.0) **Bottom of Hole**	**15.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Dyed Concrete to Abandon Boring. Note: Gx=Gasoline Range Hydrocarbons by NWTPH-Dx method, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-14**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,430.53** Easting: **350,059.69**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2315.8 ft**
Start Date **July 23, 2013** End Date **July 23, 2013**	Total Depth **15.0 ft**	Tube Height	**N/A**

Test Type
"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	97			SC- 1a (0.0-1.0) GRAVEL LOT/FILL	**0.0 - 1.0 GRAVEL LOT/FILL**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples. SC-1: No HC Odor or Staining. PID-3.0'=5.7 ppm.	
	SC1b	97			SC- 1b (1.0-3.0) TUFF; Brown; Fresh to Slightly Weathered; R0-R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Slight Pumice Clast Discoloration; Weak Cementation; Silty	**1.0 - 4.0 TUFF: Brown; Fresh to Slightly Weathered; R0-R1; Joint Spacing Unknown; Slight Clast Discoloration; Weak to Strong Cementation**			
	SC2a	100			SC- 2a (3.0-4.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Strong Cementation of Intact Disks; Silty			SC-2: No HC Odor or Staining. PID-4.5'=5.2 ppm.	
	SC2b	100			SC- 2b (4.0-5.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; No Discoloration; Abundant Rounded Gravel	**4.0 - 13.0 SANDSTONE: Brown and Red; Fresh; R1; Joint Spacing Unknown; Weak to Strong Cementation; Rounded Gravel**			
5	SC3	100			SC- 3 (5.0-8.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized; No Discoloration; Strong Cementation of Intact Disks; Gravel consisting of Rhyolite and Silicified Tuff; Primarily Fine to Medium Sand			5.0 ft - Dx and RRO=BDL; SC-3: No HC Odor or Staining. PID-7.0'=4.2 ppm.	
	SC4a	100			SC- 4a (8.0-10.5) SANDSTONE; Brown and Red; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized; No Discoloration; Strong Cementation of Intact Disks; Gravel consisting of Rhyolite and Silicified Tuff; Primarily Fine to Medium Sand			8.0 ft - Dx and RRO=BDL SC-4: No HC Odor or Staining. PID-9.7'=4.1 ppm.	
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Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
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	SC4b	100			SC- 4b (10.5-11.0) SANDSTONE; Light Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized; No Discoloration; Weak to Moderate Cementation; Silty; Gravel consisting of Rhyolite and Silicified Tuff; Primarily Fine to Medium Sand;				
	SC5	100			SC- 5 (11.0-13.0) SANDSTONE; Brown and Red; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized; No Discoloration; Strong Cementation of Intact Disks; Gravel consisting of Rhyolite and Silicified Tuff; Primarily Fine to Medium Sand			SC-5: No HC Odor or Staining. PID-13.0'=4.2 ppm.	
	SC6	100			SC- 6 (13.0-15.0) TUFF; Brown; Slightly Weathered; R1-R2; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Slight Pumice Clast Discoloration; Weak Cementation; Silty	**13.0 - 15.0 TUFF: Brown; Slightly Weathered; R1-R2; Joint Spacing Unknown; Slight Clast Discoloration; Strong Cementation**		SC-6: No HC Odor or Staining.	
15					(15.0) **Bottom of Hole**	**15.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Surface Gravel to Abandon Boring. Note: Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-15**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,422.94** Easting: **350,037.43**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2315.9 ft**
Start Date **July 23, 2013** End Date **July 23, 2013**	Total Depth **15.0 ft**	Tube Height	**N/A**

Test Type

"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-1.0) GRAVEL LOT/FILL	**0.0 - 1.0 GRAVEL LOT/FILL**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples.	
	SC1b	100			SC- 1b (1.0-3.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty	**1.0 - 5.0 TUFF: Brown; Fresh; R1; Joint Spacing Unknown; No Discoloration; Strong Cementation; Silty**		SC-1: No HC Odor or Staining. PID-3.0'=11.2 ppm.	
	SC2	100			SC- 2 (3.0-5.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty			SC-2: No HC Odor or Staining. PID-4.0'=10.8 ppm.	
5	SC3	100			SC- 3 (5.0-7.5) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; No Discoloration; Moderate Cementation of Intact Pieces; Abundant Rounded Gravel including Cobbles; Contains <30% Coarse to Fine Gravel	**5.0 - 14.0 SANDSTONE: Brown, Red and Gray; Fresh; R1; Joint Spacing Unknown; Moderate to Strong Cementation; Abundant Rounded Gravel**		SC-3: No HC Odor or Staining. PID-7.5'=13.6 ppm. 7.0 ft - VOCs, Dx, and RRO=BDL	
	SC4	100			SC- 4 (7.5-10.0) SANDSTONE; Brown and Red; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized; No Discoloration; Moderate Cementation of Intact Pieces; Abundant Rounded Gravel; Rhyolite Gravel; Contains <30% Coarse to Fine Gravel			SC-4: No HC Odor or Staining. PID-9.0'=3.0 ppm.	
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Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
10	SC5	100			SC- 5 (10.0-13.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized; No Discoloration; Moderate Cementation of Intact Pieces; Abundant Rounded Gravel; Contains <30% Coarse to Fine Gravel			SC-5: No HC Odor or Staining. PID-12.0'=11.4 ppm.	
	SC6a	100			SC- 6a (13.0-14.0) SANDSTONE; Brown, Gray and Red; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized; No Discoloration; Strong Cementation of Intact Disks; Abundant Coarse Sand; Fine, Rounded Gravel; Contains <30% Coarse to Fine Gravel			SC-6: No HC Odor or Staining.	
	SC6b	100			SC- 6b (14.0-15.0) TUFF; Brown; Moderately Weathered; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Pumice Clast Discoloration and Friability; Strong Cementation of Intact Disks; Silty; Some Plasticity due to Pulverization and Moisture from Drillers	**14.0 - 15.0 TUFF: Moderately Weathered; R1; Strong Cementation**			
15					(15.0) **Bottom of Hole**	**15.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Surface Gravel to Abandon Boring. Note: VOCs=Volatile Organic Hydrocarbons, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-16**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,414.63** Easting: **350,006.51**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2316.4 ft**
Start Date **July 23, 2013** End Date **July 23, 2013**	Total Depth **15.0 ft**	Tube Height	**N/A**

Test Type

"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-1.5) GRAVEL LOT/FILL	**0.0 - 1.5 GRAVEL LOT/FILL**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples.	
	SC1b	100			SC- 1b (1.5-2.5) TUFF; Brown; Slightly Weathered; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Moderate Cementation of Intact Disks; Silty	**1.5 - 5.0 TUFF: Brown; Sightly Weathered; R1; Jointing Unknown; Moderate to Strong Cementation**		SC-1: No HC Odor or Staining. PID-2.5'=9.6 ppm.	
	SC2	100			SC- 2 (2.5-5.0) TUFF; Brown; Slightly Weathered; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Discoloration on Intact Disk Surfaces; Strong Cementation; Silty			SC-2: No HC Odor or Staining. PID-5.0'=10.9 ppm.	
5	SC3	100			SC- 3 (5.0-7.5) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation on Intact Disks; Abundant Gravel; Contains <30% Coarse to Fine Gravel	**5.0 - 9.0 SANDSTONE: Brown; Fresh; R1; Strong to Moderate Cementation; Abundant Gravel**		SC-3: No HC Odor or Staining. PID-7.5'=10.2 ppm.	
	SC4a	100			SC- 4a (7.5-9.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Moderate Cementation of Intact Disks; Abundant Gravel; Contains <30% Coarse to Fine Gravel			SC-4: No HC Odor or Staining. PID-9.5'=7.5 ppm.	
	SC4b	100			SC- 4b (9.0-10.0) Silty SAND with Gravel; SM; Brown, Red and Gray; Nonplastic to Low Plasticity; Est. ~40% Coarse to Fine Gravel, 45% Coarse to Fine Sand and 15% Fines; Subangular to Rounded Gravel; Gravel consists of Silicified Tuff, Rhyolite and Basalt; Some Cementation	**9.0 - 12.5 ALLUVIUM: Silty SAND with Gravel; SM; Brown, Red and Gray; Nonplastic to**		9.5 ft - VOCs, Dx, and RRO=BDL	
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Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
10	SC5	100			SC- 5 (10.0-12.5) Silty SAND with Gravel; SM; Light Brown; Nonplastic to Low Plasticity; Est. ~40% Coarse to Fine Gravel, 40% Coarse to Fine Sand and 20% Fines; Rounded Gravel; Gravel consists of Silicified Tuff, Rhyolite and Basalt; Some Cementation	**Low Plasticity; Some Cementation**		SC-5: No HC Odor or Staining. PID-12.0'=7.6 ppm.	
	SC6a	100			SC- 6a (12.5-14.5) Silty SAND with Gravel; SM; Brown; Nonplastic; Est. ~30% Coarse to Fine Gravel, 55% Coarse to Fine Sand and 20% Fines; Rounded Gravel; Gravel consists of Silicified Tuff and Sandstone; Some Cementation	**12.5 - 14.5 SANDSTONE: Brown; Fresh; R0-R1; Some Cementation; Rounded Gravel**		SC-6: No HC Odor or Staining.	
	SC6b	100			SC- 6b (14.5-15.0) TUFF; Light Brown; Slightly Weathered; R0-R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Some Clast Discoloration; Weak to Strong Cementation; Contains abundant Angular, Basalt and Pumice Clasts; Silty (15.0) **Bottom of Hole**	**14.5 - 15.0 TUFF**			
15						**15.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Surface Gravel to Abandon Boring. Note: VOCs=Volatile Organic Hydrocarbons, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-17**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,506.06** Easting: **350,091.69**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2314.2 ft**
Start Date **July 23, 2013** End Date **July 23, 2013**	Total Depth **15.0 ft**	Tube Height	**N/A**

Test Type

"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

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SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	0			SC- 1a (0.0-0.5) GRAVEL LOT	**0.0 - 0.5 GRAVEL LOT**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples.	
	SC1b	100			SC- 1b (0.5-1.0) Silty SAND; SM; Brown; High Plasticity	**0.5 - 3.5 ALLUVIUM: Silty SAND with Gravel; SM; Brown and Gray; Nonplastic to Low Plasticity; Angular to Rounded Gravel**			
	SC1c	100			SC- 1c (1.0-2.0) Silty SAND with Gravel; SM; Brown and Gray; Nonplastic; Est. ~40% Coarse to Fine Gravel, 45% Coarse to Fine Sand and 15% Fines; Angular to Rounded Gravel; Gravel consists of Rhyolite, Basalt and Silicified Tuff; Some Cementation			SC-1: No HC Odor or Staining. PID-2.5'=17.8 ppm.	
	SC1c	100			SC- 1c (2.0-2.5) Silty SAND with Gravel; SM; Brown; Nonplastic to Low Plasticity; Est. ~25% Coarse to Fine Gravel, 40% Coarse to Fine Sand and 35% Fines; Subangular to Subrounded Gravel			2.0 ft - VOCs, Dx, and RRO=BDL	
	SC2a	100			SC- 2a (2.5-3.5) Silty SAND with Gravel; SM; Brown; Nonplastic to Low Plasticity; Est. ~30% Coarse to Fine Gravel, 40% Coarse to Fine Sand and 30% Fines; Subangular to Subrounded Gravel			SC-2: No HC Odor or Staining. PID-2.5'=17.8 ppm.	
	SC2b	100			SC- 2b (3.5-5.0) Silty SAND with Gravel; SM; Brown; Nonplastic; Est. ~25% Coarse to Fine Gravel, 60% Coarse to Fine Sand and 15% Fines; Subrounded to Rounded Gravel; Gravel consists of Rhyolite and Silicified Tuff; Well Sorted Sand; Some Cementation	**3.5 - 6.5 SANDSTONE: Brown; Fresh; R1; Joint Spacing Unknown; Weak to Moderate Cementation; Subrounded to Rounded Gravel**			
5	SC3a	100			SC- 3a (5.0-6.5) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Weak to Moderate Cementation; Abundant Rounded Gravel; Contains <30% Fine to Coarse Gravel			SC-3: No HC Odor or Staining. PID-6.2'=16.0 ppm.	
	SC3b	100			SC- 3b (6.5-9.0) Silty SAND with Gravel and Cobbles; SM; Brown; Nonplastic; Est. ~40% Coarse to Fine Gravel, 40% Coarse to Fine Sand and 20% Fines; Subrounded Gravel; Some Cementation	**6.5 - 11.0 ALLUVIUM: Silty SAND with Gravel and Cobbles; SM; Brown; Nonplastic; Some Cementation**		6.5 ft - VOCs, Dx, and RRO=BDL	
	SC4a	100			SC- 4a (9.0-11.0) Silty SAND with Gravel and Cobbles; SM; Brown; Nonplastic; Est. ~40% Coarse to Fine Gravel, 40% Coarse to Fine Sand and 20% Fines; Subrounded Gravel; Some Cementation			SC-4: No HC Odor or Staining. PID-11.0'=14.6 ppm.	
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Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
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	SC4b	100			SC- 4b (11.0-12.0) TUFF; Brown; Moderately Weathered; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Pumice Clasts Hand Friable with Discoloration; Weak to Strong Cementation	**11.0 - 15.0 TUFF: Brown; Moderately Weathered; R1-R2; Joint Spacing Unknown; Strong Cementation**			
	SC5	100			SC- 5 (12.0-15.0) TUFF; Brown; Moderately Weathered; R1-R2; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Pumice Clasts Hand Friable with Discoloration; Strong Cementation of Intact Disks			SC-5: No HC Odor or Staining. Soil color change at ~13.8 ft.	
15					(15.0) **Bottom of Hole**	**15.0**		**Bottom of Hole** Used Bentonite Chips and Surface Gravel to Abandon Boring. Note: VOCs=Volatile Organic Hydrocarbons, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-18**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,475.31** Easting: **350,092.19**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2314.4 ft**
Start Date **July 23, 2013** End Date **July 23, 2013**	Total Depth **15.0 ft**	Tube Height	**N/A**

Test Type
"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	0			SC- 1a (0.0-0.5) GRAVEL LOT	**0.0 - 0.5 GRAVEL LOT**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples. SC-1: No HC Odor or Staining. PID-2.0'=25.2 ppm.	
	SC1b	100			SC- 1b (0.5-1.0) Silty SAND; SM; Brown; High Plasticity; Est. ~65% Coarse to Fine Sand and 35% Fines; Trace Gravel from Parking Lot	**0.5 - 4.0 ALLUVIUM: Silty SAND with Gravel; SM; Brown and Tan; Nonplastic to High Plasticity; Subangular to Rounded Gravel**			
	SC1c	100			SC- 1c (1.0-2.0) Silty SAND with Gravel; SM; Brown; Nonplastic; Est. ~30% Coarse to Fine Gravel, 45% Coarse to Fine Sand and 25% Fines; Rhyolite, Basalt and Tuff Gravel; Some Cementation				
	SC1d	100			SC- 1d (2.0-2.5) Silty SAND with Gravel; SM; Brown and Tan; Nonplastic to Low Plasticity; Est. ~25% Coarse to Fine Gravel, 50% Coarse to Fine Sand and 25% Fines; Subangular to Rounded Gravel; Abundant Hand Friable Ash Gravel				
	SC2a	100			SC- 2a (2.5-4.0) Silty SAND with Gravel; SM; Brown and Tan; Nonplastic to Low Plasticity; Est. ~30% Coarse to Fine Gravel, 45% Coarse to Fine Sand and 25% Fines; Rhyolite, Ash and Pumice Gravel; Abundant Hand Friable Ash Gravel			SC-2: No HC Odor or Staining. PID-4.5'=24.1 ppm.	
	SC2b	100			SC- 2b (4.0-5.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Abundant Subrounded Gravel; Contains <30% Fine to Coarse Gravel; Well Sorted Sand	**4.0 - 9.0 SANDSTONE: Brown; Fresh; R1; Jointing Unknown; No Discoloration; Strong to Moderate Cementation; Abundant Rounded Gravel**			
5	SC3	100			SC- 3 (5.0-8.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Abundant Subrounded Gravel; Contains <30% Fine to Coarse Gravel; Well Sorted Sand			SC-3: No HC Odor or Staining. PID-7.0'=21.7 ppm.	
	SC4a	100			SC- 4a (8.0-9.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong to Moderate Cementation of Intact Disks; Abundant Subrounded Gravel; Contains <30% Fine to Coarse Gravel; Well Sorted Sand			SC-4: No HC Odor or Staining. PID-8.8'=20.1 ppm.	
	SC4b	100			SC- 4b (9.0-10.0) Silty SAND with Gravel; SM; Brown, Gray and Red; Nonplastic; Est. ~40% Coarse to Fine Gravel, 40% Coarse to Fine Sand and 20% Fines; Subangular to Subrounded Gravel; Rhyolite, Basalt and Silicified Tuff Gravel; Some Cementation	**9.0 - 10.0 ALLUVIUM: Silty SAND with Gravel; SM; Nonplastic; Some Cementation**		9.0 ft - VOCs, Dx, and RRO=BDL	
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Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
10	SC4c	100			SC- 4c (10.0-11.0) TUFF; Brown; Slightly Weathered; R1-R2; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Friable Pumice Clasts; Silty	**10.0 - 15.0 TUFF: Brown; Slightly Weathered; R1-R2; Jointing Unknown; Friable Pumice Clasts; Strong Cementation; Silty**			
	SC5	100			SC- 5 (11.0-13.0) TUFF; Brown; Slightly Weathered; R1-R2; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Friable Pumice Clasts; Silty			SC-5: No HC Odor or Staining. PID-11.0'=21.1 ppm.	
	SC6	100			SC- 6 (13.0-15.0) TUFF; Brown; Slightly Weathered; R1-R2; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Friable Pumice Clasts; Silty			SC-6: No HC Odor or Staining. PID-14.0'=22.4 ppm.	
15					(15.0) **Bottom of Hole**	**15.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Surface Gravel to Abandon Boring. Note: VOCs=Volatile Organic Hydrocarbons, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-19**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,450.98** Easting: **350,095.17**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2314.8 ft**
Start Date **July 23, 2013** End Date **July 23, 2013**	Total Depth **15.0 ft**	Tube Height	**N/A**

Test Type
"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	0			SC- 1a (0.0-0.5) CONCRETE SIDEWALK	**0.0 - 0.5 CONCRETE SIDEWALK**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples. SC-1: No HC Odor or Staining. PID-2.5'=41.9 ppm. PID Value dropped very quickly.	
	SC1b	100			SC- 1b (0.5-1.0) Silty SAND; SM; Brown; High Plasticity; Est. ~60% Coarse to Fine Sand and 40% Fines; Trace Subangular Gravel	**0.5 - 3.0 ALLUVIUM: Silty SAND and Silty SAND with Gravel; SM; Brown and Red; High Plasticity to Nonplastic; Subangular to Subrounded Gravel**			
	SC1c	100			SC- 1c (1.0-2.0) Silty SAND with Gravel; SM; Brown and Red; Nonplastic to Low Plasticity; Est. ~30% Coarse to Fine Gravel, 45% Coarse to Fine Sand and 25% Fines; Subrounded Gravel; Rhyolite and Silicified Tuff Gravel; Some Cementation				
	SC1d	100			SC- 1d (2.0-3.0) Silty SAND with Gravel; SM; Brown and Red; Nonplastic; Dry; Est. ~20% Coarse to Fine Gravel, 55% Coarse to Fine Sand and 25% Fines; Subangular to Subrounded Gravel; Some Cementation				
	SC2	100			SC- 2 (3.0-5.0) SANDSTONE; Brown; Slightly Weathered; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Abundant Subrounded Gravel including Cobbles	**3.0 - 9.0 SANDSTONE: Brown; Slightly Weathered to Fresh; R0-R1; Jointing Unknown; Abundant Subrounded Gravel including Cobbles; Weak to Moderate Cementation**		SC-2: No HC Odor or Staining. PID-4.0'=31.0 ppm.	
5	SC3	100			SC- 3 (5.0-8.0) SANDSTONE; Brown; Fresh; R0-R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Weak to Moderate Cementation of Intact Disks; Rhyolite and Silicified Tuff Gravel; Well Sorted Sand			SC-3: No HC Odor or Staining. PID-7.0'=38.6 ppm. PID continues to zero out very quickly.	
	SC4	100			SC- 4 (8.0-9.0) SANDSTONE; Brown; Fresh; R0-R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Weak Cementation of Intact Disks; Jasper Gravel; Well Sorted Sand			SC-4: No HC Odor or Staining. PID-8.5'=30.9 ppm. 8.5 ft - Dx and RRO=BDL	
	SC5a	100			SC- 5a (9.0-11.0) Silty SAND with Gravel; SM; Brown; Nonplastic; Est. ~40% Coarse to Fine Gravel, 45% Coarse to Fine Sand and 15% Fines; Subangular to Rounded Gravel; Rhyolite and Silicified Tuff Gravel; Some Cementation	**9.0 - 11.0 ALLUVIUM: Silty SAND with Gravel; SM; Brown; Nonplastic; Some**		SC-5: No HC Odor or Staining. PID-11.0'=37.4 ppm.	
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Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
10						**Cementation**			
	SC5b	100			SC- 5b (11.0-12.0) TUFF; Brown; Slightly Weathered; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Weak Cementation of Intact Disks; Friable Pumice Clasts; Silty	**11.0 - 12.0 TUFF: Brown; Slightly Weathered; R1; Weak Cementation; Silty**			
	SC6a	100			SC- 6a (12.0-12.7) SANDSTONE; Brown; Fresh; R2; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks	**12.0 - 15.0 SANDSTONE: Brown; Fresh; R2; Jointing Unknown; Strong Cementation**		SC-6: No HC Odor or Staining.	
	SC6b	100			SC- 6b (12.7-15.0) SANDSTONE; Brown; Fresh; R2; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Well Sorted, Fine to Medium Sand				
15					(15.0) **Bottom of Hole**	**15.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Surface Gravel to Abandon Boring. Note: Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-20**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,525.04** Easting: **349,963.37**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2316.9 ft**
Start Date **July 23, 2013** End Date **July 23, 2013**	Total Depth **15.0 ft**	Tube Height	**N/A**

Test Type

"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-1.5) GRAVEL LOT/FILL	**0.0 - 1.5 GRAVEL LOT/FILL**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples.	
	SC1b	100			SC- 1b (1.5-3.0) Silty SAND; SM; Brown; Nonplastic to Low Plasticity; Dry; Est. ~60% Medium to Fine Sand and 40% Fines; Subangular to Subrounded Gravel; Some Cementation	**1.5 - 3.0 ALLUVIUM DEPOSITS: Silty SAND; SM; Brown; Nonplastic to Low Plasticity; Dry**		SC-1: No HC Odor or Staining. PID-3.0'=48.1 ppm.	
	SC2	100			SC- 2 (3.0-5.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Moderate to Strong Cementation of Intact Disks; Silty	**3.0 - 6.5 TUFF: Brown; Fresh; R1; Jointing Unknown; Strong Cementation; Silty**		SC-2: No HC Odor or Staining.	
5	SC3a	80			SC- 3a (5.0-6.5) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty			SC-3: No HC Odor or Staining. PID-7.0'=43.1 ppm.	
	SC3b	80			SC- 3b (6.5-7.5) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Weak Cementation of Intact Disks; Abundant Fine, Rounded Gravel; Rhyolite, Basalt and Silicified Tuff Gravel	**6.5 - 10.0 SANDSTONE: Brown; Fresh; R0-R1; Jointing Unknown; Weak Cementation; Abundant Rounded Gravel**			
	SC4	100			SC- 4 (7.5-10.0) SANDSTONE; Brown; Fresh; R0-R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Weak Cementation of Intact Disks; Abundant Fine, Rounded Gravel; Silty			SC-4: No HC Odor or Staining. PID-9.5'=37.8 ppm.	
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Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
10	SC5	100			SC- 5 (10.0-12.0) TUFF; Brown; Slightly Weathered; R0-R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Moderate Cementation of Intact Disks; Friable Pumice Clasts; Silty	**10.0 - 15.0 TUFF: Brown; Slightly Weathered to Fresh; R0-R1; Jointing Unknown; Moderate to Strong Cementation; Silty**		10 ft - VOCs, Dx, and RRO=BDL; SC-5: No HC Odor or Staining. PID-10.5'=35.7 ppm.	
	SC6	100			SC- 6 (12.0-15.0) TUFF; Brown; Slightly Weathered; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Friable Pumice Clasts; Silty			SC-6: No HC Odor or Staining.	
15					(15.0) **Bottom of Hole**	**15.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Surface Gravel to abandon Boring. Note: VOCs=Volatile Organic Hydrocarbons, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-21**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,526.91** Easting: **349,984.59**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2316.4 ft**
Start Date **July 23, 2013** End Date **July 23, 2013**	Total Depth **15.0 ft**	Tube Height	**N/A**

Test Type
"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	83			SC- 1a (0.0-1.5) GRAVEL LOT/FILL	**0.0 - 1.5 GRAVEL LOT/FILL**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples.	
	SC1b	83			SC- 1b (1.5-3.0) TUFF; Brown; Slightly Weathered; R0-R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Pumice Clast Discoloration; Weak to Moderate Cementation of Intact Disks; Silty; Rhyolite Gravel	**1.5 - 2.5 TUFF: R0-R1; Weak to Moderate Cementation**		SC-1: No HC Odor or Staining. PID-3.0'=66.3 ppm. Gravel layer at ~2.0 ft. Contains Cobbles. Sample combined due to Pulverizing.	
						2.5 - 9.0 ALLUVIUM DEPOSITS: Silty SAND with Gravel and Cobbles; SM; Brown; Low Plasticity; Surbrounded Gravel			
	SC2	67			SC- 2 (3.0-6.0) Silty SAND with Gravel; SM; Brown; Low Plasticity; Est. ~35% Coarse to Fine Gravel, 35% Coarse to Fine Sand and 30% Fines; Subrounded Gravel; Rhyolite and Silicified Tuff Gravel			SC-2: No HC Odor or Staining. PID-6.0'=52.0 ppm.	
5								5.0 ft - VOCs=Det (benzene only), Dx and RRO=BDL	
	SC3	43			SC- 3 (6.0-9.0) Silty SAND with Gravel; SM; Brown; Low Plasticity; Est. ~35% Coarse to Fine Gravel, 35% Coarse to Fine Sand and 30% Fines; Subrounded Gravel; Rhyolite and Silicified Tuff Gravel			SC-3: No HC Odor or Staining. Plastic Bag used to contain sample is melting. Lost sample 6.0-7.7 ft.	
	SC4	100			SC- 4 (9.0-10.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Weak to Moderate Cementation of Intact Pieces; Trace Rhyolite Gravel; Clean, Well Sorted; Fine to Medium Sand	**9.0 - 10.0 SANDSTONE: Brown; Fresh; R1; Weak to Moderate Cementation**		SC-4: No HC Odor or Staining. PID-9.5'=47.9 ppm. 9.5 ft - VOCs, Dx, and RRO=BDL	
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Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
10	SC5	100			SC- 5 (10.0-12.0) Silty SAND with Gravel; SM; Brown; Nonplastic; Est. ~35% Coarse to Fine Gravel, 50% Coarse to Fine Sand and 15% Fines; Subrounded Gravel; Rhyolite and Silicified Tuff Gravel; Poorly Sorted	**10.0 - 12.0 ALLUVIUM: Silty SAND with Gravel; SM; Brown; Nonplastic**		SC-5: No HC Odor or Staining. PID-11.0'=42.0 ppm.	
	SC6	100			SC- 6 (12.0-15.0) TUFF; Brown; Fresh; R2; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Strong Cementation of Intact Disks; Silty	**12.0 - 15.0 TUFF: Brown; Fresh; R2; Jointing Unknown; Strong Cementation; Silty**		SC-6: No HC Odor or Staining.	
15					(15.0) Bottom of Hole	**15.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Surface Gravel to Abandon Boring. Note: VOCs=Volatile Organic Hydrocarbons, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, Det=Detected at or above Laboratory Detection Limit; BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	SD13-22
Project US97: J Street Intersection (Madras South Y) Sec. DRAFT	Purpose HazMat Investigation	E.A. No.	CO161601-011
Highway US97: The Dalles California Highway (004)	County Jefferson	Key No.	15409
Hole Location Northing: 8,039,526.64 Easting: 350,007.25		Start Card No.	N/A
Equipment AMS Sonic 17-C	Driller Cascade Drilling	Bridge No.	N/A
Project Geologist Kelly Wood	Recorder Kelly Wood	Ground Elev.	2315.9 ft
Start Date July 23, 2013 / End Date July 23, 2013	Total Depth 15.0 ft	Tube Height	N/A

Test Type

"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	88			SC- 1a (0.0-3.0) GRAVEL LOT/FILL/CONCRETE; Gravel (0.0-0.5'); Fill (0.5-2.0'); Concrete (2.0-3.0')	**0.0 - 2.0 GRAVEL LOT/FILL**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples. SC-1: No HC Odor or Staining. Gravel layer at ~2.5 ft. PID-3.0'=34.8 ppm. Driller mentioned encountering Concrete after Boring completion.	
						2.0 - 3.0 CONCRETE			
	SC1b	88			SC- 1b (3.0-4.0) Silty SAND with Gravel; SM; Brown; Nonplastic to Low Plasticity; Est. ~15% Coarse to Fine Gravel, 65% Coarse to Fine Sand and 20% Fines; Rounded Gravel	**3.0 - 10.0 ALLUVIUM: Silty SAND with Gravel; SM; Brown; Nonplastic to Low Plasticity; Rounded Gravel; Some Cementation**			
	SC2	100			SC- 2 (4.0-7.0) Silty SAND with Gravel; SM; Brown; Nonplastic; Dry; Est. ~35% Coarse to Fine Gravel, 50% Coarse to Fine Sand and 15% Fines; Subrounded to Rounded Gravel; Some Cementation			SC-2: No HC Odor or Staining. PID-6.0'=25.3 ppm.	
5								6.0 ft - VOCs, Dx, and RRO=BDL	
	SC3	100			SC- 3 (7.0-10.0) Silty SAND with Gravel; SM; Brown and Red; Nonplastic; Dry; Est. ~40% Coarse to Fine Gravel, 45% Coarse to Fine Sand and 15% Fines; Subrounded to Rounded Gravel; Some Weak to Moderate Cementation			SC-3: No HC Odor or Staining. PID-8.5'=21.8 ppm.	
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Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
10	SC4a	100			SC- 4a (10.0-11.5) SANDSTONE; Brown; Slightly Weathered; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Strong Cementation of Intact Pieces; Some Rounded Rhyolite Gravel; Fine to Coarse Sand	**10.0 - 11.5 SANDSTONE: Brown; Slightly Weathered; R1; Jointing Unknown; Strong Cementation; Rounded Gravel**		10 ft - VOCs, Dx, and RRO=BDL; SC-4: No HC Odor or Staining. PID-11.0'=22.8 ppm.	
	SC4b	100			SC- 4b (11.5-13.0) TUFF; Brown; Slightly Weathered; R0-R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Strong Cementation of Intact Disks; Friable and Discolored Pumice Clasts; Silty	**11.5 - 15.0 TUFF: Brown; Slightly Weathered; R0-R1; Jointing Unknown; Strong Cementation; Silty**			
	SC5	100			SC- 5 (13.0-15.0) TUFF; Brown; Slightly Weathered; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Strong Cementation of Intact Disks; No Discoloration; Silty; Includes Coarse Sand			SC-5: No HC Odor or Staining.	
15					(15.0) **Bottom of Hole**	**15.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Surface Gravel to Abandon Boring. Note: VOCs=Volatile Organic Hydrocarbons, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-23**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,030.53** Easting: **348,864.32**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2325.5 ft**
Start Date **July 24, 2013** End Date **July 24, 2013**	Total Depth **10.0 ft**	Tube Height	**N/A**

Test Type
"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	93			SC- 1a (0.0-1.5) ASPHALT/BASE ROCK/FILL; Asphalt (0.0-0.5') Base Rock (0.5-1.0') Fill (1.0-1.5')	**0.0 - 1.5 ASPHALT/BASE ROCK/FILL**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples.	
	SC1b	93			SC- 1b (1.5-3.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Some Joint Discoloration; Strong Cementation of Intact Disks	**1.5 - 7.5 TUFF: Brown; Fresh; R1; Joint Spacing Unknown; Joint Discoloration; Strong Cementation**		SC-1: No HC Odor or Staining. PID-3.0'=12.5 ppm. Very Difficult Drilling.	
	SC2	100			SC- 2 (3.0-5.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Some Joint Discoloration; Strong Cementation of Intact Disks			SC-2: No HC Odor or Staining. PID-5.0'=14.3 ppm. 4.0 ft - Dx and RRO=BDL	
5	SC3	100			SC- 3 (5.0-7.5) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Some Joint Discoloration; Strong Cementation of Intact Disks			SC-3: No HC Odor or Staining. PID-7.3'=16.1 ppm. 7.0 ft - Dx and RRO=BDL	
	SC4	100			SC- 4 (7.5-10.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Abundant Jasper and Silicified Tuff Gravel	**7.5 - 10.0 SANDSTONE: Brown; Fresh; R1; Joint Spacing Unknown; Strong Cementation; Abundant Gravel**		SC-4: No HC Odor or Staining. PID-9.0'=9.0 ppm.	
10					(10.0) **Bottom of Hole**	**10.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Dyed Concrete to Abandon Boring. Note: Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-24**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,037.46** Easting: **348,882.02**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2325.5 ft**
Start Date **July 24, 2013** End Date **July 24, 2013**	Total Depth **10.0 ft**	Tube Height	**N/A**

Test Type
"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-1.5) ASPHALT/BASE ROCK/FILL	**0.0 - 1.5 ASPHALT/BASE ROCK/FILL**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples. SC-1: No HC Odor or Staining. PID-2.5'=23.9 ppm. SC-2: No HC Odor or Staining. PID-6.0'=21.3 ppm. Moisture in Sample derived from Drillers. 5.0 ft - Gx, Dx, and RRO=BDL	
	SC1b	100			SC- 1b (1.5-3.0) TUFF; Brown; Fresh to Slightly Weathered; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Some Joint Discoloration; Strong Cementation of Intact Disks	**1.5 - 6.0 TUFF: Brown; Fresh to Slightly Weathered; R1: Joint Spacing Unknown; Joint Discoloration; Strong Cementation**			
	SC2	100			SC- 2 (3.0-6.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Some Joint Discoloration; Strong Cementation of Intact Disks				
5									
	SC3	100			SC- 3 (6.0-10.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Moderate to Strong Cementation of Intact Disks; Abundant Rhyolite, Jasper and Silicified Tuff Gravel	**6.0 - 10.0 SANDSTONE: Brown; Fresh; R1; Joint Spacing Unknown; No Discoloration; Moderate to Strong Cementation**		SC-3: No HC Odor or Staining. PID-7.0'=20.7 ppm.	
10					(10.0) **Bottom of Hole**	**10.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Dyed Concrete to Abandon Boring. Note: Gx=Gasoline Range Hydrocarbons by NWTPH-Gx method, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-25**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,045.36** Easting: **348,903.63**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2325.4 ft**
Start Date **July 24, 2013** End Date **July 24, 2013**	Total Depth **10.0 ft**	Tube Height	**N/A**

Test Type

"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil / Rock: Driving Resistance / Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-1.5) ASPHALT/BASE ROCK/FILL	**0.0 - 1.5 ASPHALT/BASE ROCK/FILL**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples. SC-1: No HC Odor or Staining. PID-2.0'=39.3 ppm. SC-2: No HC Odor or Staining. PID-5.0'=53.3 ppm.	
	SC1b	100			SC- 1b (1.5-2.5) TUFF; Brown; Fresh; R1-R2; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks	**1.5 - 4.0 TUFF: Brown; Fresh; R1-R2; Joint Spacing Unknown; Joint Discoloration; Strong Cementation**			
	SC2a	80			SC- 2a (2.5-4.0) TUFF; Brown; Fresh; R1-R2; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks				
	SC2b	80			SC- 2b (4.0-5.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Weak Cementation of Intact Disks; Trace Rounded Gravel; Well Sorted Sand	**4.0 - 5.0 SANDSTONE: R1; Rounded Gravel**		4.5 ft - Dx and RRO=BDL	
5	SC3	100			SC- 3 (5.0-7.5) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Slight Joint Discoloration; Strong Cementation of Intact Disks	**5.0 - 10.0 TUFF: Brown; Fresh; R1; Joint Spacing Unknown; Joint Discoloration; Strong Cementation**		SC-3: No HC Odor or Staining.	
	SC4	100			SC- 4 (7.5-10.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Slight Joint Discoloration; Strong Cementation of Intact Disks			SC-4: No HC Odor or Staining. PID-9.5'=39.9 ppm.	
10					(10.0) **Bottom of Hole**	**10.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Dyed Concrete to Abandon Boring. Note: Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-26**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,054.20** Easting: **348,927.34**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2325.4 ft**
Start Date **July 24, 2013** End Date **July 24, 2013**	Total Depth **10.0 ft**	Tube Height	**N/A**

Test Type
"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
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HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-1.5) ASPHALT/BASE ROCK/FILL; Asphalt (0.0-0.6') Base Rock (0.6-1.2) Fill (1.2-1.5')	**0.0 - 1.5 ASPHALT/BASE ROCK/FILL**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples. SC-1: No HC Odor or Staining. PID-2.4'=37.9 ppm. Sample so hot that Asphalt is Friable. SC-2: No HC Odor or Staining.	
	SC1b	100			SC- 1b (1.5-2.5) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks	**1.5 - 7.0 TUFF: Brown; Fresh; R1-R2; Joint Spacing Unknown; No Discoloration on Intact Disks; Strong Cementation**			
	SC2	100			SC- 2 (2.5-5.0) TUFF; Brown; Fresh; R1-R2; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks				
5	SC3a	100			SC- 3a (5.0-7.0) TUFF; Brown; Fresh; R1-R2; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks			SC-3: No HC Odor or Staining. PID-7.5'=44.5 ppm. 6.0 ft - Gx, Dx, and RRO=BDL	
	SC3b	100			SC- 3b (7.0-8.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Primarily Fine to Medium Sand; Abudant Subrounded Gravel; Contains <30% Fine to Coarse Gravel	**7.0 - 10.0 SANDSTONE: Brown; Fresh; R1; Jointing Unknown; No Discoloration; Strong Cementation; Subrounded Gravel**			
	SC4	100			SC- 4 (8.0-10.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Primarily Fine to Medium Sand; Abudant Subrounded Gravel; Contains <30% Fine to Coarse Gravel			SC-4: No HC Odor or Staining. PID-10.0'=43.1 ppm.	
10					(10.0) **Bottom of Hole**	**10.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Dyed Concrete to Abandon Boring. Note: Gx=Gasoline Range Hydrocarbons by NWTPH-Gx method, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-27**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,063.25** Easting: **348,950.12**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2325.2 ft**
Start Date **July 24, 2013** End Date **July 24, 2013**	Total Depth **10.0 ft**	Tube Height	**N/A**

Test Type

"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-1.5) ASPHALT/BASE ROCK/FILL; Asphalt (0.0-0.6') Base Rock (0.6-1.2) Fill (1.2-1.5')	**0.0 - 1.5 ASPHALT/BASE ROCK/FILL**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples. SC-1: No HC Odor or Staining. Sample extremely hot. PID-2.5'=44.4 ppm. SC-2: Drillers utilizing larger plastic bags for sample due to running out of smaller diameter plastic. Larger bags allow sample to compress. Recovery Estimated. No HC Odor or Staining. PID-6.5'=49.4 ppm. SC-2b: Different Appearance due to Pulverized and Dry Texture. 5.5 ft - Gx, Dx, and RRO=BDL SC-3: No HC Odor or Staining. PID-9.8'=36.8 ppm.	
	SC1b	100			SC- 1b (1.5-2.5) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty	**1.5 - 10.0 TUFF: Brown; Fresh; R1; Joint Spacing Unknown; No Discoloration; Strong Cementation; Silty**			
	SC2a	100			SC- 2a (2.5-5.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty				
5	SC2b	100			SC- 2b (5.0-6.5) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks				
	SC3	100			SC- 3 (6.5-10.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty				
10					(10.0) **Bottom of Hole**	**10.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Dyed Concrete to Abandon Boring. Note: Gx=Gasoline Range Hydrocarbons by NWTPH-Gx method, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-28**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,073.72** Easting: **348,977.37**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2325.1 ft**
Start Date **July 24, 2013** End Date **July 24, 2013**	Total Depth **10.0 ft**	Tube Height	**N/A**

Test Type

"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-1.0) ASPHALT/BASE ROCK; Asphalt (0.0-0.5') Base Rock (0.5-1.0')	**0.0 - 1.0 ASPHALT/BASE ROCK**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples.	
	SC1b	100			SC- 1b (1.0-3.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty	**1.0 - 10.0 TUFF: Brown; Fresh; R1; Joint Spacing Unknown; No Discoloration; Strong Cementation**		SC-1: No HC Odor or Staining. PID-3.0'=57.1 ppm.	
	SC2	86			SC- 2 (3.0-6.5) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty			SC-2: No HC Odor or Staining. PID-6.5'=52.6 ppm.	
5								5.0 ft - Gx, Dx, and RRO=BDL	
	SC3	100			SC- 3 (6.5-10.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty			SC-3: No HC Odor or Staining. PID-8.5'=54.9 ppm.	
10					(10.0) **Bottom of Hole**	**10.0** Bottom of Hole		**Bottom of Hole**	
								Used Bentonite Chips and Dyed Concrete to Abandon Boring. Note: Gx=Gasoline Range Hydrocarbons by NWTPH-Gx method, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-29**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,084.19** Easting: **349,007.14**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2325.0 ft**
Start Date **July 24, 2013** End Date **July 24, 2013**	Total Depth **10.0 ft**	Tube Height	**N/A**

Test Type

"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-1.0) ASPHALT/BASE ROCK; Asphalt (0.0-0.5') Base Rock (0.5-1.0')	**0.0 - 1.0 ASPHALT/BASE ROCK**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples.	
	SC1b	100			SC- 1b (1.0-3.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty	**1.0 - 7.0 TUFF: Brown; Fresh; R1; Joint Spacing Unknown; No Discoloration; Strong Cementation**		SC-1: No HC Odor or Staining. PID-3.0'=67.7 ppm.	
	SC2	88			SC- 2 (3.0-7.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty			SC-2: No HC Odor or Staining. PID-6.5'=55.3 ppm.	
5								6.0 ft - Gx, Dx, and RRO=BDL	
	SC3a	100			SC- 3a (7.0-9.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Subrounded Gravel; Primarily Fine to Medium Sand	**7.0 - 10.0 SANDSTONE: Brown; Fresh; R1; Joint Spacing Unknown; No Discoloration; Weak to Moderate Cementation; Subrounded Gravel**		SC-3: No HC Odor or Staining. PID-9.2'=52.3 ppm.	
	SC3b	100			SC- 3b (9.0-10.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Weak to Moderate Cementation of Intact Disks; Subrounded Gravel; Primarily Fine to Medium Sand				
10					(10.0) **Bottom of Hole**	**10.0** Bottom of Hole		**Bottom of Hole**	
								Used Bentonite Chips and Dyed Concrete to Abandon Boring. Note: Gx=Gasoline Range Hydrocarbons by NWTPH-Gx method, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-30**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,112.20** Easting: **349,081.45**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2324.8 ft**
Start Date **July 24, 2013** End Date **July 24, 2013**	Total Depth **10.0 ft**	Tube Height	**N/A**

Test Type
"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-1.0) ASPHALT/BASE ROCK	**0.0 - 1.0 ASPHALT/BASE ROCK**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples.	
	SC1b	100			SC- 1b (1.0-3.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty	**1.0 - 7.0 TUFF: Brown; Fresh; R1; Joint Spacing Unknown; Slight Discoloration; Strong Cementation; Silty; Some Rounded Gravel**		SC-1: No HC Odor or Staining. PID-2.8'=68.9 ppm.	
	SC2	88			SC- 2 (3.0-7.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Slight Pumice Clast Discoloration; Strong Cementation of Intact Disks; Silty; Some Rounded Gravel			SC-2: No HC Odor or Staining. PID-7.0'=62.0 ppm.	
5								6.0 ft - Dx and RRO=BDL	
	SC3	100			SC- 3 (7.0-10.0) SANDSTONE; Brown; Fresh; R0-R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Weak Cementation of Intact Disks; Poorly Sorted; Subrounded Rhyolite and Silicified Tuff Gravel; Contains <30% Fine to Coarse Gravel	**7.0 - 10.0 SANDSTONE: Brown; Fresh; R0-R1; Jointing Unknown; Weak Cementation; Subrounded Gravel**		SC-3: No HC Odor or Staining. PID-10.0'=60.0 ppm.	
10					(10.0) **Bottom of Hole**	**10.0** Bottom of Hole		**Bottom of Hole**	
								Used Bentonite Chips and Dyed Concrete to Abandon Boring. Note: Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
15									

DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-31**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,127.34** Easting: **349,121.47**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2324.8 ft**
Start Date **July 24, 2013** End Date **July 24, 2013**	Total Depth **10.0 ft**	Tube Height	**N/A**

Test Type

"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-1.0) ASPHALT/BASE ROCK	**0.0 - 1.0 ASPHALT/BASE ROCK**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples.	
	SC1b	100			SC- 1b (1.0-3.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty; Trace Rounded Gravel	**1.0 - 7.0 TUFF: Brown; Fresh; R1; Joint Spacing Unknown; No Discoloration; Strong Cementation; Silty; Trace Rounded Gravel**		SC-1: No HC Odor or Staining. PID-2.5'=67.8 ppm.	
	SC2	88			SC- 2 (3.0-7.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty; Trace Rounded Gravel			SC-2: No HC Odor or Staining. PID-5.5'=65.7 ppm.	
5								5.5 ft - Dx and RRO=BDL	
	SC3	100			SC- 3 (7.0-9.0) SANDSTONE; Brown; Fresh; R0-R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Weak Cementation of Intact Disks; Subrounded Gravel; Contains <30% Fine to Coarse Gravel	**7.0 - 10.0 SANDSTONE: Brown; Fresh; R0-R1; Jointing Unknown; Weak Cementation; Subrounded Gravel**		SC-3: No HC Odor or Staining.	
	SC4	100			SC- 4 (9.0-10.0) SANDSTONE; Brown; Fresh; R0-R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Weak Cementation of Intact Disks; Subrounded Rhyolite and Silicified Tuff Gravel; Contains <30% Fine to Coarse Gravel			SC-4: No HC Odor or Staining. PID-9.5'=46.7 ppm.	
10					(10.0) **Bottom of Hole**	**10.0** Bottom of Hole		**Bottom of Hole**	
								Used Bentonite Chips and Dyed Concrete to Abandon Boring. Note: Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
15									

DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-32**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,173.85** Easting: **349,148.86**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2326.5 ft**
Start Date **July 24, 2013** End Date **July 24, 2013**	Total Depth **10.0 ft**	Tube Height	**N/A**

Test Type

"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-0.5) GRAVEL	**0.0 - 0.5 GRAVEL LOT**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples.	
	SC1b	100			SC- 1b (0.5-2.5) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty; Trace Rounded Gravel	**0.5 - 10.0 TUFF: Brown; Fresh; R1; Joint Spacing Unknown; No Discoloration; Strong Cementation; Silty**			
	SC2	100			SC- 2 (2.5-5.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty			SC-1: No HC Odor or Staining. PID-2.5'=103.9 ppm. SC-2: No HC Odor or Staining. PID-5.0'=83.4 ppm.	
5	SC3	100			SC- 3 (5.0-7.5) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty			4.5 ft - Dx and RRO=BDL SC-3: No HC Odor or Staining. PID-6.5'=62.0 ppm.	
	SC4	100			SC- 4 (7.5-10.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty			SC-4: No HC Odor or Staining. PID-9.0'=51.8 ppm.	
10					(10.0) **Bottom of Hole**	**10.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Dyed Concrete to Abandon Boring. Note: Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	SD13-33
Project US97: J Street Intersection (Madras South Y) Sec. DRAFT	Purpose HazMat Investigation	E.A. No.	CO161601-011
Highway US97: The Dalles California Highway (004)	County Jefferson	Key No.	15409
Hole Location Northing: 8,039,527.30 Easting: 350,068.29		Start Card No.	N/A
Equipment AMS Sonic 17-C	Driller Cascade Drilling	Bridge No.	N/A
Project Geologist Kelly Wood	Recorder Kelly Wood	Ground Elev.	2315.0 ft
Start Date July 25, 2013 / End Date July 25, 2013	Total Depth 15.0 ft	Tube Height	N/A

Test Type
"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks	Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-3.0) GRAVEL/FILL/CONCRETE; Gravel (0.0-0.5') Fill (0.5-2.0') Concrete (2.0-3.0')	**0.0 - 2.0 GRAVEL/FILL**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples. SC-1: No HC Odor or Staining.		
						2.0 - 3.0 CONCRETE				
	SC1b	100			SC- 1b (3.0-4.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Sharp Contact with overlying Concrete	**3.0 - 6.0 TUFF: Brown; Fresh; R1; Joint Spacing Unknown; No Discoloration; Strong Cementation; Silty**				
	SC2a	86			SC- 2a (4.0-6.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks			SC-2: No HC Odor or Staining. PID-5.5'=55.6 ppm.		
5										
	SC2b	86			SC- 2b (6.0-7.5) SANDSTONE; Brown; Fresh; R0-R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Weak Cementation of Intact Disks; Moderately Sorted; Subrounded Gravel	**6.0 - 7.5 SANDSTONE: Brown; Fresh; R1; Jointing Unknown; No Discoloration; Weak Cementation; Subrounded Gravel**		7.0 ft - Dx and RRO=BDL		
	SC3	100			SC- 3 (7.5-9.0) Silty SAND with Gravel; SM; Light Brown; Moderate Plasticity; Est. ~20% Coarse to Fine Gravel, 50% Coarse to Fine Sand and 30% Fines; Angular Basalt Gravel; Weakly Cemented	**7.5 - 12.0 COLLUVIUM: Silty SAND with Gravel; SM; Light Brown; Moderate Plasticity; Angular Basalt Gravel; Weak Cementation**		SC-3: No HC Odor or Staining. PID-9.0'=51.7 ppm.		
	SC4	100			SC- 4 (9.0-12.0) Silty SAND with Gravel; SM; Light Brown; Moderate Plasticity; Est. ~15% Coarse to Fine Gravel, 55% Coarse to Fine Sand and 30% Fines; Angular Basalt Gravel; Weakly Cemented			SC-4: No HC Odor or Staining. PID-11.5'=55.6 ppm. Very Slow DR. Very hot drill bit. Drillers used water to cool drill		
10										

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
10							bit and steel.	
	SC5	100			SC- 5 (12.0-15.0) TUFF; Brown; Slightly Weathered; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; Pumice Clast Discoloration; Moderate to Strong Cementation of Intact Disks; Silty; Some Plasticity	**12.0 - 15.0** **TUFF: Brown; Slightly Weathered; R1; Joint Spacing Unknown; Moderate to Strong Cementation; Silty; Some Plasticity**		SC-5: No HC Odor or Staining.	
15					(15.0) **Bottom of Hole**	**15.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Surface Gravel to Abandon Boring. Note: Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	SD13-34
Project US97: J Street Intersection (Madras South Y) Sec. DRAFT	Purpose HazMat Investigation	E.A. No.	CO161601-011
Highway US97: The Dalles California Highway (004)	County Jefferson	Key No.	15409
Hole Location Northing: 8,039,527.49 Easting: 350,040.29		Start Card No.	N/A
Equipment AMS Sonic 17-C	Driller Cascade Drilling	Bridge No.	N/A
Project Geologist Kelly Wood	Recorder Kelly Wood	Ground Elev.	2315.5 ft
Start Date July 25, 2013 / End Date July 25, 2013	Total Depth 15.0 ft	Tube Height	N/A

Test Type
"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-3.0) GRAVEL/FILL/CONCRETE; Gravel (0.0-0.5') Fill (0.5-2.0') Concrete (2.0-3.0')	**0.0 - 2.0 GRAVEL/FILL**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples. SC-1: Very Fast DR. No HC Odor or Staining. PID-3.0'=21.0 ppm.	
						2.0 - 3.0 CONCRETE			
	SC1b	100			SC- 1b (3.0-4.5) Silty SAND with Gravel; SM; Brown; Low Plasticity; Est. ~40% Coarse to Fine Gravel, 40% Coarse to Fine Sand and 20% Fines; Primarily Subrounded Rhyolite and Silicified Tuff Gravel	**3.0 - 8.0 ALLUVIUM: Silty SAND with Gravel; SM; Brown; Low Plasticity; Subrounded Gravel**			
	SC2	100			SC- 2 (4.5-8.0) Silty SAND with Gravel; SM; Brown; Low Plasticity; Est. ~40% Coarse to Fine Gravel, 40% Coarse to Fine Sand and 20% Fines; Primarily Subrounded Rhyolite and Silicified Tuff Gravel			SC-2: No HC Odor or Staining. PID-8.0'=13.4 ppm. 6.0 ft - VOCs, Dx, and RRO=BDL	
5									
	SC3a	100			SC- 3a (8.0-9.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Rounded Gravel; Contains <30% Fine to Coarse Gravel; Well Sorted Sand; Silty	**8.0 - 12.0 SANDSTONE: Brown; Fresh; R1; Jointing Unknown; No Discoloration; Strong to Weak Cementation; Rounded Gravel**		SC-3: No HC Odor or Staining. PID-9.0'=18.0 ppm.	
	SC3b	100			SC- 3b (9.0-12.0) Silty SAND with Gravel; SM; Brown; Low Plasticity; Est. ~20% Coarse to Fine Gravel, 60% Coarse to Fine Sand and 20% Fines; Subrounded Rhyolite and Silicified Tuff Gravel; Some Cementation				
10									

Depth (ft)	Test Type, No.	Percent Recovery	Soil / Rock: Driving Resistance / Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
10								
	SC4	100			SC- 4 (12.0-15.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration on Intact Disks; Strong Cementation; Silty	**12.0 - 15.0** **TUFF: Brown; Fresh; R1; Joint Spacing Unknown; Strong Cementation; Silty**		SC-4: No HC Odor or Staining.	
15					(15.0) **Bottom of Hole**	**15.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Surface Gravel to Abandon Boring. Note: VOCs=Volatile Organic Hydrocarbons, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	**SD13-35**
Project **US97: J Street Intersection (Madras South Y) Sec. DRAFT**	Purpose **HazMat Investigation**	E.A. No.	**CO161601-011**
Highway **US97: The Dalles California Highway (004)**	County **Jefferson**	Key No.	**15409**
Hole Location Northing: **8,039,453.64** Easting: **350,468.14**		Start Card No.	**N/A**
Equipment **AMS Sonic 17-C**	Driller **Cascade Drilling**	Bridge No.	**N/A**
Project Geologist **Kelly Wood**	Recorder **Kelly Wood**	Ground Elev.	**2305.3 ft**
Start Date **July 25, 2013** End Date **July 25, 2013**	Total Depth **15.0 ft**	Tube Height	**N/A**

Test Type

"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-1.0) ASPHALT/BASE ROCK	**0.0 - 1.0 ASPHALT/BASE ROCK**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples. SC-1: No HC Odor or Staining. PID-3.0'=66.7 ppm.	
	SC1b	100			SC- 1b (1.0-3.0) Silty SAND; SM; Brown; Medium Plasticity; Est. ~70% Medium to Fine Sand and 30% Fines; (Alluvium)	**1.0 - 3.0 ALLUVIUM: Silty SAND: SM; Brown; Moderate Plasticity**			
	SC1c	100			SC- 1c (3.0-4.0) TUFF; Brown; Fresh; R1-R2; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks	**3.0 - 7.0 TUFF: Brown; Fresh to Slightly Weathered; R1-R2; Joint Spacing Unknown; Slight to No Discoloration; Strong Cementation; Silty**			
	SC2	100			SC- 2 (4.0-7.0) TUFF; Brown; Fresh to Slightly Weathered; R1; Joint Spacing Unknown;Sample mostly Pulverized by Sampling Method; Slight Discoloration of Pumice Clasts; Strong Cementation of Intact Disks; Silty			SC-2: No HC Odor or Staining. PID-6.0'=60.2 ppm. Sample wet from Drillers using water to cool drill bit and steel.	
5									
	SC3	100			SC- 3 (7.0-9.5) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty; Well Sorted Sand	**7.0 - 15.0 SANDSTONE: Brown; Fresh; R1; Joint Spacing Unknown; No Discoloration; Strong Cementation; Rounded Gravel**		SC-3: No HC Odor or Staining. PID-8.5'=35.4 ppm. 8.5 ft - Gx, Dx, and RRO=BDL	
	SC4	100			SC- 4 (9.5-12.5) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation			SC-4: No HC Odor or Staining. PID-11.0'=57.8	
10									

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
10					of Intact Disks; Silty; Primarily Fine to Medium Sand			ppm.	
	SC5	100			SC- 5 (12.5-15.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty; Primarily Medium Sand; Rounded Gravel			SC-5: No HC Odor or Staining. Contains Rounded Gravel.	
15					(15.0) **Bottom of Hole**	**15.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Dyed Concrete to Abandon Boring. Note: Gx=Gasoline Range Hydrocarbons by NWTPH-Gx method, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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DRILL LOG

OREGON DEPARTMENT OF TRANSPORTATION

		Hole No.	SD13-36
Project US97: J Street Intersection (Madras South Y) Sec. DRAFT	Purpose HazMat Investigation	E.A. No.	CO161601-011
Highway US97: The Dalles California Highway (004)	County Jefferson	Key No.	15409
Hole Location Northing: 8,039,458.86 Easting: 350,503.73		Start Card No.	N/A
Equipment AMS Sonic 17-C	Driller Cascade Drilling	Bridge No.	N/A
Project Geologist Kelly Wood	Recorder Kelly Wood	Ground Elev.	2304.5 ft
Start Date July 25, 2013 / End Date July 25, 2013	Total Depth 15.0 ft	Tube Height	N/A

Test Type
"A" - Auger Core
"X" - Auger
"C" - Core, Barrel Type
"N" - Standard Penetration
"U" - Undisturbed Sample
"T" - Test Pit

Rock Abbreviations

Discontinuity	Shape	Surface Roughness
J - Joint	Pl - Planar	P - Polished
F - Fault	C - Curved	Sl - Slickensided
B - Bedding	U - Undulating	Sm - Smooth
Fo - Foliation	St - Stepped	R - Rough
S - Shear	Ir - Irregular	VR - Very Rough

Typical Drilling Abbreviations

Drilling Methods	Drilling Remarks
WL - Wire Line	LW - Lost Water
HS - Hollow Stem Auger	WR - Water Return
DF - Drill Fluid	WC - Water Color
SA - Solid Auger	DP - Down Pressure
CA - Casing Advancer	DR - Drill Rate
HA - Hand Auger	DA - Drill Action

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description (SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.)	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
0	SC1a	100			SC- 1a (0.0-1.0) ASPHALT/BASE ROCK	**0.0 - 1.0 ASPHALT/BASE ROCK**		SD=Sonic Drill; SC=Sonic Core; HC=Hydrocarbon; PID=Photoionization Detector; PPM=Parts Per Million; Elevated PID readings due to moisture from hot soil samples. SC-1: No HC Odor or Staining. PID-2.8'=68.0 ppm. Water used to cool drill bit and steel.	
	SC1b	100			SC- 1b (1.0-2.5) Silty SAND; SM; Brown; High Plasticity; Est. ~65% Medium to Fine Sand and 35% Fines	**1.0 - 4.0 ALLUVIUM: Silty SAND and Silty SAND with Gravel and Cobbles; SM; Brown and Red; High Plasticity to Nonplastic; Mottled Texture**			
	SC1c	100			SC- 1c (2.5-4.0) Silty SAND with Gravel and Cobbles; SM; Light Brown and Red; Nonplastic to Low Plasticity; Est. ~20% Coarse to Fine Gravel, 45% Coarse to Fine Sand and 35% Fines; Rounded Rhyolite Gravel; Mottled Texture; Weakly to Moderately Cemented				
	SC2a	77			SC- 2a (4.0-6.5) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Coarse to Fine Sand; Trace Fine Gravel	**4.0 - 6.5 SANDSTONE: Brown; Fresh; R1; Jointing Unknown; No Discoloration; Strong Cementation; Trace Gravel**		SC-2: No HC Odor or Staining. PID-6.0'=38.5 ppm.	
5									
	SC2b	77			SC- 2b (6.5-7.5) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Silty; Pumice Clasts	**6.5 - 10.0 TUFF: Brown; Fresh; R1: Joint Spacing Unknown; No Discoloration on Intact Disks; Strong Cementation; Silty; Rounded Gravel**		6.5 ft - Gx-0.13 mg/kg, Dx and RRO=BDL	
	SC3	100			SC- 3 (7.5-10.0) TUFF; Brown; Fresh; R1; Joint Spacing Unknown; No Discoloration; Strong Cementation of Intact Disks; Silty; Rounded Gravel; Pumice Clasts			SC-3: No HC Odor or Staining. PID-9.5'=44.7 ppm.	
10									

Depth (ft)	Test Type, No.	Percent Recovery	Soil: Driving Resistance / Rock: Discontinuity Data Or RQD%	Percent Natural Moisture	Material Description SOIL: Soil Name, USCS, Color, Plasticity, Moisture, Consistency/Relative Density, Texture, Cementation, Structure, Origin. ROCK: Rock Name, Color, Weathering, Hardness, Discontinuity Spacing, Joint Filling, Core Recovery, Formation Name.	Unit Description	Graphic Log	Drilling Methods, Size and Remarks / Water Level/ Date	Backfill/ Instrumentation
10	SC4	100			SC- 4 (10.0-12.5) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Coarse to Fine Sand; Abundant Subrounded Gravel including a Cobble; Contains <30% Coarse to Fine Gravel	**10.0 - 15.0 SANDSTONE: Brown; Fresh; R1; Jointing Unknown; No Discoloration; Strong Cementation; Abundant Subrounded to Rounded Gravel**		SC-4: No HC Odor or Staining. PID-12.0'=57.1 ppm.	
	SC5	100			SC- 5 (12.5-15.0) SANDSTONE; Brown; Fresh; R1; Joint Spacing Unknown; Sample mostly Pulverized by Sampling Method; No Discoloration; Strong Cementation of Intact Disks; Coarse to Fine Sand; Rounded Gravel; Contains <30% Coarse to Fine Gravel			SC-5: No HC Odor or Staining. PID-15.0'=56.6 ppm. 14.5 ft - Gx, Dx, and RRO=BDL	
15					(15.0) **Bottom of Hole**	**15.0** Bottom of Hole		**Bottom of Hole** Used Bentonite Chips and Dyed Concrete to Abandon Boring. Note: Gx=Gasoline Range Hydrocarbons by NWTPH-Gx method, Dx=Diesel Range Hydrocarbons by NWTPH-Dx method, RRO=Residual Range Hydrocarbons by NWTPH-Dx method, BDL=Below Laboratory Detection Limit.	
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25									

Appendix E

Laboratory Analytical Data

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07-0079 C042

State of Oregon Sample Chain of Custody

Agency, Authorized Purchaser or Agent: ODOT

Send Lab Report To: Ryan Franklin
Address: 63034 O.B. Riley Rd. Bend, OR 97701
Tel. #: (541) 388-6088
E-mail: ryan.franklin@odot.state.or.us

Contract Laboratory Name: Environmental Sciences Corporation
Lab Batch #:
Invoice To: Same
Address:
Tel. #:

Lab Selection Criteria:
- ☐ Proximity (if TAT < 48 hrs)
- ☒ Prior work on same project
- ☒ Cost (for anticipated analyses)
- ☐ Other labs disqualified or unable to perform requested services
- ☐ Emergency work

Turn Around Time:
- ☒ 10 days (std.)
- ☐ 5 days
- ☐ 72 hours
- ☐ 48 hours
- ☐ 24 hours
- ☐ Other

Project Name: US97: J Street Intersection (Madras South Y)
Project #: 15409
Sampler Name: Ryan Franklin

Sample ID#	Collection Date/Time	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	VOCs by 8260	PAHs by 8270SIM	SVOCs by 8270	RCRA 8 Metals	PCBs by 8082			Comments
Sample Preservative				None	5035 Kit	None	5035 Kit	None	None	None				
SD13-10-4'	7/22/13 11:41am	S	4				X							648481-01
SD13-10-4.5'	11:45am		1											Hold
SD13-10-8'	11:54am		5											Hold
SD13-10-14'	12:09pm						X							02
SD13-11-5'	12:32pm													Hold
SD13-11-8'	12:46pm						X							03
SD13-11-15'	1:02pm						X							04

Notes: (30-cont)

5547023595 32

Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Ryan Franklin	ODOT	[redacted]	ODOT
Signature:	Time & Date: 7:30pm 7/22/13	Signature:	Time & Date: 07/24/13 11:00am
Relinquished By:	Agency/Agent: ODOT	Received By: FedEx Thomas Chase	Agency/Agent: ESC
Signature:	Time & Date: 07/24/13 11:45am	Signature:	Time & Date: 0930 07/24/13

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT # ▯. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S &C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

3.7°C

Version: 4/4/2008

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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODOT
63055 N. Hwy 97, Bldg M
Bend, OR 97701

Report Summary

Thursday August 01, 2013

Report Number: L648481
Samples Received: 07/25/13
Client Project: 15409

Description: US97: J Street Intersection (Madras South Y)

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: _____

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648481-01

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-10-4 FT

Collected By : Ryan Franklin
Collection Date : 07/22/13 11:41

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	87.0	0.100	%	2540 G-2011	08/01/13	1
Volatile Organics						
Acetone	BDL	0.060	mg/kg	8260B	07/29/13	1.04
Acrylonitrile	BDL	0.012	mg/kg	8260B	07/29/13	1.04
Benzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Bromobenzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Bromodichloromethane	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Bromoform	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Bromomethane	BDL	0.0060	mg/kg	8260B	07/29/13	1.04
n-Butylbenzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
sec-Butylbenzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
tert-Butylbenzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Carbon tetrachloride	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Chlorobenzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Chlorodibromomethane	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Chloroethane	BDL	0.0060	mg/kg	8260B	07/29/13	1.04
2-Chloroethyl vinyl ether	BDL	0.060	mg/kg	8260B	07/29/13	1.04
Chloroform	BDL	0.0060	mg/kg	8260B	07/29/13	1.04
Chloromethane	BDL	0.0030	mg/kg	8260B	07/29/13	1.04
2-Chlorotoluene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
4-Chlorotoluene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,2-Dibromo-3-Chloropropane	BDL	0.0060	mg/kg	8260B	07/29/13	1.04
1,2-Dibromoethane	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Dibromomethane	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,2-Dichlorobenzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,3-Dichlorobenzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,4-Dichlorobenzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Dichlorodifluoromethane	BDL	0.0060	mg/kg	8260B	07/29/13	1.04
1,1-Dichloroethane	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,2-Dichloroethane	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,1-Dichloroethene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
cis-1,2-Dichloroethene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
trans-1,2-Dichloroethene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,2-Dichloropropane	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,1-Dichloropropene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,3-Dichloropropane	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
cis-1,3-Dichloropropene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
trans-1,3-Dichloropropene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
2,2-Dichloropropane	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Di-isopropyl ether	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Ethylbenzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Hexachloro-1,3-butadiene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Isopropylbenzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648481-01

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-10-4 FT

Collected By : Ryan Franklin
Collection Date : 07/22/13 11:41

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
p-Isopropyltoluene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
2-Butanone (MEK)	BDL	0.012	mg/kg	8260B	07/29/13	1.04
Methylene Chloride	BDL	0.0060	mg/kg	8260B	07/29/13	1.04
4-Methyl-2-pentanone (MIBK)	BDL	0.012	mg/kg	8260B	07/29/13	1.04
Methyl tert-butyl ether	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Naphthalene	BDL	0.0060	mg/kg	8260B	07/29/13	1.04
n-Propylbenzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Styrene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,1,1,2-Tetrachloroethane	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,1,2,2-Tetrachloroethane	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,1,2-Trichlorotrifluoroethane	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Tetrachloroethene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Toluene	BDL	0.0060	mg/kg	8260B	07/29/13	1.04
1,2,3-Trichlorobenzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,2,4-Trichlorobenzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,1,1-Trichloroethane	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,1,2-Trichloroethane	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Trichloroethene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Trichlorofluoromethane	BDL	0.0060	mg/kg	8260B	07/29/13	1.04
1,2,3-Trichloropropane	BDL	0.0030	mg/kg	8260B	07/29/13	1.04
1,2,4-Trimethylbenzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,2,3-Trimethylbenzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
1,3,5-Trimethylbenzene	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Vinyl chloride	BDL	0.0012	mg/kg	8260B	07/29/13	1.04
Xylenes, Total	BDL	0.0036	mg/kg	8260B	07/29/13	1.04
Surrogate Recovery						
Toluene-d8	100.		% Rec.	8260B	07/29/13	1.04
Dibromofluoromethane	105.		% Rec.	8260B	07/29/13	1.04
a,a,a-Trifluorotoluene	99.9		% Rec.	8260B	07/29/13	1.04
4-Bromofluorobenzene	95.9		% Rec.	8260B	07/29/13	1.04

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BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648481-02

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-10-14 FT

Collected By : Ryan Franklin
Collection Date : 07/22/13 12:09

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	86.7	0.100	%	2540 G-2011	08/01/13	1
Volatile Organics						
Acetone	BDL	0.060	mg/kg	8260B	07/28/13	1.05
Acrylonitrile	BDL	0.012	mg/kg	8260B	07/28/13	1.05
Benzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Bromobenzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Bromodichloromethane	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Bromoform	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Bromomethane	BDL	0.0060	mg/kg	8260B	07/28/13	1.05
n-Butylbenzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
sec-Butylbenzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
tert-Butylbenzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Carbon tetrachloride	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Chlorobenzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Chlorodibromomethane	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Chloroethane	BDL	0.0060	mg/kg	8260B	07/28/13	1.05
2-Chloroethyl vinyl ether	BDL	0.060	mg/kg	8260B	07/28/13	1.05
Chloroform	BDL	0.0060	mg/kg	8260B	07/28/13	1.05
Chloromethane	BDL	0.0030	mg/kg	8260B	07/28/13	1.05
2-Chlorotoluene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
4-Chlorotoluene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,2-Dibromo-3-Chloropropane	BDL	0.0060	mg/kg	8260B	07/28/13	1.05
1,2-Dibromoethane	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Dibromomethane	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,2-Dichlorobenzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,3-Dichlorobenzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,4-Dichlorobenzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Dichlorodifluoromethane	BDL	0.0060	mg/kg	8260B	07/28/13	1.05
1,1-Dichloroethane	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,2-Dichloroethane	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,1-Dichloroethene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
cis-1,2-Dichloroethene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
trans-1,2-Dichloroethene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,2-Dichloropropane	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,1-Dichloropropene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,3-Dichloropropane	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
cis-1,3-Dichloropropene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
trans-1,3-Dichloropropene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
2,2-Dichloropropane	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Di-isopropyl ether	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Ethylbenzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Hexachloro-1,3-butadiene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Isopropylbenzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648481-02

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-10-14 FT

Collected By : Ryan Franklin
Collection Date : 07/22/13 12:09

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
p-Isopropyltoluene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
2-Butanone (MEK)	BDL	0.012	mg/kg	8260B	07/28/13	1.05
Methylene Chloride	BDL	0.0060	mg/kg	8260B	07/28/13	1.05
4-Methyl-2-pentanone (MIBK)	BDL	0.012	mg/kg	8260B	07/28/13	1.05
Methyl tert-butyl ether	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Naphthalene	BDL	0.0060	mg/kg	8260B	07/28/13	1.05
n-Propylbenzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Styrene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,1,1,2-Tetrachloroethane	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,1,2,2-Tetrachloroethane	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,1,2-Trichlorotrifluoroethane	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Tetrachloroethene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Toluene	BDL	0.0060	mg/kg	8260B	07/28/13	1.05
1,2,3-Trichlorobenzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,2,4-Trichlorobenzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,1,1-Trichloroethane	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,1,2-Trichloroethane	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Trichloroethene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Trichlorofluoromethane	BDL	0.0060	mg/kg	8260B	07/28/13	1.05
1,2,3-Trichloropropane	BDL	0.0030	mg/kg	8260B	07/28/13	1.05
1,2,4-Trimethylbenzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,2,3-Trimethylbenzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
1,3,5-Trimethylbenzene	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Vinyl chloride	BDL	0.0012	mg/kg	8260B	07/28/13	1.05
Xylenes, Total	BDL	0.0036	mg/kg	8260B	07/28/13	1.05
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	07/28/13	1.05
Dibromofluoromethane	103.		% Rec.	8260B	07/28/13	1.05
a,a,a-Trifluorotoluene	102.		% Rec.	8260B	07/28/13	1.05
4-Bromofluorobenzene	94.8		% Rec.	8260B	07/28/13	1.05

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648481-03

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-11-8 FT

Collected By : Ryan Franklin
Collection Date : 07/22/13 12:46

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	73.5	0.100	%	2540 G-2011	08/01/13	1
Volatile Organics						
Acetone	BDL	0.068	mg/kg	8260B	07/28/13	1
Acrylonitrile	BDL	0.014	mg/kg	8260B	07/28/13	1
Benzene	0.0023	0.0014	mg/kg	8260B	07/28/13	1
Bromobenzene	BDL	0.0014	mg/kg	8260B	07/28/13	1
Bromodichloromethane	BDL	0.0014	mg/kg	8260B	07/28/13	1
Bromoform	BDL	0.0014	mg/kg	8260B	07/28/13	1
Bromomethane	BDL	0.0068	mg/kg	8260B	07/28/13	1
n-Butylbenzene	BDL	0.0014	mg/kg	8260B	07/28/13	1
sec-Butylbenzene	BDL	0.0014	mg/kg	8260B	07/28/13	1
tert-Butylbenzene	BDL	0.0014	mg/kg	8260B	07/28/13	1
Carbon tetrachloride	BDL	0.0014	mg/kg	8260B	07/28/13	1
Chlorobenzene	BDL	0.0014	mg/kg	8260B	07/28/13	1
Chlorodibromomethane	BDL	0.0014	mg/kg	8260B	07/28/13	1
Chloroethane	BDL	0.0068	mg/kg	8260B	07/28/13	1
2-Chloroethyl vinyl ether	BDL	0.068	mg/kg	8260B	07/28/13	1
Chloroform	BDL	0.0068	mg/kg	8260B	07/28/13	1
Chloromethane	BDL	0.0034	mg/kg	8260B	07/28/13	1
2-Chlorotoluene	BDL	0.0014	mg/kg	8260B	07/28/13	1
4-Chlorotoluene	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,2-Dibromo-3-Chloropropane	BDL	0.0068	mg/kg	8260B	07/28/13	1
1,2-Dibromoethane	BDL	0.0014	mg/kg	8260B	07/28/13	1
Dibromomethane	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,2-Dichlorobenzene	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,3-Dichlorobenzene	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,4-Dichlorobenzene	BDL	0.0014	mg/kg	8260B	07/28/13	1
Dichlorodifluoromethane	BDL	0.0068	mg/kg	8260B	07/28/13	1
1,1-Dichloroethane	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,2-Dichloroethane	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,1-Dichloroethene	BDL	0.0014	mg/kg	8260B	07/28/13	1
cis-1,2-Dichloroethene	BDL	0.0014	mg/kg	8260B	07/28/13	1
trans-1,2-Dichloroethene	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,2-Dichloropropane	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,1-Dichloropropene	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,3-Dichloropropane	BDL	0.0014	mg/kg	8260B	07/28/13	1
cis-1,3-Dichloropropene	BDL	0.0014	mg/kg	8260B	07/28/13	1
trans-1,3-Dichloropropene	BDL	0.0014	mg/kg	8260B	07/28/13	1
2,2-Dichloropropane	BDL	0.0014	mg/kg	8260B	07/28/13	1
Di-isopropyl ether	BDL	0.0014	mg/kg	8260B	07/28/13	1
Ethylbenzene	BDL	0.0014	mg/kg	8260B	07/28/13	1
Hexachloro-1,3-butadiene	BDL	0.0014	mg/kg	8260B	07/28/13	1
Isopropylbenzene	BDL	0.0014	mg/kg	8260B	07/28/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648481-03

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-11-8 FT

Collected By : Ryan Franklin
Collection Date : 07/22/13 12:46

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
p-Isopropyltoluene	BDL	0.0014	mg/kg	8260B	07/28/13	1
2-Butanone (MEK)	BDL	0.014	mg/kg	8260B	07/28/13	1
Methylene Chloride	BDL	0.0068	mg/kg	8260B	07/28/13	1
4-Methyl-2-pentanone (MIBK)	BDL	0.014	mg/kg	8260B	07/28/13	1
Methyl tert-butyl ether	BDL	0.0014	mg/kg	8260B	07/28/13	1
Naphthalene	BDL	0.0068	mg/kg	8260B	07/28/13	1
n-Propylbenzene	BDL	0.0014	mg/kg	8260B	07/28/13	1
Styrene	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,1,1,2-Tetrachloroethane	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,1,2,2-Tetrachloroethane	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,1,2-Trichlorotrifluoroethane	BDL	0.0014	mg/kg	8260B	07/28/13	1
Tetrachloroethene	BDL	0.0014	mg/kg	8260B	07/28/13	1
Toluene	BDL	0.0068	mg/kg	8260B	07/28/13	1
1,2,3-Trichlorobenzene	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,2,4-Trichlorobenzene	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,1,1-Trichloroethane	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,1,2-Trichloroethane	BDL	0.0014	mg/kg	8260B	07/28/13	1
Trichloroethene	BDL	0.0014	mg/kg	8260B	07/28/13	1
Trichlorofluoromethane	BDL	0.0068	mg/kg	8260B	07/28/13	1
1,2,3-Trichloropropane	BDL	0.0034	mg/kg	8260B	07/28/13	1
1,2,4-Trimethylbenzene	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,2,3-Trimethylbenzene	BDL	0.0014	mg/kg	8260B	07/28/13	1
1,3,5-Trimethylbenzene	BDL	0.0014	mg/kg	8260B	07/28/13	1
Vinyl chloride	BDL	0.0014	mg/kg	8260B	07/28/13	1
Xylenes, Total	BDL	0.0041	mg/kg	8260B	07/28/13	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	07/28/13	1
Dibromofluoromethane	102.		% Rec.	8260B	07/28/13	1
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	07/28/13	1
4-Bromofluorobenzene	97.8		% Rec.	8260B	07/28/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648481-04

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-11-15 FT

Collected By : Ryan Franklin
Collection Date : 07/22/13 13:02

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	91.9	0.100	%	2540 G-2011	08/01/13	1
Volatile Organics						
Acetone	BDL	0.054	mg/kg	8260B	07/28/13	1
Acrylonitrile	BDL	0.011	mg/kg	8260B	07/28/13	1
Benzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromodichloromethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromoform	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromomethane	BDL	0.0054	mg/kg	8260B	07/28/13	1
n-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
sec-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
tert-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Carbon tetrachloride	BDL	0.0011	mg/kg	8260B	07/28/13	1
Chlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Chlorodibromomethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Chloroethane	BDL	0.0054	mg/kg	8260B	07/28/13	1
2-Chloroethyl vinyl ether	BDL	0.054	mg/kg	8260B	07/28/13	1
Chloroform	BDL	0.0054	mg/kg	8260B	07/28/13	1
Chloromethane	BDL	0.0027	mg/kg	8260B	07/28/13	1
2-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1
4-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dibromo-3-Chloropropane	BDL	0.0054	mg/kg	8260B	07/28/13	1
1,2-Dibromoethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Dibromomethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,3-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,4-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Dichlorodifluoromethane	BDL	0.0054	mg/kg	8260B	07/28/13	1
1,1-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
cis-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
trans-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,3-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1
cis-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1
trans-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1
2,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Di-isopropyl ether	BDL	0.0011	mg/kg	8260B	07/28/13	1
Ethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Hexachloro-1,3-butadiene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Isopropylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648481-04

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-11-15 FT

Collected By : Ryan Franklin
Collection Date : 07/22/13 13:02

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
p-Isopropyltoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1
2-Butanone (MEK)	BDL	0.011	mg/kg	8260B	07/28/13	1
Methylene Chloride	BDL	0.0054	mg/kg	8260B	07/28/13	1
4-Methyl-2-pentanone (MIBK)	BDL	0.011	mg/kg	8260B	07/28/13	1
Methyl tert-butyl ether	BDL	0.0011	mg/kg	8260B	07/28/13	1
Naphthalene	BDL	0.0054	mg/kg	8260B	07/28/13	1
n-Propylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Styrene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,1,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,2,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,2-Trichlorotrifluoroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Tetrachloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Toluene	BDL	0.0054	mg/kg	8260B	07/28/13	1
1,2,3-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2,4-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,1-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,2-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Trichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Trichlorofluoromethane	BDL	0.0054	mg/kg	8260B	07/28/13	1
1,2,3-Trichloropropane	BDL	0.0027	mg/kg	8260B	07/28/13	1
1,2,4-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2,3-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,3,5-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Vinyl chloride	BDL	0.0011	mg/kg	8260B	07/28/13	1
Xylenes, Total	BDL	0.0033	mg/kg	8260B	07/28/13	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	07/28/13	1
Dibromofluoromethane	103.		% Rec.	8260B	07/28/13	1
a,a,a-Trifluorotoluene	102.		% Rec.	8260B	07/28/13	1
4-Bromofluorobenzene	94.1		% Rec.	8260B	07/28/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L648481-02	WG674216	SAMP	2-Chloroethyl vinyl ether	R2759473	J3
L648481-03	WG674216	SAMP	2-Chloroethyl vinyl ether	R2759473	J3
L648481-04	WG674216	SAMP	2-Chloroethyl vinyl ether	R2759473	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

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Ryan Franklin (ODOT)
63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648481

August 01, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG674216	07/28/13 15:57
1,1,1-Trichloroethane	< .001	mg/kg			WG674216	07/28/13 15:57
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG674216	07/28/13 15:57
1,1,2-Trichloroethane	< .001	mg/kg			WG674216	07/28/13 15:57
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG674216	07/28/13 15:57
1,1-Dichloroethane	< .001	mg/kg			WG674216	07/28/13 15:57
1,1-Dichloroethene	< .001	mg/kg			WG674216	07/28/13 15:57
1,1-Dichloropropene	< .001	mg/kg			WG674216	07/28/13 15:57
1,2,3-Trichlorobenzene	< .001	mg/kg			WG674216	07/28/13 15:57
1,2,3-Trichloropropane	< .0025	mg/kg			WG674216	07/28/13 15:57
1,2,3-Trimethylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
1,2,4-Trichlorobenzene	< .001	mg/kg			WG674216	07/28/13 15:57
1,2,4-Trimethylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG674216	07/28/13 15:57
1,2-Dibromoethane	< .001	mg/kg			WG674216	07/28/13 15:57
1,2-Dichlorobenzene	< .001	mg/kg			WG674216	07/28/13 15:57
1,2-Dichloroethane	< .001	mg/kg			WG674216	07/28/13 15:57
1,2-Dichloropropane	< .001	mg/kg			WG674216	07/28/13 15:57
1,3,5-Trimethylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
1,3-Dichlorobenzene	< .001	mg/kg			WG674216	07/28/13 15:57
1,3-Dichloropropane	< .001	mg/kg			WG674216	07/28/13 15:57
1,4-Dichlorobenzene	< .001	mg/kg			WG674216	07/28/13 15:57
2,2-Dichloropropane	< .001	mg/kg			WG674216	07/28/13 15:57
2-Butanone (MEK)	< .01	mg/kg			WG674216	07/28/13 15:57
2-Chloroethyl vinyl ether	< .05	mg/kg			WG674216	07/28/13 15:57
2-Chlorotoluene	< .001	mg/kg			WG674216	07/28/13 15:57
4-Chlorotoluene	< .001	mg/kg			WG674216	07/28/13 15:57
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG674216	07/28/13 15:57
Acetone	< .05	mg/kg			WG674216	07/28/13 15:57
Acrylonitrile	< .01	mg/kg			WG674216	07/28/13 15:57
Benzene	< .001	mg/kg			WG674216	07/28/13 15:57
Bromobenzene	< .001	mg/kg			WG674216	07/28/13 15:57
Bromodichloromethane	< .001	mg/kg			WG674216	07/28/13 15:57
Bromoform	< .001	mg/kg			WG674216	07/28/13 15:57
Bromomethane	< .005	mg/kg			WG674216	07/28/13 15:57
Carbon tetrachloride	< .001	mg/kg			WG674216	07/28/13 15:57
Chlorobenzene	< .001	mg/kg			WG674216	07/28/13 15:57
Chlorodibromomethane	< .001	mg/kg			WG674216	07/28/13 15:57
Chloroethane	< .005	mg/kg			WG674216	07/28/13 15:57
Chloroform	< .005	mg/kg			WG674216	07/28/13 15:57
Chloromethane	< .0025	mg/kg			WG674216	07/28/13 15:57
cis-1,2-Dichloroethene	< .001	mg/kg			WG674216	07/28/13 15:57
cis-1,3-Dichloropropene	< .001	mg/kg			WG674216	07/28/13 15:57
Di-isopropyl ether	< .001	mg/kg			WG674216	07/28/13 15:57
Dibromomethane	< .001	mg/kg			WG674216	07/28/13 15:57
Dichlorodifluoromethane	< .005	mg/kg			WG674216	07/28/13 15:57
Ethylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
Hexachloro-1,3-butadiene	< .001	mg/kg			WG674216	07/28/13 15:57
Isopropylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
Methyl tert-butyl ether	< .001	mg/kg			WG674216	07/28/13 15:57
Methylene Chloride	< .005	mg/kg			WG674216	07/28/13 15:57
n-Butylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
n-Propylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
Naphthalene	< .005	mg/kg			WG674216	07/28/13 15:57
p-Isopropyltoluene	< .001	mg/kg			WG674216	07/28/13 15:57
sec-Butylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
Styrene	< .001	mg/kg			WG674216	07/28/13 15:57
tert-Butylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
Tetrachloroethene	< .001	mg/kg			WG674216	07/28/13 15:57

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Bend, OR 97701

Quality Assurance Report
Level II

L648481

August 01, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Toluene	< .005	mg/kg			WG674216	07/28/13 15:57
trans-1,2-Dichloroethene	< .001	mg/kg			WG674216	07/28/13 15:57
trans-1,3-Dichloropropene	< .001	mg/kg			WG674216	07/28/13 15:57
Trichloroethene	< .001	mg/kg			WG674216	07/28/13 15:57
Trichlorofluoromethane	< .005	mg/kg			WG674216	07/28/13 15:57
Vinyl chloride	< .001	mg/kg			WG674216	07/28/13 15:57
Xylenes, Total	< .003	mg/kg			WG674216	07/28/13 15:57
4-Bromofluorobenzene		% Rec.	95.44	67-133	WG674216	07/28/13 15:57
Dibromofluoromethane		% Rec.	99.17	72-135	WG674216	07/28/13 15:57
Toluene-d8		% Rec.	100.2	90-113	WG674216	07/28/13 15:57
a,a,a-Trifluorotoluene		% Rec.	103.1	89-115	WG674216	07/28/13 15:57
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG674338	07/29/13 15:10
1,1,1-Trichloroethane	< .001	mg/kg			WG674338	07/29/13 15:10
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG674338	07/29/13 15:10
1,1,2-Trichloroethane	< .001	mg/kg			WG674338	07/29/13 15:10
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG674338	07/29/13 15:10
1,1-Dichloroethane	< .001	mg/kg			WG674338	07/29/13 15:10
1,1-Dichloroethene	< .001	mg/kg			WG674338	07/29/13 15:10
1,1-Dichloropropene	< .001	mg/kg			WG674338	07/29/13 15:10
1,2,3-Trichlorobenzene	< .001	mg/kg			WG674338	07/29/13 15:10
1,2,3-Trichloropropane	< .0025	mg/kg			WG674338	07/29/13 15:10
1,2,3-Trimethylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
1,2,4-Trichlorobenzene	< .001	mg/kg			WG674338	07/29/13 15:10
1,2,4-Trimethylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG674338	07/29/13 15:10
1,2-Dibromoethane	< .001	mg/kg			WG674338	07/29/13 15:10
1,2-Dichlorobenzene	< .001	mg/kg			WG674338	07/29/13 15:10
1,2-Dichloroethane	< .001	mg/kg			WG674338	07/29/13 15:10
1,2-Dichloropropane	< .001	mg/kg			WG674338	07/29/13 15:10
1,3,5-Trimethylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
1,3-Dichlorobenzene	< .001	mg/kg			WG674338	07/29/13 15:10
1,3-Dichloropropane	< .001	mg/kg			WG674338	07/29/13 15:10
1,4-Dichlorobenzene	< .001	mg/kg			WG674338	07/29/13 15:10
2,2-Dichloropropane	< .001	mg/kg			WG674338	07/29/13 15:10
2-Butanone (MEK)	< .01	mg/kg			WG674338	07/29/13 15:10
2-Chloroethyl vinyl ether	< .05	mg/kg			WG674338	07/29/13 15:10
2-Chlorotoluene	< .001	mg/kg			WG674338	07/29/13 15:10
4-Chlorotoluene	< .001	mg/kg			WG674338	07/29/13 15:10
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG674338	07/29/13 15:10
Acetone	< .05	mg/kg			WG674338	07/29/13 15:10
Acrylonitrile	< .01	mg/kg			WG674338	07/29/13 15:10
Benzene	< .001	mg/kg			WG674338	07/29/13 15:10
Bromobenzene	< .001	mg/kg			WG674338	07/29/13 15:10
Bromodichloromethane	< .001	mg/kg			WG674338	07/29/13 15:10
Bromoform	< .001	mg/kg			WG674338	07/29/13 15:10
Bromomethane	< .005	mg/kg			WG674338	07/29/13 15:10
Carbon tetrachloride	< .001	mg/kg			WG674338	07/29/13 15:10
Chlorobenzene	< .001	mg/kg			WG674338	07/29/13 15:10
Chlorodibromomethane	< .001	mg/kg			WG674338	07/29/13 15:10
Chloroethane	< .005	mg/kg			WG674338	07/29/13 15:10
Chloroform	< .005	mg/kg			WG674338	07/29/13 15:10
Chloromethane	< .0025	mg/kg			WG674338	07/29/13 15:10
cis-1,2-Dichloroethene	< .001	mg/kg			WG674338	07/29/13 15:10
cis-1,3-Dichloropropene	< .001	mg/kg			WG674338	07/29/13 15:10
Di-isopropyl ether	< .001	mg/kg			WG674338	07/29/13 15:10
Dibromomethane	< .001	mg/kg			WG674338	07/29/13 15:10
Dichlorodifluoromethane	< .005	mg/kg			WG674338	07/29/13 15:10

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Est. 1970

Oregon Dept of Transportation - ODOT
Ryan Franklin (ODOT)
63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648481

August 01, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Ethylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
Hexachloro-1,3-butadiene	< .001	mg/kg			WG674338	07/29/13 15:10
Isopropylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
Methyl tert-butyl ether	< .001	mg/kg			WG674338	07/29/13 15:10
Methylene Chloride	< .005	mg/kg			WG674338	07/29/13 15:10
n-Butylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
n-Propylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
Naphthalene	< .005	mg/kg			WG674338	07/29/13 15:10
p-Isopropyltoluene	< .001	mg/kg			WG674338	07/29/13 15:10
sec-Butylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
Styrene	< .001	mg/kg			WG674338	07/29/13 15:10
tert-Butylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
Tetrachloroethene	< .001	mg/kg			WG674338	07/29/13 15:10
Toluene	< .005	mg/kg			WG674338	07/29/13 15:10
trans-1,2-Dichloroethene	< .001	mg/kg			WG674338	07/29/13 15:10
trans-1,3-Dichloropropene	< .001	mg/kg			WG674338	07/29/13 15:10
Trichloroethene	< .001	mg/kg			WG674338	07/29/13 15:10
Trichlorofluoromethane	< .005	mg/kg			WG674338	07/29/13 15:10
Vinyl chloride	< .001	mg/kg			WG674338	07/29/13 15:10
Xylenes, Total	< .003	mg/kg			WG674338	07/29/13 15:10
4-Bromofluorobenzene		% Rec.	96.01	67-133	WG674338	07/29/13 15:10
Dibromofluoromethane		% Rec.	97.07	72-135	WG674338	07/29/13 15:10
Toluene-d8		% Rec.	98.58	90-113	WG674338	07/29/13 15:10
a,a,a-Trifluorotoluene		% Rec.	99.71	89-115	WG674338	07/29/13 15:10
Total Solids	< .1	%			WG674670	08/01/13 07:47

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Total Solids	%	80.0	80.8	1.38	5	L648479-02	WG674670

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0248	99.2	77-129	WG674216
1,1,1-Trichloroethane	mg/kg	.025	0.0262	105.	70-127	WG674216
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0247	99.0	76-133	WG674216
1,1,2-Trichloroethane	mg/kg	.025	0.0250	100.	79-123	WG674216
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0287	115.	52-145	WG674216
1,1-Dichloroethane	mg/kg	.025	0.0273	109.	74-121	WG674216
1,1-Dichloroethene	mg/kg	.025	0.0259	104.	53-135	WG674216
1,1-Dichloropropene	mg/kg	.025	0.0268	107.	67-127	WG674216
1,2,3-Trichlorobenzene	mg/kg	.025	0.0261	104.	74-131	WG674216
1,2,3-Trichloropropane	mg/kg	.025	0.0250	100.	75-135	WG674216
1,2,3-Trimethylbenzene	mg/kg	.025	0.0237	94.6	76-128	WG674216
1,2,4-Trichlorobenzene	mg/kg	.025	0.0280	112.	72-130	WG674216
1,2,4-Trimethylbenzene	mg/kg	.025	0.0255	102.	75-131	WG674216
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0262	105.	55-142	WG674216
1,2-Dibromoethane	mg/kg	.025	0.0249	99.7	77-126	WG674216
1,2-Dichlorobenzene	mg/kg	.025	0.0249	99.7	80-123	WG674216
1,2-Dichloroethane	mg/kg	.025	0.0261	105.	70-128	WG674216
1,2-Dichloropropane	mg/kg	.025	0.0271	108.	74-125	WG674216
1,3,5-Trimethylbenzene	mg/kg	.025	0.0256	102.	77-129	WG674216
1,3-Dichlorobenzene	mg/kg	.025	0.0257	103.	76-128	WG674216
1,3-Dichloropropane	mg/kg	.025	0.0250	100.	77-118	WG674216
1,4-Dichlorobenzene	mg/kg	.025	0.0247	98.8	77-119	WG674216
2,2-Dichloropropane	mg/kg	.025	0.0264	106.	60-132	WG674216

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Quality Assurance Report
Level II

L648481

August 01, 2013

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
2-Butanone (MEK)	mg/kg	.125	0.147	118.	56-146	WG674216
2-Chloroethyl vinyl ether	mg/kg	.125	0.0751	60.1	17-179	WG674216
2-Chlorotoluene	mg/kg	.025	0.0248	99.1	76-125	WG674216
4-Chlorotoluene	mg/kg	.025	0.0248	99.2	76-125	WG674216
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.145	116.	55-148	WG674216
Acetone	mg/kg	.125	0.137	110.	47-155	WG674216
Acrylonitrile	mg/kg	.125	0.138	110.	50-155	WG674216
Benzene	mg/kg	.025	0.0264	106.	72-120	WG674216
Bromobenzene	mg/kg	.025	0.0248	99.4	74-122	WG674216
Bromodichloromethane	mg/kg	.025	0.0252	101.	74-128	WG674216
Bromoform	mg/kg	.025	0.0262	105.	62-137	WG674216
Bromomethane	mg/kg	.025	0.0288	115.	38-180	WG674216
Carbon tetrachloride	mg/kg	.025	0.0271	108.	62-130	WG674216
Chlorobenzene	mg/kg	.025	0.0248	99.2	77-124	WG674216
Chlorodibromomethane	mg/kg	.025	0.0247	98.9	74-128	WG674216
Chloroethane	mg/kg	.025	0.0303	121.	46-173	WG674216
Chloroform	mg/kg	.025	0.0267	107.	76-122	WG674216
Chloromethane	mg/kg	.025	0.0296	119.	49-143	WG674216
cis-1,2-Dichloroethene	mg/kg	.025	0.0265	106.	73-123	WG674216
cis-1,3-Dichloropropene	mg/kg	.025	0.0266	106.	73-126	WG674216
Di-isopropyl ether	mg/kg	.025	0.0280	112.	64-131	WG674216
Dibromomethane	mg/kg	.025	0.0267	107.	75-127	WG674216
Dichlorodifluoromethane	mg/kg	.025	0.0275	110.	30-177	WG674216
Ethylbenzene	mg/kg	.025	0.0249	99.5	76-126	WG674216
Hexachloro-1,3-butadiene	mg/kg	.025	0.0252	101.	71-134	WG674216
Isopropylbenzene	mg/kg	.025	0.0276	110.	70-128	WG674216
Methyl tert-butyl ether	mg/kg	.025	0.0272	109.	66-127	WG674216
Methylene Chloride	mg/kg	.025	0.0255	102.	67-124	WG674216
n-Butylbenzene	mg/kg	.025	0.0264	106.	71-133	WG674216
n-Propylbenzene	mg/kg	.025	0.0259	104.	76-126	WG674216
Naphthalene	mg/kg	.025	0.0270	108.	68-136	WG674216
p-Isopropyltoluene	mg/kg	.025	0.0267	107.	75-134	WG674216
sec-Butylbenzene	mg/kg	.025	0.0264	106.	75-132	WG674216
Styrene	mg/kg	.025	0.0263	105.	68-148	WG674216
tert-Butylbenzene	mg/kg	.025	0.0262	105.	75-132	WG674216
Tetrachloroethene	mg/kg	.025	0.0249	99.6	70-131	WG674216
Toluene	mg/kg	.025	0.0259	104.	74-155	WG674216
trans-1,2-Dichloroethene	mg/kg	.025	0.0258	103.	63-126	WG674216
trans-1,3-Dichloropropene	mg/kg	.025	0.0264	105.	68-126	WG674216
Trichloroethene	mg/kg	.025	0.0261	104.	75-121	WG674216
Trichlorofluoromethane	mg/kg	.025	0.0276	111.	48-170	WG674216
Vinyl chloride	mg/kg	.025	0.0287	115.	54-144	WG674216
Xylenes, Total	mg/kg	.075	0.0758	101.	76-126	WG674216
4-Bromofluorobenzene				94.27	67-133	WG674216
Dibromofluoromethane				102.1	72-135	WG674216
Toluene-d8				101.6	90-113	WG674216
a,a,a-Trifluorotoluene				102.1	89-115	WG674216
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0233	93.0	77-129	WG674338
1,1,1-Trichloroethane	mg/kg	.025	0.0246	98.3	70-127	WG674338
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0240	95.9	76-133	WG674338
1,1,2-Trichloroethane	mg/kg	.025	0.0247	98.8	79-123	WG674338
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0290	116.	52-145	WG674338
1,1-Dichloroethane	mg/kg	.025	0.0266	106.	74-121	WG674338
1,1-Dichloroethene	mg/kg	.025	0.0259	104.	53-135	WG674338
1,1-Dichloropropene	mg/kg	.025	0.0267	107.	67-127	WG674338
1,2,3-Trichlorobenzene	mg/kg	.025	0.0276	110.	74-131	WG674338
1,2,3-Trichloropropane	mg/kg	.025	0.0263	105.	75-135	WG674338

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Quality Assurance Report
Level II

L648481

August 01, 2013

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
1,2,3-Trimethylbenzene	mg/kg	.025	0.0237	94.8	76-128	WG674338
1,2,4-Trichlorobenzene	mg/kg	.025	0.0286	114.	72-130	WG674338
1,2,4-Trimethylbenzene	mg/kg	.025	0.0245	97.9	75-131	WG674338
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0244	97.8	55-142	WG674338
1,2-Dibromoethane	mg/kg	.025	0.0256	102.	77-126	WG674338
1,2-Dichlorobenzene	mg/kg	.025	0.0261	105.	80-123	WG674338
1,2-Dichloroethane	mg/kg	.025	0.0263	105.	70-128	WG674338
1,2-Dichloropropane	mg/kg	.025	0.0260	104.	74-125	WG674338
1,3,5-Trimethylbenzene	mg/kg	.025	0.0247	99.0	77-129	WG674338
1,3-Dichlorobenzene	mg/kg	.025	0.0253	101.	76-128	WG674338
1,3-Dichloropropane	mg/kg	.025	0.0250	99.8	77-118	WG674338
1,4-Dichlorobenzene	mg/kg	.025	0.0258	103.	77-119	WG674338
2,2-Dichloropropane	mg/kg	.025	0.0253	101.	60-132	WG674338
2-Butanone (MEK)	mg/kg	.125	0.147	118.	56-146	WG674338
2-Chloroethyl vinyl ether	mg/kg	.125	0.169	135.	17-179	WG674338
2-Chlorotoluene	mg/kg	.025	0.0246	98.5	76-125	WG674338
4-Chlorotoluene	mg/kg	.025	0.0244	97.7	76-125	WG674338
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.134	107.	55-148	WG674338
Acetone	mg/kg	.125	0.156	125.	47-155	WG674338
Acrylonitrile	mg/kg	.125	0.125	100.	50-155	WG674338
Benzene	mg/kg	.025	0.0267	107.	72-120	WG674338
Bromobenzene	mg/kg	.025	0.0240	96.1	74-122	WG674338
Bromodichloromethane	mg/kg	.025	0.0242	96.7	74-128	WG674338
Bromoform	mg/kg	.025	0.0239	95.8	62-137	WG674338
Bromomethane	mg/kg	.025	0.0247	98.9	38-180	WG674338
Carbon tetrachloride	mg/kg	.025	0.0248	99.0	62-130	WG674338
Chlorobenzene	mg/kg	.025	0.0244	97.6	77-124	WG674338
Chlorodibromomethane	mg/kg	.025	0.0234	93.5	74-128	WG674338
Chloroethane	mg/kg	.025	0.0257	103.	46-173	WG674338
Chloroform	mg/kg	.025	0.0257	103.	76-122	WG674338
Chloromethane	mg/kg	.025	0.0262	105.	49-143	WG674338
cis-1,2-Dichloroethene	mg/kg	.025	0.0267	107.	73-123	WG674338
cis-1,3-Dichloropropene	mg/kg	.025	0.0253	101.	73-126	WG674338
Di-isopropyl ether	mg/kg	.025	0.0266	106.	64-131	WG674338
Dibromomethane	mg/kg	.025	0.0266	107.	75-127	WG674338
Dichlorodifluoromethane	mg/kg	.025	0.0276	110.	30-177	WG674338
Ethylbenzene	mg/kg	.025	0.0243	97.3	76-126	WG674338
Hexachloro-1,3-butadiene	mg/kg	.025	0.0234	93.5	71-134	WG674338
Isopropylbenzene	mg/kg	.025	0.0265	106.	70-128	WG674338
Methyl tert-butyl ether	mg/kg	.025	0.0267	107.	66-127	WG674338
Methylene Chloride	mg/kg	.025	0.0268	107.	67-124	WG674338
n-Butylbenzene	mg/kg	.025	0.0262	105.	71-133	WG674338
n-Propylbenzene	mg/kg	.025	0.0248	99.2	76-126	WG674338
Naphthalene	mg/kg	.025	0.0279	112.	68-136	WG674338
p-Isopropyltoluene	mg/kg	.025	0.0248	99.3	75-134	WG674338
sec-Butylbenzene	mg/kg	.025	0.0242	97.0	75-132	WG674338
Styrene	mg/kg	.025	0.0262	105.	68-148	WG674338
tert-Butylbenzene	mg/kg	.025	0.0243	97.2	75-132	WG674338
Tetrachloroethene	mg/kg	.025	0.0247	98.9	70-131	WG674338
Toluene	mg/kg	.025	0.0251	101.	74-155	WG674338
trans-1,2-Dichloroethene	mg/kg	.025	0.0263	105.	63-126	WG674338
trans-1,3-Dichloropropene	mg/kg	.025	0.0239	95.6	68-126	WG674338
Trichloroethene	mg/kg	.025	0.0254	101.	75-121	WG674338
Trichlorofluoromethane	mg/kg	.025	0.0255	102.	48-170	WG674338
Vinyl chloride	mg/kg	.025	0.0270	108.	54-144	WG674338
Xylenes, Total	mg/kg	.075	0.0738	98.3	76-126	WG674338
4-Bromofluorobenzene				97.08	67-133	WG674338
Dibromofluoromethane				100.5	72-135	WG674338
Toluene-d8				100.4	90-113	WG674338

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Quality Assurance Report
Level II

L648481

August 01, 2013

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
a,a,a-Trifluorotoluene				100.8	89-115	
Total Solids	%	50	50.1	100.	85-115	WG674670

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.0255	0.0248	102.	77-129	2.94	20	WG674216
1,1,1-Trichloroethane	mg/kg	0.0269	0.0262	108.	70-127	2.89	20	WG674216
1,1,2,2-Tetrachloroethane	mg/kg	0.0244	0.0247	98.0	76-133	1.42	20	WG674216
1,1,2-Trichloroethane	mg/kg	0.0246	0.0250	98.0	79-123	1.88	20	WG674216
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0287	0.0287	115.	52-145	0.250	20	WG674216
1,1-Dichloroethane	mg/kg	0.0275	0.0273	110.	74-121	0.610	20	WG674216
1,1-Dichloroethene	mg/kg	0.0268	0.0259	107.	53-135	3.24	20	WG674216
1,1-Dichloropropene	mg/kg	0.0269	0.0268	108.	67-127	0.540	20	WG674216
1,2,3-Trichlorobenzene	mg/kg	0.0271	0.0261	108.	74-131	3.79	20	WG674216
1,2,3-Trichloropropane	mg/kg	0.0246	0.0250	98.0	75-135	1.75	20	WG674216
1,2,3-Trimethylbenzene	mg/kg	0.0244	0.0237	98.0	76-128	3.03	20	WG674216
1,2,4-Trichlorobenzene	mg/kg	0.0285	0.0280	114.	72-130	1.81	20	WG674216
1,2,4-Trimethylbenzene	mg/kg	0.0266	0.0255	106.	75-131	4.23	20	WG674216
1,2-Dibromo-3-Chloropropane	mg/kg	0.0256	0.0262	102.	55-142	2.38	20	WG674216
1,2-Dibromoethane	mg/kg	0.0247	0.0249	99.0	77-126	1.02	20	WG674216
1,2-Dichlorobenzene	mg/kg	0.0254	0.0249	102.	80-123	2.06	20	WG674216
1,2-Dichloroethane	mg/kg	0.0255	0.0261	102.	70-128	2.42	20	WG674216
1,2-Dichloropropane	mg/kg	0.0272	0.0271	109.	74-125	0.500	20	WG674216
1,3,5-Trimethylbenzene	mg/kg	0.0268	0.0256	107.	77-129	4.39	20	WG674216
1,3-Dichlorobenzene	mg/kg	0.0260	0.0257	104.	76-128	1.36	20	WG674216
1,3-Dichloropropane	mg/kg	0.0247	0.0250	99.0	77-118	1.23	20	WG674216
1,4-Dichlorobenzene	mg/kg	0.0250	0.0247	100.	77-119	1.12	20	WG674216
2,2-Dichloropropane	mg/kg	0.0271	0.0264	108.	60-132	2.56	20	WG674216
2-Butanone (MEK)	mg/kg	0.135	0.147	108.	56-146	8.29	20	WG674216
2-Chloroethyl vinyl ether	mg/kg	0.111	0.0751	89.0	17-179	38.8*	22	WG674216
2-Chlorotoluene	mg/kg	0.0261	0.0248	104.	76-125	5.26	20	WG674216
4-Chlorotoluene	mg/kg	0.0260	0.0248	104.	76-125	4.62	20	WG674216
4-Methyl-2-pentanone (MIBK)	mg/kg	0.138	0.145	111.	55-148	4.65	20	WG674216
Acetone	mg/kg	0.129	0.137	103.	47-155	6.68	22	WG674216
Acrylonitrile	mg/kg	0.129	0.138	103.	50-155	6.80	20	WG674216
Benzene	mg/kg	0.0266	0.0264	106.	72-120	0.640	20	WG674216
Bromobenzene	mg/kg	0.0252	0.0248	101.	74-122	1.52	20	WG674216
Bromodichloromethane	mg/kg	0.0256	0.0252	102.	74-128	1.53	20	WG674216
Bromoform	mg/kg	0.0258	0.0262	103.	62-137	1.62	20	WG674216
Bromomethane	mg/kg	0.0302	0.0288	121.	38-180	4.72	20	WG674216
Carbon tetrachloride	mg/kg	0.0276	0.0271	110.	62-130	1.72	20	WG674216
Chlorobenzene	mg/kg	0.0251	0.0248	100.	77-124	1.06	20	WG674216
Chlorodibromomethane	mg/kg	0.0250	0.0247	100.	74-128	1.03	20	WG674216
Chloroethane	mg/kg	0.0301	0.0303	120.	46-173	0.360	20	WG674216
Chloroform	mg/kg	0.0266	0.0267	106.	76-122	0.270	20	WG674216
Chloromethane	mg/kg	0.0295	0.0296	118.	49-143	0.480	20	WG674216
cis-1,2-Dichloroethene	mg/kg	0.0267	0.0265	107.	73-123	0.600	20	WG674216
cis-1,3-Dichloropropene	mg/kg	0.0267	0.0266	107.	73-126	0.400	20	WG674216
Di-isopropyl ether	mg/kg	0.0278	0.0280	111.	64-131	0.680	20	WG674216
Dibromomethane	mg/kg	0.0265	0.0267	106.	75-127	0.750	20	WG674216
Dichlorodifluoromethane	mg/kg	0.0277	0.0275	111.	30-177	0.910	20	WG674216
Ethylbenzene	mg/kg	0.0258	0.0249	103.	76-126	3.49	20	WG674216
Hexachloro-1,3-butadiene	mg/kg	0.0251	0.0252	100.	71-134	0.700	20	WG674216
Isopropylbenzene	mg/kg	0.0287	0.0276	115.	70-128	3.99	20	WG674216
Methyl tert-butyl ether	mg/kg	0.0268	0.0272	107.	66-127	1.54	20	WG674216
Methylene Chloride	mg/kg	0.0256	0.0255	102.	67-124	0.660	20	WG674216
n-Butylbenzene	mg/kg	0.0271	0.0264	108.	71-133	2.41	20	WG674216
n-Propylbenzene	mg/kg	0.0270	0.0259	108.	76-126	3.83	20	WG674216

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Ryan Franklin (ODOT)
63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648481

August 01, 2013

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Naphthalene	mg/kg	0.0270	0.0270	108.	68-136	0.0200	20	WG674216
p-Isopropyltoluene	mg/kg	0.0282	0.0267	113.	75-134	5.25	20	WG674216
sec-Butylbenzene	mg/kg	0.0278	0.0264	111.	75-132	4.92	20	WG674216
Styrene	mg/kg	0.0272	0.0263	109.	68-148	3.17	20	WG674216
tert-Butylbenzene	mg/kg	0.0275	0.0262	110.	75-132	4.87	20	WG674216
Tetrachloroethene	mg/kg	0.0261	0.0249	104.	70-131	4.60	20	WG674216
Toluene	mg/kg	0.0263	0.0259	105.	74-155	1.39	20	WG674216
trans-1,2-Dichloroethene	mg/kg	0.0262	0.0258	105.	63-126	1.47	20	WG674216
trans-1,3-Dichloropropene	mg/kg	0.0269	0.0264	108.	68-126	2.09	20	WG674216
Trichloroethene	mg/kg	0.0267	0.0261	107.	75-121	2.16	20	WG674216
Trichlorofluoromethane	mg/kg	0.0279	0.0276	111.	48-170	0.770	20	WG674216
Vinyl chloride	mg/kg	0.0294	0.0287	118.	54-144	2.53	20	WG674216
Xylenes, Total	mg/kg	0.0781	0.0758	104.	76-126	3.11	20	WG674216
4-Bromofluorobenzene				97.26	67-133			WG674216
Dibromofluoromethane				99.71	72-135			WG674216
Toluene-d8				101.7	90-113			WG674216
a,a,a-Trifluorotoluene				103.6	89-115			WG674216
1,1,1,2-Tetrachloroethane	mg/kg	0.0242	0.0233	97.0	77-129	3.85	20	WG674338
1,1,1-Trichloroethane	mg/kg	0.0256	0.0246	102.	70-127	4.25	20	WG674338
1,1,2,2-Tetrachloroethane	mg/kg	0.0258	0.0240	103.	76-133	7.31	20	WG674338
1,1,2-Trichloroethane	mg/kg	0.0251	0.0247	100.	79-123	1.74	20	WG674338
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0287	0.0290	115.	52-145	0.790	20	WG674338
1,1-Dichloroethane	mg/kg	0.0271	0.0266	108.	74-121	1.70	20	WG674338
1,1-Dichloroethene	mg/kg	0.0263	0.0259	105.	53-135	1.40	20	WG674338
1,1-Dichloropropene	mg/kg	0.0263	0.0267	105.	67-127	1.41	20	WG674338
1,2,3-Trichlorobenzene	mg/kg	0.0284	0.0276	114.	74-131	2.97	20	WG674338
1,2,3-Trichloropropane	mg/kg	0.0283	0.0263	113.	75-135	7.15	20	WG674338
1,2,3-Trimethylbenzene	mg/kg	0.0237	0.0237	95.0	76-128	0.140	20	WG674338
1,2,4-Trichlorobenzene	mg/kg	0.0294	0.0286	117.	72-130	2.74	20	WG674338
1,2,4-Trimethylbenzene	mg/kg	0.0250	0.0245	100.	75-131	2.09	20	WG674338
1,2-Dibromo-3-Chloropropane	mg/kg	0.0271	0.0244	108.	55-142	10.4	20	WG674338
1,2-Dibromoethane	mg/kg	0.0265	0.0256	106.	77-126	3.53	20	WG674338
1,2-Dichlorobenzene	mg/kg	0.0264	0.0261	106.	80-123	1.14	20	WG674338
1,2-Dichloroethane	mg/kg	0.0270	0.0263	108.	70-128	2.51	20	WG674338
1,2-Dichloropropane	mg/kg	0.0265	0.0260	106.	74-125	1.60	20	WG674338
1,3,5-Trimethylbenzene	mg/kg	0.0252	0.0247	101.	77-129	1.81	20	WG674338
1,3-Dichlorobenzene	mg/kg	0.0257	0.0253	103.	76-128	1.46	20	WG674338
1,3-Dichloropropane	mg/kg	0.0259	0.0250	104.	77-118	3.84	20	WG674338
1,4-Dichlorobenzene	mg/kg	0.0262	0.0258	105.	77-119	1.56	20	WG674338
2,2-Dichloropropane	mg/kg	0.0253	0.0253	101.	60-132	0.0300	20	WG674338
2-Butanone (MEK)	mg/kg	0.155	0.147	124.	56-146	4.71	20	WG674338
2-Chloroethyl vinyl ether	mg/kg	0.176	0.169	141.	17-179	4.11	22	WG674338
2-Chlorotoluene	mg/kg	0.0252	0.0246	101.	76-125	2.13	20	WG674338
4-Chlorotoluene	mg/kg	0.0257	0.0244	103.	76-125	5.00	20	WG674338
4-Methyl-2-pentanone (MIBK)	mg/kg	0.144	0.134	116.	55-148	7.18	20	WG674338
Acetone	mg/kg	0.156	0.156	125.	47-155	0.360	22	WG674338
Acrylonitrile	mg/kg	0.133	0.125	107.	50-155	6.36	20	WG674338
Benzene	mg/kg	0.0267	0.0267	107.	72-120	0.0100	20	WG674338
Bromobenzene	mg/kg	0.0253	0.0240	101.	74-122	5.05	20	WG674338
Bromodichloromethane	mg/kg	0.0245	0.0242	98.0	74-128	1.42	20	WG674338
Bromoform	mg/kg	0.0250	0.0239	100.	62-137	4.44	20	WG674338
Bromomethane	mg/kg	0.0253	0.0247	101.	38-180	2.31	20	WG674338
Carbon tetrachloride	mg/kg	0.0250	0.0248	100.	62-130	0.950	20	WG674338
Chlorobenzene	mg/kg	0.0254	0.0244	102.	77-124	4.01	20	WG674338
Chlorodibromomethane	mg/kg	0.0243	0.0234	97.0	74-128	4.12	20	WG674338
Chloroethane	mg/kg	0.0256	0.0257	102.	46-173	0.290	20	WG674338
Chloroform	mg/kg	0.0257	0.0257	103.	76-122	0.110	20	WG674338

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Quality Assurance Report
Level II

L648481

August 01, 2013

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Chloromethane	mg/kg	0.0264	0.0262	106.	49-143	0.540	20	WG674338
cis-1,2-Dichloroethene	mg/kg	0.0273	0.0267	109.	73-123	2.20	20	WG674338
cis-1,3-Dichloropropene	mg/kg	0.0258	0.0253	103.	73-126	1.79	20	WG674338
Di-isopropyl ether	mg/kg	0.0269	0.0266	108.	64-131	1.21	20	WG674338
Dibromomethane	mg/kg	0.0278	0.0266	111.	75-127	4.33	20	WG674338
Dichlorodifluoromethane	mg/kg	0.0277	0.0276	111.	30-177	0.390	20	WG674338
Ethylbenzene	mg/kg	0.0244	0.0243	98.0	76-126	0.250	20	WG674338
Hexachloro-1,3-butadiene	mg/kg	0.0232	0.0234	93.0	71-134	0.580	20	WG674338
Isopropylbenzene	mg/kg	0.0270	0.0265	108.	70-128	1.83	20	WG674338
Methyl tert-butyl ether	mg/kg	0.0280	0.0267	112.	66-127	4.42	20	WG674338
Methylene Chloride	mg/kg	0.0267	0.0268	107.	67-124	0.280	20	WG674338
n-Butylbenzene	mg/kg	0.0261	0.0262	104.	71-133	0.540	20	WG674338
n-Propylbenzene	mg/kg	0.0253	0.0248	101.	76-126	2.08	20	WG674338
Naphthalene	mg/kg	0.0300	0.0279	120.	68-136	6.94	20	WG674338
p-Isopropyltoluene	mg/kg	0.0254	0.0248	102.	75-134	2.31	20	WG674338
sec-Butylbenzene	mg/kg	0.0248	0.0242	99.0	75-132	2.39	20	WG674338
Styrene	mg/kg	0.0268	0.0262	107.	68-148	2.22	20	WG674338
tert-Butylbenzene	mg/kg	0.0251	0.0243	100.	75-132	3.09	20	WG674338
Tetrachloroethene	mg/kg	0.0251	0.0247	100.	70-131	1.67	20	WG674338
Toluene	mg/kg	0.0254	0.0251	102.	74-155	1.19	20	WG674338
trans-1,2-Dichloroethene	mg/kg	0.0264	0.0263	106.	63-126	0.220	20	WG674338
trans-1,3-Dichloropropene	mg/kg	0.0243	0.0239	97.0	68-126	1.84	20	WG674338
Trichloroethene	mg/kg	0.0252	0.0254	101.	75-121	0.600	20	WG674338
Trichlorofluoromethane	mg/kg	0.0255	0.0255	102.	48-170	0.190	20	WG674338
Vinyl chloride	mg/kg	0.0273	0.0270	109.	54-144	0.920	20	WG674338
Xylenes, Total	mg/kg	0.0750	0.0738	100.	76-126	1.72	20	WG674338
4-Bromofluorobenzene				98.06	67-133			WG674338
Dibromofluoromethane				100.1	72-135			WG674338
Toluene-d8				99.75	90-113			WG674338
a,a,a-Trifluorotoluene				101.0	89-115			WG674338

		Matrix Spike						
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.0228	0	.025	91.4	49-135	L648812-01	WG674216
1,1,1-Trichloroethane	mg/kg	0.0234	0	.025	93.7	43-142	L648812-01	WG674216
1,1,2,2-Tetrachloroethane	mg/kg	0.0223	0	.025	89.4	42-147	L648812-01	WG674216
1,1,2-Trichloroethane	mg/kg	0.0230	0	.025	91.8	51-134	L648812-01	WG674216
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0248	0	.025	99.4	25-156	L648812-01	WG674216
1,1-Dichloroethane	mg/kg	0.0245	0	.025	97.8	50-131	L648812-01	WG674216
1,1-Dichloroethene	mg/kg	0.0236	0	.025	94.5	29-145	L648812-01	WG674216
1,1-Dichloropropene	mg/kg	0.0238	0	.025	95.1	40-136	L648812-01	WG674216
1,2,3-Trichlorobenzene	mg/kg	0.0232	0	.025	93.0	13-142	L648812-01	WG674216
1,2,3-Trichloropropane	mg/kg	0.0221	0	.025	88.3	41-149	L648812-01	WG674216
1,2,3-Trimethylbenzene	mg/kg	0.0222	0	.025	88.9	33-146	L648812-01	WG674216
1,2,4-Trichlorobenzene	mg/kg	0.0256	0	.025	102.	12-140	L648812-01	WG674216
1,2,4-Trimethylbenzene	mg/kg	0.0236	0	.025	94.6	29-143	L648812-01	WG674216
1,2-Dibromo-3-Chloropropane	mg/kg	0.0229	0	.025	91.5	29-151	L648812-01	WG674216
1,2-Dibromoethane	mg/kg	0.0227	0	.025	91.0	48-133	L648812-01	WG674216
1,2-Dichlorobenzene	mg/kg	0.0233	0	.025	93.2	37-136	L648812-01	WG674216
1,2-Dichloroethane	mg/kg	0.0237	0	.025	95.0	49-131	L648812-01	WG674216
1,2-Dichloropropane	mg/kg	0.0247	0	.025	98.7	50-132	L648812-01	WG674216
1,3,5-Trimethylbenzene	mg/kg	0.0233	0	.025	93.2	29-144	L648812-01	WG674216
1,3-Dichlorobenzene	mg/kg	0.0230	0	.025	92.2	26-140	L648812-01	WG674216
1,3-Dichloropropane	mg/kg	0.0231	0	.025	92.3	50-126	L648812-01	WG674216
1,4-Dichlorobenzene	mg/kg	0.0227	0	.025	90.7	34-132	L648812-01	WG674216
2,2-Dichloropropane	mg/kg	0.0241	0	.025	96.6	35-148	L648812-01	WG674216
2-Butanone (MEK)	mg/kg	0.127	0	.125	102.	40-149	L648812-01	WG674216
2-Chloroethyl vinyl ether	mg/kg	0.0430	0	.125	34.4	10-173	L648812-01	WG674216

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Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
2-Chlorotoluene	mg/kg	0.0229	0	.025	91.5	34-136	L648812-01	WG674216
4-Chlorotoluene	mg/kg	0.0230	0	.025	92.0	31-137	L648812-01	WG674216
4-Methyl-2-pentanone (MIBK)	mg/kg	0.127	0	.125	101.	37-153	L648812-01	WG674216
Acetone	mg/kg	0.120	0.00512	.125	92.0	10-177	L648812-01	WG674216
Acrylonitrile	mg/kg	0.119	0	.125	95.3	33-159	L648812-01	WG674216
Benzene	mg/kg	0.0237	0	.025	94.6	44-131	L648812-01	WG674216
Bromobenzene	mg/kg	0.0227	0	.025	91.0	36-132	L648812-01	WG674216
Bromodichloromethane	mg/kg	0.0234	0	.025	93.4	48-134	L648812-01	WG674216
Bromoform	mg/kg	0.0237	0	.025	94.7	34-141	L648812-01	WG674216
Bromomethane	mg/kg	0.0258	0	.025	103.	19-173	L648812-01	WG674216
Carbon tetrachloride	mg/kg	0.0245	0	.025	98.1	36-140	L648812-01	WG674216
Chlorobenzene	mg/kg	0.0226	0	.025	90.4	42-133	L648812-01	WG674216
Chlorodibromomethane	mg/kg	0.0226	0	.025	90.5	45-135	L648812-01	WG674216
Chloroethane	mg/kg	0.0263	0	.025	105.	16-178	L648812-01	WG674216
Chloroform	mg/kg	0.0241	0	.025	96.4	52-130	L648812-01	WG674216
Chloromethane	mg/kg	0.0260	0	.025	104.	28-147	L648812-01	WG674216
cis-1,2-Dichloroethene	mg/kg	0.0238	0	.025	95.3	52-128	L648812-01	WG674216
cis-1,3-Dichloropropene	mg/kg	0.0245	0	.025	97.9	46-131	L648812-01	WG674216
Di-isopropyl ether	mg/kg	0.0257	0	.025	103.	46-134	L648812-01	WG674216
Dibromomethane	mg/kg	0.0244	0	.025	97.7	51-133	L648812-01	WG674216
Dichlorodifluoromethane	mg/kg	0.0250	0	.025	99.9	12-179	L648812-01	WG674216
Ethylbenzene	mg/kg	0.0229	0	.025	91.5	38-139	L648812-01	WG674216
Hexachloro-1,3-butadiene	mg/kg	0.0208	0	.025	83.1	10-147	L648812-01	WG674216
Isopropylbenzene	mg/kg	0.0251	0	.025	100.	34-137	L648812-01	WG674216
Methyl tert-butyl ether	mg/kg	0.0246	0	.025	98.3	45-134	L648812-01	WG674216
Methylene Chloride	mg/kg	0.0233	0	.025	93.2	41-133	L648812-01	WG674216
n-Butylbenzene	mg/kg	0.0243	0	.025	97.3	19-149	L648812-01	WG674216
n-Propylbenzene	mg/kg	0.0235	0	.025	94.1	27-142	L648812-01	WG674216
Naphthalene	mg/kg	0.0238	0	.025	95.2	19-146	L648812-01	WG674216
p-Isopropyltoluene	mg/kg	0.0241	0	.025	96.5	21-150	L648812-01	WG674216
sec-Butylbenzene	mg/kg	0.0234	0	.025	93.8	25-148	L648812-01	WG674216
Styrene	mg/kg	0.0242	0	.025	96.9	30-156	L648812-01	WG674216
tert-Butylbenzene	mg/kg	0.0234	0	.025	93.6	32-146	L648812-01	WG674216
Tetrachloroethene	mg/kg	0.0274	0.00177	.025	102.	35-139	L648812-01	WG674216
Toluene	mg/kg	0.0235	0	.025	94.2	43-127	L648812-01	WG674216
trans-1,2-Dichloroethene	mg/kg	0.0232	0	.025	92.8	41-132	L648812-01	WG674216
trans-1,3-Dichloropropene	mg/kg	0.0251	0	.025	100.	43-129	L648812-01	WG674216
Trichloroethene	mg/kg	0.0234	0	.025	93.5	42-136	L648812-01	WG674216
Trichlorofluoromethane	mg/kg	0.0243	0	.025	97.2	20-178	L648812-01	WG674216
Vinyl chloride	mg/kg	0.0260	0	.025	104.	30-157	L648812-01	WG674216
Xylenes, Total	mg/kg	0.0693	0	.075	92.4	38-137	L648812-01	WG674216
4-Bromofluorobenzene					95.69	67-133		WG674216
Dibromofluoromethane					100.2	72-135		WG674216
Toluene-d8					101.4	90-113		WG674216
a,a,a-Trifluorotoluene					101.9	89-115		WG674216
1,1,1,2-Tetrachloroethane	mg/kg	0.118	0	.025	94.4	49-135	L648411-01	WG674338
1,1,1-Trichloroethane	mg/kg	0.127	0	.025	102.	43-142	L648411-01	WG674338
1,1,2,2-Tetrachloroethane	mg/kg	0.119	0	.025	94.8	42-147	L648411-01	WG674338
1,1,2-Trichloroethane	mg/kg	0.122	0	.025	97.9	51-134	L648411-01	WG674338
1,1,2-Trichlorotrifluoroethane	mg/kg	0.145	0	.025	116.	25-156	L648411-01	WG674338
1,1-Dichloroethane	mg/kg	0.132	0	.025	106.	50-131	L648411-01	WG674338
1,1-Dichloroethene	mg/kg	0.132	0	.025	106.	29-145	L648411-01	WG674338
1,1-Dichloropropene	mg/kg	0.132	0	.025	106.	40-136	L648411-01	WG674338
1,2,3-Trichlorobenzene	mg/kg	0.122	0.00198	.025	96.1	13-142	L648411-01	WG674338
1,2,3-Trichloropropane	mg/kg	0.121	0.00215	.025	95.1	41-149	L648411-01	WG674338
1,2,3-Trimethylbenzene	mg/kg	0.113	0.000420	.025	89.7	33-146	L648411-01	WG674338
1,2,4-Trichlorobenzene	mg/kg	0.131	0.00199	.025	103.	12-140	L648411-01	WG674338

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Oregon Dept of Transportation - ODOT
Ryan Franklin (ODOT)
63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648481

August 01, 2013

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,2,4-Trimethylbenzene	mg/kg	0.121	0.000418	.025	96.7	29-143	L648411-01	WG674338
1,2-Dibromo-3-Chloropropane	mg/kg	0.113	0	.025	90.8	29-151	L648411-01	WG674338
1,2-Dibromoethane	mg/kg	0.128	0	.025	102.	48-133	L648411-01	WG674338
1,2-Dichlorobenzene	mg/kg	0.124	0.000315	.025	99.3	37-136	L648411-01	WG674338
1,2-Dichloroethane	mg/kg	0.127	0	.025	101.	49-131	L648411-01	WG674338
1,2-Dichloropropane	mg/kg	0.126	0	.025	101.	50-132	L648411-01	WG674338
1,3,5-Trimethylbenzene	mg/kg	0.125	0	.025	99.7	29-144	L648411-01	WG674338
1,3-Dichlorobenzene	mg/kg	0.126	0.000328	.025	101.	26-140	L648411-01	WG674338
1,3-Dichloropropane	mg/kg	0.123	0	.025	98.1	50-126	L648411-01	WG674338
1,4-Dichlorobenzene	mg/kg	0.125	0.000568	.025	99.3	34-132	L648411-01	WG674338
2,2-Dichloropropane	mg/kg	0.129	0	.025	103.	35-148	L648411-01	WG674338
2-Butanone (MEK)	mg/kg	0.751	0.000550	.125	120.	40-149	L648411-01	WG674338
2-Chloroethyl vinyl ether	mg/kg	0.866	0	.125	138.	10-173	L648411-01	WG674338
2-Chlorotoluene	mg/kg	0.123	0	.025	98.4	34-136	L648411-01	WG674338
4-Chlorotoluene	mg/kg	0.125	0	.025	100.	31-137	L648411-01	WG674338
4-Methyl-2-pentanone (MIBK)	mg/kg	0.647	0	.125	103.	37-153	L648411-01	WG674338
Acetone	mg/kg	0.810	0.0106	.125	128.	10-177	L648411-01	WG674338
Acrylonitrile	mg/kg	0.604	0	.125	96.7	33-159	L648411-01	WG674338
Benzene	mg/kg	0.132	0.000350	.025	105.	44-131	L648411-01	WG674338
Bromobenzene	mg/kg	0.122	0.000309	.025	97.5	36-132	L648411-01	WG674338
Bromodichloromethane	mg/kg	0.117	0	.025	93.6	48-134	L648411-01	WG674338
Bromoform	mg/kg	0.119	0	.025	95.5	34-141	L648411-01	WG674338
Bromomethane	mg/kg	0.123	0.000349	.025	98.3	19-173	L648411-01	WG674338
Carbon tetrachloride	mg/kg	0.128	0	.025	102.	36-140	L648411-01	WG674338
Chlorobenzene	mg/kg	0.126	0	.025	100.	42-133	L648411-01	WG674338
Chlorodibromomethane	mg/kg	0.114	0	.025	91.3	45-135	L648411-01	WG674338
Chloroethane	mg/kg	0.128	0	.025	102.	16-178	L648411-01	WG674338
Chloroform	mg/kg	0.126	0	.025	101.	52-130	L648411-01	WG674338
Chloromethane	mg/kg	0.133	0	.025	106.	28-147	L648411-01	WG674338
cis-1,2-Dichloroethene	mg/kg	0.129	0	.025	103.	52-128	L648411-01	WG674338
cis-1,3-Dichloropropene	mg/kg	0.124	0	.025	98.8	46-131	L648411-01	WG674338
Di-isopropyl ether	mg/kg	0.129	0	.025	104.	46-134	L648411-01	WG674338
Dibromomethane	mg/kg	0.129	0	.025	103.	51-133	L648411-01	WG674338
Dichlorodifluoromethane	mg/kg	0.144	0	.025	115.	12-179	L648411-01	WG674338
Ethylbenzene	mg/kg	0.125	0	.025	99.9	38-139	L648411-01	WG674338
Hexachloro-1,3-butadiene	mg/kg	0.111	0.00113	.025	87.7	10-147	L648411-01	WG674338
Isopropylbenzene	mg/kg	0.136	0	.025	109.	34-137	L648411-01	WG674338
Methyl tert-butyl ether	mg/kg	0.130	0	.025	104.	45-134	L648411-01	WG674338
Methylene Chloride	mg/kg	0.130	0.00117	.025	103.	41-133	L648411-01	WG674338
n-Butylbenzene	mg/kg	0.125	0.000750	.025	99.1	19-149	L648411-01	WG674338
n-Propylbenzene	mg/kg	0.126	0.000338	.025	101.	27-142	L648411-01	WG674338
Naphthalene	mg/kg	0.123	0.00314	.025	95.5	19-146	L648411-01	WG674338
p-Isopropyltoluene	mg/kg	0.125	0.000391	.025	100.	21-150	L648411-01	WG674338
sec-Butylbenzene	mg/kg	0.123	0.000424	.025	97.8	25-148	L648411-01	WG674338
Styrene	mg/kg	0.132	0	.025	106.	30-156	L648411-01	WG674338
tert-Butylbenzene	mg/kg	0.125	0.000410	.025	99.9	32-146	L648411-01	WG674338
Tetrachloroethene	mg/kg	0.129	0	.025	103.	35-139	L648411-01	WG674338
Toluene	mg/kg	0.124	0.000371	.025	98.9	43-127	L648411-01	WG674338
trans-1,2-Dichloroethene	mg/kg	0.129	0	.025	103.	41-132	L648411-01	WG674338
trans-1,3-Dichloropropene	mg/kg	0.116	0	.025	93.1	43-129	L648411-01	WG674338
Trichloroethene	mg/kg	0.126	0.000303	.025	100.	42-136	L648411-01	WG674338
Trichlorofluoromethane	mg/kg	0.131	0	.025	105.	20-178	L648411-01	WG674338
Vinyl chloride	mg/kg	0.138	0	.025	110.	30-157	L648411-01	WG674338
Xylenes, Total	mg/kg	0.371	0.000557	.075	98.8	38-137	L648411-01	WG674338
4-Bromofluorobenzene					98.36	67-133		WG674338
Dibromofluoromethane					98.87	72-135		WG674338
Toluene-d8					97.40	90-113		WG674338
a,a,a-Trifluorotoluene					96.23	89-115		WG674338

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August 01, 2013

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.0222	0.0228	88.9	49-135	2.72	23	L648812-01	WG674216
1,1,1-Trichloroethane	mg/kg	0.0236	0.0234	94.5	43-142	0.880	24	L648812-01	WG674216
1,1,2,2-Tetrachloroethane	mg/kg	0.0215	0.0223	85.9	42-147	3.98	25	L648812-01	WG674216
1,1,2-Trichloroethane	mg/kg	0.0223	0.0230	89.0	51-134	3.07	21	L648812-01	WG674216
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0249	0.0248	99.7	25-156	0.320	29	L648812-01	WG674216
1,1-Dichloroethane	mg/kg	0.0238	0.0245	95.3	50-131	2.60	21	L648812-01	WG674216
1,1-Dichloroethene	mg/kg	0.0231	0.0236	92.4	29-145	2.26	28	L648812-01	WG674216
1,1-Dichloropropene	mg/kg	0.0236	0.0238	94.4	40-136	0.720	24	L648812-01	WG674216
1,2,3-Trichlorobenzene	mg/kg	0.0218	0.0232	87.2	13-142	6.41	33	L648812-01	WG674216
1,2,3-Trichloropropane	mg/kg	0.0202	0.0221	80.6	41-149	9.11	28	L648812-01	WG674216
1,2,3-Trimethylbenzene	mg/kg	0.0211	0.0222	84.4	33-146	5.20	27	L648812-01	WG674216
1,2,4-Trichlorobenzene	mg/kg	0.0239	0.0256	95.8	12-140	6.62	32	L648812-01	WG674216
1,2,4-Trimethylbenzene	mg/kg	0.0229	0.0236	91.6	29-143	3.16	30	L648812-01	WG674216
1,2-Dibromo-3-Chloropropane	mg/kg	0.0230	0.0229	91.9	29-151	0.460	31	L648812-01	WG674216
1,2-Dibromoethane	mg/kg	0.0223	0.0227	89.3	48-133	1.86	22	L648812-01	WG674216
1,2-Dichlorobenzene	mg/kg	0.0218	0.0233	87.4	37-136	6.42	25	L648812-01	WG674216
1,2-Dichloroethane	mg/kg	0.0227	0.0237	90.9	49-131	4.35	20	L648812-01	WG674216
1,2-Dichloropropane	mg/kg	0.0233	0.0247	93.1	50-132	5.80	21	L648812-01	WG674216
1,3,5-Trimethylbenzene	mg/kg	0.0229	0.0233	91.5	29-144	1.87	30	L648812-01	WG674216
1,3-Dichlorobenzene	mg/kg	0.0226	0.0230	90.5	26-140	1.83	28	L648812-01	WG674216
1,3-Dichloropropane	mg/kg	0.0222	0.0231	89.0	50-126	3.73	22	L648812-01	WG674216
1,4-Dichlorobenzene	mg/kg	0.0212	0.0227	84.7	34-132	6.78	26	L648812-01	WG674216
2,2-Dichloropropane	mg/kg	0.0240	0.0241	96.2	35-148	0.450	26	L648812-01	WG674216
2-Butanone (MEK)	mg/kg	0.124	0.127	99.0	40-149	2.55	27	L648812-01	WG674216
2-Chloroethyl vinyl ether	mg/kg	0.0551	0.0430	44.1	10-173	24.8	33	L648812-01	WG674216
2-Chlorotoluene	mg/kg	0.0224	0.0229	89.4	34-136	2.25	28	L648812-01	WG674216
4-Chlorotoluene	mg/kg	0.0221	0.0230	88.5	31-137	3.90	27	L648812-01	WG674216
4-Methyl-2-pentanone (MIBK)	mg/kg	0.121	0.127	96.6	37-153	4.87	27	L648812-01	WG674216
Acetone	mg/kg	0.116	0.120	89.0	10-177	3.22	28	L648812-01	WG674216
Acrylonitrile	mg/kg	0.114	0.119	90.8	33-159	4.75	26	L648812-01	WG674216
Benzene	mg/kg	0.0232	0.0237	92.9	44-131	1.88	21	L648812-01	WG674216
Bromobenzene	mg/kg	0.0221	0.0227	88.6	36-132	2.62	26	L648812-01	WG674216
Bromodichloromethane	mg/kg	0.0220	0.0234	88.0	48-134	5.96	20	L648812-01	WG674216
Bromoform	mg/kg	0.0229	0.0237	91.5	34-141	3.36	24	L648812-01	WG674216
Bromomethane	mg/kg	0.0255	0.0258	102.	19-173	1.39	25	L648812-01	WG674216
Carbon tetrachloride	mg/kg	0.0244	0.0245	97.4	36-140	0.700	26	L648812-01	WG674216
Chlorobenzene	mg/kg	0.0219	0.0226	87.5	42-133	3.20	24	L648812-01	WG674216
Chlorodibromomethane	mg/kg	0.0219	0.0226	87.8	45-135	3.08	23	L648812-01	WG674216
Chloroethane	mg/kg	0.0264	0.0263	105.	16-178	0.120	25	L648812-01	WG674216
Chloroform	mg/kg	0.0234	0.0241	93.4	52-130	3.11	21	L648812-01	WG674216
Chloromethane	mg/kg	0.0260	0.0260	104.	28-147	0.0100	23	L648812-01	WG674216
cis-1,2-Dichloroethene	mg/kg	0.0229	0.0238	91.6	52-128	3.93	21	L648812-01	WG674216
cis-1,3-Dichloropropene	mg/kg	0.0232	0.0245	92.6	46-131	5.56	21	L648812-01	WG674216
Di-isopropyl ether	mg/kg	0.0245	0.0257	98.2	46-134	4.45	20	L648812-01	WG674216
Dibromomethane	mg/kg	0.0228	0.0244	91.3	51-133	6.80	21	L648812-01	WG674216
Dichlorodifluoromethane	mg/kg	0.0243	0.0250	97.1	12-179	2.81	27	L648812-01	WG674216
Ethylbenzene	mg/kg	0.0226	0.0229	90.4	38-139	1.24	27	L648812-01	WG674216
Hexachloro-1,3-butadiene	mg/kg	0.0200	0.0208	80.2	10-147	3.61	37	L648812-01	WG674216
Isopropylbenzene	mg/kg	0.0247	0.0251	98.9	34-137	1.40	29	L648812-01	WG674216
Methyl tert-butyl ether	mg/kg	0.0236	0.0246	94.2	45-134	4.29	22	L648812-01	WG674216
Methylene Chloride	mg/kg	0.0223	0.0233	89.3	41-133	4.19	28	L648812-01	WG674216
n-Butylbenzene	mg/kg	0.0234	0.0243	93.6	19-149	3.93	32	L648812-01	WG674216
n-Propylbenzene	mg/kg	0.0233	0.0235	93.1	27-142	1.05	29	L648812-01	WG674216
Naphthalene	mg/kg	0.0233	0.0238	93.2	19-146	2.17	30	L648812-01	WG674216
p-Isopropyltoluene	mg/kg	0.0237	0.0241	94.8	21-150	1.76	31	L648812-01	WG674216
sec-Butylbenzene	mg/kg	0.0232	0.0234	92.9	25-148	0.950	31	L648812-01	WG674216
Styrene	mg/kg	0.0235	0.0242	93.8	30-156	3.27	26	L648812-01	WG674216
tert-Butylbenzene	mg/kg	0.0231	0.0234	92.4	32-146	1.25	30	L648812-01	WG674216
Tetrachloroethene	mg/kg	0.0280	0.0274	105.	35-139	2.25	27	L648812-01	WG674216
Toluene	mg/kg	0.0222	0.0235	89.0	43-127	5.63	21	L648812-01	WG674216

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Quality Assurance Report
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August 01, 2013

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
trans-1,2-Dichloroethene	mg/kg	0.0232	0.0232	92.6	41-132	0.260	23	L648812-01	WG674216
trans-1,3-Dichloropropene	mg/kg	0.0237	0.0251	94.7	43-129	5.81	23	L648812-01	WG674216
Trichloroethene	mg/kg	0.0225	0.0234	90.1	42-136	3.71	23	L648812-01	WG674216
Trichlorofluoromethane	mg/kg	0.0241	0.0243	96.4	20-178	0.810	30	L648812-01	WG674216
Vinyl chloride	mg/kg	0.0254	0.0260	102.	30-157	2.07	24	L648812-01	WG674216
Xylenes, Total	mg/kg	0.0678	0.0693	90.4	38-137	2.14	26	L648812-01	WG674216
4-Bromofluorobenzene				97.78	67-133				WG674216
Dibromofluoromethane				99.84	72-135				WG674216
Toluene-d8				100.2	90-113				WG674216
a,a,a-Trifluorotoluene				101.2	89-115				WG674216
1,1,1,2-Tetrachloroethane	mg/kg	0.113	0.118	90.7	49-135	4.00	23	L648411-01	WG674338
1,1,1-Trichloroethane	mg/kg	0.122	0.127	97.8	43-142	4.08	24	L648411-01	WG674338
1,1,2,2-Tetrachloroethane	mg/kg	0.112	0.119	89.2	42-147	6.07	25	L648411-01	WG674338
1,1,2-Trichloroethane	mg/kg	0.114	0.122	90.9	51-134	7.47	21	L648411-01	WG674338
1,1,2-Trichlorotrifluoroethane	mg/kg	0.140	0.145	112.	25-156	3.12	29	L648411-01	WG674338
1,1-Dichloroethane	mg/kg	0.129	0.132	103.	50-131	2.70	21	L648411-01	WG674338
1,1-Dichloroethene	mg/kg	0.126	0.132	101.	29-145	4.75	28	L648411-01	WG674338
1,1-Dichloropropene	mg/kg	0.127	0.132	101.	40-136	4.25	24	L648411-01	WG674338
1,2,3-Trichlorobenzene	mg/kg	0.125	0.122	98.2	13-142	2.16	33	L648411-01	WG674338
1,2,3-Trichloropropane	mg/kg	0.117	0.121	91.7	41-149	3.62	28	L648411-01	WG674338
1,2,3-Trimethylbenzene	mg/kg	0.109	0.113	87.0	33-146	3.04	27	L648411-01	WG674338
1,2,4-Trichlorobenzene	mg/kg	0.127	0.131	100.	12-140	3.41	32	L648411-01	WG674338
1,2,4-Trimethylbenzene	mg/kg	0.114	0.121	91.1	29-143	5.95	30	L648411-01	WG674338
1,2-Dibromo-3-Chloropropane	mg/kg	0.108	0.113	86.4	29-151	4.90	31	L648411-01	WG674338
1,2-Dibromoethane	mg/kg	0.119	0.128	95.4	48-133	6.99	22	L648411-01	WG674338
1,2-Dichlorobenzene	mg/kg	0.120	0.124	95.8	37-136	3.61	25	L648411-01	WG674338
1,2-Dichloroethane	mg/kg	0.122	0.127	97.3	49-131	4.11	20	L648411-01	WG674338
1,2-Dichloropropane	mg/kg	0.124	0.126	99.0	50-132	1.91	21	L648411-01	WG674338
1,3,5-Trimethylbenzene	mg/kg	0.118	0.125	94.1	29-144	5.73	30	L648411-01	WG674338
1,3-Dichlorobenzene	mg/kg	0.119	0.126	95.2	26-140	5.49	28	L648411-01	WG674338
1,3-Dichloropropane	mg/kg	0.116	0.123	92.6	50-126	5.82	22	L648411-01	WG674338
1,4-Dichlorobenzene	mg/kg	0.116	0.125	92.7	34-132	6.89	26	L648411-01	WG674338
2,2-Dichloropropane	mg/kg	0.122	0.129	97.8	35-148	5.27	26	L648411-01	WG674338
2-Butanone (MEK)	mg/kg	0.678	0.751	108.	40-149	10.2	27	L648411-01	WG674338
2-Chloroethyl vinyl ether	mg/kg	0.749	0.866	120.	10-173	14.5	33	L648411-01	WG674338
2-Chlorotoluene	mg/kg	0.117	0.123	93.8	34-136	4.82	28	L648411-01	WG674338
4-Chlorotoluene	mg/kg	0.118	0.125	94.5	31-137	6.05	27	L648411-01	WG674338
4-Methyl-2-pentanone (MIBK)	mg/kg	0.590	0.647	94.3	37-153	9.25	27	L648411-01	WG674338
Acetone	mg/kg	0.721	0.810	114.	10-177	11.7	28	L648411-01	WG674338
Acrylonitrile	mg/kg	0.575	0.604	92.0	33-159	5.05	26	L648411-01	WG674338
Benzene	mg/kg	0.127	0.132	101.	44-131	3.67	21	L648411-01	WG674338
Bromobenzene	mg/kg	0.115	0.122	91.6	36-132	6.24	26	L648411-01	WG674338
Bromodichloromethane	mg/kg	0.111	0.117	89.0	48-134	5.01	20	L648411-01	WG674338
Bromoform	mg/kg	0.108	0.119	86.6	34-141	9.74	24	L648411-01	WG674338
Bromomethane	mg/kg	0.121	0.123	96.2	19-173	2.14	25	L648411-01	WG674338
Carbon tetrachloride	mg/kg	0.122	0.128	97.7	36-140	4.41	26	L648411-01	WG674338
Chlorobenzene	mg/kg	0.118	0.126	94.4	42-133	6.27	24	L648411-01	WG674338
Chlorodibromomethane	mg/kg	0.110	0.114	87.9	45-135	3.76	23	L648411-01	WG674338
Chloroethane	mg/kg	0.121	0.128	96.6	16-178	5.90	25	L648411-01	WG674338
Chloroform	mg/kg	0.123	0.126	98.2	52-130	2.61	21	L648411-01	WG674338
Chloromethane	mg/kg	0.126	0.133	100.	28-147	5.62	23	L648411-01	WG674338
cis-1,2-Dichloroethene	mg/kg	0.125	0.129	99.8	52-128	3.60	21	L648411-01	WG674338
cis-1,3-Dichloropropene	mg/kg	0.119	0.124	95.4	46-131	3.49	21	L648411-01	WG674338
Di-isopropyl ether	mg/kg	0.125	0.129	99.8	46-134	3.64	20	L648411-01	WG674338
Dibromomethane	mg/kg	0.122	0.129	97.5	51-133	5.37	21	L648411-01	WG674338
Dichlorodifluoromethane	mg/kg	0.138	0.144	111.	12-179	4.18	27	L648411-01	WG674338
Ethylbenzene	mg/kg	0.116	0.125	92.8	38-139	7.40	27	L648411-01	WG674338

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648481

August 01, 2013

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Hexachloro-1,3-butadiene	mg/kg	0.107	0.111	84.9	10-147	3.16	37	L648411-01	WG674338
Isopropylbenzene	mg/kg	0.128	0.136	102.	34-137	6.10	29	L648411-01	WG674338
Methyl tert-butyl ether	mg/kg	0.126	0.130	101.	45-134	3.53	22	L648411-01	WG674338
Methylene Chloride	mg/kg	0.126	0.130	100.	41-133	3.24	28	L648411-01	WG674338
n-Butylbenzene	mg/kg	0.119	0.125	95.0	19-149	4.27	32	L648411-01	WG674338
n-Propylbenzene	mg/kg	0.119	0.126	94.9	27-142	6.03	29	L648411-01	WG674338
Naphthalene	mg/kg	0.125	0.123	97.3	19-146	1.81	30	L648411-01	WG674338
p-Isopropyltoluene	mg/kg	0.118	0.125	94.2	21-150	5.89	31	L648411-01	WG674338
sec-Butylbenzene	mg/kg	0.117	0.123	93.3	25-148	4.72	31	L648411-01	WG674338
Styrene	mg/kg	0.125	0.132	100.	30-156	5.34	26	L648411-01	WG674338
tert-Butylbenzene	mg/kg	0.117	0.125	93.6	32-146	6.40	30	L648411-01	WG674338
Tetrachloroethene	mg/kg	0.119	0.129	95.2	35-139	7.69	27	L648411-01	WG674338
Toluene	mg/kg	0.118	0.124	93.8	43-127	5.24	21	L648411-01	WG674338
trans-1,2-Dichloroethene	mg/kg	0.127	0.129	102.	41-132	1.62	23	L648411-01	WG674338
trans-1,3-Dichloropropene	mg/kg	0.107	0.116	85.9	43-129	8.06	23	L648411-01	WG674338
Trichloroethene	mg/kg	0.121	0.126	96.8	42-136	3.76	23	L648411-01	WG674338
Trichlorofluoromethane	mg/kg	0.123	0.131	98.0	20-178	6.64	30	L648411-01	WG674338
Vinyl chloride	mg/kg	0.132	0.138	106.	30-157	4.03	24	L648411-01	WG674338
Xylenes, Total	mg/kg	0.351	0.371	93.5	38-137	5.46	26	L648411-01	WG674338
4-Bromofluorobenzene				97.51	67-133				WG674338
Dibromofluoromethane				102.8	72-135				WG674338
Toluene-d8				99.47	90-113				WG674338
a,a,a-Trifluorotoluene				99.11	89-115				WG674338

Batch number /Run number / Sample number cross reference

WG674216: R2759473: L648481-02 03 04
WG674338: R2760282: L648481-01
WG674670: R2763186: L648481-01 02 03 04

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Quality Assurance Report
Level II

L648481

August 01, 2013

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

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State of Oregon Sample Chain of Custody

C043

Agency, Authorized Purchaser or Agent: ODOT

Send Lab Report To: Ryan Franklin
Address: 63034 O.B. Riley Rd.
Bend, OR 97701
Tel. #: (541) 388-6088
E-mail: ryan.franklin@odot.state.or.us

Contract Laboratory Name: Environmental Sciences Corporation
Lab Batch #:
Invoice To: Same
Address:
Tel. #:

Lab Selection Criteria:
- ☐ Proximity (if TAT < 48 hrs)
- ☒ Prior work on same project
- ☒ Cost (for anticipated analyses)
- ☐ Other labs disqualified or unable to perform requested services
- ☐ Emergency work

Turn Around Time:
- ☒ 10 days (std.)
- ☐ 5 days
- ☐ 72 hours
- ☐ 48 hours
- ☐ 24 hours
- ☐ Other

Project Name: US97: J Street Intersection (Madras South Y)
Project #: 15409
Sampler Name: Ryan Franklin

Sample ID#	Collection Date/Time	Matrix	Number of Containers	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	VOCs by 8260	PAHs by 8270SIM	SVOCs by 8270	RCRA 8 Metals	PCBs by 8082			Comments
Sample Preservative				None	5035 Kit	None	5035 Kit	None	None	None				
SD13-12-4'	7/22/13 2:15pm	S	5		X	X								L648459-01
SD13-12-7.5'	2:24pm	↓	↓		X	X								02
SD13-12-13'	2:42pm	↓	↓		X	X								03
SD13-13-2.5'	3:07pm	↓	↓		X	X								04
SD13-13-9'	3:25pm	↓	↓		X	X								05
SD13-13-13.5'	3:46pm	↓	↓		X	X								06

Notes: 30-cont

554702359554

Relinquished By: Ryan Franklin	Agency/Agent: ODOT	Received By: [redacted]	Agency/Agent: ODOT
Signature:	Time & Date: 7:30pm 7/22/13	Signature:	Time & Date: 7/24/13 11:15am
Relinquished By: Mike Darby	Agency/Agent: ODOT	Received By: Fed Ex Thomas Chase	Agency/Agent: ESC
Signature:	Time & Date: 7/24/13 11:45am	Signature:	Time & Date: 07/24/13 0930

MS 3.52

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT # []. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S &C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

Version: 4/4/2008

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Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODOT
63055 N. Hwy 97, Bldg M
Bend, OR 97701

Report Summary

Thursday August 01, 2013

Report Number: L648459
Samples Received: 07/25/13
Client Project: 15409

Description: US97: J Street Intersection (Madras South Y)

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648459-01

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-12-4 FT

Collected By : Ryan Franklin
Collection Date : 07/22/13 14:15

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	90.5	0.100	%	2540 G-2011	08/01/13	1
Gasoline Range Organics-NWTPH	BDL	0.11	mg/kg	NWTPHGX	07/27/13	1
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	96.0		% Rec.	NWTPHGX	07/27/13	1
Diesel Range Organics (DRO)	BDL	4.4	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	98.2		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 08/01/13 13:31 Printed: 08/01/13 13:38

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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648459-02

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-12-7.5 FT

Collected By : Ryan Franklin
Collection Date : 07/22/13 14:24

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	84.2	0.100	%	2540 G-2011	08/01/13	1
Gasoline Range Organics-NWTPH	BDL	0.12	mg/kg	NWTPHGX	07/27/13	1.06
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	96.2		% Rec.	NWTPHGX	07/27/13	1.06
Diesel Range Organics (DRO)	BDL	4.8	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	12.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	103.		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Bend, OR 97701

August 01,2013

ESC Sample # : L648459-03

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-12-13 FT

Collected By : Ryan Franklin
Collection Date : 07/22/13 14:42

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	86.2	0.100	%	2540 G-2011	08/01/13	1
Gasoline Range Organics-NWTPH	BDL	0.12	mg/kg	NWTPHGX	07/27/13	1.06
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	96.0		% Rec.	NWTPHGX	07/27/13	1.06
Diesel Range Organics (DRO)	BDL	4.6	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	12.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	90.5		% Rec.	NWTPHDX	07/29/13	1

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Det. Limit - Practical Quantitation Limit(PQL)
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Oregon Dept of Transportation - ODO
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August 01,2013

ESC Sample # : L648459-04

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-13-2.5 FT

Collected By : Ryan Franklin
Collection Date : 07/22/13 15:07

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	82.0	0.100	%	2540 G-2011	08/01/13	1
Gasoline Range Organics-NWTPH	BDL	0.14	mg/kg	NWTPHGX	07/27/13	1.12
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	96.1		% Rec.	NWTPHGX	07/27/13	1.12
Diesel Range Organics (DRO)	BDL	4.9	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	12.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	105.		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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August 01,2013

ESC Sample # : L648459-05

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-13-9 FT

Collected By : Ryan Franklin
Collection Date : 07/22/13 15:25

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	82.8	0.100	%	2540 G-2011	08/01/13	1
Gasoline Range Organics-NWTPH	BDL	0.13	mg/kg	NWTPHGX	07/27/13	1.06
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	96.1		% Rec.	NWTPHGX	07/27/13	1.06
Diesel Range Organics (DRO)	BDL	4.8	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	12.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	89.2		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648459-06

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-13-13.5 FT

Collected By : Ryan Franklin
Collection Date : 07/22/13 15:46

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	87.0	0.100	%	2540 G-2011	08/01/13	1
Gasoline Range Organics-NWTPH	BDL	0.57	mg/kg	NWTPHGX	07/27/13	5
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	95.0		% Rec.	NWTPHGX	07/27/13	5
Diesel Range Organics (DRO)	BDL	4.6	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	107.		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Ryan Franklin (ODOT)
63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648459

August 01, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Gasoline Range Organics-NWTPH	< .1	mg/kg			WG673956	07/27/13 12:11
a,a,a-Trifluorotoluene(FID)		% Rec.	97.76	59-128	WG673956	07/27/13 12:11
Diesel Range Organics (DRO)	< 4	mg/kg			WG674011	07/28/13 11:23
Residual Range Organics (RRO)	< 10	mg/kg			WG674011	07/28/13 11:23
o-Terphenyl		% Rec.	101.0	50-150	WG674011	07/28/13 11:23
Total Solids	< .1	%			WG674668	08/01/13 07:52

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Total Solids	%	88.0	87.9	0.211	5	L648441-01	WG674668

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Gasoline Range Organics-NWTPH	mg/kg	5.5	3.71	67.4	62.2-127	WG673956
a,a,a-Trifluorotoluene(FID)				96.55	59-128	WG673956
Diesel Range Organics (DRO)	mg/kg	30	26.2	87.2	50-150	WG674011
Residual Range Organics (RRO)	mg/kg	30	23.6	78.7	50-150	WG674011
o-Terphenyl				103.0	50-150	WG674011
Total Solids	%	50	50.1	100.	85-115	WG674668

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Gasoline Range Organics-NWTPH	mg/kg	3.71	3.71	68.0	62.2-127	0.150	20	WG673956
a,a,a-Trifluorotoluene(FID)				96.81	59-128			WG673956
Diesel Range Organics (DRO)	mg/kg	25.5	26.2	85.0	50-150	2.59	20	WG674011
Residual Range Organics (RRO)	mg/kg	23.1	23.6	77.0	50-150	2.21	20	WG674011
o-Terphenyl				99.90	50-150			WG674011

Matrix Spike

Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Gasoline Range Organics-NWTPH	mg/kg	13.3	0.170	5.5	47.6	20.5-134	L648395-07	WG673956
a,a,a-Trifluorotoluene(FID)					94.26	59-128		WG673956
Diesel Range Organics (DRO)	mg/kg	26.3	0.215	30	87.1	50-150	L648477-02	WG674011
Residual Range Organics (RRO)	mg/kg	22.1	0.131	30	73.3	50-150	L648477-02	WG674011
o-Terphenyl					114.0	50-150		WG674011

Matrix Spike Duplicate

Analyte	Units	MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Gasoline Range Organics-NWTPH	mg/kg	12.0	13.3	43.1	20.5-134	9.83	23.8	L648395-07	WG673956
a,a,a-Trifluorotoluene(FID)				95.03	59-128				WG673956

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Ryan Franklin (ODOT)
63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648459

August 01, 2013

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Diesel Range Organics (DRO)	mg/kg	25.7	26.3	84.9	50-150	2.48	20	L648477-02	WG674011
Residual Range Organics (RRO)	mg/kg	22.3	22.1	74.0	50-150	0.970	20	L648477-02	WG674011
o-Terphenyl				114.0	50-150				WG674011

Batch number /Run number / Sample number cross reference

WG673956: R2759180: L648459-01 02 03 04 05 06
WG674011: R2759544 R2761023: L648459-01 02 03 04 05 06
WG674668: R2763200: L648459-01 02 03 04 05 06

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Quality Assurance Report
Level II

L648459

August 01, 2013

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

State of Oregon Sample Chain of Custody

Agency, Authorized Purchaser or Agent: ODOT	Contract Laboratory Name: Environmental Sciences Corporation	Lab Selection Criteria:	Turn Around Time:
Send Lab Report To: Ryan Franklin Address: 63034 O.B. Riley Rd. Bend, OR 97701 Tel. #: (541) 388-6088 E-mail: ryan.franklin@odot.state.or.us	Lab Batch #: Invoice To: Same Address: Tel. #:	☐ Proximity (if TAT < 48 hrs) ☒ Prior work on same project ☒ Cost (for anticipated analyses) ☐ Other labs disqualified or unable to perform requested services ☐ Emergency work	☒ 10 days (std.) ☐ 5 days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ Other _____

Project Name: US97: J Street Intersection (Madras South Y)
Project #: 15409
Sampler Name: Ryan Franklin

J005

Sample ID#	Collection Date/Time	Matrix	Number of Contain-ers	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	VOCs by 8260	PAHs by 8270SIM	SVOCs by 8270	RCRA 8 Metals	PCBs by 8082			Comments
Sample Preservative				None	5035 Kit	None	5035 Kit	None	None	None				
SD13-14-5'	7/23/13 7:04am	S	5			X								L648403-01
SD13-14-8'	7:12am					X								-02
SD13-15-5'	7:57am					X	X							-03
SD13-16-9.5'	8:48am					X	X							-04
SD13-17-2'	10:05am					X	X							-05
SD13-17-6.5'	10:19am					X	X							-06
SD13-18-9'	11:04am					X	X							-07

Notes:

5547 0235 9543 3.6℃ TP

Relinquished By: Ryan Franklin	Agency/Agent: ODOT	Received By: [illegible]	Agency/Agent: ODOT
Signature: [illegible]	Time & Date: 7:03pm 7/23/13	Signature: [illegible]	Time & Date: 7/24/13 11:20am
Relinquished By: [illegible]	Agency/Agent: ODOT	Received By: Fed Ex	Agency/Agent:
Signature: [illegible]	Time & Date: 11:50am 7/24/13	Signature: [illegible]	Time & Date: 07/24/13

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT # ▯. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S &C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

ok

Version: 4/4/2008

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Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODOT
63055 N. Hwy 97, Bldg M
Bend, OR 97701

Report Summary

Thursday August 01, 2013

Report Number: L648403
Samples Received: 07/25/13
Client Project: 15409

Description: US97: J Street Intersection (Madras South Y)

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648403-01

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Site ID :

Sample ID : SD13-14-5FT

Project # : 15409

Collected By : Ryan Franklin
Collection Date : 07/23/13 07:04

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	87.3	0.100	%	2540 G-2011	08/01/13	1
Diesel Range Organics (DRO)	BDL	4.6	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	97.9		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 08/01/13 13:32 Printed: 08/01/13 13:39

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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648403-02

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Site ID :

Sample ID : SD13-14-8FT

Project # : 15409

Collected By : Ryan Franklin
Collection Date : 07/23/13 07:12

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	90.4	0.100	%	2540 G-2011	08/01/13	1
Diesel Range Organics (DRO)	BDL	4.4	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	105.		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648403-03

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-15-7FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 07:57

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	90.7	0.100	%	2540 G-2011	08/01/13	1
Volatile Organics						
Acetone	BDL	0.055	mg/kg	8260B	07/27/13	1
Acrylonitrile	BDL	0.011	mg/kg	8260B	07/27/13	1
Benzene	BDL	0.0011	mg/kg	8260B	07/27/13	1
Bromobenzene	BDL	0.0011	mg/kg	8260B	07/27/13	1
Bromodichloromethane	BDL	0.0011	mg/kg	8260B	07/27/13	1
Bromoform	BDL	0.0011	mg/kg	8260B	07/27/13	1
Bromomethane	BDL	0.0055	mg/kg	8260B	07/27/13	1
n-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/27/13	1
sec-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/27/13	1
tert-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/27/13	1
Carbon tetrachloride	BDL	0.0011	mg/kg	8260B	07/27/13	1
Chlorobenzene	BDL	0.0011	mg/kg	8260B	07/27/13	1
Chlorodibromomethane	BDL	0.0011	mg/kg	8260B	07/27/13	1
Chloroethane	BDL	0.0055	mg/kg	8260B	07/27/13	1
2-Chloroethyl vinyl ether	BDL	0.055	mg/kg	8260B	07/27/13	1
Chloroform	BDL	0.0055	mg/kg	8260B	07/27/13	1
Chloromethane	BDL	0.0028	mg/kg	8260B	07/27/13	1
2-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/27/13	1
4-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,2-Dibromo-3-Chloropropane	BDL	0.0055	mg/kg	8260B	07/27/13	1
1,2-Dibromoethane	BDL	0.0011	mg/kg	8260B	07/27/13	1
Dibromomethane	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,2-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,3-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,4-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/27/13	1
Dichlorodifluoromethane	BDL	0.0055	mg/kg	8260B	07/27/13	1
1,1-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,2-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,1-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/27/13	1
cis-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/27/13	1
trans-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,1-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,3-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/27/13	1
cis-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/27/13	1
trans-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/27/13	1
2,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/27/13	1
Di-isopropyl ether	BDL	0.0011	mg/kg	8260B	07/27/13	1
Ethylbenzene	BDL	0.0011	mg/kg	8260B	07/27/13	1
Hexachloro-1,3-butadiene	BDL	0.0011	mg/kg	8260B	07/27/13	1
Isopropylbenzene	BDL	0.0011	mg/kg	8260B	07/27/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648403-03

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-15-7FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 07:57

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
p-Isopropyltoluene	BDL	0.0011	mg/kg	8260B	07/27/13	1
2-Butanone (MEK)	BDL	0.011	mg/kg	8260B	07/27/13	1
Methylene Chloride	BDL	0.0055	mg/kg	8260B	07/27/13	1
4-Methyl-2-pentanone (MIBK)	BDL	0.011	mg/kg	8260B	07/27/13	1
Methyl tert-butyl ether	BDL	0.0011	mg/kg	8260B	07/27/13	1
Naphthalene	BDL	0.0055	mg/kg	8260B	07/27/13	1
n-Propylbenzene	BDL	0.0011	mg/kg	8260B	07/27/13	1
Styrene	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,1,1,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,1,2,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,1,2-Trichlorotrifluoroethane	BDL	0.0011	mg/kg	8260B	07/27/13	1
Tetrachloroethene	BDL	0.0011	mg/kg	8260B	07/27/13	1
Toluene	BDL	0.0055	mg/kg	8260B	07/27/13	1
1,2,3-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,2,4-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,1,1-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,1,2-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/27/13	1
Trichloroethene	BDL	0.0011	mg/kg	8260B	07/27/13	1
Trichlorofluoromethane	BDL	0.0055	mg/kg	8260B	07/27/13	1
1,2,3-Trichloropropane	BDL	0.0028	mg/kg	8260B	07/27/13	1
1,2,4-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,2,3-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/27/13	1
1,3,5-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/27/13	1
Vinyl chloride	BDL	0.0011	mg/kg	8260B	07/27/13	1
Xylenes, Total	BDL	0.0033	mg/kg	8260B	07/27/13	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	07/27/13	1
Dibromofluoromethane	105.		% Rec.	8260B	07/27/13	1
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	07/27/13	1
4-Bromofluorobenzene	108.		% Rec.	8260B	07/27/13	1
Diesel Range Organics (DRO)	BDL	4.4	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	114.		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648403-04

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-16-9.5FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 08:48

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	92.3	0.100	%	2540 G-2011	08/01/13	1
Volatile Organics						
Acetone	BDL	0.058	mg/kg	8260B	07/27/13	1.07
Acrylonitrile	BDL	0.012	mg/kg	8260B	07/27/13	1.07
Benzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Bromobenzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Bromodichloromethane	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Bromoform	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Bromomethane	BDL	0.0058	mg/kg	8260B	07/27/13	1.07
n-Butylbenzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
sec-Butylbenzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
tert-Butylbenzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Carbon tetrachloride	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Chlorobenzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Chlorodibromomethane	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Chloroethane	BDL	0.0058	mg/kg	8260B	07/27/13	1.07
2-Chloroethyl vinyl ether	BDL	0.058	mg/kg	8260B	07/27/13	1.07
Chloroform	BDL	0.0058	mg/kg	8260B	07/27/13	1.07
Chloromethane	BDL	0.0029	mg/kg	8260B	07/27/13	1.07
2-Chlorotoluene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
4-Chlorotoluene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,2-Dibromo-3-Chloropropane	BDL	0.0058	mg/kg	8260B	07/27/13	1.07
1,2-Dibromoethane	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Dibromomethane	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,2-Dichlorobenzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,3-Dichlorobenzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,4-Dichlorobenzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Dichlorodifluoromethane	BDL	0.0058	mg/kg	8260B	07/27/13	1.07
1,1-Dichloroethane	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,2-Dichloroethane	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,1-Dichloroethene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
cis-1,2-Dichloroethene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
trans-1,2-Dichloroethene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,2-Dichloropropane	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,1-Dichloropropene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,3-Dichloropropane	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
cis-1,3-Dichloropropene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
trans-1,3-Dichloropropene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
2,2-Dichloropropane	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Di-isopropyl ether	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Ethylbenzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Hexachloro-1,3-butadiene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Isopropylbenzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648403-04

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-16-9.5FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 08:48

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
p-Isopropyltoluene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
2-Butanone (MEK)	BDL	0.012	mg/kg	8260B	07/27/13	1.07
Methylene Chloride	BDL	0.0058	mg/kg	8260B	07/27/13	1.07
4-Methyl-2-pentanone (MIBK)	BDL	0.012	mg/kg	8260B	07/27/13	1.07
Methyl tert-butyl ether	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Naphthalene	BDL	0.0058	mg/kg	8260B	07/27/13	1.07
n-Propylbenzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Styrene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,1,1,2-Tetrachloroethane	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,1,2,2-Tetrachloroethane	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,1,2-Trichlorotrifluoroethane	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Tetrachloroethene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Toluene	BDL	0.0058	mg/kg	8260B	07/27/13	1.07
1,2,3-Trichlorobenzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,2,4-Trichlorobenzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,1,1-Trichloroethane	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,1,2-Trichloroethane	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Trichloroethene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Trichlorofluoromethane	BDL	0.0058	mg/kg	8260B	07/27/13	1.07
1,2,3-Trichloropropane	BDL	0.0029	mg/kg	8260B	07/27/13	1.07
1,2,4-Trimethylbenzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,2,3-Trimethylbenzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
1,3,5-Trimethylbenzene	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Vinyl chloride	BDL	0.0012	mg/kg	8260B	07/27/13	1.07
Xylenes, Total	BDL	0.0035	mg/kg	8260B	07/27/13	1.07
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	07/27/13	1.07
Dibromofluoromethane	105.		% Rec.	8260B	07/27/13	1.07
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	07/27/13	1.07
4-Bromofluorobenzene	107.		% Rec.	8260B	07/27/13	1.07
Diesel Range Organics (DRO)	BDL	4.3	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	106.		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Est. 1970

REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648403-05

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-17-2FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 10:05

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	89.2	0.100	%	2540 G-2011	08/01/13	1
Volatile Organics						
Acetone	BDL	0.056	mg/kg	8260B	07/30/13	1
Acrylonitrile	BDL	0.011	mg/kg	8260B	07/30/13	1
Benzene	BDL	0.0011	mg/kg	8260B	07/30/13	1
Bromobenzene	BDL	0.0011	mg/kg	8260B	07/30/13	1
Bromodichloromethane	BDL	0.0011	mg/kg	8260B	07/30/13	1
Bromoform	BDL	0.0011	mg/kg	8260B	07/30/13	1
Bromomethane	BDL	0.0056	mg/kg	8260B	07/30/13	1
n-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/30/13	1
sec-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/30/13	1
tert-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/30/13	1
Carbon tetrachloride	BDL	0.0011	mg/kg	8260B	07/30/13	1
Chlorobenzene	BDL	0.0011	mg/kg	8260B	07/30/13	1
Chlorodibromomethane	BDL	0.0011	mg/kg	8260B	07/30/13	1
Chloroethane	BDL	0.0056	mg/kg	8260B	07/30/13	1
2-Chloroethyl vinyl ether	BDL	0.056	mg/kg	8260B	07/30/13	1
Chloroform	BDL	0.0056	mg/kg	8260B	07/30/13	1
Chloromethane	BDL	0.0028	mg/kg	8260B	07/30/13	1
2-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/30/13	1
4-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,2-Dibromo-3-Chloropropane	BDL	0.0056	mg/kg	8260B	07/30/13	1
1,2-Dibromoethane	BDL	0.0011	mg/kg	8260B	07/30/13	1
Dibromomethane	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,2-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,3-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,4-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/30/13	1
Dichlorodifluoromethane	BDL	0.0056	mg/kg	8260B	07/30/13	1
1,1-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,2-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,1-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/30/13	1
cis-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/30/13	1
trans-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,1-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,3-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/30/13	1
cis-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/30/13	1
trans-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/30/13	1
2,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/30/13	1
Di-isopropyl ether	BDL	0.0011	mg/kg	8260B	07/30/13	1
Ethylbenzene	BDL	0.0011	mg/kg	8260B	07/30/13	1
Hexachloro-1,3-butadiene	BDL	0.0011	mg/kg	8260B	07/30/13	1
Isopropylbenzene	BDL	0.0011	mg/kg	8260B	07/30/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648403-05

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-17-2FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 10:05

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
p-Isopropyltoluene	BDL	0.0011	mg/kg	8260B	07/30/13	1
2-Butanone (MEK)	BDL	0.011	mg/kg	8260B	07/30/13	1
Methylene Chloride	BDL	0.0056	mg/kg	8260B	07/30/13	1
4-Methyl-2-pentanone (MIBK)	BDL	0.011	mg/kg	8260B	07/30/13	1
Methyl tert-butyl ether	BDL	0.0011	mg/kg	8260B	07/30/13	1
Naphthalene	BDL	0.0056	mg/kg	8260B	07/30/13	1
n-Propylbenzene	BDL	0.0011	mg/kg	8260B	07/30/13	1
Styrene	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,1,1,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,1,2,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,1,2-Trichlorotrifluoroethane	BDL	0.0011	mg/kg	8260B	07/30/13	1
Tetrachloroethene	BDL	0.0011	mg/kg	8260B	07/30/13	1
Toluene	BDL	0.0056	mg/kg	8260B	07/30/13	1
1,2,3-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,2,4-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,1,1-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,1,2-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/30/13	1
Trichloroethene	BDL	0.0011	mg/kg	8260B	07/30/13	1
Trichlorofluoromethane	BDL	0.0056	mg/kg	8260B	07/30/13	1
1,2,3-Trichloropropane	BDL	0.0028	mg/kg	8260B	07/30/13	1
1,2,4-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,2,3-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/30/13	1
1,3,5-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/30/13	1
Vinyl chloride	BDL	0.0011	mg/kg	8260B	07/30/13	1
Xylenes, Total	BDL	0.0034	mg/kg	8260B	07/30/13	1
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	07/30/13	1
Dibromofluoromethane	102.		% Rec.	8260B	07/30/13	1
a,a,a-Trifluorotoluene	107.		% Rec.	8260B	07/30/13	1
4-Bromofluorobenzene	94.0		% Rec.	8260B	07/30/13	1
Diesel Range Organics (DRO)	BDL	4.5	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	112.		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648403-06

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-17-6.5FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 10:19

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	91.3	0.100	%	2540 G-2011	08/01/13	1
Volatile Organics						
Acetone	BDL	0.055	mg/kg	8260B	07/29/13	1
Acrylonitrile	BDL	0.011	mg/kg	8260B	07/29/13	1
Benzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Bromobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Bromodichloromethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
Bromoform	BDL	0.0011	mg/kg	8260B	07/29/13	1
Bromomethane	BDL	0.0055	mg/kg	8260B	07/29/13	1
n-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
sec-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
tert-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Carbon tetrachloride	BDL	0.0011	mg/kg	8260B	07/29/13	1
Chlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Chlorodibromomethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
Chloroethane	BDL	0.0055	mg/kg	8260B	07/29/13	1
2-Chloroethyl vinyl ether	BDL	0.055	mg/kg	8260B	07/29/13	1
Chloroform	BDL	0.0055	mg/kg	8260B	07/29/13	1
Chloromethane	BDL	0.0027	mg/kg	8260B	07/29/13	1
2-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/29/13	1
4-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,2-Dibromo-3-Chloropropane	BDL	0.0055	mg/kg	8260B	07/29/13	1
1,2-Dibromoethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
Dibromomethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,2-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,3-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,4-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Dichlorodifluoromethane	BDL	0.0055	mg/kg	8260B	07/29/13	1
1,1-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,2-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,1-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/29/13	1
cis-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/29/13	1
trans-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,1-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,3-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/29/13	1
cis-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/29/13	1
trans-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/29/13	1
2,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/29/13	1
Di-isopropyl ether	BDL	0.0011	mg/kg	8260B	07/29/13	1
Ethylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Hexachloro-1,3-butadiene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Isopropylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648403-06

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-17-6.5FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 10:19

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
p-Isopropyltoluene	BDL	0.0011	mg/kg	8260B	07/29/13	1
2-Butanone (MEK)	BDL	0.011	mg/kg	8260B	07/29/13	1
Methylene Chloride	BDL	0.0055	mg/kg	8260B	07/29/13	1
4-Methyl-2-pentanone (MIBK)	BDL	0.011	mg/kg	8260B	07/29/13	1
Methyl tert-butyl ether	BDL	0.0011	mg/kg	8260B	07/29/13	1
Naphthalene	BDL	0.0055	mg/kg	8260B	07/29/13	1
n-Propylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Styrene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,1,1,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,1,2,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,1,2-Trichlorotrifluoroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
Tetrachloroethene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Toluene	BDL	0.0055	mg/kg	8260B	07/29/13	1
1,2,3-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,2,4-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,1,1-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,1,2-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
Trichloroethene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Trichlorofluoromethane	BDL	0.0055	mg/kg	8260B	07/29/13	1
1,2,3-Trichloropropane	BDL	0.0027	mg/kg	8260B	07/29/13	1
1,2,4-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,2,3-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,3,5-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Vinyl chloride	BDL	0.0011	mg/kg	8260B	07/29/13	1
Xylenes, Total	BDL	0.0033	mg/kg	8260B	07/29/13	1
Surrogate Recovery						
Toluene-d8	100.		% Rec.	8260B	07/29/13	1
Dibromofluoromethane	103.		% Rec.	8260B	07/29/13	1
a,a,a-Trifluorotoluene	98.7		% Rec.	8260B	07/29/13	1
4-Bromofluorobenzene	96.9		% Rec.	8260B	07/29/13	1
Diesel Range Organics (DRO)	BDL	4.4	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	101.		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648403-07

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-18-9FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 11:04

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	90.8	0.100	%	2540 G-2011	08/01/13	1
Volatile Organics						
Acetone	BDL	0.055	mg/kg	8260B	07/29/13	1
Acrylonitrile	BDL	0.011	mg/kg	8260B	07/29/13	1
Benzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Bromobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Bromodichloromethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
Bromoform	BDL	0.0011	mg/kg	8260B	07/29/13	1
Bromomethane	BDL	0.0055	mg/kg	8260B	07/29/13	1
n-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
sec-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
tert-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Carbon tetrachloride	BDL	0.0011	mg/kg	8260B	07/29/13	1
Chlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Chlorodibromomethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
Chloroethane	BDL	0.0055	mg/kg	8260B	07/29/13	1
2-Chloroethyl vinyl ether	BDL	0.055	mg/kg	8260B	07/29/13	1
Chloroform	BDL	0.0055	mg/kg	8260B	07/29/13	1
Chloromethane	BDL	0.0028	mg/kg	8260B	07/29/13	1
2-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/29/13	1
4-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,2-Dibromo-3-Chloropropane	BDL	0.0055	mg/kg	8260B	07/29/13	1
1,2-Dibromoethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
Dibromomethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,2-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,3-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,4-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Dichlorodifluoromethane	BDL	0.0055	mg/kg	8260B	07/29/13	1
1,1-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,2-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,1-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/29/13	1
cis-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/29/13	1
trans-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,1-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,3-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/29/13	1
cis-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/29/13	1
trans-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/29/13	1
2,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/29/13	1
Di-isopropyl ether	BDL	0.0011	mg/kg	8260B	07/29/13	1
Ethylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Hexachloro-1,3-butadiene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Isopropylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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The reported analytical results relate only to the sample submitted

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Est. 1970

REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648403-07

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-18-9FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 11:04

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
p-Isopropyltoluene	BDL	0.0011	mg/kg	8260B	07/29/13	1
2-Butanone (MEK)	BDL	0.011	mg/kg	8260B	07/29/13	1
Methylene Chloride	BDL	0.0055	mg/kg	8260B	07/29/13	1
4-Methyl-2-pentanone (MIBK)	BDL	0.011	mg/kg	8260B	07/29/13	1
Methyl tert-butyl ether	BDL	0.0011	mg/kg	8260B	07/29/13	1
Naphthalene	BDL	0.0055	mg/kg	8260B	07/29/13	1
n-Propylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Styrene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,1,1,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,1,2,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,1,2-Trichlorotrifluoroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
Tetrachloroethene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Toluene	BDL	0.0055	mg/kg	8260B	07/29/13	1
1,2,3-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,2,4-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,1,1-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,1,2-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1
Trichloroethene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Trichlorofluoromethane	BDL	0.0055	mg/kg	8260B	07/29/13	1
1,2,3-Trichloropropane	BDL	0.0028	mg/kg	8260B	07/29/13	1
1,2,4-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,2,3-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
1,3,5-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1
Vinyl chloride	BDL	0.0011	mg/kg	8260B	07/29/13	1
Xylenes, Total	BDL	0.0033	mg/kg	8260B	07/29/13	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	07/29/13	1
Dibromofluoromethane	106.		% Rec.	8260B	07/29/13	1
a,a,a-Trifluorotoluene	99.3		% Rec.	8260B	07/29/13	1
4-Bromofluorobenzene	95.0		% Rec.	8260B	07/29/13	1
Diesel Range Organics (DRO)	BDL	4.4	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	112.		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Reported: 08/01/13 13:32 Printed: 08/01/13 13:39

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L648403-05	WG674509	SAMP	Isopropylbenzene	R2761620	J4

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J4	The associated batch QC was outside the established quality control range for accuracy.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

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Bend, OR 97701

Quality Assurance Report
Level II

L648403

August 01, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG673970	07/26/13 16:40
1,1,1-Trichloroethane	< .001	mg/kg			WG673970	07/26/13 16:40
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG673970	07/26/13 16:40
1,1,2-Trichloroethane	< .001	mg/kg			WG673970	07/26/13 16:40
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG673970	07/26/13 16:40
1,1-Dichloroethane	< .001	mg/kg			WG673970	07/26/13 16:40
1,1-Dichloroethene	< .001	mg/kg			WG673970	07/26/13 16:40
1,1-Dichloropropene	< .001	mg/kg			WG673970	07/26/13 16:40
1,2,3-Trichlorobenzene	< .001	mg/kg			WG673970	07/26/13 16:40
1,2,3-Trichloropropane	< .0025	mg/kg			WG673970	07/26/13 16:40
1,2,3-Trimethylbenzene	< .001	mg/kg			WG673970	07/26/13 16:40
1,2,4-Trichlorobenzene	< .001	mg/kg			WG673970	07/26/13 16:40
1,2,4-Trimethylbenzene	< .001	mg/kg			WG673970	07/26/13 16:40
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG673970	07/26/13 16:40
1,2-Dibromoethane	< .001	mg/kg			WG673970	07/26/13 16:40
1,2-Dichlorobenzene	< .001	mg/kg			WG673970	07/26/13 16:40
1,2-Dichloroethane	< .001	mg/kg			WG673970	07/26/13 16:40
1,2-Dichloropropane	< .001	mg/kg			WG673970	07/26/13 16:40
1,3,5-Trimethylbenzene	< .001	mg/kg			WG673970	07/26/13 16:40
1,3-Dichlorobenzene	< .001	mg/kg			WG673970	07/26/13 16:40
1,3-Dichloropropane	< .001	mg/kg			WG673970	07/26/13 16:40
1,4-Dichlorobenzene	< .001	mg/kg			WG673970	07/26/13 16:40
2,2-Dichloropropane	< .001	mg/kg			WG673970	07/26/13 16:40
2-Butanone (MEK)	< .01	mg/kg			WG673970	07/26/13 16:40
2-Chloroethyl vinyl ether	< .05	mg/kg			WG673970	07/26/13 16:40
2-Chlorotoluene	< .001	mg/kg			WG673970	07/26/13 16:40
4-Chlorotoluene	< .001	mg/kg			WG673970	07/26/13 16:40
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG673970	07/26/13 16:40
Acetone	< .05	mg/kg			WG673970	07/26/13 16:40
Acrylonitrile	< .01	mg/kg			WG673970	07/26/13 16:40
Benzene	< .001	mg/kg			WG673970	07/26/13 16:40
Bromobenzene	< .001	mg/kg			WG673970	07/26/13 16:40
Bromodichloromethane	< .001	mg/kg			WG673970	07/26/13 16:40
Bromoform	< .001	mg/kg			WG673970	07/26/13 16:40
Bromomethane	< .005	mg/kg			WG673970	07/26/13 16:40
Carbon tetrachloride	< .001	mg/kg			WG673970	07/26/13 16:40
Chlorobenzene	< .001	mg/kg			WG673970	07/26/13 16:40
Chlorodibromomethane	< .001	mg/kg			WG673970	07/26/13 16:40
Chloroethane	< .005	mg/kg			WG673970	07/26/13 16:40
Chloroform	< .005	mg/kg			WG673970	07/26/13 16:40
Chloromethane	< .0025	mg/kg			WG673970	07/26/13 16:40
cis-1,2-Dichloroethene	< .001	mg/kg			WG673970	07/26/13 16:40
cis-1,3-Dichloropropene	< .001	mg/kg			WG673970	07/26/13 16:40
Di-isopropyl ether	< .001	mg/kg			WG673970	07/26/13 16:40
Dibromomethane	< .001	mg/kg			WG673970	07/26/13 16:40
Dichlorodifluoromethane	< .005	mg/kg			WG673970	07/26/13 16:40
Ethylbenzene	< .001	mg/kg			WG673970	07/26/13 16:40
Hexachloro-1,3-butadiene	< .001	mg/kg			WG673970	07/26/13 16:40
Isopropylbenzene	< .001	mg/kg			WG673970	07/26/13 16:40
Methyl tert-butyl ether	< .001	mg/kg			WG673970	07/26/13 16:40
Methylene Chloride	< .005	mg/kg			WG673970	07/26/13 16:40
n-Butylbenzene	< .001	mg/kg			WG673970	07/26/13 16:40
n-Propylbenzene	< .001	mg/kg			WG673970	07/26/13 16:40
Naphthalene	< .005	mg/kg			WG673970	07/26/13 16:40
p-Isopropyltoluene	< .001	mg/kg			WG673970	07/26/13 16:40
sec-Butylbenzene	< .001	mg/kg			WG673970	07/26/13 16:40
Styrene	< .001	mg/kg			WG673970	07/26/13 16:40
tert-Butylbenzene	< .001	mg/kg			WG673970	07/26/13 16:40
Tetrachloroethene	< .001	mg/kg			WG673970	07/26/13 16:40

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Ryan Franklin (ODOT)
63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648403

August 01, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Toluene	< .005	mg/kg			WG673970	07/26/13 16:40
trans-1,2-Dichloroethene	< .001	mg/kg			WG673970	07/26/13 16:40
trans-1,3-Dichloropropene	< .001	mg/kg			WG673970	07/26/13 16:40
Trichloroethene	< .001	mg/kg			WG673970	07/26/13 16:40
Trichlorofluoromethane	< .005	mg/kg			WG673970	07/26/13 16:40
Vinyl chloride	< .001	mg/kg			WG673970	07/26/13 16:40
Xylenes, Total	< .003	mg/kg			WG673970	07/26/13 16:40
4-Bromofluorobenzene		% Rec.	106.5	67-133	WG673970	07/26/13 16:40
Dibromofluoromethane		% Rec.	101.7	72-135	WG673970	07/26/13 16:40
Toluene-d8		% Rec.	101.0	90-113	WG673970	07/26/13 16:40
a,a,a-Trifluorotoluene		% Rec.	107.4	89-115	WG673970	07/26/13 16:40
Diesel Range Organics (DRO)	< 4	mg/kg			WG674011	07/28/13 11:23
Residual Range Organics (RRO)	< 10	mg/kg			WG674011	07/28/13 11:23
o-Terphenyl		% Rec.	101.0	50-150	WG674011	07/28/13 11:23
Diesel Range Organics (DRO)	< 4	mg/kg			WG673757	07/28/13 12:03
Residual Range Organics (RRO)	< 10	mg/kg			WG673757	07/28/13 12:03
o-Terphenyl		% Rec.	91.00	50-150	WG673757	07/28/13 12:03
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG674338	07/29/13 15:10
1,1,1-Trichloroethane	< .001	mg/kg			WG674338	07/29/13 15:10
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG674338	07/29/13 15:10
1,1,2-Trichloroethane	< .001	mg/kg			WG674338	07/29/13 15:10
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG674338	07/29/13 15:10
1,1-Dichloroethane	< .001	mg/kg			WG674338	07/29/13 15:10
1,1-Dichloroethene	< .001	mg/kg			WG674338	07/29/13 15:10
1,1-Dichloropropene	< .001	mg/kg			WG674338	07/29/13 15:10
1,2,3-Trichlorobenzene	< .001	mg/kg			WG674338	07/29/13 15:10
1,2,3-Trichloropropane	< .0025	mg/kg			WG674338	07/29/13 15:10
1,2,3-Trimethylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
1,2,4-Trichlorobenzene	< .001	mg/kg			WG674338	07/29/13 15:10
1,2,4-Trimethylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG674338	07/29/13 15:10
1,2-Dibromoethane	< .001	mg/kg			WG674338	07/29/13 15:10
1,2-Dichlorobenzene	< .001	mg/kg			WG674338	07/29/13 15:10
1,2-Dichloroethane	< .001	mg/kg			WG674338	07/29/13 15:10
1,2-Dichloropropane	< .001	mg/kg			WG674338	07/29/13 15:10
1,3,5-Trimethylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
1,3-Dichlorobenzene	< .001	mg/kg			WG674338	07/29/13 15:10
1,3-Dichloropropane	< .001	mg/kg			WG674338	07/29/13 15:10
1,4-Dichlorobenzene	< .001	mg/kg			WG674338	07/29/13 15:10
2,2-Dichloropropane	< .001	mg/kg			WG674338	07/29/13 15:10
2-Butanone (MEK)	< .01	mg/kg			WG674338	07/29/13 15:10
2-Chloroethyl vinyl ether	< .05	mg/kg			WG674338	07/29/13 15:10
2-Chlorotoluene	< .001	mg/kg			WG674338	07/29/13 15:10
4-Chlorotoluene	< .001	mg/kg			WG674338	07/29/13 15:10
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG674338	07/29/13 15:10
Acetone	< .05	mg/kg			WG674338	07/29/13 15:10
Acrylonitrile	< .01	mg/kg			WG674338	07/29/13 15:10
Benzene	< .001	mg/kg			WG674338	07/29/13 15:10
Bromobenzene	< .001	mg/kg			WG674338	07/29/13 15:10
Bromodichloromethane	< .001	mg/kg			WG674338	07/29/13 15:10
Bromoform	< .001	mg/kg			WG674338	07/29/13 15:10
Bromomethane	< .005	mg/kg			WG674338	07/29/13 15:10
Carbon tetrachloride	< .001	mg/kg			WG674338	07/29/13 15:10

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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L648403

August 01, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Chlorobenzene	< .001	mg/kg			WG674338	07/29/13 15:10
Chlorodibromomethane	< .001	mg/kg			WG674338	07/29/13 15:10
Chloroethane	< .005	mg/kg			WG674338	07/29/13 15:10
Chloroform	< .005	mg/kg			WG674338	07/29/13 15:10
Chloromethane	< .0025	mg/kg			WG674338	07/29/13 15:10
cis-1,2-Dichloroethene	< .001	mg/kg			WG674338	07/29/13 15:10
cis-1,3-Dichloropropene	< .001	mg/kg			WG674338	07/29/13 15:10
Di-isopropyl ether	< .001	mg/kg			WG674338	07/29/13 15:10
Dibromomethane	< .001	mg/kg			WG674338	07/29/13 15:10
Dichlorodifluoromethane	< .005	mg/kg			WG674338	07/29/13 15:10
Ethylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
Hexachloro-1,3-butadiene	< .001	mg/kg			WG674338	07/29/13 15:10
Isopropylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
Methyl tert-butyl ether	< .001	mg/kg			WG674338	07/29/13 15:10
Methylene Chloride	< .005	mg/kg			WG674338	07/29/13 15:10
n-Butylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
n-Propylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
Naphthalene	< .005	mg/kg			WG674338	07/29/13 15:10
p-Isopropyltoluene	< .001	mg/kg			WG674338	07/29/13 15:10
sec-Butylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
Styrene	< .001	mg/kg			WG674338	07/29/13 15:10
tert-Butylbenzene	< .001	mg/kg			WG674338	07/29/13 15:10
Tetrachloroethene	< .001	mg/kg			WG674338	07/29/13 15:10
Toluene	< .005	mg/kg			WG674338	07/29/13 15:10
trans-1,2-Dichloroethene	< .001	mg/kg			WG674338	07/29/13 15:10
trans-1,3-Dichloropropene	< .001	mg/kg			WG674338	07/29/13 15:10
Trichloroethene	< .001	mg/kg			WG674338	07/29/13 15:10
Trichlorofluoromethane	< .005	mg/kg			WG674338	07/29/13 15:10
Vinyl chloride	< .001	mg/kg			WG674338	07/29/13 15:10
Xylenes, Total	< .003	mg/kg			WG674338	07/29/13 15:10
4-Bromofluorobenzene		% Rec.	96.01	67-133	WG674338	07/29/13 15:10
Dibromofluoromethane		% Rec.	97.07	72-135	WG674338	07/29/13 15:10
Toluene-d8		% Rec.	98.58	90-113	WG674338	07/29/13 15:10
a,a,a-Trifluorotoluene		% Rec.	99.71	89-115	WG674338	07/29/13 15:10
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG674509	07/30/13 14:49
1,1,1-Trichloroethane	< .001	mg/kg			WG674509	07/30/13 14:49
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG674509	07/30/13 14:49
1,1,2-Trichloroethane	< .001	mg/kg			WG674509	07/30/13 14:49
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG674509	07/30/13 14:49
1,1-Dichloroethane	< .001	mg/kg			WG674509	07/30/13 14:49
1,1-Dichloroethene	< .001	mg/kg			WG674509	07/30/13 14:49
1,1-Dichloropropene	< .001	mg/kg			WG674509	07/30/13 14:49
1,2,3-Trichlorobenzene	< .001	mg/kg			WG674509	07/30/13 14:49
1,2,3-Trichloropropane	< .0025	mg/kg			WG674509	07/30/13 14:49
1,2,3-Trimethylbenzene	< .001	mg/kg			WG674509	07/30/13 14:49
1,2,4-Trichlorobenzene	< .001	mg/kg			WG674509	07/30/13 14:49
1,2,4-Trimethylbenzene	< .001	mg/kg			WG674509	07/30/13 14:49
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG674509	07/30/13 14:49
1,2-Dibromoethane	< .001	mg/kg			WG674509	07/30/13 14:49
1,2-Dichlorobenzene	< .001	mg/kg			WG674509	07/30/13 14:49
1,2-Dichloroethane	< .001	mg/kg			WG674509	07/30/13 14:49
1,2-Dichloropropane	< .001	mg/kg			WG674509	07/30/13 14:49
1,3,5-Trimethylbenzene	< .001	mg/kg			WG674509	07/30/13 14:49
1,3-Dichlorobenzene	< .001	mg/kg			WG674509	07/30/13 14:49
1,3-Dichloropropane	< .001	mg/kg			WG674509	07/30/13 14:49
1,4-Dichlorobenzene	< .001	mg/kg			WG674509	07/30/13 14:49
2,2-Dichloropropane	< .001	mg/kg			WG674509	07/30/13 14:49

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Oregon Dept of Transportation - ODOT
Ryan Franklin (ODOT)
63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648403

August 01, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
2-Butanone (MEK)	< .01	mg/kg			WG674509	07/30/13 14:49
2-Chloroethyl vinyl ether	< .05	mg/kg			WG674509	07/30/13 14:49
2-Chlorotoluene	< .001	mg/kg			WG674509	07/30/13 14:49
4-Chlorotoluene	< .001	mg/kg			WG674509	07/30/13 14:49
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG674509	07/30/13 14:49
Acetone	< .05	mg/kg			WG674509	07/30/13 14:49
Acrylonitrile	< .01	mg/kg			WG674509	07/30/13 14:49
Benzene	< .001	mg/kg			WG674509	07/30/13 14:49
Bromobenzene	< .001	mg/kg			WG674509	07/30/13 14:49
Bromodichloromethane	< .001	mg/kg			WG674509	07/30/13 14:49
Bromoform	< .001	mg/kg			WG674509	07/30/13 14:49
Bromomethane	< .005	mg/kg			WG674509	07/30/13 14:49
Carbon tetrachloride	< .001	mg/kg			WG674509	07/30/13 14:49
Chlorobenzene	< .001	mg/kg			WG674509	07/30/13 14:49
Chlorodibromomethane	< .001	mg/kg			WG674509	07/30/13 14:49
Chloroethane	< .005	mg/kg			WG674509	07/30/13 14:49
Chloroform	< .005	mg/kg			WG674509	07/30/13 14:49
Chloromethane	< .0025	mg/kg			WG674509	07/30/13 14:49
cis-1,2-Dichloroethene	< .001	mg/kg			WG674509	07/30/13 14:49
cis-1,3-Dichloropropene	< .001	mg/kg			WG674509	07/30/13 14:49
Di-isopropyl ether	< .001	mg/kg			WG674509	07/30/13 14:49
Dibromomethane	< .001	mg/kg			WG674509	07/30/13 14:49
Dichlorodifluoromethane	< .005	mg/kg			WG674509	07/30/13 14:49
Ethylbenzene	< .001	mg/kg			WG674509	07/30/13 14:49
Hexachloro-1,3-butadiene	< .001	mg/kg			WG674509	07/30/13 14:49
Isopropylbenzene	< .001	mg/kg			WG674509	07/30/13 14:49
Methyl tert-butyl ether	< .001	mg/kg			WG674509	07/30/13 14:49
Methylene Chloride	< .005	mg/kg			WG674509	07/30/13 14:49
n-Butylbenzene	< .001	mg/kg			WG674509	07/30/13 14:49
n-Propylbenzene	< .001	mg/kg			WG674509	07/30/13 14:49
Naphthalene	< .005	mg/kg			WG674509	07/30/13 14:49
p-Isopropyltoluene	< .001	mg/kg			WG674509	07/30/13 14:49
sec-Butylbenzene	< .001	mg/kg			WG674509	07/30/13 14:49
Styrene	< .001	mg/kg			WG674509	07/30/13 14:49
tert-Butylbenzene	< .001	mg/kg			WG674509	07/30/13 14:49
Tetrachloroethene	< .001	mg/kg			WG674509	07/30/13 14:49
Toluene	< .005	mg/kg			WG674509	07/30/13 14:49
trans-1,2-Dichloroethene	< .001	mg/kg			WG674509	07/30/13 14:49
trans-1,3-Dichloropropene	< .001	mg/kg			WG674509	07/30/13 14:49
Trichloroethene	< .001	mg/kg			WG674509	07/30/13 14:49
Trichlorofluoromethane	< .005	mg/kg			WG674509	07/30/13 14:49
Vinyl chloride	< .001	mg/kg			WG674509	07/30/13 14:49
Xylenes, Total	< .003	mg/kg			WG674509	07/30/13 14:49
4-Bromofluorobenzene		% Rec.	99.86	67-133	WG674509	07/30/13 14:49
Dibromofluoromethane		% Rec.	98.37	72-135	WG674509	07/30/13 14:49
Toluene-d8		% Rec.	104.7	90-113	WG674509	07/30/13 14:49
a,a,a-Trifluorotoluene		% Rec.	109.5	89-115	WG674509	07/30/13 14:49
Total Solids	< .1	%			WG674665	08/01/13 07:59
Total Solids	< .1	%			WG674667	08/01/13 08:13

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Total Solids	%	89.0	92.7	4.05	5	L648400-13	WG674665

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Bend, OR 97701

Quality Assurance Report
Level II

L648403

August 01, 2013

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
			Duplicate				
Total Solids	%	89.0	89.2	0.147	5	L648403-05	WG674667

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
			Laboratory Control Sample			
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0270	108.	77-129	WG673970
1,1,1-Trichloroethane	mg/kg	.025	0.0248	99.2	70-127	WG673970
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0222	88.9	76-133	WG673970
1,1,2-Trichloroethane	mg/kg	.025	0.0255	102.	79-123	WG673970
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0287	115.	52-145	WG673970
1,1-Dichloroethane	mg/kg	.025	0.0234	93.6	74-121	WG673970
1,1-Dichloroethene	mg/kg	.025	0.0271	108.	53-135	WG673970
1,1-Dichloropropene	mg/kg	.025	0.0242	96.9	67-127	WG673970
1,2,3-Trichlorobenzene	mg/kg	.025	0.0229	91.4	74-131	WG673970
1,2,3-Trichloropropane	mg/kg	.025	0.0227	90.7	75-135	WG673970
1,2,3-Trimethylbenzene	mg/kg	.025	0.0228	91.3	76-128	WG673970
1,2,4-Trichlorobenzene	mg/kg	.025	0.0252	101.	72-130	WG673970
1,2,4-Trimethylbenzene	mg/kg	.025	0.0264	106.	75-131	WG673970
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0213	85.0	55-142	WG673970
1,2-Dibromoethane	mg/kg	.025	0.0257	103.	77-126	WG673970
1,2-Dichlorobenzene	mg/kg	.025	0.0239	95.6	80-123	WG673970
1,2-Dichloroethane	mg/kg	.025	0.0238	95.4	70-128	WG673970
1,2-Dichloropropane	mg/kg	.025	0.0231	92.3	74-125	WG673970
1,3,5-Trimethylbenzene	mg/kg	.025	0.0275	110.	77-129	WG673970
1,3-Dichlorobenzene	mg/kg	.025	0.0260	104.	76-128	WG673970
1,3-Dichloropropane	mg/kg	.025	0.0243	97.2	77-118	WG673970
1,4-Dichlorobenzene	mg/kg	.025	0.0248	99.2	77-119	WG673970
2,2-Dichloropropane	mg/kg	.025	0.0239	95.5	60-132	WG673970
2-Butanone (MEK)	mg/kg	.125	0.138	110.	56-146	WG673970
2-Chloroethyl vinyl ether	mg/kg	.125	0.117	93.5	17-179	WG673970
2-Chlorotoluene	mg/kg	.025	0.0260	104.	76-125	WG673970
4-Chlorotoluene	mg/kg	.025	0.0259	103.	76-125	WG673970
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.113	90.2	55-148	WG673970
Acetone	mg/kg	.125	0.150	120.	47-155	WG673970
Acrylonitrile	mg/kg	.125	0.0960	76.8	50-155	WG673970
Benzene	mg/kg	.025	0.0242	96.9	72-120	WG673970
Bromobenzene	mg/kg	.025	0.0255	102.	74-122	WG673970
Bromodichloromethane	mg/kg	.025	0.0244	97.4	74-128	WG673970
Bromoform	mg/kg	.025	0.0270	108.	62-137	WG673970
Bromomethane	mg/kg	.025	0.0285	114.	38-180	WG673970
Carbon tetrachloride	mg/kg	.025	0.0252	101.	62-130	WG673970
Chlorobenzene	mg/kg	.025	0.0263	105.	77-124	WG673970
Chlorodibromomethane	mg/kg	.025	0.0263	105.	74-128	WG673970
Chloroethane	mg/kg	.025	0.0266	106.	46-173	WG673970
Chloroform	mg/kg	.025	0.0245	98.0	76-122	WG673970
Chloromethane	mg/kg	.025	0.0220	88.1	49-143	WG673970
cis-1,2-Dichloroethene	mg/kg	.025	0.0247	98.6	73-123	WG673970
cis-1,3-Dichloropropene	mg/kg	.025	0.0246	98.2	73-126	WG673970
Di-isopropyl ether	mg/kg	.025	0.0224	89.7	64-131	WG673970
Dibromomethane	mg/kg	.025	0.0242	96.9	75-127	WG673970
Dichlorodifluoromethane	mg/kg	.025	0.0263	105.	30-177	WG673970
Ethylbenzene	mg/kg	.025	0.0273	109.	76-126	WG673970
Hexachloro-1,3-butadiene	mg/kg	.025	0.0239	95.8	71-134	WG673970
Isopropylbenzene	mg/kg	.025	0.0298	119.	70-128	WG673970
Methyl tert-butyl ether	mg/kg	.025	0.0244	97.8	66-127	WG673970
Methylene Chloride	mg/kg	.025	0.0225	90.2	67-124	WG673970
n-Butylbenzene	mg/kg	.025	0.0237	94.6	71-133	WG673970
n-Propylbenzene	mg/kg	.025	0.0266	107.	76-126	WG673970

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Bend, OR 97701

Quality Assurance Report
Level II

L648403

August 01, 2013

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Naphthalene	mg/kg	.025	0.0218	87.1	68-136	WG673970
p-Isopropyltoluene	mg/kg	.025	0.0277	111.	75-134	WG673970
sec-Butylbenzene	mg/kg	.025	0.0263	105.	75-132	WG673970
Styrene	mg/kg	.025	0.0290	116.	68-148	WG673970
tert-Butylbenzene	mg/kg	.025	0.0271	108.	75-132	WG673970
Tetrachloroethene	mg/kg	.025	0.0275	110.	70-131	WG673970
Toluene	mg/kg	.025	0.0249	99.8	74-155	WG673970
trans-1,2-Dichloroethene	mg/kg	.025	0.0246	98.4	63-126	WG673970
trans-1,3-Dichloropropene	mg/kg	.025	0.0264	106.	68-126	WG673970
Trichloroethene	mg/kg	.025	0.0251	100.	75-121	WG673970
Trichlorofluoromethane	mg/kg	.025	0.0269	108.	48-170	WG673970
Vinyl chloride	mg/kg	.025	0.0246	98.4	54-144	WG673970
Xylenes, Total	mg/kg	.075	0.0823	110.	76-126	WG673970
4-Bromofluorobenzene				106.6	67-133	WG673970
Dibromofluoromethane				97.03	72-135	WG673970
Toluene-d8				103.1	90-113	WG673970
a,a,a-Trifluorotoluene				107.6	89-115	WG673970
Diesel Range Organics (DRO)	mg/kg	30	26.2	87.2	50-150	WG674011
Residual Range Organics (RRO)	mg/kg	30	23.6	78.7	50-150	WG674011
o-Terphenyl				103.0	50-150	WG674011
Diesel Range Organics (DRO)	mg/kg	30	26.3	87.5	50-150	WG673757
Residual Range Organics (RRO)	mg/kg	30	25.4	84.7	50-150	WG673757
o-Terphenyl				108.0	50-150	WG673757
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0233	93.0	77-129	WG674338
1,1,1-Trichloroethane	mg/kg	.025	0.0246	98.3	70-127	WG674338
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0240	95.9	76-133	WG674338
1,1,2-Trichloroethane	mg/kg	.025	0.0247	98.8	79-123	WG674338
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0290	116.	52-145	WG674338
1,1-Dichloroethane	mg/kg	.025	0.0266	106.	74-121	WG674338
1,1-Dichloroethene	mg/kg	.025	0.0259	104.	53-135	WG674338
1,1-Dichloropropene	mg/kg	.025	0.0267	107.	67-127	WG674338
1,2,3-Trichlorobenzene	mg/kg	.025	0.0276	110.	74-131	WG674338
1,2,3-Trichloropropane	mg/kg	.025	0.0263	105.	75-135	WG674338
1,2,3-Trimethylbenzene	mg/kg	.025	0.0237	94.8	76-128	WG674338
1,2,4-Trichlorobenzene	mg/kg	.025	0.0286	114.	72-130	WG674338
1,2,4-Trimethylbenzene	mg/kg	.025	0.0245	97.9	75-131	WG674338
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0244	97.8	55-142	WG674338
1,2-Dibromoethane	mg/kg	.025	0.0256	102.	77-126	WG674338
1,2-Dichlorobenzene	mg/kg	.025	0.0261	105.	80-123	WG674338
1,2-Dichloroethane	mg/kg	.025	0.0263	105.	70-128	WG674338
1,2-Dichloropropane	mg/kg	.025	0.0260	104.	74-125	WG674338
1,3,5-Trimethylbenzene	mg/kg	.025	0.0247	99.0	77-129	WG674338
1,3-Dichlorobenzene	mg/kg	.025	0.0253	101.	76-128	WG674338
1,3-Dichloropropane	mg/kg	.025	0.0250	99.8	77-118	WG674338
1,4-Dichlorobenzene	mg/kg	.025	0.0258	103.	77-119	WG674338
2,2-Dichloropropane	mg/kg	.025	0.0253	101.	60-132	WG674338
2-Butanone (MEK)	mg/kg	.125	0.147	118.	56-146	WG674338
2-Chloroethyl vinyl ether	mg/kg	.125	0.169	135.	17-179	WG674338
2-Chlorotoluene	mg/kg	.025	0.0246	98.5	76-125	WG674338
4-Chlorotoluene	mg/kg	.025	0.0244	97.7	76-125	WG674338
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.134	107.	55-148	WG674338
Acetone	mg/kg	.125	0.156	125.	47-155	WG674338
Acrylonitrile	mg/kg	.125	0.125	100.	50-155	WG674338

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Quality Assurance Report
Level II

L648403

August 01, 2013

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Benzene	mg/kg	.025	0.0267	107.	72-120	WG674338
Bromobenzene	mg/kg	.025	0.0240	96.1	74-122	WG674338
Bromodichloromethane	mg/kg	.025	0.0242	96.7	74-128	WG674338
Bromoform	mg/kg	.025	0.0239	95.8	62-137	WG674338
Bromomethane	mg/kg	.025	0.0247	98.9	38-180	WG674338
Carbon tetrachloride	mg/kg	.025	0.0248	99.0	62-130	WG674338
Chlorobenzene	mg/kg	.025	0.0244	97.6	77-124	WG674338
Chlorodibromomethane	mg/kg	.025	0.0234	93.5	74-128	WG674338
Chloroethane	mg/kg	.025	0.0257	103.	46-173	WG674338
Chloroform	mg/kg	.025	0.0257	103.	76-122	WG674338
Chloromethane	mg/kg	.025	0.0262	105.	49-143	WG674338
cis-1,2-Dichloroethene	mg/kg	.025	0.0267	107.	73-123	WG674338
cis-1,3-Dichloropropene	mg/kg	.025	0.0253	101.	73-126	WG674338
Di-isopropyl ether	mg/kg	.025	0.0266	106.	64-131	WG674338
Dibromomethane	mg/kg	.025	0.0266	107.	75-127	WG674338
Dichlorodifluoromethane	mg/kg	.025	0.0276	110.	30-177	WG674338
Ethylbenzene	mg/kg	.025	0.0243	97.3	76-126	WG674338
Hexachloro-1,3-butadiene	mg/kg	.025	0.0234	93.5	71-134	WG674338
Isopropylbenzene	mg/kg	.025	0.0265	106.	70-128	WG674338
Methyl tert-butyl ether	mg/kg	.025	0.0267	107.	66-127	WG674338
Methylene Chloride	mg/kg	.025	0.0268	107.	67-124	WG674338
n-Butylbenzene	mg/kg	.025	0.0262	105.	71-133	WG674338
n-Propylbenzene	mg/kg	.025	0.0248	99.2	76-126	WG674338
Naphthalene	mg/kg	.025	0.0279	112.	68-136	WG674338
p-Isopropyltoluene	mg/kg	.025	0.0248	99.3	75-134	WG674338
sec-Butylbenzene	mg/kg	.025	0.0242	97.0	75-132	WG674338
Styrene	mg/kg	.025	0.0262	105.	68-148	WG674338
tert-Butylbenzene	mg/kg	.025	0.0243	97.2	75-132	WG674338
Tetrachloroethene	mg/kg	.025	0.0247	98.9	70-131	WG674338
Toluene	mg/kg	.025	0.0251	101.	74-155	WG674338
trans-1,2-Dichloroethene	mg/kg	.025	0.0263	105.	63-126	WG674338
trans-1,3-Dichloropropene	mg/kg	.025	0.0239	95.6	68-126	WG674338
Trichloroethene	mg/kg	.025	0.0254	101.	75-121	WG674338
Trichlorofluoromethane	mg/kg	.025	0.0255	102.	48-170	WG674338
Vinyl chloride	mg/kg	.025	0.0270	108.	54-144	WG674338
Xylenes, Total	mg/kg	.075	0.0738	98.3	76-126	WG674338
4-Bromofluorobenzene				97.08	67-133	WG674338
Dibromofluoromethane				100.5	72-135	WG674338
Toluene-d8				100.4	90-113	WG674338
a,a,a-Trifluorotoluene				100.8	89-115	WG674338
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0276	110.	77-129	WG674509
1,1,1-Trichloroethane	mg/kg	.025	0.0220	88.1	70-127	WG674509
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0257	103.	76-133	WG674509
1,1,2-Trichloroethane	mg/kg	.025	0.0259	104.	79-123	WG674509
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0256	103.	52-145	WG674509
1,1-Dichloroethane	mg/kg	.025	0.0219	87.4	74-121	WG674509
1,1-Dichloroethene	mg/kg	.025	0.0236	94.5	53-135	WG674509
1,1-Dichloropropene	mg/kg	.025	0.0224	89.7	67-127	WG674509
1,2,3-Trichlorobenzene	mg/kg	.025	0.0272	109.	74-131	WG674509
1,2,3-Trichloropropane	mg/kg	.025	0.0254	102.	75-135	WG674509
1,2,3-Trimethylbenzene	mg/kg	.025	0.0240	96.2	76-128	WG674509
1,2,4-Trichlorobenzene	mg/kg	.025	0.0286	114.	72-130	WG674509
1,2,4-Trimethylbenzene	mg/kg	.025	0.0282	113.	75-131	WG674509
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0248	99.4	55-142	WG674509
1,2-Dibromoethane	mg/kg	.025	0.0263	105.	77-126	WG674509
1,2-Dichlorobenzene	mg/kg	.025	0.0264	105.	80-123	WG674509
1,2-Dichloroethane	mg/kg	.025	0.0203	81.2	70-128	WG674509

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Oregon Dept of Transportation - ODOT
Ryan Franklin (ODOT)
63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648403

August 01, 2013

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
1,2-Dichloropropane	mg/kg	.025	0.0239	95.8	74-125	WG674509
1,3,5-Trimethylbenzene	mg/kg	.025	0.0284	113.	77-129	WG674509
1,3-Dichlorobenzene	mg/kg	.025	0.0288	115.	76-128	WG674509
1,3-Dichloropropane	mg/kg	.025	0.0253	101.	77-118	WG674509
1,4-Dichlorobenzene	mg/kg	.025	0.0262	105.	77-119	WG674509
2,2-Dichloropropane	mg/kg	.025	0.0221	88.5	60-132	WG674509
2-Butanone (MEK)	mg/kg	.125	0.0991	79.3	56-146	WG674509
2-Chloroethyl vinyl ether	mg/kg	.125	0.0545	43.6	17-179	WG674509
2-Chlorotoluene	mg/kg	.025	0.0265	106.	76-125	WG674509
4-Chlorotoluene	mg/kg	.025	0.0270	108.	76-125	WG674509
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.128	103.	55-148	WG674509
Acetone	mg/kg	.125	0.0886	70.8	47-155	WG674509
Acrylonitrile	mg/kg	.125	0.105	84.1	50-155	WG674509
Benzene	mg/kg	.025	0.0224	89.5	72-120	WG674509
Bromobenzene	mg/kg	.025	0.0259	103.	74-122	WG674509
Bromodichloromethane	mg/kg	.025	0.0224	89.7	74-128	WG674509
Bromoform	mg/kg	.025	0.0287	115.	62-137	WG674509
Bromomethane	mg/kg	.025	0.0294	118.	38-180	WG674509
Carbon tetrachloride	mg/kg	.025	0.0227	90.9	62-130	WG674509
Chlorobenzene	mg/kg	.025	0.0272	109.	77-124	WG674509
Chlorodibromomethane	mg/kg	.025	0.0261	104.	74-128	WG674509
Chloroethane	mg/kg	.025	0.0249	99.5	46-173	WG674509
Chloroform	mg/kg	.025	0.0223	89.2	76-122	WG674509
Chloromethane	mg/kg	.025	0.0241	96.2	49-143	WG674509
cis-1,2-Dichloroethene	mg/kg	.025	0.0231	92.2	73-123	WG674509
cis-1,3-Dichloropropene	mg/kg	.025	0.0248	99.4	73-126	WG674509
Di-isopropyl ether	mg/kg	.025	0.0222	88.9	64-131	WG674509
Dibromomethane	mg/kg	.025	0.0249	99.6	75-127	WG674509
Dichlorodifluoromethane	mg/kg	.025	0.0231	92.3	30-177	WG674509
Ethylbenzene	mg/kg	.025	0.0279	112.	76-126	WG674509
Hexachloro-1,3-butadiene	mg/kg	.025	0.0261	104.	71-134	WG674509
Isopropylbenzene	mg/kg	.025	0.0303	121.	70-128	WG674509
Methyl tert-butyl ether	mg/kg	.025	0.0224	89.8	66-127	WG674509
Methylene Chloride	mg/kg	.025	0.0203	81.2	67-124	WG674509
n-Butylbenzene	mg/kg	.025	0.0269	108.	71-133	WG674509
n-Propylbenzene	mg/kg	.025	0.0275	110.	76-126	WG674509
Naphthalene	mg/kg	.025	0.0253	101.	68-136	WG674509
p-Isopropyltoluene	mg/kg	.025	0.0306	123.	75-134	WG674509
sec-Butylbenzene	mg/kg	.025	0.0293	117.	75-132	WG674509
Styrene	mg/kg	.025	0.0301	121.	68-148	WG674509
tert-Butylbenzene	mg/kg	.025	0.0289	116.	75-132	WG674509
Tetrachloroethene	mg/kg	.025	0.0273	109.	70-131	WG674509
Toluene	mg/kg	.025	0.0244	97.6	74-155	WG674509
trans-1,2-Dichloroethene	mg/kg	.025	0.0225	89.9	63-126	WG674509
trans-1,3-Dichloropropene	mg/kg	.025	0.0266	106.	68-126	WG674509
Trichloroethene	mg/kg	.025	0.0246	98.5	75-121	WG674509
Trichlorofluoromethane	mg/kg	.025	0.0255	102.	48-170	WG674509
Vinyl chloride	mg/kg	.025	0.0238	95.1	54-144	WG674509
Xylenes, Total	mg/kg	.075	0.0851	114.	76-126	WG674509
4-Bromofluorobenzene				102.0	67-133	WG674509
Dibromofluoromethane				96.72	72-135	WG674509
Toluene-d8				104.3	90-113	WG674509
a,a,a-Trifluorotoluene				107.7	89-115	WG674509
Total Solids	%	50	50.0	99.9	85-115	WG674665
Total Solids	%	50	50.0	100.	85-115	WG674667

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Bend, OR 97701

Quality Assurance Report
Level II

L648403

August 01, 2013

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.0260	0.0270	104.	77-129	3.92	20	WG673970
1,1,1-Trichloroethane	mg/kg	0.0247	0.0248	99.0	70-127	0.230	20	WG673970
1,1,2,2-Tetrachloroethane	mg/kg	0.0214	0.0222	86.0	76-133	3.66	20	WG673970
1,1,2-Trichloroethane	mg/kg	0.0244	0.0255	97.0	79-123	4.55	20	WG673970
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0285	0.0287	114.	52-145	0.690	20	WG673970
1,1-Dichloroethane	mg/kg	0.0230	0.0234	92.0	74-121	1.68	20	WG673970
1,1-Dichloroethene	mg/kg	0.0266	0.0271	106.	53-135	2.01	20	WG673970
1,1-Dichloropropene	mg/kg	0.0237	0.0242	95.0	67-127	2.01	20	WG673970
1,2,3-Trichlorobenzene	mg/kg	0.0228	0.0229	91.0	74-131	0.260	20	WG673970
1,2,3-Trichloropropane	mg/kg	0.0218	0.0227	87.0	75-135	3.84	20	WG673970
1,2,3-Trimethylbenzene	mg/kg	0.0225	0.0228	90.0	76-128	1.48	20	WG673970
1,2,4-Trichlorobenzene	mg/kg	0.0249	0.0252	100.	72-130	1.33	20	WG673970
1,2,4-Trimethylbenzene	mg/kg	0.0255	0.0264	102.	75-131	3.52	20	WG673970
1,2-Dibromo-3-Chloropropane	mg/kg	0.0210	0.0213	84.0	55-142	1.19	20	WG673970
1,2-Dibromoethane	mg/kg	0.0247	0.0257	99.0	77-126	3.85	20	WG673970
1,2-Dichlorobenzene	mg/kg	0.0231	0.0239	92.0	80-123	3.54	20	WG673970
1,2-Dichloroethane	mg/kg	0.0230	0.0238	92.0	70-128	3.60	20	WG673970
1,2-Dichloropropane	mg/kg	0.0221	0.0231	88.0	74-125	4.30	20	WG673970
1,3,5-Trimethylbenzene	mg/kg	0.0264	0.0275	106.	77-129	4.03	20	WG673970
1,3-Dichlorobenzene	mg/kg	0.0251	0.0260	100.	76-128	3.48	20	WG673970
1,3-Dichloropropane	mg/kg	0.0235	0.0243	94.0	77-118	3.47	20	WG673970
1,4-Dichlorobenzene	mg/kg	0.0240	0.0248	96.0	77-119	3.37	20	WG673970
2,2-Dichloropropane	mg/kg	0.0240	0.0239	96.0	60-132	0.590	20	WG673970
2-Butanone (MEK)	mg/kg	0.136	0.138	108.	56-146	1.49	20	WG673970
2-Chloroethyl vinyl ether	mg/kg	0.113	0.117	90.0	17-179	3.73	22	WG673970
2-Chlorotoluene	mg/kg	0.0251	0.0260	100.	76-125	3.73	20	WG673970
4-Chlorotoluene	mg/kg	0.0250	0.0259	100.	76-125	3.51	20	WG673970
4-Methyl-2-pentanone (MIBK)	mg/kg	0.110	0.113	88.0	55-148	2.17	20	WG673970
Acetone	mg/kg	0.147	0.150	117.	47-155	2.21	22	WG673970
Acrylonitrile	mg/kg	0.0956	0.0960	76.0	50-155	0.450	20	WG673970
Benzene	mg/kg	0.0235	0.0242	94.0	72-120	3.03	20	WG673970
Bromobenzene	mg/kg	0.0244	0.0255	98.0	74-122	4.08	20	WG673970
Bromodichloromethane	mg/kg	0.0235	0.0244	94.0	74-128	3.57	20	WG673970
Bromoform	mg/kg	0.0263	0.0270	105.	62-137	2.60	20	WG673970
Bromomethane	mg/kg	0.0284	0.0285	114.	38-180	0.190	20	WG673970
Carbon tetrachloride	mg/kg	0.0250	0.0252	100.	62-130	0.690	20	WG673970
Chlorobenzene	mg/kg	0.0254	0.0263	101.	77-124	3.73	20	WG673970
Chlorodibromomethane	mg/kg	0.0254	0.0263	102.	74-128	3.22	20	WG673970
Chloroethane	mg/kg	0.0264	0.0266	106.	46-173	0.750	20	WG673970
Chloroform	mg/kg	0.0240	0.0245	96.0	76-122	2.03	20	WG673970
Chloromethane	mg/kg	0.0216	0.0220	86.0	49-143	1.68	20	WG673970
cis-1,2-Dichloroethene	mg/kg	0.0238	0.0247	95.0	73-123	3.74	20	WG673970
cis-1,3-Dichloropropene	mg/kg	0.0233	0.0246	93.0	73-126	5.25	20	WG673970
Di-isopropyl ether	mg/kg	0.0219	0.0224	88.0	64-131	2.40	20	WG673970
Dibromomethane	mg/kg	0.0235	0.0242	94.0	75-127	3.14	20	WG673970
Dichlorodifluoromethane	mg/kg	0.0256	0.0263	102.	30-177	2.78	20	WG673970
Ethylbenzene	mg/kg	0.0263	0.0273	105.	76-126	3.65	20	WG673970
Hexachloro-1,3-butadiene	mg/kg	0.0234	0.0239	94.0	71-134	2.41	20	WG673970
Isopropylbenzene	mg/kg	0.0286	0.0298	114.	70-128	4.07	20	WG673970
Methyl tert-butyl ether	mg/kg	0.0239	0.0244	95.0	66-127	2.42	20	WG673970
Methylene Chloride	mg/kg	0.0221	0.0225	88.0	67-124	2.18	20	WG673970
n-Butylbenzene	mg/kg	0.0231	0.0237	92.0	71-133	2.28	20	WG673970
n-Propylbenzene	mg/kg	0.0255	0.0266	102.	76-126	4.38	20	WG673970
Naphthalene	mg/kg	0.0217	0.0218	87.0	68-136	0.330	20	WG673970
p-Isopropyltoluene	mg/kg	0.0267	0.0277	107.	75-134	3.66	20	WG673970
sec-Butylbenzene	mg/kg	0.0255	0.0263	102.	75-132	3.04	20	WG673970
Styrene	mg/kg	0.0275	0.0290	110.	68-148	5.20	20	WG673970
tert-Butylbenzene	mg/kg	0.0262	0.0271	105.	75-132	3.24	20	WG673970
Tetrachloroethene	mg/kg	0.0262	0.0275	105.	70-131	4.83	20	WG673970

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Quality Assurance Report
Level II

L648403

August 01, 2013

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Toluene	mg/kg	0.0240	0.0249	96.0	74-155	3.75	20	WG673970
trans-1,2-Dichloroethene	mg/kg	0.0240	0.0246	96.0	63-126	2.24	20	WG673970
trans-1,3-Dichloropropene	mg/kg	0.0251	0.0264	100.	68-126	5.30	20	WG673970
Trichloroethene	mg/kg	0.0247	0.0251	99.0	75-121	1.58	20	WG673970
Trichlorofluoromethane	mg/kg	0.0267	0.0269	107.	48-170	0.860	20	WG673970
Vinyl chloride	mg/kg	0.0240	0.0246	96.0	54-144	2.50	20	WG673970
Xylenes, Total	mg/kg	0.0785	0.0823	105.	76-126	4.72	20	WG673970
4-Bromofluorobenzene				106.0	67-133			WG673970
Dibromofluoromethane				98.79	72-135			WG673970
Toluene-d8				102.6	90-113			WG673970
a,a,a-Trifluorotoluene				107.2	89-115			WG673970
Diesel Range Organics (DRO)	mg/kg	25.5	26.2	85.0	50-150	2.59	20	WG674011
Residual Range Organics (RRO)	mg/kg	23.1	23.6	77.0	50-150	2.21	20	WG674011
o-Terphenyl				99.90	50-150			WG674011
Diesel Range Organics (DRO)	mg/kg	26.3	26.3	88.0	50-150	0.0200	20	WG673757
Residual Range Organics (RRO)	mg/kg	24.1	25.4	80.0	50-150	5.44	20	WG673757
o-Terphenyl				104.0	50-150			WG673757
1,1,1,2-Tetrachloroethane	mg/kg	0.0242	0.0233	97.0	77-129	3.85	20	WG674338
1,1,1-Trichloroethane	mg/kg	0.0256	0.0246	102.	70-127	4.25	20	WG674338
1,1,2,2-Tetrachloroethane	mg/kg	0.0258	0.0240	103.	76-133	7.31	20	WG674338
1,1,2-Trichloroethane	mg/kg	0.0251	0.0247	100.	79-123	1.74	20	WG674338
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0287	0.0290	115.	52-145	0.790	20	WG674338
1,1-Dichloroethane	mg/kg	0.0271	0.0266	108.	74-121	1.70	20	WG674338
1,1-Dichloroethene	mg/kg	0.0263	0.0259	105.	53-135	1.40	20	WG674338
1,1-Dichloropropene	mg/kg	0.0263	0.0267	105.	67-127	1.41	20	WG674338
1,2,3-Trichlorobenzene	mg/kg	0.0284	0.0276	114.	74-131	2.97	20	WG674338
1,2,3-Trichloropropane	mg/kg	0.0283	0.0263	113.	75-135	7.15	20	WG674338
1,2,3-Trimethylbenzene	mg/kg	0.0237	0.0237	95.0	76-128	0.140	20	WG674338
1,2,4-Trichlorobenzene	mg/kg	0.0294	0.0286	117.	72-130	2.74	20	WG674338
1,2,4-Trimethylbenzene	mg/kg	0.0250	0.0245	100.	75-131	2.09	20	WG674338
1,2-Dibromo-3-Chloropropane	mg/kg	0.0271	0.0244	108.	55-142	10.4	20	WG674338
1,2-Dibromoethane	mg/kg	0.0265	0.0256	106.	77-126	3.53	20	WG674338
1,2-Dichlorobenzene	mg/kg	0.0264	0.0261	106.	80-123	1.14	20	WG674338
1,2-Dichloroethane	mg/kg	0.0270	0.0263	108.	70-128	2.51	20	WG674338
1,2-Dichloropropane	mg/kg	0.0265	0.0260	106.	74-125	1.60	20	WG674338
1,3,5-Trimethylbenzene	mg/kg	0.0252	0.0247	101.	77-129	1.81	20	WG674338
1,3-Dichlorobenzene	mg/kg	0.0257	0.0253	103.	76-128	1.46	20	WG674338
1,3-Dichloropropane	mg/kg	0.0259	0.0250	104.	77-118	3.84	20	WG674338
1,4-Dichlorobenzene	mg/kg	0.0262	0.0258	105.	77-119	1.56	20	WG674338
2,2-Dichloropropane	mg/kg	0.0253	0.0253	101.	60-132	0.0300	20	WG674338
2-Butanone (MEK)	mg/kg	0.155	0.147	124.	56-146	4.71	20	WG674338
2-Chloroethyl vinyl ether	mg/kg	0.176	0.169	141.	17-179	4.11	22	WG674338
2-Chlorotoluene	mg/kg	0.0252	0.0246	101.	76-125	2.13	20	WG674338
4-Chlorotoluene	mg/kg	0.0257	0.0244	103.	76-125	5.00	20	WG674338
4-Methyl-2-pentanone (MIBK)	mg/kg	0.144	0.134	116.	55-148	7.18	20	WG674338
Acetone	mg/kg	0.156	0.156	125.	47-155	0.360	22	WG674338
Acrylonitrile	mg/kg	0.133	0.125	107.	50-155	6.36	20	WG674338
Benzene	mg/kg	0.0267	0.0267	107.	72-120	0.0100	20	WG674338
Bromobenzene	mg/kg	0.0253	0.0240	101.	74-122	5.05	20	WG674338
Bromodichloromethane	mg/kg	0.0245	0.0242	98.0	74-128	1.42	20	WG674338
Bromoform	mg/kg	0.0250	0.0239	100.	62-137	4.44	20	WG674338
Bromomethane	mg/kg	0.0253	0.0247	101.	38-180	2.31	20	WG674338
Carbon tetrachloride	mg/kg	0.0250	0.0248	100.	62-130	0.950	20	WG674338

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Est. 1970

Oregon Dept of Transportation - ODOT
Ryan Franklin (ODOT)
63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648403

August 01, 2013

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Chlorobenzene	mg/kg	0.0254	0.0244	102.	77-124	4.01	20	WG674338
Chlorodibromomethane	mg/kg	0.0243	0.0234	97.0	74-128	4.12	20	WG674338
Chloroethane	mg/kg	0.0256	0.0257	102.	46-173	0.290	20	WG674338
Chloroform	mg/kg	0.0257	0.0257	103.	76-122	0.110	20	WG674338
Chloromethane	mg/kg	0.0264	0.0262	106.	49-143	0.540	20	WG674338
cis-1,2-Dichloroethene	mg/kg	0.0273	0.0267	109.	73-123	2.20	20	WG674338
cis-1,3-Dichloropropene	mg/kg	0.0258	0.0253	103.	73-126	1.79	20	WG674338
Di-isopropyl ether	mg/kg	0.0269	0.0266	108.	64-131	1.21	20	WG674338
Dibromomethane	mg/kg	0.0278	0.0266	111.	75-127	4.33	20	WG674338
Dichlorodifluoromethane	mg/kg	0.0277	0.0276	111.	30-177	0.390	20	WG674338
Ethylbenzene	mg/kg	0.0244	0.0243	98.0	76-126	0.250	20	WG674338
Hexachloro-1,3-butadiene	mg/kg	0.0232	0.0234	93.0	71-134	0.580	20	WG674338
Isopropylbenzene	mg/kg	0.0270	0.0265	108.	70-128	1.83	20	WG674338
Methyl tert-butyl ether	mg/kg	0.0280	0.0267	112.	66-127	4.42	20	WG674338
Methylene Chloride	mg/kg	0.0267	0.0268	107.	67-124	0.280	20	WG674338
n-Butylbenzene	mg/kg	0.0261	0.0262	104.	71-133	0.540	20	WG674338
n-Propylbenzene	mg/kg	0.0253	0.0248	101.	76-126	2.08	20	WG674338
Naphthalene	mg/kg	0.0300	0.0279	120.	68-136	6.94	20	WG674338
p-Isopropyltoluene	mg/kg	0.0254	0.0248	102.	75-134	2.31	20	WG674338
sec-Butylbenzene	mg/kg	0.0248	0.0242	99.0	75-132	2.39	20	WG674338
Styrene	mg/kg	0.0268	0.0262	107.	68-148	2.22	20	WG674338
tert-Butylbenzene	mg/kg	0.0251	0.0243	100.	75-132	3.09	20	WG674338
Tetrachloroethene	mg/kg	0.0251	0.0247	100.	70-131	1.67	20	WG674338
Toluene	mg/kg	0.0254	0.0251	102.	74-155	1.19	20	WG674338
trans-1,2-Dichloroethene	mg/kg	0.0264	0.0263	106.	63-126	0.220	20	WG674338
trans-1,3-Dichloropropene	mg/kg	0.0243	0.0239	97.0	68-126	1.84	20	WG674338
Trichloroethene	mg/kg	0.0252	0.0254	101.	75-121	0.600	20	WG674338
Trichlorofluoromethane	mg/kg	0.0255	0.0255	102.	48-170	0.190	20	WG674338
Vinyl chloride	mg/kg	0.0273	0.0270	109.	54-144	0.920	20	WG674338
Xylenes, Total	mg/kg	0.0750	0.0738	100.	76-126	1.72	20	WG674338
4-Bromofluorobenzene				98.06	67-133			WG674338
Dibromofluoromethane				100.1	72-135			WG674338
Toluene-d8				99.75	90-113			WG674338
a,a,a-Trifluorotoluene				101.0	89-115			WG674338
1,1,1,2-Tetrachloroethane	mg/kg	0.0286	0.0276	114.	77-129	3.56	20	WG674509
1,1,1-Trichloroethane	mg/kg	0.0236	0.0220	94.0	70-127	6.93	20	WG674509
1,1,2,2-Tetrachloroethane	mg/kg	0.0277	0.0257	111.	76-133	7.33	20	WG674509
1,1,2-Trichloroethane	mg/kg	0.0276	0.0259	110.	79-123	6.42	20	WG674509
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0276	0.0256	110.	52-145	7.23	20	WG674509
1,1-Dichloroethane	mg/kg	0.0230	0.0219	92.0	74-121	5.32	20	WG674509
1,1-Dichloroethene	mg/kg	0.0250	0.0236	100.	53-135	5.65	20	WG674509
1,1-Dichloropropene	mg/kg	0.0236	0.0224	94.0	67-127	5.29	20	WG674509
1,2,3-Trichlorobenzene	mg/kg	0.0289	0.0272	116.	74-131	5.99	20	WG674509
1,2,3-Trichloropropane	mg/kg	0.0267	0.0254	107.	75-135	4.86	20	WG674509
1,2,3-Trimethylbenzene	mg/kg	0.0253	0.0240	101.	76-128	5.07	20	WG674509
1,2,4-Trichlorobenzene	mg/kg	0.0302	0.0286	121.	72-130	5.47	20	WG674509
1,2,4-Trimethylbenzene	mg/kg	0.0299	0.0282	120.	75-131	5.75	20	WG674509
1,2-Dibromo-3-Chloropropane	mg/kg	0.0277	0.0248	111.	55-142	10.9	20	WG674509
1,2-Dibromoethane	mg/kg	0.0272	0.0263	109.	77-126	3.44	20	WG674509
1,2-Dichlorobenzene	mg/kg	0.0276	0.0264	110.	80-123	4.49	20	WG674509
1,2-Dichloroethane	mg/kg	0.0209	0.0203	84.0	70-128	2.86	20	WG674509
1,2-Dichloropropane	mg/kg	0.0257	0.0239	103.	74-125	7.21	20	WG674509
1,3,5-Trimethylbenzene	mg/kg	0.0307	0.0284	123.	77-129	7.87	20	WG674509
1,3-Dichlorobenzene	mg/kg	0.0305	0.0288	122.	76-128	5.82	20	WG674509
1,3-Dichloropropane	mg/kg	0.0266	0.0253	106.	77-118	5.04	20	WG674509
1,4-Dichlorobenzene	mg/kg	0.0276	0.0262	110.	77-119	5.12	20	WG674509
2,2-Dichloropropane	mg/kg	0.0236	0.0221	94.0	60-132	6.58	20	WG674509

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Level II

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August 01, 2013

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
2-Butanone (MEK)	mg/kg	0.103	0.0991	82.0	56-146	3.83	20	WG674509
2-Chloroethyl vinyl ether	mg/kg	0.0571	0.0545	46.0	17-179	4.68	22	WG674509
2-Chlorotoluene	mg/kg	0.0285	0.0265	114.	76-125	7.38	20	WG674509
4-Chlorotoluene	mg/kg	0.0285	0.0270	114.	76-125	5.32	20	WG674509
4-Methyl-2-pentanone (MIBK)	mg/kg	0.131	0.128	105.	55-148	2.31	20	WG674509
Acetone	mg/kg	0.0915	0.0886	73.0	47-155	3.31	22	WG674509
Acrylonitrile	mg/kg	0.110	0.105	88.0	50-155	4.36	20	WG674509
Benzene	mg/kg	0.0238	0.0224	95.0	72-120	5.95	20	WG674509
Bromobenzene	mg/kg	0.0273	0.0259	109.	74-122	5.58	20	WG674509
Bromodichloromethane	mg/kg	0.0237	0.0224	95.0	74-128	5.44	20	WG674509
Bromoform	mg/kg	0.0294	0.0287	118.	62-137	2.43	20	WG674509
Bromomethane	mg/kg	0.0304	0.0294	122.	38-180	3.49	20	WG674509
Carbon tetrachloride	mg/kg	0.0237	0.0227	95.0	62-130	4.12	20	WG674509
Chlorobenzene	mg/kg	0.0289	0.0272	116.	77-124	5.97	20	WG674509
Chlorodibromomethane	mg/kg	0.0273	0.0261	109.	74-128	4.61	20	WG674509
Chloroethane	mg/kg	0.0258	0.0249	103.	46-173	3.80	20	WG674509
Chloroform	mg/kg	0.0233	0.0223	93.0	76-122	4.30	20	WG674509
Chloromethane	mg/kg	0.0252	0.0241	101.	49-143	4.78	20	WG674509
cis-1,2-Dichloroethene	mg/kg	0.0242	0.0231	97.0	73-123	4.67	20	WG674509
cis-1,3-Dichloropropene	mg/kg	0.0265	0.0248	106.	73-126	6.42	20	WG674509
Di-isopropyl ether	mg/kg	0.0230	0.0222	92.0	64-131	3.34	20	WG674509
Dibromomethane	mg/kg	0.0257	0.0249	103.	75-127	3.29	20	WG674509
Dichlorodifluoromethane	mg/kg	0.0249	0.0231	100.	30-177	7.60	20	WG674509
Ethylbenzene	mg/kg	0.0295	0.0279	118.	76-126	5.62	20	WG674509
Hexachloro-1,3-butadiene	mg/kg	0.0288	0.0261	115.	71-134	10.2	20	WG674509
Isopropylbenzene	mg/kg	0.0326	0.0303	130*	70-128	7.38	20	WG674509
Methyl tert-butyl ether	mg/kg	0.0230	0.0224	92.0	66-127	2.24	20	WG674509
Methylene Chloride	mg/kg	0.0217	0.0203	87.0	67-124	6.68	20	WG674509
n-Butylbenzene	mg/kg	0.0291	0.0269	116.	71-133	7.93	20	WG674509
n-Propylbenzene	mg/kg	0.0295	0.0275	118.	76-126	7.02	20	WG674509
Naphthalene	mg/kg	0.0269	0.0253	108.	68-136	6.21	20	WG674509
p-Isopropyltoluene	mg/kg	0.0332	0.0306	133.	75-134	8.21	20	WG674509
sec-Butylbenzene	mg/kg	0.0317	0.0293	127.	75-132	7.79	20	WG674509
Styrene	mg/kg	0.0315	0.0301	126.	68-148	4.42	20	WG674509
tert-Butylbenzene	mg/kg	0.0312	0.0289	125.	75-132	7.52	20	WG674509
Tetrachloroethene	mg/kg	0.0294	0.0273	118.	70-131	7.66	20	WG674509
Toluene	mg/kg	0.0260	0.0244	104.	74-155	6.52	20	WG674509
trans-1,2-Dichloroethene	mg/kg	0.0236	0.0225	94.0	63-126	4.75	20	WG674509
trans-1,3-Dichloropropene	mg/kg	0.0278	0.0266	111.	68-126	4.33	20	WG674509
Trichloroethene	mg/kg	0.0263	0.0246	105.	75-121	6.69	20	WG674509
Trichlorofluoromethane	mg/kg	0.0272	0.0255	109.	48-170	6.32	20	WG674509
Vinyl chloride	mg/kg	0.0252	0.0238	101.	54-144	5.85	20	WG674509
Xylenes, Total	mg/kg	0.0889	0.0851	118.	76-126	4.37	20	WG674509
4-Bromofluorobenzene				101.7	67-133			WG674509
Dibromofluoromethane				95.62	72-135			WG674509
Toluene-d8				105.1	90-113			WG674509
a,a,a-Trifluorotoluene				108.2	89-115			WG674509

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.112	0	.025	90.0	49-135	L648400-06	WG673970
1,1,1-Trichloroethane	mg/kg	0.113	0	.025	90.3	43-142	L648400-06	WG673970
1,1,2,2-Tetrachloroethane	mg/kg	0.0925	0	.025	74.0	42-147	L648400-06	WG673970
1,1,2-Trichloroethane	mg/kg	0.107	0	.025	85.7	51-134	L648400-06	WG673970
1,1,2-Trichlorotrifluoroethane	mg/kg	0.127	0	.025	102.	25-156	L648400-06	WG673970
1,1-Dichloroethane	mg/kg	0.105	0	.025	84.4	50-131	L648400-06	WG673970
1,1-Dichloroethene	mg/kg	0.125	0	.025	100.	29-145	L648400-06	WG673970
1,1-Dichloropropene	mg/kg	0.108	0	.025	86.7	40-136	L648400-06	WG673970

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Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,2,3-Trichlorobenzene	mg/kg	0.0744	0	.025	59.6	13-142	L648400-06	WG673970
1,2,3-Trichloropropane	mg/kg	0.0926	0	.025	74.1	41-149	L648400-06	WG673970
1,2,3-Trimethylbenzene	mg/kg	0.0909	0	.025	72.7	33-146	L648400-06	WG673970
1,2,4-Trichlorobenzene	mg/kg	0.0832	0.000305	.025	66.3	12-140	L648400-06	WG673970
1,2,4-Trimethylbenzene	mg/kg	0.102	0	.025	81.3	29-143	L648400-06	WG673970
1,2-Dibromo-3-Chloropropane	mg/kg	0.0880	0	.025	70.4	29-151	L648400-06	WG673970
1,2-Dibromoethane	mg/kg	0.106	0	.025	85.0	48-133	L648400-06	WG673970
1,2-Dichlorobenzene	mg/kg	0.0909	0	.025	72.8	37-136	L648400-06	WG673970
1,2-Dichloroethane	mg/kg	0.103	0	.025	82.6	49-131	L648400-06	WG673970
1,2-Dichloropropane	mg/kg	0.0993	0	.025	79.4	50-132	L648400-06	WG673970
1,3,5-Trimethylbenzene	mg/kg	0.106	0	.025	84.6	29-144	L648400-06	WG673970
1,3-Dichlorobenzene	mg/kg	0.0968	0	.025	77.4	26-140	L648400-06	WG673970
1,3-Dichloropropane	mg/kg	0.104	0	.025	82.9	50-126	L648400-06	WG673970
1,4-Dichlorobenzene	mg/kg	0.0965	0	.025	77.2	34-132	L648400-06	WG673970
2,2-Dichloropropane	mg/kg	0.113	0	.025	90.1	35-148	L648400-06	WG673970
2-Butanone (MEK)	mg/kg	0.608	0	.125	97.3	40-149	L648400-06	WG673970
2-Chloroethyl vinyl ether	mg/kg	0.501	0	.125	80.1	10-173	L648400-06	WG673970
2-Chlorotoluene	mg/kg	0.101	0	.025	81.0	34-136	L648400-06	WG673970
4-Chlorotoluene	mg/kg	0.0996	0	.025	79.7	31-137	L648400-06	WG673970
4-Methyl-2-pentanone (MIBK)	mg/kg	0.497	0	.125	79.6	37-153	L648400-06	WG673970
Acetone	mg/kg	0.666	0.00925	.125	105.	10-177	L648400-06	WG673970
Acrylonitrile	mg/kg	0.430	0	.125	68.9	33-159	L648400-06	WG673970
Benzene	mg/kg	0.106	0	.025	85.0	44-131	L648400-06	WG673970
Bromobenzene	mg/kg	0.102	0	.025	81.6	36-132	L648400-06	WG673970
Bromodichloromethane	mg/kg	0.103	0	.025	82.6	48-134	L648400-06	WG673970
Bromoform	mg/kg	0.112	0	.025	89.5	34-141	L648400-06	WG673970
Bromomethane	mg/kg	0.128	0	.025	103.	19-173	L648400-06	WG673970
Carbon tetrachloride	mg/kg	0.113	0	.025	90.6	36-140	L648400-06	WG673970
Chlorobenzene	mg/kg	0.109	0	.025	87.0	42-133	L648400-06	WG673970
Chlorodibromomethane	mg/kg	0.109	0	.025	87.6	45-135	L648400-06	WG673970
Chloroethane	mg/kg	0.123	0	.025	98.7	16-178	L648400-06	WG673970
Chloroform	mg/kg	0.107	0	.025	85.8	52-130	L648400-06	WG673970
Chloromethane	mg/kg	0.102	0	.025	81.3	28-147	L648400-06	WG673970
cis-1,2-Dichloroethene	mg/kg	0.109	0	.025	87.1	52-128	L648400-06	WG673970
cis-1,3-Dichloropropene	mg/kg	0.104	0	.025	83.0	46-131	L648400-06	WG673970
Di-isopropyl ether	mg/kg	0.0982	0	.025	78.6	46-134	L648400-06	WG673970
Dibromomethane	mg/kg	0.103	0	.025	82.3	51-133	L648400-06	WG673970
Dichlorodifluoromethane	mg/kg	0.121	0	.025	96.6	12-179	L648400-06	WG673970
Ethylbenzene	mg/kg	0.114	0	.025	91.2	38-139	L648400-06	WG673970
Hexachloro-1,3-butadiene	mg/kg	0.0682	0	.025	54.5	10-147	L648400-06	WG673970
Isopropylbenzene	mg/kg	0.119	0	.025	95.4	34-137	L648400-06	WG673970
Methyl tert-butyl ether	mg/kg	0.106	0	.025	84.5	45-134	L648400-06	WG673970
Methylene Chloride	mg/kg	0.0989	0.000329	.025	78.9	41-133	L648400-06	WG673970
n-Butylbenzene	mg/kg	0.0824	0	.025	65.9	19-149	L648400-06	WG673970
n-Propylbenzene	mg/kg	0.104	0	.025	83.6	27-142	L648400-06	WG673970
Naphthalene	mg/kg	0.0798	0.000444	.025	63.5	19-146	L648400-06	WG673970
p-Isopropyltoluene	mg/kg	0.102	0	.025	81.2	21-150	L648400-06	WG673970
sec-Butylbenzene	mg/kg	0.0955	0	.025	76.4	25-148	L648400-06	WG673970
Styrene	mg/kg	0.117	0	.025	93.3	30-156	L648400-06	WG673970
tert-Butylbenzene	mg/kg	0.103	0	.025	82.4	32-146	L648400-06	WG673970
Tetrachloroethene	mg/kg	0.114	0	.025	91.4	35-139	L648400-06	WG673970
Toluene	mg/kg	0.107	0	.025	85.4	43-127	L648400-06	WG673970
trans-1,2-Dichloroethene	mg/kg	0.112	0	.025	89.4	41-132	L648400-06	WG673970
trans-1,3-Dichloropropene	mg/kg	0.111	0	.025	88.7	43-129	L648400-06	WG673970
Trichloroethene	mg/kg	0.110	0	.025	88.0	42-136	L648400-06	WG673970
Trichlorofluoromethane	mg/kg	0.124	0	.025	99.0	20-178	L648400-06	WG673970
Vinyl chloride	mg/kg	0.112	0	.025	89.7	30-157	L648400-06	WG673970
Xylenes, Total	mg/kg	0.339	0	.075	90.4	38-137	L648400-06	WG673970
4-Bromofluorobenzene					105.9	67-133		WG673970

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L648403

August 01, 2013

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Dibromofluoromethane					99.48	72-135		
Toluene-d8					103.8	90-113		
a,a,a-Trifluorotoluene					107.8	89-115		
Diesel Range Organics (DRO)	mg/kg	25.1	0.450	30	82.2	50-150	L648403-01	WG673757
Residual Range Organics (RRO)	mg/kg	22.0	1.11	30	69.5	50-150	L648403-01	WG673757
o-Terphenyl					101.0	50-150		WG673757
1,1,1,2-Tetrachloroethane	mg/kg	0.118	0	.025	94.4	49-135	L648411-01	WG674338
1,1,1-Trichloroethane	mg/kg	0.127	0	.025	102.	43-142	L648411-01	WG674338
1,1,2,2-Tetrachloroethane	mg/kg	0.119	0	.025	94.8	42-147	L648411-01	WG674338
1,1,2-Trichloroethane	mg/kg	0.122	0	.025	97.9	51-134	L648411-01	WG674338
1,1,2-Trichlorotrifluoroethane	mg/kg	0.145	0	.025	116.	25-156	L648411-01	WG674338
1,1-Dichloroethane	mg/kg	0.132	0	.025	106.	50-131	L648411-01	WG674338
1,1-Dichloroethene	mg/kg	0.132	0	.025	106.	29-145	L648411-01	WG674338
1,1-Dichloropropene	mg/kg	0.132	0	.025	106.	40-136	L648411-01	WG674338
1,2,3-Trichlorobenzene	mg/kg	0.122	0.00198	.025	96.1	13-142	L648411-01	WG674338
1,2,3-Trichloropropane	mg/kg	0.121	0.00215	.025	95.1	41-149	L648411-01	WG674338
1,2,3-Trimethylbenzene	mg/kg	0.113	0.000420	.025	89.7	33-146	L648411-01	WG674338
1,2,4-Trichlorobenzene	mg/kg	0.131	0.00199	.025	103.	12-140	L648411-01	WG674338
1,2,4-Trimethylbenzene	mg/kg	0.121	0.000418	.025	96.7	29-143	L648411-01	WG674338
1,2-Dibromo-3-Chloropropane	mg/kg	0.113	0	.025	90.8	29-151	L648411-01	WG674338
1,2-Dibromoethane	mg/kg	0.128	0	.025	102.	48-133	L648411-01	WG674338
1,2-Dichlorobenzene	mg/kg	0.124	0.000315	.025	99.3	37-136	L648411-01	WG674338
1,2-Dichloroethane	mg/kg	0.127	0	.025	101.	49-131	L648411-01	WG674338
1,2-Dichloropropane	mg/kg	0.126	0	.025	101.	50-132	L648411-01	WG674338
1,3,5-Trimethylbenzene	mg/kg	0.125	0	.025	99.7	29-144	L648411-01	WG674338
1,3-Dichlorobenzene	mg/kg	0.126	0.000328	.025	101.	26-140	L648411-01	WG674338
1,3-Dichloropropane	mg/kg	0.123	0	.025	98.1	50-126	L648411-01	WG674338
1,4-Dichlorobenzene	mg/kg	0.125	0.000568	.025	99.3	34-132	L648411-01	WG674338
2,2-Dichloropropane	mg/kg	0.129	0	.025	103.	35-148	L648411-01	WG674338
2-Butanone (MEK)	mg/kg	0.751	0.000550	.125	120.	40-149	L648411-01	WG674338
2-Chloroethyl vinyl ether	mg/kg	0.866	0	.125	138.	10-173	L648411-01	WG674338
2-Chlorotoluene	mg/kg	0.123	0	.025	98.4	34-136	L648411-01	WG674338
4-Chlorotoluene	mg/kg	0.125	0	.025	100.	31-137	L648411-01	WG674338
4-Methyl-2-pentanone (MIBK)	mg/kg	0.647	0	.125	103.	37-153	L648411-01	WG674338
Acetone	mg/kg	0.810	0.0106	.125	128.	10-177	L648411-01	WG674338
Acrylonitrile	mg/kg	0.604	0	.125	96.7	33-159	L648411-01	WG674338
Benzene	mg/kg	0.132	0.000350	.025	105.	44-131	L648411-01	WG674338
Bromobenzene	mg/kg	0.122	0.000309	.025	97.5	36-132	L648411-01	WG674338
Bromodichloromethane	mg/kg	0.117	0	.025	93.6	48-134	L648411-01	WG674338
Bromoform	mg/kg	0.119	0	.025	95.5	34-141	L648411-01	WG674338
Bromomethane	mg/kg	0.123	0.000349	.025	98.3	19-173	L648411-01	WG674338
Carbon tetrachloride	mg/kg	0.128	0	.025	102.	36-140	L648411-01	WG674338
Chlorobenzene	mg/kg	0.126	0	.025	100.	42-133	L648411-01	WG674338
Chlorodibromomethane	mg/kg	0.114	0	.025	91.3	45-135	L648411-01	WG674338
Chloroethane	mg/kg	0.128	0	.025	102.	16-178	L648411-01	WG674338
Chloroform	mg/kg	0.126	0	.025	101.	52-130	L648411-01	WG674338
Chloromethane	mg/kg	0.133	0	.025	106.	28-147	L648411-01	WG674338
cis-1,2-Dichloroethene	mg/kg	0.129	0	.025	103.	52-128	L648411-01	WG674338
cis-1,3-Dichloropropene	mg/kg	0.124	0	.025	98.8	46-131	L648411-01	WG674338
Di-isopropyl ether	mg/kg	0.129	0	.025	104.	46-134	L648411-01	WG674338
Dibromomethane	mg/kg	0.129	0	.025	103.	51-133	L648411-01	WG674338
Dichlorodifluoromethane	mg/kg	0.144	0	.025	115.	12-179	L648411-01	WG674338
Ethylbenzene	mg/kg	0.125	0	.025	99.9	38-139	L648411-01	WG674338
Hexachloro-1,3-butadiene	mg/kg	0.111	0.00113	.025	87.7	10-147	L648411-01	WG674338
Isopropylbenzene	mg/kg	0.136	0	.025	109.	34-137	L648411-01	WG674338
Methyl tert-butyl ether	mg/kg	0.130	0	.025	104.	45-134	L648411-01	WG674338
Methylene Chloride	mg/kg	0.130	0.00117	.025	103.	41-133	L648411-01	WG674338

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Bend, OR 97701

Quality Assurance Report
Level II

L648403

August 01, 2013

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
n-Butylbenzene	mg/kg	0.125	0.000750	.025	99.1	19-149	L648411-01	WG674338
n-Propylbenzene	mg/kg	0.126	0.000338	.025	101.	27-142	L648411-01	WG674338
Naphthalene	mg/kg	0.123	0.00314	.025	95.5	19-146	L648411-01	WG674338
p-Isopropyltoluene	mg/kg	0.125	0.000391	.025	100.	21-150	L648411-01	WG674338
sec-Butylbenzene	mg/kg	0.123	0.000424	.025	97.8	25-148	L648411-01	WG674338
Styrene	mg/kg	0.132	0	.025	106.	30-156	L648411-01	WG674338
tert-Butylbenzene	mg/kg	0.125	0.000410	.025	99.9	32-146	L648411-01	WG674338
Tetrachloroethene	mg/kg	0.129	0	.025	103.	35-139	L648411-01	WG674338
Toluene	mg/kg	0.124	0.000371	.025	98.9	43-127	L648411-01	WG674338
trans-1,2-Dichloroethene	mg/kg	0.129	0	.025	103.	41-132	L648411-01	WG674338
trans-1,3-Dichloropropene	mg/kg	0.116	0	.025	93.1	43-129	L648411-01	WG674338
Trichloroethene	mg/kg	0.126	0.000303	.025	100.	42-136	L648411-01	WG674338
Trichlorofluoromethane	mg/kg	0.131	0	.025	105.	20-178	L648411-01	WG674338
Vinyl chloride	mg/kg	0.138	0	.025	110.	30-157	L648411-01	WG674338
Xylenes, Total	mg/kg	0.371	0.000557	.075	98.8	38-137	L648411-01	WG674338
4-Bromofluorobenzene					98.36	67-133		WG674338
Dibromofluoromethane					98.87	72-135		WG674338
Toluene-d8					97.40	90-113		WG674338
a,a,a-Trifluorotoluene					96.23	89-115		WG674338
1,1,1,2-Tetrachloroethane	mg/kg	0.135	0	.025	108.	49-135	L648922-09	WG674509
1,1,1-Trichloroethane	mg/kg	0.111	0	.025	89.1	43-142	L648922-09	WG674509
1,1,2,2-Tetrachloroethane	mg/kg	0.120	0	.025	96.0	42-147	L648922-09	WG674509
1,1,2-Trichloroethane	mg/kg	0.124	0	.025	99.1	51-134	L648922-09	WG674509
1,1,2-Trichlorotrifluoroethane	mg/kg	0.127	0	.025	102.	25-156	L648922-09	WG674509
1,1-Dichloroethane	mg/kg	0.111	0	.025	88.7	50-131	L648922-09	WG674509
1,1-Dichloroethene	mg/kg	0.117	0	.025	93.9	29-145	L648922-09	WG674509
1,1-Dichloropropene	mg/kg	0.111	0	.025	88.8	40-136	L648922-09	WG674509
1,2,3-Trichlorobenzene	mg/kg	0.122	0	.025	97.5	13-142	L648922-09	WG674509
1,2,3-Trichloropropane	mg/kg	0.123	0	.025	98.3	41-149	L648922-09	WG674509
1,2,3-Trimethylbenzene	mg/kg	0.118	0	.025	94.2	33-146	L648922-09	WG674509
1,2,4-Trichlorobenzene	mg/kg	0.133	0.000527	.025	106.	12-140	L648922-09	WG674509
1,2,4-Trimethylbenzene	mg/kg	0.138	0	.025	111.	29-143	L648922-09	WG674509
1,2-Dibromo-3-Chloropropane	mg/kg	0.122	0	.025	97.8	29-151	L648922-09	WG674509
1,2-Dibromoethane	mg/kg	0.125	0	.025	99.9	48-133	L648922-09	WG674509
1,2-Dichlorobenzene	mg/kg	0.128	0	.025	103.	37-136	L648922-09	WG674509
1,2-Dichloroethane	mg/kg	0.0984	0	.025	78.7	49-131	L648922-09	WG674509
1,2-Dichloropropane	mg/kg	0.117	0	.025	93.7	50-132	L648922-09	WG674509
1,3,5-Trimethylbenzene	mg/kg	0.140	0	.025	112.	29-144	L648922-09	WG674509
1,3-Dichlorobenzene	mg/kg	0.140	0	.025	112.	26-140	L648922-09	WG674509
1,3-Dichloropropane	mg/kg	0.123	0	.025	98.2	50-126	L648922-09	WG674509
1,4-Dichlorobenzene	mg/kg	0.131	0	.025	104.	34-132	L648922-09	WG674509
2,2-Dichloropropane	mg/kg	0.112	0	.025	90.0	35-148	L648922-09	WG674509
2-Butanone (MEK)	mg/kg	0.531	0	.125	85.0	40-149	L648922-09	WG674509
2-Chloroethyl vinyl ether	mg/kg	0.245	0	.125	39.3	10-173	L648922-09	WG674509
2-Chlorotoluene	mg/kg	0.131	0	.025	105.	34-136	L648922-09	WG674509
4-Chlorotoluene	mg/kg	0.132	0	.025	106.	31-137	L648922-09	WG674509
4-Methyl-2-pentanone (MIBK)	mg/kg	0.614	0	.125	98.2	37-153	L648922-09	WG674509
Acetone	mg/kg	0.510	0.0176	.125	78.7	10-177	L648922-09	WG674509
Acrylonitrile	mg/kg	0.502	0	.125	80.3	33-159	L648922-09	WG674509
Benzene	mg/kg	0.114	0	.025	90.9	44-131	L648922-09	WG674509
Bromobenzene	mg/kg	0.127	0	.025	101.	36-132	L648922-09	WG674509
Bromodichloromethane	mg/kg	0.109	0	.025	87.1	48-134	L648922-09	WG674509
Bromoform	mg/kg	0.135	0	.025	108.	34-141	L648922-09	WG674509
Bromomethane	mg/kg	0.148	0	.025	119.	19-173	L648922-09	WG674509
Carbon tetrachloride	mg/kg	0.112	0	.025	89.3	36-140	L648922-09	WG674509
Chlorobenzene	mg/kg	0.136	0	.025	108.	42-133	L648922-09	WG674509
Chlorodibromomethane	mg/kg	0.126	0	.025	101.	45-135	L648922-09	WG674509

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Quality Assurance Report
Level II

L648403

August 01, 2013

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Chloroethane	mg/kg	0.128	0	.025	102.	16-178	L648922-09	WG674509
Chloroform	mg/kg	0.112	0	.025	89.7	52-130	L648922-09	WG674509
Chloromethane	mg/kg	0.124	0	.025	99.1	28-147	L648922-09	WG674509
cis-1,2-Dichloroethene	mg/kg	0.114	0	.025	91.5	52-128	L648922-09	WG674509
cis-1,3-Dichloropropene	mg/kg	0.118	0	.025	94.5	46-131	L648922-09	WG674509
Di-isopropyl ether	mg/kg	0.111	0	.025	89.2	46-134	L648922-09	WG674509
Dibromomethane	mg/kg	0.117	0	.025	93.3	51-133	L648922-09	WG674509
Dichlorodifluoromethane	mg/kg	0.120	0	.025	96.4	12-179	L648922-09	WG674509
Ethylbenzene	mg/kg	0.137	0	.025	110.	38-139	L648922-09	WG674509
Hexachloro-1,3-butadiene	mg/kg	0.120	0	.025	95.9	10-147	L648922-09	WG674509
Isopropylbenzene	mg/kg	0.149	0	.025	119.	34-137	L648922-09	WG674509
Methyl tert-butyl ether	mg/kg	0.110	0	.025	88.2	45-134	L648922-09	WG674509
Methylene Chloride	mg/kg	0.103	0.00141	.025	81.2	41-133	L648922-09	WG674509
n-Butylbenzene	mg/kg	0.132	0	.025	106.	19-149	L648922-09	WG674509
n-Propylbenzene	mg/kg	0.138	0	.025	110.	27-142	L648922-09	WG674509
Naphthalene	mg/kg	0.117	0.00103	.025	92.6	19-146	L648922-09	WG674509
p-Isopropyltoluene	mg/kg	0.147	0	.025	117.	21-150	L648922-09	WG674509
sec-Butylbenzene	mg/kg	0.140	0	.025	112.	25-148	L648922-09	WG674509
Styrene	mg/kg	0.147	0	.025	118.	30-156	L648922-09	WG674509
tert-Butylbenzene	mg/kg	0.143	0	.025	114.	32-146	L648922-09	WG674509
Tetrachloroethene	mg/kg	0.133	0	.025	106.	35-139	L648922-09	WG674509
Toluene	mg/kg	0.119	0	.025	95.5	43-127	L648922-09	WG674509
trans-1,2-Dichloroethene	mg/kg	0.112	0	.025	89.8	41-132	L648922-09	WG674509
trans-1,3-Dichloropropene	mg/kg	0.125	0	.025	99.7	43-129	L648922-09	WG674509
Trichloroethene	mg/kg	0.125	0	.025	99.6	42-136	L648922-09	WG674509
Trichlorofluoromethane	mg/kg	0.126	0	.025	101.	20-178	L648922-09	WG674509
Vinyl chloride	mg/kg	0.123	0	.025	98.1	30-157	L648922-09	WG674509
Xylenes, Total	mg/kg	0.421	0	.075	112.	38-137	L648922-09	WG674509
4-Bromofluorobenzene					100.9	67-133		WG674509
Dibromofluoromethane					97.95	72-135		WG674509
Toluene-d8					102.7	90-113		WG674509
a,a,a-Trifluorotoluene					107.6	89-115		WG674509

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.122	0.112	97.2	49-135	7.72	23	L648400-06	WG673970
1,1,1-Trichloroethane	mg/kg	0.123	0.113	98.2	43-142	8.37	24	L648400-06	WG673970
1,1,2,2-Tetrachloroethane	mg/kg	0.105	0.0925	84.2	42-147	12.9	25	L648400-06	WG673970
1,1,2-Trichloroethane	mg/kg	0.117	0.107	93.7	51-134	8.94	21	L648400-06	WG673970
1,1,2-Trichlorotrifluoroethane	mg/kg	0.138	0.127	110.	25-156	8.42	29	L648400-06	WG673970
1,1-Dichloroethane	mg/kg	0.114	0.105	90.9	50-131	7.43	21	L648400-06	WG673970
1,1-Dichloroethene	mg/kg	0.133	0.125	106.	29-145	5.57	28	L648400-06	WG673970
1,1-Dichloropropene	mg/kg	0.116	0.108	92.6	40-136	6.50	24	L648400-06	WG673970
1,2,3-Trichlorobenzene	mg/kg	0.0912	0.0744	72.9	13-142	20.2	33	L648400-06	WG673970
1,2,3-Trichloropropane	mg/kg	0.107	0.0926	85.8	41-149	14.7	28	L648400-06	WG673970
1,2,3-Trimethylbenzene	mg/kg	0.104	0.0909	83.0	33-146	13.1	27	L648400-06	WG673970
1,2,4-Trichlorobenzene	mg/kg	0.100	0.0832	80.1	12-140	18.8	32	L648400-06	WG673970
1,2,4-Trimethylbenzene	mg/kg	0.113	0.102	90.5	29-143	10.8	30	L648400-06	WG673970
1,2-Dibromo-3-Chloropropane	mg/kg	0.104	0.0880	83.3	29-151	16.8	31	L648400-06	WG673970
1,2-Dibromoethane	mg/kg	0.119	0.106	95.6	48-133	11.8	22	L648400-06	WG673970
1,2-Dichlorobenzene	mg/kg	0.105	0.0909	83.9	37-136	14.3	25	L648400-06	WG673970
1,2-Dichloroethane	mg/kg	0.115	0.103	92.2	49-131	10.9	20	L648400-06	WG673970
1,2-Dichloropropane	mg/kg	0.110	0.0993	88.1	50-132	10.4	21	L648400-06	WG673970
1,3,5-Trimethylbenzene	mg/kg	0.119	0.106	94.9	29-144	11.5	30	L648400-06	WG673970
1,3-Dichlorobenzene	mg/kg	0.109	0.0968	86.8	26-140	11.5	28	L648400-06	WG673970
1,3-Dichloropropane	mg/kg	0.113	0.104	90.6	50-126	8.97	22	L648400-06	WG673970
1,4-Dichlorobenzene	mg/kg	0.108	0.0965	86.8	34-132	11.6	26	L648400-06	WG673970
2,2-Dichloropropane	mg/kg	0.120	0.113	96.2	35-148	6.49	26	L648400-06	WG673970

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Quality Assurance Report
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August 01, 2013

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
2-Butanone (MEK)	mg/kg	0.727	0.608	116.	40-149	17.8	27	L648400-06	WG673970
2-Chloroethyl vinyl ether	mg/kg	0.567	0.501	90.7	10-173	12.4	33	L648400-06	WG673970
2-Chlorotoluene	mg/kg	0.112	0.101	89.3	34-136	9.76	28	L648400-06	WG673970
4-Chlorotoluene	mg/kg	0.111	0.0996	88.9	31-137	10.9	27	L648400-06	WG673970
4-Methyl-2-pentanone (MIBK)	mg/kg	0.579	0.497	92.7	37-153	15.2	27	L648400-06	WG673970
Acetone	mg/kg	0.780	0.666	123.	10-177	15.7	28	L648400-06	WG673970
Acrylonitrile	mg/kg	0.493	0.430	78.9	33-159	13.6	26	L648400-06	WG673970
Benzene	mg/kg	0.117	0.106	93.2	44-131	9.19	21	L648400-06	WG673970
Bromobenzene	mg/kg	0.109	0.102	87.5	36-132	6.98	26	L648400-06	WG673970
Bromodichloromethane	mg/kg	0.115	0.103	92.3	48-134	11.0	20	L648400-06	WG673970
Bromoform	mg/kg	0.126	0.112	101.	34-141	12.0	24	L648400-06	WG673970
Bromomethane	mg/kg	0.139	0.128	111.	19-173	7.84	25	L648400-06	WG673970
Carbon tetrachloride	mg/kg	0.122	0.113	97.2	36-140	7.03	26	L648400-06	WG673970
Chlorobenzene	mg/kg	0.118	0.109	94.5	42-133	8.28	24	L648400-06	WG673970
Chlorodibromomethane	mg/kg	0.121	0.109	96.6	45-135	9.79	23	L648400-06	WG673970
Chloroethane	mg/kg	0.131	0.123	105.	16-178	5.85	25	L648400-06	WG673970
Chloroform	mg/kg	0.120	0.107	95.8	52-130	11.0	21	L648400-06	WG673970
Chloromethane	mg/kg	0.109	0.102	86.9	28-147	6.69	23	L648400-06	WG673970
cis-1,2-Dichloroethene	mg/kg	0.119	0.109	95.6	52-128	9.24	21	L648400-06	WG673970
cis-1,3-Dichloropropene	mg/kg	0.115	0.104	92.2	46-131	10.5	21	L648400-06	WG673970
Di-isopropyl ether	mg/kg	0.110	0.0982	88.3	46-134	11.6	20	L648400-06	WG673970
Dibromomethane	mg/kg	0.116	0.103	92.7	51-133	11.8	21	L648400-06	WG673970
Dichlorodifluoromethane	mg/kg	0.127	0.121	102.	12-179	5.26	27	L648400-06	WG673970
Ethylbenzene	mg/kg	0.123	0.114	98.8	38-139	7.98	27	L648400-06	WG673970
Hexachloro-1,3-butadiene	mg/kg	0.0874	0.0682	70.0	10-147	24.8	37	L648400-06	WG673970
Isopropylbenzene	mg/kg	0.131	0.119	105.	34-137	9.27	29	L648400-06	WG673970
Methyl tert-butyl ether	mg/kg	0.122	0.106	97.4	45-134	14.2	22	L648400-06	WG673970
Methylene Chloride	mg/kg	0.110	0.0989	87.7	41-133	10.6	28	L648400-06	WG673970
n-Butylbenzene	mg/kg	0.0991	0.0824	79.2	19-149	18.4	32	L648400-06	WG673970
n-Propylbenzene	mg/kg	0.115	0.104	91.9	27-142	9.52	29	L648400-06	WG673970
Naphthalene	mg/kg	0.0961	0.0798	76.5	19-146	18.6	30	L648400-06	WG673970
p-Isopropyltoluene	mg/kg	0.117	0.102	93.6	21-150	14.2	31	L648400-06	WG673970
sec-Butylbenzene	mg/kg	0.111	0.0955	88.5	25-148	14.8	31	L648400-06	WG673970
Styrene	mg/kg	0.126	0.117	101.	30-156	7.98	26	L648400-06	WG673970
tert-Butylbenzene	mg/kg	0.116	0.103	93.0	32-146	12.2	30	L648400-06	WG673970
Tetrachloroethene	mg/kg	0.122	0.114	97.4	35-139	6.30	27	L648400-06	WG673970
Toluene	mg/kg	0.117	0.107	93.6	43-127	9.15	21	L648400-06	WG673970
trans-1,2-Dichloroethene	mg/kg	0.119	0.112	95.4	41-132	6.59	23	L648400-06	WG673970
trans-1,3-Dichloropropene	mg/kg	0.125	0.111	99.8	43-129	11.8	23	L648400-06	WG673970
Trichloroethene	mg/kg	0.116	0.110	92.6	42-136	5.10	23	L648400-06	WG673970
Trichlorofluoromethane	mg/kg	0.132	0.124	105.	20-178	6.18	30	L648400-06	WG673970
Vinyl chloride	mg/kg	0.120	0.112	95.9	30-157	6.74	24	L648400-06	WG673970
Xylenes, Total	mg/kg	0.366	0.339	97.5	38-137	7.57	26	L648400-06	WG673970
4-Bromofluorobenzene				104.4	67-133				WG673970
Dibromofluoromethane				100.8	72-135				WG673970
Toluene-d8				103.1	90-113				WG673970
a,a,a-Trifluorotoluene				106.0	89-115				WG673970
Diesel Range Organics (DRO)	mg/kg	26.5	25.1	86.8	50-150	5.42	20	L648403-01	WG673757
Residual Range Organics (RRO)	mg/kg	22.8	22.0	72.2	50-150	3.61	20	L648403-01	WG673757
o-Terphenyl				104.0	50-150				WG673757
1,1,1,2-Tetrachloroethane	mg/kg	0.113	0.118	90.7	49-135	4.00	23	L648411-01	WG674338
1,1,1-Trichloroethane	mg/kg	0.122	0.127	97.8	43-142	4.08	24	L648411-01	WG674338
1,1,2,2-Tetrachloroethane	mg/kg	0.112	0.119	89.2	42-147	6.07	25	L648411-01	WG674338
1,1,2-Trichloroethane	mg/kg	0.114	0.122	90.9	51-134	7.47	21	L648411-01	WG674338
1,1,2-Trichlorotrifluoroethane	mg/kg	0.140	0.145	112.	25-156	3.12	29	L648411-01	WG674338

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Ryan Franklin (ODOT)
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Bend, OR 97701

Quality Assurance Report
Level II

L648403

August 01, 2013

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1-Dichloroethane	mg/kg	0.129	0.132	103.	50-131	2.70	21	L648411-01	WG674338
1,1-Dichloroethene	mg/kg	0.126	0.132	101.	29-145	4.75	28	L648411-01	WG674338
1,1-Dichloropropene	mg/kg	0.127	0.132	101.	40-136	4.25	24	L648411-01	WG674338
1,2,3-Trichlorobenzene	mg/kg	0.125	0.122	98.2	13-142	2.16	33	L648411-01	WG674338
1,2,3-Trichloropropane	mg/kg	0.117	0.121	91.7	41-149	3.62	28	L648411-01	WG674338
1,2,3-Trimethylbenzene	mg/kg	0.109	0.113	87.0	33-146	3.04	27	L648411-01	WG674338
1,2,4-Trichlorobenzene	mg/kg	0.127	0.131	100.	12-140	3.41	32	L648411-01	WG674338
1,2,4-Trimethylbenzene	mg/kg	0.114	0.121	91.1	29-143	5.95	30	L648411-01	WG674338
1,2-Dibromo-3-Chloropropane	mg/kg	0.108	0.113	86.4	29-151	4.90	31	L648411-01	WG674338
1,2-Dibromoethane	mg/kg	0.119	0.128	95.4	48-133	6.99	22	L648411-01	WG674338
1,2-Dichlorobenzene	mg/kg	0.120	0.124	95.8	37-136	3.61	25	L648411-01	WG674338
1,2-Dichloroethane	mg/kg	0.122	0.127	97.3	49-131	4.11	20	L648411-01	WG674338
1,2-Dichloropropane	mg/kg	0.124	0.126	99.0	50-132	1.91	21	L648411-01	WG674338
1,3,5-Trimethylbenzene	mg/kg	0.118	0.125	94.1	29-144	5.73	30	L648411-01	WG674338
1,3-Dichlorobenzene	mg/kg	0.119	0.126	95.2	26-140	5.49	28	L648411-01	WG674338
1,3-Dichloropropane	mg/kg	0.116	0.123	92.6	50-126	5.82	22	L648411-01	WG674338
1,4-Dichlorobenzene	mg/kg	0.116	0.125	92.7	34-132	6.89	26	L648411-01	WG674338
2,2-Dichloropropane	mg/kg	0.122	0.129	97.8	35-148	5.27	26	L648411-01	WG674338
2-Butanone (MEK)	mg/kg	0.678	0.751	108.	40-149	10.2	27	L648411-01	WG674338
2-Chloroethyl vinyl ether	mg/kg	0.749	0.866	120.	10-173	14.5	33	L648411-01	WG674338
2-Chlorotoluene	mg/kg	0.117	0.123	93.8	34-136	4.82	28	L648411-01	WG674338
4-Chlorotoluene	mg/kg	0.118	0.125	94.5	31-137	6.05	27	L648411-01	WG674338
4-Methyl-2-pentanone (MIBK)	mg/kg	0.590	0.647	94.3	37-153	9.25	27	L648411-01	WG674338
Acetone	mg/kg	0.721	0.810	114.	10-177	11.7	28	L648411-01	WG674338
Acrylonitrile	mg/kg	0.575	0.604	92.0	33-159	5.05	26	L648411-01	WG674338
Benzene	mg/kg	0.127	0.132	101.	44-131	3.67	21	L648411-01	WG674338
Bromobenzene	mg/kg	0.115	0.122	91.6	36-132	6.24	26	L648411-01	WG674338
Bromodichloromethane	mg/kg	0.111	0.117	89.0	48-134	5.01	20	L648411-01	WG674338
Bromoform	mg/kg	0.108	0.119	86.6	34-141	9.74	24	L648411-01	WG674338
Bromomethane	mg/kg	0.121	0.123	96.2	19-173	2.14	25	L648411-01	WG674338
Carbon tetrachloride	mg/kg	0.122	0.128	97.7	36-140	4.41	26	L648411-01	WG674338
Chlorobenzene	mg/kg	0.118	0.126	94.4	42-133	6.27	24	L648411-01	WG674338
Chlorodibromomethane	mg/kg	0.110	0.114	87.9	45-135	3.76	23	L648411-01	WG674338
Chloroethane	mg/kg	0.121	0.128	96.6	16-178	5.90	25	L648411-01	WG674338
Chloroform	mg/kg	0.123	0.126	98.2	52-130	2.61	21	L648411-01	WG674338
Chloromethane	mg/kg	0.126	0.133	100.	28-147	5.62	23	L648411-01	WG674338
cis-1,2-Dichloroethene	mg/kg	0.125	0.129	99.8	52-128	3.60	21	L648411-01	WG674338
cis-1,3-Dichloropropene	mg/kg	0.119	0.124	95.4	46-131	3.49	21	L648411-01	WG674338
Di-isopropyl ether	mg/kg	0.125	0.129	99.8	46-134	3.64	20	L648411-01	WG674338
Dibromomethane	mg/kg	0.122	0.129	97.5	51-133	5.37	21	L648411-01	WG674338
Dichlorodifluoromethane	mg/kg	0.138	0.144	111.	12-179	4.18	27	L648411-01	WG674338
Ethylbenzene	mg/kg	0.116	0.125	92.8	38-139	7.40	27	L648411-01	WG674338
Hexachloro-1,3-butadiene	mg/kg	0.107	0.111	84.9	10-147	3.16	37	L648411-01	WG674338
Isopropylbenzene	mg/kg	0.128	0.136	102.	34-137	6.10	29	L648411-01	WG674338
Methyl tert-butyl ether	mg/kg	0.126	0.130	101.	45-134	3.53	22	L648411-01	WG674338
Methylene Chloride	mg/kg	0.126	0.130	100.	41-133	3.24	28	L648411-01	WG674338
n-Butylbenzene	mg/kg	0.119	0.125	95.0	19-149	4.27	32	L648411-01	WG674338
n-Propylbenzene	mg/kg	0.119	0.126	94.9	27-142	6.03	29	L648411-01	WG674338
Naphthalene	mg/kg	0.125	0.123	97.3	19-146	1.81	30	L648411-01	WG674338
p-Isopropyltoluene	mg/kg	0.118	0.125	94.2	21-150	5.89	31	L648411-01	WG674338
sec-Butylbenzene	mg/kg	0.117	0.123	93.3	25-148	4.72	31	L648411-01	WG674338
Styrene	mg/kg	0.125	0.132	100.	30-156	5.34	26	L648411-01	WG674338
tert-Butylbenzene	mg/kg	0.117	0.125	93.6	32-146	6.40	30	L648411-01	WG674338
Tetrachloroethene	mg/kg	0.119	0.129	95.2	35-139	7.69	27	L648411-01	WG674338
Toluene	mg/kg	0.118	0.124	93.8	43-127	5.24	21	L648411-01	WG674338
trans-1,2-Dichloroethene	mg/kg	0.127	0.129	102.	41-132	1.62	23	L648411-01	WG674338
trans-1,3-Dichloropropene	mg/kg	0.107	0.116	85.9	43-129	8.06	23	L648411-01	WG674338
Trichloroethene	mg/kg	0.121	0.126	96.8	42-136	3.76	23	L648411-01	WG674338
Trichlorofluoromethane	mg/kg	0.123	0.131	98.0	20-178	6.64	30	L648411-01	WG674338

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Quality Assurance Report
Level II

L648403

August 01, 2013

Analyte	Units	MSD	Matrix Spike Ref	Duplicate %Rec	Limit	RPD	Limit	Ref Samp	Batch
Vinyl chloride	mg/kg	0.132	0.138	106.	30-157	4.03	24	L648411-01	WG674338
Xylenes, Total	mg/kg	0.351	0.371	93.5	38-137	5.46	26	L648411-01	WG674338
4-Bromofluorobenzene				97.51	67-133				WG674338
Dibromofluoromethane				102.8	72-135				WG674338
Toluene-d8				99.47	90-113				WG674338
a,a,a-Trifluorotoluene				99.11	89-115				WG674338
1,1,1,2-Tetrachloroethane	mg/kg	0.138	0.135	110.	49-135	1.61	23	L648922-09	WG674509
1,1,1-Trichloroethane	mg/kg	0.111	0.111	88.7	43-142	0.440	24	L648922-09	WG674509
1,1,2,2-Tetrachloroethane	mg/kg	0.122	0.120	97.4	42-147	1.46	25	L648922-09	WG674509
1,1,2-Trichloroethane	mg/kg	0.131	0.124	105.	51-134	5.46	21	L648922-09	WG674509
1,1,2-Trichlorotrifluoroethane	mg/kg	0.125	0.127	100.	25-156	1.83	29	L648922-09	WG674509
1,1-Dichloroethane	mg/kg	0.112	0.111	89.8	50-131	1.25	21	L648922-09	WG674509
1,1-Dichloroethene	mg/kg	0.120	0.117	95.6	29-145	1.87	28	L648922-09	WG674509
1,1-Dichloropropene	mg/kg	0.112	0.111	89.8	40-136	1.15	24	L648922-09	WG674509
1,2,3-Trichlorobenzene	mg/kg	0.117	0.122	93.4	13-142	4.24	33	L648922-09	WG674509
1,2,3-Trichloropropane	mg/kg	0.128	0.123	103.	41-149	4.37	28	L648922-09	WG674509
1,2,3-Trimethylbenzene	mg/kg	0.123	0.118	98.1	33-146	4.00	27	L648922-09	WG674509
1,2,4-Trichlorobenzene	mg/kg	0.127	0.133	101.	12-140	4.22	32	L648922-09	WG674509
1,2,4-Trimethylbenzene	mg/kg	0.139	0.138	111.	29-143	0.480	30	L648922-09	WG674509
1,2-Dibromo-3-Chloropropane	mg/kg	0.123	0.122	98.6	29-151	0.900	31	L648922-09	WG674509
1,2-Dibromoethane	mg/kg	0.129	0.125	103.	48-133	3.02	22	L648922-09	WG674509
1,2-Dichlorobenzene	mg/kg	0.131	0.128	105.	37-136	2.33	25	L648922-09	WG674509
1,2-Dichloroethane	mg/kg	0.102	0.0984	82.0	49-131	4.05	20	L648922-09	WG674509
1,2-Dichloropropane	mg/kg	0.123	0.117	98.2	50-132	4.69	21	L648922-09	WG674509
1,3,5-Trimethylbenzene	mg/kg	0.143	0.140	114.	29-144	1.71	30	L648922-09	WG674509
1,3-Dichlorobenzene	mg/kg	0.138	0.140	110.	26-140	1.29	28	L648922-09	WG674509
1,3-Dichloropropane	mg/kg	0.128	0.123	102.	50-126	3.84	22	L648922-09	WG674509
1,4-Dichlorobenzene	mg/kg	0.133	0.131	106.	34-132	1.77	26	L648922-09	WG674509
2,2-Dichloropropane	mg/kg	0.115	0.112	92.2	35-148	2.43	26	L648922-09	WG674509
2-Butanone (MEK)	mg/kg	0.556	0.531	88.9	40-149	4.48	27	L648922-09	WG674509
2-Chloroethyl vinyl ether	mg/kg	0.263	0.245	42.0	10-173	6.83	33	L648922-09	WG674509
2-Chlorotoluene	mg/kg	0.133	0.131	106.	34-136	1.69	28	L648922-09	WG674509
4-Chlorotoluene	mg/kg	0.132	0.132	106.	31-137	0.0800	27	L648922-09	WG674509
4-Methyl-2-pentanone (MIBK)	mg/kg	0.640	0.614	102.	37-153	4.23	27	L648922-09	WG674509
Acetone	mg/kg	0.518	0.510	80.0	10-177	1.59	28	L648922-09	WG674509
Acrylonitrile	mg/kg	0.523	0.502	83.7	33-159	4.25	26	L648922-09	WG674509
Benzene	mg/kg	0.114	0.114	91.3	44-131	0.490	21	L648922-09	WG674509
Bromobenzene	mg/kg	0.129	0.127	103.	36-132	1.47	26	L648922-09	WG674509
Bromodichloromethane	mg/kg	0.111	0.109	89.1	48-134	2.31	20	L648922-09	WG674509
Bromoform	mg/kg	0.139	0.135	112.	34-141	3.32	24	L648922-09	WG674509
Bromomethane	mg/kg	0.153	0.148	122.	19-173	2.81	25	L648922-09	WG674509
Carbon tetrachloride	mg/kg	0.111	0.112	88.5	36-140	0.890	26	L648922-09	WG674509
Chlorobenzene	mg/kg	0.138	0.136	110.	42-133	1.42	24	L648922-09	WG674509
Chlorodibromomethane	mg/kg	0.132	0.126	106.	45-135	4.35	23	L648922-09	WG674509
Chloroethane	mg/kg	0.126	0.128	101.	16-178	0.950	25	L648922-09	WG674509
Chloroform	mg/kg	0.114	0.112	91.4	52-130	1.90	21	L648922-09	WG674509
Chloromethane	mg/kg	0.127	0.124	101.	28-147	2.10	23	L648922-09	WG674509
cis-1,2-Dichloroethene	mg/kg	0.116	0.114	92.5	52-128	1.05	21	L648922-09	WG674509
cis-1,3-Dichloropropene	mg/kg	0.124	0.118	98.8	46-131	4.42	21	L648922-09	WG674509
Di-isopropyl ether	mg/kg	0.113	0.111	90.5	46-134	1.50	20	L648922-09	WG674509
Dibromomethane	mg/kg	0.123	0.117	98.2	51-133	5.10	21	L648922-09	WG674509
Dichlorodifluoromethane	mg/kg	0.120	0.120	96.3	12-179	0.0700	27	L648922-09	WG674509
Ethylbenzene	mg/kg	0.142	0.137	113.	38-139	3.40	27	L648922-09	WG674509
Hexachloro-1,3-butadiene	mg/kg	0.120	0.120	96.2	10-147	0.250	37	L648922-09	WG674509
Isopropylbenzene	mg/kg	0.153	0.149	122.	34-137	2.37	29	L648922-09	WG674509
Methyl tert-butyl ether	mg/kg	0.111	0.110	88.5	45-134	0.420	22	L648922-09	WG674509
Methylene Chloride	mg/kg	0.102	0.103	80.3	41-133	1.09	28	L648922-09	WG674509

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Oregon Dept of Transportation - ODOT
Ryan Franklin (ODOT)
63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648403

August 01, 2013

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
n-Butylbenzene	mg/kg	0.134	0.132	107.	19-149	1.17	32	L648922-09	WG674509
n-Propylbenzene	mg/kg	0.137	0.138	110.	27-142	0.900	29	L648922-09	WG674509
Naphthalene	mg/kg	0.116	0.117	92.2	19-146	0.420	30	L648922-09	WG674509
p-Isopropyltoluene	mg/kg	0.149	0.147	119.	21-150	1.49	31	L648922-09	WG674509
sec-Butylbenzene	mg/kg	0.144	0.140	115.	25-148	2.69	31	L648922-09	WG674509
Styrene	mg/kg	0.150	0.147	120.	30-156	1.70	26	L648922-09	WG674509
tert-Butylbenzene	mg/kg	0.144	0.143	115.	32-146	0.440	30	L648922-09	WG674509
Tetrachloroethene	mg/kg	0.138	0.133	111.	35-139	4.04	27	L648922-09	WG674509
Toluene	mg/kg	0.122	0.119	97.8	43-127	2.39	21	L648922-09	WG674509
trans-1,2-Dichloroethene	mg/kg	0.115	0.112	91.6	41-132	1.94	23	L648922-09	WG674509
trans-1,3-Dichloropropene	mg/kg	0.132	0.125	106.	43-129	5.90	23	L648922-09	WG674509
Trichloroethene	mg/kg	0.128	0.125	102.	42-136	2.92	23	L648922-09	WG674509
Trichlorofluoromethane	mg/kg	0.126	0.126	101.	20-178	0.120	30	L648922-09	WG674509
Vinyl chloride	mg/kg	0.124	0.123	99.2	30-157	1.08	24	L648922-09	WG674509
Xylenes, Total	mg/kg	0.432	0.421	115.	38-137	2.46	26	L648922-09	WG674509
4-Bromofluorobenzene				100.7	67-133				WG674509
Dibromofluoromethane				96.60	72-135				WG674509
Toluene-d8				103.1	90-113				WG674509
a,a,a-Trifluorotoluene				107.3	89-115				WG674509

Batch number /Run number / Sample number cross reference

WG673970: R2759320: L648403-03 04
WG673757: R2759543: L648403-01 02 03 04 05 06
WG674011: R2759544: L648403-07
WG674338: R2760282: L648403-06 07
WG674509: R2761620: L648403-05
WG674665: R2763221: L648403-01 02 03 04
WG674667: R2763545: L648403-05 06 07

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Bend, OR 97701

Quality Assurance Report
Level II

L648403

August 01, 2013

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

D038

State of Oregon Sample Chain of Custody

Agency, Authorized Purchaser or Agent: ODOT

Send Lab Report To: Ryan Franklin
Address: 63034 O.B. Riley Rd. Bend, OR 97701
Tel. #: (541) 388-6088
E-mail: ryan.franklin@odot.state.or.us

Contract Laboratory Name: Environmental Sciences Corporation
Lab Batch #:
Invoice To: Same
Address:
Tel. #:

Lab Selection Criteria:
- ☐ Proximity (if TAT < 48 hrs)
- ☒ Prior work on same project
- ☒ Cost (for anticipated analyses)
- ☐ Other labs disqualified or unable to perform requested services
- ☐ Emergency work

Turn Around Time:
- ☒ 10 days (std.)
- ☐ 5 days
- ☐ 72 hours
- ☐ 48 hours
- ☐ 24 hours
- ☐ Other

Project Name: US97: J Street Intersection (Madras South Y)
Project #: 15409
Sampler Name: Ryan Franklin

Sample ID#	Collection Date/Time	Matrix	Number of Contain-ers	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	VOCs by 8260	PAHs by 8270SIM	SVOCs by 8270	RCRA 8 Metals	PCBs by 8082			Comments
Sample Preservative				None	5035 Kit	None	5035 Kit	None	None	None				
SD13-19-8.5'	7/23/13 12:33pm	S	5			X								L648490-01
SD13-20-10'	1:39pm					X	X							-02
SD13-21-5'	2:16pm					X	X							-03
SD13-21-9.5'	2:38pm					X	X							-04
SD13-22-6'	3:19pm					X	X							-05
SD13-22-10'	3:31pm					X	X							-06

Notes:

Relinquished By: Ryan Franklin	Agency/Agent: ODOT	Received By: [redacted] 5547 0235 9565	Agency/Agent: ODOT
Signature:	Time & Date: 7:00pm 7/23/13	Signature:	Time & Date: 07/24/13 11:20am
Relinquished By:	Agency/Agent: ODOT	Received By: Fed Ex	Agency/Agent:
Signature:	Time & Date: 7/24/13 11:53am	Signature:	Time & Date: 07/25/13 0930

3.6°C JW

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT # []. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S &C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

30 cont

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Version: 4/4/2008

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Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODOT
63055 N. Hwy 97, Bldg M
Bend, OR 97701

Report Summary

Thursday August 01, 2013

Report Number: L648490
Samples Received: 07/25/13
Client Project: 15409

Description: US97: J Street Intersection (Madras South Y)

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648490-01

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Site ID :

Sample ID : SD13-19-8.5FT

Project # : 15409

Collected By : Ryan Franklin
Collection Date : 07/23/13 12:33

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	89.5	0.100	%	2540 G-2011	08/01/13	1
Diesel Range Organics (DRO)	BDL	4.5	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	110.		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Reported: 08/01/13 13:31 Printed: 08/01/13 13:37

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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648490-02

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-20-10FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 13:39

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	87.5	0.100	%	2540 G-2011	08/01/13	1
Volatile Organics						
Acetone	BDL	0.057	mg/kg	8260B	07/28/13	1
Acrylonitrile	BDL	0.011	mg/kg	8260B	07/28/13	1
Benzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromodichloromethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromoform	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromomethane	BDL	0.0057	mg/kg	8260B	07/28/13	1
n-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
sec-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
tert-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Carbon tetrachloride	BDL	0.0011	mg/kg	8260B	07/28/13	1
Chlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Chlorodibromomethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Chloroethane	BDL	0.0057	mg/kg	8260B	07/28/13	1
2-Chloroethyl vinyl ether	BDL	0.057	mg/kg	8260B	07/28/13	1
Chloroform	BDL	0.0057	mg/kg	8260B	07/28/13	1
Chloromethane	BDL	0.0028	mg/kg	8260B	07/28/13	1
2-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1
4-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dibromo-3-Chloropropane	BDL	0.0057	mg/kg	8260B	07/28/13	1
1,2-Dibromoethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Dibromomethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,3-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,4-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Dichlorodifluoromethane	BDL	0.0057	mg/kg	8260B	07/28/13	1
1,1-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
cis-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
trans-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,3-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1
cis-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1
trans-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1
2,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Di-isopropyl ether	BDL	0.0011	mg/kg	8260B	07/28/13	1
Ethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Hexachloro-1,3-butadiene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Isopropylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648490-02

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-20-10FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 13:39

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
p-Isopropyltoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1
2-Butanone (MEK)	BDL	0.011	mg/kg	8260B	07/28/13	1
Methylene Chloride	BDL	0.0057	mg/kg	8260B	07/28/13	1
4-Methyl-2-pentanone (MIBK)	BDL	0.011	mg/kg	8260B	07/28/13	1
Methyl tert-butyl ether	BDL	0.0011	mg/kg	8260B	07/28/13	1
Naphthalene	BDL	0.0057	mg/kg	8260B	07/28/13	1
n-Propylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Styrene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,1,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,2,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,2-Trichlorotrifluoroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Tetrachloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Toluene	BDL	0.0057	mg/kg	8260B	07/28/13	1
1,2,3-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2,4-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,1-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,2-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Trichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Trichlorofluoromethane	BDL	0.0057	mg/kg	8260B	07/28/13	1
1,2,3-Trichloropropane	BDL	0.0028	mg/kg	8260B	07/28/13	1
1,2,4-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2,3-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,3,5-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Vinyl chloride	BDL	0.0011	mg/kg	8260B	07/28/13	1
Xylenes, Total	BDL	0.0034	mg/kg	8260B	07/28/13	1
Surrogate Recovery						
Toluene-d8	100.		% Rec.	8260B	07/28/13	1
Dibromofluoromethane	103.		% Rec.	8260B	07/28/13	1
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	07/28/13	1
4-Bromofluorobenzene	95.0		% Rec.	8260B	07/28/13	1
Diesel Range Organics (DRO)	BDL	4.6	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	111.		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648490-03

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-21-5FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 14:16

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	91.8	0.100	%	2540 G-2011	08/01/13	1
Volatile Organics						
Acetone	BDL	0.057	mg/kg	8260B	07/28/13	1.05
Acrylonitrile	BDL	0.011	mg/kg	8260B	07/28/13	1.05
Benzene	0.0052	0.0011	mg/kg	8260B	07/28/13	1.05
Bromobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Bromodichloromethane	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Bromoform	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Bromomethane	BDL	0.0057	mg/kg	8260B	07/28/13	1.05
n-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
sec-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
tert-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Carbon tetrachloride	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Chlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Chlorodibromomethane	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Chloroethane	BDL	0.0057	mg/kg	8260B	07/28/13	1.05
2-Chloroethyl vinyl ether	BDL	0.057	mg/kg	8260B	07/28/13	1.05
Chloroform	BDL	0.0057	mg/kg	8260B	07/28/13	1.05
Chloromethane	BDL	0.0028	mg/kg	8260B	07/28/13	1.05
2-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
4-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,2-Dibromo-3-Chloropropane	BDL	0.0057	mg/kg	8260B	07/28/13	1.05
1,2-Dibromoethane	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Dibromomethane	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,2-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,3-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,4-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Dichlorodifluoromethane	BDL	0.0057	mg/kg	8260B	07/28/13	1.05
1,1-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,2-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,1-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
cis-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
trans-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,1-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,3-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
cis-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
trans-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
2,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Di-isopropyl ether	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Ethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Hexachloro-1,3-butadiene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Isopropylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648490-03

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-21-5FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 14:16

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
p-Isopropyltoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
2-Butanone (MEK)	BDL	0.011	mg/kg	8260B	07/28/13	1.05
Methylene Chloride	BDL	0.0057	mg/kg	8260B	07/28/13	1.05
4-Methyl-2-pentanone (MIBK)	BDL	0.011	mg/kg	8260B	07/28/13	1.05
Methyl tert-butyl ether	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Naphthalene	BDL	0.0057	mg/kg	8260B	07/28/13	1.05
n-Propylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Styrene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,1,1,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,1,2,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,1,2-Trichlorotrifluoroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Tetrachloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Toluene	BDL	0.0057	mg/kg	8260B	07/28/13	1.05
1,2,3-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,2,4-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,1,1-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,1,2-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Trichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Trichlorofluoromethane	BDL	0.0057	mg/kg	8260B	07/28/13	1.05
1,2,3-Trichloropropane	BDL	0.0028	mg/kg	8260B	07/28/13	1.05
1,2,4-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,2,3-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
1,3,5-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Vinyl chloride	BDL	0.0011	mg/kg	8260B	07/28/13	1.05
Xylenes, Total	BDL	0.0034	mg/kg	8260B	07/28/13	1.05
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	07/28/13	1.05
Dibromofluoromethane	102.		% Rec.	8260B	07/28/13	1.05
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	07/28/13	1.05
4-Bromofluorobenzene	95.2		% Rec.	8260B	07/28/13	1.05
Diesel Range Organics (DRO)	BDL	4.4	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	111.		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648490-04

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-21-9.5FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 14:38

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	91.8	0.100	%	2540 G-2011	08/01/13	1
Volatile Organics						
Acetone	BDL	0.054	mg/kg	8260B	07/28/13	1
Acrylonitrile	BDL	0.011	mg/kg	8260B	07/28/13	1
Benzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromodichloromethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromoform	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromomethane	BDL	0.0054	mg/kg	8260B	07/28/13	1
n-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
sec-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
tert-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Carbon tetrachloride	BDL	0.0011	mg/kg	8260B	07/28/13	1
Chlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Chlorodibromomethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Chloroethane	BDL	0.0054	mg/kg	8260B	07/28/13	1
2-Chloroethyl vinyl ether	BDL	0.054	mg/kg	8260B	07/28/13	1
Chloroform	BDL	0.0054	mg/kg	8260B	07/28/13	1
Chloromethane	BDL	0.0027	mg/kg	8260B	07/28/13	1
2-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1
4-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dibromo-3-Chloropropane	BDL	0.0054	mg/kg	8260B	07/28/13	1
1,2-Dibromoethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Dibromomethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,3-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,4-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Dichlorodifluoromethane	BDL	0.0054	mg/kg	8260B	07/28/13	1
1,1-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
cis-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
trans-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,3-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1
cis-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1
trans-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1
2,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Di-isopropyl ether	BDL	0.0011	mg/kg	8260B	07/28/13	1
Ethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Hexachloro-1,3-butadiene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Isopropylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648490-04

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-21-9.5FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 14:38

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
p-Isopropyltoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1
2-Butanone (MEK)	BDL	0.011	mg/kg	8260B	07/28/13	1
Methylene Chloride	BDL	0.0054	mg/kg	8260B	07/28/13	1
4-Methyl-2-pentanone (MIBK)	BDL	0.011	mg/kg	8260B	07/28/13	1
Methyl tert-butyl ether	BDL	0.0011	mg/kg	8260B	07/28/13	1
Naphthalene	BDL	0.0054	mg/kg	8260B	07/28/13	1
n-Propylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Styrene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,1,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,2,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,2-Trichlorotrifluoroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Tetrachloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Toluene	BDL	0.0054	mg/kg	8260B	07/28/13	1
1,2,3-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2,4-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,1-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,2-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Trichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Trichlorofluoromethane	BDL	0.0054	mg/kg	8260B	07/28/13	1
1,2,3-Trichloropropane	BDL	0.0027	mg/kg	8260B	07/28/13	1
1,2,4-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2,3-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,3,5-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Vinyl chloride	BDL	0.0011	mg/kg	8260B	07/28/13	1
Xylenes, Total	BDL	0.0033	mg/kg	8260B	07/28/13	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	07/28/13	1
Dibromofluoromethane	103.		% Rec.	8260B	07/28/13	1
a,a,a-Trifluorotoluene	103.		% Rec.	8260B	07/28/13	1
4-Bromofluorobenzene	96.9		% Rec.	8260B	07/28/13	1
Diesel Range Organics (DRO)	BDL	4.4	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	115.		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648490-05

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-22-6FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 15:19

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	91.6	0.100	%	2540 G-2011	08/01/13	1
Volatile Organics						
Acetone	BDL	0.054	mg/kg	8260B	07/28/13	1
Acrylonitrile	BDL	0.011	mg/kg	8260B	07/28/13	1
Benzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromodichloromethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromoform	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromomethane	BDL	0.0054	mg/kg	8260B	07/28/13	1
n-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
sec-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
tert-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Carbon tetrachloride	BDL	0.0011	mg/kg	8260B	07/28/13	1
Chlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Chlorodibromomethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Chloroethane	BDL	0.0054	mg/kg	8260B	07/28/13	1
2-Chloroethyl vinyl ether	BDL	0.054	mg/kg	8260B	07/28/13	1
Chloroform	BDL	0.0054	mg/kg	8260B	07/28/13	1
Chloromethane	BDL	0.0027	mg/kg	8260B	07/28/13	1
2-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1
4-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dibromo-3-Chloropropane	BDL	0.0054	mg/kg	8260B	07/28/13	1
1,2-Dibromoethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Dibromomethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,3-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,4-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Dichlorodifluoromethane	BDL	0.0054	mg/kg	8260B	07/28/13	1
1,1-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
cis-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
trans-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,3-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1
cis-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1
trans-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1
2,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Di-isopropyl ether	BDL	0.0011	mg/kg	8260B	07/28/13	1
Ethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Hexachloro-1,3-butadiene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Isopropylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648490-05

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-22-6FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 15:19

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
p-Isopropyltoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1
2-Butanone (MEK)	BDL	0.011	mg/kg	8260B	07/28/13	1
Methylene Chloride	BDL	0.0054	mg/kg	8260B	07/28/13	1
4-Methyl-2-pentanone (MIBK)	BDL	0.011	mg/kg	8260B	07/28/13	1
Methyl tert-butyl ether	BDL	0.0011	mg/kg	8260B	07/28/13	1
Naphthalene	BDL	0.0054	mg/kg	8260B	07/28/13	1
n-Propylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Styrene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,1,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,2,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,2-Trichlorotrifluoroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Tetrachloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Toluene	BDL	0.0054	mg/kg	8260B	07/28/13	1
1,2,3-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2,4-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,1-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,2-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Trichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Trichlorofluoromethane	BDL	0.0054	mg/kg	8260B	07/28/13	1
1,2,3-Trichloropropane	BDL	0.0027	mg/kg	8260B	07/28/13	1
1,2,4-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2,3-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,3,5-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Vinyl chloride	BDL	0.0011	mg/kg	8260B	07/28/13	1
Xylenes, Total	BDL	0.0033	mg/kg	8260B	07/28/13	1
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	07/28/13	1
Dibromofluoromethane	105.		% Rec.	8260B	07/28/13	1
a,a,a-Trifluorotoluene	102.		% Rec.	8260B	07/28/13	1
4-Bromofluorobenzene	94.8		% Rec.	8260B	07/28/13	1
Diesel Range Organics (DRO)	BDL	4.4	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	108.		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648490-06

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-22-10FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 15:31

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	91.8	0.100	%	2540 G-2011	08/01/13	1
Volatile Organics						
Acetone	BDL	0.054	mg/kg	8260B	07/28/13	1
Acrylonitrile	BDL	0.011	mg/kg	8260B	07/28/13	1
Benzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromodichloromethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromoform	BDL	0.0011	mg/kg	8260B	07/28/13	1
Bromomethane	BDL	0.0054	mg/kg	8260B	07/28/13	1
n-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
sec-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
tert-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Carbon tetrachloride	BDL	0.0011	mg/kg	8260B	07/28/13	1
Chlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Chlorodibromomethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Chloroethane	BDL	0.0054	mg/kg	8260B	07/28/13	1
2-Chloroethyl vinyl ether	BDL	0.054	mg/kg	8260B	07/28/13	1
Chloroform	BDL	0.0054	mg/kg	8260B	07/28/13	1
Chloromethane	BDL	0.0027	mg/kg	8260B	07/28/13	1
2-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1
4-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dibromo-3-Chloropropane	BDL	0.0054	mg/kg	8260B	07/28/13	1
1,2-Dibromoethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Dibromomethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,3-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,4-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Dichlorodifluoromethane	BDL	0.0054	mg/kg	8260B	07/28/13	1
1,1-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
cis-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
trans-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,3-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1
cis-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1
trans-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/28/13	1
2,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Di-isopropyl ether	BDL	0.0011	mg/kg	8260B	07/28/13	1
Ethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Hexachloro-1,3-butadiene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Isopropylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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The reported analytical results relate only to the sample submitted

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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 01,2013

ESC Sample # : L648490-06

Site ID :

Project # : 15409

Date Received : July 25, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-22-10FT

Collected By : Ryan Franklin
Collection Date : 07/23/13 15:31

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
p-Isopropyltoluene	BDL	0.0011	mg/kg	8260B	07/28/13	1
2-Butanone (MEK)	BDL	0.011	mg/kg	8260B	07/28/13	1
Methylene Chloride	BDL	0.0054	mg/kg	8260B	07/28/13	1
4-Methyl-2-pentanone (MIBK)	BDL	0.011	mg/kg	8260B	07/28/13	1
Methyl tert-butyl ether	BDL	0.0011	mg/kg	8260B	07/28/13	1
Naphthalene	BDL	0.0054	mg/kg	8260B	07/28/13	1
n-Propylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Styrene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,1,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,2,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,2-Trichlorotrifluoroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Tetrachloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Toluene	BDL	0.0054	mg/kg	8260B	07/28/13	1
1,2,3-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2,4-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,1-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,1,2-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/28/13	1
Trichloroethene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Trichlorofluoromethane	BDL	0.0054	mg/kg	8260B	07/28/13	1
1,2,3-Trichloropropane	BDL	0.0027	mg/kg	8260B	07/28/13	1
1,2,4-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,2,3-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
1,3,5-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/28/13	1
Vinyl chloride	BDL	0.0011	mg/kg	8260B	07/28/13	1
Xylenes, Total	BDL	0.0033	mg/kg	8260B	07/28/13	1
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	07/28/13	1
Dibromofluoromethane	105.		% Rec.	8260B	07/28/13	1
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	07/28/13	1
4-Bromofluorobenzene	94.6		% Rec.	8260B	07/28/13	1
Diesel Range Organics (DRO)	BDL	4.4	mg/kg	NWTPHDX	07/29/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	07/29/13	1
Surrogate Recovery						
o-Terphenyl	90.0		% Rec.	NWTPHDX	07/29/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Reported: 08/01/13 13:31 Printed: 08/01/13 13:37

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L648490-02	WG674216	SAMP	2-Chloroethyl vinyl ether	R2759473	J3
L648490-03	WG674216	SAMP	2-Chloroethyl vinyl ether	R2759473	J3
L648490-04	WG674216	SAMP	2-Chloroethyl vinyl ether	R2759473	J3
L648490-05	WG674216	SAMP	2-Chloroethyl vinyl ether	R2759473	J3
L648490-06	WG674216	SAMP	2-Chloroethyl vinyl ether	R2759473	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

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Bend, OR 97701

Quality Assurance Report
Level II

L648490

August 01, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG674216	07/28/13 15:57
1,1,1-Trichloroethane	< .001	mg/kg			WG674216	07/28/13 15:57
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG674216	07/28/13 15:57
1,1,2-Trichloroethane	< .001	mg/kg			WG674216	07/28/13 15:57
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG674216	07/28/13 15:57
1,1-Dichloroethane	< .001	mg/kg			WG674216	07/28/13 15:57
1,1-Dichloroethene	< .001	mg/kg			WG674216	07/28/13 15:57
1,1-Dichloropropene	< .001	mg/kg			WG674216	07/28/13 15:57
1,2,3-Trichlorobenzene	< .001	mg/kg			WG674216	07/28/13 15:57
1,2,3-Trichloropropane	< .0025	mg/kg			WG674216	07/28/13 15:57
1,2,3-Trimethylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
1,2,4-Trichlorobenzene	< .001	mg/kg			WG674216	07/28/13 15:57
1,2,4-Trimethylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG674216	07/28/13 15:57
1,2-Dibromoethane	< .001	mg/kg			WG674216	07/28/13 15:57
1,2-Dichlorobenzene	< .001	mg/kg			WG674216	07/28/13 15:57
1,2-Dichloroethane	< .001	mg/kg			WG674216	07/28/13 15:57
1,2-Dichloropropane	< .001	mg/kg			WG674216	07/28/13 15:57
1,3,5-Trimethylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
1,3-Dichlorobenzene	< .001	mg/kg			WG674216	07/28/13 15:57
1,3-Dichloropropane	< .001	mg/kg			WG674216	07/28/13 15:57
1,4-Dichlorobenzene	< .001	mg/kg			WG674216	07/28/13 15:57
2,2-Dichloropropane	< .001	mg/kg			WG674216	07/28/13 15:57
2-Butanone (MEK)	< .01	mg/kg			WG674216	07/28/13 15:57
2-Chloroethyl vinyl ether	< .05	mg/kg			WG674216	07/28/13 15:57
2-Chlorotoluene	< .001	mg/kg			WG674216	07/28/13 15:57
4-Chlorotoluene	< .001	mg/kg			WG674216	07/28/13 15:57
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG674216	07/28/13 15:57
Acetone	< .05	mg/kg			WG674216	07/28/13 15:57
Acrylonitrile	< .01	mg/kg			WG674216	07/28/13 15:57
Benzene	< .001	mg/kg			WG674216	07/28/13 15:57
Bromobenzene	< .001	mg/kg			WG674216	07/28/13 15:57
Bromodichloromethane	< .001	mg/kg			WG674216	07/28/13 15:57
Bromoform	< .001	mg/kg			WG674216	07/28/13 15:57
Bromomethane	< .005	mg/kg			WG674216	07/28/13 15:57
Carbon tetrachloride	< .001	mg/kg			WG674216	07/28/13 15:57
Chlorobenzene	< .001	mg/kg			WG674216	07/28/13 15:57
Chlorodibromomethane	< .001	mg/kg			WG674216	07/28/13 15:57
Chloroethane	< .005	mg/kg			WG674216	07/28/13 15:57
Chloroform	< .005	mg/kg			WG674216	07/28/13 15:57
Chloromethane	< .0025	mg/kg			WG674216	07/28/13 15:57
cis-1,2-Dichloroethene	< .001	mg/kg			WG674216	07/28/13 15:57
cis-1,3-Dichloropropene	< .001	mg/kg			WG674216	07/28/13 15:57
Di-isopropyl ether	< .001	mg/kg			WG674216	07/28/13 15:57
Dibromomethane	< .001	mg/kg			WG674216	07/28/13 15:57
Dichlorodifluoromethane	< .005	mg/kg			WG674216	07/28/13 15:57
Ethylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
Hexachloro-1,3-butadiene	< .001	mg/kg			WG674216	07/28/13 15:57
Isopropylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
Methyl tert-butyl ether	< .001	mg/kg			WG674216	07/28/13 15:57
Methylene Chloride	< .005	mg/kg			WG674216	07/28/13 15:57
n-Butylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
n-Propylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
Naphthalene	< .005	mg/kg			WG674216	07/28/13 15:57
p-Isopropyltoluene	< .001	mg/kg			WG674216	07/28/13 15:57
sec-Butylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
Styrene	< .001	mg/kg			WG674216	07/28/13 15:57
tert-Butylbenzene	< .001	mg/kg			WG674216	07/28/13 15:57
Tetrachloroethene	< .001	mg/kg			WG674216	07/28/13 15:57

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Bend, OR 97701

Quality Assurance Report
Level II

L648490

August 01, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Toluene	< .005	mg/kg			WG674216	07/28/13 15:57
trans-1,2-Dichloroethene	< .001	mg/kg			WG674216	07/28/13 15:57
trans-1,3-Dichloropropene	< .001	mg/kg			WG674216	07/28/13 15:57
Trichloroethene	< .001	mg/kg			WG674216	07/28/13 15:57
Trichlorofluoromethane	< .005	mg/kg			WG674216	07/28/13 15:57
Vinyl chloride	< .001	mg/kg			WG674216	07/28/13 15:57
Xylenes, Total	< .003	mg/kg			WG674216	07/28/13 15:57
4-Bromofluorobenzene		% Rec.	95.44	67-133	WG674216	07/28/13 15:57
Dibromofluoromethane		% Rec.	99.17	72-135	WG674216	07/28/13 15:57
Toluene-d8		% Rec.	100.2	90-113	WG674216	07/28/13 15:57
a,a,a-Trifluorotoluene		% Rec.	103.1	89-115	WG674216	07/28/13 15:57
Total Solids	< .1	%			WG674671	08/01/13 07:38

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Total Solids	%	92.0	89.5	2.45	5	L648490-01	WG674671

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0248	99.2	77-129	WG674216
1,1,1-Trichloroethane	mg/kg	.025	0.0262	105.	70-127	WG674216
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0247	99.0	76-133	WG674216
1,1,2-Trichloroethane	mg/kg	.025	0.0250	100.	79-123	WG674216
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0287	115.	52-145	WG674216
1,1-Dichloroethane	mg/kg	.025	0.0273	109.	74-121	WG674216
1,1-Dichloroethene	mg/kg	.025	0.0259	104.	53-135	WG674216
1,1-Dichloropropene	mg/kg	.025	0.0268	107.	67-127	WG674216
1,2,3-Trichlorobenzene	mg/kg	.025	0.0261	104.	74-131	WG674216
1,2,3-Trichloropropane	mg/kg	.025	0.0250	100.	75-135	WG674216
1,2,3-Trimethylbenzene	mg/kg	.025	0.0237	94.6	76-128	WG674216
1,2,4-Trichlorobenzene	mg/kg	.025	0.0280	112.	72-130	WG674216
1,2,4-Trimethylbenzene	mg/kg	.025	0.0255	102.	75-131	WG674216
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0262	105.	55-142	WG674216
1,2-Dibromoethane	mg/kg	.025	0.0249	99.7	77-126	WG674216
1,2-Dichlorobenzene	mg/kg	.025	0.0249	99.7	80-123	WG674216
1,2-Dichloroethane	mg/kg	.025	0.0261	105.	70-128	WG674216
1,2-Dichloropropane	mg/kg	.025	0.0271	108.	74-125	WG674216
1,3,5-Trimethylbenzene	mg/kg	.025	0.0256	102.	77-129	WG674216
1,3-Dichlorobenzene	mg/kg	.025	0.0257	103.	76-128	WG674216
1,3-Dichloropropane	mg/kg	.025	0.0250	100.	77-118	WG674216
1,4-Dichlorobenzene	mg/kg	.025	0.0247	98.8	77-119	WG674216
2,2-Dichloropropane	mg/kg	.025	0.0264	106.	60-132	WG674216
2-Butanone (MEK)	mg/kg	.125	0.147	118.	56-146	WG674216
2-Chloroethyl vinyl ether	mg/kg	.125	0.0751	60.1	17-179	WG674216
2-Chlorotoluene	mg/kg	.025	0.0248	99.1	76-125	WG674216
4-Chlorotoluene	mg/kg	.025	0.0248	99.2	76-125	WG674216
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.145	116.	55-148	WG674216
Acetone	mg/kg	.125	0.137	110.	47-155	WG674216
Acrylonitrile	mg/kg	.125	0.138	110.	50-155	WG674216
Benzene	mg/kg	.025	0.0264	106.	72-120	WG674216
Bromobenzene	mg/kg	.025	0.0248	99.4	74-122	WG674216
Bromodichloromethane	mg/kg	.025	0.0252	101.	74-128	WG674216
Bromoform	mg/kg	.025	0.0262	105.	62-137	WG674216
Bromomethane	mg/kg	.025	0.0288	115.	38-180	WG674216
Carbon tetrachloride	mg/kg	.025	0.0271	108.	62-130	WG674216

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Bend, OR 97701

Quality Assurance Report
Level II

L648490

August 01, 2013

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Chlorobenzene	mg/kg	.025	0.0248	99.2	77-124	WG674216
Chlorodibromomethane	mg/kg	.025	0.0247	98.9	74-128	WG674216
Chloroethane	mg/kg	.025	0.0303	121.	46-173	WG674216
Chloroform	mg/kg	.025	0.0267	107.	76-122	WG674216
Chloromethane	mg/kg	.025	0.0296	119.	49-143	WG674216
cis-1,2-Dichloroethene	mg/kg	.025	0.0265	106.	73-123	WG674216
cis-1,3-Dichloropropene	mg/kg	.025	0.0266	106.	73-126	WG674216
Di-isopropyl ether	mg/kg	.025	0.0280	112.	64-131	WG674216
Dibromomethane	mg/kg	.025	0.0267	107.	75-127	WG674216
Dichlorodifluoromethane	mg/kg	.025	0.0275	110.	30-177	WG674216
Ethylbenzene	mg/kg	.025	0.0249	99.5	76-126	WG674216
Hexachloro-1,3-butadiene	mg/kg	.025	0.0252	101.	71-134	WG674216
Isopropylbenzene	mg/kg	.025	0.0276	110.	70-128	WG674216
Methyl tert-butyl ether	mg/kg	.025	0.0272	109.	66-127	WG674216
Methylene Chloride	mg/kg	.025	0.0255	102.	67-124	WG674216
n-Butylbenzene	mg/kg	.025	0.0264	106.	71-133	WG674216
n-Propylbenzene	mg/kg	.025	0.0259	104.	76-126	WG674216
Naphthalene	mg/kg	.025	0.0270	108.	68-136	WG674216
p-Isopropyltoluene	mg/kg	.025	0.0267	107.	75-134	WG674216
sec-Butylbenzene	mg/kg	.025	0.0264	106.	75-132	WG674216
Styrene	mg/kg	.025	0.0263	105.	68-148	WG674216
tert-Butylbenzene	mg/kg	.025	0.0262	105.	75-132	WG674216
Tetrachloroethene	mg/kg	.025	0.0249	99.6	70-131	WG674216
Toluene	mg/kg	.025	0.0259	104.	74-155	WG674216
trans-1,2-Dichloroethene	mg/kg	.025	0.0258	103.	63-126	WG674216
trans-1,3-Dichloropropene	mg/kg	.025	0.0264	105.	68-126	WG674216
Trichloroethene	mg/kg	.025	0.0261	104.	75-121	WG674216
Trichlorofluoromethane	mg/kg	.025	0.0276	111.	48-170	WG674216
Vinyl chloride	mg/kg	.025	0.0287	115.	54-144	WG674216
Xylenes, Total	mg/kg	.075	0.0758	101.	76-126	WG674216
4-Bromofluorobenzene				94.27	67-133	WG674216
Dibromofluoromethane				102.1	72-135	WG674216
Toluene-d8				101.6	90-113	WG674216
a,a,a-Trifluorotoluene				102.1	89-115	WG674216
Total Solids	%	50	50.0	100.	85-115	WG674671

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.0255	0.0248	102.	77-129	2.94	20	WG674216
1,1,1-Trichloroethane	mg/kg	0.0269	0.0262	108.	70-127	2.89	20	WG674216
1,1,2,2-Tetrachloroethane	mg/kg	0.0244	0.0247	98.0	76-133	1.42	20	WG674216
1,1,2-Trichloroethane	mg/kg	0.0246	0.0250	98.0	79-123	1.88	20	WG674216
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0287	0.0287	115.	52-145	0.250	20	WG674216
1,1-Dichloroethane	mg/kg	0.0275	0.0273	110.	74-121	0.610	20	WG674216
1,1-Dichloroethene	mg/kg	0.0268	0.0259	107.	53-135	3.24	20	WG674216
1,1-Dichloropropene	mg/kg	0.0269	0.0268	108.	67-127	0.540	20	WG674216
1,2,3-Trichlorobenzene	mg/kg	0.0271	0.0261	108.	74-131	3.79	20	WG674216
1,2,3-Trichloropropane	mg/kg	0.0246	0.0250	98.0	75-135	1.75	20	WG674216
1,2,3-Trimethylbenzene	mg/kg	0.0244	0.0237	98.0	76-128	3.03	20	WG674216
1,2,4-Trichlorobenzene	mg/kg	0.0285	0.0280	114.	72-130	1.81	20	WG674216
1,2,4-Trimethylbenzene	mg/kg	0.0266	0.0255	106.	75-131	4.23	20	WG674216
1,2-Dibromo-3-Chloropropane	mg/kg	0.0256	0.0262	102.	55-142	2.38	20	WG674216
1,2-Dibromoethane	mg/kg	0.0247	0.0249	99.0	77-126	1.02	20	WG674216
1,2-Dichlorobenzene	mg/kg	0.0254	0.0249	102.	80-123	2.06	20	WG674216
1,2-Dichloroethane	mg/kg	0.0255	0.0261	102.	70-128	2.42	20	WG674216
1,2-Dichloropropane	mg/kg	0.0272	0.0271	109.	74-125	0.500	20	WG674216

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Bend, OR 97701

Quality Assurance Report
Level II

L648490

August 01, 2013

		Laboratory Control Sample Duplicate						
Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,3,5-Trimethylbenzene	mg/kg	0.0268	0.0256	107.	77-129	4.39	20	WG674216
1,3-Dichlorobenzene	mg/kg	0.0260	0.0257	104.	76-128	1.36	20	WG674216
1,3-Dichloropropane	mg/kg	0.0247	0.0250	99.0	77-118	1.23	20	WG674216
1,4-Dichlorobenzene	mg/kg	0.0250	0.0247	100.	77-119	1.12	20	WG674216
2,2-Dichloropropane	mg/kg	0.0271	0.0264	108.	60-132	2.56	20	WG674216
2-Butanone (MEK)	mg/kg	0.135	0.147	108.	56-146	8.29	20	WG674216
2-Chloroethyl vinyl ether	mg/kg	0.111	0.0751	89.0	17-179	38.8*	22	WG674216
2-Chlorotoluene	mg/kg	0.0261	0.0248	104.	76-125	5.26	20	WG674216
4-Chlorotoluene	mg/kg	0.0260	0.0248	104.	76-125	4.62	20	WG674216
4-Methyl-2-pentanone (MIBK)	mg/kg	0.138	0.145	111.	55-148	4.65	20	WG674216
Acetone	mg/kg	0.129	0.137	103.	47-155	6.68	22	WG674216
Acrylonitrile	mg/kg	0.129	0.138	103.	50-155	6.80	20	WG674216
Benzene	mg/kg	0.0266	0.0264	106.	72-120	0.640	20	WG674216
Bromobenzene	mg/kg	0.0252	0.0248	101.	74-122	1.52	20	WG674216
Bromodichloromethane	mg/kg	0.0256	0.0252	102.	74-128	1.53	20	WG674216
Bromoform	mg/kg	0.0258	0.0262	103.	62-137	1.62	20	WG674216
Bromomethane	mg/kg	0.0302	0.0288	121.	38-180	4.72	20	WG674216
Carbon tetrachloride	mg/kg	0.0276	0.0271	110.	62-130	1.72	20	WG674216
Chlorobenzene	mg/kg	0.0251	0.0248	100.	77-124	1.06	20	WG674216
Chlorodibromomethane	mg/kg	0.0250	0.0247	100.	74-128	1.03	20	WG674216
Chloroethane	mg/kg	0.0301	0.0303	120.	46-173	0.360	20	WG674216
Chloroform	mg/kg	0.0266	0.0267	106.	76-122	0.270	20	WG674216
Chloromethane	mg/kg	0.0295	0.0296	118.	49-143	0.480	20	WG674216
cis-1,2-Dichloroethene	mg/kg	0.0267	0.0265	107.	73-123	0.600	20	WG674216
cis-1,3-Dichloropropene	mg/kg	0.0267	0.0266	107.	73-126	0.400	20	WG674216
Di-isopropyl ether	mg/kg	0.0278	0.0280	111.	64-131	0.680	20	WG674216
Dibromomethane	mg/kg	0.0265	0.0267	106.	75-127	0.750	20	WG674216
Dichlorodifluoromethane	mg/kg	0.0277	0.0275	111.	30-177	0.910	20	WG674216
Ethylbenzene	mg/kg	0.0258	0.0249	103.	76-126	3.49	20	WG674216
Hexachloro-1,3-butadiene	mg/kg	0.0251	0.0252	100.	71-134	0.700	20	WG674216
Isopropylbenzene	mg/kg	0.0287	0.0276	115.	70-128	3.99	20	WG674216
Methyl tert-butyl ether	mg/kg	0.0268	0.0272	107.	66-127	1.54	20	WG674216
Methylene Chloride	mg/kg	0.0256	0.0255	102.	67-124	0.660	20	WG674216
n-Butylbenzene	mg/kg	0.0271	0.0264	108.	71-133	2.41	20	WG674216
n-Propylbenzene	mg/kg	0.0270	0.0259	108.	76-126	3.83	20	WG674216
Naphthalene	mg/kg	0.0270	0.0270	108.	68-136	0.0200	20	WG674216
p-Isopropyltoluene	mg/kg	0.0282	0.0267	113.	75-134	5.25	20	WG674216
sec-Butylbenzene	mg/kg	0.0278	0.0264	111.	75-132	4.92	20	WG674216
Styrene	mg/kg	0.0272	0.0263	109.	68-148	3.17	20	WG674216
tert-Butylbenzene	mg/kg	0.0275	0.0262	110.	75-132	4.87	20	WG674216
Tetrachloroethene	mg/kg	0.0261	0.0249	104.	70-131	4.60	20	WG674216
Toluene	mg/kg	0.0263	0.0259	105.	74-155	1.39	20	WG674216
trans-1,2-Dichloroethene	mg/kg	0.0262	0.0258	105.	63-126	1.47	20	WG674216
trans-1,3-Dichloropropene	mg/kg	0.0269	0.0264	108.	68-126	2.09	20	WG674216
Trichloroethene	mg/kg	0.0267	0.0261	107.	75-121	2.16	20	WG674216
Trichlorofluoromethane	mg/kg	0.0279	0.0276	111.	48-170	0.770	20	WG674216
Vinyl chloride	mg/kg	0.0294	0.0287	118.	54-144	2.53	20	WG674216
Xylenes, Total	mg/kg	0.0781	0.0758	104.	76-126	3.11	20	WG674216
4-Bromofluorobenzene				97.26	67-133			WG674216
Dibromofluoromethane				99.71	72-135			WG674216
Toluene-d8				101.7	90-113			WG674216
a,a,a-Trifluorotoluene				103.6	89-115			WG674216

		Matrix Spike						
Analyte	Units	MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.0228	0	.025	91.4	49-135	L648812-01	WG674216
1,1,1-Trichloroethane	mg/kg	0.0234	0	.025	93.7	43-142	L648812-01	WG674216
1,1,2,2-Tetrachloroethane	mg/kg	0.0223	0	.025	89.4	42-147	L648812-01	WG674216

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Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,2-Trichloroethane	mg/kg	0.0230	0	.025	91.8	51-134	L648812-01	WG674216
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0248	0	.025	99.4	25-156	L648812-01	WG674216
1,1-Dichloroethane	mg/kg	0.0245	0	.025	97.8	50-131	L648812-01	WG674216
1,1-Dichloroethene	mg/kg	0.0236	0	.025	94.5	29-145	L648812-01	WG674216
1,1-Dichloropropene	mg/kg	0.0238	0	.025	95.1	40-136	L648812-01	WG674216
1,2,3-Trichlorobenzene	mg/kg	0.0232	0	.025	93.0	13-142	L648812-01	WG674216
1,2,3-Trichloropropane	mg/kg	0.0221	0	.025	88.3	41-149	L648812-01	WG674216
1,2,3-Trimethylbenzene	mg/kg	0.0222	0	.025	88.9	33-146	L648812-01	WG674216
1,2,4-Trichlorobenzene	mg/kg	0.0256	0	.025	102.	12-140	L648812-01	WG674216
1,2,4-Trimethylbenzene	mg/kg	0.0236	0	.025	94.6	29-143	L648812-01	WG674216
1,2-Dibromo-3-Chloropropane	mg/kg	0.0229	0	.025	91.5	29-151	L648812-01	WG674216
1,2-Dibromoethane	mg/kg	0.0227	0	.025	91.0	48-133	L648812-01	WG674216
1,2-Dichlorobenzene	mg/kg	0.0233	0	.025	93.2	37-136	L648812-01	WG674216
1,2-Dichloroethane	mg/kg	0.0237	0	.025	95.0	49-131	L648812-01	WG674216
1,2-Dichloropropane	mg/kg	0.0247	0	.025	98.7	50-132	L648812-01	WG674216
1,3,5-Trimethylbenzene	mg/kg	0.0233	0	.025	93.2	29-144	L648812-01	WG674216
1,3-Dichlorobenzene	mg/kg	0.0230	0	.025	92.2	26-140	L648812-01	WG674216
1,3-Dichloropropane	mg/kg	0.0231	0	.025	92.3	50-126	L648812-01	WG674216
1,4-Dichlorobenzene	mg/kg	0.0227	0	.025	90.7	34-132	L648812-01	WG674216
2,2-Dichloropropane	mg/kg	0.0241	0	.025	96.6	35-148	L648812-01	WG674216
2-Butanone (MEK)	mg/kg	0.127	0	.125	102.	40-149	L648812-01	WG674216
2-Chloroethyl vinyl ether	mg/kg	0.0430	0	.125	34.4	10-173	L648812-01	WG674216
2-Chlorotoluene	mg/kg	0.0229	0	.025	91.5	34-136	L648812-01	WG674216
4-Chlorotoluene	mg/kg	0.0230	0	.025	92.0	31-137	L648812-01	WG674216
4-Methyl-2-pentanone (MIBK)	mg/kg	0.127	0	.125	101.	37-153	L648812-01	WG674216
Acetone	mg/kg	0.120	0.00512	.125	92.0	10-177	L648812-01	WG674216
Acrylonitrile	mg/kg	0.119	0	.125	95.3	33-159	L648812-01	WG674216
Benzene	mg/kg	0.0237	0	.025	94.6	44-131	L648812-01	WG674216
Bromobenzene	mg/kg	0.0227	0	.025	91.0	36-132	L648812-01	WG674216
Bromodichloromethane	mg/kg	0.0234	0	.025	93.4	48-134	L648812-01	WG674216
Bromoform	mg/kg	0.0237	0	.025	94.7	34-141	L648812-01	WG674216
Bromomethane	mg/kg	0.0258	0	.025	103.	19-173	L648812-01	WG674216
Carbon tetrachloride	mg/kg	0.0245	0	.025	98.1	36-140	L648812-01	WG674216
Chlorobenzene	mg/kg	0.0226	0	.025	90.4	42-133	L648812-01	WG674216
Chlorodibromomethane	mg/kg	0.0226	0	.025	90.5	45-135	L648812-01	WG674216
Chloroethane	mg/kg	0.0263	0	.025	105.	16-178	L648812-01	WG674216
Chloroform	mg/kg	0.0241	0	.025	96.4	52-130	L648812-01	WG674216
Chloromethane	mg/kg	0.0260	0	.025	104.	28-147	L648812-01	WG674216
cis-1,2-Dichloroethene	mg/kg	0.0238	0	.025	95.3	52-128	L648812-01	WG674216
cis-1,3-Dichloropropene	mg/kg	0.0245	0	.025	97.9	46-131	L648812-01	WG674216
Di-isopropyl ether	mg/kg	0.0257	0	.025	103.	46-134	L648812-01	WG674216
Dibromomethane	mg/kg	0.0244	0	.025	97.7	51-133	L648812-01	WG674216
Dichlorodifluoromethane	mg/kg	0.0250	0	.025	99.9	12-179	L648812-01	WG674216
Ethylbenzene	mg/kg	0.0229	0	.025	91.5	38-139	L648812-01	WG674216
Hexachloro-1,3-butadiene	mg/kg	0.0208	0	.025	83.1	10-147	L648812-01	WG674216
Isopropylbenzene	mg/kg	0.0251	0	.025	100.	34-137	L648812-01	WG674216
Methyl tert-butyl ether	mg/kg	0.0246	0	.025	98.3	45-134	L648812-01	WG674216
Methylene Chloride	mg/kg	0.0233	0	.025	93.2	41-133	L648812-01	WG674216
n-Butylbenzene	mg/kg	0.0243	0	.025	97.3	19-149	L648812-01	WG674216
n-Propylbenzene	mg/kg	0.0235	0	.025	94.1	27-142	L648812-01	WG674216
Naphthalene	mg/kg	0.0238	0	.025	95.2	19-146	L648812-01	WG674216
p-Isopropyltoluene	mg/kg	0.0241	0	.025	96.5	21-150	L648812-01	WG674216
sec-Butylbenzene	mg/kg	0.0234	0	.025	93.8	25-148	L648812-01	WG674216
Styrene	mg/kg	0.0242	0	.025	96.9	30-156	L648812-01	WG674216
tert-Butylbenzene	mg/kg	0.0234	0	.025	93.6	32-146	L648812-01	WG674216
Tetrachloroethene	mg/kg	0.0274	0.00177	.025	102.	35-139	L648812-01	WG674216
Toluene	mg/kg	0.0235	0	.025	94.2	43-127	L648812-01	WG674216
trans-1,2-Dichloroethene	mg/kg	0.0232	0	.025	92.8	41-132	L648812-01	WG674216
trans-1,3-Dichloropropene	mg/kg	0.0251	0	.025	100.	43-129	L648812-01	WG674216

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Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Trichloroethene	mg/kg	0.0234	0	.025	93.5	42-136	L648812-01	WG674216
Trichlorofluoromethane	mg/kg	0.0243	0	.025	97.2	20-178	L648812-01	WG674216
Vinyl chloride	mg/kg	0.0260	0	.025	104.	30-157	L648812-01	WG674216
Xylenes, Total	mg/kg	0.0693	0	.075	92.4	38-137	L648812-01	WG674216
4-Bromofluorobenzene					95.69	67-133		WG674216
Dibromofluoromethane					100.2	72-135		WG674216
Toluene-d8					101.4	90-113		WG674216
a,a,a-Trifluorotoluene					101.9	89-115		WG674216
Diesel Range Organics (DRO)	mg/kg	26.3	0.215	30	87.1	50-150	L648477-02	WG674011
Residual Range Organics (RRO)	mg/kg	22.1	0.131	30	73.3	50-150	L648477-02	WG674011
o-Terphenyl					114.0	50-150		WG674011

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.0222	0.0228	88.9	49-135	2.72	23	L648812-01	WG674216
1,1,1-Trichloroethane	mg/kg	0.0236	0.0234	94.5	43-142	0.880	24	L648812-01	WG674216
1,1,2,2-Tetrachloroethane	mg/kg	0.0215	0.0223	85.9	42-147	3.98	25	L648812-01	WG674216
1,1,2-Trichloroethane	mg/kg	0.0223	0.0230	89.0	51-134	3.07	21	L648812-01	WG674216
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0249	0.0248	99.7	25-156	0.320	29	L648812-01	WG674216
1,1-Dichloroethane	mg/kg	0.0238	0.0245	95.3	50-131	2.60	21	L648812-01	WG674216
1,1-Dichloroethene	mg/kg	0.0231	0.0236	92.4	29-145	2.26	28	L648812-01	WG674216
1,1-Dichloropropene	mg/kg	0.0236	0.0238	94.4	40-136	0.720	24	L648812-01	WG674216
1,2,3-Trichlorobenzene	mg/kg	0.0218	0.0232	87.2	13-142	6.41	33	L648812-01	WG674216
1,2,3-Trichloropropane	mg/kg	0.0202	0.0221	80.6	41-149	9.11	28	L648812-01	WG674216
1,2,3-Trimethylbenzene	mg/kg	0.0211	0.0222	84.4	33-146	5.20	27	L648812-01	WG674216
1,2,4-Trichlorobenzene	mg/kg	0.0239	0.0256	95.8	12-140	6.62	32	L648812-01	WG674216
1,2,4-Trimethylbenzene	mg/kg	0.0229	0.0236	91.6	29-143	3.16	30	L648812-01	WG674216
1,2-Dibromo-3-Chloropropane	mg/kg	0.0230	0.0229	91.9	29-151	0.460	31	L648812-01	WG674216
1,2-Dibromoethane	mg/kg	0.0223	0.0227	89.3	48-133	1.86	22	L648812-01	WG674216
1,2-Dichlorobenzene	mg/kg	0.0218	0.0233	87.4	37-136	6.42	25	L648812-01	WG674216
1,2-Dichloroethane	mg/kg	0.0227	0.0237	90.9	49-131	4.35	20	L648812-01	WG674216
1,2-Dichloropropane	mg/kg	0.0233	0.0247	93.1	50-132	5.80	21	L648812-01	WG674216
1,3,5-Trimethylbenzene	mg/kg	0.0229	0.0233	91.5	29-144	1.87	30	L648812-01	WG674216
1,3-Dichlorobenzene	mg/kg	0.0226	0.0230	90.5	26-140	1.83	28	L648812-01	WG674216
1,3-Dichloropropane	mg/kg	0.0222	0.0231	89.0	50-126	3.73	22	L648812-01	WG674216
1,4-Dichlorobenzene	mg/kg	0.0212	0.0227	84.7	34-132	6.78	26	L648812-01	WG674216
2,2-Dichloropropane	mg/kg	0.0240	0.0241	96.2	35-148	0.450	26	L648812-01	WG674216
2-Butanone (MEK)	mg/kg	0.124	0.127	99.0	40-149	2.55	27	L648812-01	WG674216
2-Chloroethyl vinyl ether	mg/kg	0.0551	0.0430	44.1	10-173	24.8	33	L648812-01	WG674216
2-Chlorotoluene	mg/kg	0.0224	0.0229	89.4	34-136	2.25	28	L648812-01	WG674216
4-Chlorotoluene	mg/kg	0.0221	0.0230	88.5	31-137	3.90	27	L648812-01	WG674216
4-Methyl-2-pentanone (MIBK)	mg/kg	0.121	0.127	96.6	37-153	4.87	27	L648812-01	WG674216
Acetone	mg/kg	0.116	0.120	89.0	10-177	3.22	28	L648812-01	WG674216
Acrylonitrile	mg/kg	0.114	0.119	90.8	33-159	4.75	26	L648812-01	WG674216
Benzene	mg/kg	0.0232	0.0237	92.9	44-131	1.88	21	L648812-01	WG674216
Bromobenzene	mg/kg	0.0221	0.0227	88.6	36-132	2.62	26	L648812-01	WG674216
Bromodichloromethane	mg/kg	0.0220	0.0234	88.0	48-134	5.96	20	L648812-01	WG674216
Bromoform	mg/kg	0.0229	0.0237	91.5	34-141	3.36	24	L648812-01	WG674216
Bromomethane	mg/kg	0.0255	0.0258	102.	19-173	1.39	25	L648812-01	WG674216
Carbon tetrachloride	mg/kg	0.0244	0.0245	97.4	36-140	0.700	26	L648812-01	WG674216
Chlorobenzene	mg/kg	0.0219	0.0226	87.5	42-133	3.20	24	L648812-01	WG674216
Chlorodibromomethane	mg/kg	0.0219	0.0226	87.8	45-135	3.08	23	L648812-01	WG674216
Chloroethane	mg/kg	0.0264	0.0263	105.	16-178	0.120	25	L648812-01	WG674216
Chloroform	mg/kg	0.0234	0.0241	93.4	52-130	3.11	21	L648812-01	WG674216
Chloromethane	mg/kg	0.0260	0.0260	104.	28-147	0.0100	23	L648812-01	WG674216
cis-1,2-Dichloroethene	mg/kg	0.0229	0.0238	91.6	52-128	3.93	21	L648812-01	WG674216

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648490

August 01, 2013

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
cis-1,3-Dichloropropene	mg/kg	0.0232	0.0245	92.6	46-131	5.56	21	L648812-01	WG674216
Di-isopropyl ether	mg/kg	0.0245	0.0257	98.2	46-134	4.45	20	L648812-01	WG674216
Dibromomethane	mg/kg	0.0228	0.0244	91.3	51-133	6.80	21	L648812-01	WG674216
Dichlorodifluoromethane	mg/kg	0.0243	0.0250	97.1	12-179	2.81	27	L648812-01	WG674216
Ethylbenzene	mg/kg	0.0226	0.0229	90.4	38-139	1.24	27	L648812-01	WG674216
Hexachloro-1,3-butadiene	mg/kg	0.0200	0.0208	80.2	10-147	3.61	37	L648812-01	WG674216
Isopropylbenzene	mg/kg	0.0247	0.0251	98.9	34-137	1.40	29	L648812-01	WG674216
Methyl tert-butyl ether	mg/kg	0.0236	0.0246	94.2	45-134	4.29	22	L648812-01	WG674216
Methylene Chloride	mg/kg	0.0223	0.0233	89.3	41-133	4.19	28	L648812-01	WG674216
n-Butylbenzene	mg/kg	0.0234	0.0243	93.6	19-149	3.93	32	L648812-01	WG674216
n-Propylbenzene	mg/kg	0.0233	0.0235	93.1	27-142	1.05	29	L648812-01	WG674216
Naphthalene	mg/kg	0.0233	0.0238	93.2	19-146	2.17	30	L648812-01	WG674216
p-Isopropyltoluene	mg/kg	0.0237	0.0241	94.8	21-150	1.76	31	L648812-01	WG674216
sec-Butylbenzene	mg/kg	0.0232	0.0234	92.9	25-148	0.950	31	L648812-01	WG674216
Styrene	mg/kg	0.0235	0.0242	93.8	30-156	3.27	26	L648812-01	WG674216
tert-Butylbenzene	mg/kg	0.0231	0.0234	92.4	32-146	1.25	30	L648812-01	WG674216
Tetrachloroethene	mg/kg	0.0280	0.0274	105.	35-139	2.25	27	L648812-01	WG674216
Toluene	mg/kg	0.0222	0.0235	89.0	43-127	5.63	21	L648812-01	WG674216
trans-1,2-Dichloroethene	mg/kg	0.0232	0.0232	92.6	41-132	0.260	23	L648812-01	WG674216
trans-1,3-Dichloropropene	mg/kg	0.0237	0.0251	94.7	43-129	5.81	23	L648812-01	WG674216
Trichloroethene	mg/kg	0.0225	0.0234	90.1	42-136	3.71	23	L648812-01	WG674216
Trichlorofluoromethane	mg/kg	0.0241	0.0243	96.4	20-178	0.810	30	L648812-01	WG674216
Vinyl chloride	mg/kg	0.0254	0.0260	102.	30-157	2.07	24	L648812-01	WG674216
Xylenes, Total	mg/kg	0.0678	0.0693	90.4	38-137	2.14	26	L648812-01	WG674216
4-Bromofluorobenzene				97.78	67-133				WG674216
Dibromofluoromethane				99.84	72-135				WG674216
Toluene-d8				100.2	90-113				WG674216
a,a,a-Trifluorotoluene				101.2	89-115				WG674216
Diesel Range Organics (DRO)	mg/kg	25.7	26.3	84.9	50-150	2.48	20	L648477-02	WG674011
Residual Range Organics (RRO)	mg/kg	22.3	22.1	74.0	50-150	0.970	20	L648477-02	WG674011
o-Terphenyl				114.0	50-150				WG674011

Batch number /Run number / Sample number cross reference

WG674216: R2759473: L648490-02 03 04 05 06
WG674011: R2761023: L648490-01 02 03 04 05 06
WG674671: R2763185: L648490-01 02 03 04 05 06

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
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Bend, OR 97701

Quality Assurance Report
Level II

L648490

August 01, 2013

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

E027

State of Oregon Sample Chain of Custody

Agency, Authorized Purchaser or Agent: ODOT

Send Lab Report To: Ryan Franklin
Address: 63034 O.B. Riley Rd. Bend, OR 97701
Tel. #: (541) 388-6088
E-mail: ryan.franklin@odot.state.or.us

Contract Laboratory Name: Environmental Sciences Corporation
Lab Batch #:
Invoice To: Same
Address:
Tel. #:

Lab Selection Criteria:
- ☐ Proximity (if TAT < 48 hrs)
- ☒ Prior work on same project
- ☒ Cost (for anticipated analyses)
- ☐ Other labs disqualified or unable to perform requested services
- ☐ Emergency work

Turn Around Time:
- ☒ 10 days (std.)
- ☐ 5 days
- ☐ 72 hours
- ☐ 48 hours
- ☐ 24 hours
- ☐ Other

Project Name: US97: J Street Intersection (Madras South Y)
Project #: 15409
Sampler Name: Ryan Franklin

Sample ID#	Collection Date/Time	Matrix	Number of Contain-ers	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	VOCs by 8260	PAHs by 8270SIM	SVOCs by 8270	RCRA 8 Metals	PCBs by 8082			Comments
Sample Preservative				None	5035 Kit	None	5035 Kit	None	None	None				
SD13-23-4'	7/24/13 7:24am	S	1			X								L618665-01
SD13-23-7'	7:37am		1			X								02
SD13-24-5'	8:13am		5		X	X								03
SD13-25-4.5'	9:09am		1			X								04
SD13-26-6'	10:07am		5		X	X								05
SD13-27-5.5'	10:43am		4 HP		X	X								06
SD13-28-5'	11:27am				X	X								07
SD13-29-6'	12:47pm				X	X								08
SD13-30-6'	1:29pm		1			X								09
SD13-31-5.5'	2:07pm					X								10
SD13-32-4.5'	2:37pm					X								11

Requested Analyses

Notes: Bottles Rec'd: 30
PH:
#: 5547 0235 9646

Relinquished By:	Agency/Agent:	Received By:	Agency/Agent:
Ryan Franklin	ODOT	FedEx	ODOT
Signature:	Time & Date: 7:00pm 7/24/13	Signature:	Time & Date: 07/25/2013 10:30am
Relinquished By:	Agency/Agent: ODOT	Received By: FedEx	Agency/Agent:
Signature:	Time & Date: 7/25/13 11:15am	Signature: 7/26/13	Time & Date: 07/25/13 11:20am

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT # ▯. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S &C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

3.12

Version: 4/4/2008

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Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODOT
63055 N. Hwy 97, Bldg M
Bend, OR 97701

Report Summary

Tuesday August 06, 2013

Report Number: L648665
Samples Received: 07/26/13
Client Project: 15409

Description: US97: J Street Intersection (Madras South Y)

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 06,2013

ESC Sample # : L648665-01

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Site ID :

Sample ID : SD13-23-4 FT

Project # : 15409

Collected By : Ryan Franklin
Collection Date : 07/24/13 07:24

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	84.7	0.100	%	2540 G-2011	08/02/13	1
Diesel Range Organics (DRO)	BDL	4.7	mg/kg	NWTPHDX	07/31/13	1
Residual Range Organics (RRO)	BDL	12.	mg/kg	NWTPHDX	07/31/13	1
Surrogate Recovery						
o-Terphenyl	89.5		% Rec.	NWTPHDX	07/31/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Reported: 08/06/13 14:29 Printed: 08/06/13 14:29

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REPORT OF ANALYSIS

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Bend, OR 97701

August 06,2013

ESC Sample # : L648665-02

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Site ID :

Sample ID : SD13-23-7 FT

Project # : 15409

Collected By : Ryan Franklin
Collection Date : 07/24/13 07:37

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	85.6	0.100	%	2540 G-2011	08/02/13	1
Diesel Range Organics (DRO)	BDL	4.7	mg/kg	NWTPHDX	08/05/13	1
Residual Range Organics (RRO)	BDL	12.	mg/kg	NWTPHDX	08/05/13	1
Surrogate Recovery						
o-Terphenyl	87.0		% Rec.	NWTPHDX	08/05/13	1

Results listed are dry weight basis.
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Det. Limit - Practical Quantitation Limit(PQL)
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August 06,2013

ESC Sample # : L648665-03

Site ID :

Project # : 15409

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-24-5 FT

Collected By : Ryan Franklin
Collection Date : 07/24/13 08:13

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	88.7	0.100	%	2540 G-2011	08/02/13	1
Gasoline Range Organics-NWTPH	BDL	0.11	mg/kg	NWTPHGX	07/30/13	1
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	103.		% Rec.	NWTPHGX	07/30/13	1
Diesel Range Organics (DRO)	BDL	4.5	mg/kg	NWTPHDX	07/31/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	07/31/13	1
Surrogate Recovery						
o-Terphenyl	87.2		% Rec.	NWTPHDX	07/31/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 06,2013

ESC Sample # : L648665-04

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Site ID :

Sample ID : SD13-25-4.5 FT

Project # : 15409

Collected By : Ryan Franklin
Collection Date : 07/24/13 09:09

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	82.8	0.100	%	2540 G-2011	08/02/13	1
Diesel Range Organics (DRO)	BDL	4.8	mg/kg	NWTPHDX	07/31/13	1
Residual Range Organics (RRO)	BDL	12.	mg/kg	NWTPHDX	07/31/13	1
Surrogate Recovery						
o-Terphenyl	92.4		% Rec.	NWTPHDX	07/31/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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August 06,2013

ESC Sample # : L648665-05

Site ID :

Project # : 15409

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-26-6 FT

Collected By : Ryan Franklin
Collection Date : 07/24/13 10:07

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	83.5	0.100	%	2540 G-2011	08/02/13	1
Gasoline Range Organics-NWTPH	BDL	0.12	mg/kg	NWTPHGX	07/30/13	1.04
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	104.		% Rec.	NWTPHGX	07/30/13	1.04
Diesel Range Organics (DRO)	BDL	4.8	mg/kg	NWTPHDX	07/31/13	1
Residual Range Organics (RRO)	BDL	12.	mg/kg	NWTPHDX	07/31/13	1
Surrogate Recovery						
o-Terphenyl	87.6		% Rec.	NWTPHDX	07/31/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Bend, OR 97701

August 06,2013

ESC Sample # : L648665-06

Site ID :

Project # : 15409

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-27-5.5 FT

Collected By : Ryan Franklin
Collection Date : 07/24/13 10:43

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	84.3	0.100	%	2540 G-2011	08/02/13	1
Gasoline Range Organics-NWTPH	BDL	0.12	mg/kg	NWTPHGX	07/30/13	1
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	104.		% Rec.	NWTPHGX	07/30/13	1
Diesel Range Organics (DRO)	BDL	4.7	mg/kg	NWTPHDX	07/31/13	1
Residual Range Organics (RRO)	BDL	12.	mg/kg	NWTPHDX	07/31/13	1
Surrogate Recovery						
o-Terphenyl	76.8		% Rec.	NWTPHDX	07/31/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Reported: 08/06/13 14:29 Printed: 08/06/13 14:29

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 06,2013

ESC Sample # : L648665-07

Site ID :

Project # : 15409

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-28-5 FT

Collected By : Ryan Franklin
Collection Date : 07/24/13 11:27

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	83.2	0.100	%	2540 G-2011	08/02/13	1
Gasoline Range Organics-NWTPH	BDL	0.12	mg/kg	NWTPHGX	07/30/13	1
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	103.		% Rec.	NWTPHGX	07/30/13	1
Diesel Range Organics (DRO)	BDL	4.8	mg/kg	NWTPHDX	07/31/13	1
Residual Range Organics (RRO)	BDL	12.	mg/kg	NWTPHDX	07/31/13	1
Surrogate Recovery						
o-Terphenyl	84.2		% Rec.	NWTPHDX	07/31/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Ryan Franklin (ODOT)
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63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 06,2013

ESC Sample # : L648665-08

Site ID :

Project # : 15409

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-29-6 FT

Collected By : Ryan Franklin
Collection Date : 07/24/13 12:47

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	85.6	0.100	%	2540 G-2011	08/02/13	1
Gasoline Range Organics-NWTPH	BDL	0.12	mg/kg	NWTPHGX	07/31/13	1
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	99.6		% Rec.	NWTPHGX	07/31/13	1
Diesel Range Organics (DRO)	BDL	4.7	mg/kg	NWTPHDX	07/31/13	1
Residual Range Organics (RRO)	BDL	12.	mg/kg	NWTPHDX	07/31/13	1
Surrogate Recovery						
o-Terphenyl	81.4		% Rec.	NWTPHDX	07/31/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 06,2013

ESC Sample # : L648665-09

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Site ID :

Sample ID : SD13-30-6 FT

Project # : 15409

Collected By : Ryan Franklin
Collection Date : 07/24/13 13:29

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	84.8	0.100	%	2540 G-2011	08/02/13	1
Diesel Range Organics (DRO)	BDL	4.7	mg/kg	NWTPHDX	07/31/13	1
Residual Range Organics (RRO)	BDL	12.	mg/kg	NWTPHDX	07/31/13	1
Surrogate Recovery						
o-Terphenyl	103.		% Rec.	NWTPHDX	07/31/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 06,2013

ESC Sample # : L648665-10

Site ID :

Project # : 15409

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-31-5.5 FT

Collected By : Ryan Franklin
Collection Date : 07/24/13 14:07

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	79.8	0.100	%	2540 G-2011	08/02/13	1
Diesel Range Organics (DRO)	BDL	5.0	mg/kg	NWTPHDX	07/31/13	1
Residual Range Organics (RRO)	BDL	12.	mg/kg	NWTPHDX	07/31/13	1
Surrogate Recovery						
o-Terphenyl	73.8		% Rec.	NWTPHDX	07/31/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 06,2013

ESC Sample # : L648665-11

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Site ID :

Sample ID : SD13-32-4.5 FT

Project # : 15409

Collected By : Ryan Franklin
Collection Date : 07/24/13 14:37

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	84.1	0.100	%	2540 G-2011	08/02/13	1
Diesel Range Organics (DRO)	BDL	4.8	mg/kg	NWTPHDX	07/31/13	1
Residual Range Organics (RRO)	BDL	12.	mg/kg	NWTPHDX	07/31/13	1
Surrogate Recovery						
o-Terphenyl	88.9		% Rec.	NWTPHDX	07/31/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Summary of Remarks For Samples Printed
08/06/13 at 14:29:44

TSR Signing Reports: 358
R5 - Desired TAT

Clients MUST use the State of Oregon COCs for all work. Create an NCF for any samples received on ESC COCs.

Sample: L648665-01 Account: OREGONDOT Received: 07/26/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:29

Sample: L648665-02 Account: OREGONDOT Received: 07/26/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:29

Sample: L648665-03 Account: OREGONDOT Received: 07/26/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:29

Sample: L648665-04 Account: OREGONDOT Received: 07/26/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:29

Sample: L648665-05 Account: OREGONDOT Received: 07/26/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:29

Sample: L648665-06 Account: OREGONDOT Received: 07/26/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:29

Sample: L648665-07 Account: OREGONDOT Received: 07/26/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:29

Sample: L648665-08 Account: OREGONDOT Received: 07/26/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:29

Sample: L648665-09 Account: OREGONDOT Received: 07/26/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:29

Sample: L648665-10 Account: OREGONDOT Received: 07/26/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:29

Sample: L648665-11 Account: OREGONDOT Received: 07/26/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:29

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Ryan Franklin (ODOT)
63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648665

August 06, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Diesel Range Organics (DRO)	< 4	mg/kg			WG674262	07/30/13 20:15
Residual Range Organics (RRO)	< 10	mg/kg			WG674262	07/30/13 20:15
o-Terphenyl		% Rec.	97.30	50-150	WG674262	07/30/13 20:15
Gasoline Range Organics-NWTPH	< .1	mg/kg			WG674101	07/30/13 15:45
a,a,a-Trifluorotoluene(FID)		% Rec.	105.0	59-128	WG674101	07/30/13 15:45
Total Solids	< .1	%			WG674741	08/02/13 08:17
Total Solids	< .1	%			WG674740	08/02/13 08:22
Diesel Range Organics (DRO)	< 4	mg/kg			WG674797	08/05/13 19:36
Residual Range Organics (RRO)	< 10	mg/kg			WG674797	08/05/13 19:36
o-Terphenyl		% Rec.	92.20	50-150	WG674797	08/05/13 19:36

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Total Solids	%	86.0	85.6	0.0210	5	L648665-02	WG674741
Total Solids	%	100.	99.1	0.486	5	L648601-67	WG674740

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Diesel Range Organics (DRO)	mg/kg	30	25.3	84.3	50-150	WG674262
Residual Range Organics (RRO)	mg/kg	30	20.4	68.0	50-150	WG674262
o-Terphenyl				102.0	50-150	WG674262
Gasoline Range Organics-NWTPH	mg/kg	5.5	6.39	116.	62.2-127	WG674101
a,a,a-Trifluorotoluene(FID)				109.0	59-128	WG674101
Total Solids	%	50	50.3	101.	85-115	WG674741
Total Solids	%	50	50.1	100.	85-115	WG674740
Diesel Range Organics (DRO)	mg/kg	30	26.9	89.8	50-150	WG674797
Residual Range Organics (RRO)	mg/kg	30	26.5	88.4	50-150	WG674797
o-Terphenyl				97.20	50-150	WG674797

Laboratory Control Sample Duplicate

Analyte	Units	Result	Ref	%Rec	Limit	RPD	Limit	Batch
Diesel Range Organics (DRO)	mg/kg	25.5	25.3	85.0	50-150	0.990	20	WG674262
Residual Range Organics (RRO)	mg/kg	21.4	20.4	71.0	50-150	4.66	20	WG674262
o-Terphenyl				103.0	50-150			WG674262
Gasoline Range Organics-NWTPH	mg/kg	6.27	6.39	114.	62.2-127	1.91	20	WG674101
a,a,a-Trifluorotoluene(FID)				109.0	59-128			WG674101

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Ryan Franklin (ODOT)
63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648665

August 06, 2013

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Diesel Range Organics (DRO)	mg/kg	25.9	26.9	86.0	50-150	4.04	20	WG674797
Residual Range Organics (RRO)	mg/kg	24.5	26.5	82.0	50-150	7.98	20	WG674797
o-Terphenyl				91.70	50-150			WG674797

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
Gasoline Range Organics-NWTPH	mg/kg	26.2	0.0593	5.5	95.1	20.5-134	L648681-01	WG674101
a,a,a-Trifluorotoluene(FID)					106.0	59-128		WG674101
Diesel Range Organics (DRO)	mg/kg	26.5	0	30	88.3	50-150	L648764-01	WG674797
Residual Range Organics (RRO)	mg/kg	25.5	0	30	84.9	50-150	L648764-01	WG674797
o-Terphenyl					92.50	50-150		WG674797

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Gasoline Range Organics-NWTPH	mg/kg	22.2	26.2	80.5	20.5-134	16.6	23.8	L648681-01	WG674101
a,a,a-Trifluorotoluene(FID)				105.0	59-128				WG674101
Diesel Range Organics (DRO)	mg/kg	23.0	26.5	76.6	50-150	14.2	20	L648764-01	WG674797
Residual Range Organics (RRO)	mg/kg	22.6	25.5	75.2	50-150	12.1	20	L648764-01	WG674797
o-Terphenyl				83.20	50-150				WG674797

Batch number /Run number / Sample number cross reference

WG674262: R2761962: L648665-01 03 04 05 06 07 08 09 10 11
WG674101: R2762621: L648665-03 05 06 07 08
WG674741: R2765401: L648665-02 03 04 05 06 07 08 09 10 11
WG674740: R2766367: L648665-01
WG674797: R2769281: L648665-02

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Bend, OR 97701

Quality Assurance Report
Level II

L648665

August 06, 2013

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

J044

07-0089

State of Oregon Sample Chain of Custody

Agency, Authorized Purchaser or Agent: ODOT

Send Lab Report To: Ryan Franklin
Address: 63034 O.B. Riley Rd. Bend, OR 97701
Tel. #: (541) 388-6088
E-mail: ryan.franklin@odot.state.or.us

Contract Laboratory Name: Environmental Sciences Corporation
Lab Batch #:
Invoice To: Same
Address:
Tel. #:

Lab Selection Criteria:
- ☐ Proximity (if TAT < 48 hrs)
- ☒ Prior work on same project
- ☒ Cost (for anticipated analyses)
- ☐ Other labs disqualified or unable to perform requested services
- ☐ Emergency work

Turn Around Time:
- ☒ 10 days (std.)
- ☐ 5 days
- ☐ 72 hours
- ☐ 48 hours
- ☐ 24 hours
- ☐ Other

Project Name: US97: J Street Intersection (Madras South Y)
Project #: 15409
Sampler Name: Ryan Franklin

Sample ID#	Collection Date/Time	Matrix	Number of Contain-ers	NWTPH-HCID	NWTPH-Gx	NWTPH-Dx	VOCs by 8260	PAHs by 8270SIM	SVOCs by 8270	RCRA 8 Metals	PCBs by 8082			Comments
Sample Preservative				None	5035 Kit	None	5035 Kit	None	None	None				
SD13-33-7'	7/25/13 7:31am	S	1			X								L648764-01
SD13-34-6'	8:28am	↓	5			X	X							02
SD13-34-9'	8:44am	↓	5											Hold
SD13-35-8.5'	10:19am	↓	5		X	X								03
SD13-36-6.5'	11:11am	↓	5		X	X								04
SD13-36-14.5'	11:42am	↓	5		X	X								05

Notes: 5547023596 57 26-cont

Relinquished By: Ryan Franklin	Agency/Agent: ODOT	Received By: FedEx	Agency/Agent:
Signature:	Time & Date: 7/25/13 3:00pm	Signature:	Time & Date:
Relinquished By:	Agency/Agent:	Received By: Thomas Chase	Agency/Agent: ESC
Signature:	Time & Date:	Signature:	Time & Date: 0930 7/26/13

SW 3.6°C

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #102-1098-07 AND PRICE AGREEMENT # ▯. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S &C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

Version: 4/4/2008

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Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODOT
63055 N. Hwy 97, Bldg M
Bend, OR 97701

Report Summary

Tuesday August 06, 2013

Report Number: L648764
Samples Received: 07/26/13
Client Project: 15409

Description: US97: J Street Intersection (Madras South Y)

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.
Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 06,2013

ESC Sample # : L648764-01

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Site ID :

Sample ID : SD13-33-7 FT

Project # : 15409

Collected By : Ryan Franklin
Collection Date : 07/25/13 07:31

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	90.0	0.100	%	2540 G-2011	08/02/13	1
Diesel Range Organics (DRO)	BDL	4.4	mg/kg	NWTPHDX	08/05/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	08/05/13	1
Surrogate Recovery						
o-Terphenyl	92.4		% Rec.	NWTPHDX	08/05/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 06,2013

ESC Sample # : L648764-02

Site ID :

Project # : 15409

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-34-6 FT

Collected By : Ryan Franklin
Collection Date : 07/25/13 08:28

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	93.1	0.100	%	2540 G-2011	08/02/13	1
Volatile Organics						
Acetone	BDL	0.055	mg/kg	8260B	07/29/13	1.02
Acrylonitrile	BDL	0.011	mg/kg	8260B	07/29/13	1.02
Benzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Bromobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Bromodichloromethane	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Bromoform	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Bromomethane	BDL	0.0055	mg/kg	8260B	07/29/13	1.02
n-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
sec-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
tert-Butylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Carbon tetrachloride	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Chlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Chlorodibromomethane	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Chloroethane	BDL	0.0055	mg/kg	8260B	07/29/13	1.02
2-Chloroethyl vinyl ether	BDL	0.055	mg/kg	8260B	07/29/13	1.02
Chloroform	BDL	0.0055	mg/kg	8260B	07/29/13	1.02
Chloromethane	BDL	0.0027	mg/kg	8260B	07/29/13	1.02
2-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
4-Chlorotoluene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,2-Dibromo-3-Chloropropane	BDL	0.0055	mg/kg	8260B	07/29/13	1.02
1,2-Dibromoethane	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Dibromomethane	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,2-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,3-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,4-Dichlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Dichlorodifluoromethane	BDL	0.0055	mg/kg	8260B	07/29/13	1.02
1,1-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,2-Dichloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,1-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
cis-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
trans-1,2-Dichloroethene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,1-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,3-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
cis-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
trans-1,3-Dichloropropene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
2,2-Dichloropropane	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Di-isopropyl ether	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Ethylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Hexachloro-1,3-butadiene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Isopropylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02

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BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 06,2013

ESC Sample # : L648764-02

Site ID :

Project # : 15409

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-34-6 FT

Collected By : Ryan Franklin
Collection Date : 07/25/13 08:28

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
p-Isopropyltoluene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
2-Butanone (MEK)	BDL	0.011	mg/kg	8260B	07/29/13	1.02
Methylene Chloride	BDL	0.0055	mg/kg	8260B	07/29/13	1.02
4-Methyl-2-pentanone (MIBK)	BDL	0.011	mg/kg	8260B	07/29/13	1.02
Methyl tert-butyl ether	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Naphthalene	BDL	0.0055	mg/kg	8260B	07/29/13	1.02
n-Propylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Styrene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,1,1,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,1,2,2-Tetrachloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,1,2-Trichlorotrifluoroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Tetrachloroethene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Toluene	BDL	0.0055	mg/kg	8260B	07/29/13	1.02
1,2,3-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,2,4-Trichlorobenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,1,1-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,1,2-Trichloroethane	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Trichloroethene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Trichlorofluoromethane	BDL	0.0055	mg/kg	8260B	07/29/13	1.02
1,2,3-Trichloropropane	BDL	0.0027	mg/kg	8260B	07/29/13	1.02
1,2,4-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,2,3-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
1,3,5-Trimethylbenzene	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Vinyl chloride	BDL	0.0011	mg/kg	8260B	07/29/13	1.02
Xylenes, Total	BDL	0.0033	mg/kg	8260B	07/29/13	1.02
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	07/29/13	1.02
Dibromofluoromethane	101.		% Rec.	8260B	07/29/13	1.02
a,a,a-Trifluorotoluene	102.		% Rec.	8260B	07/29/13	1.02
4-Bromofluorobenzene	95.6		% Rec.	8260B	07/29/13	1.02
Diesel Range Organics (DRO)	BDL	4.3	mg/kg	NWTPHDX	08/05/13	1
Residual Range Organics (RRO)	BDL	11.	mg/kg	NWTPHDX	08/05/13	1
Surrogate Recovery						
o-Terphenyl	84.0		% Rec.	NWTPHDX	08/05/13	1

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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 06,2013

ESC Sample # : L648764-03

Site ID :

Project # : 15409

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-35-8.5 FT

Collected By : Ryan Franklin
Collection Date : 07/25/13 10:19

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	85.7	0.100	%	2540 G-2011	08/02/13	1
Gasoline Range Organics-NWTPH	BDL	0.13	mg/kg	NWTPHGX	07/30/13	1.11
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	96.5		% Rec.	NWTPHGX	07/30/13	1.11
Diesel Range Organics (DRO)	BDL	4.7	mg/kg	NWTPHDX	08/05/13	1
Residual Range Organics (RRO)	BDL	12.	mg/kg	NWTPHDX	08/05/13	1
Surrogate Recovery						
o-Terphenyl	91.6		% Rec.	NWTPHDX	08/05/13	1

Results listed are dry weight basis.
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Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 06,2013

ESC Sample # : L648764-04

Site ID :

Project # : 15409

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-36-6.5 FT

Collected By : Ryan Franklin
Collection Date : 07/25/13 11:11

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	83.7	0.100	%	2540 G-2011	08/02/13	1
Gasoline Range Organics-NWTPH	0.13	0.13	mg/kg	NWTPHGX	07/31/13	1.09
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	90.1		% Rec.	NWTPHGX	07/31/13	1.09
Diesel Range Organics (DRO)	BDL	4.8	mg/kg	NWTPHDX	08/05/13	1
Residual Range Organics (RRO)	BDL	12.	mg/kg	NWTPHDX	08/05/13	1
Surrogate Recovery						
o-Terphenyl	79.1		% Rec.	NWTPHDX	08/05/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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REPORT OF ANALYSIS

Ryan Franklin (ODOT)
Oregon Dept of Transportation - ODO
63055 N. Hwy 97, Bldg M
Bend, OR 97701

August 06,2013

ESC Sample # : L648764-05

Site ID :

Project # : 15409

Date Received : July 26, 2013
Description : US97: J Street Intersection (Madras South Y)

Sample ID : SD13-36-14.5 FT

Collected By : Ryan Franklin
Collection Date : 07/25/13 11:42

Parameter	Dry Result	Det. Limit	Units	Method	Date	Dil.
Total Solids	78.8	0.100	%	2540 G-2011	08/02/13	1
Gasoline Range Organics-NWTPH	BDL	0.13	mg/kg	NWTPHGX	07/31/13	1
Surrogate Recovery						
a,a,a-Trifluorotoluene(FID)	97.0		% Rec.	NWTPHGX	07/31/13	1
Diesel Range Organics (DRO)	BDL	5.1	mg/kg	NWTPHDX	08/05/13	1
Residual Range Organics (RRO)	BDL	13.	mg/kg	NWTPHDX	08/05/13	1
Surrogate Recovery						
o-Terphenyl	88.6		% Rec.	NWTPHDX	08/05/13	1

Results listed are dry weight basis.
BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
Note:
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Summary of Remarks For Samples Printed
08/06/13 at 14:33:54

TSR Signing Reports: 358
R5 - Desired TAT

Clients MUST use the State of Oregon COCs for all work. Create an NCF for any samples received on ESC COCs.

Sample: L648764-01 Account: OREGONDOT Received: 07/26/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:33
07-0089 = hold samples
Sample: L648764-02 Account: OREGONDOT Received: 07/26/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:33
07-0089 = hold samples
Sample: L648764-03 Account: OREGONDOT Received: 07/26/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:33
07-0089 = hold samples
Sample: L648764-04 Account: OREGONDOT Received: 07/26/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:33
07-0089 = hold samples
Sample: L648764-05 Account: OREGONDOT Received: 07/26/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:33
07-0089 = hold samples

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Oregon Dept of Transportation - ODOT
Ryan Franklin (ODOT)
63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648764

August 06, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
1,1,1,2-Tetrachloroethane	< .001	mg/kg			WG674217	07/29/13 11:42
1,1,1-Trichloroethane	< .001	mg/kg			WG674217	07/29/13 11:42
1,1,2,2-Tetrachloroethane	< .001	mg/kg			WG674217	07/29/13 11:42
1,1,2-Trichloroethane	< .001	mg/kg			WG674217	07/29/13 11:42
1,1,2-Trichlorotrifluoroethane	< .001	mg/kg			WG674217	07/29/13 11:42
1,1-Dichloroethane	< .001	mg/kg			WG674217	07/29/13 11:42
1,1-Dichloroethene	< .001	mg/kg			WG674217	07/29/13 11:42
1,1-Dichloropropene	< .001	mg/kg			WG674217	07/29/13 11:42
1,2,3-Trichlorobenzene	< .001	mg/kg			WG674217	07/29/13 11:42
1,2,3-Trichloropropane	< .0025	mg/kg			WG674217	07/29/13 11:42
1,2,3-Trimethylbenzene	< .001	mg/kg			WG674217	07/29/13 11:42
1,2,4-Trichlorobenzene	< .001	mg/kg			WG674217	07/29/13 11:42
1,2,4-Trimethylbenzene	< .001	mg/kg			WG674217	07/29/13 11:42
1,2-Dibromo-3-Chloropropane	< .005	mg/kg			WG674217	07/29/13 11:42
1,2-Dibromoethane	< .001	mg/kg			WG674217	07/29/13 11:42
1,2-Dichlorobenzene	< .001	mg/kg			WG674217	07/29/13 11:42
1,2-Dichloroethane	< .001	mg/kg			WG674217	07/29/13 11:42
1,2-Dichloropropane	< .001	mg/kg			WG674217	07/29/13 11:42
1,3,5-Trimethylbenzene	< .001	mg/kg			WG674217	07/29/13 11:42
1,3-Dichlorobenzene	< .001	mg/kg			WG674217	07/29/13 11:42
1,3-Dichloropropane	< .001	mg/kg			WG674217	07/29/13 11:42
1,4-Dichlorobenzene	< .001	mg/kg			WG674217	07/29/13 11:42
2,2-Dichloropropane	< .001	mg/kg			WG674217	07/29/13 11:42
2-Butanone (MEK)	< .01	mg/kg			WG674217	07/29/13 11:42
2-Chloroethyl vinyl ether	< .05	mg/kg			WG674217	07/29/13 11:42
2-Chlorotoluene	< .001	mg/kg			WG674217	07/29/13 11:42
4-Chlorotoluene	< .001	mg/kg			WG674217	07/29/13 11:42
4-Methyl-2-pentanone (MIBK)	< .01	mg/kg			WG674217	07/29/13 11:42
Acetone	< .05	mg/kg			WG674217	07/29/13 11:42
Acrylonitrile	< .01	mg/kg			WG674217	07/29/13 11:42
Benzene	< .001	mg/kg			WG674217	07/29/13 11:42
Bromobenzene	< .001	mg/kg			WG674217	07/29/13 11:42
Bromodichloromethane	< .001	mg/kg			WG674217	07/29/13 11:42
Bromoform	< .001	mg/kg			WG674217	07/29/13 11:42
Bromomethane	< .005	mg/kg			WG674217	07/29/13 11:42
Carbon tetrachloride	< .001	mg/kg			WG674217	07/29/13 11:42
Chlorobenzene	< .001	mg/kg			WG674217	07/29/13 11:42
Chlorodibromomethane	< .001	mg/kg			WG674217	07/29/13 11:42
Chloroethane	< .005	mg/kg			WG674217	07/29/13 11:42
Chloroform	< .005	mg/kg			WG674217	07/29/13 11:42
Chloromethane	< .0025	mg/kg			WG674217	07/29/13 11:42
cis-1,2-Dichloroethene	< .001	mg/kg			WG674217	07/29/13 11:42
cis-1,3-Dichloropropene	< .001	mg/kg			WG674217	07/29/13 11:42
Di-isopropyl ether	< .001	mg/kg			WG674217	07/29/13 11:42
Dibromomethane	< .001	mg/kg			WG674217	07/29/13 11:42
Dichlorodifluoromethane	< .005	mg/kg			WG674217	07/29/13 11:42
Ethylbenzene	< .001	mg/kg			WG674217	07/29/13 11:42
Hexachloro-1,3-butadiene	< .001	mg/kg			WG674217	07/29/13 11:42
Isopropylbenzene	< .001	mg/kg			WG674217	07/29/13 11:42
Methyl tert-butyl ether	< .001	mg/kg			WG674217	07/29/13 11:42
Methylene Chloride	< .005	mg/kg			WG674217	07/29/13 11:42
n-Butylbenzene	< .001	mg/kg			WG674217	07/29/13 11:42
n-Propylbenzene	< .001	mg/kg			WG674217	07/29/13 11:42
Naphthalene	< .005	mg/kg			WG674217	07/29/13 11:42
p-Isopropyltoluene	< .001	mg/kg			WG674217	07/29/13 11:42
sec-Butylbenzene	< .001	mg/kg			WG674217	07/29/13 11:42
Styrene	< .001	mg/kg			WG674217	07/29/13 11:42
tert-Butylbenzene	< .001	mg/kg			WG674217	07/29/13 11:42
Tetrachloroethene	< .001	mg/kg			WG674217	07/29/13 11:42

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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Bend, OR 97701

Quality Assurance Report
Level II

L648764

August 06, 2013

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
Toluene	< .005	mg/kg			WG674217	07/29/13 11:42
trans-1,2-Dichloroethene	< .001	mg/kg			WG674217	07/29/13 11:42
trans-1,3-Dichloropropene	< .001	mg/kg			WG674217	07/29/13 11:42
Trichloroethene	< .001	mg/kg			WG674217	07/29/13 11:42
Trichlorofluoromethane	< .005	mg/kg			WG674217	07/29/13 11:42
Vinyl chloride	< .001	mg/kg			WG674217	07/29/13 11:42
Xylenes, Total	< .003	mg/kg			WG674217	07/29/13 11:42
4-Bromofluorobenzene		% Rec.	96.30	67-133	WG674217	07/29/13 11:42
Dibromofluoromethane		% Rec.	98.24	72-135	WG674217	07/29/13 11:42
Toluene-d8		% Rec.	101.6	90-113	WG674217	07/29/13 11:42
a,a,a-Trifluorotoluene		% Rec.	103.9	89-115	WG674217	07/29/13 11:42
Gasoline Range Organics-NWTPH	< .1	mg/kg			WG674494	07/30/13 13:45
a,a,a-Trifluorotoluene(FID)		% Rec.	100.0	59-128	WG674494	07/30/13 13:45
Gasoline Range Organics-NWTPH	< .1	mg/kg			WG674159	07/30/13 11:33
a,a,a-Trifluorotoluene(FID)		% Rec.	98.58	59-128	WG674159	07/30/13 11:33
Gasoline Range Organics-NWTPH	< .1	mg/kg			WG674556	07/31/13 12:48
a,a,a-Trifluorotoluene(FID)		% Rec.	98.72	59-128	WG674556	07/31/13 12:48
Total Solids	< .1	%			WG674754	08/02/13 11:04
Total Solids	< .1	%			WG674753	08/02/13 11:28
Diesel Range Organics (DRO)	< 4	mg/kg			WG674797	08/05/13 19:36
Residual Range Organics (RRO)	< 10	mg/kg			WG674797	08/05/13 19:36
o-Terphenyl		% Rec.	92.20	50-150	WG674797	08/05/13 19:36

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Total Solids	%	99.0	99.1	0.00127	5	L648766-03	WG674754
Total Solids	%	97.0	97.9	0.711	5	L648762-07	WG674753

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/kg	.025	0.0249	99.4	77-129	WG674217
1,1,1-Trichloroethane	mg/kg	.025	0.0252	101.	70-127	WG674217
1,1,2,2-Tetrachloroethane	mg/kg	.025	0.0258	103.	76-133	WG674217
1,1,2-Trichloroethane	mg/kg	.025	0.0250	100.	79-123	WG674217
1,1,2-Trichlorotrifluoroethane	mg/kg	.025	0.0268	107.	52-145	WG674217
1,1-Dichloroethane	mg/kg	.025	0.0259	104.	74-121	WG674217
1,1-Dichloroethene	mg/kg	.025	0.0245	97.8	53-135	WG674217
1,1-Dichloropropene	mg/kg	.025	0.0251	100.	67-127	WG674217
1,2,3-Trichlorobenzene	mg/kg	.025	0.0294	118.	74-131	WG674217
1,2,3-Trichloropropane	mg/kg	.025	0.0239	95.4	75-135	WG674217
1,2,3-Trimethylbenzene	mg/kg	.025	0.0234	93.5	76-128	WG674217
1,2,4-Trichlorobenzene	mg/kg	.025	0.0307	123.	72-130	WG674217
1,2,4-Trimethylbenzene	mg/kg	.025	0.0257	103.	75-131	WG674217

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Tax I.D. 62-0814289

Est. 1970

Oregon Dept of Transportation - ODOT
Ryan Franklin (ODOT)
63055 N. Hwy 97, Bldg M

Bend, OR 97701

Quality Assurance Report
Level II

L648764

August 06, 2013

Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
1,2-Dibromo-3-Chloropropane	mg/kg	.025	0.0273	109.	55-142	WG674217
1,2-Dibromoethane	mg/kg	.025	0.0249	99.5	77-126	WG674217
1,2-Dichlorobenzene	mg/kg	.025	0.0251	100.	80-123	WG674217
1,2-Dichloroethane	mg/kg	.025	0.0253	101.	70-128	WG674217
1,2-Dichloropropane	mg/kg	.025	0.0262	105.	74-125	WG674217
1,3,5-Trimethylbenzene	mg/kg	.025	0.0256	102.	77-129	WG674217
1,3-Dichlorobenzene	mg/kg	.025	0.0257	103.	76-128	WG674217
1,3-Dichloropropane	mg/kg	.025	0.0247	98.6	77-118	WG674217
1,4-Dichlorobenzene	mg/kg	.025	0.0246	98.4	77-119	WG674217
2,2-Dichloropropane	mg/kg	.025	0.0260	104.	60-132	WG674217
2-Butanone (MEK)	mg/kg	.125	0.152	121.	56-146	WG674217
2-Chloroethyl vinyl ether	mg/kg	.125	0.0935	74.8	17-179	WG674217
2-Chlorotoluene	mg/kg	.025	0.0250	100.	76-125	WG674217
4-Chlorotoluene	mg/kg	.025	0.0249	99.5	76-125	WG674217
4-Methyl-2-pentanone (MIBK)	mg/kg	.125	0.149	119.	55-148	WG674217
Acetone	mg/kg	.125	0.140	112.	47-155	WG674217
Acrylonitrile	mg/kg	.125	0.135	108.	50-155	WG674217
Benzene	mg/kg	.025	0.0252	101.	72-120	WG674217
Bromobenzene	mg/kg	.025	0.0246	98.2	74-122	WG674217
Bromodichloromethane	mg/kg	.025	0.0249	99.8	74-128	WG674217
Bromoform	mg/kg	.025	0.0263	105.	62-137	WG674217
Bromomethane	mg/kg	.025	0.0272	109.	38-180	WG674217
Carbon tetrachloride	mg/kg	.025	0.0262	105.	62-130	WG674217
Chlorobenzene	mg/kg	.025	0.0242	97.0	77-124	WG674217
Chlorodibromomethane	mg/kg	.025	0.0246	98.6	74-128	WG674217
Chloroethane	mg/kg	.025	0.0273	109.	46-173	WG674217
Chloroform	mg/kg	.025	0.0257	103.	76-122	WG674217
Chloromethane	mg/kg	.025	0.0286	114.	49-143	WG674217
cis-1,2-Dichloroethene	mg/kg	.025	0.0248	99.2	73-123	WG674217
cis-1,3-Dichloropropene	mg/kg	.025	0.0260	104.	73-126	WG674217
Di-isopropyl ether	mg/kg	.025	0.0271	108.	64-131	WG674217
Dibromomethane	mg/kg	.025	0.0263	105.	75-127	WG674217
Dichlorodifluoromethane	mg/kg	.025	0.0257	103.	30-177	WG674217
Ethylbenzene	mg/kg	.025	0.0246	98.6	76-126	WG674217
Hexachloro-1,3-butadiene	mg/kg	.025	0.0255	102.	71-134	WG674217
Isopropylbenzene	mg/kg	.025	0.0271	109.	70-128	WG674217
Methyl tert-butyl ether	mg/kg	.025	0.0262	105.	66-127	WG674217
Methylene Chloride	mg/kg	.025	0.0244	97.7	67-124	WG674217
n-Butylbenzene	mg/kg	.025	0.0263	105.	71-133	WG674217
n-Propylbenzene	mg/kg	.025	0.0255	102.	76-126	WG674217
Naphthalene	mg/kg	.025	0.0292	117.	68-136	WG674217
p-Isopropyltoluene	mg/kg	.025	0.0270	108.	75-134	WG674217
sec-Butylbenzene	mg/kg	.025	0.0261	104.	75-132	WG674217
Styrene	mg/kg	.025	0.0261	105.	68-148	WG674217
tert-Butylbenzene	mg/kg	.025	0.0259	104.	75-132	WG674217
Tetrachloroethene	mg/kg	.025	0.0245	98.1	70-131	WG674217
Toluene	mg/kg	.025	0.0247	98.8	74-155	WG674217
trans-1,2-Dichloroethene	mg/kg	.025	0.0249	99.6	63-126	WG674217
trans-1,3-Dichloropropene	mg/kg	.025	0.0261	104.	68-126	WG674217
Trichloroethene	mg/kg	.025	0.0251	101.	75-121	WG674217
Trichlorofluoromethane	mg/kg	.025	0.0256	102.	48-170	WG674217
Vinyl chloride	mg/kg	.025	0.0272	109.	54-144	WG674217
Xylenes, Total	mg/kg	.075	0.0749	99.9	76-126	WG674217
4-Bromofluorobenzene				95.21	67-133	WG674217
Dibromofluoromethane				99.21	72-135	WG674217
Toluene-d8				101.3	90-113	WG674217
a,a,a-Trifluorotoluene				101.7	89-115	WG674217

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Quality Assurance Report
Level II

L648764

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Analyte	Units	Laboratory Control Sample Known Val	Result	% Rec	Limit	Batch
Gasoline Range Organics-NWTPH	mg/kg	5.5	5.46	99.4	62.2-127	WG674494
a,a,a-Trifluorotoluene(FID)				101.5	59-128	WG674494
Gasoline Range Organics-NWTPH	mg/kg	5.5	5.60	102.	62.2-127	WG674159
a,a,a-Trifluorotoluene(FID)				101.0	59-128	WG674159
Gasoline Range Organics-NWTPH	mg/kg	5.5	5.15	93.7	62.2-127	WG674556
a,a,a-Trifluorotoluene(FID)				100.2	59-128	WG674556
Total Solids	%	50	50.0	100.	85-115	WG674754
Total Solids	%	50	49.9	99.8	85-115	WG674753
Diesel Range Organics (DRO)	mg/kg	30	26.9	89.8	50-150	WG674797
Residual Range Organics (RRO)	mg/kg	30	26.5	88.4	50-150	WG674797
o-Terphenyl				97.20	50-150	WG674797

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.0238	0.0249	95.0	77-129	4.12	20	WG674217
1,1,1-Trichloroethane	mg/kg	0.0241	0.0252	96.0	70-127	4.79	20	WG674217
1,1,2,2-Tetrachloroethane	mg/kg	0.0243	0.0258	97.0	76-133	5.72	20	WG674217
1,1,2-Trichloroethane	mg/kg	0.0236	0.0250	94.0	79-123	5.80	20	WG674217
1,1,2-Trichlorotrifluoroethane	mg/kg	0.0249	0.0268	99.0	52-145	7.52	20	WG674217
1,1-Dichloroethane	mg/kg	0.0246	0.0259	98.0	74-121	5.12	20	WG674217
1,1-Dichloroethene	mg/kg	0.0239	0.0245	96.0	53-135	2.21	20	WG674217
1,1-Dichloropropene	mg/kg	0.0241	0.0251	96.0	67-127	3.86	20	WG674217
1,2,3-Trichlorobenzene	mg/kg	0.0277	0.0294	111.	74-131	6.16	20	WG674217
1,2,3-Trichloropropane	mg/kg	0.0238	0.0239	95.0	75-135	0.230	20	WG674217
1,2,3-Trimethylbenzene	mg/kg	0.0222	0.0234	89.0	76-128	5.23	20	WG674217
1,2,4-Trichlorobenzene	mg/kg	0.0290	0.0307	116.	72-130	5.75	20	WG674217
1,2,4-Trimethylbenzene	mg/kg	0.0245	0.0257	98.0	75-131	4.96	20	WG674217
1,2-Dibromo-3-Chloropropane	mg/kg	0.0263	0.0273	105.	55-142	3.76	20	WG674217
1,2-Dibromoethane	mg/kg	0.0236	0.0249	94.0	77-126	5.34	20	WG674217
1,2-Dichlorobenzene	mg/kg	0.0241	0.0251	96.0	80-123	4.27	20	WG674217
1,2-Dichloroethane	mg/kg	0.0245	0.0253	98.0	70-128	3.34	20	WG674217
1,2-Dichloropropane	mg/kg	0.0251	0.0262	100.	74-125	4.17	20	WG674217
1,3,5-Trimethylbenzene	mg/kg	0.0240	0.0256	96.0	77-129	6.22	20	WG674217
1,3-Dichlorobenzene	mg/kg	0.0248	0.0257	99.0	76-128	3.68	20	WG674217
1,3-Dichloropropane	mg/kg	0.0235	0.0247	94.0	77-118	4.60	20	WG674217
1,4-Dichlorobenzene	mg/kg	0.0235	0.0246	94.0	77-119	4.51	20	WG674217
2,2-Dichloropropane	mg/kg	0.0247	0.0260	99.0	60-132	5.05	20	WG674217
2-Butanone (MEK)	mg/kg	0.147	0.152	118.	56-146	2.89	20	WG674217
2-Chloroethyl vinyl ether	mg/kg	0.0862	0.0935	69.0	17-179	8.11	22	WG674217
2-Chlorotoluene	mg/kg	0.0238	0.0250	95.0	76-125	4.83	20	WG674217
4-Chlorotoluene	mg/kg	0.0237	0.0249	95.0	76-125	4.71	20	WG674217
4-Methyl-2-pentanone (MIBK)	mg/kg	0.145	0.149	116.	55-148	3.20	20	WG674217
Acetone	mg/kg	0.138	0.140	110.	47-155	1.45	22	WG674217
Acrylonitrile	mg/kg	0.129	0.135	103.	50-155	4.90	20	WG674217
Benzene	mg/kg	0.0243	0.0252	97.0	72-120	3.75	20	WG674217
Bromobenzene	mg/kg	0.0234	0.0246	94.0	74-122	4.83	20	WG674217
Bromodichloromethane	mg/kg	0.0238	0.0249	95.0	74-128	4.64	20	WG674217
Bromoform	mg/kg	0.0259	0.0263	104.	62-137	1.50	20	WG674217

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August 06, 2013

Analyte	Units	Laboratory Control Sample Duplicate Result	Ref	%Rec	Limit	RPD	Limit	Batch
Bromomethane	mg/kg	0.0255	0.0272	102.	38-180	6.49	20	WG674217
Carbon tetrachloride	mg/kg	0.0249	0.0262	100.	62-130	5.18	20	WG674217
Chlorobenzene	mg/kg	0.0232	0.0242	93.0	77-124	4.51	20	WG674217
Chlorodibromomethane	mg/kg	0.0237	0.0246	95.0	74-128	3.98	20	WG674217
Chloroethane	mg/kg	0.0260	0.0273	104.	46-173	5.17	20	WG674217
Chloroform	mg/kg	0.0249	0.0257	99.0	76-122	3.22	20	WG674217
Chloromethane	mg/kg	0.0272	0.0286	109.	49-143	4.95	20	WG674217
cis-1,2-Dichloroethene	mg/kg	0.0239	0.0248	96.0	73-123	3.60	20	WG674217
cis-1,3-Dichloropropene	mg/kg	0.0254	0.0260	101.	73-126	2.29	20	WG674217
Di-isopropyl ether	mg/kg	0.0261	0.0271	104.	64-131	3.87	20	WG674217
Dibromomethane	mg/kg	0.0254	0.0263	102.	75-127	3.44	20	WG674217
Dichlorodifluoromethane	mg/kg	0.0244	0.0257	98.0	30-177	5.05	20	WG674217
Ethylbenzene	mg/kg	0.0233	0.0246	93.0	76-126	5.45	20	WG674217
Hexachloro-1,3-butadiene	mg/kg	0.0240	0.0255	96.0	71-134	6.30	20	WG674217
Isopropylbenzene	mg/kg	0.0257	0.0271	103.	70-128	5.61	20	WG674217
Methyl tert-butyl ether	mg/kg	0.0257	0.0262	103.	66-127	1.99	20	WG674217
Methylene Chloride	mg/kg	0.0230	0.0244	92.0	67-124	6.09	20	WG674217
n-Butylbenzene	mg/kg	0.0246	0.0263	98.0	71-133	6.48	20	WG674217
n-Propylbenzene	mg/kg	0.0244	0.0255	97.0	76-126	4.60	20	WG674217
Naphthalene	mg/kg	0.0278	0.0292	111.	68-136	4.88	20	WG674217
p-Isopropyltoluene	mg/kg	0.0254	0.0270	102.	75-134	6.17	20	WG674217
sec-Butylbenzene	mg/kg	0.0247	0.0261	99.0	75-132	5.33	20	WG674217
Styrene	mg/kg	0.0250	0.0261	100.	68-148	4.36	20	WG674217
tert-Butylbenzene	mg/kg	0.0248	0.0259	99.0	75-132	4.52	20	WG674217
Tetrachloroethene	mg/kg	0.0235	0.0245	94.0	70-131	4.40	20	WG674217
Toluene	mg/kg	0.0239	0.0247	96.0	74-155	3.25	20	WG674217
trans-1,2-Dichloroethene	mg/kg	0.0236	0.0249	94.0	63-126	5.25	20	WG674217
trans-1,3-Dichloropropene	mg/kg	0.0259	0.0261	104.	68-126	0.650	20	WG674217
Trichloroethene	mg/kg	0.0244	0.0251	98.0	75-121	3.03	20	WG674217
Trichlorofluoromethane	mg/kg	0.0240	0.0256	96.0	48-170	6.35	20	WG674217
Vinyl chloride	mg/kg	0.0262	0.0272	105.	54-144	3.73	20	WG674217
Xylenes, Total	mg/kg	0.0708	0.0749	94.0	76-126	5.67	20	WG674217
4-Bromofluorobenzene				96.01	67-133			WG674217
Dibromofluoromethane				100.6	72-135			WG674217
Toluene-d8				101.8	90-113			WG674217
a,a,a-Trifluorotoluene				102.0	89-115			WG674217
Gasoline Range Organics-NWTPH	mg/kg	5.76	5.46	105.	62.2-127	5.19	20	WG674494
a,a,a-Trifluorotoluene(FID)				102.2	59-128			WG674494
Gasoline Range Organics-NWTPH	mg/kg	5.58	5.60	102.	62.2-127	0.220	20	WG674159
a,a,a-Trifluorotoluene(FID)				100.8	59-128			WG674159
Gasoline Range Organics-NWTPH	mg/kg	5.18	5.15	94.0	62.2-127	0.450	20	WG674556
a,a,a-Trifluorotoluene(FID)				100.2	59-128			WG674556
Diesel Range Organics (DRO)	mg/kg	25.9	26.9	86.0	50-150	4.04	20	WG674797
Residual Range Organics (RRO)	mg/kg	24.5	26.5	82.0	50-150	7.98	20	WG674797
o-Terphenyl				91.70	50-150			WG674797

Analyte	Units	Matrix Spike MS Res	Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.104	0	.025	83.4	49-135	L648845-01	WG674217
1,1,1-Trichloroethane	mg/kg	0.115	0	.025	92.0	43-142	L648845-01	WG674217

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Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
1,1,2,2-Tetrachloroethane	mg/kg	0.0977	0	.025	78.2	42-147	L648845-01	WG674217
1,1,2-Trichloroethane	mg/kg	0.105	0	.025	83.9	51-134	L648845-01	WG674217
1,1,2-Trichlorotrifluoroethane	mg/kg	0.119	0	.025	95.6	25-156	L648845-01	WG674217
1,1-Dichloroethane	mg/kg	0.117	0	.025	93.8	50-131	L648845-01	WG674217
1,1-Dichloroethene	mg/kg	0.113	0	.025	90.7	29-145	L648845-01	WG674217
1,1-Dichloropropene	mg/kg	0.115	0	.025	91.8	40-136	L648845-01	WG674217
1,2,3-Trichlorobenzene	mg/kg	0.0913	0.000608	.025	72.6	13-142	L648845-01	WG674217
1,2,3-Trichloropropane	mg/kg	0.0971	0	.025	77.7	41-149	L648845-01	WG674217
1,2,3-Trimethylbenzene	mg/kg	0.0984	0.000533	.025	78.3	33-146	L648845-01	WG674217
1,2,4-Trichlorobenzene	mg/kg	0.104	0.000446	.025	83.0	12-140	L648845-01	WG674217
1,2,4-Trimethylbenzene	mg/kg	0.107	0.00113	.025	84.9	29-143	L648845-01	WG674217
1,2-Dibromo-3-Chloropropane	mg/kg	0.0969	0	.025	77.5	29-151	L648845-01	WG674217
1,2-Dibromoethane	mg/kg	0.103	0	.025	82.4	48-133	L648845-01	WG674217
1,2-Dichlorobenzene	mg/kg	0.101	0	.025	81.2	37-136	L648845-01	WG674217
1,2-Dichloroethane	mg/kg	0.107	0	.025	85.3	49-131	L648845-01	WG674217
1,2-Dichloropropane	mg/kg	0.115	0	.025	92.0	50-132	L648845-01	WG674217
1,3,5-Trimethylbenzene	mg/kg	0.106	0.000385	.025	84.5	29-144	L648845-01	WG674217
1,3-Dichlorobenzene	mg/kg	0.105	0	.025	84.0	26-140	L648845-01	WG674217
1,3-Dichloropropane	mg/kg	0.103	0	.025	82.0	50-126	L648845-01	WG674217
1,4-Dichlorobenzene	mg/kg	0.102	0	.025	81.2	34-132	L648845-01	WG674217
2,2-Dichloropropane	mg/kg	0.118	0	.025	94.0	35-148	L648845-01	WG674217
2-Butanone (MEK)	mg/kg	0.574	0	.125	91.8	40-149	L648845-01	WG674217
2-Chloroethyl vinyl ether	mg/kg	0.224	0	.125	35.9	10-173	L648845-01	WG674217
2-Chlorotoluene	mg/kg	0.104	0	.025	82.8	34-136	L648845-01	WG674217
4-Chlorotoluene	mg/kg	0.105	0	.025	83.6	31-137	L648845-01	WG674217
4-Methyl-2-pentanone (MIBK)	mg/kg	0.563	0	.125	90.0	37-153	L648845-01	WG674217
Acetone	mg/kg	0.537	0.0174	.125	83.1	10-177	L648845-01	WG674217
Acrylonitrile	mg/kg	0.523	0	.125	83.6	33-159	L648845-01	WG674217
Benzene	mg/kg	0.112	0	.025	89.6	44-131	L648845-01	WG674217
Bromobenzene	mg/kg	0.102	0	.025	81.4	36-132	L648845-01	WG674217
Bromodichloromethane	mg/kg	0.108	0	.025	86.6	48-134	L648845-01	WG674217
Bromoform	mg/kg	0.104	0	.025	83.1	34-141	L648845-01	WG674217
Bromomethane	mg/kg	0.118	0	.025	94.1	19-173	L648845-01	WG674217
Carbon tetrachloride	mg/kg	0.117	0	.025	93.9	36-140	L648845-01	WG674217
Chlorobenzene	mg/kg	0.104	0	.025	83.5	42-133	L648845-01	WG674217
Chlorodibromomethane	mg/kg	0.102	0	.025	81.8	45-135	L648845-01	WG674217
Chloroethane	mg/kg	0.122	0	.025	97.6	16-178	L648845-01	WG674217
Chloroform	mg/kg	0.114	0	.025	91.2	52-130	L648845-01	WG674217
Chloromethane	mg/kg	0.125	0	.025	100.	28-147	L648845-01	WG674217
cis-1,2-Dichloroethene	mg/kg	0.112	0	.025	89.6	52-128	L648845-01	WG674217
cis-1,3-Dichloropropene	mg/kg	0.112	0	.025	89.3	46-131	L648845-01	WG674217
Di-isopropyl ether	mg/kg	0.119	0	.025	95.6	46-134	L648845-01	WG674217
Dibromomethane	mg/kg	0.108	0	.025	86.4	51-133	L648845-01	WG674217
Dichlorodifluoromethane	mg/kg	0.120	0	.025	95.7	12-179	L648845-01	WG674217
Ethylbenzene	mg/kg	0.108	0.000302	.025	86.4	38-139	L648845-01	WG674217
Hexachloro-1,3-butadiene	mg/kg	0.0937	0	.025	74.9	10-147	L648845-01	WG674217
Isopropylbenzene	mg/kg	0.117	0	.025	93.4	34-137	L648845-01	WG674217
Methyl tert-butyl ether	mg/kg	0.109	0	.025	87.6	45-134	L648845-01	WG674217
Methylene Chloride	mg/kg	0.109	0.00149	.025	85.7	41-133	L648845-01	WG674217
n-Butylbenzene	mg/kg	0.107	0	.025	85.7	19-149	L648845-01	WG674217
n-Propylbenzene	mg/kg	0.108	0	.025	86.3	27-142	L648845-01	WG674217
Naphthalene	mg/kg	0.0900	0.000920	.025	71.3	19-146	L648845-01	WG674217
p-Isopropyltoluene	mg/kg	0.111	0	.025	88.9	21-150	L648845-01	WG674217
sec-Butylbenzene	mg/kg	0.107	0	.025	85.4	25-148	L648845-01	WG674217
Styrene	mg/kg	0.111	0	.025	88.6	30-156	L648845-01	WG674217
tert-Butylbenzene	mg/kg	0.108	0	.025	86.5	32-146	L648845-01	WG674217
Tetrachloroethene	mg/kg	0.108	0	.025	86.3	35-139	L648845-01	WG674217
Toluene	mg/kg	0.113	0.00165	.025	88.7	43-127	L648845-01	WG674217
trans-1,2-Dichloroethene	mg/kg	0.111	0	.025	89.0	41-132	L648845-01	WG674217

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Quality Assurance Report
Level II

L648764

August 06, 2013

Analyte	Units	MS Res	Matrix Spike Ref Res	TV	% Rec	Limit	Ref Samp	Batch
trans-1,3-Dichloropropene	mg/kg	0.111	0	.025	88.4	43-129	L648845-01	WG674217
Trichloroethene	mg/kg	0.113	0	.025	90.4	42-136	L648845-01	WG674217
Trichlorofluoromethane	mg/kg	0.116	0	.025	92.4	20-178	L648845-01	WG674217
Vinyl chloride	mg/kg	0.123	0	.025	98.1	30-157	L648845-01	WG674217
Xylenes, Total	mg/kg	0.328	0.00319	.075	86.6	38-137	L648845-01	WG674217
4-Bromofluorobenzene					96.05	67-133		WG674217
Dibromofluoromethane					99.95	72-135		WG674217
Toluene-d8					101.0	90-113		WG674217
a,a,a-Trifluorotoluene					102.9	89-115		WG674217
Gasoline Range Organics-NWTPH	mg/kg	21.2	0.269	5.5	76.2	20.5-134	L648492-01	WG674494
a,a,a-Trifluorotoluene(FID)					99.56	59-128		WG674494
Gasoline Range Organics-NWTPH	mg/kg	23.6	0.0948	5.5	85.3	20.5-134	L648353-01	WG674159
a,a,a-Trifluorotoluene(FID)					99.33	59-128		WG674159
Gasoline Range Organics-NWTPH	mg/kg	17.1	0.103	5.5	61.7	20.5-134	L649016-04	WG674556
a,a,a-Trifluorotoluene(FID)					97.30	59-128		WG674556
Diesel Range Organics (DRO)	mg/kg	26.5	0	30	88.3	50-150	L648764-01	WG674797
Residual Range Organics (RRO)	mg/kg	25.5	0	30	84.9	50-150	L648764-01	WG674797
o-Terphenyl					92.50	50-150		WG674797

Analyte	Units	MSD	Matrix Spike Duplicate Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
1,1,1,2-Tetrachloroethane	mg/kg	0.119	0.104	95.0	49-135	13.1	23	L648845-01	WG674217
1,1,1-Trichloroethane	mg/kg	0.128	0.115	102.	43-142	10.7	24	L648845-01	WG674217
1,1,2,2-Tetrachloroethane	mg/kg	0.114	0.0977	91.3	42-147	15.5	25	L648845-01	WG674217
1,1,2-Trichloroethane	mg/kg	0.117	0.105	93.7	51-134	11.1	21	L648845-01	WG674217
1,1,2-Trichlorotrifluoroethane	mg/kg	0.131	0.119	105.	25-156	9.54	29	L648845-01	WG674217
1,1-Dichloroethane	mg/kg	0.128	0.117	103.	50-131	8.96	21	L648845-01	WG674217
1,1-Dichloroethene	mg/kg	0.127	0.113	101.	29-145	10.9	28	L648845-01	WG674217
1,1-Dichloropropene	mg/kg	0.125	0.115	100.	40-136	8.94	24	L648845-01	WG674217
1,2,3-Trichlorobenzene	mg/kg	0.106	0.0913	84.6	13-142	15.3	33	L648845-01	WG674217
1,2,3-Trichloropropane	mg/kg	0.104	0.0971	83.2	41-149	6.93	28	L648845-01	WG674217
1,2,3-Trimethylbenzene	mg/kg	0.107	0.0984	85.2	33-146	8.48	27	L648845-01	WG674217
1,2,4-Trichlorobenzene	mg/kg	0.114	0.104	91.0	12-140	9.16	32	L648845-01	WG674217
1,2,4-Trimethylbenzene	mg/kg	0.117	0.107	92.5	29-143	8.53	30	L648845-01	WG674217
1,2-Dibromo-3-Chloropropane	mg/kg	0.115	0.0969	92.1	29-151	17.2	31	L648845-01	WG674217
1,2-Dibromoethane	mg/kg	0.116	0.103	92.9	48-133	11.9	22	L648845-01	WG674217
1,2-Dichlorobenzene	mg/kg	0.109	0.101	87.2	37-136	7.17	25	L648845-01	WG674217
1,2-Dichloroethane	mg/kg	0.119	0.107	95.6	49-131	11.4	20	L648845-01	WG674217
1,2-Dichloropropane	mg/kg	0.130	0.115	104.	50-132	12.6	21	L648845-01	WG674217
1,3,5-Trimethylbenzene	mg/kg	0.117	0.106	92.9	29-144	9.43	30	L648845-01	WG674217
1,3-Dichlorobenzene	mg/kg	0.111	0.105	89.0	26-140	5.70	28	L648845-01	WG674217
1,3-Dichloropropane	mg/kg	0.117	0.103	93.4	50-126	13.0	22	L648845-01	WG674217
1,4-Dichlorobenzene	mg/kg	0.109	0.102	86.8	34-132	6.62	26	L648845-01	WG674217
2,2-Dichloropropane	mg/kg	0.136	0.118	109.	35-148	14.6	26	L648845-01	WG674217
2-Butanone (MEK)	mg/kg	0.665	0.574	106.	40-149	14.8	27	L648845-01	WG674217
2-Chloroethyl vinyl ether	mg/kg	0.442	0.224	70.7	10-173	65.3*	33	L648845-01	WG674217
2-Chlorotoluene	mg/kg	0.113	0.104	90.6	34-136	9.04	28	L648845-01	WG674217
4-Chlorotoluene	mg/kg	0.112	0.105	90.0	31-137	7.29	27	L648845-01	WG674217
4-Methyl-2-pentanone (MIBK)	mg/kg	0.659	0.563	105.	37-153	15.8	27	L648845-01	WG674217
Acetone	mg/kg	0.619	0.537	96.2	10-177	14.2	28	L648845-01	WG674217

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Quality Assurance Report
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August 06, 2013

Analyte	Units	Matrix Spike Duplicate MSD	Ref	%Rec	Limit	RPD	Limit	Ref Samp	Batch
Acrylonitrile	mg/kg	0.600	0.523	96.0	33-159	13.9	26	L648845-01	WG674217
Benzene	mg/kg	0.126	0.112	101.	44-131	11.6	21	L648845-01	WG674217
Bromobenzene	mg/kg	0.114	0.102	90.9	36-132	11.1	26	L648845-01	WG674217
Bromodichloromethane	mg/kg	0.121	0.108	97.0	48-134	11.4	20	L648845-01	WG674217
Bromoform	mg/kg	0.121	0.104	97.0	34-141	15.4	24	L648845-01	WG674217
Bromomethane	mg/kg	0.132	0.118	106.	19-173	11.8	25	L648845-01	WG674217
Carbon tetrachloride	mg/kg	0.133	0.117	106.	36-140	12.2	26	L648845-01	WG674217
Chlorobenzene	mg/kg	0.116	0.104	92.4	42-133	10.1	24	L648845-01	WG674217
Chlorodibromomethane	mg/kg	0.117	0.102	93.3	45-135	13.1	23	L648845-01	WG674217
Chloroethane	mg/kg	0.139	0.122	112.	16-178	13.4	25	L648845-01	WG674217
Chloroform	mg/kg	0.126	0.114	101.	52-130	9.84	21	L648845-01	WG674217
Chloromethane	mg/kg	0.143	0.125	115.	28-147	13.3	23	L648845-01	WG674217
cis-1,2-Dichloroethene	mg/kg	0.124	0.112	99.6	52-128	10.5	21	L648845-01	WG674217
cis-1,3-Dichloropropene	mg/kg	0.126	0.112	101.	46-131	12.1	21	L648845-01	WG674217
Di-isopropyl ether	mg/kg	0.131	0.119	105.	46-134	9.17	20	L648845-01	WG674217
Dibromomethane	mg/kg	0.124	0.108	99.2	51-133	13.8	21	L648845-01	WG674217
Dichlorodifluoromethane	mg/kg	0.131	0.120	105.	12-179	9.11	27	L648845-01	WG674217
Ethylbenzene	mg/kg	0.119	0.108	95.0	38-139	9.46	27	L648845-01	WG674217
Hexachloro-1,3-butadiene	mg/kg	0.0907	0.0937	72.5	10-147	3.24	37	L648845-01	WG674217
Isopropylbenzene	mg/kg	0.128	0.117	102.	34-137	9.09	29	L648845-01	WG674217
Methyl tert-butyl ether	mg/kg	0.123	0.109	98.5	45-134	11.8	22	L648845-01	WG674217
Methylene Chloride	mg/kg	0.120	0.109	94.8	41-133	9.97	28	L648845-01	WG674217
n-Butylbenzene	mg/kg	0.109	0.107	87.3	19-149	1.82	32	L648845-01	WG674217
n-Propylbenzene	mg/kg	0.117	0.108	93.6	27-142	8.10	29	L648845-01	WG674217
Naphthalene	mg/kg	0.112	0.0900	89.0	19-146	22.0	30	L648845-01	WG674217
p-Isopropyltoluene	mg/kg	0.117	0.111	93.4	21-150	4.96	31	L648845-01	WG674217
sec-Butylbenzene	mg/kg	0.115	0.107	91.8	25-148	7.15	31	L648845-01	WG674217
Styrene	mg/kg	0.122	0.111	97.8	30-156	9.86	26	L648845-01	WG674217
tert-Butylbenzene	mg/kg	0.118	0.108	94.8	32-146	9.10	30	L648845-01	WG674217
Tetrachloroethene	mg/kg	0.119	0.108	95.2	35-139	9.87	27	L648845-01	WG674217
Toluene	mg/kg	0.126	0.113	99.5	43-127	11.3	21	L648845-01	WG674217
trans-1,2-Dichloroethene	mg/kg	0.126	0.111	101.	41-132	12.6	23	L648845-01	WG674217
trans-1,3-Dichloropropene	mg/kg	0.123	0.111	98.2	43-129	10.5	23	L648845-01	WG674217
Trichloroethene	mg/kg	0.126	0.113	100.	42-136	10.7	23	L648845-01	WG674217
Trichlorofluoromethane	mg/kg	0.130	0.116	104.	20-178	12.2	30	L648845-01	WG674217
Vinyl chloride	mg/kg	0.138	0.123	111.	30-157	12.2	24	L648845-01	WG674217
Xylenes, Total	mg/kg	0.364	0.328	96.2	38-137	10.5	26	L648845-01	WG674217
4-Bromofluorobenzene				95.46	67-133				WG674217
Dibromofluoromethane				98.46	72-135				WG674217
Toluene-d8				101.7	90-113				WG674217
a,a,a-Trifluorotoluene				102.9	89-115				WG674217
Gasoline Range Organics-NWTPH	mg/kg	21.3	21.2	76.5	20.5-134	0.400	23.8	L648492-01	WG674494
a,a,a-Trifluorotoluene(FID)				99.33	59-128				WG674494
Gasoline Range Organics-NWTPH	mg/kg	23.1	23.6	83.6	20.5-134	2.05	23.8	L648353-01	WG674159
a,a,a-Trifluorotoluene(FID)				97.79	59-128				WG674159
Gasoline Range Organics-NWTPH	mg/kg	14.4	17.1	52.2	20.5-134	16.7	23.8	L649016-04	WG674556
a,a,a-Trifluorotoluene(FID)				96.90	59-128				WG674556
Diesel Range Organics (DRO)	mg/kg	23.0	26.5	76.6	50-150	14.2	20	L648764-01	WG674797
Residual Range Organics (RRO)	mg/kg	22.6	25.5	75.2	50-150	12.1	20	L648764-01	WG674797
o-Terphenyl				83.20	50-150				WG674797

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Batch number /Run number / Sample number cross reference

WG674217: R2760306: L648764-02
WG674494: R2761463: L648764-04
WG674159: R2761581: L648764-03
WG674556: R2762381: L648764-05
WG674754: R2765980: L648764-03 04 05
WG674753: R2766006: L648764-01 02
WG674797: R2769281: L648764-01 02 03 04 05

* * Calculations are performed prior to rounding of reported values.
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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.