FOURTH QUARTER 2014 GROUNDWATER MONITORING REPORT

Department of Ecology VCP ID #: SW1070

Pierce County Parcel: 4715010367
1440 Puyallup Avenue
Tacoma, Washington 98421

January 13, 2015

Prepared For:

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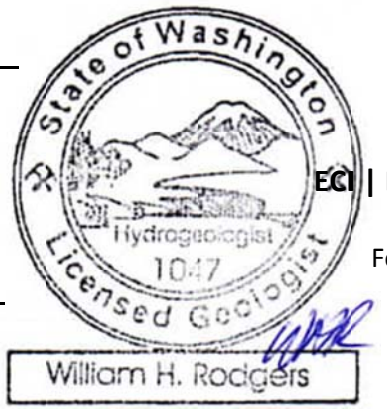

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1.0 INTRODUCTION

EcoCon, Inc. (ECI), at the request of the property owner, Pyramid Gold I LLC, completed groundwater monitoring activities as part of an on-going remedial activity at the property located at 1440 Puyallup Avenue in Tacoma, Washington (the "Subject Site"). The Subject Site is an irregularly shaped tax parcel covering approximately 1.71 acres of land. The Site is currently an active retail fuel service station and convenience store.

ECI has prepared this report to document site activities that include the collection and chemical analysis of groundwater samples from eleven groundwater monitoring wells (MW1-MW11) at the Subject Site (Appendix A, Figure 1). Pursuant to Ecology regulations, investigation and remediation activities were completed in accordance with the following documents published by Ecology.

Relevant Publications:

- The Model Toxics Control Act Cleanup Regulation, WAC 173-340, Pub. 9406 (2007)
- Guidance for Remediation of Petroleum Contaminated Sites, Publication 10-09-057 (2011)

The project scope was to investigation subsurface soil and groundwater conditions previously identified as impacted with contaminates associated with the historic operations of the site exceeding the Model Toxic Control Act (MTCA) Method A Soil Cleanup Levels for Unrestricted Land Uses.

1.1 Property Description/Location

The Subject Site, identified by Pierce County Tax Parcel Number 4715010367, is located within Section 10, Township 20 North, and Range 03 East of the Willamette Meridian (Appendix A, Figures 1 and 2). According to the Pierce County Assessor-Treasurer's Office records, the construction date for the current structure is 1991. The Site is located in a predominantly commercial and industrial area on the southwestern side of the intersection of Portland and Puyallup Avenues.

1.3 Property Geology & Hydrogeology

The Site is located in the Puget Lowland, an elongated topographic and structural depression filled with complex sequences of glacial and non-glacial sediments that overlie bedrock. The soil in the vicinity of the Site is primarily gravelly sandy loam (coarse-grained soils) and Urban Land. The USDA Natural Resources Conservation Service, Washington Soil Survey Reports for Pierce County and City of Tacoma (1939) indicates that primary component of the native soils at the Site is Alderwood gravelly sandy loam. However, closer investigation of the Site soils indicates reworked native materials (silty sands with gravel) were used to level the majority of the Subject Property.

The primary aquifers in the Puget Sound region are typically overlain by relatively impermeable glacial till deposits that are present at or near the ground surface. Within these till deposits are localized areas or lenses of water-bearing sands and gravels that may result in a shallow, perched water table. Lateral and vertical migration of shallow groundwater may be impeded by the relatively impermeable nature of the till and by the sometimes-discontinuous nature of the perched water-bearing sands and gravel. Perched and discontinuous zones of shallow groundwater may be seasonally or perennially present, depending on site-specific conditions. Shallow groundwater flow directions can fluctuate but tend to follow the topography. They can also be affected by seasonal high water tables and variable soil characteristics. Groundwater migration pathways may also follow underground conduits such as utility trenches.

1.4 Background

Previous environmental site work included the placement of borings by Shaw Environmental (Shaw) in 2009 and the installation of monitoring wells in 2011. These activities identified areas of the Subject Site impacted with various contaminants exceeding the Ecology Model Toxic Control Act (MTCA) Method A Cleanup levels (MTCA-A CULs) in both soil and groundwater. The contaminants identified by Shaw include gasoline (GRO), diesel (DRO) and oil range organics (ORO), total metals: arsenic and lead, polycyclic aromatic hydrocarbons (PAHs) and the fuel additive methyl tertiary-butyl ether (MTBE).

ECI, utilizing the data developed by Shaw, divided the Subject Site into four Areas of Concern (AOCs). These areas, represented on Figure 3 (Appendix A), have differing contaminants of concern (COCs) and are being treated as separate subareas within the Subject Site property boundary. It was determined through review of the previous environmental work (Shaw) that Areas 1, 2 and 3 contained accessible source materials exceeding applicable cleanup levels that could be removed. ECI and sub-contractor Joe Hall Construction completed a soil remediation project in February 2014, excavating three of the four AOCs (Areas 1, 2 and 3). Following soil excavation activities, soil sample results collected from the three AOC boundaries reported results below the applicable MTCA-A CUL in each of the three AOCs.

Area 4 is a City of Tacoma easement, incorporating a fifteen to twenty foot embankment shoring both Puyallup Avenue South and Portland Avenue South. Excavation and / or invasive exploration of this area is not permitted by the City of Tacoma.

2.0 VOLUNTARY CLEANUP PROGRAM

2.1 Washington State Department of Ecology

The Subject Property was entered into the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program (VCP) and assigned a file number SW1070. Documents and analytical reports were submitted to Ecology with a Request for Opinion which is currently being reviewed by the Ecology assigned site manager and ultimately receipt of a No Further Action Determination.

3.0 GROUNDWATER MONITORING PROGRAM

3.1 Regulatory Compliance

Regulatory compliance for this project is based on the Washington Administrative Code (WAC) 173-340 – Model Toxic Control Act (MTCA) - chapter 70.105D RCW and is regulated by Ecology. Ecology has established cleanup standards and requirements for the cleanup actions. The rules establishing these standards and requirements were developed by Ecology in consultation with the Science Advisory Board (established under the Act) and with representatives from local government, citizen, environmental, and business groups. The rules were first published in February 1991, with amendments in January 1996, February 2001, and October 2007.

The applicable ground water cleanup levels (CUL) for the contaminants of concern (COC) are guided by Ecology's MTCA-173-340: Table 720-1 Method A Cleanup Levels for Groundwater.

3.2 Sampling Activities

Groundwater sampling was conducted at the Subject Site on December 30, 2014. Groundwater sampling methodology was completed in general conformance with American Society of Testing and Materials (ASTM) Guideline D6771-02 Standard Practice for Low-Flow Purging and Sampling for Wells and Devices Used for Ground-Water Quality Investigations.

The activities conducted during this sampling event included the collection of representative groundwater samples from eleven groundwater monitoring wells along with collecting field measurements of groundwater elevations, pH, and temperature, specific conductivity, and field observations of water color and presence of odor or sheen.

The depth to groundwater was measured relative to the top of each monitoring well casing using an electric water level indicator / well sounder. The measurements were read from the north side of the well casing. All of the monitoring wells were purged of three well volumes, purged dry and allowed to recharge or purged until water parameters stabilized prior to the collection of groundwater samples. The monitoring wells are shown in Appendix A - Project Figures; Figure 2.

3.2.1 Monitoring Well Installation

Monitoring wells MW-1 through MW-6 were installed by Shaw in November 2009. Monitoring wells MW7 through MW 11 were installed by ECI in 2014. Installation included placement of 2-inch (in the six wells installed by Shaw) and 1-inch (in the five wells installed by ECI) diameter 0.01-inch slot Schedule 40 PVC well screen from the bottom of each boring to between 4 and 10 feet below ground surface, depending on depth of groundwater and soil conditions. The well screen was coupled with blank Schedule 40 PVC well casing extending from the well screen to just below the ground surface. The annular space around

the well screen was filled with 10/20 silica sand from the bottom of the boring to at least one-foot past the top of the screen. The rest of the annular space was filled with bentonite chips to 2 feet below ground surface, and concrete from 2 feet to the surface. The monitoring well was completed with a flush mount steel monument. Monitoring well completion will complies with the minimum standards for well construction (WAC 173-160).

3.2.3 Contaminants of Concern

The contaminants of concern (COCs) were determined utilizing MTCA Table 830-1 Required Testing for Petroleum Releases and consultation with the assigned Ecology site manager (Mr. Eugene Radcliff). The COCs at the Subject Site are identified as gasoline-(GRO), diesel-(DRO) and oil-range organics (ORO), select volatile organic compounds benzene, ethylbenzene, toluene, xylene (BTEX), Methyl tertiary butyl ether (MTBE), chlorinated polycyclic aromatic hydrocarbons (cPAHs) and total metals arsenic and lead.

Contaminants of Concern: Groundwater
MTCA Cleanup Regulation 173-340-900: Table 720-1: Method A Cleanup Levels for Groundwater

Contaminants of Concern	Area of Concern	Analytical Method	MTCA Method A Groundwater - µg/L
Gasoline Range Organics (GRO)	2	NWTPH-Gx	800
Diesel Range Organics (DRO)	2,3,4	NWTPH-Dx w/Silica Gel	500
Heavy Oil Range Organics (ORO)	2,3,4	NWTPH-Dx w/Silica Gel	500
Methyl tertiary butyl ether (MTBE)	2	EPA 8260	20
Benzene	2	EPA 8260B	5
Toluene	2	EPA 8260B	1000
Ethylbenzene	2	EPA 8260B	700
Xylenes	2	EPA 8260B	1000
Polycyclic Aromatic Hydrocarbons (PAHs)	3,4	EPA 8270C	0.1
Arsenic	2,4	EPA 6020	5
Lead	2,4	EPA 6020	15

3.2.2 Sample Collection

Representative discrete groundwater samples were collected using a properly calibrated low-flow peristaltic pump and disposable polyethylene tubing. Groundwater samples were collected into new

analyte specific laboratory provided containers. ECI utilized a water perameter-measuring instrument to measure the temperature, pH and conductivity during well purging (Well Sample Logs – Attached).

Following collection, each sample container was assigned a unique identification number and placed into a climate-controlled container maintained at 4° Celsius. The samples were then delivered to an accredited analytical laboratory under industry standard chain-of-custody.

Groundwater samples were collected and analyzed from the following areas:

- Groundwater samples collected for Area 1 from GW monitoring wells MW1 – MW4, and MW8 were analyzed for the following: GRO, BTEX, DRO, ORO, Arsenic, Lead, PAHs.
- Groundwater samples collected for Area 2 from GW monitoring wells MW4, MW10 and MW11 were analyzed for the following: GRO, BTEX, MTBE, DRO, ORO, Arsenic, Lead, PAHs.
- Groundwater samples collected for Area 3 from GW monitoring wells MW9 were analyzed for the following: GRO, BTEX, DRO, ORO, and PAHs.
- Groundwater samples collected for Area 4 from GW monitoring wells MW5, MW6 and MW7 were analyzed for the following: GRO, BTEX, DRO, ORO, Arsenic, Lead, PAHs.

3.3 Laboratory Analysis

3.3.1 Area 1 (Wells MW1, MW2, MW3 and MW8)

Groundwater samples were collected from four monitoring wells located in this area (MW1, MW2, MW3, and MW8). Analytical results reported the following:

- DRO concentrations (840 µg/L) ORO concentrations (990 µg/L) exceeded the MTCA-A CUL in sample MW3. The samples were re-analyzed with the sample extracts passed through a silica gel column prior to analysis, with the results reporting concentrations in MW3 of <50 µg/L for DRO and <250L for ORO.
- Total arsenic concentrations exceeded the MTCA-A CUL in samples MW2 (47.7 µg/L), MW3 (143 µg/L) and MW8 (38.0 µg/L).
- Dissolved arsenic concentrations exceeded the MTCA-A CUL in samples MW2 (15.2 µg/L) and MW3 (24.7 µg/L).
- Total Lead concentrations exceeded the MTCA-A CUL in MW8 (39.4 µg/L).

The remaining analytes were reported below the MTCA-A CULs for Area 1 COCs.

3.3.2 Area 2 (Wells MW4, MW10, and MW11)

Groundwater samples were collected from three monitoring wells located in this area (MW4, MW10, and MW11). Analytical results reported the following:

- DRO concentrations exceeded the MTCA-A CUL in sample MW11 (3300 µg/L) and ORO concentrations exceeded the MTCA-A CUL in samples MW4 (560 µg/L) and MW11 (6100 µg/L). The samples were re-analyzed with the sample extracts passed through a silica gel column prior to analysis, with the results reporting concentrations in MW 11 of 120 µg/L for DRO and 2100 µg/L for ORO, and <250 µg/L for ORO in MW4.
- Total Arsenic concentrations exceeded the MTCA-A CUL in samples MW4 (7.28 µg/L) and MW11 (9.65 µg/L).
- MTBE concentrations exceeded the MTCA-A CUL in sample MW10 (13 µg/L).
- EDB concentrations exceeded MTCA-A clean up levels in sample MW10 (0.053 µg/L).
- Total Lead concentrations exceeding MTCA-A clean up levels in sample MW11 (22.3 µg/L).

The remaining sample analytes were reported below the MTCA-A CULs for Area 2 COCs.

3.3.3 Area 3 (Well MW9)

One groundwater sample was collected from this area (MW9). All MW9 analytes were reported below the MTCA-A CULs for Area 3 COCs.

3.3.4 Area 4 (Wells MW5, MW6, MW7)

Groundwater samples were collected from three monitoring wells located in this area (MW5, MW6, and MW10). Analytical results reported the following:

- Total arsenic concentrations exceeded the MTCA-A CUL in samples MW5 (361 µg/L), MW6 (22.6 µg/L), and MW7 (292 µg/L).
- Total lead concentrations exceeded MTCA-A CUL in sample MW7 (933 µg/L).

The remaining sample analytes were reported below the MTCA-A CULs for Area 4 COCs.

Analytical results for the groundwater samples are presented in Table 2, Appendix B. The laboratory analytical report is included in Appendix C.

3.4 Data Quality

Groundwater samples collected on December 30, 2014 were submitted for analysis under industry standard chain-of-custody to Friedman & Bruya, Inc. Below is a summary of the data quality. All samples were prepared and/or analyzed within the required holding times and were properly preserved and cooled after collection. Method blanks were prepared and analyzed with the samples for all parameters.

These applications were performed under Washington State Department of Ecology accreditation parameters. All appropriate Quality Assurance / Quality Control (QA/QC) method parameters have been applied. Friedman Bruya, Inc. stated there were no reportable sample analysis issues.

3.5 Groundwater Flow Direction

ECI environmental professionals measured the depth to groundwater in each of the monitoring wells in order to determine groundwater elevation and evaluate the current water table gradient.

Monitoring well elevations were established from the survey performed by Baseline Engineering, a Washington State Licensed Surveyor on licensed on October 10, 2014. Groundwater elevations are presented below:

Groundwater Elevations – September 26, 2014

Well ID	Depth to Water (feet)	Surface Elevation* (feet)	Groundwater Elevation (feet)
MW-1	5.92	12.72	6.80
MW-2	8.35	15.17	6.82
MW-3	7.05	13.82	6.77
MW-4	10.41	12.62	2.21
MW-5	7.61	14.74	7.13
MW-6	7.81	13.10	5.29
MW-7	7.91	15.05	7.14
MW-8	7.22	13.74	6.52
MW-9	9.07	11.85	2.78
MW-10	13.65	13 .90	0.25
MW-11	7.11	13.37	6.26

*NOTE: The surface elevation includes the distance from the top of the casing to ground surface.

Groundwater flow appears to be to the southeast at an approximate gradient of 0.02 ft/ft (Appendix A, Figure 3). The measured depth to groundwater in monitoring well MW-10 may be the result of a perched lens of groundwater and not the actual surface of the water table at the Site.

4.0 CONCLUSION

Groundwater samples were collected and analyzed from eleven groundwater monitoring wells installed at the Subject Site.

Groundwater sample results for petroleum hydrocarbons as gasoline, diesel, oil and polycyclic aromatic hydrocarbons, were reported below the MTCA-A clean up levels for areas 1, 3, and 4 (and only the sample from MW 3 with a DRO concentration above the laboratory method reporting limit). Samples results exceeded MTCA-A clean up levels for GRO, DRO, MTBE, and EDB within area 2 (refer to section 3.3). Sample results for volatile organic compounds (VOCs) were reported below the method reporting limit for all the groundwater samples collected and analyzed in Areas 1, 2, 3, and 4.

Groundwater samples collected from monitoring wells in each Area were analyzed for total lead and arsenic, and the samples collected from the wells in Area 1 were also analyzed for dissolved lead and arsenic. Analytical results reported total arsenic concentrations exceeding the MTCA-A clean up level in samples collected from nearly all the wells in Areas 1, 2, and 4 (except MW1). Analytical results reported total lead concentrations exceeding the MTCA-A clean up level in the sample collected from MW8 in Area 1 and from MW7 in Area 4. Analytical results reported dissolved arsenic exceeding the MTCA-A clean up level in samples collected from Area 1. Laboratory analytical results for the groundwater samples are presented in Table 1, Appendix B, and are shown on Figure 3, Appendix A.

4.1 Opinion

The elevated concentrations of arsenic and lead are likely due to infilling of the site and adjacent off-site areas (City of Tacoma Right-Of-Way) with Asarco Smelter Plume arsenic and lead impacted soil prior to development (or re-development), and the subsequent leaching of these compounds into the groundwater. The elevated heavy hydrocarbon concentrations found in the groundwater samples collected were all shown to be significantly reduced when re-analyzed after using silica gel cleanup to separate analytes from biogenic interfering compounds, indicating that the DRO AND ORO concentrations present are most likely not related to any release from the site operations. The DRO and ORO concentrations found in the sample from MW11 in Area 2 does exceed the MTCA-A cleanup levels, but the contaminants are localized and likely the result of historical dumping or discarding of materials in this area in the from many years past prior to the current development of the site.

Quarterly groundwater monitoring and sampling will be continued per VCP requirements.

4.2 Standard Limitations

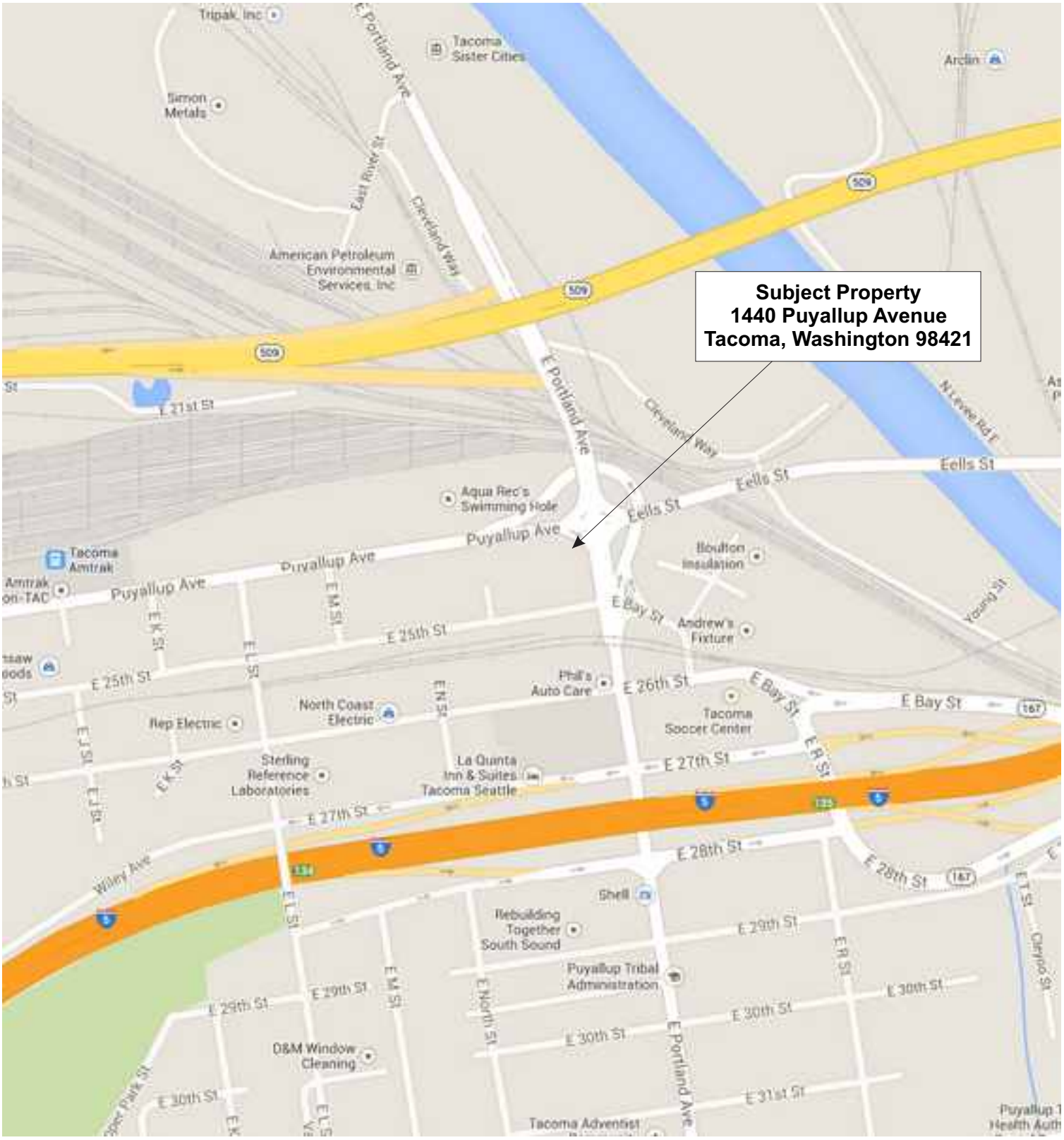
This report has been prepared to document the activities that occurred during quarterly groundwater monitoring and sampling activities at the site addressed at 1440 Puyallup Avenue, Tacoma, Washington. The findings and conclusions documented in this report have been prepared for the specific application to this project and have been developed in a manner consistent with the level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area. No warranty, expressed or implied, is made. This report is for the exclusive use of Pyramid Gold I, LLC and/or its representatives.

If new information is developed in future site work (which may include excavations, additional borings, or other studies), ECI should be contacted to re-evaluate the interpretations in this report, and to provide amendments as required.

Appendix A

Project Figures

Figure 1: Site Location Map
Figure 2: Site Topographic Map
Figure 3: Monitoring Well & Sample Location Map



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Not To Scale

Site Vicinity Map
Quarterly Groundwater Assessments
1440 Puyallup Avenue
Tacoma, Washington 98421

Date:	January 13, 2015
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Reviewed By.:	S. Spencer
Version:	ECI-004
Project No.:	0482-03

Figure No.: 01
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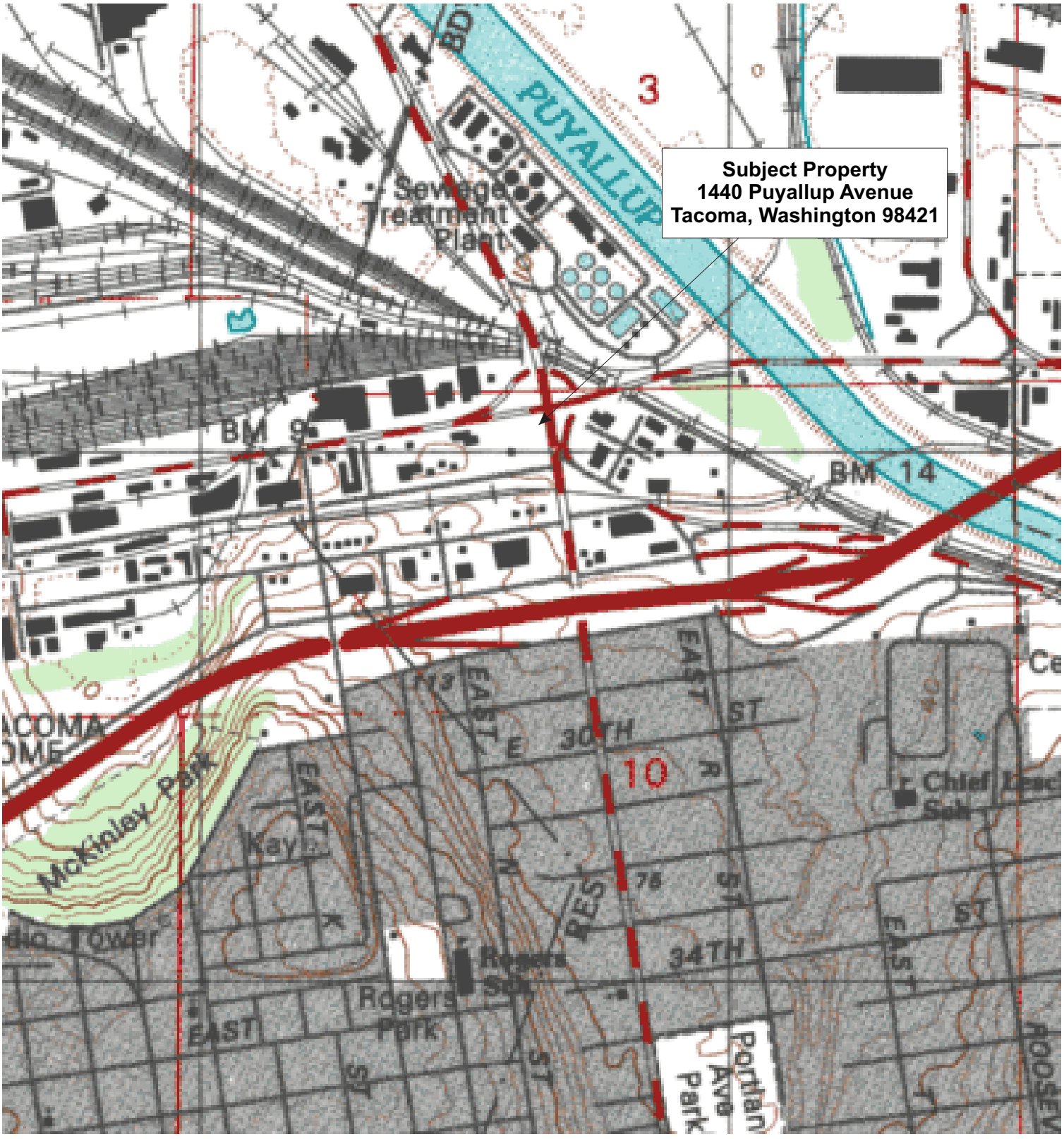

N
Not To Scale

Site Topographic Map
Quarterly Groundwater Assessments
1440 Puyallup Avenue
Tacoma, Washington 98421

Date:	January 13, 2015
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Puyallup Avenue

Portland Avenue

City of Tacoma Easement (Orange)

AREA 1

AREA 4

AREA 2

AREA 3

S-MW1
GW 6.8' AMSL
GRO:<100,B<1,T<1,E<1,X<3
DRO:<50,ORO:<250
SG-DRO:<50, SG-ORO:<250
T-As:1.78,D-As:<1,T-Pb:3.19,D-Pb:<1
cPAHs:<0.1*

S-MW2
GW:6.82' AMLS
GRO:<100,B<1,T<1,E<1,X<3
DRO:150,ORO:<250, SG-DRO:<50, SG-ORO:<250
T-As:47.7, D-As:15.2,T-Pb:3.51,D-Pb:<1
cPAHs:<0.1*

ECI-MW8
GW:6.52' AMLS
GRO:<100,B<1,T<1,E<1,X<3
DRO:550,ORO:470, SG-DRO:<50, SG-ORO:<250
T-As:38.0,D-As:3.33,**T-Pb:39.4**,D-Pb:<1
cPAHs:<0.1*

S-MW3
GW:6.77' AMLS
GRO:<100,B<1,T<1,E<1,X<3
DRO:840,**ORO:990**
SG-DRO:<50, SG-ORO:<250
T-As:143,**D-As:24.7**,T-Pb:2.06
D-Pb:<1,cPAHs:<0.1*

ECI-MW7
GW:7.14' AMLS
GRO:<100,B<1,T<1,E<1,X<3
DRO:200,ORO:340
SG-DRO:<50, SG-ORO:<250
T-As:292,T-Pb:933

S-MW5
GW:7.13' AMLS
GRO:<100,B<1,T<1,E<1,X<3
DRO:<50,ORO:<250
SG-DRO:<50, SG-ORO:<250
T-As:361, T-Pb:<1

6.5 6 5.5 5 4.5 4 3.5 3 2.5 2 4.5 5 5.5

Canopy

Inferred Groundwater Flow Direction

ECI-MW10
GW:0.25' AMLS
GRO:<100,B<1,T<1,E<1,X<3
MTBE:13,EDC:<1,**EDB:0.053**

ECI-MW11
GW:6.26' AMLS
GRO:<100,B<1,T<1,E<1,X<3
DRO:3300,**ORO:6100**,SG-DRO:120, **SG-ORO:2100**
T-As:9.65,**T-Pb:22.3**,
MTBE:<1,EDC:<1,EDB:<0.01

S-MW4
GW:2.21' AMLS
GRO:<100,B<1,T<1,E<1,X<3
DRO:480,**ORO:560**,SG-DRO:<50, SG-ORO:<250
T-As:7.28,T-Pb:<1,
MTBE:<1,EDC:<1,EDB:<0.01

S-MW6
GW:5.29' AMLS
GRO:<100,B<1,T<1,E<1,X<3
DRO:<50,ORO:<250
T-As:22.6, T-Pb:<1,MTBE:<1

C.Store

ECI-MW9
GW:2.78' AMLS
GRO:150,B<1,T<1,E<1,X<3
DRO:390,ORO:410,SG-DRO:<50, SG-ORO:<250
cPAHs:<0.1*

0 30 60 120
Approximate Scale in Feet

N
Not To Scale

Groundwater Sample Analytical Results
Quarterly Groundwater Assessments
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Appendix B

Project Tables

Table 1: Soil Sample Analytical Results
MTCA Method A Cleanup Levels for Groundwater

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Table 1: Groundwater Sample Analytical Results

1440 Puyallup Avenue
Tacoma, Washington 98421

Sample ID	Quarter	Date Collected	Sample Location (Lat/Long)		Sample Depth	Groundwater Elevation	NWTPH-Gx	EPA 8260/8021B						NWTPH-Dx Ext		EPA 200.8				EPA 8270D SIM								EPA 8011
							Gasoline	Benzene	Toluene	Ethylbenzene	Total Xylenes	1,2-Dichloroethane	Methyl t-butyl ether	Diesel Range Organics	Oil Range Organics	Total Arsenic	Disolved Arsenic	Total Lead	Disolved Lead	Benz(a)anthracene	Chrysene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	TEF cPAHs	1,2-DIBROMOETHANE
			Latitude	Longitude	Feet bgs		mg/kg																					
Area 1																												
S-MW1	Second	4/10/2014	47°14'31.71"N	122°24'47.02"W	5.51	6.5	<100	<1	<1	<1	<3	N/A	N/A	<71	<360	1.45	<1	1.18	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Thired	9/26/2014	47°14'31.71"N	122°24'47.02"W	7	6	<100	<1	<1	<1	<3	N/A	<1	<200	<400	**6.3**	**8.8**	9.2	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Fourth	12/31/2014	47°14'31.71"N	122°24'47.02"W	6.8	5.92	<100	<1	<1	<1	<3	N/A	N/A	<50	<250	1.78	<1	3.19	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
S-MW2	Second	4/10/2014	47°14'31.80"N	122°24'45.81"W	7.43	8.5	<100	<1	<1	<1	<3	N/A	N/A	170	<280	**77.9**	**17**	4.58	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Thired	9/26/2014	47°14'31.80"N	122°24'45.81"W	10	9.1	<100	<1	<1	<1	<3	N/A	<1	<200	<400	**100**	**58**	9.5	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Fourth	12/31/2014	47°14'31.80"N	122°24'45.81"W	9.5	8.35	<100	<1	<1	<1	<3	N/A	N/A	**150/**<50	<250/<250	**47.7**	**15.2**	3.51	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
S-MW3	Second	4/10/2014	47°14'31.33"N	122°24'46.27"W	6.2	7.3	<100	<1	<1	<1	<3	N/A	N/A	**700**	**580**	**136**	**25**	1.26	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Thired	9/26/2014	47°14'31.33"N	122°24'46.27"W	8.1	7.3	<100	<1	<1	<1	<3	N/A	<1	<200	<400	**126**	**49**	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Fourth	12/31/2014	47°14'31.33"N	122°24'46.27"W	8	7.05	<100	<1	<1	<1	<3	N/A	N/A	**840/**<50	**990/**<250	**143**	**24.7**	2.06	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
ECI-MW8	Second	4/10/2014	47°14'31.76"N	122°24'46.27"W	5.82	6.5	<100	<1	<1	<1	<3	N/A	N/A	200	<280	**5.37**	2.9	2.11	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Thired	9/26/2014	47°14'31.76"N	122°24'46.27"W	8	7.3	<100	<1	<1	<1	<3	N/A	<1	<200	<400	**102**	<1	**847**	13.8	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Fourth	12/31/2014	47°14'31.76"N	122°24'46.27"W	8.1	7.22	<100	<1	<1	<1	<3	N/A	N/A	**550/**<50	470/<250	**38**	3.33	**39.4**	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
Area 2																												
S-MW4	Second	4/11/2014	47°14'30.54"N	122°24'43.27"W	5.8	6.9	<100	<1	<1	<1	<3	N/A	<1	460	<280	**5.3**	<1	5.3	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Thired	9/26/2014	47°14'30.54"N	122°24'43.27"W	10	9	<100	<1	<1	<1	<3	N/A	<1	<200	<400	**7.3**	<1	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Fourth	12/30/2014	47°14'30.54"N	122°24'43.27"W	11.5	10.41	<100	<1	<1	<1	<3	<1	<1	480/<50	**560/**<250	**7.28**	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.01
ECI-MW10	Second	4/11/2014	47°14'31.01"N	122°24'42.49"W	5.68	7	<100	<1	<1	<1	<3	N/A	3.2	230	<420	**16.3**	**15.4**	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Thired	9/26/2014	47°14'31.01"N	122°24'42.49"W	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Fourth	12/30/2014	47°14'31.01"N	122°24'42.49"W	14.5	13.65	<100	<1	<1	<1	<3	<1	**13**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**0.053**
ECI-MW11	Second	4/11/2014	47°14'30.83"N	122°24'42.17"W	5.7	6.8	<100	<1	<1	<1	<3	N/A	N/A	**610**	**1000**	**6.51**	<1	**15.8**	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Thired	9/26/2014	47°14'30.83"N	122°24'42.17"W	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Fourth	12/30/2014	47°14'30.83"N	122°24'42.17"W	8.5	7.11	<100	<1	<1	<1	<3	<1	<1	**3300/**120	**6100/2100**	**9.65**	N/A	**22.3**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.01
Area 3																												
ECI-MW9	Second	4/10/2014	47°14'29.74"N	122°24'42.44"W	5.65	6.5	<100	<1	<1	<1	<3	N/A	N/A	**1300**	**900**	N/A	N/A	N/A	N/A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Thired	9/26/2014	47°14'29.74"N	122°24'42.44"W	12	11	<100	<1	<1	<1	<3	N/A	<1	<200	<400	N/A	N/A	N/A	N/A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Fourth	12/30/2014	47°14'29.74"N	122°24'42.44"W	10	9.07	150	<1	<1	<1	<3	N/A	N/A	390/100	410/<250	N/A	N/A	N/A	N/A	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
Area 4																												
S-MW5	Second	4/10/2014	47°14'31.67"N	122°24'42.04"W	6.9	8	<100	<1	<1	<1	<3	N/A	N/A	60	<280	**469**	**314**	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Thired	9/26/2014	47°14'31.67"N	122°24'42.04"W	7	8.5	<100	<1	<1	<1	<3	N/A	<1	<200	<400	**560**	4.5	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Fourth	12/30/2014	47°14'31.67"N	122°24'42.04"W	8.5	7.61	<100	<1	<1	<1	<3	N/A	N/A	<50	<250	**361**	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
S-MW6	Second	4/10/2014	47°14'31.01"N	122°24'41.61"W	6.8	7.9	<100	<1	<1	<1	<3	N/A	N/A	66	<280	**16**	**8.88**	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Thired	9/26/2014	47°14'31.01"N	122°24'41.61"W	6.4	9.3	<100	<1	<1	<1	<3	N/A	<1	<200	<400	**50**	**38**	<1	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Fourth	12/30/2014	47°14'31.01"N	122°24'41.61"W	9	7.81	<100	<1	<1	<1	<3	N/A	**<1**	<50	<250	**22.6**	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ECI-MW7	Second	4/11/2014	47°14'31.19"N	122°24'41.70"W	7	8	<100	<1	<1	<1	<3	N/A	N/A	300	<350	**229**	**14.3**	**638**	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Thired	9/26/2014	47°14'31.19"N	122°24'41.70"W	4	9.1	<100	<1	<1	<1	<3	N/A	<1	<200	<400	**106**	**67**	**106**	4.9	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	N/A
	Fourth	12/30/2014	47°14'31.19"N	122°24'41.70"W	8.8	7.91	<100	<1	<1	<1	<3	N/A	N/A	200/<50	340/<250	**292**	N/A	**933**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Laboratory Method Reporting Limit (MRL)							100	1	1	1	3	1	1	50	280	1	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	--	0.01
MTCA Method A Cleanup Levels*							1000/800	5	1000	700	1000	5	20	500	500	5	5	15	15	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.01

*Washington State Department of Ecology's Model Toxics Control Act (MTCA) Method A Cleanup Levels for soil
cPAHs: TEF is an estimate of the relative toxicity of a chemical compared to a reference chemical
Bold/Shaded: Sample analysis exceeding MTCA-A Cleanup Level
Bold: Sample Analysis exceeds laboratory method reporting limit
N/A: No Analysis
NA: Not Applicable - Sample Analysis Noion identified dring analysis aftet Completed
Latitude/Longitude approximated from Google Maps
840/<50, 6100/2100 - Concentrations identified during original laboratory analysis/concentrations identified with silica gel filtering prior to analysis

Table 720-1
Method A Cleanup Levels for Ground Water.[a]

Hazardous Substance	CAS Number	Cleanup Level
Arsenic	7440-38-2	5 ug/liter[b]
Benzene	71-43-2	5 ug/liter[c]
Benzo(a)pyrene	50-32-8	0.1 ug/liter[d]
Cadmium	7440-43-9	5 ug/liter[e]
Chromium (Total)	7440-47-3	50 ug/liter[f]
DDT	50-29-3	0.3 ug/liter[g]
1,2 Dichloroethane (EDC)	107-06-2	5 ug/liter[h]
Ethylbenzene	100-41-4	700 ug/liter[i]
Ethylene dibromide (EDB)	106-93-4	0.01 ug/liter[j]
Gross Alpha Particle Activity		15 pCi/liter[k]
Gross Beta Particle Activity		4 mrem/yr[l]
Lead	7439-92-1	15 ug/liter[m]
Lindane	58-89-9	0.2 ug/liter[n]
Methylene chloride	75-09-2	5 ug/liter[o]
Mercury	7439-97-6	2 ug/liter[p]
MTBE	1634-04-4	20 ug/liter[q]
Naphthalenes	91-20-3	160 ug/liter[r]
PAHs (carcinogenic)		See benzo(a)pyrene[d]
PCB mixtures		0.1 ug/liter[s]
Radium 226 and 228		5 pCi/liter[t]
Radium 226		3 pCi/liter[u]
Tetrachloroethylene	127-18-4	5 ug/liter[v]
Toluene	108-88-3	1,000 ug/liter[w]
Total Petroleum Hydrocarbons[x]		
[Note: Must also test for and meet cleanup levels for other petroleum components--see footnotes!]		
Gasoline Range Organics		
Benzene present in ground water		800 ug/liter
No detectable benzene in ground water		1,000 ug/liter
Diesel Range Organics		500 ug/liter
Heavy Oils		500 ug/liter
Mineral Oil		500 ug/liter
1,1,1 Trichloroethane	71-55-6	200 ug/liter[y]
Trichloroethylene	79-01-6	5 ug/liter[z]
Vinyl chloride	75-01-4	0.2 ug/liter[aa]
Xylenes	1330-20-7	1,000 ug/liter[bb]

Footnotes:

a **Caution on misusing this table.** This table has been developed for specific purposes. It is intended to provide conservative cleanup levels for drinking water beneficial uses at sites undergoing routine cleanup actions or those sites with relatively few hazardous substances. This table may not be appropriate for defining cleanup levels at other sites. For these reasons, the values in this table should not automatically be used to define cleanup levels that must be met for financial, real estate, insurance coverage or placement, or similar transactions or purposes. Exceedances of the values in this table do not necessarily mean the ground water must be restored to those levels at all sites. The level of restoration depends on the remedy selected under WAC 173-340-350 through 173-340-390.

b **Arsenic.** Cleanup level based on background concentrations for state of Washington.

c **Benzene.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).

d **Benzo(a)pyrene.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61), adjusted to a 1×10^{-5} risk. If other carcinogenic PAHs are suspected of being present at the site, test for them and use this value as the total concentration that all carcinogenic PAHs must meet using the toxicity equivalency methodology in WAC 173-340-708(8).

e **Cadmium.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.62).

f **Chromium (Total).** Cleanup level based on concentration derived using Equation 720-1 for hexavalent chromium. This is a total value for chromium III and chromium VI. If just chromium III is present at the site, a cleanup level of 100 ug/l may be used (based on WAC 246-290-310 and 40 C.F.R. 141.62).

g **DDT (dichlorodiphenyltrichloroethane).** Cleanup levels based on concentration derived using Equation 720-2.

h **1,2 Dichloroethane (ethylene dichloride or EDC)**. Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).

i **Ethylbenzene.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).

j **Ethylene dibromide (1,2 dibromoethane or EDB).** Cleanup level based on concentration derived using Equation 720-2, adjusted for the practical quantitation limit.

k **Gross Alpha Particle Activity, excluding uranium.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.15).

l **Gross Beta Particle Activity, including gamma activity.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.15).

m **Lead.** Cleanup level based on applicable state and federal law (40 C.F.R. 141.80).

n **Lindane.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).

o **Methylene chloride (dichloromethane).** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).

p **Mercury.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.62).

q **Methyl tertiary-butyl ether (MTBE).** Cleanup level based on federal drinking water advisory level (EPA-822-F-97-009, December 1997).

r **Naphthalenes.** Cleanup level based on concentration derived using Equation 720-1. This is a total value for naphthalene, 1-methyl naphthalene and 2-methyl naphthalene.

s **PCB mixtures.** Cleanup level based on concentration derived using Equation 720-2, adjusted for the practical quantitation limit. This cleanup level is a total value for all PCBs.

t **Radium 226 and 228.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.15).

u **Radium 226.** Cleanup level based on applicable state law (WAC 246-290-310).

v **Tetrachloroethylene.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).

w **Toluene.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).

x **Total Petroleum Hydrocarbons (TPH).** TPH cleanup values have been provided for the most common petroleum products encountered at contaminated sites. Where there is a mixture of products or the product composition is unknown, samples must be tested using both the NWTPH-Gx and NWTPH-Dx methods and the lowest applicable TPH cleanup level must be met.

- **Gasoline range organics** means organic compounds measured using method NWTPH-Gx. Examples are aviation and automotive gasoline. The cleanup level is based on protection of ground water for noncarcinogenic effects during drinking water use. Two cleanup levels are provided. The higher value is based on the assumption that no benzene is present in the ground water sample. If any detectable amount of benzene is present in the ground water sample, then the lower TPH cleanup level must be used. No interpolation between these cleanup levels is allowed. The ground water cleanup level for any carcinogenic components of the petroleum [such as benzene, EDB and EDC] and any noncarcinogenic components [such as ethylbenzene, toluene, xylenes and MTBE], if present at the site, must also be met. See Table 830-1 for the minimum testing requirements for gasoline releases.
- **Diesel range organics** means organic compounds measured using NWTPH-Dx. Examples are diesel, kerosene, and #1 and #2 heating oil. The cleanup level is based on protection from noncarcinogenic effects during drinking water use. The ground water cleanup level for any carcinogenic components of the petroleum [such as benzene and PAHs] and any noncarcinogenic components [such as ethylbenzene, toluene, xylenes and naphthalenes], if present at the site, must also be met. See Table 830-1 for the minimum testing requirements for diesel releases.
- **Heavy oils** means organic compounds measured using NWTPH-Dx. Examples are #6 fuel oil, bunker C oil, hydraulic oil and waste oil. The cleanup level is based on protection from noncarcinogenic effects during drinking water use, assuming a product composition similar to diesel fuel. The ground water cleanup level for any carcinogenic components of the petroleum [such as benzene, PAHs and PCBs] and any noncarcinogenic components [such as ethylbenzene, toluene, xylenes and naphthalenes], if present at the site, must also be met. See Table 830-1 for the minimum testing requirements for heavy oil releases.
- **Mineral oil** means non-PCB mineral oil, typically used as an insulator and coolant in electrical devices such as transformers and capacitors measured using NWTPH-Dx. The cleanup level is based on protection from noncarcinogenic effects during drinking water use. Sites using this cleanup level must analyze ground water samples for PCBs and meet the PCB cleanup level in this table unless it can be demonstrated that: (1) The release originated from an electrical device manufactured after July 1, 1979; or (2) oil containing PCBs was never used in the equipment suspected as the source of the release; or (3) it can be documented that the oil released was recently tested and did not contain PCBs. Method B (or Method C, if applicable) must be used for releases of oils containing greater than 50 ppm PCBs. See Table 830-1 for the minimum testing requirements for mineral oil releases.

y **1,1,1 Trichloroethane.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).

z **Trichloroethylene.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61).

aa **Vinyl chloride.** Cleanup level based on applicable state and federal law (WAC 246-290-310 and 40 C.F.R. 141.61), adjusted to a 1×10^{-5} risk.

bb **Xylenes.** Cleanup level based on xylene not exceeding the maximum allowed cleanup level in this table for total petroleum hydrocarbons and on prevention of adverse aesthetic characteristics. This is a total value for all xylenes.

Appendix C

Project Analytical Results

Laboratory Analytical Results
Sample Chain Of Custody

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
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January 12, 2015

Steve Spencer, Project Manager
EcoCon, Inc.
PO Box 153
Fox Island, WA 98333

Dear Mr. Spencer:

Included are the results from the testing of material submitted on January 2, 2015 from the 0482-04, F&BI 501002 project. There are 40 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
EMS0112R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 2, 2015 by Friedman & Bruya, Inc. from the EcoCon 0482-04, F&BI 501002 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	EcoCon
501002 -01	S-MW1
501002 -02	S-MW2
501002 -03	S-MW3
501002 -04	ECI-MW8
501002 -05	S-MW4
501002 -06	ECI-MW10
501002 -07	ECI-MW11
501002 -08	ECI-MW9
501002 -09	S-MW5
501002 -10	S-MW6
501002 -11	ECI-MW7

The dissolved metals samples were filtered at Friedman and Bruya on January 2, 2015. The data were flagged accordingly.

The 8270D surrogate benzo(a)anthracene-d12 exceeded the laboratory acceptance criteria for several samples. No analytes associated with that surrogate were detected in the samples, therefore the data were acceptable.

There was insufficient sample volume for sample ECI-MW10 to analyze for NWTPH-Dx, NWTPH-Gx, 8021B, and metals.

All other quality control requirements were acceptable.

Date of Report: 01/12/15
Date Received: 01/02/15
Project: 0482-04, F&BI 501002
Date Extracted: 01/05/15
Date Analyzed: 01/05/15

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Benzene	Toluene	Ethyl Benzene	Total Xylenes	Gasoline Range	Surrogate (% Recovery) (Limit 52-124)
S-MW1 501002-01	<1	<1	<1	<3	<100	104
S-MW2 501002-02	<1	<1	<1	<3	<100	102
S-MW3 501002-03	<1	<1	<1	<3	<100	100
ECI-MW8 501002-04	<1	<1	<1	<3	<100	105
S-MW4 501002-05	<1	<1	<1	<3	<100	102
ECI-MW11 501002-07	<1	<1	<1	<3	<100	102
ECI-MW9 501002-08	<1	<1	<1	<3	150	101
S-MW5 501002-09	<1	<1	<1	<3	<100	100
S-MW6 501002-10	<1	<1	<1	<3	<100	104
ECI-MW7 501002-11	<1	<1	<1	<3	<100	104
Method Blank 05-0013 MB	<1	<1	<1	<3	<100	88

Date of Report: 01/12/15
Date Received: 01/02/15
Project: 0482-04, F&BI 501002
Date Extracted: 01/05/15
Date Analyzed: 01/05/15

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
S-MW1 501002-01	<50	<250	86
S-MW2 501002-02	150 x	<250	96
S-MW3 501002-03	840 x	990 x	96
ECI-MW8 501002-04	550 x	470 x	88
S-MW4 501002-05	480 x	560 x	89
ECI-MW11 501002-07 1/2	3,300 x	6,100 x	92
ECI-MW9 501002-08	390 x	410 x	95
S-MW5 501002-09	<50	<250	89
S-MW6 501002-10	<50	<250	79
ECI-MW7 501002-11	200 x	340 x	95
Method Blank 05-025 MB	<50	<250	95

Analysis For Total Metals By EPA Method 200.8

Client ID:	S-MW1	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/08/15	Lab ID:	501002-01
Date Analyzed:	01/08/15 11:23:05	Data File:	501002-01.018
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	100	60	125
Holmium	110	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	1.78
Lead	3.19

Analysis For Total Metals By EPA Method 200.8

Client ID:	S-MW2	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/08/15	Lab ID:	501002-02
Date Analyzed:	01/08/15 11:41:37	Data File:	501002-02.023
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	99	60	125
Holmium	106	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	47.7
Lead	3.51

Analysis For Total Metals By EPA Method 200.8

Client ID:	S-MW3	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/08/15	Lab ID:	501002-03
Date Analyzed:	01/08/15 11:45:20	Data File:	501002-03.024
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	93	60	125
Holmium	99	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	143
Lead	2.06

Analysis For Total Metals By EPA Method 200.8

Client ID:	ECI-MW8	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/08/15	Lab ID:	501002-04 x5
Date Analyzed:	01/08/15 11:49:01	Data File:	501002-04 x5.025
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	97	60	125
Holmium	105	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	38.0
Lead	39.4

Analysis For Total Metals By EPA Method 200.8

Client ID:	S-MW4	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/08/15	Lab ID:	501002-05
Date Analyzed:	01/08/15 11:52:43	Data File:	501002-05.026
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	93	60	125
Holmium	102	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	7.28
Lead	<1

Analysis For Total Metals By EPA Method 200.8

Client ID:	ECI-MW11	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/08/15	Lab ID:	501002-07
Date Analyzed:	01/08/15 11:56:25	Data File:	501002-07.027
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	92	60	125
Holmium	102	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	9.65
Lead	22.3

Analysis For Total Metals By EPA Method 200.8

Client ID:	S-MW5	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/08/15	Lab ID:	501002-09
Date Analyzed:	01/08/15 12:00:07	Data File:	501002-09.028
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	88	60	125
Holmium	102	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	361
Lead	<1

Analysis For Total Metals By EPA Method 200.8

Client ID:	S-MW6	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/08/15	Lab ID:	501002-10
Date Analyzed:	01/08/15 12:03:49	Data File:	501002-10.029
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	94	60	125
Holmium	106	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	22.6
Lead	<1

Analysis For Total Metals By EPA Method 200.8

Client ID:	ECI-MW7	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/08/15	Lab ID:	501002-11 x5
Date Analyzed:	01/08/15 12:11:11	Data File:	501002-11 x5.031
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	97	60	125
Holmium	112	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	292
Lead	933

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	EcoCon
Date Received:	NA	Project:	0482-04, F&BI 501002
Date Extracted:	01/08/15	Lab ID:	I5-012 mb
Date Analyzed:	01/08/15 10:44:11	Data File:	I5-012 mb.009
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	101	60	125
Holmium	103	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	S-MW1 f	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/06/15	Lab ID:	501002-01
Date Analyzed:	01/06/15	Data File:	501002-01.048
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	87	60	125
Holmium	95	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	S-MW2 f	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/06/15	Lab ID:	501002-02
Date Analyzed:	01/06/15	Data File:	501002-02.045
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	92	60	125
Holmium	98	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	15.2
Lead	<1

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	S-MW3 f	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/06/15	Lab ID:	501002-03
Date Analyzed:	01/06/15	Data File:	501002-03.049
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	82	60	125
Holmium	89	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	24.7
Lead	<1

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	ECI-MW8 f	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/06/15	Lab ID:	501002-04
Date Analyzed:	01/06/15	Data File:	501002-04.050
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	80	60	125
Holmium	88	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	3.33
Lead	<1

Analysis For Dissolved Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	EcoCon
Date Received:	NA	Project:	0482-04, F&BI 501002
Date Extracted:	01/06/15	Lab ID:	I5-003 mb
Date Analyzed:	01/06/15	Data File:	I5-003 mb.043
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Indium	92	60	125
Holmium	98	60	125

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Lead	<1

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	S-MW6	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/05/15	Lab ID:	501002-10
Date Analyzed:	01/06/15	Data File:	010533.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	85	117
Toluene-d8	100	93	107
4-Bromofluorobenzene	101	76	126

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	EcoCon
Date Received:	Not Applicable	Project:	0482-04, F&BI 501002
Date Extracted:	01/05/15	Lab ID:	05-003 mb
Date Analyzed:	01/05/15	Data File:	010510.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	85	117
Toluene-d8	98	93	107
4-Bromofluorobenzene	98	76	126

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	S-MW4	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/05/15	Lab ID:	501002-05
Date Analyzed:	01/05/15	Data File:	010531.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	85	117
Toluene-d8	103	93	107
4-Bromofluorobenzene	102	76	126

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	ECI-MW10	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/05/15	Lab ID:	501002-06
Date Analyzed:	01/05/15	Data File:	010512.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	85	117
Toluene-d8	100	93	107
4-Bromofluorobenzene	101	76	126

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	13
1,2-Dichloroethane (EDC)	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	ECI-MW11	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/05/15	Lab ID:	501002-07
Date Analyzed:	01/05/15	Data File:	010532.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	85	117
Toluene-d8	99	93	107
4-Bromofluorobenzene	98	76	126

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	EcoCon
Date Received:	Not Applicable	Project:	0482-04, F&BI 501002
Date Extracted:	01/05/15	Lab ID:	05-003 mb
Date Analyzed:	01/05/15	Data File:	010510.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	85	117
Toluene-d8	98	93	107
4-Bromofluorobenzene	98	76	126

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1

Date of Report: 01/12/15
Date Received: 01/02/15
Project: 0482-04, F&BI 501002
Date Extracted: 01/06/15
Date Analyzed: 01/06/15

RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED
Results Reported as µg/L (ppb)

Sample ID Laboratory ID	EDB
S-MW4 501002-05	<0.01
ECI-MW10 501002-06	0.053
ECI-MW11 501002-07	<0.01
Method Blank	<0.01

EDB 1,2-Dibromoethane

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	S-MW1	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/05/15	Lab ID:	501002-01 1/2
Date Analyzed:	01/06/15	Data File:	010612.D
Matrix:	Water	Instrument:	GCMS10
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	122	50	150
Benzo(a)anthracene-d12	125	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.1
Chrysene	<0.1
Benzo(a)pyrene	<0.1
Benzo(b)fluoranthene	<0.1
Benzo(k)fluoranthene	<0.1
Indeno(1,2,3-cd)pyrene	<0.1
Dibenz(a,h)anthracene	<0.1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	S-MW2	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/05/15	Lab ID:	501002-02 1/2
Date Analyzed:	01/06/15	Data File:	010613.D
Matrix:	Water	Instrument:	GCMS10
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	120	50	150
Benzo(a)anthracene-d12	124	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.1
Chrysene	<0.1
Benzo(a)pyrene	<0.1
Benzo(b)fluoranthene	<0.1
Benzo(k)fluoranthene	<0.1
Indeno(1,2,3-cd)pyrene	<0.1
Dibenz(a,h)anthracene	<0.1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	S-MW3	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/05/15	Lab ID:	501002-03 1/2
Date Analyzed:	01/06/15	Data File:	010614.D
Matrix:	Water	Instrument:	GCMS10
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	123	50	150
Benzo(a)anthracene-d12	199 vo	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.1
Chrysene	<0.1
Benzo(a)pyrene	<0.1
Benzo(b)fluoranthene	<0.1
Benzo(k)fluoranthene	<0.1
Indeno(1,2,3-cd)pyrene	<0.1
Dibenz(a,h)anthracene	<0.1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	ECI-MW8	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/05/15	Lab ID:	501002-04 1/2
Date Analyzed:	01/06/15	Data File:	010615.D
Matrix:	Water	Instrument:	GCMS10
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	123	50	150
Benzo(a)anthracene-d12	150	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.1
Chrysene	<0.1
Benzo(a)pyrene	<0.1
Benzo(b)fluoranthene	<0.1
Benzo(k)fluoranthene	<0.1
Indeno(1,2,3-cd)pyrene	<0.1
Dibenz(a,h)anthracene	<0.1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	ECI-MW9	Client:	EcoCon
Date Received:	01/02/15	Project:	0482-04, F&BI 501002
Date Extracted:	01/05/15	Lab ID:	501002-08 1/2
Date Analyzed:	01/06/15	Data File:	010616.D
Matrix:	Water	Instrument:	GCMS10
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	123	50	150
Benzo(a)anthracene-d12	163 vo	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.1
Chrysene	<0.1
Benzo(a)pyrene	<0.1
Benzo(b)fluoranthene	<0.1
Benzo(k)fluoranthene	<0.1
Indeno(1,2,3-cd)pyrene	<0.1
Dibenz(a,h)anthracene	<0.1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	EcoCon
Date Received:	Not Applicable	Project:	0482-04, F&BI 501002
Date Extracted:	01/05/15	Lab ID:	05-009 mb2 1/2
Date Analyzed:	01/06/15	Data File:	010607.D
Matrix:	Water	Instrument:	GCMS10
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	120	50	150
Benzo(a)anthracene-d12	125	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.1
Chrysene	<0.1
Benzo(a)pyrene	<0.1
Benzo(b)fluoranthene	<0.1
Benzo(k)fluoranthene	<0.1
Indeno(1,2,3-cd)pyrene	<0.1
Dibenz(a,h)anthracene	<0.1

Date of Report: 01/12/15
Date Received: 01/02/15
Project: 0482-04, F&BI 501002

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	50	84	85	72-119	1
Toluene	ug/L (ppb)	50	83	96	71-113	15
Ethylbenzene	ug/L (ppb)	50	83	96	72-114	15
Xylenes	ug/L (ppb)	150	76	86	72-113	12
Gasoline	ug/L (ppb)	1,000	89	94	70-119	5

Date of Report: 01/12/15
Date Received: 01/02/15
Project: 0482-04, F&BI 501002

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	96	99	63-142	3

Date of Report: 01/12/15
Date Received: 01/02/15
Project: 0482-04, F&BI 501002

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 501070-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<1	100	99	60-150	1
Lead	ug/L (ppb)	10	1.97	98	104	79-121	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	96	80-111
Lead	ug/L (ppb)	10	107	83-115

Date of Report: 01/12/15
Date Received: 01/02/15
Project: 0482-04, F&BI 501002

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 200.8

Laboratory Code: 501002-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	15.2	101	101	60-150	0
Lead	ug/L (ppb)	10	<1	115	114	79-121	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	94	80-111
Lead	ug/L (ppb)	10	116 vo	83-115

Date of Report: 01/12/15
Date Received: 01/02/15
Project: 0482-04, F&BI 501002

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	100	99	70-122	1

Date of Report: 01/12/15
Date Received: 01/02/15
Project: 0482-04, F&BI 501002

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	100	99	70-122	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	98	96	79-109	2

Date of Report: 01/12/15
Date Received: 01/02/15
Project: 0482-04, F&BI 501002

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR 1,2-DIBROMOETHANE BY EPA METHOD 8011 MODIFIED

Laboratory Code: 501002-07 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 10)
1,2-Dibromoethane	ug/L (ppb)	<0.01	<0.01	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
1,2-Dibromoethane	ug/L (ppb)	0.10	105	70-130

Date of Report: 01/12/15
Date Received: 01/02/15
Project: 0482-04, F&BI 501002

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR PNA'S BY EPA METHOD 8270D SIM

Laboratory Code: Laboratory Control Sample 1/0.25

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	ug/L (ppb)	<0.25	91	99	70-130	8
Chrysene	ug/L (ppb)	<0.25	90	100	70-130	11
Benzo(b)fluoranthene	ug/L (ppb)	<0.25	94	99	59-130	5
Benzo(k)fluoranthene	ug/L (ppb)	<0.25	95	104	65-120	9
Benzo(a)pyrene	ug/L (ppb)	<0.25	93	98	60-125	5
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	<0.25	85	99	42-135	15
Dibenz(a,h)anthracene	ug/L (ppb)	<0.25	70	81	39-122	15

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

501002

SAMPLE CHAIN OF CUSTODY

ME 01-02-15   B14 / B04 / V2

Send Report To Steve Spencer

Company ECI

Address PO BOX 153

City, State, ZIP Fox Island, WA 98333

Phone # 2539217059 Fax # 2533696228

Email Address

SAMPLERS (signature)	
PROJECT NAME/NO. 0482-09	PO #
PROJECT ADDRESS 1440 Puyallup AVE	
· ELECTRONIC DATA REQUESTED	

Page # 1 of 2

TURNAROUND TIME
· Standard Turnaround (circled)
· RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
· Dispose after 30 days
· Return samples
· Will call with instructions
Samples Received at ___ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	cPAH's	Pb & As	MTBE	EDB by 8011	EDC	Notes
S-MW1	01 A-E	12/31		H2O		X	X	X				X	X				
S-MW2	02	↓		↓		X	X	X				X	X				TOTAL & Dissolved
S-MW3	03					X	X	X				X	X				↓
ECI-MW8	04					X	X	X				X	X				
S-MW4	05					X	X	X					X	X	X	X	
ECI-MW10	06 A-B					X	X	X					X	X	X	X	* - insufficient volume [?] 1/2/15
ECI-MW11	07 A-E					X	X	X					X	X	X	X	
ECI-MW9	08					X	X	X				X					
S-MW5	09					X	X	X					X				
S-MW6	10					X	X	X					X	X			

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:				
Received by: [illegible signature]	HONG NGUYEN	FBI	1/2/15	12:40
Relinquished by:				
Received by:				

FORMS\COC\COC.DOC

Samples received at 2 °C

501002

SAMPLE CHAIN OF CUSTODY

ME 01-02-15 BE4 / BO4 / V2

Page # 2 of 2

Send Report To Steve Spencer

Company EC1

Address PO Box 153

City, State, ZIP Fox Island, WA 98333

Phone # 2539017059 Fax # 2533696228

Email Address

SAMPLERS (signature)

PROJECT NAME/NO. 0482-09

PO #

PROJECT ADDRESS 1440 Pugallup AVE

· ELECTRONIC DATA REQUESTED

TURNAROUND TIME
· Standard Turnaround
· RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
· Dispose after 30 days
· Return samples
· Will call with instructions

Samples Received at ____ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	CAH's	Pb & As	MTBE	EDB by 8011	EDC	Notes
EC1-MW7	11k-E					X	X	X					X				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:				
Received by:	HONG NGUYEN	FBI	1/2/15	12:40
Relinquished by:				
Received by:				

Samples received at 12 °C

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

January 19, 2015

Steve Spencer, Project Manager
EcoCon, Inc.
PO Box 153
Fox Island, WA 98333

Dear Mr. Spencer:

Included are the additional results from the testing of material submitted on January 2, 2015 from the 0482-04, F&BI 501002 project. There are 4 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
EMS0119R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on January 2, 2015 by Friedman & Bruya, Inc. from the EcoCon 0482-04, F&BI 501002 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	EcoCon
501002 -01	S-MW1
501002 -02	S-MW2
501002 -03	S-MW3
501002 -04	ECI-MW8
501002 -05	S-MW4
501002 -06	ECI-MW10
501002 -07	ECI-MW11
501002 -08	ECI-MW9
501002 -09	S-MW5
501002 -10	S-MW6
501002 -11	ECI-MW7

All quality control requirements were acceptable.

Date of Report: 01/19/15
Date Received: 01/02/15
Project: 0482-04, F&BI 501002
Date Extracted: 01/14/15
Date Analyzed: 01/14/15

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
S-MW2 501002-02	<50	<250	85
S-MW3 501002-03	<50	<250	78
ECI-MW8 501002-04	<50	<250	84
S-MW4 501002-05	<50	<250	82
ECI-MW11 501002-07 1/1.9	120 x	2,100	77
ECI-MW9 501002-08	100 x	<250	78
ECI-MW7 501002-11	<50	<250	87
Method Blank 05-025 MB	<50	<250	81

Date of Report: 01/19/15
Date Received: 01/02/15
Project: 0482-04, F&BI 501002

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	84	94	63-142	11

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

501002

SAMPLE CHAIN OF CUSTODY

ME 01-02-15   BI4/B04/VI2

Send Report To Steve Spencer
Company ECI
Address PO BOX 153
City, State, ZIP Fox Island, WA 98333
Phone # 2539217059 Fax # 2533696228
Email Address

SAMPLERS (signature)
PROJECT NAME/NO. 0482-09
PO #
PROJECT ADDRESS 1440 Puyallup Ave
· ELECTRONIC DATA REQUESTED

Page # 1 of 2
TURNAROUND TIME
· ~~Standard Turnaround~~ (circled)
· RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
· Dispose after 30 days
· Return samples
· Will call with instructions
Samples Received at ___ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	Dx w/SG (~~VOCs by 8260~~)	SVOCs by 8270	HFS	cPAH's	Pb & As	MTBE	EDB by 8011	EDC	O per SS 1/12/15 MA Notes
S-MW1	01 A-E	12/31		H2O		X	X	X				X	X				
S-MW2	02	↓		↓		X	X	X	O			X	X				TOTAL & Dissolved
S-MW3	03					X	X	X	O			X	X				↓
~~ECI-MW8~~	04					X	X	X	O			X	X				
S-MW4	05					X	X	X	O				X	X	X	X	
ECI-MW10	06 A-B					~~X~~	~~X~~	~~X~~					X	X	X	X	* - insufficient volume MA 1/2/15
ECI-MW11	07 A-E					X	X	X	O				X	X	X	X	
ECI-MW9	08					X	X	X	O			X					
S-MW5	09					X	X	X					X				
S-MW6	10	↓		↓		X	X	X					X	X			

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3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044
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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:				
Received by: [signature]	HONG NGUYEN	FBI	1/2/15	12:40
Relinquished by:				
Received by:				

Samples received at 2 °C

501002

SAMPLE CHAIN OF CUSTODY

ME 01-02-15 BI4/Boy/n

Send Report To Steve Spencer

Company ECI

Address PO Box 153

City, State, ZIP Fox Island, WA 98333

Phone # 2539217059 Fax # 2533696228

Email Address

SAMPLERS (signature)	
PROJECT NAME/NO. 0482-09	PO #
PROJECT ADDRESS 1440 Puyallup AVE	
• ELECTRONIC DATA REQUESTED	

Page # 2 of 2

TURNAROUND TIME
• Standard Turnaround • RUSH Rush charges authorized by:
SAMPLE DISPOSAL
• Dispose after 30 days • Return samples • Will call with instructions
Samples Received at ___ °C

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260 (Br-ISG)	SVOCs by 8270	HFS	CPAH's	Pb&As	MTBE	EDB by 8011	EDC	Notes
ECI-MW7	11 A-E					X	X	X	O				X				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:				
Received by: [signature]	HONG NGUYEN	FBI	1/2/15	12:40
Relinquished by:				
Received by:				

Samples received at 12 °C

FORMS\COC\COC.DOC

Appendix D

Sample Collection Forms

Appendix D
Sample Collection Forms

ECI MONITORING WELL PURGE AND SAMPLE FORM

Date: 12/30/14

Project Name: Shalabi	Project No.: 00482-03	Well No.: MW1
Field Personnel: Kyle Spencer	Static Water Level: 6.0’	
Water Level Measurement Method: Electronic Tape		
Time Start Purge: 9:47 AM	Time End Purge: 10:05 AM	Time Sampled: 10:10 AM
Measuring Point Description: Top of Casing		
Purge Method: Low Flow (Peristaltic Pump)	Purge Depth: one foot off bottom of water column	

Well Volume Calculation (Fill in before purging)	Total Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier for Casing Diameter (in) (Circle) $V = (d^2h/77.01)$			Casing Volume (gal)
	15.52	5.92					

Volume Purged	.5	1.5					
pH	8.2	7.69					
Temperature C.	49.4	52.1					
Conductivity uS/cm	186.6	163.9					
Turbidity	126.0	77.3					
Color	Clear	Clear					
Odor/Sheen	None	None					

Comments:

Percent Recovery:	Depth to Water at Sampling (ft): one foot below top of water column
Sampling Equipment: Peristaltic pump/dedicated tubing	

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analysis Request (Method)	Comments
MW1	2	40 mil Voa	None	No	G/BTEX/ 8260C	
	1	Amber	None	No	CPAH/Dx	
	1	Poly	HNO3	No	EPA Total Metals	
	1	Poly	None	Yes	EPA Dissolved Metals	

Total Discharge (gal):	Disposal Method: Drum	Drum Designation(s)/Volume:

WELL HEAD CONDITIONS CHECKLIST (Circle **YES** or NO -- if NO, add comments)

Well Security Devices OK (Bollards, Christy Lid, Casing Lid and Lock): **YES** / NO

Inside of Well Head and Outer Casing Dry: YES / **NO**

Well Casing: **YES** / NO

Notes: _____

ECI MONITORING WELL PURGE AND SAMPLE FORM

Date: 12/30/14

Project Name: Shalabi	Project No.: 00482-03	Well No.: MW2
Field Personnel: kyle s	Static Water Level: 8.35	
Water Level Measurement Method: Electronic Tape		
Time Start Purge: 10:40 AM	Time End Purge: 10:50 AM	Time Sampled: 10:55 AM
Measuring Point Description: Top of Casing		
Purge Method: Low Flow (Peristaltic Pump)	Purge Depth: one foot off bottom of water column	

Well Volume Calculation (Fill in before purging)	Total Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier for Casing Diameter (in) (Circle) $V = (d^2h/77.01)$			Casing Volume (gal)
	18.55	8.35					

Volume Purged	.5	1.5					
pH	7.05	7.08					
Temperature C.	52.5	55.8					
Conductivity uS/cm	604	575					
Turbidity	417	382					
Color	Clear	Clear					
Odor/Sheen	None	None					

Comments:

Percent Recovery:	Depth to Water at Sampling (ft): one foot below top of water column
Sampling Equipment: Peristaltic pump/dedicated tubing	

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analysis Request (Method)	Comments
MW2	2	40 mil Voa	None	No	G/BTEX/ 8260C	
	1	Amber	None	No	CPAH/Dx	
	1	Poly	HNO3	No	EPA Total Metals	
	1	Poly	None	Yes	EPA Dissolved Metals	

Total Discharge (gal): 1.5	Disposal Method: Drum	Drum Designation(s)/Volume:

WELL HEAD CONDITIONS CHECKLIST (Circle **YES** or NO -- if NO, add comments)

Well Security Devices OK (Bollards, Christy Lid, Casing Lid and Lock): **YES** / NO

Inside of Well Head and Outer Casing Dry: YES / **NO**

Well Casing: **YES** / NO

Notes: _____

ECI MONITORING WELL PURGE AND SAMPLE FORM

Date: 12/30/14

Project Name: Shalabi	Project No.: 00482-03	Well No.: MW3
Field Personnel: Tom Smith/Gina Mulderig	Static Water Level: 7.05	
Water Level Measurement Method: Electronic Tape		
Time Start Purge: 8:15 AM	Time End Purge: 8:35 AM	Time Sampled: 8:35 AM
Measuring Point Description: Top of Casing		
Purge Method: Low Flow (Peristaltic Pump)	Purge Depth: one foot off bottom of water column	

Well Volume Calculation (Fill in before purging)	Total Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier for Casing Diameter (in) (Circle) $V = (d^2h/77.01)$			Casing Volume (gal)
	15.45	7.05					

Volume Purged	.5	1.5					
pH	7.22	6.9					
Temperature C.	59.3	59.7					
Conductivity uS/cm	1198	1044					
Turbidity	849	748					
Color	Clear	Clear					
Odor/Sheen	None	None					

Comments:

Percent Recovery:	Depth to Water at Sampling (ft): one foot below top of water column
Sampling Equipment: Peristaltic pump/dedicated tubing	

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analysis Request (Method)	Comments
MW3	2	40 mil Voa	None	No	G/BTEX/ 8260C	
	1	Amber	None	No	CPAH/Dx	
	1	Poly	HNO3	No	EPA Total Metals	
	1	Poly	None	Yes	EPA Dissolved Metals	

Total Discharge (gal): 1.5	Disposal Method: Drum	Drum Designation(s)/Volume:

WELL HEAD CONDITIONS CHECKLIST (Circle **YES** or NO -- if NO, add comments)

Well Security Devices OK (Bollards, Christy Lid, Casing Lid and Lock): **YES** / NO

Inside of Well Head and Outer Casing Dry: YES / **NO**

Well Casing: **YES** / NO

Notes: _____

ECI MONITORING WELL PURGE AND SAMPLE FORM

Date 12/30/14

Project Name: Shalabi	Project No.: 00482-03	Well No.: MW4
Field Personnel: Kyle S.	Static Water Level: 10.41	
Water Level Measurement Method: Electronic Tape		
Time Start Purge: 2:10 PM	Time End Purge: 2:25 PM	Time Sampled: 2:30 PM
Measuring Point Description: Top of Casing		
Purge Method: Low Flow (Peristaltic Pump)	Purge Depth: one foot off bottom of water column	

Well Volume Calculation (Fill in before purging)	Total Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier for Casing Diameter (in) (Circle) $V = (d^2h/77.01)$			Casing Volume (gal)
	15.9	10.41					

Volume Purged	.5	1.5					
pH	6.99	6.76					
Temperature C.	54.5	57.5					
Conductivity uS/cm	725	736					
Turbidity	506	501					
Color	Clear	Clear					
Odor/Sheen	None	None					

Comments:

Percent Recovery:	Depth to Water at Sampling (ft): one foot below top of water column
Sampling Equipment: Peristaltic pump/dedicated tubing	

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analysis Request (Method)	Comments
MW4	2	40 mil Voa	None	No	G/BTEX/ 8260C	
	1	Amber	None	No	CPAH/Dx	
	1	Poly	HNO3	No	EPA Total Metals	
	1	Poly	None	Yes	EPA Dissolved Metals	

Total Discharge (gal): 1.5	Disposal Method: Drum	Drum Designation(s)/Volume:

WELL HEAD CONDITIONS CHECKLIST (Circle **YES** or NO -- if NO, add comments)

Well Security Devices OK (Bollards, Christy Lid, Casing Lid and Lock): **YES** / NO

Inside of Well Head and Outer Casing Dry: YES **/ NO**

Well Casing: **YES** / NO

Notes: _____

ECI MONITORING WELL PURGE AND SAMPLE FORM

Date: 12/30/14

Project Name: Shalabi	Project No.: 00482-03	Well No.: MW5
Field Personnel: Tom Smith/Gina Mulderig	Static Water Level: 7.61	
Water Level Measurement Method: Electronic Tape		
Time Start Purge: 12:05 PM	Time End Purge: 12:10 PM	Time Sampled: 12:15 PM
Measuring Point Description: Top of Casing		
Purge Method: Low Flow (Peristaltic Pump)	Purge Depth: one foot off bottom of water column	

Well Volume Calculation (Fill in before purging)	Total Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier for Casing Diameter (in) (Circle) $V = (d^2h/77.01)$			Casing Volume (gal)
	15.5	7.61					

Volume Purged	.5	1.75					
pH	7.80	7.77					
Temperature C.	49.9	53.6					
Conductivity uS/cm	587	576					
Turbidity	397	415					
Color	Clear	Clear					
Odor/Sheen							

Comments:

Percent Recovery:	Depth to Water at Sampling (ft): one foot below top of water column
Sampling Equipment: Peristaltic pump/dedicated tubing	

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analysis Request (Method)	Comments
MW5	2	40 mil Voa	None	No	G/BTEX/ 8260C	
	1	Amber	None	No	CPAH/Dx	
	1	Poly	HNO3	No	EPA Total Metals	
	1	Poly	None	Yes	EPA Dissolved Metals	

Total Discharge (gal): 0.05	Disposal Method: Drum	Drum Designation(s)/Volume:

WELL HEAD CONDITIONS CHECKLIST (Circle **YES** or NO -- if NO, add comments)

Well Security Devices OK (Bollards, Christy Lid, Casing Lid and Lock): **YES** / NO

Inside of Well Head and Outer Casing Dry: YES / **NO**

Well Casing: **YES** / NO

Notes: _____

ECI MONITORING WELL PURGE AND SAMPLE FORM

Date: 12/30/14

Project Name: Shalabi	Project No.: 00482-03	Well No.: MW6
Field Personnel: Kyle S.	Static Water Level: 7.81	
Water Level Measurement Method: Electronic Tape		
Time Start Purge: 12:40 PM	Time End Purge: 12:55 PM	Time Sampled: 1:00 PM
Measuring Point Description: Top of Casing		
Purge Method: Low Flow (Peristaltic Pump)	Purge Depth: one foot off bottom of water column	

Well Volume Calculation (Fill in before purging)	Total Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier for Casing Diameter (in) (Circle) $V = (d^2h/77.01)$			Casing Volume (gal)
	15.4	7.81					

Volume Purged	.5	1.5					
pH	7.22	7.23					
Temperature C.	56.3	56.3					
Conductivity uS/cm	543	577					
Turbidity	375	394					
Color	Clear	Clear					
Odor/Sheen	None	None					

Comments:

Percent Recovery:	Depth to Water at Sampling (ft): one foot below top of water column
Sampling Equipment: Peristaltic pump/dedicated tubing	

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analysis Request (Method)	Comments
MW6	2	40 mil Voa	None	No	G/BTEX/ 8260C	
	1	Amber	None	No	CPAH/Dx	
	1	Poly	HNO3	No	EPA Total Metals	
	1	Poly	None	Yes	EPA Dissolved Metals	

Total Discharge (gal): 1.5	Disposal Method: Drum	Drum Designation(s)/Volume:

WELL HEAD CONDITIONS CHECKLIST (Circle **YES** or NO -- if NO, add comments)

Well Security Devices OK (Bollards, Christy Lid, Casing Lid and Lock): **YES** / NO

Inside of Well Head and Outer Casing Dry: YES **/ NO**

Well Casing: **YES** / NO

Notes: _____

ECI MONITORING WELL PURGE AND SAMPLE FORM

Date: 12/30/14

Project Name: Shalabi	Project No.: 00482-03	Well No.: MW7
Field Personnel: Kyle S.	Static Water Level: 7.91	
Water Level Measurement Method: Electronic Tape		
Time Start Purge: 11:20 AM	Time End Purge: 11:30 AM	Time Sampled: 11:30 AM
Measuring Point Description: Top of Casing		
Purge Method: Low Flow (Peristaltic Pump)	Purge Depth: one foot off bottom of water column	

Well Volume Calculation (Fill in before purging)	Total Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier for Casing Diameter (in) (Circle) $V = (d^2h/77.01)$			Casing Volume (gal)
	13	7.91					

Volume Purged	.5	1.5					
pH	6.97	6.84					
Temperature C.	66.7	66.3					
Conductivity uS/cm	1149	1182					
Turbidity	819	828					
Color	Clear	Clear					
Odor/Sheen	None	None					

Comments:

Percent Recovery:	Depth to Water at Sampling (ft): one foot below top of water column
Sampling Equipment: Peristaltic pump/dedicated tubing	

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analysis Request (Method)	Comments
MW7	2	40 mil Voa	None	No	G/BTEX/ 8260C	
	2	Amber	None	No	CPAH/Dx	
	1	Poly	HNO3	No	EPA Total Metals	
	1	Poly	None	Yes	EPA Dissolved Metals	

Total Discharge (gal): 1.5	Disposal Method: Drum	Drum Designation(s)/Volume:

WELL HEAD CONDITIONS CHECKLIST (Circle **YES** or NO -- if NO, add comments)

Well Security Devices OK (Bollards, Christy Lid, Casing Lid and Lock): **YES** / NO

Inside of Well Head and Outer Casing Dry: YES / **NO**

Well Casing: **YES** / NO

Notes: _____

ECI MONITORING WELL PURGE AND SAMPLE FORM

Date: 12/30/14

Project Name: Shalabi	Project No.: 00482-03	Well No.: MW8
Field Personnel: Kyle S.	Static Water Level: 7.22	
Water Level Measurement Method: Electronic Tape		
Time Start Purge: 8:55 AM	Time End Purge: 9:15 AM	Time Sampled: 10:30 AM
Measuring Point Description: Top of Casing		
Purge Method: Low Flow (Peristaltic Pump)	Purge Depth: one foot off bottom of water column	

Well Volume Calculation (Fill in before purging)	Total Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier for Casing Diameter (in) (Circle) $V = (d^2h/77.01)$			Casing Volume (gal)
	15.24	7.22					

Volume Purged	.5	1.5					
pH	7.57	7.22					
Temperature C.	49.2	51.0					
Conductivity uS/cm	1761	1972					
Turbidity	880	823					
Color	Cloudy	Cloudy					
Odor/Sheen	None	None					

Comments:

Percent Recovery:	Depth to Water at Sampling (ft): one foot below top of water column
Sampling Equipment: Peristaltic pump/dedicated tubing	

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analysis Request (Method)	Comments
MW8	2	40 mil Voa	None	No	G/BTEX/ 8260C	
	1	Amber	None	No	CPAH/Dx	
	1	Poly	HNO3	No	EPA Total Metals	
	1	Poly	None	Yes	EPA Dissolved Metals	

Total Discharge (gal): 1.5	Disposal Method: Drum	Drum Designation(s)/Volume:

WELL HEAD CONDITIONS CHECKLIST (Circle **YES** or NO -- if NO, add comments)

Well Security Devices OK (Bollards, Christy Lid, Casing Lid and Lock): **YES** / NO

Inside of Well Head and Outer Casing Dry: YES / **NO**

Well Casing: **YES** / NO

Notes: Closed and came back after recharging for roughly an hour .

ECI MONITORING WELL PURGE AND SAMPLE FORM

Date: 12/30/14

Project Name: Shalabi	Project No.: 00482-03	Well No.: MW9
Field Personnel: Kyle S.	Static Water Level: 9.07	
Water Level Measurement Method: Electronic Tape		
Time Start Purge: 1:25 PM	Time End Purge: 1:35 PM	Time Sampled: 1:40 PM
Measuring Point Description: Top of Casing		
Purge Method: Low Flow (Peristaltic Pump)	Purge Depth: one foot off bottom of water column	

Well Volume Calculation (Fill in before purging)	Total Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier for Casing Diameter (in) (Circle) $V = (d^2h/77.01)$			Casing Volume (gal)
	14.9	9.07					

Volume Purged	.5	1					
pH	7.63	7.46					
Temperature C.	55.3	53.6					
Conductivity uS/cm	450	595					
Turbidity	316	416					
Color	Cloudy	Cloudy					
Odor/Sheen	Oder	Oder					

Comments:

Percent Recovery:	Depth to Water at Sampling (ft): one foot below top of water column
Sampling Equipment: Peristaltic pump/dedicated tubing	

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analysis Request (Method)	Comments
MW9	2	40 mil Voa	None	No	G/BTEX/ 8260C	
	1	Amber	None	No	CPAH/Dx	
	1	Poly	HNO3	No	EPA Total Metals	
	1	Poly	None	Yes	EPA Dissolved Metals	

Total Discharge (gal): 1.5	Disposal Method: Drum	Drum Designation(s)/Volume:

WELL HEAD CONDITIONS CHECKLIST (Circle **YES** or NO -- if NO, add comments)

Well Security Devices OK (Bollards, Christy Lid, Casing Lid and Lock): **YES** / NO

Inside of Well Head and Outer Casing Dry: YES / **NO**

Well Casing: **YES** / NO

Notes: Slow Charging

ECI MONITORING WELL PURGE AND SAMPLE FORM

Date: 12/30/14

Project Name: Shalabi	Project No.: 00482-03	Well No.: MW10
Field Personnel: Kyle S.	Static Water Level: Dry Well	
Water Level Measurement Method: Electronic Tape		
Time Start Purge: None	Time End Purge: None	Time Sampled: 3:40 PM
Measuring Point Description: Top of Casing		
Purge Method: Low Flow (Peristaltic Pump)	Purge Depth: one foot off bottom of water column	

Well Volume Calculation (Fill in before purging)	Total Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier for Casing Diameter (in) (Circle) $V = (d^2h/77.01)$			Casing Volume (gal)
	15.6	13.65					

Volume Purged	N/A	N/A					
pH	N/A	N/A					
Temperature C.	N/A	N/A					
Conductivity uS/cm	N/A	N/A					
Turbidity	N/A	N/A					
Color	Cloudy	Cloudy					
Odor/Sheen	Oder	Oder					

Comments:

Percent Recovery:	Depth to Water at Sampling (ft): one foot below top of water column
Sampling Equipment: Peristaltic pump/dedicated tubing	

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analysis Request (Method)	Comments
MW10	2	40 mil Voa	None	No	G/BTEX/ 8260C	

Total Discharge (gal): Dry Well	Disposal Method: Drum	Drum Designation(s)/Volume:

WELL HEAD CONDITIONS CHECKLIST (Circle **YES** or NO -- if NO, add comments)

Well Security Devices OK (Bollards, Christy Lid, Casing Lid and Lock): **YES** / NO

Inside of Well Head and Outer Casing Dry: YES / **NO**

Well Casing: **YES** / NO

Notes: _____

ECI MONITORING WELL PURGE AND SAMPLE FORM

Date: 12/30/14

Project Name: Shalabi	Project No.: 00482-03	Well No.: MW11
Field Personnel: Kyle S.	Static Water Level: Dry Well	
Water Level Measurement Method: Electronic Tape		
Time Start Purge: None	Time End Purge: None	Time Sampled: 3:00 PM
Measuring Point Description: Top of Casing		
Purge Method: Low Flow (Peristaltic Pump)	Purge Depth: one foot off bottom of water column	

Well Volume Calculation (Fill in before purging)	Total Depth (ft)	Depth to Water (ft)	Water Column (ft)	Multiplier for Casing Diameter (in) (Circle) $V = (d^2h/77.01)$			Casing Volume (gal)
	14.62	7.11					

Volume Purged	N/A	N/A					
pH	N/A	N/A					
Temperature C.	N/A	N/A					
Conductivity uS/cm	N/A	N/A					
Turbidity	N/A	N/A					
Color	Cloudy	Cloudy					
Odor/Sheen	Oder	Oder					

Comments:

Percent Recovery:	Depth to Water at Sampling (ft): one foot below top of water column
Sampling Equipment: Peristaltic pump/dedicated tubing	

Sample No.	No. of Containers	Container Type	Preservative	Field Filtration	Analysis Request (Method)	Comments
MW11	2	40 mil Voa	None	No	G/BTEX/ 8260C	

Total Discharge (gal): Dry Well	Disposal Method: Drum	Drum Designation(s)/Volume:

WELL HEAD CONDITIONS CHECKLIST (Circle **YES** or NO -- if NO, add comments)

Well Security Devices OK (Bollards, Christy Lid, Casing Lid and Lock): **YES** / NO

Inside of Well Head and Outer Casing Dry: YES / **NO**

Well Casing: **YES** / NO

Notes: _____