Quarterly Groundwater Monitoring
Fourth Quarter 2014

Tiger Oil Summitview
Yakima, Washington

for
Washington State Department of Ecology

March 26, 2015

GeoEngineers
Earth Science + Technology

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File No. 0504-101-00

March 26, 2015

Prepared for:

Washington State Department of Ecology
Toxics Cleanup Program - Central Region Office
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Yakima, Washington 98902-3452

Attention: Mary Monahan

Prepared by:

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Table of Contents

1.0 INTRODUCTION

This report describes groundwater monitoring activities conducted in December 2014 at the Tiger Oil Summitview site located at 5511 Summitview Road in Yakima, Washington (herein referred to as "site"). The site is located approximately as shown in the Vicinity Map, Figure 1.

Environmental activities at the site currently are managed by the Washington State Department of Ecology (Ecology). This report provides a brief site description and background, our scope of services, a description of field activities, chemical analytical results and conclusions for the December 2014 groundwater monitoring event.

2.0 SITE DESCRIPTION AND BACKGROUND

The Tiger Oil Summitview property is located at 5511 Summitview Road in Yakima, Washington. The site operated as a retail gasoline station and convenience store until closure in 2001. The site contains two buildings and two historic fuel dispenser islands as show on Site Plan and Sample Locations, Figure 2. Buildings at the site include the larger former convenience store in the northeast corner of the site and a smaller former satellite pay station in the southwest corner of the site. Former fuel dispenser islands are located in the south and west areas of the property. The site is generally paved, except where three former underground storage tanks (USTs) were removed in the east-central portion of the site.

In 2005, three USTs were decommissioned and removed from the site. Underground fuel delivery lines were drained and capped with quick setting cement and the tank excavation was backfilled with imported sands, gravels and cobbles (Tetra Tech, 2005). Samples collected during the tank removal indicated gasoline-range petroleum hydrocarbons (GRPH), benzene, toluene, ethylbenzene and xylene (BTEX), and lead were present at concentrations greater than MTCA Method A cleanup levels approximately 11 to 15 feet below ground surface (bgs) in the soil of the tank beds (Tetra Tech, 2005). A follow-up assessment in the area of the dispensers and product lines indicated concentrations of GRPH and BTEX greater than MTCA Method A cleanup levels at the western most fuel dispenser island at a depth of 3½ feet (Wayne Perry, 2005). Samples taken along the product lines and at the southern fuel dispenser island did not indicate the presence of GRPH or BTEX greater than laboratory detection limits (Wayne Perry, 2005).

In 2014, GeoEngineers Inc. (GeoEngineers) conducted additional assessment activities in order to confirm the presence and extents of contamination identified during the 2005 UST removal. The additional assessment activities included advancing six direct-push borings, collecting groundwater samples from temporary wells installed in two of the direct-push borings where groundwater was encountered, installing three groundwater monitoring wells and collecting groundwater samples from each of the new wells in September 2014.

The 2014 assessment indicated the presence of GRPH, BTEX and naphthalenes exceeding MTCA Method A cleanup levels in soil at SVDP-1, SVDP-2 and SVMW-3 (GeoEngineers, 2014c). Groundwater laboratory analytical results indicated GRPH, DRPH, benzene, xylenes and naphthalenes were present at concentrations exceeding MTCA Method A cleanup criteria in SVMW-3, located south of the former tank pit and south fuel dispenser island. Analytical results of groundwater collected from SVMW-2 located south of the subject property across Summitview Avenue did not indicate the presence of petroleum hydrocarbons.

Monitoring well SVMW-1, installed presumably upgradient of the fuel dispenser islands, was screened in a non-water bearing subsurface stratum and has provided limited groundwater information to date. Exploration locations and cleanup level exceedances are shown in Figure 2.

3.0 SCOPE OF SERVICES

GeoEngineers prepared a Work Plan, dated April 15, 2014 (GeoEngineers, 2014a) and supplemental memorandum (GeoEngineers, 2014b) to guide the groundwater monitoring activities described herein. The scope of services performed by GeoEngineers during the quarterly groundwater monitoring event conducted on December 12, 2014 included:

- Measuring well headspace vapors and depth to groundwater in each of the three monitoring wells (SVMW-1 through SVMW-3).
- Measuring water quality parameters including pH, temperature, specific conductivity, dissolved oxygen (DO), oxidation-reduction potential (ORP) and ferrous iron in groundwater wells SVMW-2 and SVMW-3.
- Collecting primary groundwater samples from each well and a duplicate sample from SVMW-3 using low-flow/low-stress sampling techniques. The sample from SVMW-1 was collected with a bailer and the well was not purged prior to sampling because of insufficient water within the well.
- Submitting groundwater samples to TestAmerica Laboratories, Inc. (TestAmerica) for chemical analysis of the following (note the sample from SVMW-1 was only analyzed for GRPH):
    - GRPH (Northwest Method NWTPH-Gx);
    - DRPH (Northwest Method NWTPH-Dx, with and without silica gel cleanup);
    - Volatile organic compounds (VOCs) (Environmental Protection Agency [EPA] Method 8260C);
    - 1,2-dibromoethane (EDB) (EPA Method 8011C);
    - Total organic carbon (TOC) (Method SM5310C);
    - Lead (EPA Method 200.7); and
    - Naphthalenes (EPA Method 8260C).
- Comparing laboratory analytical results with applicable project cleanup criteria.
- Calculating groundwater elevation within monitoring wells SVMW-2 and SVMW-3. The minimal water level measured in SVMW-1 indicates water in this well is not representative of the shallow perched groundwater under assessment and therefore no elevation is reported.
- Estimating general groundwater flow direction based on calculated elevations within monitoring wells SVMW-2 and SVMW-3. The hydraulic gradient across the site was not calculated because the groundwater elevation in SVMW-1 is not representative of general groundwater conditions below the site.

Samples were also analyzed for two natural attenuation parameters: nitrate and sulfate (SO_4) using EPA Method 300.0. Soluble ferrous iron (Fe^{+2}), which has a 15-minute hold time, was analyzed in the field using a Hach IR-18C color disc test kit and the 1,10 phenanthroline testing method.

Note that insufficient amounts of groundwater were present in well SVMW-1. Therefore, water quality parameters were not measured in that well. Sufficient amounts of groundwater were available to collect a groundwater sample for GRPH analysis only.

4.0 FIELD ACTIVITIES

4.1. Monitoring Well Headspace Vapor Monitoring

Monitoring well headspace vapors were measured on December 12, 2014 using a photoionization detector (PID). Headspace measurements were collected by inserting the PID probe into the well casing immediately after removing the well cap and recording the maximum observed concentration. Headspace vapors were less than 1.0 parts per million (ppm) in each monitoring well, as shown in Summary of Groundwater Field Parameters, Table 1.

4.2. Groundwater Elevation Monitoring

Static depth to groundwater was measured in monitoring wells SVMW-1 through SVMW-3 on December 12, 2014 using an electronic water level indicator. Depth to groundwater ranged from 16.90 feet (SVMW-2) to 39.49 feet (SVMW-1) below the top of well casing, as shown in Summary of Groundwater Level Measurements, Table 2. Groundwater elevations ranged from about 1,181.46 feet in SVMW-1 to 1,201.00 feet in SVMW-3. In monitoring wells SVMW-2 and SVMW-3, groundwater elevations decreased on average approximately 0.2 feet relative to the previous monitoring event conducted during September 2014.

Groundwater elevations in wells SVMW-2 and SVMW-3 appear to be representative of the shallow perched aquifer beneath the site. Based on groundwater elevations measured in SVMW-2 and SVMW-3 on December 12, 2014, groundwater flow in the shallow unconfined aquifer beneath the property generally was southerly, as shown in Groundwater Elevations December 12, 2014, Figure 3. However, groundwater flow direction and gradient could not be fully estimated because of the lack of water in SVMW-1.

4.3. Groundwater Sampling

Monitoring wells SVMW-2 and SVMW-3 were purged and sampled in general conformance with standard low-flow sampling methodology on December 12, 2014. A duplicate sample was collected from SVMW-3. A peristaltic pump and dedicated well tubing was used to purge and sample each well. Groundwater quality parameters were measured at approximate 3-minute intervals during well purging. Groundwater samples were collected in conformance with the stabilization and/or maximum purge time criteria presented in Appendix A. Groundwater field parameters recorded at the conclusion of well purging are provided in Table 1.

Note that a minimal amount of groundwater was present in well SVMW-1 and a small volume of water was collected from the well using a bailer. The well was not purged prior to sampling and water quality parameters were not measured. Water collected from the well, was placed directly into a sample container for GRPH. Additional water volume was not available for other analyses.

Purge water generated during groundwater sampling was drummed, labeled and stored on the subject property pending profiling and disposal.

5.0 CHEMICAL ANALYTICAL RESULTS

5.1. Groundwater Chemical Analytical Results

Analytical results for samples collected on December 12, 2014 are tabulated and compared to previous results and MTCA Method A cleanup levels in Summary of Chemical Analytical Results – Groundwater, Table 3. TestAmerica's laboratory report is provided in Appendix B.

The following is a summary of the December 12, 2014 analytical data:

- GRPH was detected at a concentration of 13,200 micrograms per liter (µg/L) in the sample collected from SVMW-3, which is greater than the MTCA Method A cleanup level of 800 µg/L (when benzene is present). GRPH was not detected in samples collected from SVMW-1 or SVMW-2; however, SVMW-1 is not be screened in the same groundwater formation as other site wells and analytical results from this well are most likely not representative of general site conditions.
- DRPH was detected at a concentration of 650 µg/Lin the sample collected from SVMW-3, which is greater than the MTCA Method A cleanup level of 500 µg/L. DRPH was not detected in the sample collected from SVMW-2.
- Benzene was detected at a concentration of 32.0 µg/L in the sample collected from SVMW-3, which exceeds the MTCA Method A cleanup level of 5 µg/L. Benzene was not detected in the sample collected from SVMW-2.
- EDB was detected at a concentration of 0.181 µg/L in the sample collected from SVMW-3, which is greater than the MTCA Method A cleanup level of 0.01 µg/L. EDB was not detected in the sample collected from SVMW-2.
- Naphthalene was detected at a concentration of 200 µg/L in the sample collected from SVMW-3, which is greater than the MTCA Method A cleanup level of 160 µg/L. Naphthalene was not detected in the sample collected from SVMW-2.
- Total xylenes were detected at a concentration of 3,096 µg/L in the sample collected from SVMW-3, which is greater than the MTCA Method A cleanup level of 1,000 µg/L. Xylenes were not detected in the sample collected from SVMW-2.
- Ethylbenzene, toluene, 1,3,5-trimethylbenzene, 1,2,4-trimethylbenzene and n-propylbenzene were detected at concentrations greater than laboratory reporting levels in SVMW-2 and SVMW-3.
- Lead, EDC and MTBE were not detected at concentrations greater than laboratory reporting levels in SVMW-2 and SVMW-3.

In addition to the contaminants of concern, groundwater samples were analyzed for natural attenuation parameters and field parameters. Results of laboratory-analyzed natural attenuation parameters are provided in Table 3. Field measurement results are provided in Table 1. Reported field parameters reflect stabilized conditions at the conclusion of well purging during low-flow sampling.

Analytical results of the groundwater collected from well SVMW-3 (including a duplicate sample) were similar to results from the September 2014 sampling event.

5.2. Natural Attenuation Parameters

Natural attenuation parameters evaluated during the December 12, 2014 groundwater monitoring event included nitrate, sulfate and field parameters. Results of laboratory-analyzed natural attenuation parameters are provided in Table 3. Field measurement results are provided in Table 1. Because the water table is believed to have a minimal thickness of about 2 feet and subsurface soil conditions were generally fine grained silts and clays with lesser amounts of sand and gravel water quality of the aquifer may naturally be of low quality. This makes it difficult to evaluate natural attenuation parameters and effects from outside influences like petroleum contamination, lawn watering and fertilizer applications.

DO is generally low in SVMW-2 and SVMW-3 and this suggests poor water quality of the groundwater where SVMW-2 and SVMW-3 are screened. DO is slightly lower in SVMW-3 where petroleum contamination has been observed. Similar observations occur when comparing nitrate and sulfate concentrations between SVMW-3 and SVMW-2. Given that SVMW-2 is located near a residential lawn, the influence of lawn watering and fertilizer applications is generally unknown when compared to SVMW-3 located underneath the asphalt concrete pavement at the site.

5.3. QA/QC Summary

GeoEngineers reviewed the laboratory internal quality assurance/quality control (QA/QC) in the context of project data quality goals. Results of our review, as well as our evaluation of data suitability, are provided in Appendix B. Results of the duplicate sample collected from well SVMW-3 were within an allowable range of variance. In summary, it is our opinion that the quality of the analytical data generally is acceptable for the intended use. However, the following items were noted:

- For Samples SVMW-3-121214 and MW-Dup-121214, the laboratory flagged the diesel-range hydrocarbons results with "Q5," indicating that the diesel-range hydrocarbons results were being influenced by the relative concentration of gasoline-range hydrocarbons in the samples. For this reason, the positive results for diesel-range hydrocarbons were qualified as estimated (J) in these samples, in order to signify a potential high bias.
- For Samples SVMW-3-121214 and MW-Dup-121214, the laboratory flagged the EDB results with "R1," indicating the relative percent difference (RPD) between the results from the dual-column electron capture detector (ECD) system was greater than 40 percent in each sample. For this reason, the positive results for EDB were qualified as estimated (J) in these samples.

6.0 CONCLUSIONS

Fourth quarter 2014 groundwater monitoring activities occurred at the Summitview site on December 12, 2014. Depth to groundwater ranged from 16.90 feet (SVMW-2) to 17.38 feet (SVMW-3) below the top of well casing. Groundwater elevations ranged from about 1,198.69 feet in SVMW-2 to 1,201.00 feet in SVMW-3; groundwater elevations decreased on average approximately 0.2 feet, as measured in the three site wells, relative to the previous monitoring event. Groundwater elevations at the site indicated groundwater flow in the shallow unconfined aquifer beneath the property generally was southerly. Data from SVMW-1 is not included in this summary because groundwater conditions in SVMW-1 are not representative of general groundwater conditions at the site.

The groundwater sample collected in December 2014 from monitoring well SVMW-3 contained concentrations of GRPH, DRPH, benzene, EDB, naphthalene and xylenes greater than their MTCA Method A cleanup levels. Note that the DRPH and EDB analytical results contained laboratory qualifiers and the results are estimated. Petroleum concentrations in the sample collected from SVMW-3 were similar to those in the sample collected in September 2014. The groundwater sample collected from SVMW-2 did not contain detectable concentrations of site contaminants of concern.

The groundwater sample from SVMW-1 did not contain detectable concentrations of GRPH; however, SVMW-1 is not screened in the same groundwater formation as other site wells and this well was not purged prior to sampling due to low water volume in the well. Analytical results from SVMW-1 might not be representative of general site conditions.

7.0 LIMITATIONS

We have prepared this report for the exclusive use of Ecology and their authorized agents.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. The conclusions and opinions presented in this report are based on our professional knowledge, judgment and experience. No warranty or other conditions, express or implied, should be understood.

Any electronic form, facsimile or hard copy of the original document (email, text, table and/or figure), if provided, and any attachments should be considered a copy of the original document. The original document is stored by GeoEngineers, Inc. and will serve as the official document of record.

Please refer to "Report Limitations and Guidelines for Use," Appendix C, for additional information pertaining to use of this report.

8.0 REFERENCES

GeoEngineers, Inc., 2014a. "Sampling and Analysis Plan Soil and Groundwater Assessment." Three Tiger Oil Sites, Yakima, Washington. GEI File No. 0504-101-00, April 15, 2014.

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U.S. Environmental Protection Agency. 2010. "Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review," EPA-540-R-10-011. January 2010.

Wayne Perry. 2005. "Results of Underground Piping and Dispenser Island Sampling at Tiger Oil Corporation Facility, 5511 Summitview in Yakima, Washington," December 14, 2005.

TABLES

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Table 1

Summary of Groundwater Field Parameters[1]

Tiger Oil Summitview

Yakima, Washington

Well Number	Date Collected	pH	Temperature (°C)	Specific Conductivity (mS/cm)	Dissolved Oxygen (mg/L)	ORP - Field[2] (mV)	ORP - Normalized[3] (mV)	Turbidity (NTU)	Soluble Ferrous Iron (mg/L)	Monitoring Well Headspace[5] (ppm)
SVMW-1	09/18/14	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NA	NM[4]	NM[4]	0.0
	12/12/14	NM[4]	NM[4]	NM[4]	NM[4]	NM[4]	NA	NM[4]	NM[4]	0.0
SVMW-2	09/18/14	6.97	16.78	0.75	1.11	170	372	0.8	0.0	0.1
	12/12/14	6.88	16.93	0.80	3.67	210	412	0.3	0.0	0.0
SVMW-3	09/18/14	6.81	17.14	0.78	0.96	-10	192	1.5	1.5	3.8
	12/12/14	6.83	17.07	0.80	1.09	-70	132	5.0	1.0	0.2

Notes:

[1]Reported water quality parameters reflect stabilized conditions at the conclusion of well purging during low-flow sampling.

[2]Field ORP values are relative to the reference electrode associated with the multi-parameter meter.

[3]Normalized ORP values have been normalized, using algorithms provided by the instrument manufacturer, to the standard hydrogen electrode (SHE).

[4]Not measured (NM) due to lack of water in well.

[5]Well headspace measurements were obtained using a photoionization detector immediately upon removal of the well's compression cap.

ORP = Oxidation reduction potential; °C = degrees Celsius; mS/cm = millisiemens per centimeter; mg/L = milligrams per liter; mV = millivolts; NM = not measured

NA = not applicable; NTU = nephelometric turbidity units; ppm = parts per million

Table 2

Summary of Groundwater Level Measurements

Tiger Oil Summitview

Yakima, Washington

Well Number	Grid Northing[1] (feet)	Grid Easting[1] (feet)	Top of Casing Elevation[2] (feet)	Screen Elevation[2] (feet)	Date Measured	Depth to Groundwater[3] (feet)	Groundwater Elevation[2] (feet)	Change in Groundwater Elevation[4] (feet)
SVMW-1	462054.5	1619556.5	1,220.95	1191.0 to 1181.0	09/18/14	39.30	NA[5]	NA
					12/12/14	39.49	NA[5]	NA
SVMW-2	461870.0	1619606.4	1,215.59	1204.6 to 1189.6	09/18/14	16.70	1,198.89	NA
					12/12/14	16.90	1,198.69	-0.20
SVMW-3	461949.3	1619606.4	1,218.38	1208.4 to 1193.4	09/18/14	17.20	1,201.18	NA
					12/12/14	17.38	1,201.00	-0.18

Notes:

[1]Grid northing and easting are referenced to NAD83, Washington State Plane Coordinate System, South Zone.

[2]Elevations are referenced to the North American Vertical Datum of 1988 (NAVD88).

[3]Depth to water measurements obtained from the north side of the top of PVC well casing.

[4]Represents change in groundwater elevation from previous monitoring event, as measured in monitoring wells.

[5]Water levels measured in SVMW-1 indicate groundwater conditions in this well might not be representative of general site groundwater conditions, therefore no elevation is reported.

NA = Not Applicable

Table 3

Summary of Chemical Analytical Results - Groundwater[1]

Tiger Oil Summitview

Yakima, Washington

Well ID	Regulatory	SVMW-1[3]		SVMW-2		SVMW-3		Duplicate (SVMW-3)
Date Sampled	Levels[2]	9/18/2014	12/12/2014	9/18/2014	12/12/2014	9/18/2014	12/12/2014	12/12/2014
Method NWTPH-Gx - Gasoline Range (µg/L)								
Gasoline-range hydrocarbons	800/1,000[4]	<100	<100	<100	<100	**12,700**	**13,200**	**11,600**
Method NWTPH-Dx - Diesel Range (µg/L)								
Diesel-range hydrocarbons	500	NA	NT	<239	<232	**815 J**	**650 J**	**818 J**
Diesel-range hydrocarbons w/silica gel	500	NT	NT	NT	NT	**968 J**	**592 J**	**808 J**
Heavy Oil-Range Hydrocarbons	500	NA	NT	<399	<387	<385	<385	<387
Heavy Oil-Range Hydrocarbons w/silica gel	500	NT	NT	NT	NT	<385	<385	<387
Method EPA 8011 - EDB (µg/L)								
1,2-dibromoethane (EDB)	0.01	NT	NT	NT	<0.0100	NT	**0.181 J**	**0.168 J**
Method EPA 8260 - VOCs (µg/L)[5]								
1,2-Dichloroethane (EDC)	5	<1.00	NT	<1.00	<1.00	<1.00	<100[9]	<100[9]
Benzene	5	<0.200	NT	<0.200	<0.200	**27.6**	**32.0**	**32.0**
Ethylbenzene	700	<1.00	NT	<1.00	<1.00	**436**	**571**	**567**
Methyl t-butyl ether (MTBE)	20	<1.00	NT	<1.00	<1.00	<1.00	<100[9]	<100[9]
Naphthalene	160	<2.00	NT	<2.00	<2.00	**236**	**200**	**201**
Toluene	1,000	<1.00	NT	<1.00	<1.00	**422**	**427**	**431**
Xylene, m-,p-	1,000[6]	<2.00	NT	<2.00	<2.00	**2,000**	**2,200**	**2,200**
Xylene, o-		<1.00	NT	<1.00	<1.00	**794**	**896**	**893**
Xylene, Total		<3.00	NT	<3.00	<3.00	**2,000**	**2,200**	**3,093**
1,3,5-Trimethylbenzene	NE	<1.00	NT	<1.00	<1.00	**140**	**211**	**200**
1,2,4-Trimethylbenzene	NE	<1.00	NT	<1.00	<1.00	**660**	**763**	**767**
n-propylbenzene	NE	<1.00	NT	<1.00	<1.00	**82.0**	**107**	**106**
Metals Method EPA 200.7 - Total Lead (mg/L)								
Lead	0.015	NT	NT	NT	<0.0140	NT	<0.0140	<0.0140
Conventionals (mg/L)								
Nitrate-Nitrogen	10[7]	**3.43**	NT	**6.16**	**7.10**	**2.45**	**4.86**	**4.04**
Sulfate	250[8]	**28.6**	NT	**32.0**	**31.2**	**15.4**	**19.1**	**16.9**
Total Organic Carbon	NE	NA	NT	**4.39 J**	**1.79**	**3.45**	**2.69**	**2.94**

Notes:

[1]Chemical analyses conducted by TestAmerica of Spokane, Washington.

[2]Regulatory level refers to Washington State Model Toxics Control Act (MTCA) Method A cleanup level unless otherwise footnoted.

[3]Samples from SVMW-1 may not be representative of general site groundwater conditions.

[4]Cleanup level for GRPH is 800 µg/L when benzene is present, 1,000 µg/L when benzene is not present.

[5]Only VOCs detected at concentrations greater than their reporting limits are listed in the table. For a complete list of VOCs analyzed see the laboratory analytical report, Appendix B.

[6]Cleanup level for total xylenes.

[7]Maximum contaminant level established by Title 40, Volume 19 of the Code of Federal Regulations.

[8]Secondary maximum contaminant level recommended by the Environmental Protection Agency.

[9]Reporting limits were greater than regulatory levels as a result of sample dilutions and the calibration range of the laboratory analytical equipment.

J flag indicates results are qualified as estimated. See data validation report for additional information.

Bold indicates analyte concentration exceeds laboratory reporting limit.

Red Bold and outline indicates analyte concentration exceeds referenced regulatory level.

µg/L = micrograms per liter; mg/L = milligrams per liter; NA = not applicable; NE = not established; NT = not tested

FIGURES

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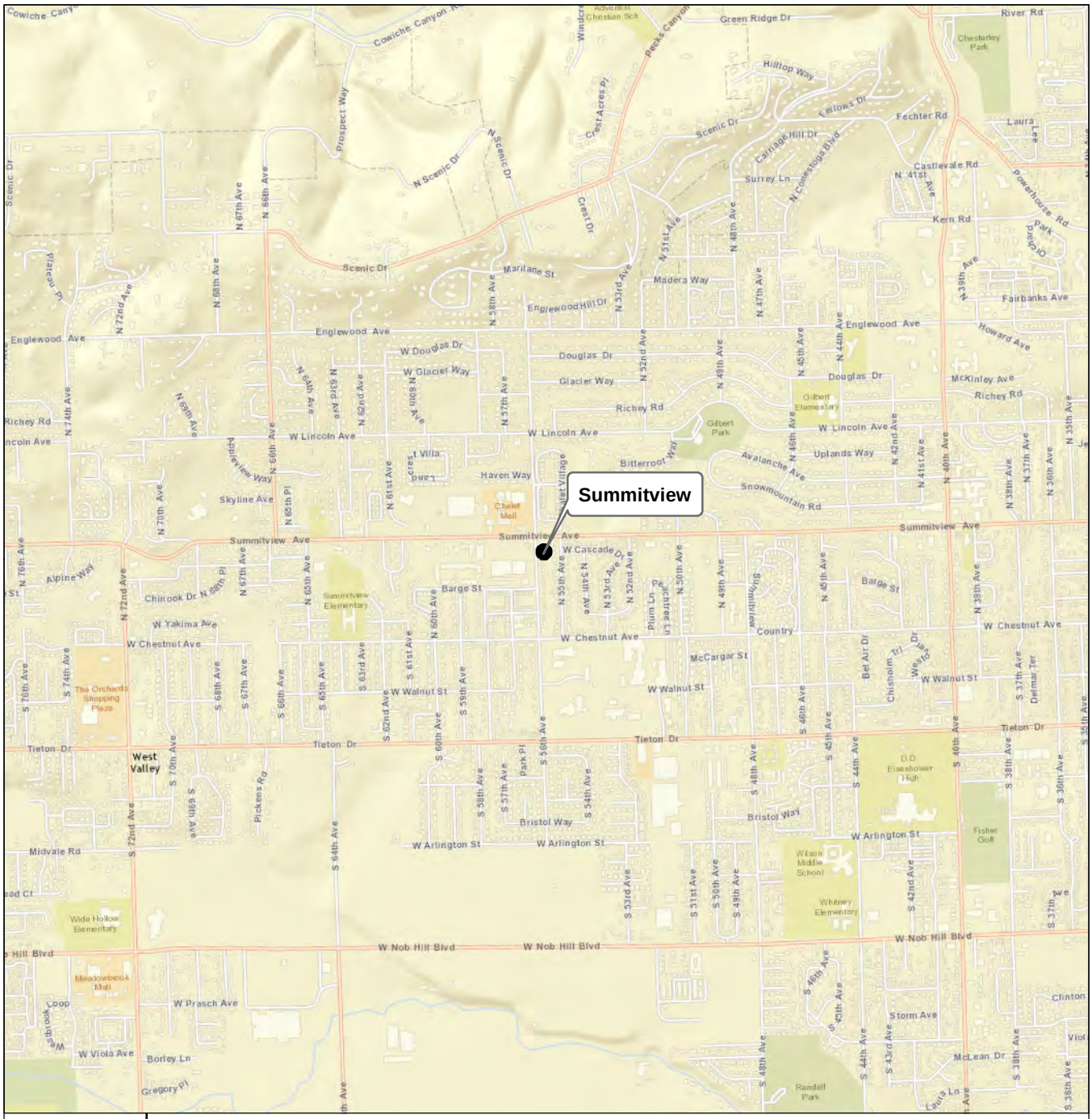

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
Data Sources: ESRI Data & Maps, Street Maps 2008.
Base map from ESRI Data Online.
Projection: NAD 1983, UTM Zone 10 North.

Vicinity Map

Tiger Oil Summitview
Yakima, Washington

GeoEngineers

Figure 1

Map Revised: 11 September 2014 ccabrera
Path: P:\0\0504101_GIS\MXD\050410100_F1_VM_SV.mxd
Office: PORT

Legend

- SVDP-3 — Approximate Soil Boring Location
- SVMW-1 — Approximate Monitoring Well Location and Groundwater Elevation
- GRPH and/or DRPH, ORPH, Naphthalenes and BTEX Concentrations in Soil and/or Groundwater Greater than MTCA Method A Cleanup Levels
- Approximate Location of Product Piping
- Approximate DID Line Location
- Approximate Former Tank Pit Location
- Approximate Property Boundary

N
W E
S

30 0 30
Feet

Data Source: Aerial base from ArcGIS Online.
Projection: NAD 1983 StatePlane Washington South FIPS 4602 Feet
Notes:
1. The locations of all features shown are approximate.
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3. Product piping location estimated from "Results of Underground Piping and Dispenser Island Sampling at Tiger Oil Corporation Facility, 5511 Summitview in Yakima, Washington". Figure 2 Wayne Perry, Inc. December 14, 2005.

Site Plan and Sample Locations

Tiger Oil Summitview
Yakima, Washington

GeoEngineers

Figure 2

Map Revised: 05 February 2015 ccabrera
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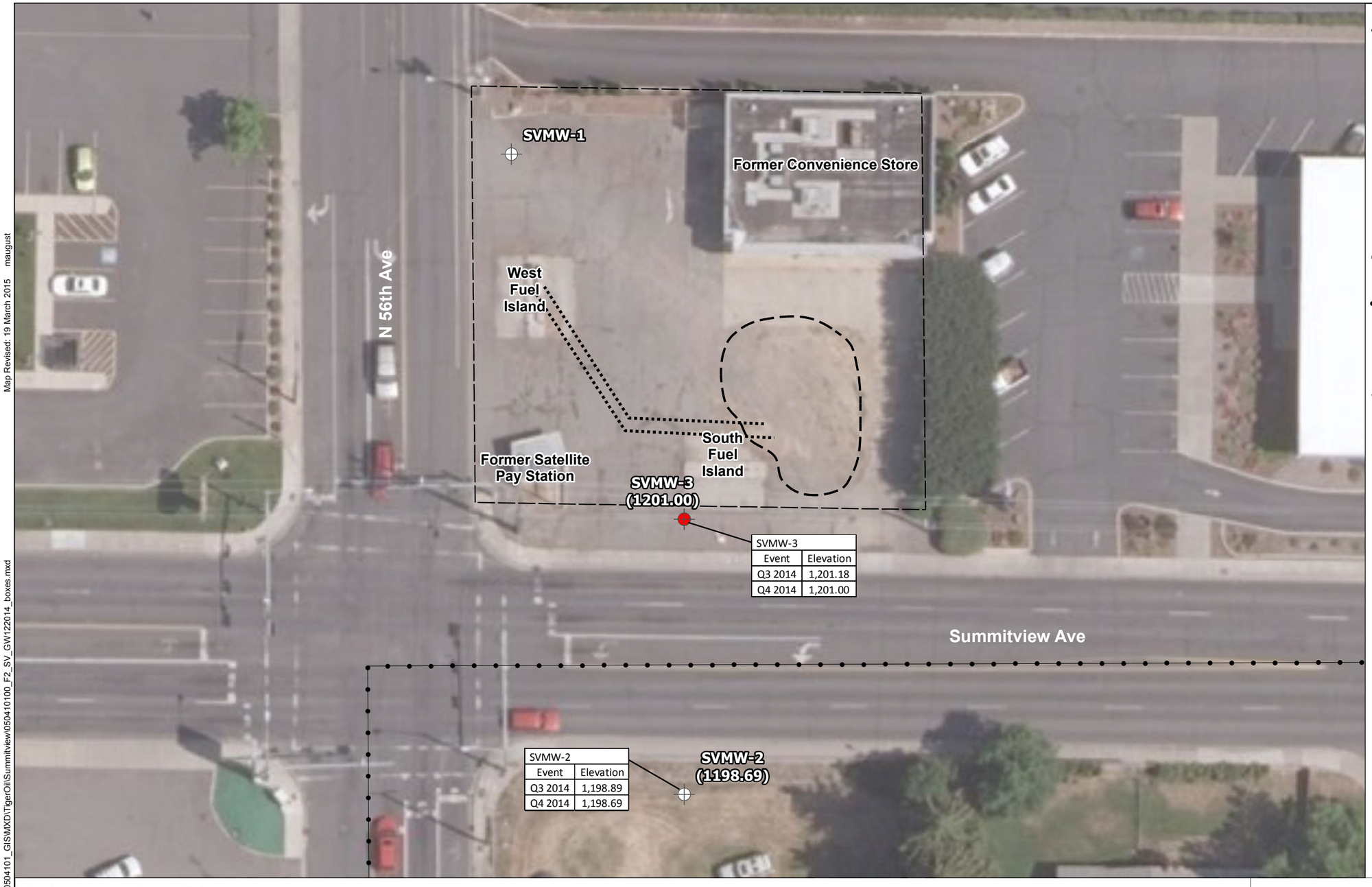
Office: PORT



Legend

- SVMW-2 (1198.69) — Approximate Monitoring Well Location and Groundwater Elevation
- GRPH and/or DRPH, Benzene, EDB, Naphthalene, or Xylene Concentrations in Groundwater Greater than MTCA Method A Cleanup Levels
- Approximate Location of Product Piping
- Approximate DID Line Location
- Approximate Former Tank Pit Location
- Approximate Property Boundary

N
W E
S

30 0 30
Feet

Data Source: Aerial base from ArcGIS Online.

Projection: NAD 1983 StatePlane Washington South FIPS 4602 Feet

Notes:
1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.
3. Groundwater elevations are referred to the North American Vertical Datum of 1988 (NAVD 88).
4. Groundwater elevations contours interpreted by Surfer Version 12.

Groundwater Elevations December 12, 2014

Tiger Oil Summitview
Yakima, Washington

GeoEngineers

Figure 3

Map Revised: 19 March 2015 maugust

Office: PORT Path: \\pdx\projects\0\05041\01_GIS\MXD\TigerOilSummitview\050410100_F2_SV_GW122014_boxes.mxd

APPENDICES

GeoEngineers

APPENDIX A
Field Procedures

APPENDIX A
FIELD PROCEDURES

General

Groundwater conditions at the Tiger Oil Summitview site were monitored on December 12, 2014 by measuring depth to groundwater in monitoring wells SVMW-1 through SVMW-3 and sampling groundwater from monitoring wells SVMW-2 and SVMW-3, which are situated at the approximate locations shown on Figure 3. Note that well SVMW-1 did not contain sufficient groundwater to measure water quality parameters, purge the well prior to sampling, or collect a groundwater sample for the full suite of analytes. Only GRPH was analyzed from the groundwater sample collected from SVMW-1. Field methods generally were performed in compliance with the project Work Plan dated April 15, 2014 (GeoEngineers, 2014a), with the exception of those items noted above with regard to SVMW-1.

Groundwater Elevations

Depths to groundwater were measured relative to the north side of the monitoring well casing rim using an electric water level indicator. The probe of the water level indicator was decontaminated between wells using a detergent wash, followed by two distilled water rinses.

Low-Flow Sampling Procedures

Groundwater sampling was performed consistent with the EPA's low-flow groundwater sampling procedure, as described by EPA (1996) and Puls and Barcelona (1996). Monitoring well purging and sampling activities were accomplished using a Cole-Parmer Masterflex or GeoTech Environmental peristaltic pump and dedicated tubing. During purging activities, water quality parameters, including pH, conductivity, temperature, ORP and DO, were measured using a Troll 9500 multi-parameter meter equipped with a flow-through cell. Water quality measurements were recorded approximately every 3 minutes. The meter calibration was verified at the beginning of each work day consistent with manufacturer recommendations prior to purging and sampling activities.

Groundwater samples from SVMW-2 and SVMW-3 were collected after (1) water quality parameters had stabilized; or (2) a maximum purge time of 30 minutes was achieved. During purging and sampling, purge rate was not allowed to exceed 500 milliliters per minute. Water quality parameter stabilization criteria include the following:

- Turbidity: ±10 percent for values greater than 5 nephelometric turbidity units (NTU);
- DO: ±10 percent for values greater than 0.5 mg/L;
- Conductivity: ±3 percent;
- Temperature: ±3 percent; and
- ORP: ±10 millivolts (mV).

After the groundwater quality stabilization criteria or maximum purge time were reached, the pump's discharge tubing was disconnected from the flow-through cell and groundwater samples were collected for analysis.

The groundwater sample from SVMW-1 was collected using a bailer and water quality parameters were not recorded for this well. Water removed from SVMW-1 was placed directly into the GRPH Sampling container.

Sample from SVMW-2 and SVMW-3 were pumped directly into sample containers supplied by the laboratory. Groundwater samples collected for chemical analysis were kept cool during on-site storage and transport to the laboratory. Chain-of-custody procedures were observed during transport of the groundwater samples.

APPENDIX B
Chemical Analytical Laboratory Report and Data Validation

APPENDIX B
CHEMICAL ANALYTICAL LABORATORY REPORT AND DATA VALIDATION

General

This report documents the results of a United States EPA-defined Stage 2A data validation (EPA Document 540-R-08-005; EPA, 2009) of analytical data from the analyses of groundwater samples collected as part of the December 2014 sampling event, and the associated laboratory and field quality control (QC) samples. The samples were obtained from the Tiger Oil, Summitview Site located at 5511 Summitview Road in Yakima, Washington.

OBJECTIVE AND QUALITY CONTROL ELEMENTS

GeoEngineers completed the data validation consistent with the EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (EPA, 2008) and Inorganic Superfund Data Review (EPA, 2010) (National Functional Guidelines) to determine if the laboratory analytical results meet the project objectives and are usable for their intended purpose. Data usability was assessed by determining if:

- The samples were analyzed using well-defined and acceptable methods that provide reporting limits below applicable regulatory criteria;
- The precision and accuracy of the data are well-defined and sufficient to provide defensible data; and
- The QA/QC procedures utilized by the laboratory meet acceptable industry practices and standards.

In accordance with Quality Assurance Project Plan (Appendix A of the Sampling and Analysis Plan, Soil and Groundwater Assessment; GeoEngineers, 2014), the data validation included review of the following QC elements:

- Data package completeness
- Chain-of-custody documentation
- Holding times and sample preservation
- Surrogate recoveries
- Method blanks
- Matrix spikes (MS)/matrix spike duplicates (MSD)
- Laboratory control samples (LCS)/laboratory control sample duplicates (LCSD)
- Laboratory and field duplicates
- Miscellaneous

VALIDATED SAMPLE DELIVERY GROUPS

This data validation included review of the sample delivery group (SDG) listed below in Table B-1.

TABLE B-1: SUMMARY OF VALIDATED SAMPLE DELIVERY GROUPS

Laboratory SDGs	Samples Validated
SXL0087	SVMW-1-121214, SVMW-2-121214, SVMW-3-121214, MW-Dup-121214

CHEMICAL ANALYSIS PERFORMED

TestAmerica, located in Spokane, Washington, performed laboratory analyses on the groundwater samples using the following methods:

- Petroleum hydrocarbons (NWTPH-Dx) by Method NWTPH-Dx;
- Petroleum hydrocarbons with Silica Gel (SG) Cleanup (NWTPH-Dx/SG) by Method NWTPH-Dx/SG;
- Gas-range hydrocarbons (NWTPH-Gx) by Method NWTPH-Gx;
- VOCs by Method SW8260C;
- 1,2-dibromoethane (EDB) by Method SW8011;
- Total metals by Method EPA200.7;
- Anions by Method EPA300.0; and
- TOC by Method SM5310C.

DATA VALIDATION SUMMARY

The results for each of the QC elements are summarized below.

Data Package Completeness

TestAmerica provided all required deliverables for the data validation according to the National Functional Guidelines. The laboratory appears to have followed adequate corrective action processes; however, the laboratory analytical report does not contain a case narrative.

Chain-of-Custody Documentation

Chain-of-custody (COC) forms were provided with the laboratory analytical report. The COCs were accurate and complete when submitted to the laboratory.

Holding Times and Sample Preservation

The sample holding time is defined as the time that elapses between sample collection and sample analysis. Maximum holding time criteria exist for each analysis to help ensure that the analyte concentrations found at the time of analysis reflect the concentration present at the time of sample collection. Established holding times were met for all analyses. The sample cooler arrived at the laboratory within the appropriate temperatures of between 2 and 6 degrees Celsius.

Surrogate Recoveries

A surrogate compound is a compound that is chemically similar to the organic analytes of interest, but unlikely to be found in any environmental sample. Surrogates are used for organic analyses and are added to all samples, standards and blanks to serve as an accuracy and specificity check of each analysis. The

surrogates are added to the samples at a known concentration and percent recoveries are calculated following analysis. All surrogate percent recoveries for field samples were within the laboratory control limits.

Method Blanks

Method blanks are analyzed to ensure that laboratory procedures and reagents do not introduce measurable concentrations of the analytes of interest. A method blank was analyzed with each batch of samples, at a frequency of 1 per 20 samples. For all sample batches, method blanks for all applicable methods were analyzed at the required frequency. None of the analytes of interest were detected above the reporting limits in any of the method blanks.

Matrix Spikes/Matrix Spike Duplicates

Since the actual analyte concentration in an environmental sample is not known, the accuracy of a particular analysis is usually inferred by performing a MS analysis on one sample from the associated batch, known as the parent sample. One aliquot of the sample is analyzed in the normal manner and then a second aliquot of the sample is spiked with a known amount of analyte concentration and analyzed. From these analyses, a percent recovery is calculated. MSD analyses are generally performed for organic analyses as a precision check and analyzed in the same sequence as a matrix spike. Using the result values from the MS and MSD, the RPD is calculated. The percent recovery control limits for MS and MSD analyses are specified in the laboratory documents, as are the RPD control limits for MS/MSD sample sets.

For inorganic methods, the matrix spike is followed by a post-digestion spike sample if any element percent recoveries were outside the control limits in the matrix spike. The percent recovery control limits for matrix spikes are 75 percent to 125 percent.

One MS/MSD analysis should be performed for every analytical batch or every 20 field samples, whichever is more frequent. The frequency requirements were met for all analyses and the percent recovery and RPD values were within the proper control limits.

Laboratory Control Samples/Laboratory Control Sample Duplicates

A LCS is a blank sample that is spiked with a known amount of analyte and then analyzed. An LCS is similar to an MS, but without the possibility of matrix interference. Given that matrix interference is not an issue, the LCS/LCSD control limits for accuracy and precision are usually more rigorous than for MS/MSD analyses. Additionally, data qualification based on LCS/LCSD analyses would apply to all samples in the associated batch, instead of just the parent sample. The percent recovery control limits for LCS and LCSD analyses are specified in the laboratory documents, as are the RPD control limits for LCS/LCSD sample sets.

One LCS/LCSD analysis should be performed for every analytical batch or every 20 field samples, whichever is more frequent. The frequency requirements were met for all analyses and the percent recovery and RPD values were within the proper control limits, with the following exception:

SDG SXL0087: (VOCs) The percent recovery for dichlorodifluoromethane was greater than the control limits in the LCS extracted on December 15, 2014. There were no positive results for this target analyte in the associated field samples; therefore, no action was required for this outlier.

Laboratory Duplicates

Internal laboratory duplicate analyses are performed to monitor the precision of the analyses. Two separate aliquots of a sample are analyzed as distinct samples in the laboratory and the RPD between the two results is calculated. Duplicate analyses should be performed once per analytical batch. If one or more of the samples used has a concentration less than five times the reporting limit for that sample, the absolute difference is used instead of the RPD. For organic analyses, the RPD control limits are specified in the laboratory documents. For inorganic analyses, the RPD control limit 20 percent. Laboratory duplicates were analyzed at the proper frequency and the specified acceptance criteria were met.

Field Duplicates

In order to assess precision, field duplicate samples are collected and analyzed along with the reviewed sample batches. The duplicate samples are analyzed for the same parameters as the associated parent samples. Precision is determined by calculating the RPD between each pair of samples. If one or more of the sample analytes has a concentration less than five times the reporting limit for that sample, then the absolute difference is used instead of the RPD. The RPD control limit is 20 percent.

SDG SXL0087: One field duplicate sample pair, SVMW-3-121214 and MW-Dup-121214, was submitted with this SDG. The precision criteria for all target analytes were met for this sample pair.

Miscellaneous

SDG SXL0087: (NWTPH-Dx and NWTPH-Dx/SG) For Samples SVMW-3-121214 and MW-Dup-121214, the laboratory flagged the diesel-range hydrocarbons results with "Q5," indicating that the diesel-range hydrocarbons results were being influenced by the relative concentration of gasoline-range hydrocarbons in the samples. For this reason, the positive results for diesel-range hydrocarbons were qualified as estimated (J) in these samples, in order to signify a potential high bias.

(EDB) For Samples SVMW-3-121214 and MW-DUP-121214, the laboratory flagged the EDB results with "R1," indicating the RPD between the results from the dual-column electron capture detector (ECD) system was greater than 40 percent in each sample. For this reason, the positive results for EDB were qualified as estimated (J) in these samples.

OVERALL ASSESSMENT

As was determined by this data validation, the laboratory followed the specified analytical methods. Accuracy was acceptable, as demonstrated by the surrogate, LCS/LCSD, and MS/MSD percent recovery values, with the exception noted above. Precision was acceptable, as demonstrated by the LCS/LCSD, MS/MSD and laboratory/field duplicate RPD values.

All data are acceptable for the intended use, with the following qualifications listed below in Table B-2.

TABLE B-2: SUMMARY OF QUALIFIED SAMPLES

Sample ID	Analyte	Qualifier	Result
SVMW-3-121214	Diesel-range hydrocarbons	J	Other
	EDB	J	Other
MW-Dup-121214	Diesel-range hydrocarbons	J	Other
	EDB	J	Other

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Spokane
11922 East 1st. Avenue
Spokane, WA 99206
Tel: (509)924-9200

TestAmerica Job ID: SXL0087
Client Project/Site: 0504-101-00
Client Project Description: Tiger Oil - Summit View

For:
Geo Engineers - Spokane
523 East Second Ave.
Spokane, WA 99202

Attn: JR Sugalski

Authorized for release by:
12/31/2014 8:01:21 AM

Randee Arrington, Project Manager
(509)924-9200
Randee.Arrington@testamericainc.com

Table of Contents

Sample Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-101-00

TestAmerica Job ID: SXL0087

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
SXL0087-01	SVMW-1-121214	Water	12/12/14 09:50	12/12/14 14:50
SXL0087-02	SVMW-2-121214	Water	12/12/14 08:28	12/12/14 14:50
SXL0087-03	SVMW-3-121214	Water	12/12/14 09:13	12/12/14 14:50
SXL0087-04	MW-Dup-121214	Water	12/12/14 10:00	12/12/14 14:50

Qualifiers

GCMS Volatiles

Qualifier	Qualifier Description
L	Laboratory Control Sample and/or Laboratory Control Sample Duplicate recovery was above the acceptance limits. Analyte not detected, data not impacted.

Semivolatiles

Qualifier	Qualifier Description
R1	The RPD between the primary and confirmatory analysis exceeded 40%. Per method 8000B, the higher value was reported.

Fuels

Qualifier	Qualifier Description
Q5	Results in the diesel organics range are primarily due to overlap from a gasoline range product.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client: Geo Engineers - Spokane
Project/Site: 0504-101-00

TestAmerica Job ID: SXL0087

Client Sample ID: SVMW-1-121214

Lab Sample ID: SXL0087-01

Date Collected: 12/12/14 09:50

Matrix: Water

Date Received: 12/12/14 14:50

Method: NWTPH-Gx - Gasoline Hydrocarbons by NWTPH-Gx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		100		ug/L		12/15/14 10:25	12/15/14 14:19	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-bromofluorobenzene	*105*		*68.7 - 141*	*12/15/14 10:25*	*12/15/14 14:19*	*1.00*

Client Sample ID: SVMW-2-121214

Lab Sample ID: SXL0087-02

Date Collected: 12/12/14 08:28

Matrix: Water

Date Received: 12/12/14 14:50

Method: EPA 8260C - Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	L	1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Chloromethane	ND		3.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Vinyl chloride	ND		0.200		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Bromomethane	ND		5.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Chloroethane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Trichlorofluoromethane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,1-Dichloroethene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Dichlorofluoromethane	ND		0.200		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Carbon disulfide	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Methylene chloride	ND		10.0		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
trans-1,2-Dichloroethene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Methyl tert-butyl ether	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,1,2-Trichlorotrifluoroethane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,1-Dichloroethane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
cis-1,2-Dichloroethene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
2,2-Dichloropropane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Bromochloromethane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Chloroform	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Carbon tetrachloride	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,1,1-Trichloroethane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
2-Butanone	ND		10.0		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Hexane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,1-Dichloropropene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Benzene	ND		0.200		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,2-Dichloroethane (EDC)	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Trichloroethene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Dibromomethane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,2-Dichloropropane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Bromodichloromethane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
cis-1,3-Dichloropropene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Toluene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
4-Methyl-2-pentanone	ND		10.0		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
trans-1,3-Dichloropropene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Tetrachloroethene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,1,2-Trichloroethane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Dibromochloromethane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,3-Dichloropropane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,2-Dibromoethane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
2-Hexanone	ND		10.0		ug/L		12/15/14 10:25	12/15/14 14:42	1.00

Client Sample ID: SVMW-2-121214
Date Collected: 12/12/14 08:28
Date Received: 12/12/14 14:50

Lab Sample ID: SXL0087-02
Matrix: Water

Method: EPA 8260C - Volatile Organic Compounds by EPA Method 8260C (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Chlorobenzene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,1,1,2-Tetrachloroethane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
m,p-Xylene	ND		2.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
o-Xylene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Styrene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Bromoform	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Isopropylbenzene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
n-Propylbenzene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,1,2,2-Tetrachloroethane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Bromobenzene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,3,5-Trimethylbenzene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
2-Chlorotoluene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,2,3-Trichloropropane	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
4-Chlorotoluene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
tert-Butylbenzene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,2,4-Trimethylbenzene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
sec-Butylbenzene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
p-Isopropyltoluene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,3-Dichlorobenzene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,4-Dichlorobenzene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
n-Butylbenzene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,2-Dichlorobenzene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,2-Dibromo-3-chloropropane	ND		5.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Hexachlorobutadiene	ND		2.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,2,4-Trichlorobenzene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
Naphthalene	ND		2.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00
1,2,3-Trichlorobenzene	ND		1.00		ug/L		12/15/14 10:25	12/15/14 14:42	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*100*		*71.2 - 143*	*12/15/14 10:25*	*12/15/14 14:42*	*1.00*
1,2-dichloroethane-d4	*107*		*70 - 140*	*12/15/14 10:25*	*12/15/14 14:42*	*1.00*
Toluene-d8	*96.3*		*74.1 - 135*	*12/15/14 10:25*	*12/15/14 14:42*	*1.00*
4-bromofluorobenzene	*103*		*68.7 - 141*	*12/15/14 10:25*	*12/15/14 14:42*	*1.00*

Method: NWTPH-Gx - Gasoline Hydrocarbons by NWTPH-Gx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		100		ug/L		12/15/14 10:25	12/15/14 14:42	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-bromofluorobenzene	*103*		*68.7 - 141*	*12/15/14 10:25*	*12/15/14 14:42*	*1.00*

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		0.0100		ug/L		12/15/14 08:27	12/15/14 16:11	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	ND		0.232		mg/L		12/16/14 09:48	12/16/14 14:35	1.00
Heavy Oil Range Hydrocarbons	ND		0.387		mg/L		12/16/14 09:48	12/16/14 14:35	1.00

Client Sample ID: SVMW-2-121214

Lab Sample ID: SXL0087-02

Date Collected: 12/12/14 08:28

Matrix: Water

Date Received: 12/12/14 14:50

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*82.3*		*50 - 150*	*12/16/14 09:48*	*12/16/14 14:35*	*1.00*
n-Triacontane-d62	*93.2*		*50 - 150*	*12/16/14 09:48*	*12/16/14 14:35*	*1.00*

Method: EPA 200.7 - Total Metals by EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0140		mg/L		12/18/14 14:52	12/23/14 15:17	1.00

Method: EPA 300.0 - Anions by EPA Method 300.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate-Nitrogen	**7.10**		0.200		mg/L		12/12/14 14:27	12/12/14 14:54	1.00
Sulfate	**31.2**		0.500		mg/L		12/12/14 14:27	12/12/14 14:54	1.00

Method: SM 5310C - TOC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	**1.79**		1.00		mg/L		12/17/14 12:56	12/17/14 12:56	1

Client Sample ID: SVMW-3-121214

Lab Sample ID: SXL0087-03

Date Collected: 12/12/14 09:13

Matrix: Water

Date Received: 12/12/14 14:50

Method: EPA 8260C - Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	L	100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Chloromethane	ND		300		ug/L		12/15/14 10:25	12/15/14 20:36	100
Vinyl chloride	ND		20.0		ug/L		12/15/14 10:25	12/15/14 20:36	100
Bromomethane	ND		500		ug/L		12/15/14 10:25	12/15/14 20:36	100
Chloroethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Trichlorofluoromethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,1-Dichloroethene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Dichlorofluoromethane	ND		20.0		ug/L		12/15/14 10:25	12/15/14 20:36	100
Carbon disulfide	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Methylene chloride	ND		1000		ug/L		12/15/14 10:25	12/15/14 20:36	100
trans-1,2-Dichloroethene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Methyl tert-butyl ether	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,1,2-Trichlorotrifluoroethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,1-Dichloroethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
cis-1,2-Dichloroethene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
2,2-Dichloropropane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Bromochloromethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Chloroform	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Carbon tetrachloride	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,1,1-Trichloroethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
2-Butanone	ND		1000		ug/L		12/15/14 10:25	12/15/14 20:36	100
Hexane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,1-Dichloropropene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Benzene	**32.0**		20.0		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,2-Dichloroethane (EDC)	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Trichloroethene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Dibromomethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,2-Dichloropropane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Bromodichloromethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100

Client: Geo Engineers - Spokane
Project/Site: 0504-101-00

TestAmerica Job ID: SXL0087

Client Sample ID: SVMW-3-121214
Date Collected: 12/12/14 09:13
Date Received: 12/12/14 14:50

Lab Sample ID: SXL0087-03
Matrix: Water

Method: EPA 8260C - Volatile Organic Compounds by EPA Method 8260C (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,3-Dichloropropene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Toluene	**427**		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
4-Methyl-2-pentanone	ND		1000		ug/L		12/15/14 10:25	12/15/14 20:36	100
trans-1,3-Dichloropropene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Tetrachloroethene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,1,2-Trichloroethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Dibromochloromethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,3-Dichloropropane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,2-Dibromoethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
2-Hexanone	ND		1000		ug/L		12/15/14 10:25	12/15/14 20:36	100
Ethylbenzene	**571**		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Chlorobenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,1,1,2-Tetrachloroethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
m,p-Xylene	**2200**		200		ug/L		12/15/14 10:25	12/15/14 20:36	100
o-Xylene	**896**		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Styrene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Bromoform	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Isopropylbenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
n-Propylbenzene	**107**		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,1,2,2-Tetrachloroethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Bromobenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,3,5-Trimethylbenzene	**211**		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
2-Chlorotoluene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,2,3-Trichloropropane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
4-Chlorotoluene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
tert-Butylbenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,2,4-Trimethylbenzene	**763**		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
sec-Butylbenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
p-Isopropyltoluene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,3-Dichlorobenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,4-Dichlorobenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
n-Butylbenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,2-Dichlorobenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,2-Dibromo-3-chloropropane	ND		500		ug/L		12/15/14 10:25	12/15/14 20:36	100
Hexachlorobutadiene	ND		200		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,2,4-Trichlorobenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100
Naphthalene	**200**		200		ug/L		12/15/14 10:25	12/15/14 20:36	100
1,2,3-Trichlorobenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:36	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*99.9*		*71.2 - 143*	*12/15/14 10:25*	*12/15/14 20:36*	*100*
1,2-dichloroethane-d4	*105*		*70 - 140*	*12/15/14 10:25*	*12/15/14 20:36*	*100*
Toluene-d8	*98.5*		*74.1 - 135*	*12/15/14 10:25*	*12/15/14 20:36*	*100*
4-bromofluorobenzene	*103*		*68.7 - 141*	*12/15/14 10:25*	*12/15/14 20:36*	*100*

Method: NWTPH-Gx - Gasoline Hydrocarbons by NWTPH-Gx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	**13200**		10000		ug/L		12/15/14 10:25	12/15/14 20:36	100

Client Sample ID: SVMW-3-121214

Lab Sample ID: SXL0087-03

Date Collected: 12/12/14 09:13

Matrix: Water

Date Received: 12/12/14 14:50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-bromofluorobenzene	103		68.7 - 141	12/15/14 10:25	12/15/14 20:36	100

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	0.181	R1	0.0100		ug/L		12/15/14 08:27	12/16/14 11:00	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx w/Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	0.592	Q5	0.231		mg/L		12/16/14 09:48	12/17/14 12:28	1.00
Heavy Oil Range Hydrocarbons	ND		0.385		mg/L		12/16/14 09:48	12/17/14 12:28	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	88.4		50 - 150	12/16/14 09:48	12/17/14 12:28	1.00
n-Triacontane-d62	97.5		50 - 150	12/16/14 09:48	12/17/14 12:28	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	0.650	Q5	0.231		mg/L		12/16/14 09:48	12/16/14 14:59	1.00
Heavy Oil Range Hydrocarbons	ND		0.385		mg/L		12/16/14 09:48	12/16/14 14:59	1.00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	86.7		50 - 150	12/16/14 09:48	12/16/14 14:59	1.00
n-Triacontane-d62	97.6		50 - 150	12/16/14 09:48	12/16/14 14:59	1.00

Method: EPA 200.7 - Total Metals by EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0140		mg/L		12/18/14 14:52	12/23/14 15:23	1.00

Method: EPA 300.0 - Anions by EPA Method 300.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate-Nitrogen	4.86		0.200		mg/L		12/12/14 14:27	12/12/14 15:09	1.00
Sulfate	19.1		0.500		mg/L		12/12/14 14:27	12/12/14 15:09	1.00

Method: SM 5310C - TOC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.69		1.00		mg/L		12/17/14 12:56	12/17/14 12:56	1

Client Sample ID: MW-Dup-121214

Lab Sample ID: SXL0087-04

Date Collected: 12/12/14 10:00

Matrix: Water

Date Received: 12/12/14 14:50

Method: EPA 8260C - Volatile Organic Compounds by EPA Method 8260C

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND	L	100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Chloromethane	ND		300		ug/L		12/15/14 10:25	12/15/14 20:58	100
Vinyl chloride	ND		20.0		ug/L		12/15/14 10:25	12/15/14 20:58	100
Bromomethane	ND		500		ug/L		12/15/14 10:25	12/15/14 20:58	100
Chloroethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Trichlorofluoromethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,1-Dichloroethene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Dichlorofluoromethane	ND		20.0		ug/L		12/15/14 10:25	12/15/14 20:58	100
Carbon disulfide	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100

Client: Geo Engineers - Spokane
Project/Site: 0504-101-00

TestAmerica Job ID: SXL0087

Client Sample ID: MW-Dup-121214
Date Collected: 12/12/14 10:00
Date Received: 12/12/14 14:50

Lab Sample ID: SXL0087-04
Matrix: Water

Method: EPA 8260C - Volatile Organic Compounds by EPA Method 8260C (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene chloride	ND		1000		ug/L		12/15/14 10:25	12/15/14 20:58	100
Acetone	ND		2500		ug/L		12/15/14 10:25	12/15/14 20:58	100
trans-1,2-Dichloroethene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Methyl tert-butyl ether	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,1,2-Trichlorotrifluoroethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,1-Dichloroethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
cis-1,2-Dichloroethene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
2,2-Dichloropropane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Bromochloromethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Chloroform	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Carbon tetrachloride	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,1,1-Trichloroethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
2-Butanone	ND		1000		ug/L		12/15/14 10:25	12/15/14 20:58	100
Hexane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,1-Dichloropropene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Benzene	**32.0**		20.0		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,2-Dichloroethane (EDC)	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Trichloroethene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Dibromomethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,2-Dichloropropane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Bromodichloromethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
cis-1,3-Dichloropropene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Toluene	**431**		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
4-Methyl-2-pentanone	ND		1000		ug/L		12/15/14 10:25	12/15/14 20:58	100
trans-1,3-Dichloropropene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Tetrachloroethene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,1,2-Trichloroethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Dibromochloromethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,3-Dichloropropane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,2-Dibromoethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
2-Hexanone	ND		1000		ug/L		12/15/14 10:25	12/15/14 20:58	100
Ethylbenzene	**567**		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Chlorobenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,1,1,2-Tetrachloroethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
m,p-Xylene	**2200**		200		ug/L		12/15/14 10:25	12/15/14 20:58	100
o-Xylene	**893**		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Styrene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Bromoform	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Isopropylbenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
n-Propylbenzene	**106**		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,1,2,2-Tetrachloroethane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Bromobenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,3,5-Trimethylbenzene	**200**		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
2-Chlorotoluene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,2,3-Trichloropropane	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
4-Chlorotoluene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
tert-Butylbenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,2,4-Trimethylbenzene	**767**		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
sec-Butylbenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100

Client: Geo Engineers - Spokane
Project/Site: 0504-101-00

TestAmerica Job ID: SXL0087

Client Sample ID: MW-Dup-121214
Date Collected: 12/12/14 10:00
Date Received: 12/12/14 14:50

Lab Sample ID: SXL0087-04
Matrix: Water

Method: EPA 8260C - Volatile Organic Compounds by EPA Method 8260C (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
p-Isopropyltoluene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,3-Dichlorobenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,4-Dichlorobenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
n-Butylbenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,2-Dichlorobenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,2-Dibromo-3-chloropropane	ND		500		ug/L		12/15/14 10:25	12/15/14 20:58	100
Hexachlorobutadiene	ND		200		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,2,4-Trichlorobenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100
Naphthalene	**201**		200		ug/L		12/15/14 10:25	12/15/14 20:58	100
1,2,3-Trichlorobenzene	ND		100		ug/L		12/15/14 10:25	12/15/14 20:58	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*101*		*71.2 - 143*	*12/15/14 10:25*	*12/15/14 20:58*	*100*
1,2-dichloroethane-d4	*106*		*70 - 140*	*12/15/14 10:25*	*12/15/14 20:58*	*100*
Toluene-d8	*98.7*		*74.1 - 135*	*12/15/14 10:25*	*12/15/14 20:58*	*100*
4-bromofluorobenzene	*103*		*68.7 - 141*	*12/15/14 10:25*	*12/15/14 20:58*	*100*

Method: NWTPH-Gx - Gasoline Hydrocarbons by NWTPH-Gx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	**11600**		10000		ug/L		12/15/14 10:25	12/15/14 20:58	100

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-bromofluorobenzene	*103*		*68.7 - 141*	*12/15/14 10:25*	*12/15/14 20:58*	*100*

Method: EPA 8011 - EDB by EPA Method 8011

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	**0.168**	**R1**	0.0100		ug/L		12/15/14 08:27	12/16/14 11:13	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx w/Silica Gel Cleanup

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	**0.808**	**Q5**	0.232		mg/L		12/16/14 09:48	12/17/14 12:51	1.00
Heavy Oil Range Hydrocarbons	ND		0.387		mg/L		12/16/14 09:48	12/17/14 12:51	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*87.9*		*50 - 150*	*12/16/14 09:48*	*12/17/14 12:51*	*1.00*
n-Triacontane-d62	*96.2*		*50 - 150*	*12/16/14 09:48*	*12/17/14 12:51*	*1.00*

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	**0.818**	**Q5**	0.232		mg/L		12/16/14 09:48	12/16/14 15:23	1.00
Heavy Oil Range Hydrocarbons	ND		0.387		mg/L		12/16/14 09:48	12/16/14 15:23	1.00

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*82.9*		*50 - 150*	*12/16/14 09:48*	*12/16/14 15:23*	*1.00*
n-Triacontane-d62	*93.6*		*50 - 150*	*12/16/14 09:48*	*12/16/14 15:23*	*1.00*

Method: EPA 200.7 - Total Metals by EPA 200 Series Methods

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0140		mg/L		12/18/14 14:52	12/23/14 15:30	1.00

Client: Geo Engineers - Spokane
Project/Site: 0504-101-00

TestAmerica Job ID: SXL0087

Client Sample ID: MW-Dup-121214
Date Collected: 12/12/14 10:00
Date Received: 12/12/14 14:50

Lab Sample ID: SXL0087-04
Matrix: Water

Method: EPA 300.0 - Anions by EPA Method 300.0

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate-Nitrogen	4.04		0.200		mg/L		12/12/14 14:27	12/12/14 15:23	1.00
Sulfate	16.9		0.500		mg/L		12/12/14 14:27	12/12/14 15:23	1.00

Method: SM 5310C - TOC

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.94		1.00		mg/L		12/17/14 12:56	12/17/14 12:56	1

Client: Geo Engineers - Spokane
Project/Site: 0504-101-00

TestAmerica Job ID: SXL0087

Method: EPA 8260C - Volatile Organic Compounds by EPA Method 8260C

Lab Sample ID: 14L0082-BLK1
Matrix: Water
Analysis Batch: 14L0082

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 14L0082_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Chloromethane	ND		3.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Vinyl chloride	ND		0.200		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Bromomethane	ND		5.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Chloroethane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Trichlorofluoromethane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,1-Dichloroethene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Dichlorofluoromethane	ND		0.200		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Carbon disulfide	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Methylene chloride	ND		10.0		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Acetone	ND		25.0		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
trans-1,2-Dichloroethene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Methyl tert-butyl ether	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,1,2-Trichlorotrifluoroethane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,1-Dichloroethane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
cis-1,2-Dichloroethene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
2,2-Dichloropropane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Bromochloromethane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Chloroform	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Carbon tetrachloride	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,1,1-Trichloroethane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
2-Butanone	ND		10.0		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Hexane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,1-Dichloropropene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Benzene	ND		0.200		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,2-Dichloroethane (EDC)	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Trichloroethene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Dibromomethane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,2-Dichloropropane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Bromodichloromethane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
cis-1,3-Dichloropropene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Toluene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
4-Methyl-2-pentanone	ND		10.0		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
trans-1,3-Dichloropropene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Tetrachloroethene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,1,2-Trichloroethane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Dibromochloromethane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,3-Dichloropropane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,2-Dibromoethane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
2-Hexanone	ND		10.0		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Ethylbenzene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Chlorobenzene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,1,1,2-Tetrachloroethane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
m,p-Xylene	ND		2.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
o-Xylene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Styrene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Bromoform	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Isopropylbenzene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00

Method: EPA 8260C - Volatile Organic Compounds by EPA Method 8260C (Continued)

Lab Sample ID: 14L0082-BLK1
Matrix: Water
Analysis Batch: 14L0082

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 14L0082_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
n-Propylbenzene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,1,2,2-Tetrachloroethane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Bromobenzene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,3,5-Trimethylbenzene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
2-Chlorotoluene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,2,3-Trichloropropane	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
4-Chlorotoluene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
tert-Butylbenzene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,2,4-Trimethylbenzene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
sec-Butylbenzene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
p-Isopropyltoluene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,3-Dichlorobenzene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,4-Dichlorobenzene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
n-Butylbenzene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,2-Dichlorobenzene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,2-Dibromo-3-chloropropane	ND		5.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Hexachlorobutadiene	ND		2.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,2,4-Trichlorobenzene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
Naphthalene	ND		2.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00
1,2,3-Trichlorobenzene	ND		1.00		ug/L		12/15/14 09:38	12/15/14 11:19	1.00

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane	*98.7*		*71.2 - 143*	*12/15/14 09:38*	*12/15/14 11:19*	*1.00*
1,2-dichloroethane-d4	*101*		*70 - 140*	*12/15/14 09:38*	*12/15/14 11:19*	*1.00*
Toluene-d8	*99.0*		*74.1 - 135*	*12/15/14 09:38*	*12/15/14 11:19*	*1.00*
4-bromofluorobenzene	*103*		*68.7 - 141*	*12/15/14 09:38*	*12/15/14 11:19*	*1.00*

Lab Sample ID: 14L0082-BS1
Matrix: Water
Analysis Batch: 14L0082

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 14L0082_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	10.0	14.4	L	ug/L		144	60 - 140
Chloromethane	10.0	12.8		ug/L		128	60 - 140
Vinyl chloride	10.0	12.0		ug/L		120	60 - 140
Bromomethane	10.0	12.3		ug/L		123	60 - 140
Chloroethane	10.0	12.0		ug/L		120	60 - 140
Trichlorofluoromethane	10.0	11.2		ug/L		112	60 - 140
1,1-Dichloroethene	10.0	12.0		ug/L		120	78.1 - 155
Dichlorofluoromethane	10.0	11.8		ug/L		118	60 - 140
Carbon disulfide	10.0	12.1		ug/L		121	60 - 140
Methylene chloride	10.0	10.7		ug/L		107	60 - 140
Acetone	50.0	50.8		ug/L		102	60 - 140
trans-1,2-Dichloroethene	10.0	10.8		ug/L		108	60 - 140
Methyl tert-butyl ether	10.0	11.1		ug/L		111	80.1 - 128
1,1,2-Trichlorotrifluoroethane	10.0	11.6		ug/L		116	60 - 140
1,1-Dichloroethane	10.0	11.3		ug/L		113	60 - 140
cis-1,2-Dichloroethene	10.0	10.6		ug/L		106	60 - 140

Method: EPA 8260C - Volatile Organic Compounds by EPA Method 8260C (Continued)

Lab Sample ID: 14L0082-BS1
Matrix: Water
Analysis Batch: 14L0082

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 14L0082_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,2-Dichloropropane	10.0	11.6		ug/L		116	60 - 140
Bromochloromethane	10.0	11.5		ug/L		115	60 - 140
Chloroform	10.0	11.1		ug/L		111	60 - 140
Carbon tetrachloride	10.0	10.7		ug/L		107	60 - 140
1,1,1-Trichloroethane	10.0	10.7		ug/L		107	60 - 140
2-Butanone	50.0	51.9		ug/L		104	60 - 140
Hexane	10.0	11.1		ug/L		111	60 - 140
1,1-Dichloropropene	10.0	11.8		ug/L		118	60 - 140
Benzene	10.0	11.1		ug/L		111	80 - 122
1,2-Dichloroethane (EDC)	10.0	11.4		ug/L		114	63.9 - 144
Trichloroethene	10.0	10.4		ug/L		104	74.8 - 123
Dibromomethane	10.0	11.0		ug/L		110	60 - 140
1,2-Dichloropropane	10.0	11.4		ug/L		114	60 - 140
Bromodichloromethane	10.0	11.1		ug/L		111	60 - 140
cis-1,3-Dichloropropene	10.0	11.0		ug/L		110	60 - 140
Toluene	10.0	10.2		ug/L		102	80 - 123
4-Methyl-2-pentanone	50.0	54.9		ug/L		110	60 - 140
trans-1,3-Dichloropropene	10.0	10.5		ug/L		105	60 - 140
Tetrachloroethene	10.0	10.6		ug/L		106	60 - 140
1,1,2-Trichloroethane	10.0	10.8		ug/L		108	60 - 140
Dibromochloromethane	10.0	11.1		ug/L		111	60 - 140
1,3-Dichloropropane	10.0	11.0		ug/L		110	60 - 140
1,2-Dibromoethane	10.0	10.3		ug/L		103	70 - 130
2-Hexanone	50.0	52.9		ug/L		106	60 - 140
Ethylbenzene	10.0	10.3		ug/L		103	80 - 120
Chlorobenzene	10.0	10.4		ug/L		104	79.2 - 125
1,1,1,2-Tetrachloroethane	10.0	10.8		ug/L		108	60 - 140
m,p-Xylene	10.0	10.2		ug/L		102	80 - 120
o-Xylene	10.0	10.4		ug/L		104	80 - 120
Styrene	10.0	10.6		ug/L		106	60 - 140
Bromoform	10.0	9.39		ug/L		93.9	60 - 140
Isopropylbenzene	10.0	10.6		ug/L		106	60 - 140
n-Propylbenzene	10.0	11.2		ug/L		112	60 - 140
1,1,2,2-Tetrachloroethane	10.0	11.4		ug/L		114	60 - 140
Bromobenzene	10.0	11.0		ug/L		110	60 - 140
1,3,5-Trimethylbenzene	10.0	10.6		ug/L		106	60 - 140
2-Chlorotoluene	10.0	11.0		ug/L		110	60 - 140
1,2,3-Trichloropropane	10.0	9.93		ug/L		99.3	60 - 140
4-Chlorotoluene	10.0	11.4		ug/L		114	60 - 140
tert-Butylbenzene	10.0	11.0		ug/L		110	60 - 140
1,2,4-Trimethylbenzene	10.0	10.5		ug/L		105	60 - 140
sec-Butylbenzene	10.0	10.8		ug/L		108	60 - 140
p-Isopropyltoluene	10.0	10.6		ug/L		106	60 - 140
1,3-Dichlorobenzene	10.0	11.0		ug/L		110	60 - 140
1,4-Dichlorobenzene	10.0	10.8		ug/L		108	60 - 140
n-Butylbenzene	10.0	10.9		ug/L		109	60 - 140
1,2-Dichlorobenzene	10.0	11.0		ug/L		110	60 - 140
1,2-Dibromo-3-chloropropane	10.0	11.0		ug/L		110	60 - 140

Method: EPA 8260C - Volatile Organic Compounds by EPA Method 8260C (Continued)

Lab Sample ID: 14L0082-BS1
Matrix: Water
Analysis Batch: 14L0082

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 14L0082_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Hexachlorobutadiene			10.0	9.38		ug/L		93.8	60 - 140		
1,2,4-Trichlorobenzene			10.0	9.20		ug/L		92.0	60 - 140		
Naphthalene			10.0	10.0		ug/L		100	62.8 - 132		
1,2,3-Trichlorobenzene			10.0	9.76		ug/L		97.6	60 - 140		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane	*99.7*		*71.2 - 143*
1,2-dichloroethane-d4	*105*		*70 - 140*
Toluene-d8	*98.2*		*74.1 - 135*
4-bromofluorobenzene	*104*		*68.7 - 141*

Method: NWTPH-Gx - Gasoline Hydrocarbons by NWTPH-Gx

Lab Sample ID: 14L0082-BLK1
Matrix: Water
Analysis Batch: 14L0082

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 14L0082_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Hydrocarbons	ND		100		ug/L		12/15/14 09:38	12/15/14 11:19	1.00

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-bromofluorobenzene	*103*		*68.7 - 141*	*12/15/14 09:38*	*12/15/14 11:19*	*1.00*

Lab Sample ID: 14L0082-BS2
Matrix: Water
Analysis Batch: 14L0082

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 14L0082_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline Range Hydrocarbons			1000	857		ug/L		85.7	80 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
4-bromofluorobenzene	*97.1*		*68.7 - 141*

Method: EPA 8011 - EDB by EPA Method 8011

Lab Sample ID: 14L0079-BLK1
Matrix: Water
Analysis Batch: 14L0079

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 14L0079_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		0.0100		ug/L		12/15/14 08:27	12/16/14 10:33	1.00
1,2-Dibromo-3-chloropropane	ND		0.0100		ug/L		12/15/14 08:27	12/16/14 10:33	1.00

Method: EPA 8011 - EDB by EPA Method 8011 (Continued)

Lab Sample ID: 14L0079-BS1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0079 — **Prep Batch: 14L0079_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane	0.125	0.154		ug/L		123	60 - 140
1,2-Dibromo-3-chloropropane	0.125	0.171		ug/L		137	60 - 140

Lab Sample ID: 14L0079-BS2 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0079 — **Prep Batch: 14L0079_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane	0.125	0.146		ug/L		117	60 - 140
1,2-Dibromo-3-chloropropane	0.125	0.124		ug/L		99.2	60 - 140

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx w/Silica Gel Cleanup

Lab Sample ID: 14L0092-BLK1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0092 — **Prep Batch: 14L0092_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	ND		0.240		mg/L		12/16/14 09:48	12/17/14 11:42	1.00
Heavy Oil Range Hydrocarbons	ND		0.400		mg/L		12/16/14 09:48	12/17/14 11:42	1.00

Surrogate	*Blank %Recovery*	*Blank Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*91.8*		*50 - 150*	*12/16/14 09:48*	*12/17/14 11:42*	*1.00*
n-Triacontane-d62	*105*		*50 - 150*	*12/16/14 09:48*	*12/17/14 11:42*	*1.00*

Lab Sample ID: 14L0092-BS1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0092 — **Prep Batch: 14L0092_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Hydrocarbons	3.20	2.20		mg/L		68.7	50 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl	*91.0*		*50 - 150*
n-Triacontane-d62	*101*		*50 - 150*

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx

Lab Sample ID: 14L0092-BLK1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0092 — **Prep Batch: 14L0092_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Hydrocarbons	ND		0.240		mg/L		12/16/14 09:48	12/16/14 13:48	1.00
Heavy Oil Range Hydrocarbons	ND		0.400		mg/L		12/16/14 09:48	12/16/14 13:48	1.00

Method: NWTPH-Dx - Semivolatile Petroleum Products by NWTPH-Dx (Continued)

Lab Sample ID: 14L0092-BLK1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0092 — **Prep Batch: 14L0092_P**

Surrogate	Blank %Recovery	Blank Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	87.5		50 - 150	12/16/14 09:48	12/16/14 13:48	1.00
n-Triacontane-d62	102		50 - 150	12/16/14 09:48	12/16/14 13:48	1.00

Lab Sample ID: 14L0092-BS1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0092 — **Prep Batch: 14L0092_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Hydrocarbons	3.20	2.04		mg/L		63.8	50 - 150

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	87.5		50 - 150
n-Triacontane-d62	100		50 - 150

Method: EPA 200.7 - Total Metals by EPA 200 Series Methods

Lab Sample ID: 14L0116-BLK1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0116 — **Prep Batch: 14L0116_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		0.0140		mg/L		12/18/14 14:52	12/23/14 15:15	1.00

Lab Sample ID: 14L0116-BS1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0116 — **Prep Batch: 14L0116_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1.00	1.00		mg/L		100	85 - 115

Lab Sample ID: 14L0116-MS1 — **Client Sample ID: SVMW-3-121214**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0116 — **Prep Batch: 14L0116_P**

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		1.00	0.958		mg/L		95.8	70 - 130

Lab Sample ID: 14L0116-MSD1 — **Client Sample ID: SVMW-3-121214**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0116 — **Prep Batch: 14L0116_P**

Analyte	Sample Result	Sample Qualifier	Spike Added	ıtrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		1.00	0.986		mg/L		98.6	70 - 130	2.91	20

Method: EPA 200.7 - Total Metals by EPA 200 Series Methods (Continued)

Lab Sample ID: 14L0116-DUP1 — **Client Sample ID: SVMW-2-121214**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0116 — **Prep Batch: 14L0116_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Lead	ND		ND		mg/L			20

Method: EPA 300.0 - Anions by EPA Method 300.0

Lab Sample ID: 14L0074-BLK1 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0074 — **Prep Batch: 14L0074_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate-Nitrogen	ND		0.200		mg/L		12/12/14 09:27	12/12/14 11:31	1.00
Sulfate	ND		0.500		mg/L		12/12/14 09:27	12/12/14 11:31	1.00

Lab Sample ID: 14L0074-BS1 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0074 — **Prep Batch: 14L0074_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate-Nitrogen	5.00	4.90		mg/L		98.0	90 - 110
Sulfate	12.5	12.5		mg/L		99.8	90 - 110

Lab Sample ID: 14L0074-MS1 — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0074 — **Prep Batch: 14L0074_P**

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate-Nitrogen	0.610		5.00	5.58		mg/L		99.3	80 - 120
Sulfate	7.90		12.5	21.3		mg/L		107	80 - 120

Lab Sample ID: 14L0074-MSD1 — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0074 — **Prep Batch: 14L0074_P**

Analyte	Sample Result	Sample Qualifier	Spike Added	trix Spike Dup Result	Matrix Spike Du Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate-Nitrogen	0.610		5.00	5.60		mg/L		99.8	80 - 120	0.394	12.1
Sulfate	7.90		12.5	21.3		mg/L		107	80 - 120	0.155	10

Lab Sample ID: 14L0074-DUP1 — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total**
Analysis Batch: 14L0074 — **Prep Batch: 14L0074_P**

Analyte	Sample Result	Sample Qualifier	Duplicate Result	Duplicate Qualifier	Unit	D	RPD	RPD Limit
Nitrate-Nitrogen	0.610		0.580		mg/L		5.04	13.1
Sulfate	7.90		7.91		mg/L		0.126	15.7

Client: Geo Engineers - Spokane
Project/Site: 0504-101-00

TestAmerica Job ID: SXL0087

Method: SM 5310C - TOC

Lab Sample ID: 214965-1
Matrix: Water
Analysis Batch: 214965

Client Sample ID: Method Blank
Prep Type: Total
Prep Batch: 214965_P

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.00		mg/L		12/17/14 12:56	12/17/14 12:56	1

Lab Sample ID: 214965-4
Matrix: Water
Analysis Batch: 214965

Client Sample ID: Lab Control Sample
Prep Type: Total
Prep Batch: 214965_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			10.0	9.839		mg/L		98	90 - 110		

Lab Sample ID: 214965-10
Matrix: Water
Analysis Batch: 214965

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total
Prep Batch: 214965_P

Analyte	Sample Result	Sample Qualifier	Spike Added	ıtrix Spike Dup Result	Matrix Spike Dup Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon			20.0	20.82		mg/L		99	75 - 122	1	20

Lab Sample ID: 214965-9
Matrix: Water
Analysis Batch: 214965

Client Sample ID: Matrix Spike
Prep Type: Total
Prep Batch: 214965_P

Analyte	Sample Result	Sample Qualifier	Spike Added	Matrix Spike Result	Matrix Spike Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon			20.0	20.96		mg/L		100	75 - 122		

Lab Chronicle

Client: Geo Engineers - Spokane
Project/Site: 0504-101-00

TestAmerica Job ID: SXL0087

Client Sample ID: SVMW-1-121214

Lab Sample ID: SXL0087-01

Date Collected: 12/12/14 09:50

Matrix: Water

Date Received: 12/12/14 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.00	14L0082_P	12/15/14 10:25	MS	TAL SPK
Total	Analysis	NWTPH-Gx		1.00	14L0082	12/15/14 14:19	MS	TAL SPK

Client Sample ID: SVMW-2-121214

Lab Sample ID: SXL0087-02

Date Collected: 12/12/14 08:28

Matrix: Water

Date Received: 12/12/14 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.00	14L0082_P	12/15/14 10:25	MS	TAL SPK
Total	Analysis	EPA 8260C		1.00	14L0082	12/15/14 14:42	MS	TAL SPK
Total	Prep	GC/MS Volatiles		1.00	14L0082_P	12/15/14 10:25	MS	TAL SPK
Total	Analysis	NWTPH-Gx		1.00	14L0082	12/15/14 14:42	MS	TAL SPK
Total	Prep	EPA 3580		1.00	14L0079_P	12/15/14 08:27	IAB	TAL SPK
Total	Analysis	EPA 8011		1.00	14L0079	12/15/14 16:11	NMI	TAL SPK
Total	Prep	EPA 3510/600 Series		0.969	14L0092_P	12/16/14 09:48	IAB	TAL SPK
Total	Analysis	NWTPH-Dx		1.00	14L0092	12/16/14 14:35	NMI	TAL SPK
Total	Prep	EPA 3005A		1.00	14L0116_P	12/18/14 14:52	JSP	TAL SPK
Total	Analysis	EPA 200.7		1.00	14L0116	12/23/14 15:17	ICP	TAL SPK
Total	Prep	Wet Chem		1.00	14L0074_P	12/12/14 14:27	MS	TAL SPK
Total	Analysis	EPA 300.0		1.00	14L0074	12/12/14 14:54	MS	TAL SPK

Client Sample ID: SVMW-3-121214

Lab Sample ID: SXL0087-03

Date Collected: 12/12/14 09:13

Matrix: Water

Date Received: 12/12/14 14:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.00	14L0082_P	12/15/14 10:25	MS	TAL SPK
Total	Analysis	EPA 8260C		100	14L0082	12/15/14 20:36	MS	TAL SPK
Total	Prep	GC/MS Volatiles		1.00	14L0082_P	12/15/14 10:25	MS	TAL SPK
Total	Analysis	NWTPH-Gx		100	14L0082	12/15/14 20:36	MS	TAL SPK
Total	Prep	EPA 3580		1.00	14L0079_P	12/15/14 08:27	IAB	TAL SPK
Total	Analysis	EPA 8011		1.00	14L0079	12/16/14 11:00	NMI	TAL SPK
Total	Prep	EPA 3510/600 Series		0.962	14L0092_P	12/16/14 09:48	IAB	TAL SPK
Total	Analysis	NWTPH-Dx		1.00	14L0092	12/16/14 14:59	NMI	TAL SPK
Total	Prep	EPA 3510/600 Series		0.962	14L0092_P	12/16/14 09:48	NI	TAL SPK
Total	Analysis	NWTPH-Dx		1.00	14L0092	12/17/14 12:28	NMI	TAL SPK
Total	Prep	EPA 3005A		1.00	14L0116_P	12/18/14 14:52	JSP	TAL SPK
Total	Analysis	EPA 200.7		1.00	14L0116	12/23/14 15:23	ICP	TAL SPK
Total	Prep	Wet Chem		1.00	14L0074_P	12/12/14 14:27	MS	TAL SPK
Total	Analysis	EPA 300.0		1.00	14L0074	12/12/14 15:09	MS	TAL SPK

Lab Chronicle

Client: Geo Engineers - Spokane
Project/Site: 0504-101-00

TestAmerica Job ID: SXL0087

Client Sample ID: MW-Dup-121214
Date Collected: 12/12/14 10:00
Date Received: 12/12/14 14:50

Lab Sample ID: SXL0087-04
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total	Prep	GC/MS Volatiles		1.00	14L0082_P	12/15/14 10:25	MS	TAL SPK
Total	Analysis	EPA 8260C		100	14L0082	12/15/14 20:58	MS	TAL SPK
Total	Prep	GC/MS Volatiles		1.00	14L0082_P	12/15/14 10:25	MS	TAL SPK
Total	Analysis	NWTPH-Gx		100	14L0082	12/15/14 20:58	MS	TAL SPK
Total	Prep	EPA 3580		1.00	14L0079_P	12/15/14 08:27	IAB	TAL SPK
Total	Analysis	EPA 8011		1.00	14L0079	12/16/14 11:13	NMI	TAL SPK
Total	Prep	EPA 3510/600 Series		0.967	14L0092_P	12/16/14 09:48	IAB	TAL SPK
Total	Analysis	NWTPH-Dx		1.00	14L0092	12/16/14 15:23	NMI	TAL SPK
Total	Prep	EPA 3510/600 Series		0.967	14L0092_P	12/16/14 09:48	NI	TAL SPK
Total	Analysis	NWTPH-Dx		1.00	14L0092	12/17/14 12:51	NMI	TAL SPK
Total	Prep	EPA 3005A		1.00	14L0116_P	12/18/14 14:52	JSP	TAL SPK
Total	Analysis	EPA 200.7		1.00	14L0116	12/23/14 15:30	ICP	TAL SPK
Total	Prep	Wet Chem		1.00	14L0074_P	12/12/14 14:27	MS	TAL SPK
Total	Analysis	EPA 300.0		1.00	14L0074	12/12/14 15:23	MS	TAL SPK
Total	Analysis	SM 5310C		1	214965	12/17/14 12:56	JAB	TAL NSH
Total	Prep	NA			214965_P	12/17/14 12:56		TAL NSH

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (800) 765-0980

TAL SPK = TestAmerica Spokane, 11922 East 1st. Avenue, Spokane, WA 99206, TEL (509)924-9200

Certification Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-101-00

TestAmerica Job ID: SXL0087

Laboratory: TestAmerica Spokane

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-071	10-31-15
Washington	State Program	10	C569	01-06-15

Laboratory: TestAmerica Nashville

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	A2LA		NA: NELAP & A2LA	12-31-15
A2LA	ISO/IEC 17025		0453.07	12-31-15
Alaska (UST)	State Program	10	UST-087	10-31-15
Arizona	State Program	9	AZ0473	05-05-15
Arkansas DEQ	State Program	6	88-0737	04-25-15
California	NELAP	9	1168CA	10-31-14
Connecticut	State Program	1	PH-0220	12-31-15
Florida	NELAP	4	E87358	06-30-15
Illinois	NELAP	5	200010	12-09-15
Iowa	State Program	7	131	04-01-16
Kansas	NELAP	7	E-10229	01-31-15
Kentucky (UST)	State Program	4	19	06-30-15
Kentucky (WW)	State Program	4	90038	12-31-15
Louisiana	NELAP	6	30613	06-30-15
Maryland	State Program	3	316	03-31-15
Massachusetts	State Program	1	M-TN032	06-30-15
Minnesota	NELAP	5	047-999-345	12-31-15
Mississippi	State Program	4	N/A	06-30-15
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-15
New Hampshire	NELAP	1	2963	10-09-15
New Jersey	NELAP	2	TN965	06-30-15
New York	NELAP	2	11342	03-31-15
North Carolina (WW/SW)	State Program	4	387	12-31-15
North Dakota	State Program	8	R-146	06-30-15
Ohio VAP	State Program	5	CL0033	10-16-15
Oklahoma	State Program	6	9412	08-31-15
Oregon	NELAP	10	TN200001	04-29-15
Pennsylvania	NELAP	3	68-00585	06-30-15
Rhode Island	State Program	1	LAO00268	12-30-14
South Carolina	State Program	4	84009 (001)	02-28-15
South Carolina (DW)	State Program	4	84009 (002)	02-23-17
Tennessee	State Program	4	2008	02-23-17
Texas	NELAP	6	T104704077	08-31-15
USDA	Federal		S-48469	10-30-16
Utah	NELAP	8	TN00032	07-31-15
Virginia	NELAP	3	460152	06-14-15
Washington	State Program	10	C789	07-19-15
West Virginia DEP	State Program	3	219	02-28-15
Wisconsin	State Program	5	998020430	08-31-15
Wyoming (UST)	A2LA	8	453.07	12-31-15

Method Summary

Client: Geo Engineers - Spokane
Project/Site: 0504-101-00

TestAmerica Job ID: SXL0087

Method	Method Description	Protocol	Laboratory
EPA 8260C	Volatile Organic Compounds by EPA Method 8260C		TAL SPK
NWTPH-Gx	Gasoline Hydrocarbons by NWTPH-Gx		TAL SPK
EPA 8011	EDB by EPA Method 8011		TAL SPK
NWTPH-Dx	Semivolatile Petroleum Products by NWTPH-Dx		TAL SPK
NWTPH-Dx	Semivolatile Petroleum Products by NWTPH-Dx w/Silica Gel Cleanup		TAL SPK
EPA 200.7	Total Metals by EPA 200 Series Methods		TAL SPK
EPA 300.0	Anions by EPA Method 300.0		TAL SPK
SM 5310C	TOC		TAL NSH

Protocol References:

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (800) 765-0980

TAL SPK = TestAmerica Spokane, 11922 East 1st. Avenue, Spokane, WA 99206, TEL (509)924-9200

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

5755 8th Street East, Tacoma, WA 98424-1317 253-922-2310 FAX 922-5047
11922 E. First Ave., Spokane WA 99206-5302 509-924-9200 FAX 924-9290
9405 SW Nimbus Ave., Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: SXL0087

CLIENT: GeoEngineers

REPORT TO: JR Sugalski JSugalski@geoengineers.com
ADDRESS: 523 E Second Ave
Spokane WA 99202
PHONE: 509-363-3125 FAX: 509-363-3126

INVOICE TO:

P.O. NUMBER:

PROJECT NAME: Tiger Oil - Summit View
PROJECT NUMBER: 0504-101-00
SAMPLED BY: JWP

TURNAROUND REQUEST
in Business Days *
Organic & Inorganic Analyses: ~~10~~ STD. | 7 | 5 | 4 | 3 | 2 | 1 | <1
Petroleum Hydrocarbon Analyses: ~~15~~ STD. | 4 | 3 | 2 | 1 | <1
OTHER Specify:
* Turnaround Requests less than standard may incur Rush Charges.

	CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	PRESERVATIVE	REQUESTED ANALYSES: NWTPH-Gx	NWTPH-Dx	NWTPH-Dx w/ silica gel	VOCs	Naphthalene (8270C)	EDB (8011)	TOC (SM5310B)	Lead	Nitrate	Sulfate				MATRIX (W, S, O)	# OF CONT.	LOCATION/ COMMENTS	TA WO ID
1	SVMW-1-121214	12/12/14 0950		X													W	2		
2	SVMW-2-121214	0828		X	X	X	X	X	X	X	X	X	X					10		
3	SVMW-3-121214	0913		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓					↓		
4	DMW-DUP-121214	1000		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓					↓		
5																				
6																				
7																				
8																				
9																				
10																				

RELEASED BY: Justin Rice DATE: 12/12/14 TIME: 1450
PRINT NAME: Justin Rice FIRM: GeoEngineers
RECEIVED BY: Cat Stapleton DATE: 12-12-14 TIME: 14:50
PRINT NAME: Cat Stapleton FIRM: TestAmerica
RELEASED BY: DATE:
PRINT NAME: FIRM: TIME:
RECEIVED BY: DATE:
PRINT NAME: FIRM: TIME:

ADDITIONAL REMARKS:

TEMP: 4.7 PAGE 1 OF 1

TAL-1000 (0612)

TestAmerica Spokane
Sample Receipt Form

Work Order #: SXL0087	Client: GeoEngineers	Project: Tiger Oil Summit View
Date/Time Received: 12/12/14 14:50	By: CS	

Samples Delivered By: ☐ Shipping Service ☐ Courier ☒ Client ☐ Other: _____

List Air Bill Number(s) or Attach a photocopy of the Air Bill:

Receipt Phase	Yes	No	NA	Comments
Were samples received in a cooler:	X			
Custody Seals are present and intact:			X	
Are CoC documents present:	X			
Necessary signatures:	X			

Thermal Preservation Type: ☐ Blue Ice ☐ Gel Ice ☒ Real Ice ☐ Dry Ice ☐ None ☐ Other: _____

Temperature: 4.7 °C Thermometer (Circle **one** Serial #122208348 Keyring IR Serial # 111874910 IR Gun 2)(acceptance criteria 0-6

Temperature out of range: ☐ Not enough ice ☐ Ice melted ☐ w/in 4hrs of collection ☐ NA ☐ Other: _____

Log-in Phase Date/Time: 12/12/14 15:00 By: CS	Yes	No	NA	Comments
Are sample labels affixed and completed for each container	Y			
Samples containers were received intact:	Y			
Do sample IDs match the CoC	Y			
Appropriate sample containers were received for tests requested	Y			
Are sample volumes adequate for tests requested	Y			
Appropriate preservatives were used for the tests requested	Y			
pH of inorganic samples checked and is within method specification	Y			
Are VOC samples free of bubbles >6mm (1/4" diameter)	Y			
Are dissolved parameters field filtered			Y	
Do any samples need to be filtered or preserved by the lab			Y	
Does this project require quick turnaround analysis			Y	
Are there any short hold time tests (see chart below)	Y	Y (3)		Nitrate
Are any samples within 2 days of or past expiration		Y		
Was the CoC scanned	Y			
Were there Non-conformance issues at login		Y		
If yes, was a CAR generated # _____			N	

24 hours or less	48 hours	7 days
Coliform Bacteria	BOD, Color, MBAS	TDS, TSS, VDS, FDS
Chromium +6	Nitrate/Nitrite	Sulfide
	Orthophosphate	Aqueous Organic Prep

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APPENDIX C
Report Limitations and Guidelines for Use

APPENDIX C
REPORT LIMITATIONS AND GUIDELINES FOR USE[1]

This Appendix provides information to help you manage your risks with respect to the use of this report.

Environmental Services Are Performed for Specific Purposes, Persons and Projects

This report has been prepared for the exclusive use of the Washington State Department of Ecology (Ecology). This report is not intended for use by others, and the information contained herein is not applicable to other sites.

GeoEngineers structures our services to meet the specific needs of our clients. For example, an environmental site assessment study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and project site. No one except Ecology should rely on this environmental report without first conferring with GeoEngineers. This report should not be applied for any purpose or project except the one originally contemplated.

This Environmental Report is Based on a Unique Set of Project-Specific Factors

This report has been prepared for the Tiger Oil Summitview site located at 5511 Summitview Road in Yakima, Washington. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, do not rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

If important changes are made after the date of this report, GeoEngineers should be given the opportunity to review our interpretations and recommendations and provide written modifications or confirmation, as appropriate.

Reliance Conditions for Third Parties

Our report was prepared for the exclusive use of Ecology. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm and Ecology with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with Ecology and generally accepted environmental practices in this area at the time this report was prepared.

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[1] Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

Environmental Regulations are Always Evolving

Some substances may be present in the site vicinity in quantities or under conditions that may have led, or may lead, to contamination of the subject site, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substance, change or if more stringent environmental standards are developed in the future.

Uncertainty May Remain Even After This Phase II ESA is Completed

No ESA can wholly eliminate uncertainty regarding the potential for contamination in connection with a property. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely-spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled or analyzed.

Subsurface Conditions Can Change

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by manmade events such as construction on or adjacent to the site, by new releases of hazardous substances, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Always contact GeoEngineers before applying this report to determine if it is still applicable.

Soil and Groundwater End Use

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other sites or for other on-site uses of the affected media (soil and/or groundwater). Note that hazardous substances may be present in some of the site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or groundwater from the subject site or reuse of the affected media on site to evaluate the potential for associated environmental liabilities. We cannot be responsible for potential environmental liability arising out of the transfer of soil and/or groundwater from the subject site to another location or its reuse on site in instances that we were not aware of or could not control.

Most Environmental Findings are Professional Opinions

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the site. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ – sometimes significantly – from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Do Not Redraw the Exploration Logs

Environmental scientists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in an environmental report should never be redrawn for inclusion in other design drawings. Only photographic or electronic reproductions are acceptable, but recognize that separating logs from the report can elevate risk.

Read These Provisions Closely

Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory "limitations" provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these "Report Limitations and Guidelines for Use" apply to your project or site.

Geotechnical, Geologic and Geoenvironmental Reports Should Not be Interchanged

The equipment, techniques and personnel used to perform an environmental study differ significantly from those used to perform a geotechnical or geologic study and vice versa. For that reason, a geotechnical engineering or geologic report does not usually relate any environmental findings, conclusions or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. Similarly, environmental reports are not used to address geotechnical or geologic concerns regarding a specific project.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants and no conclusions or inferences should be drawn regarding Biological Pollutants, as they may relate to this project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts.

If Ecology desires these specialized services, they should be obtained from a consultant who offers services in this specialized field.

Have we delivered World Class Client Service?

Please let us know by visiting **www.geoengineers.com/feedback**.

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