

Monitoring Well Installation and Second Quarter 2017 Groundwater Sampling Report

Priceless Gas
1110 Morgan Street
Davenport, Washington

for
Washington State Department of Ecology

August 25, 2017



GEOENGINEERS 
Earth Science + Technology

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File No. 0504-027-05

August 25, 2017

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1.0 INTRODUCTION

This report presents results of additional groundwater monitoring well installation and the second quarter 2017 groundwater monitoring event conducted at the former Priceless Gas site, located at 1110 Morgan Street in Davenport, Washington (herein referred to as the “site”). The approximate site location is depicted in the Vicinity Map, Figure 1. Groundwater monitoring well locations and general site features are presented in Site Plan and Groundwater Data, May 16, 2017, Figure 2. This report was prepared on behalf of the Washington State Department of Ecology (Ecology). This work was conducted under Ecology Contract No. C1100145 and work assignment C11145B7.

2.0 SITE DESCRIPTION AND BACKGROUND

The site is located at and adjacent to the former Priceless Gas service station. The *Some Like It Hot!* espresso stand currently operates on the site. An air sparge and soil vapor extraction (SVE) remediation system is located in the northwest corner of the former service station property. A remediation trench containing SVE and air sparge wells is located near the northern boundary of the former service station property, oriented east to west. Fourteen groundwater monitoring wells (including four wells installed during the events summarized in this report) are located on the site and surrounding properties extending from MW-8 to the south to MW-10 to the north. Monitoring well locations are presented in Figure 2. The ground surface slopes downward from south to north toward the nearby Cottonwood Creek. One monitoring well, MW-30, located west of the espresso stand, was installed to monitor groundwater associated with a nearby property and is included in the site monitoring program.

In 2013, GeoEngineers subcontracted a vactor truck for several site visits to remove petroleum product, water, and vapors from selected monitoring wells. During the liquid and vapor removal events, monitoring wells MW-1 through MW-4 were each evacuated for a period of about 45 minutes and removed a water/petroleum product mixture.

GeoEngineers conducted a bioremediation pilot test at the site in spring 2015. The pilot test consisted of applying bioremediation amendments to the existing SVE remediation trench based on recommendations from Bioremediation Specialists, LLC (BRS). GeoEngineers subcontracted Sandry Environmental Services (Sandry) to conduct the first injection of BRS-supplied product on May 27, 2015. The product was injected into risers located on the remediation trench’s east and west ends. GeoEngineers returned to the site and conducted a second round of injections on August 21, 2015.

The results indicated amendment injections, either into existing monitoring wells or the remediation trench, which are screened within the basalt aquifer, or potential lance injections spread across the site, will have only localized effectiveness because the amendment does not readily disperse given the site geology and hydrogeology. Also, the product blend injected into the East Trench has not effectively reduced the contaminant concentration.

In March 2017, GeoEngineers installed 32 passive soil vapor samplers and continued quarterly groundwater monitoring activities. Based on the passive vapor analytical results, Ecology requested that GeoEngineers install additional groundwater monitoring wells. This report addresses the additional monitoring well installation activities and results of the second quarter 2017 groundwater monitoring.

3.0 SCOPE OF SERVICES

GeoEngineers' services for this project includes groundwater monitoring well installation, and groundwater monitoring and reporting. Our scope of services for these activities included the following:

- Marking groundwater monitoring well locations in the field and completing the required public one-call utility locate. Each location was cleared by Advanced Underground Utility Locating, Inc., a private utility locator, on the day of drilling.
- Installing additional monitoring wells (MW-11 through MW-13) in areas with high soil vapor concentrations, as identified during the March 2017 passive soil vapor investigation.
- Abandoning existing monitoring well MW-7 and replacing it with new monitoring well MW-14.
- Obtaining soil samples from each monitoring well boring using standard penetration test (SPT) samplers at 5-foot intervals. Soil samples were submitted for chemical analysis of gasoline-range petroleum hydrocarbons (GRPH) using Northwest Method NWTPH-Gx; and benzene, toluene, ethylbenzene, total xylenes, naphthalene (BTEXN) and methyl tert-butyl ether (MTBE) using Environmental Protection Agency (EPA) Method 8260C.
- Coordinating with Coffman Engineers to survey the location and elevations of the new and existing monitoring wells.
- Measuring depth to groundwater and/or product in 15 locations: monitoring wells MW-1 through MW-6, MW-8 through MW-14, MW-30, and in the East Remediation Trench (East Trench).
- Conducting groundwater monitoring and sampling activities in general accordance with the procedures used and activities performed during the previous groundwater monitoring events conducted since 2016. The following 13 locations were sampled during this event: monitoring wells MW-1, MW-2, MW-4, MW-6, MW-8 through MW-14, and MW-30; a groundwater sample also was collected from the East Trench access. Note that groundwater monitoring wells MW-3 and MW-5 were not sampled because the wells contained light non-aqueous phase liquids (LNAPL, or product) or are not included in the sampling program for the site.
- Purging groundwater and sampling monitoring wells MW-1, MW-2, MW-4, MW-6, MW-8 through MW-14, MW-30 and the East Trench using a peristaltic groundwater pump and dedicated tubing. Low-flow and low-stress sampling technologies were used. During purging activities, water quality parameters (temperature, pH, conductivity, oxidation-reduction potential [ORP], dissolved oxygen [DO] and turbidity) were measured and recorded.
- Submitting samples to TestAmerica Laboratories, Inc. (TestAmerica) in Spokane Valley, Washington for chemical analysis. Groundwater samples were analyzed for: GRPH using Northwest Method NWTPH-Gx; and BTEXN and MTBE using EPA Method 8260C, total organic carbon (TOC) using standard Method 5310C, and nitrate and sulfate using EPA Method 300.0.
- Calculating groundwater elevations within site monitoring wells and groundwater flow direction and estimated hydraulic gradient across the site.
- Placing purge water into a labeled 55-gallon drum stored near the remediation system compound.
- Removing LNAPL from monitoring well MW-3.
- Recording field data, measurements and observations on a field data sheet.

- Preparing this report following receipt of the final analytical data.

4.0 MONITORING WELL INSTALLATION

Monitoring wells MW-11 through MW-14 were installed using air-rotary drilling methods on May 8 and 9, 2017. Monitoring wells MW-11 through MW-13 were installed at locations determined based on the passive vapor sampling survey data results. Monitoring well MW-14 was installed to replace monitoring well MW-7, which was abandoned during this event. Monitoring well MW-7 was abandoned and replaced at Ecology's request because the poor quality of the well construction (we observed two monuments stacked on top of each other) might have caused stormwater infiltration, thus contributing to poor water quality data, especially high turbidity measurements.

Drilling was conducted by Environmental West Exploration of Spokane, Washington, and supervised by a trained GeoEngineers field representative. A soil sample was collected from each boring, except MW-13, for field screening and potential chemical analysis. Basalt bedrock was encountered, at about 2 feet below ground surface (bgs), before a sampler could be driven in MW-13. The GeoEngineers field representative classified encountered soil and bedrock in each boring, and prepared a detailed log. Soil encountered in the borings was classified in the field in general accordance with ASTM International (ASTM) D 2488, the Standard Practice for Classification of Soils, Visual-Manual Procedure. Soil generally consisted of interbedded silt and sand. Basalt was encountered at depths ranging between about 2 to 12 feet bgs.

A GeoEngineers field representative performed field screening tests on soil samples and recorded the observations on the field boring log. Field screening included measuring volatile vapors using a photoionization detector (PID), assessing water sheens on collected samples, and observing samples for evidence of staining or other signs of petroleum. Field screening results were used to aid in the selection of soil samples for chemical analysis. The sample from each boring exhibiting the greatest potential petroleum contamination conditions, based on the field screening, was selected for laboratory analysis. Headspace vapors were detected from borings MW-11 and MW-12 at concentrations ranging between 4.9 and 88.2 parts per million (ppm). Slight petroleum sheens also were observed from soil samples collected from borings MW-11 and MW-12 at about 8 to 9 feet bgs. Field screening indications of contamination were not observed in borings MW-13 and MW-14.

Soil samples selected for analysis were removed from the sampler using new, clean nitrile gloves and transferred into a laboratory-prepared container, which was labeled with a water proof pen and placed on "blue ice" or wet ice in a clean plastic lined cooler. Each sample was documented on a boring log and chain of custody (COC) including sample name, sample collection date and time, sample type, sample depth, requested analytical methods and sampler name. Soil samples for volatile organic compound (VOC) analyses (e.g. BTEX) were collected referencing EPA Method 5035A and preserved in accordance with Ecology Memorandum 5 (Ecology 2004).

Sampling equipment was decontaminated between each monitoring well by removing large soil particles, rinsing the samplers with distilled water, scrubbing the samplers with a detergent solution (Liquinox) and conducting a final distilled water rinse. The sample coolers were delivered to the analytical laboratory under standard COC procedures.

After monitoring wells MW-11 through MW-14 were installed, Coffman Engineers surveyed the locations and elevations of the existing and new monitoring wells. Survey data is included in Appendix A. The top of casing elevations, used to calculate the groundwater elevations, were updated in this report based on the survey results.

5.0 GROUNDWATER MONITORING PROGRAM

Groundwater monitoring events have been performed intermittently between January 2011 and May 2017. Monitoring wells selected for sampling during these events were based on historical laboratory analytical data, monitoring well locations, accessibility and/or the presence of LNAPL. Summary of Groundwater Elevations and Natural Attenuation Parameters, Table A-1, summarizes the dates and monitoring wells sampled during each event.

During the May 2017 monitoring event, monitoring wells MW-1, MW-2, MW-4, MW-6, MW-8 through MW-14, MW-30 and the East Trench were sampled. Monitoring well MW-3 was not sampled because approximately 0.04 feet of LNAPL was observed. Monitoring well MW-5 was not sampled per the agreed plan approved by Ecology. MW-7 was abandoned prior to the groundwater sampling event.

5.1. Groundwater Elevations and Flow Data

On May 16, 2017, GeoEngineers measured the depth to groundwater in monitoring wells MW-1 through MW-6, MW-8 through MW-14, MW-30 and the East Trench sampling location. The depth to groundwater, as measured from the top of the polyvinyl chloride (PVC) well casing, ranged from approximately 0.98 feet (MW-2) to 8.98 feet (MW-9). The depth to groundwater in monitoring well MW-3 was approximately 4.83 feet and the depth to product was approximately 4.79 feet; thus, the measured LNAPL thickness in MW-3 was 0.04 feet. Groundwater elevations ranged from 2,363.07 feet in monitoring well MW-10 to 2,387.00 feet in monitoring well MW-30. Groundwater elevations are presented in Table 1 below. Historical data is summarized in Appendix A.

Please note that site monitoring wells were resurveyed on May 17, 2017, by Coffman Engineers. The new survey results indicate the casing elevations are higher by between 3.1 to 5.56 feet. Because each well elevation is higher within that narrow range, the difference is probably the result of different survey methods or datums. The original survey datum and method is not known to compare with the recent survey. Groundwater elevations calculated during this event (May 2017) reflect the new survey data in Table 1 and Table A-1. Groundwater elevations reported during prior events reflect the original survey data in Table A-1.

TABLE 1. GROUNDWATER ELEVATIONS – MAY 16, 2017

Well Number	Top of Casing Elevation (feet)	Depth to Water (feet)	Groundwater Elevation ¹ (feet)	Product Elevation ² (feet)	Equivalent Groundwater Elevation ³ (feet)
MW-1	2,384.61	1.00	2,383.61	--	--
MW-2	2,382.46	0.98	2,381.48	--	--
MW-3	2,388.37	4.83	2,383.54	2,383.58	2,383.57
MW-4	2,379.70	8.73	2,370.97	--	--

Well Number	Top of Casing Elevation (feet)	Depth to Water (feet)	Groundwater Elevation ¹ (feet)	Product Elevation ² (feet)	Equivalent Groundwater Elevation ³ (feet)
MW-5	2,376.07	6.39	2,369.68	--	--
MW-6	2,382.63	1.35	2,381.28	--	--
MW-8	2,390.70	4.59	2,386.11	--	--
MW-9	2,381.13	8.98	2,372.15	--	--
MW-10	2,369.63	6.56	2,363.07	--	--
MW-11	2,388.61	5.73	2,382.88	--	--
MW-12	2,386.87	3.89	2,382.98	--	--
MW-13	2,383.82	7.34	2,376.48	--	--
MW-14	2,388.96	5.44	2,383.52	--	--
MW-30	2,390.56	3.56	2,387.00	--	--
East Trench	2,385.63	3.01	2,382.62	--	--

Notes:

¹Groundwater elevations calculated using the formula: Groundwater Elevation = Top of Casing Elevation - Depth to Water

²Product elevations calculated through use of the following formula: Product elevation = Top of Casing Elevation - Depth to Product.

³Equivalent groundwater elevation for MW-3 calculated using the equation: Equivalent Groundwater Elevation = Measured Groundwater Elevation + (Specific Gravity of Gasoline (0.75) x Product Thickness (0.04 feet))

Based on available boring logs, site monitoring wells are screened within weathered basalt, which is interpreted to act as a confining layer for the overlying shallow unconfined aquifer. As such, it is likely that groundwater elevations and flow across the site are controlled by the topography of the basalt surface (in addition to local and regional recharge and discharge conditions). The general groundwater flow is to the north with a hydraulic gradient of approximately 0.04 feet per foot (about 210 feet per mile). Approximate groundwater elevations and flow directions are graphically presented in Figure 2. Field methods are described in Appendix A.

5.2. Groundwater Sampling

Monitoring wells MW-1, MW-2, MW-4, MW-6, MW-8 through MW-14, MW-30 and the East Trench were purged and sampled on May 16, 2017, using standard low-flow sampling methodology. A peristaltic pump equipped with disposable tubing was used to purge and sample each well. Groundwater quality parameters generally were measured at 3-minute intervals during well purging. Groundwater samples were collected after each water quality parameter had stabilized in conformance with the criteria presented in Appendix A or a maximum purge time of 30 minutes elapsed. Groundwater samples were submitted to TestAmerica for analysis using the methods described in "Scope of Services" and chemical analytical results are discussed in "Groundwater Analytical Data."

5.3. Product Removal

Approximately 0.04 feet of LNAPL was measured in monitoring well MW-3 using an interface probe. Approximately 0.05 gallons of LNAPL was removed from monitoring well MW-3 using a bailer. LNAPL was bailed from the well until evidence of petroleum product was no longer observed.

Purge water generated during groundwater sampling was drummed, labeled and stored behind the remediation system building pending analytical results for profiling and disposal. The gasoline and water mixture removed from MW-3 was placed in a separate drum from the purge water. Seven storage drums for purge water, one for LNAPL, six for soil cuttings, and two empty drums were stored on site. Investigation derived waste was profiled and disposed by Able Cleanup Technologies on June 16, 2017.

6.0 SOIL ANALYTICAL DATA

Soil analytical results from each boring are summarized in Table 2 below.

- GRPH and benzene were detected at concentrations exceeding the Model Toxics Control Act (MTCA) Method A cleanup levels in soil samples collected from borings MW-11 and MW-12. The remaining analytes in the samples from borings MW-11 and MW-12 either were not detected or were detected at concentrations less than MTCA Method A cleanup levels.
- GRPH, BTEXN and MTBE were not detected in boring MW-14.
- Basalt was encountered at about 3 feet bgs in boring MW-13; therefore, a soil sample was not collected.

TABLE 2. CHEMICAL ANALYTICAL RESULTS¹ – SOIL

Sample No.	Depth (feet)	GRPH ² (mg/kg)	Benzene ³ (mg/kg)	Toluene ³ (mg/kg)	Ethyl-benzene ³ (mg/kg)	o-Xylene ³ (mg/kg)	m,p-Xylenes ³ (mg/kg)	Total Xylenes ³ (mg/kg)	Naphthalene (mg/kg)	Methyl tert-butyl ether ³ (mg/kg)
MW-11	8 – 9	98	0.038	0.16	0.62	0.49	1.8	2.2	0.48	<0.064
MW-12	8½ - 9	280	0.035	< 0.12	1.6	< 0.24	< 0.48	< 0.72	< 0.24	< 0.060
MW-14	3 – 3½	<7.1	<0.029	<0.14	<0.14	<0.29	<0.57	<0.86	<0.29	<0.071
MTCA Method A CULs		30/100 ⁴	0.03	7	6	9 ⁵			5	0.1

Notes:

¹Chemical analyses completed by TestAmerica Laboratories, Inc. located in Spokane Valley, Washington.

²GRPH analyzed by Northwest Method NWTPH-Gx.

³BTEXN and MTBE analyzed by EPA 8260C.

⁴Cleanup level is 100 mg/kg; 30 mg/kg when benzene is detected.

⁵Cleanup level for total xylenes (o-xylene and m,p-xylene) is 9 mg/kg. Concentrations were summed to determine compliance
mg/kg = milligrams per kilogram; CUL = cleanup level

Bold indicates the contaminant was detected at a concentration greater than the laboratory reporting limits.

Red border indicates the contaminant concentration exceeded the applicable MTCA Method A Cleanup Level.

A copy of the laboratory report is included in Appendix B.

7.0 GROUNDWATER ANALYTICAL DATA

Groundwater analytical results for petroleum-related compounds are summarized in Table 3 below.

- GRPH was detected in concentrations exceeding the MTCA Method A cleanup level in samples collected from monitoring wells MW-2 and MW-11. GRPH also was detected in MW-1, MW-4, MW-8, MW-13 and

MW-14 exceeding the laboratory method detection limit (MDL), but at a concentration less than MTCA Method A cleanup level. GRPH was not detected in the East Trench, but the detection limit was greater than the MTCA Method A CUL. The reported benzene concentration in the East Trench sample indicates that GRPH could be greater than the MTCA Method A cleanup level.

- Benzene was detected at concentrations exceeding the MTCA Method A cleanup level in samples collected from monitoring wells MW-1, MW-4, MW-8, MW-11, MW-14 and the East Trench. Benzene also was detected, but did not exceed the MTCA CUL, in groundwater samples collected from MW-2, MW-6 and MW-13.
- Toluene concentrations were detected in monitoring well samples from MW-8, MW-11 and MW-14, but did not exceed the MTCA CUL.
- Ethylbenzene was detected in samples collected from monitoring wells MW-1, MW-2, MW-4, MW-11, MW-13 and MW-14, but did not exceed the MTCA CUL.
- Xylenes were detected in monitoring well MW-2, MW-11, MW-13 and MW-14 samples at concentrations less than the MTCA Method A cleanup level.
- MTBE was detected at concentrations exceeding the MTCA Method A cleanup level in samples collected from monitoring wells MW-1, MW-2, MW-4, MW-11 and the East Trench. MTBE also was reported in samples collected from monitoring well MW-6, MW-8, MW-13 and MW-14 at concentrations less than the MTCA Method A cleanup level.

TABLE 3. CHEMICAL ANALYTICAL RESULTS¹ – GROUNDWATER (MAY 16, 2017)

Sample Number	GRPH ² (µg/L)	Benzene ³ (µg/L)	Toluene ³ (µg/L)	Ethylbenzene ³ (µg/L)	o-Xylene ³ (µg/L)	m,p-Xylenes ³ (µg/L)	Total Xylenes ³ (µg/L)	Methyl tert-butyl ether ³ (µg/L)
MTCA Method A CULs	1,000/ 800 ⁴	5	1,000	700	1,000 ⁵			20
MW-1	500	36	<1.0	11	<1.0	<2.0	<3.0	50
MW-2	1,500	2.1	<1.0	11	1.8	5.0	6.8	58
MW-4	620	44	<1.0	2.1	<1.0	<2.0	<3.0	150
MW-6	<150	2.4	<1.0	<1.0	<1.0	<2.0	<3.0	16
MW-8	210	41	1.2	<1.0	<1.0	<2.0	<3.0	1.4
MW-9	<150	<0.40	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0
MW-10	<150	<0.40	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0
MW-11	5,700	330	200	130	190	570	760	64
MW-12	<150	<0.40	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0
MW-13	250	2.1	<1.0	4.6	<1.0	2.2	<3.0	13
MW-14	720	160	9.6	5.0	25	42	67	7.1
MW-30	<150	<0.40	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0
East Trench	<3,000 ⁶	1,400	<20	<20	<20	<40	<60	40

Notes:

¹Chemical analyses completed by TestAmerica Laboratories, Inc. located in Spokane Valley, Washington.

²GRPH analyzed by Northwest Method NWTPH-Gx.

³BTEX and MTBE analyzed by EPA 8260C.

⁴Cleanup level is 1,000 µg/L; 800 µg/L when benzene is detected.

⁵Cleanup level for total xylenes (o-xylene and m,p-xylene) is 1,000 µg/L. Concentrations were summed to determine compliance.

⁶The Laboratory detection limit is elevated due to dilution of the sample. The contaminant was not detected above the reporting limit, but the reporting limit exceeds the cleanup level.

µg/L = micrograms per liter

Bold indicates the contaminant was detected at a concentration greater than the laboratory reporting limits.

Red border indicates the contaminant concentration exceeded the applicable MTCA Method A Cleanup Level.

Groundwater monitoring chemical analytical results recorded from January 2011 to the current monitoring event are listed in Summary of Chemical Analytical Test Results – Groundwater, Table A-2. A copy of the laboratory report is included in Appendix B.

7.1. Natural Attenuation Parameters

Groundwater samples were submitted to TestAmerica for total organic carbon, nitrate, and sulfate analysis. Turbidity, DO, ORP, specific conductivity, pH and temperature were measured in the field using a calibrated YSI Pro DDS multi-parameter meter equipped with a flow-through cell. Field and laboratory analytical results for natural attenuation parameters are summarized in Tables 4 and 5, respectively. Reported field parameters reflect conditions at the conclusion of well purging during low-flow sampling.

- Nitrate was detected at a concentration exceeding the EPA's Maximum Contaminant Level (MCL) in MW-14 and the East Trench.
- Sulfate was detected at a concentration exceeding the EPA's Secondary MCL in the East Trench.
- ORP and DO measured in monitoring wells MW-1, MW-2, MW-4, MW-8, and MW-11 indicate reducing conditions are present.

TABLE 4. FIELD MEASURED NATURAL ATTENUATION PARAMETERS

Monitoring Well	Field Measured Natural Attenuation Parameters					
	Turbidity ¹ (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)	Specific Conductivity (µS/cm)	pH (pH units)	Temperature (degrees C)
MW-1	9.7	0.007	-130.5	958	7.27	9.8
MW-2	5.5	0.05	-163.0	1002	7.24	9.8
MW-4	7.0	0.08	-61.1	984	7.19	10.9
MW-6	8.1	0.08	28.3	922	6.96	10.9
MW-8	9.6	0.08	-80.9	820	7.03	11.9
MW-9	7.9	4.01	104.8	638	6.81	9.9
MW-10	8.6	1.46	65.7	440	7.28	9.4
MW-11	11.8	0.13	-120.9	1022	7.02	12.1
MW-12	9.0	0.28	61.3	790	7.07	14.0
MW-13	5.3	0.39	-30.9	947	6.92	10.7
MW-14	12.3	9.56	99.9	437.3	6.75	10.7
MW-30	6.2	0.11	85.9	2,257	6.65	11.4

Monitoring Well	Field Measured Natural Attenuation Parameters					
	Turbidity ¹ (NTU)	Dissolved Oxygen (mg/L)	ORP (mV)	Specific Conductivity (µS/cm)	pH (pH units)	Temperature (degrees C)
East Trench	4.9	0.17	75.2	18,615	7.25	10.5

Notes:

¹Turbidity is not a natural attenuation parameter but was measured in the field to determine groundwater stabilization.

NTU = nephelometric turbidity units; mg/L = milligrams per liter; mV = millivolts; µS/cm = micro Siemens per centimeter

TABLE 5. LABORATORY ANALYZED NATURAL ATTENUATION PARAMETERS

Monitoring Well	Laboratory Analyzed Natural Attenuation Parameters (mg/L)		
	Total Organic Carbon	Nitrate	Sulfate
Nitrate MCL and Sulfate secondary MCL	NE	10	250
MW-1	2.1	1.1	11
MW-2	2.7	<0.20	17
MW-4	4.8	0.59	4.2
MW-6	2.6	<0.20	14
MW-8	1.9	<0.20	19
MW-9	3.1	0.55	21
MW-10	1.4	4.8	15
MW-11	4.4	<0.20	8.6
MW-12	1.3	2.1	18
MW-13	2.7	<0.20	17
MW-14	9.7	14	28
MW-30	6.6	1.7	57
East Trench	24	2,800	19,000

Notes:

Bold indicates the contaminant was detected at a concentration greater than the laboratory reporting limits.

Red border indicates the concentration exceeded the applicable EPA MCL and/or Secondary MCL.

NE = not established

Natural attenuation parameters recorded from January 2011 to the current monitoring event are presented in Table A-1. A copy of the laboratory analytical report is included in Appendix B.

8.0 CONCLUSIONS AND RECOMMENDATIONS

GeoEngineers installed four additional groundwater monitoring wells (MW-11 through MW-14) on May 8 and 9, 2017 and conducted a groundwater monitoring event on May 16, 2017 at the Priceless Gas site in Davenport, Washington. Groundwater elevations were measured in 14 monitoring wells and the East Trench. Groundwater elevation data indicated groundwater flow was generally to the north. Previous sampling events indicate that irregularities in the groundwater table (likely caused by the geometry of the underlying basalt surface) result in variable flow conditions in the central and northern portions of the site.

Samples were collected from 12 monitoring wells and the East Trench. Contaminant concentrations exceeding MTCA Method A cleanup levels were detected in samples collected from monitoring wells MW-1, MW-2, MW-4, MW-8, MW-11, MW-14 and the East Trench. LNAPL was observed and removed from monitoring well MW-3.

Compared to the results from the previous event, GRPH, BTEX and MTBE concentrations remained relatively stable in MW-1, MW-9, MW-10, MW-30 and the East Trench. GRPH, BTEX and MTBE concentrations decreased in MW-2, MW-4 and MW-6; and increased in MW-8. Nitrate concentrations exceeding the MCL were observed in monitoring well MW-14 and the East Trench. Sulfate concentrations exceeding the secondary MCL were observed in the East Trench sample. ORP and DO measurements indicated reducing conditions are present in the wells where petroleum-related contaminants were present.

Based on the total organic carbon, sulfate and nitrate concentrations observed in the East Trench, the products injected in the trench in 2015 appeared to remain in the remediation trench. Sulfate, nitrate and total organic carbon concentrations continue to be greater in the East Trench by one or two orders of magnitude compared with the observed monitoring well concentrations. Based on the well logs, groundwater is located within basalt underlying the site (basalt was encountered as shallow as 2 feet below ground surface [bgs]). The remediation trench, where the bioremediation amendments were injected, also was installed in the basalt formation. The lack of apparent amendment migration from the trench indicates that the transmissivity of the basalt aquifer is very low.

Because the basalt aquifer transmissivity appears to be very low, the petroleum contaminant observed in MW-3, is likely trapped in basalt void space. This trapped product continually contaminates groundwater with dissolved phase GRPH as groundwater fluctuates seasonally. LNAPL was not observed in the new monitoring wells during this event, but might be present in monitoring well MW-11 (based on proximity to well MW-3) during different times of the year when the depth to groundwater is greater. The depth to groundwater during this event was less than any other previous event, likely corresponding to the wet spring conditions. As the groundwater elevation decreases, the presence of LNAPL and/or the concentration of dissolved-phase contaminants will likely also change in the new monitoring wells. We recommend continued monitoring on a quarterly basis to obtain additional data from the monitoring well network.

Based on the groundwater monitoring results, the contaminant plume extends south to north from MW-8 to MW-4. We recommend future assessment efforts be focused on further defining the extent of the dissolved phase plume and the LNAPL source area. Such efforts might include:

- Installing a monitoring well on the north side of Logan Street, across from monitoring well MW-4 to define the northern extent of the plume; and
- After more data is obtained from the new monitoring wells (MW-11 and MW-12), if necessary, installing monitoring wells near MW-3 to define the extent of LNAPL present.

9.0 LIMITATIONS

We have prepared this report for use by Ecology for the Priceless Gas site in Davenport, Washington.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in the field of environmental monitoring in this area at the time this report was

prepared. No warranty or other conditions express or implied should be understood. Report limitations and guidelines for use are included in Appendix C.

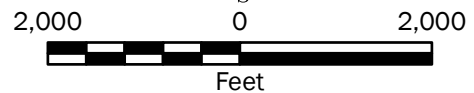
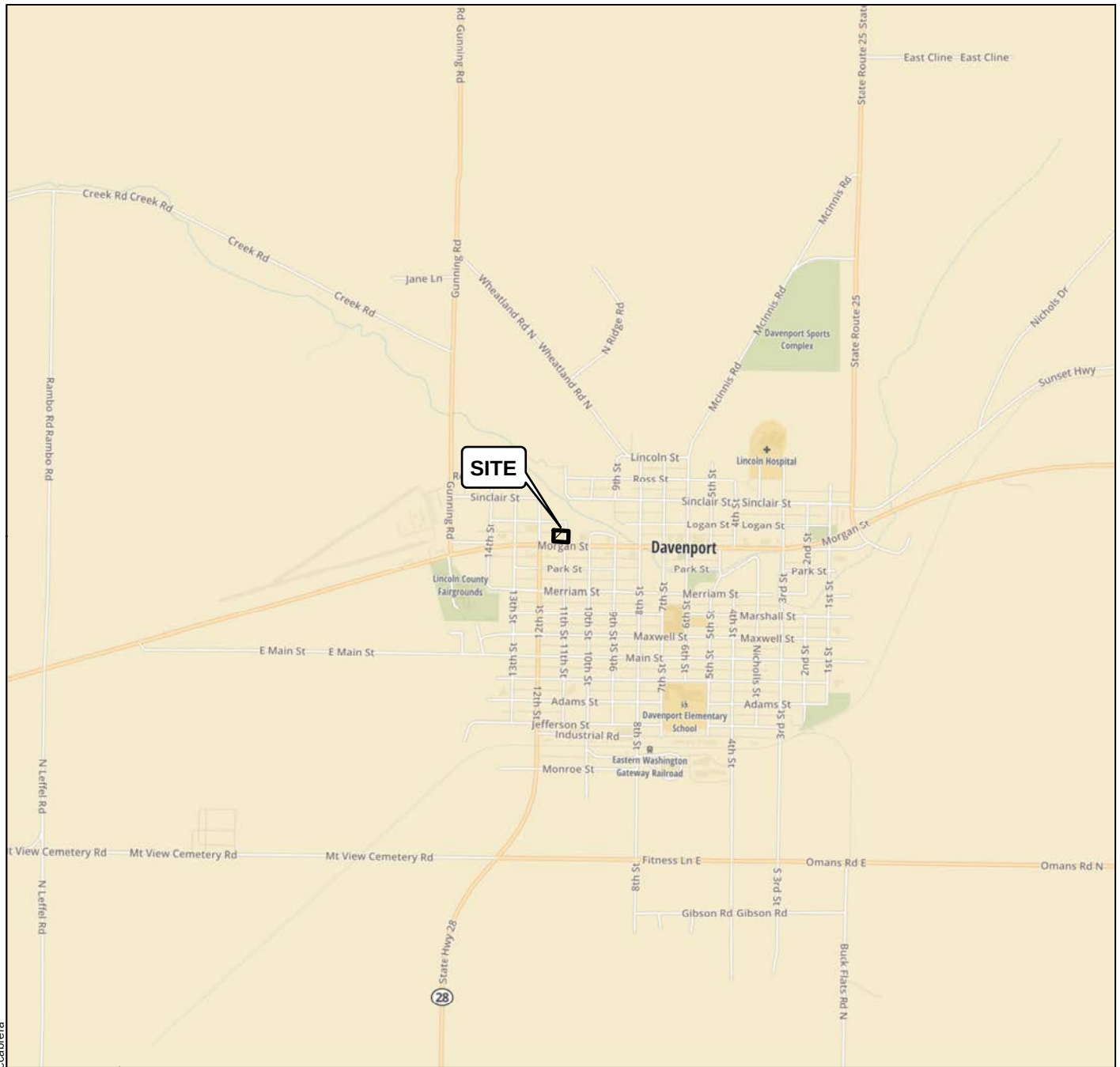
We appreciate the opportunity to provide these continued services to Ecology. Please call Scott Lathen or Bruce Williams at (509) 363-3125 if you have questions regarding the contents of this report.

10.0 REFERENCES

Puls, R.W. and M.J. Barcelona. 1996. Low-flow (minimal drawdown) ground-water sampling procedures: EPA Ground Water Issue, April. p.1-9.

U.S. Environmental Protection Agency (EPA), Region 1. 1996. "Low stress (low-flow) purging and sampling procedure for the collection of ground water samples from monitoring wells." EPA SOP No. GW 0001, Revision No. 2, July 30.

Washington State Department of Ecology. 2004. "Collecting and Preparing Soil Samples for VOC Analysis" Implementation Memorandum #5. June 17, 2004.



Vicinity Map

Priceless Gas - 1110 Morgan Street
Davenport, Washington



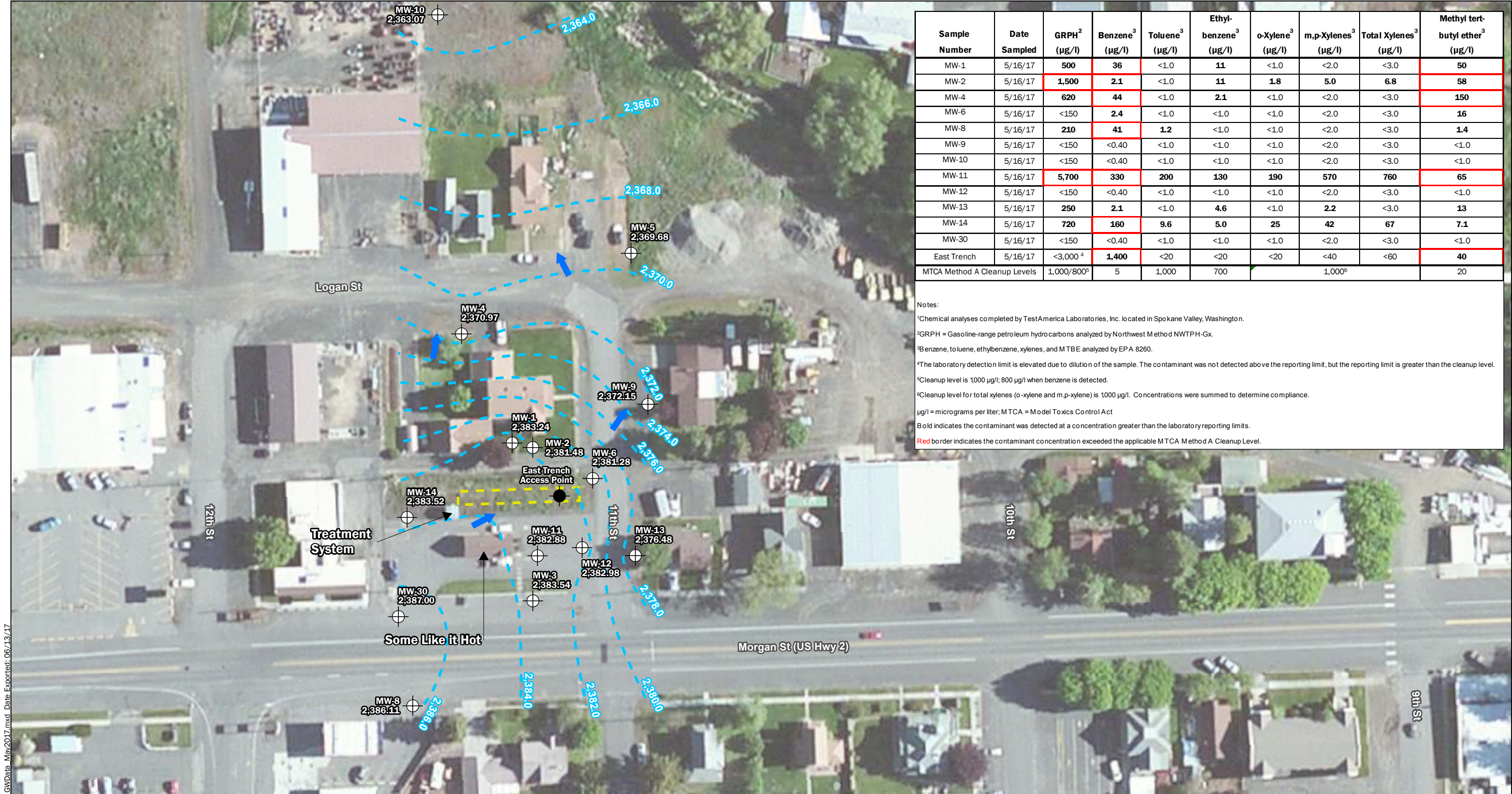
Figure 1

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 Source: Mapbox Open Street Map, 2016

Projection: NAD 1983 UTM Zone 11N



Sample Number	Date Sampled	GRPH ² (µg/l)	Benzene ³ (µg/l)	Toluene ³ (µg/l)	Ethyl-benzene ³ (µg/l)	o-Xylene ³ (µg/l)	m,p-Xylenes ³ (µg/l)	Total Xylenes ³ (µg/l)	Methyl tert-butyl ether ³ (µg/l)
MW-1	5/16/17	500	36	<1.0	11	<1.0	<2.0	<3.0	50
MW-2	5/16/17	1,500	2.1	<1.0	11	1.8	5.0	6.8	58
MW-4	5/16/17	620	44	<1.0	2.1	<1.0	<2.0	<3.0	150
MW-6	5/16/17	<150	2.4	<1.0	<1.0	<1.0	<2.0	<3.0	16
MW-8	5/16/17	210	41	1.2	<1.0	<1.0	<2.0	<3.0	1.4
MW-9	5/16/17	<150	<0.40	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0
MW-10	5/16/17	<150	<0.40	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0
MW-11	5/16/17	5,700	330	200	130	190	570	760	65
MW-12	5/16/17	<150	<0.40	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0
MW-13	5/16/17	250	2.1	<1.0	4.6	<1.0	2.2	<3.0	13
MW-14	5/16/17	720	160	9.6	5.0	25	42	67	7.1
MW-30	5/16/17	<150	<0.40	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0
East Trench	5/16/17	<3,000 ⁴	1,400	<20	<20	<20	<40	<60	40
MTCA Method A Cleanup Levels		1,000/800 ⁵	5	1,000	700	1,000 ⁶			20

Notes:

¹Chemical analyses completed by TestAmerica Laboratories, Inc. located in Spokane Valley, Washington.

²GRPH = Gasoline-range petroleum hydrocarbons analyzed by Northwest Method NWTPH-Gx.

³Benzene, toluene, ethylbenzene, xylenes, and MTBE analyzed by EPA 8260.

⁴The laboratory detection limit is elevated due to dilution of the sample. The contaminant was not detected above the reporting limit, but the reporting limit is greater than the cleanup level.

⁵Cleanup level is 1000 µg/l; 800 µg/l when benzene is detected.

⁶Cleanup level for total xylenes (o-xylene and m,p-xylene) is 1000 µg/l. Concentrations were summed to determine compliance.

µg/l = micrograms per liter; MTCA = Model Toxics Control Act

Bold indicates the contaminant was detected at a concentration greater than the laboratory reporting limits.

Red border indicates the contaminant concentration exceeded the applicable MTCA Method A Cleanup Level.

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 Source: ESRI Data & Maps, Lincoln County GIS

Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

MW-1
2,383.24

Monitoring Well Number, Groundwater Evaluation and Approximate Location

Trench Access Point

Interpreted Groundwater Flow Direction

Approximate Location of Treatment Trench

Approximate Groundwater Elevation Contour (2-Foot Interval)

North Arrow

Scale: 80 0 80 Feet

Site Plan and Groundwater Data

May 16, 2017

Priceless Gas - 1110 Morgan Street

Davenport, Washington

GEOENGINEERS

Figure 2

APPENDIX A

Historical Data, Field Methods, Boring Logs and Survey Data

APPENDIX A

HISTORICAL DATA, FIELD METHODS, BORING LOGS AND SURVEY DATA

General

Groundwater conditions at the Priceless Gas site in Davenport, Washington were monitored on May 16, 2017, by measuring depth to groundwater and/or product and sampling groundwater in monitoring wells MW-1, MW-2, MW-4, MW-6, MW-8 through MW-14, MW-30 and the East Trench at the approximate locations shown on Figure 2. Depth to groundwater was also measured in MW-3 and MW-5.

Groundwater Elevations

Depth to groundwater was measured relative to the monitoring well casing rim using an electric water level indicator. The probe of the water level indicator was decontaminated after use with a detergent wash, followed by two distilled water rinses. Depths to groundwater measured in the monitoring wells are summarized in Table A-2. The corresponding groundwater elevations are summarized in Table A-2 and report Table 1 and shown in Figure 2.

Depth to product was measured when LNAPL is present in monitoring wells. If LNAPL is detected in a monitoring well, the product is removed using a bailer or peristaltic pump until measurable LNAPL can no longer be detected. The LNAPL is stored in a labeled drum at the site.

Low-Flow Sampling Procedures

Groundwater sampling generally 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 activities were accomplished using a Cole-Parmer MasterFlex peristaltic pump equipped with disposable tubing. During purging activities, water quality parameters, including pH, conductivity, temperature, turbidity, ORP and DO, were measured using a Troll 9500 or YSI DSS Pro multi-parameter meter equipped with a flow-through cell; measurements were recorded approximately every 3 minutes. The meter calibration was verified at the beginning of each work day consistent with manufacturer recommendations.

Groundwater samples 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 included the following:

- Turbidity: ± 10 percent for values greater than 5 NTU;
- DO: ± 10 percent for values greater than 0.5 mg/L;
- Conductivity: ± 3 percent;
- pH: ± 0.1 unit;
- Temperature: ± 3 percent; and
- ORP: ± 10 mV.

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

Each sample was pumped directly into sample containers supplied by the laboratory. Groundwater samples collected for chemical analysis were stored on ice during on-site storage and transport to the laboratory. Chain-of-custody procedures were observed during transport of the groundwater samples.

Field Screening

Screening methods included: (1) visual examination; (2) water sheen screening; and (3) headspace vapor screening using a PID. Visual screening consists of inspecting the soil for discoloration indicative of the presence of petroleum-impacted material in the sample.

Water sheen screening involved placing soil in water and observing the water surface for signs of sheen. Sheen classifications are as follows:

1. **No Sheen (NS)** No visible sheen on the water surface;
2. **Slight Sheen (SS)** Light, colorless, dull sheen; spread is irregular, not rapid; sheen dissipates rapidly. Natural organic matter in the soil might produce a slight sheen;
3. **Moderate Sheen (MS)** Light to heavy sheen; might have some color/iridescence; spread is irregular to flowing, may be rapid; few remaining areas of no sheen on water surface; and
4. **Heavy Sheen (HS)** Heavy sheen with color/iridescence; spread is rapid; entire water surface might be covered with sheen.

Headspace vapor screening involved inserting a soil sample into a sealed plastic bag and measuring the airspace VOC vapor concentrations in ppm with a PID. Once a soil sample is placed in a sealed plastic bag with air space, the bag is shaken to expose the soil to the air trapped in the bag. The PID probe was inserted into a small opening in the bag seal and the total VOC concentration measurement collected. The PID typically is designed to quantify VOC vapor concentrations in the range between 1 ppm and 2,000 ppm with an accuracy of 10 percent of the reading and between 2,000 ppm and 10,000 ppm with an accuracy of 20 percent of the reading.

Field screening results are site-specific. The results vary with temperature, soil type, type of contaminant, and soil moisture content. Water sheen testing equipment was disposable or decontaminated before field screening each sample using a Liquinox® soap solution with a water rinse.

Table A-1
Summary of Groundwater Elevations and Natural Attenuation Parameters
Priceless Gas - 1110 Morgan Street
Davenport, Washington

Well Number and Top of Casing Elevation (feet)	Date Measured	Depth to Water (feet)	Groundwater Elevation ¹ (feet)	Product Elevation ² (feet)	Equivalent Groundwater Elevation (feet)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (millivolts)	Specific Conductivity (µS/cm)	pH (pH units)	Temperature (degrees C)
MW-1 2379.39 2384.61	01/25/11	2.88	2,376.51	–	–	0.00	3.84	171	1,740	6.63	8.93
	03/30/11	1.95	2,377.44	–	–	0.00	5.44	-97	1,520	6.82	8.43
	06/06/11	2.30	2,377.09	–	–	3.222	-0.10	-161	816.4	7.16	10.61
	03/06/12 ³	4.35	2,375.04	–	–	–	–	–	–	–	–
	06/05/12 ³	3.17	2,376.22	–	–	–	–	–	–	–	–
	12/06/12 ³	3.81	2,375.58	–	–	–	–	–	–	–	–
	03/7/13 ³	–	–	–	–	–	–	–	–	–	–
	06/05/13 ³	3.73	2,375.66	–	–	–	–	–	–	–	–
	10/22/13 ³	5.66	2,373.73	–	–	–	–	–	–	–	–
	12/17/14	5.63	2,373.76	–	–	2.497	0.18	-118	814.9	7.11	11.80
	03/17/15	3.45	2,375.94	–	–	6.788	0.97	7	873.8	7.33	8.76
	06/25/15	4.24	2,375.15	–	–	1.983	0.33	-130	950.9	7.23	13.45
	06/21/16	3.09	2,376.30	–	–	0.000	0.31	-127.5	1,034	7.28	12.00
	09/27/16	4.49	2,374.90	–	–	2.6	0.32	-107.9	1,128	7.06	14.6
	12/15/16	3.53	2,375.86	–	–	1.638	0.08	-93	1,559	6.99	11.03
	03/16/17	1.15	2,378.24			0.8298	0.00	-172	1,046	7.06	9.03
	05/16/17	1.00	2,383.61			9.70	0.007	-130.5	958	7.27	9.8
MW-2 2378.72 2382.46	01/25/11	2.21	2,376.51	–	–	0.00	2.43	-127	1,030	6.56	8.93
	03/30/11	1.81	2,376.91	–	–	0.00	5.43	-324	1,310	6.79	8.99
	06/06/11	1.85	2,376.87	–	–	3.638	-0.03	-188	809.6	7.17	12.34
	03/06/12	4.12	2,374.60	–	–	2.008	-0.07	-102	735.7	6.94	7.34
	06/05/12	2.63	2,376.09	–	–	4.712	-0.06	-172	872.7	7.04	9.78
	12/06/12	2.88	2,375.84	–	–	0.0676	-0.04	-100	687.8	6.91	9.07
	03/07/13	2.14	2,376.58	–	–	9.608	-0.01	-95	643.2	NR ¹	8.25
	06/05/13	3.19	2,375.53	–	–	0.5653	0.04	-152	950.0	7.14	14.96
	10/22/13	4.95	2,373.77	–	–	1.410	0.02	-141	773.5	7.05	14.87
	12/17/14	4.96	2,373.76	–	–	0.8471	0.08	-121	593.8	7.05	11.27
	03/17/15	2.73	2,375.99	–	–	4.032	0.25	-166	616.8	7.28	8.67
	06/25/15	3.54	2,375.18	–	–	3.025	0.07	-109	944.6	7.020	15.36
	06/21/16	2.41	2,376.31	–	–	0.000	0.33	-141	1,079.0	7.24	13.5
	09/27/16	3.84	2,374.88	–	–	3.5	0.31	-92.7	1,279.0	6.86	16.3
	12/15/16	3.00	2,375.72	–	–	19.79	0.00	-326	1,048	7.00	11.14

Well Number and Top of Casing Elevation (feet)	Date Measured	Depth to Water (feet)	Groundwater Elevation ¹ (feet)	Product Elevation ² (feet)	Equivalent Groundwater Elevation (feet)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (millivolts)	Specific Conductivity (µS/cm)	pH (pH units)	Temperature (degrees C)
MW-2 continued	03/16/17	1.02	2,377.70	-	-	11.09	0.00	-226	974.9	7.10	8.89
	05/16/17	0.98	2,381.48	-	-	5.50	0.05	-163.0	1,002.0	7.24	9.80
MW-3 2384.85 2388.37	01/25/11	9.27	2,375.58	-	-	0.00	2.80	-183	1,670	6.32	12.67
	03/30/11	7.64	2,377.21	-	-	0.00	6.49	-253	1,820	6.49	11.73
	06/06/11 ^{4,5}	-	-	-	-	-	-	-	-	-	-
	03/06/12 ³	10.68	2,374.17	-	-	-	-	-	-	-	-
	06/05/12 ³	9.50	2,375.35	-	-	-	-	-	-	-	-
	12/06/12 ³	10.93	2,373.92	-	-	-	-	-	-	-	-
	03/07/13 ³	7.15	2,377.70	-	-	-	-	-	-	-	-
	06/05/13 ³	8.50	2,376.35	-	-	-	-	-	-	-	-
	10/22/13 ³	11.27	2,373.58	-	-	-	-	-	-	-	-
	12/17/14 ⁵	11.24	2,373.61	2,374.21	2,374.06	-	-	-	-	-	-
	03/17/15 ⁵	8.72	2,376.13	2,376.65	2,376.52	-	-	-	-	-	-
	06/25/15 ⁵	10.12	2,374.73	2,376.04	2,375.71	-	-	-	-	-	-
	6/21/2016 ⁵	8.07	2,376.78	2,377.44	2,377.28	-	-	-	-	-	-
	09/27/16	10.22	2,374.63	2,375.31	2,375.14	-	-	-	-	-	-
	12/15/16	9.29	2,375.56	2,376.43	2,376.21	-	-	-	-	-	-
	03/16/17	5.87	2,378.98	2,379.42	2,379.31	-	-	-	-	-	-
	05/16/17	4.83	2,383.54	2,383.58	2,383.57	-	-	-	-	-	-
MW-4 2376.09 2379.70	01/25/11	11.88	2,364.21	-	-	0.00	6.45	-191	1,290	6.65	10.41
	03/30/11	11.20	2,364.89	-	-	0.00	5.71	-321	1,380	6.83	10.59
	06/06/11	12.60	2,363.49	-	-	2.895	-0.07	-171	869.9	7.20	11.84
	03/06/12	13.40	2,362.69	-	-	0.00	-0.07	-125	835.3	7.12	10.43
	06/05/12	11.27	2,364.82	-	-	1.710	-0.07	-125	835.4	7.14	9.72
	12/06/12	12.67	2,363.42	-	-	4.552	-0.03	-123	888.7	7.01	11.32
	03/07/13	11.81	2,364.28	-	-	0.8810	-0.01	-108	840.4	NR ⁷	9.43
	06/05/13	12.54	2,363.55	-	-	1.101	0.08	-104	847.0	7.21	11.42
	10/22/13	13.80	2,362.29	-	-	2.687	-0.01	-181	929.8	7.34	12.72
	12/17/14	14.65	2,361.44	-	-	2.484	0.12	-140	774.9	7.05	11.78
	03/17/15	12.19	2,363.90	-	-	2.433	0.82	-43	674.2	7.30	10.48
	06/25/15	14.08	2,362.01	-	-	5.098	0.27	-111	700.3	7.11	13.15
	06/21/16	12.47	2,363.62	-	-	0.000	1.87	-50.5	833.0	7.11	12.6
	09/27/16	13.50	2,362.59	-	-	38.2	0.32	-114.6	1,029	7.08	13.6
	12/15/16	12.23	2,363.86	-	-	<1	0.01	-242	1,032	7.06	11.94
	03/16/17	9.27	2,366.82	-	-	0.0	0.00	-266	839.6	7.15	11.35
	05/16/17	8.73	2,370.97	-	-	7.0	0.08	-61.1	984.0	7.19	10.90

Well Number and Top of Casing Elevation (feet)	Date Measured	Depth to Water (feet)	Groundwater Elevation ¹ (feet)	Product Elevation ² (feet)	Equivalent Groundwater Elevation (feet)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (millivolts)	Specific Conductivity (µS/cm)	pH (pH units)	Temperature (degrees C)
MW-5 2372.54 2376.07	01/25/11	10.87	2,361.67	–	–	0.00	4.81	68	690	6.62	10.64
	03/30/11	10.95	2,361.59	–	–	0.00	9.83	-24	703	6.80	10.04
	06/06/11	8.89	2,363.65	–	–	16.02	5.33	-41	356.4	7.08	11.87
	03/06/12	11.28	2,361.26	–	–	7.781	4.24	257	360	7.05	9.45
	06/05/12	8.19	2,364.35	–	–	4.169	4.65	66	369.9	7.13	10.01
	12/06/12	9.90	2,362.64	–	–	5.325	3.36	221	424.1	6.94	11.79
	03/07/13	5.76	2,366.78	–	–	6.806	4.03	-54	368.4	NR ¹	9.23
	06/05/13	8.53	2,364.01	–	–	1.804	3.98	475	382.0	7.13	11.72
	10/22/13	9.80	2,362.74	–	–	0.64	3.64	11	393.0	7.01	12.71
	12/17/14	8.90	2,363.64	–	–	2.795	2.99	231	364.7	6.99	10.10
	03/17/15	6.78	2,365.76	–	–	–	–	–	–	–	–
	06/25/15	8.80	2,363.74	–	–	2.983	3.25	227	380.9	7.07	13.74
	06/21/16	8.37	2,364.17	–	–	0.24	2.24	-141	520.80	6.90	17.33
	09/27/16	8.73	2,363.81	–	–	–	–	–	–	–	–
	12/15/16	8.21	2,364.33	–	–	–	–	–	–	–	–
	03/16/17	3.27	2,369.27	–	–	–	–	–	–	–	–
	05/16/17	6.39	2,369.68	–	–	–	–	–	–	–	–
MW-6 2379.12 2382.63	01/25/11 ⁶	–	–	–	–	–	–	–	–	–	–
	03/30/11	1.91	2,377.21	–	–	0.00	5.18	-198	1,200	6.67	9.54
	06/06/11	2.08	2,377.04	–	–	2.708	-0.09	-173	784	6.99	12.51
	03/06/12	4.14	2,374.98	–	–	1.736	1.67	212	513	6.85	8.46
	06/05/12	2.86	2,376.26	–	–	4.485	2.26	-33	720.5	6.94	10.74
	12/06/12	3.52	2,375.60	–	–	4.043	4.68	102	607.6	6.77	11.30
	03/07/13	3.85	2,375.27	–	–	5.707	6.60	-4	257.5	NR ¹	7.29
	06/05/13	3.31	2,375.81	–	–	3.156	3.38	78	701.4	6.98	13.64
	10/22/13	5.33	2,373.79	–	–	0.4850	0.20	-111	733.5	6.90	15.34
	12/17/14	5.34	2,373.78	–	–	3.370	4.84	-18	579.4	7.05	12.72
	03/17/15	3.23	2,375.89	–	–	1.898	6.91	248	386.9	7.05	9.92
	06/25/15	3.75	2,375.37	–	–	1.009	0.19	160	668.9	6.97	17.43
	06/21/16	2.88	2,376.24	–	–	0.000	2.66	59	817.0	6.97	15.6
	09/27/16	3.11	2,376.01	–	–	4.3	4.55	173.2	624	6.83	18.7
	03/16/17	1.42	2,377.70	–	–	8.173	5.35	-94	368.6	7.07	9.92
	05/16/17	1.35	2,381.28	–	–	8.100	0.08	28.3	922.0	6.96	10.90
MW-7 2384.62	01/25/11	3.15	2,381.47	–	–	0.00	7.57	136	405	6.61	9.11
	03/30/11	3.23	2,381.39	–	–	0.00	12.09	-12	292	6.34	8.74
	06/06/11	4.58	2,380.04	–	–	8.061	4.22	-52	159.4	6.80	11.20
	03/06/12	5.35	2,379.27	–	–	3.854	5.05	245	336	6.76	8.53

Well Number and Top of Casing Elevation (feet)	Date Measured	Depth to Water (feet)	Groundwater Elevation ¹ (feet)	Product Elevation ² (feet)	Equivalent Groundwater Elevation (feet)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (millivolts)	Specific Conductivity (µS/cm)	pH (pH units)	Temperature (degrees C)
MW-7 continued	06/05/12	2.98	2,381.64	–	–	51.77	8.12	59	89.6	6.98	11.18
	12/06/12	3.17	2,381.45	–	–	29.38	4.65	88	136.1	6.81	12.27
	03/07/13	1.50	2,383.12	–	–	48.11	9.83	-16	78.3	NR ⁷	7.60
	06/05/13	4.25	2,380.37	–	–	92.15	6.26	427	210.0	6.86	16.00
	10/22/13	9.16	2,375.46	–	–	66.20	1.07	15	266.4	6.59	14.22
	12/17/14	3.67	2,380.95	–	–	14.81	7.08	214	286.7	6.83	10.77
	03/17/15	3.20	2,381.42	–	–	–	–	–	–	–	–
	06/25/15	7.30	2,377.32	–	–	4.801	0.97	137	317.1	6.71	15.24
	06/21/16	4.35	2,380.27	–	–	9.195	1.83	-151	276.3	6.86	15.26
	09/27/16	8.06	2,376.56	–	–	7.243	2.06	–	279.2	6.86	20.06
	12/15/16	4.88	2,379.74	–	–	10.5	4.03	242.6	271.3	6.86	11.1
	03/16/17	2.95	2,381.67	–	–	12.7	8.37	112.0	224.6	6.78	7.9
MW-8 2386.95 2390.70	01/25/11	9.13	2,377.82	–	–	3.580	7.04	-144	1,490	6.34	11.49
	03/30/11	7.32	2,379.63	–	–	0.00	6.20	-304	1,620	6.47	11.57
	06/06/11	7.89	2,379.06	–	–	9.792	0.12	-148	1,063	6.81	13.62
	03/06/12 ³	11.21	2,375.74	–	–	–	–	–	–	–	–
	06/05/12 ³	9.52	2,377.43	–	–	–	–	–	–	–	–
	12/06/12 ³	10.73	2,376.22	–	–	–	–	–	–	–	–
	03/07/13 ³	8.60	2,378.35	–	–	–	–	–	–	–	–
	06/05/13 ³	9.90	2,377.05	–	–	–	–	–	–	–	–
	10/22/13 ³	12.77	2,374.18	–	–	–	–	–	–	–	–
	12/17/14	12.55	2,374.40	–	–	0.2767	0.45	-92	1,214	6.78	12.21
	03/17/15	9.87	2,377.08	–	–	3.741	0.05	-122	949.6	7.03	12.45
	06/25/15	10.89	2,376.06	–	–	0.1041	0.20	-73	1,364	6.77	16.07
	06/21/16	9.05	2,377.90	–	–	1.056	0.00	-320	1,600	6.69	14.76
	09/27/16	11.50	2,375.45	–	–	80.8	0.27	-69.3	1,557	6.69	16.2
	03/16/17	5.55	2,381.40	–	–	62.4	0.09	-44.7	790	6.89	12.0
	05/16/17	4.59	2,386.11	–	–	9.6	0.08	-80.9	820	7.03	11.9
MW-9 2377.40 2381.13	01/25/11	11.34	2,366.06	–	–	0.00	6.85	-47	999	6.52	10.80
	03/30/11	10.50	2,366.90	–	–	0.00	9.08	-24	938	6.48	10.00
	06/06/11	10.88	2,366.52	–	–	2.967	3.85	-56	461.3	6.81	12.00
	03/06/12	12.75	2,364.65	–	–	7.387	1.83	250	470.2	6.87	10.06
	06/05/12	11.66	2,365.74	–	–	3.510	4.84	69	481.1	6.96	10.84
	12/06/12	12.25	2,365.15	–	–	9.169	1.04	53	528.9	6.90	11.56
	03/07/13	10.76	2,366.64	–	–	3.289	3.79	-30	487.2	NR ⁷	10.90
	06/05/13	12.10	2,365.30	–	–	2.328	3.13	446	475.0	7.00	11.92
	10/22/13	12.48	2,364.92	–	–	1.170	5.09	34	472.4	7.00	13.74

Well Number and Top of Casing Elevation (feet)	Date Measured	Depth to Water (feet)	Groundwater Elevation ¹ (feet)	Product Elevation ² (feet)	Equivalent Groundwater Elevation (feet)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (millivolts)	Specific Conductivity (µS/cm)	pH (pH units)	Temperature (degrees C)
MW-9 continued	12/17/14	12.68	2,364.72	-	-	1.634	5.64	219	443.4	7.13	11.37
	03/17/15	12.09	2,365.31	-	-	-	-	-	-	-	-
	06/25/15	12.11	2,365.29	-	-	2.020	5.00	13	495.7	7.04	14.19
	06/21/16	11.62	2,365.78	-	-	3.982	6.18	-108	617.9	7.10	13.26
	09/27/16	12.15	2,365.25	-	-	7.011	4.83	-	563.0	7.04	15.44
	12/15/16	11.75	2,365.65	-	-	6.1	4.43	297	576	6.97	10.6
	03/16/17	8.80	2,368.60	-	-	9.2	2.85	91.4	695	6.69	9.2
	05/16/17	8.98	2,372.15	-	-	7.9	4.01	104.8	638	6.81	9.9
MW-10	01/25/11 ⁶	-	-	-	-	-	-	-	-	-	-
2366.53	03/30/11	6.45	2,360.08	-	-	2.930	9.14	-26	163	7.00	8.21
2369.63	06/06/11	9.91	2,356.62	-	-	18.31	4.41	-60	202	7.14	10.79
	03/06/12	8.64	2,357.89	-	-	3.631	5.00	207	182	7.06	9.17
	06/05/12	7.77	2,358.76	-	-	27.64	4.92	66	204	7.15	9.67
	12/06/12	7.42	2,359.11	-	-	23.89	6.42	120	185.0	6.88	10.87
	03/07/13	6.24	2,360.29	-	-	43.05	9.65	25	103.8	NR ⁷	8.61
	06/05/13	9.15	2,357.38	-	-	6.395	2.66	379	320.2	7.21	12.05
	10/22/13	11.00	2,355.53	-	-	8.713	0.69	-39	342.3	7.33	12.78
	12/17/14	9.31	2,357.22	-	-	14.13	4.58	165	241.0	6.92	11.43
	03/17/15	7.09	2,359.44	-	-	-	-	-	-	-	-
	06/25/15	7.52	2,359.01	-	-	10.44	0.30	213	299.0	7.52	13.85
	06/21/16	9.18	2,357.35	-	-	0.00	2.51	58	346.6	7.21	12.3
	09/27/16	10.53	2,356.00	-	-	23.1	0.87	181.9	404	7.14	15.1
	12/15/16	9.13	2,357.40	-	-	5.264	3.49	-33.0	348	7.39	10.52
	03/16/17	5.37	2,361.16	-	-	94.34	10.70	-84	90.40	7.99	8.23
	05/16/17	6.56	2,363.07	-	-	8.60	1.46	66	440	7.28	9.40
MW-11	05/16/17	5.73	2,382.88	-	-	11.80	0.13	-120.9	1022	7.02	12.1
2388.61											
MW-12	05/16/17	3.89	2,382.98	-	-	9.00	0.28	61.30	790	7.07	14.0
2386.87											
MW-13	05/16/17	7.34	2,376.48	-	-	5.30	0.39	-30.9	947	6.92	10.7
2383.82											
MW-14	05/16/17	5.44	2,383.52	-	-	12.30	9.56	99.90	437.30	6.75	10.7
2388.96											
MW-30	01/25/11	9.98	2,375.02	-	-	0.00	2.00	-66	1,760	6.19	12.3
2385.00	06/06/11	9.38	2,375.62	-	-	2.74	0.16	-135	1,726	6.54	13.15
2390.56	03/06/12 ³	11.17	2,373.83	-	-	-	-	-	-	-	-
	06/05/12 ³	9.06	2,375.94	-	-	-	-	-	-	-	-

Well Number and Top of Casing Elevation (feet)	Date Measured	Depth to Water (feet)	Groundwater Elevation ¹ (feet)	Product Elevation ² (feet)	Equivalent Groundwater Elevation (feet)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Redox Potential (millivolts)	Specific Conductivity (µS/cm)	pH (pH units)	Temperature (degrees C)
MW-30 continued	12/06/12 ³	7.57	2,377.43	–	–	–	–	–	–	–	–
	03/07/13 ³	7.59	2,377.41	–	–	–	–	–	–	–	–
	06/05/13 ³	8.27	2,376.73	–	–	–	–	–	–	–	–
	10/22/13 ³	11.33	2,373.67	–	–	–	–	–	–	–	–
	12/17/14 ³	8.26	2,376.74	–	–	–	–	–	–	–	–
	03/17/15	10.58	2,374.42	–	–	–	–	–	–	–	–
	06/25/15	9.24	2,375.76	–	–	–	–	–	–	–	–
	06/21/16	7.54	2,377.46	–	–	130.0	0.03	-297	3,277	6.53	16.12
	09/27/16	9.01	2,375.99	–	–	1.044	0.04	–	2,760	6.80	19.56
	03/16/17	5.08	2,379.92	–	–	29.9	0.04	104	1,741	6.54	10.4
	05/16/17	3.56	2,387.00	–	–	29.9	0.04	104	1,741	6.54	10.4
East Trench 2385.63	12/17/14	5.40	NA	–	–	0.4539	0.09	-123	834.0	7.04	11.31
	03/17/15	3.95	NA	–	–	12.20	0.09	-45	654.0	7.26	8.81
	06/25/15	4.16	NA	–	–	36.21	0.00	-128	23,100	7.42	16.73
	06/21/16	3.16	NA	–	–	13.57	0.00	-279	22,792	7.31	15.68
	09/27/16	3.38	NA	–	–	182.1	0.25	-20.2	22,840	7.14	18.8
	12/15/16	3.84	NA	–	–	23.4	0.17	254.5	18,013	7.31	10.8
	03/16/17	2.56	NA	–	–	10.0	0.00	100.3	20,202	7.06	7.4
	05/16/17	3.01	2,382.62	–	–	10.0	0.00	100.3	20,202	7.06	7.4

Notes:

¹Groundwater elevations were calculated through use of the following formula: Groundwater elevation = Top of Casing Elevation - Depth to Water.

Groundwater elevations are referenced to the north side of the top of the well casing. Elevations for the May 16, 2017 event calculated using the top of casing elevations surveyed by Coffman Engineers on May 19, 2017. All other elevations calculated based on the historical survey data.

²Product elevations were calculated through use of the following formula: Product elevation = Top of Casing Elevation - Depth to Product.

Product elevations are referenced to the north side of the top of the well casing.

Dissolved oxygen, redox potential, specific conductivity, pH and temperature were measured at conclusion of well purging.

³Groundwater parameters were not measured in the monitoring wells because the well was not included in the sampling program.

⁴Depth to groundwater was not measured in MW-3 because of observed free product in the well.

⁵Groundwater parameters were not measured in MW-3 because of observed free product in the well. The equivalent groundwater elevation was calculated using the following equation:

GW elevation = specific gravity of gasoline (assumed 0.75) x measured gasoline thickness + the measured groundwater elevation.

⁶MW-6 and MW-10 were inaccessible on January 25, 2011 due to ice and snow.

⁷Measurements not reported because of a suspected error in pH calibration.

"–" = Not measured; NR = not reported; NTU = nephelometric turbidity units; mg/L = milligrams per liter; µS/cm = microSiemens per centimeter

Elevation # = Top of casing elevation based on May 19, 2017 survey conducted by Coffman Engineers

Table A-2
Summary of Chemical Analytical Test Results¹ – Groundwater
Priceless Gas - 1110 Morgan Street
Davenport, Washington

Well Number and Top of Casing Elevation (feet)	Date Measured	Petroleum-Range Hydrocarbons			Volatile Organic Compounds (µg/L)							Natural Attenuation Parameters (mg/L)		
		GRPH ² (µg/L)	DRPH ³ (mg/L)	ORPH ⁴ (mg/L)	Benzene	Toluene	Ethylbenzene	o-Xylene ⁵	m,p-Xylenes ⁵	Total Xylenes ⁵	Methyl tert-butyl ether ⁵	Total Organic Carbon ²	Nitrate - Nitrogen ^{2,3}	Sulfate ^{2,3}
MTCA Method A Cleanup Levels		1,000/800 ⁴	0.500	0.500	5	1,000	700	1,000 ⁵			20	NE	10	250
MW-1	01/25/11	116	<0.245	<0.490	46.7	<1.00	<1.00	3.11	<2.00	NA	76.8	NA	NA	NA
	03/30/11	<100	0.253	<0.483	11.1	<2.00	<2.00	<2.00	<4.00	NA	202	NA	NA	NA
	06/06/11	135	<0.250	<0.500	16.4	<5.00	<5.00	<5.00	<10.0	NA	224	NA	NA	NA
	12/17/14	11,800	NA	NA	873	<50.0	416	292	1,780	2,070	94.0	11.8	<0.200	1.22
	03/17/15	720	NA	NA	26	1.4	23	11	62	73	45	16	0.55	50
	06/25/15	<1000	NA	NA	<2.0	<10	<10	<10	<20	<30	220	4.4	<0.20	5.9
	06/21/16	400	NA	NA	19	<1.0	2.0	<1.0	<2.0	<3.0	120	2.8	<0.20	9.7
	09/27/16	3,300	NA	NA	490	13	180	47	180	230	280	7.7	<0.20	17
	12/15/16	370 ⁶	NA	NA	11	<10	<10	<10	<20	<30	36	13	0.37	42
	03/16/17	290	NA	NA	8.8	<10	<10	<10	<20	<30	130	4.5	<0.20	9.4
05/16/17	500	NA	NA	36	<1.0	11	<1.0	<2.0	<3.0	50	2.1	1.1	11	
MW-2	01/25/11	17,200	2.98	<0.483	802	<200	512	490	2,190	NA	<200	NA	NA	NA
	03/30/11	5,030	1.11	<0.474	81.0	<100	123	<100	439	NA	728	NA	NA	NA
	06/06/11	1,620	0.363	<0.508	31.6	<20.0	47.0	<20.0	105	NA	345	NA	NA	NA
	03/06/12	25,700	NA	NA	1,990	135	947	800	2,980	NA	50.4	NA	NA	NA
	06/05/12	15,000	NA	NA	500	26.5	422	330	1,130	NA	448	NA	NA	NA
	12/06/12	27,700	NA	NA	1,110	60	909	617	2,770	NA	<0.500	NA	NA	NA
	03/07/13	20,300	NA	NA	1,340	51.5	420	652	2,340	NA	<5.00	NA	NA	NA
	06/05/13	1,940	0.485	<0.380	46.2	<5.00	60.4	25.4	102	NA	308	NA	NA	NA
	10/22/13	36,600	NA	NA	793	84.7	1,370	1,210	4,480	NA	36.1	NA	NA	NA
	12/17/14	21,800	NA	NA	492	<50.0	759	465	2,220	2,680	<50.0	10.4	<0.200	1.48
	03/17/15	18,000	NA	NA	480	23	720	340	1,900	2,200	<10	15	<0.20	19
	06/21/16	3,600	NA	NA	6.3	<1.0	9.0	2.1	13	15	120	4.4	<0.20	22
	09/27/16	9,200	NA	NA	270	<10	260	85	570	660	22	14	<0.20	140
	12/15/16	7,700	NA	NA	120	<10	140	94	300	390	13	16	<0.20	18
	03/16/17	8,200	NA	NA	69	<10	280	110	460	560	97	10	<0.20	14
05/16/17	1,500	NA	NA	2.1	<1.0	11	1.8	5.0	6.8	58	2.7	<0.20	17	
MW-3	01/25/11	23,700	3.25	<0.488	6,210	494	2,300	412	3,560	NA	<10	NA	NA	NA
	03/30/11	42,600	3.41	<0.481	8,680	584	2,900	420	4,500	NA	<200	NA	NA	NA
MW-4	01/25/11	1,110	0.687	<0.485	668	14.9	26.8	3.28	13.9	NA	680	NA	NA	NA
	03/30/11	2,570	0.765	<0.476	1,100	<50.0	54.0	<50.0	<100	NA	886	NA	NA	NA
	06/06/11	2,010	0.475	<0.500	577	<50.0	<50.0	<50.0	<100	NA	560	NA	NA	NA
	03/06/12	2,860	NA	NA	453	9.50	49.2	8.30	21.8	NA	559	NA	NA	NA
	06/05/12	3,270	NA	NA	858	16.1	33.6	6.20	9.40	NA	541	NA	NA	NA
	12/06/12	3,860	NA	NA	527	10.5	35.1	6.49	24.90	NA	386	NA	NA	NA
	03/07/13	4,600	NA	NA	967	17.9	24.7	5.60	10.70	NA	611	NA	NA	NA
	06/05/13	2,250	0.541	<0.381	412	5.70	9.00	<5.00	<5.00	NA	391	NA	NA	NA
	10/22/13	2,990	NA	NA	342	<5.00	22.3	8.90	6.00	NA	385	NA	NA	NA
	12/17/14	2,060	NA	NA	383	<5.00	11.6	<5.00	<5.00	<15.0	335	7.10	<0.200	2.46
	03/17/15	1,200	NA	NA	220	<10	<10	<10	<20	<30	220	6.9	1.7	7.0

Well Number and Top of Casing Elevation (feet)	Date Measured	Petroleum-Range Hydrocarbons			Volatile Organic Compounds (µg/L)							Natural Attenuation Parameters (mg/L)		
		GRPH ² (µg/L)	DRPH ³ (mg/L)	ORPH ⁴ (mg/L)	Benzene	Toluene	Ethylbenzene	o-Xylene ⁵	m,p-Xylenes ⁵	Total Xylenes ⁵	Methyl tert-butyl ether ⁵	Total Organic Carbon ²	Nitrate - Nitrogen ^{2,3}	Sulfate ^{2,3}
MTCA Method A Cleanup Levels		1,000/800 ⁴	0.500	0.500	5	1,000	700	1,000 ⁵			20	NE	10	250
MW-4 continued	06/25/15	1,000	NA	NA	180	<10	<10	<10	<20	<30	160	6.0	0.92	6.5
	06/21/16	740	NA	NA	79	1.0	2.1	<1.0	<2.0	<3.0	120	5.6	2.7	12
	09/27/16	1,600	NA	NA	440	<10	<10	<10	<20	<30	280	6.5	<0.20	5.2
	12/15/16	2,500	NA	NA	580	<10	<10	<10	<20	<30	290	6.9	0.28	2.0
	03/16/17	<1,500 ⁸	NA	NA	210	<10	<10	<10	<20	<30	190	6.1	1.5	5.3
	05/16/17	620	NA	NA	44	<1.0	2.1	<1.0	<2.0	<3.0	150	4.8	0.59	4.2
MW-5	01/25/11	111	<0.248	<0.495	1.63	<1.00	4.92	<1.00	9.16	NA	<1.00	NA	NA	NA
	03/30/11	<100	0.242	<0.483	<0.200	<1.00	<1.00	<1.00	<2.00	NA	1.16	NA	NA	NA
	06/06/11	<100	<0.248	<0.495	<0.200	<1.00	<1.00	<1.00	<2.00	NA	<1.00	NA	NA	NA
	03/06/12	<100	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
	06/05/12	<90	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
	12/06/12	<90	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
	03/07/13	<90	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	0.560	NA	NA	NA
	06/05/13	<90	<0.238	<0.381	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
	10/22/13	<90	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
	12/17/14	<100	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	<1.50	<0.500	3.30	3.95	20.8
	06/25/15	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	7.2	4.7	22
06/21/16	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	3.8	5.2	25	
MW-6	03/30/11	1,030	0.590	<0.474	83.4	3.56	3.90	25.8	5.82	NA	149	NA	NA	NA
	06/06/11	891	0.501	<0.495	31.2	8.40	61.7	44.8	46.6	NA	113	NA	NA	NA
	03/06/12	366	NA	NA	43.6	2.26	21.1	24.9	32.6	NA	17.4	NA	NA	NA
	06/05/12	2,780	NA	NA	201	9.94	83.5	113	87.8	NA	53.3	NA	NA	NA
	12/06/12	91	--	--	2.39	<0.500	3.43	4.04	5.79	NA	5.11	NA	NA	NA
	03/07/13	1,430	NA	NA	5.96	9.56	86.5	108	97.2	NA	<5.00	NA	NA	NA
	06/05/13	1,330	0.601	<0.381	10.3	5.38	40.6	73.4	73.5	NA	20.6	NA	NA	NA
	10/22/13	942	NA	NA	80.0	4.05	34.0	45.4	21.7	NA	25.6	NA	NA	NA
	12/17/14	<100	NA	NA	0.600	<0.500	0.500	<0.500	<0.500	<1.50	4.12	6.23	2.57	19.6
	03/17/15	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	6.6	7.6	12
	06/25/15	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	6.1	8.8	25
	06/21/16	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	5.2	18	33
	09/27/16	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	4.5	9.7	27
	03/16/17	520	NA	NA	4.5	<1.0	28	38	42	80	6.6	2.9	1.4	6.7
	05/16/17	<150	NA	NA	2.4	<1.0	<1.0	<1.0	<2.0	<3.0	16	2.6	<0.20	14
	MW-7	01/25/11	<100	<0.245	<0.490	<0.200	<1.00	<1.00	<1.00	<2.00	NA	<1.00	NA	NA
03/30/11		<100	<0.244	<0.488	<0.200	<1.00	<1.00	<1.00	<2.00	NA	<1.00	NA	NA	NA
06/06/11		<100	<0.244	<0.488	0.430	<1.00	<1.00	<1.00	<2.00	NA	<1.00	NA	NA	NA
03/06/12		<100	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
06/05/12		<90	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
12/06/12		<90	--	--	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
03/07/13		<90	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
06/05/13		<90	<0.237	<0.380	<0.200	<0.500	<0.500	<0.500	<0.500	NA	3.05	NA	NA	NA
10/22/13		<90	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	11.6	NA	NA	NA
12/17/14		<100	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	<1.50	<0.500	7.27	4.91	14.4
06/25/15		<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	5.2	6.6	13
06/21/16		<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	5.7	12	14
09/27/16		<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	5.1	13	22
12/15/16		<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	4.3	13	18
03/16/17	<150	NA	NA	<0.40	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	2.4	3.0	7.2	

Well Number and Top of Casing Elevation (feet)	Date Measured	Petroleum-Range Hydrocarbons			Volatile Organic Compounds (µg/L)							Natural Attenuation Parameters (mg/L)		
		GRPH ² (µg/L)	DRPH ³ (mg/L)	ORPH ⁴ (mg/L)	Benzene	Toluene	Ethylbenzene	o-Xylene ⁵	m,p-Xylenes ⁵	Total Xylenes ⁵	Methyl tert-butyl ether ⁵	Total Organic Carbon ²	Nitrate - Nitrogen ^{2,3}	Sulfate ^{2,3}
MTCA Method A Cleanup Levels		1,000/800 ⁴	0.500	0.500	5	1,000	700		1,000 ⁵		20	NE	10	250
MW-8	01/25/11	1,580	1.07	1.08	49.7	2.06	<1.00	2.52	<2.00	NA	6.48	NA	NA	NA
	03/30/11	3,070	1.45	<0.481	556	19.0	10.0	3.16	8.36	NA	26.9	NA	NA	NA
	06/06/11	3,840	1.55	<0.495	870	36.9	24.4	<10.0	<20.0	NA	27.6	NA	NA	NA
	12/17/14	4,790	NA	NA	397	10.2	<5.00	<5.00	<5.00	<15.0	14.8	6.57	<0.200	<0.500
	03/17/15	2,700	NA	NA	220	<10	<10	<10	<20	<30	10	4.8	0.39	15
	06/25/15	6,000	NA	NA	280	10	18	3.0	11	14	10	6.3	<0.20	5
	06/21/16	4,200	NA	NA	260	11	21	3.0	8.8	12	13	6.3	0.24	6.9
	09/27/16	3,400	NA	NA	380	11	9.1	3.9	7.5	11	15	6.7	<0.20	2.3
	03/16/17	<150	NA	NA	0.41	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	1.8	0.48	22
05/16/17	210	NA	NA	41	1.2	<1.0	<1.0	<2.0	<3.0	1.4	1.9	<0.20	19	
MW-9	01/25/11	<100	<0.250	<0.500	<0.200	<1.00	<1.00	<1.00	<2.00	NA	<1.00	NA	NA	NA
	03/30/11	<100	<0.256	0.513	<0.200	<1.00	<1.00	<1.00	<2.00	NA	4.06	NA	NA	NA
	06/06/11	<100	<0.250	<0.500	0.360	<1.00	<1.00	<1.00	<2.00	NA	<1.00	NA	NA	NA
	03/06/12	<100	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
	06/05/12	<90	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
	12/06/12	<90	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
	03/07/13	<90	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	0.700	NA	NA	NA
	06/05/13	<90	<0.239	<0.382	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
	10/22/13	<90	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
	12/17/14	<100	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	<1.50	<0.500	3.04	0.67	26.8
	09/27/16	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	3.1	0.67	29
	12/15/16	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	3.0	0.71	26
	03/16/17	<150	NA	NA	<0.40	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	3.2	0.33	25
05/16/17	<150	NA	NA	<0.40	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	3.1	0.55	21	
MW-10	06/25/15	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	3.9	0.86	27
	06/21/16	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	3.4	0.69	28
	03/30/11	<100	<0.245	<0.490	<0.200	<1.00	<1.00	<1.00	<2.00	NA	<1.00	NA	NA	NA
	06/06/11	<100	<0.246	<0.493	<0.200	<1.00	<1.00	<1.00	<2.00	NA	<1.00	NA	NA	NA
	03/06/12	<100	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
	06/05/12	<90	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
	12/06/12	<90	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
	03/07/13	<90	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
	06/05/13	<90	<0.238	<0.380	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
	10/22/13	<90	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	NA	<0.500	NA	NA	NA
	12/17/14	<100	NA	NA	<0.200	<0.500	<0.500	<0.500	<0.500	<1.50	<0.500	2.24	10.8	13.5
	06/25/15	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	1.7	5.4	15
	06/21/16	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	1.9	6.6	13
	09/27/16	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	1.5	5.5	17
	12/15/16	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	2.2	6.3	13
03/16/17	<150	NA	NA	<0.40	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	2.2	3.8	4.7	
05/16/17	<150	NA	NA	<0.40	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	1.4	4.8	15	
MW-11	05/16/17	5,700	NA	NA	330	200	130	190	570	760	64	4.4	<0.20	8.6
MW-12	05/16/17	<150	NA	NA	<0.40	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	1.3	2.1	18
MW-13	05/16/17	250	NA	NA	2.1	<1.0	4.6	<1.0	2.2	<3.0	13	2.7	<0.20	17
MW-14	05/16/17	720	NA	NA	160	9.6	5.0	25	42	67	7.1	9.7	14	28

Well Number and Top of Casing Elevation (feet)	Date Measured	Petroleum-Range Hydrocarbons			Volatile Organic Compounds (µg/L)							Natural Attenuation Parameters (mg/L)		
		GRPH ² (µg/L)	DRPH ³ (mg/L)	ORPH ⁴ (mg/L)	Benzene	Toluene	Ethylbenzene	o-Xylene ⁵	m,p-Xylenes ⁵	Total Xylenes ⁵	Methyl tert-butyl ether ⁵	Total Organic Carbon ²	Nitrate - Nitrogen ^{2,3}	Sulfate ^{2,3}
MTCA Method A Cleanup Levels		1,000/800 ⁴	0.500	0.500	5	1,000	700	1,000 ⁵			20	NE	10	250
MW-30	01/25/11	<100	<0.248	<0.495	0.410	<1.00	<1.00	<1.00	<2.00	NA	<1.00	NA	NA	NA
	06/06/11	454	0.304	<0.495	1.51	<1.00	1.00	<1.00	<2.00	NA	<1.00	NA	NA	NA
	06/21/16	110	NA	NA	0.59	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	5.4	0.23	54
	09/27/16	390	NA	NA	0.75	<1.0	1.4	<1.0	<2.0	<3.0	<1.0	5.6	<0.20	42
	03/16/17	<150	NA	NA	<0.40	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	5.8	4.1	50
	05/16/17	<150	NA	NA	<0.40	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	6.6	1.7	57
East Trench	12/17/14	13,700	NA	NA	3,930	308	842	585	951	1,540	76.0	11.0	<0.200	2.52
	03/17/15	3,900	NA	NA	1,400	19	78	19	100	120	24	11	0.42	44
	06/21/16	2,400	NA	NA	610	<20	26	<20	<40	<60	23	47	880 ⁷	8600 ⁷
	09/27/16	2,300	NA	NA	930	<20	<20	<20	<40	<60	23	41	680 ⁷	6,300 ⁷
	12/15/16	2,700	NA	NA	1,100	<20	<20	<20	<40	<60	26	30	610 ⁷	5,400 ⁷
	03/16/17	<3,000 ⁸	NA	NA	1,500	<20	<20	<20	<40	<60	43	19	700 ⁷	4500 ⁷
	05/16/17	<3,000 ⁸	NA	NA	1,400	<20	<20	<20	<40	<60	40	24	2,800 ⁷	19,000 ⁷
Duplicate-1	01/25/11	<100	<0.250	<0.500	0.200	<1.00	<1.00	<1.00	<2.00	NA	8.51	NA	NA	NA
Duplicate-1 (MW-9)	03/30/11	<100	<0.243	<0.485	<0.200	<1.00	<1.00	<1.00	<2.00	NA	4.00	NA	NA	NA
Duplicate-1 (MW-9)	06/06/11	<100	<0.255	<0.510	<0.200	<1.00	<1.00	<1.00	<2.00	NA	<1.00	NA	NA	NA
Duplicate-1 (MW-4)	03/06/12	2,760	NA	NA	429	9.24	48.4	7.46	18.8	NA	531	NA	NA	NA
Duplicate-1 (MW-6)	06/05/12	2,610	NA	NA	209	10.6	93.5	118	101	NA	52.4	NA	NA	NA
Duplicate-1 (MW-6)	12/06/12	179	–	–	5.40	0.990	8.35	10.3	14.9	NA	8.44	NA	NA	NA
Duplicate-1 (MW-6)	03/07/13	1,320	NA	NA	5.30	8.200	74.1	108	86.3	NA	<5.00	NA	NA	NA
Duplicate-1 (MW-6)	06/05/13	1,370	0.618	<0.380	10.6	5.60	40.7	79.0	75.6	NA	20.6	NA	NA	NA
Duplicate-1 (MW-6)	10/22/13	1,000	NA	NA	85.1	4.15	35.4	47.4	21.2	NA	27.8	NA	NA	NA
MW-Dup-121714 (MW-6)	12/17/14	<100	NA	NA	0.640	<0.500	0.630	<0.500	<0.500	<1.50	4.49	6.13	2.55	19.8
Duplicate-1-031715	03/17/15	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	6.8	7.3	12
MW-Dup-062515	06/25/15	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	6.1	9.1	26
Dup:-062116	06/21/16	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	5.1	18	32
MW-Dup-092716	09/27/16	<100	NA	NA	<0.20	<1.0	<1.0	<1.0	<2.0	<3.0	<1.0	4.5	9.7	27
MW-Dup:121516 (MW-4)	12/15/16	2,300	NA	NA	520	<20	<20	<20	<40	<60	270	7.5	0.23	1.7
MW-Dup-031617 (MW-6)	03/16/17	450	NA	NA	3.8	<1.0	25	33	38	71	6.0	2.8	1.5	6.9
Dup-051617 (MW-6)	05/16/17	<150	NA	NA	2.6	<1.0	<1.0	<1.0	<2.0	<3.0	19.0	3.0	<0.20	14

Notes:

- ¹Chemical analyses completed by TestAmerica Laboratories, Inc. located in Spokane Valley, Washington.
- ²Total organic carbon, nitrate-nitrogen and sulfate analyzed using EPA Method 300.0.
- ³The cleanup level refers to the Maximum Contaminant Level (MCL) for nitrate and the Secondary MCL for sulfate as recommended by the EPA.
- ⁴Cleanup level is 1,000 µg/L; 800 µg/L when benzene is detected.
- ⁵Cleanup level for total xylenes (o-xylene and m,p-xylene) is 1,000 µg/L. Analytes were summed to determine compliance.
- ⁶TestAmerica reported this result as an estimate (J-Flag). The result is less than the reporting limit but greater than the method detection limit.
- ⁷The detected nitrate or sulfate concentration exceeded the MCL and the secondary MCL
- ⁸The laboratory detection limit is elevated due to dilution of the sample. The contaminant was not detected above the reporting limit, but the reporting limit exceeds the cleanup level.

Bold = detection is greater than reporting limit.

Red border indicates the contaminant concentration exceeded the applicable MTCA Method A Cleanup Level.

mg/L = milligrams per liter; µg/L = micrograms per liter; NA = not analyzed; MTCA = Model Toxics Control Act; NE = not established; EPA = Environmental Protection Agency

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS	
			GRAPH	LETTER		
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES	
		(LITTLE OR NO FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES	
		GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES	
		(APPRECIABLE AMOUNT OF FINES)		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES	
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS		SW	WELL-GRADED SANDS, GRAVELLY SANDS
			(LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND
MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE		SANDS WITH FINES		SM	SILTY SANDS, SAND - SILT MIXTURES	
			(APPRECIABLE AMOUNT OF FINES)		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY	
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS	
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY	
	MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
					CH	INORGANIC CLAYS OF HIGH PLASTICITY
					OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

Sampler Symbol Descriptions

	2.4-inch I.D. split barrel
	Standard Penetration Test (SPT)
	Shelby tube
	Piston
	Direct-Push
	Bulk or grab
	Continuous Coring

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

"P" indicates sampler pushed using the weight of the drill rig.

"WOH" indicates sampler pushed using the weight of the hammer.

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS		TYPICAL DESCRIPTIONS
GRAPH	LETTER	
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/Quarry Spalls
	SOD	Sod/Forest Duff
	TS	Topsoil

Groundwater Contact



Measured groundwater level in exploration, well, or piezometer



Measured free product in well or piezometer

Graphic Log Contact



Distinct contact between soil strata



Approximate contact between soil strata

Material Description Contact



Contact between geologic units



Contact between soil of the same geologic unit

Laboratory / Field Tests

%F	Percent fines
%G	Percent gravel
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DD	Dry density
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content
Mohs	Mohs hardness scale
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PP	Pocket penetrometer
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
VS	Vane shear

Sheen Classification

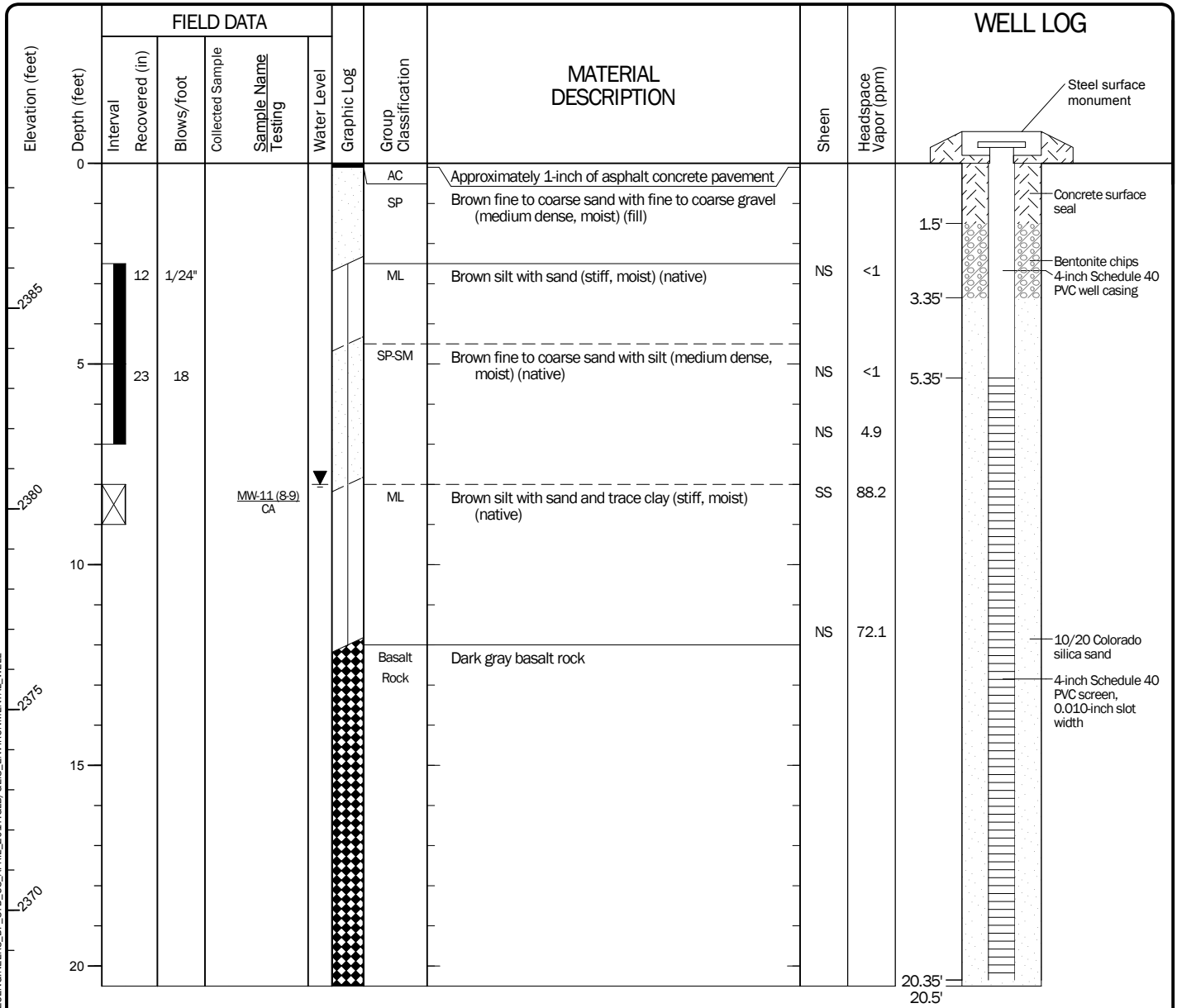
NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen

Key to Exploration Logs



Figure A-1

Start Drilled	5/8/2017	End 5/8/2017	Total Depth (ft)	20.5	Logged By Checked By	JML SHL	Driller	Environmental West Explorations, Inc.	Drilling Method	Air Rotary
Hammer Data	Autohammer 140 (lbs) / 30 (in) Drop			Drilling Equipment	Schramm T-300 Air Rotary			A 8 (in) well was installed on 5/8/2017 to a depth of 20.35 (ft). Well was developed on 5/10/2017.		
Surface Elevation (ft)		2388.61		Top of Casing Elevation (ft)						
Vertical Datum		NAVD88								
Easting (X)		2299989.16		Horizontal Datum		WA State Plane North NAD83		<u>Groundwater</u> <u>Date Measured</u>		
Northing (Y)		250128.16						<u>Depth to Water (ft)</u> 5/8/2017 8.00		
								<u>Elevation (ft)</u>		
Notes:										



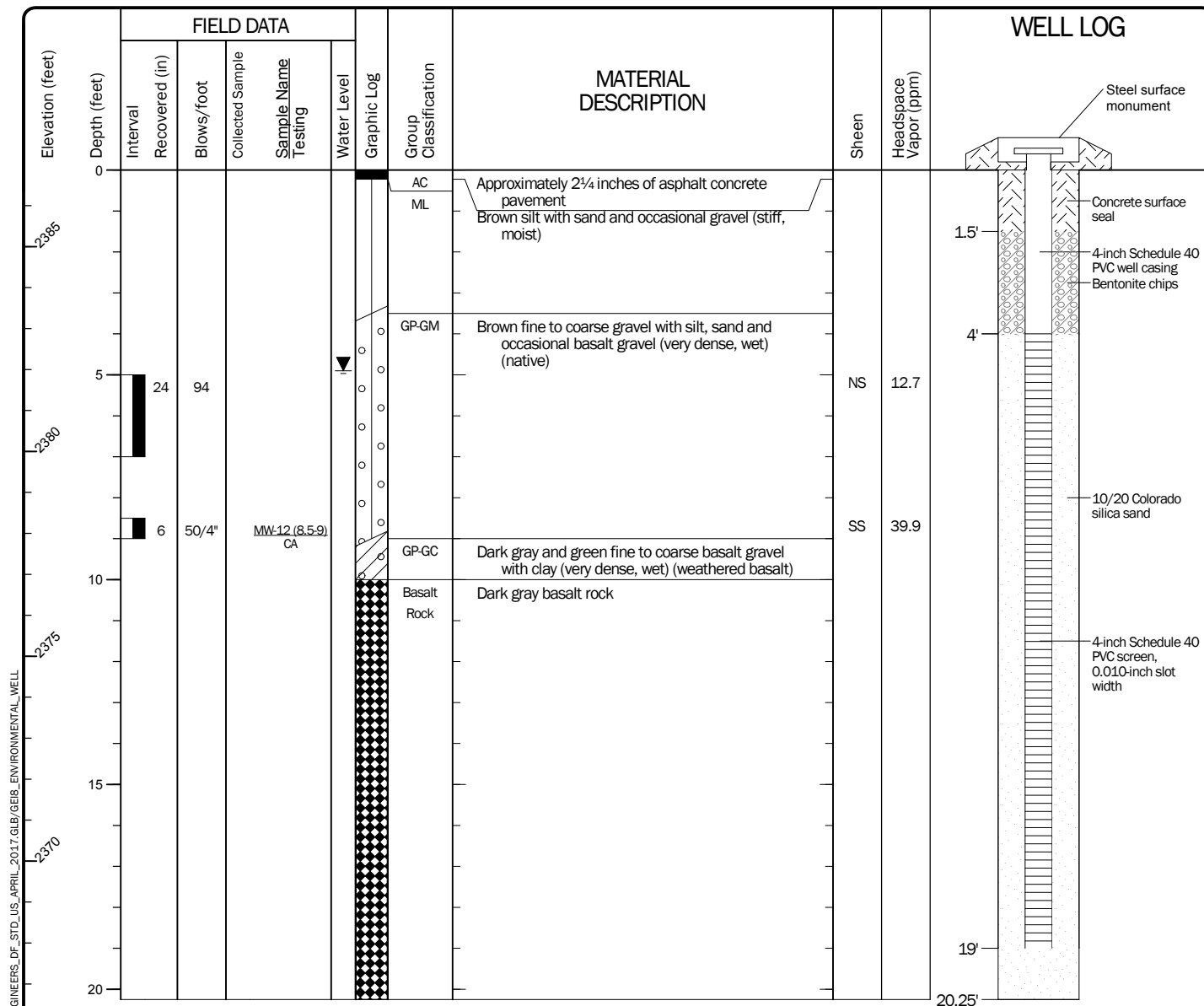
Log of Monitoring Well MW-11



Project: Priceless Gas
Project Location: Davenport, Washington
Project Number: 0504-027-05

Figure A-2
Sheet 1 of 1

Drilled	Start 5/9/2017	End 5/9/2017	Total Depth (ft)	20.25	Logged By Checked By	JML SHL	Driller	Environmental West Explorations, Inc.	Drilling Method	Air Rotary
Hammer Data	Autohammer 140 (lbs) / 30 (in) Drop				Drilling Equipment	Schramm T-300 Air Rotary			A 8 (in) well was installed on 5/9/2017 to a depth of 19 (ft). Well was developed on 5/10/2017. <u>Groundwater</u> <u>Date Measured</u> 5/9/2017 <u>Depth to Water (ft)</u> 4.90 <u>Elevation (ft)</u>	
Surface Elevation (ft) Vertical Datum			2386.87 NAVD88		Top of Casing Elevation (ft)					
Easting (X) Northing (Y)			2300021.49 250133.12		Horizontal Datum WA State Plane North NAD83					
Notes:										



Note: See Figure A-1 for explanation of symbols.

Coordinates Data Source: Horizontal approximated based on Topographic Survey, Vertical approximated based on Topographic Survey

Log of Monitoring Well MW-12

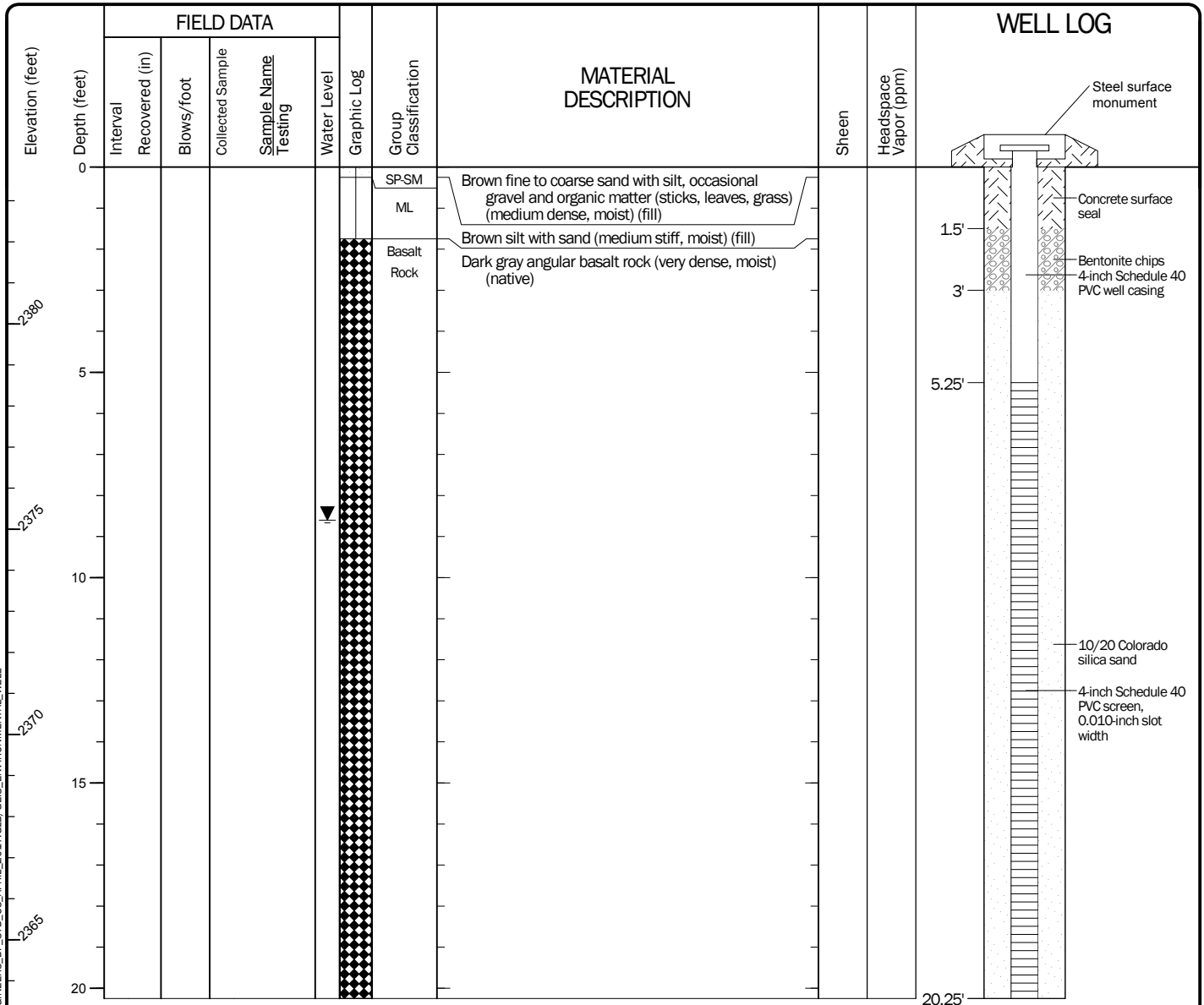


Project: Priceless Gas
Project Location: Davenport, Washington
Project Number: 0504-027-05

Figure A-3
Sheet 1 of 1

Date: 7/7/17 Path: P:\0504027\GINT\050402705.GPJ DBLibrary\Library\GEOENGINEERS_DF_STD_US_APRIL_2017.GLB\GEB_ENVIRONMENTAL_WELL

Drilled	<u>Start</u> 5/9/2017	<u>End</u> 5/9/2017	Total Depth (ft)	20.25	Logged By Checked By	JML SHL	Driller	Environmental West Explorations, Inc.	Drilling Method	Air Rotary
Hammer Data	Autohammer 140 (lbs) / 30 (in) Drop			Drilling Equipment	Schramm T-300 Air Rotary			A 8 (in) well was installed on 5/9/2017 to a depth of 20.4 (ft). Well was developed on 5/10/2017.		
Surface Elevation (ft) Vertical Datum	2383.82 NAVD88		Top of Casing Elevation (ft)							
Easting (X) Northing (Y)	2300080.55 250153.42			Horizontal Datum	WA State Plane North NAD83			<u>Groundwater</u> Date Measured	Depth to Water (ft)	<u>Elevation (ft)</u>
							5/9/2017		8.60	
Notes:										



Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Topographic Survey, Vertical approximated based on Topographic Survey

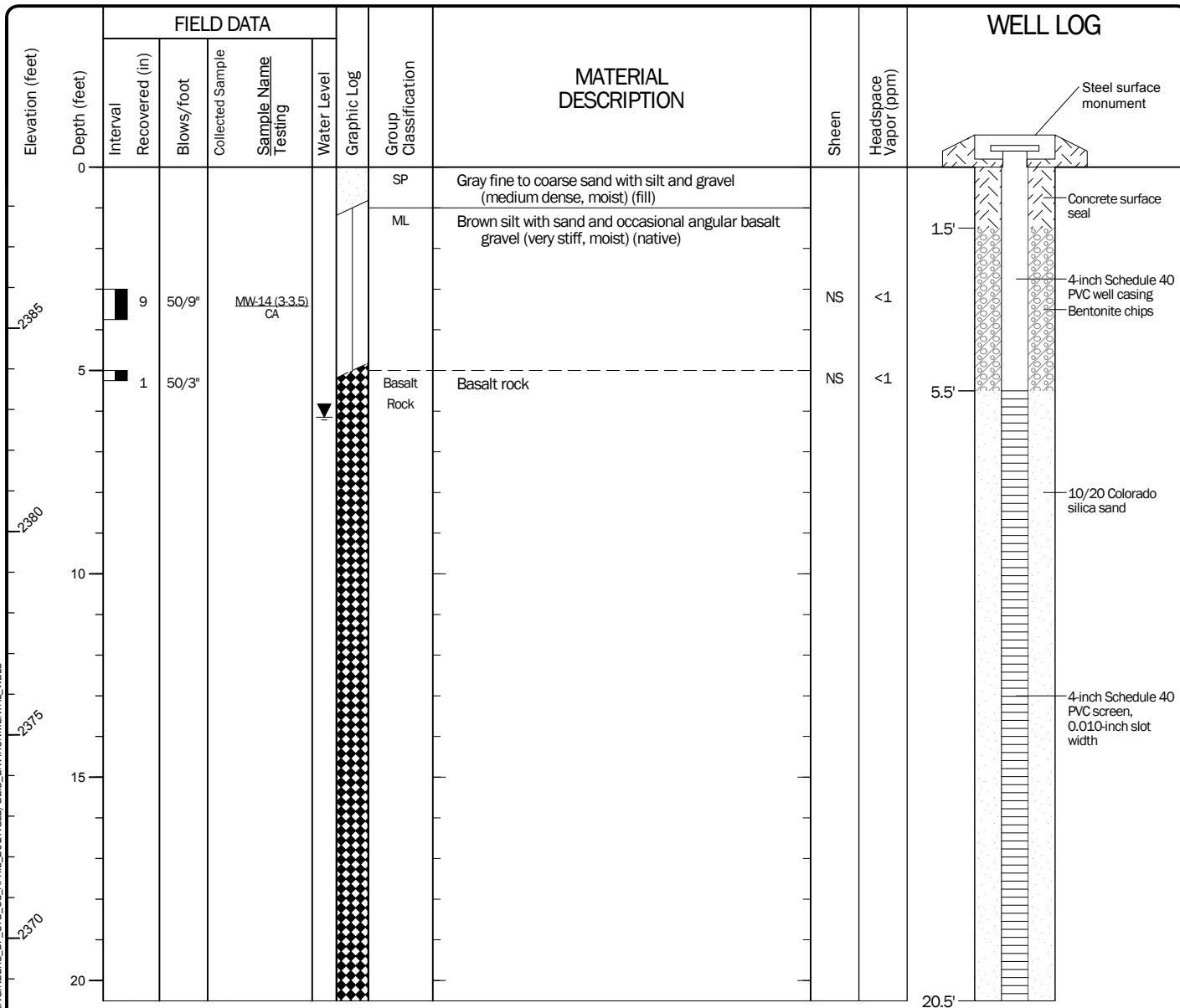
Log of Monitoring Well MW-13



Project: Priceless Gas
Project Location: Davenport, Washington
Project Number: 0504-027-05

Figure A-4
Sheet 1 of 1

Drilled	Start 5/8/2017	End 5/8/2017	Total Depth (ft)	20.5	Logged By Checked By	JML SHL	Driller	Environmental West Explorations, Inc.	Drilling Method	Air Rotary
Hammer Data	Autohammer 140 (lbs) / 30 (in) Drop				Drilling Equipment		Schramm T-300 Air Rotary		A 8 (in) well was installed on 5/8/2017 to a depth of 21.2 (ft). Well was developed on 5/10/2017.	
Surface Elevation (ft) Vertical Datum		2388.96 NAVD88		Top of Casing Elevation (ft)						
Easting (X) Northing (Y)		2299879.11 250163.23		Horizontal Datum		WA State Plane North NAD83		<u>Groundwater</u> Date Measured	Depth to Water (ft)	Elevation (ft)
								5/8/2017	6.15	
Notes:										



Note: See Figure A-1 for explanation of symbols.
Coordinates Data Source: Horizontal approximated based on Topographic Survey, Vertical approximated based on Topographic Survey

Log of Monitoring Well MW-14



Project: Priceless Gas
Project Location: Davenport, Washington
Project Number: 0504-027-05

Figure A-5
Sheet 1 of 1

WASHINGTON STATE DEPARTMENT OF ECOLOGY
PRICELESS GAS MONITORING WELLS SURVEY
DAVENPORT, WASHINGTON



SCALE: 1"=100'

HORIZONTAL DATUM

SURVEY IS BASED ON WASHINGTON
STATE PLANE SYSTEM, NAD83, NORTH
ZONE, U.S. FOOT.

ELEVATION DATUM

NORTH AMERICAN VERTICAL DATUM OF
1988(NAVD 88). GEOID 12A

NOTES

FIELD SURVEY COMPLETED MAY 17, 2017.



10 N. Post Street Suite 500
Spokane, Washington 99201
509 328 2994 Fax 509 328 2999

project	PRICELESS GAS MONITORING WELL SURVEY	by	JEA	sheet no.
location	1110 MORGAN ST. DAVENPORT, WASHINGTON	date	05/19/2017	1 OF 2
client	GEOENGINEERS	checked	DJA	job no.
	(WASHINGTON STATE DEPARTMENT OF ECOLOGY)	date	05/19/2017	170214

**WASHINGTON STATE DEPARTMENT OF ECOLOGY
PRICELESS GAS MONITORING WELLS SURVEY
DAVENPORT, WASHINGTON**

DESCRIPTION	NORTHING	EASTING	ELEVATION
MW-1	250223.47	2299962.21	2384.61
MW-2	250217.46	2299989.26	2382.46
MW-3	250088.57	2299982.60	2388.37
MW-4	250318.48	2299926.28	2379.70
MW-5	250386.36	2300064.50	2376.07
MW-6	250188.54	2300030.49	2382.63
MW-8	250004.71	2299892.13	2390.70
MW-9	250255.21	2300084.14	2381.13
MW-10	250604.06	2299897.79	2369.63
MW-11	250128.16	2299989.16	2388.61
MW-12	250133.12	2300021.49	2386.87
MW-13	250153.42	2300080.55	2383.82
MW-14	250163.23	2299879.11	2388.96
MW-30	250068.77	2299873.00	2390.56
EAST TRENCH	250176.68	2300003.64	2385.63



 COFFMAN ENGINEERS 10 N. Post Street Suite 500 Spokane, Washington 99201 509 328 2994 Fax 509 328 2999	project	PRICELESS GAS MONITORING WELL SURVEY	by	JEA	sheet no.
	location	1110 MORGAN ST. DAVENPORT, WASHINGTON	date	05/19/2017	2 OF 2
	client	GEOENGINEERS	checked	DJA	job no.
		(WASHINGTON STATE DEPARTMENT OF ECOLOGY)	date	05/19/2017	170214

APPENDIX B

Chemical Analytical Data

APPENDIX B

CHEMICAL ANALYTICAL DATA

Samples

Chain-of-custody procedures were followed during the transport of the field samples to the accredited analytical laboratory. The samples were held in cold storage pending extraction and/or analysis. The analytical results and quality control records are included in this appendix.

Analytical Data Review

During the May 2017 groundwater monitoring event, a duplicate sample was collected from MW-6 and designated MW-Dup:051617. Concentrations were similar in MW-6 and the duplicate sample.

The laboratory maintains an internal quality assurance/quality control (QA/QC) program as documented in its laboratory quality assurance manual. The laboratory uses a combination of blanks, surrogate recoveries, duplicates, matrix spike duplicate recoveries, blank spike recoveries and blank spike duplicate recoveries to evaluate the analytical results. The laboratory also uses data quality goals for individual chemicals or groups of chemicals based on the long-term performance of the test methods. The data quality goals were included in the laboratory reports. The laboratory compared each group of samples with the existing data quality goals and noted any exceptions in the laboratory report. No data quality exceptions were noted by the analytical laboratory in their report. In our opinion and based on our review, the reported data are of acceptable quality for their intended use.

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Spokane

11922 East 1st Ave

Spokane, WA 99206

Tel: (509)924-9200

TestAmerica Job ID: 590-6100-1

Client Project/Site: Priceless Gas/0504-057-05

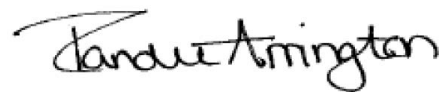
For:

GeoEngineers Inc

523 East Second Ave

Spokane, Washington 99202

Attn: Scott Lathen



Authorized for release by:

5/15/2017 10:04:35 AM

Randee Arrington, Project Manager II

(509)924-9200

randee.arrington@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6100-1

Job ID: 590-6100-1

Laboratory: TestAmerica Spokane

Narrative

Receipt

The samples were received on 5/10/2017 9:20 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.7° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6100-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-6100-1	MW-11 (8-9)	Solid	05/08/17 14:25	05/10/17 09:20
590-6100-2	MW-12 (8.5-9)	Solid	05/09/17 13:50	05/10/17 09:20
590-6100-3	MW-14 (3-3.5)	Solid	05/08/17 09:30	05/10/17 09:20

Definitions/Glossary

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6100-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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 Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6100-1

Client Sample ID: MW-11 (8-9)

Lab Sample ID: 590-6100-1

Date Collected: 05/08/17 14:25

Matrix: Solid

Date Received: 05/10/17 09:20

Percent Solids: 84.7

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.038		0.026		mg/Kg	☼	05/10/17 11:36	05/10/17 17:18	1
Ethylbenzene	0.62		0.13		mg/Kg	☼	05/10/17 11:36	05/10/17 17:18	1
m,p-Xylene	1.8		0.51		mg/Kg	☼	05/10/17 11:36	05/10/17 17:18	1
Methyl tert-butyl ether	ND		0.064		mg/Kg	☼	05/10/17 11:36	05/10/17 17:18	1
o-Xylene	0.49		0.26		mg/Kg	☼	05/10/17 11:36	05/10/17 17:18	1
Toluene	0.16		0.13		mg/Kg	☼	05/10/17 11:36	05/10/17 17:18	1
Naphthalene	0.48		0.26		mg/Kg	☼	05/10/17 11:36	05/10/17 17:18	1
Xylenes, Total	2.2		0.77		mg/Kg	☼	05/10/17 11:36	05/10/17 17:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		75 - 120	05/10/17 11:36	05/10/17 17:18	1
4-Bromofluorobenzene (Surr)	106		76 - 122	05/10/17 11:36	05/10/17 17:18	1
Dibromofluoromethane (Surr)	101		80 - 120	05/10/17 11:36	05/10/17 17:18	1
Toluene-d8 (Surr)	95		80 - 120	05/10/17 11:36	05/10/17 17:18	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	98		6.4		mg/Kg	☼	05/10/17 11:36	05/10/17 17:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		41.5 - 162	05/10/17 11:36	05/10/17 17:18	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	15.3		0.01		%			05/12/17 09:00	1
Percent Solids	84.7		0.01		%			05/12/17 09:00	1

Client Sample ID: MW-12 (8.5-9)

Lab Sample ID: 590-6100-2

Date Collected: 05/09/17 13:50

Matrix: Solid

Date Received: 05/10/17 09:20

Percent Solids: 78.4

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.035		0.024		mg/Kg	☼	05/10/17 11:36	05/10/17 17:40	1
Ethylbenzene	1.6		0.12		mg/Kg	☼	05/10/17 11:36	05/10/17 17:40	1
m,p-Xylene	ND		0.48		mg/Kg	☼	05/10/17 11:36	05/10/17 17:40	1
Methyl tert-butyl ether	ND		0.060		mg/Kg	☼	05/10/17 11:36	05/10/17 17:40	1
o-Xylene	ND		0.24		mg/Kg	☼	05/10/17 11:36	05/10/17 17:40	1
Toluene	ND		0.12		mg/Kg	☼	05/10/17 11:36	05/10/17 17:40	1
Naphthalene	ND		0.24		mg/Kg	☼	05/10/17 11:36	05/10/17 17:40	1
Xylenes, Total	ND		0.72		mg/Kg	☼	05/10/17 11:36	05/10/17 17:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 120	05/10/17 11:36	05/10/17 17:40	1
4-Bromofluorobenzene (Surr)	119		76 - 122	05/10/17 11:36	05/10/17 17:40	1
Dibromofluoromethane (Surr)	99		80 - 120	05/10/17 11:36	05/10/17 17:40	1
Toluene-d8 (Surr)	92		80 - 120	05/10/17 11:36	05/10/17 17:40	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	280		6.0		mg/Kg	☼	05/10/17 11:36	05/10/17 17:40	1

TestAmerica Spokane

Client Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6100-1

Client Sample ID: MW-12 (8.5-9)

Date Collected: 05/09/17 13:50

Date Received: 05/10/17 09:20

Lab Sample ID: 590-6100-2

Matrix: Solid

Percent Solids: 78.4

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	119		41.5 - 162	05/10/17 11:36	05/10/17 17:40	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	21.6		0.01		%			05/12/17 09:00	1
Percent Solids	78.4		0.01		%			05/12/17 09:00	1

Client Sample ID: MW-14 (3-3.5)

Date Collected: 05/08/17 09:30

Date Received: 05/10/17 09:20

Lab Sample ID: 590-6100-3

Matrix: Solid

Percent Solids: 78.2

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.029		mg/Kg	☼	05/10/17 11:36	05/10/17 18:02	1
Ethylbenzene	ND		0.14		mg/Kg	☼	05/10/17 11:36	05/10/17 18:02	1
m,p-Xylene	ND		0.57		mg/Kg	☼	05/10/17 11:36	05/10/17 18:02	1
Methyl tert-butyl ether	ND		0.071		mg/Kg	☼	05/10/17 11:36	05/10/17 18:02	1
o-Xylene	ND		0.29		mg/Kg	☼	05/10/17 11:36	05/10/17 18:02	1
Toluene	ND		0.14		mg/Kg	☼	05/10/17 11:36	05/10/17 18:02	1
Naphthalene	ND		0.29		mg/Kg	☼	05/10/17 11:36	05/10/17 18:02	1
Xylenes, Total	ND		0.86		mg/Kg	☼	05/10/17 11:36	05/10/17 18:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		75 - 120	05/10/17 11:36	05/10/17 18:02	1
4-Bromofluorobenzene (Surr)	107		76 - 122	05/10/17 11:36	05/10/17 18:02	1
Dibromofluoromethane (Surr)	101		80 - 120	05/10/17 11:36	05/10/17 18:02	1
Toluene-d8 (Surr)	97		80 - 120	05/10/17 11:36	05/10/17 18:02	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		7.1		mg/Kg	☼	05/10/17 11:36	05/10/17 18:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		41.5 - 162	05/10/17 11:36	05/10/17 18:02	1

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	21.8		0.01		%			05/12/17 09:00	1
Percent Solids	78.2		0.01		%			05/12/17 09:00	1

TestAmerica Spokane

QC Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6100-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 590-12015/1-A

Matrix: Solid

Analysis Batch: 12017

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 12015

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.020		mg/Kg		05/10/17 09:30	05/10/17 12:11	1
Ethylbenzene	ND		0.10		mg/Kg		05/10/17 09:30	05/10/17 12:11	1
m,p-Xylene	ND		0.40		mg/Kg		05/10/17 09:30	05/10/17 12:11	1
Methyl tert-butyl ether	ND		0.050		mg/Kg		05/10/17 09:30	05/10/17 12:11	1
o-Xylene	ND		0.20		mg/Kg		05/10/17 09:30	05/10/17 12:11	1
Toluene	ND		0.10		mg/Kg		05/10/17 09:30	05/10/17 12:11	1
Naphthalene	ND		0.20		mg/Kg		05/10/17 09:30	05/10/17 12:11	1
Xylenes, Total	ND		0.60		mg/Kg		05/10/17 09:30	05/10/17 12:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		75 - 120	05/10/17 09:30	05/10/17 12:11	1
4-Bromofluorobenzene (Surr)	105		76 - 122	05/10/17 09:30	05/10/17 12:11	1
Dibromofluoromethane (Surr)	104		80 - 120	05/10/17 09:30	05/10/17 12:11	1
Toluene-d8 (Surr)	101		80 - 120	05/10/17 09:30	05/10/17 12:11	1

Lab Sample ID: LCS 590-12015/2-A

Matrix: Solid

Analysis Batch: 12017

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 12015

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	0.500	0.559		mg/Kg		112	76 - 123
Ethylbenzene	0.500	0.543		mg/Kg		109	77 - 121
m,p-Xylene	0.500	0.554		mg/Kg		111	78 - 124
Methyl tert-butyl ether	0.500	0.539		mg/Kg		108	67 - 130
o-Xylene	0.500	0.544		mg/Kg		109	77 - 129
Toluene	0.500	0.538		mg/Kg		108	77 - 125
Naphthalene	0.500	0.451		mg/Kg		90	55 - 128

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		75 - 120
4-Bromofluorobenzene (Surr)	99		76 - 122
Dibromofluoromethane (Surr)	102		80 - 120
Toluene-d8 (Surr)	96		80 - 120

Lab Sample ID: LCSD 590-12015/3-A

Matrix: Solid

Analysis Batch: 12017

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 12015

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	0.500	0.567		mg/Kg		113	76 - 123	1	25
Ethylbenzene	0.500	0.559		mg/Kg		112	77 - 121	3	25
m,p-Xylene	0.500	0.553		mg/Kg		111	78 - 124	0	25
Methyl tert-butyl ether	0.500	0.541		mg/Kg		108	67 - 130	0	25
o-Xylene	0.500	0.560		mg/Kg		112	77 - 129	3	25
Toluene	0.500	0.536		mg/Kg		107	77 - 125	0	25
Naphthalene	0.500	0.476		mg/Kg		95	55 - 128	5	25

TestAmerica Spokane

QC Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6100-1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 590-12015/3-A

Matrix: Solid

Analysis Batch: 12017

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 12015

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		75 - 120
4-Bromofluorobenzene (Surr)	99		76 - 122
Dibromofluoromethane (Surr)	103		80 - 120
Toluene-d8 (Surr)	97		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 590-12015/1-A

Matrix: Solid

Analysis Batch: 12018

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 12015

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		5.0		mg/Kg		05/10/17 09:30	05/10/17 12:11	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		41.5 - 162				05/10/17 09:30	05/10/17 12:11	1

Lab Sample ID: LCS 590-12015/4-A

Matrix: Solid

Analysis Batch: 12018

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 12015

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	50.0	50.0		mg/Kg		100	74.4 - 124
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	108		41.5 - 162				

Lab Sample ID: LCSD 590-12015/5-A

Matrix: Solid

Analysis Batch: 12018

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 12015

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	50.0	48.5		mg/Kg		97	74.4 - 124	3	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	107		41.5 - 162						

Method: Moisture - Percent Moisture

Lab Sample ID: 590-6100-1 DU

Matrix: Solid

Analysis Batch: 12057

Client Sample ID: MW-11 (8-9)

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Percent Moisture	15.3		15.8		%		3	20
Percent Solids	84.7		84.2		%		0.5	20

TestAmerica Spokane

Lab Chronicle

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6100-1

Client Sample ID: MW-11 (8-9)

Date Collected: 05/08/17 14:25

Date Received: 05/10/17 09:20

Lab Sample ID: 590-6100-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			12057	05/12/17 09:00	MRS	TAL SPK

Client Sample ID: MW-11 (8-9)

Date Collected: 05/08/17 14:25

Date Received: 05/10/17 09:20

Lab Sample ID: 590-6100-1

Matrix: Solid

Percent Solids: 84.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.347 g	5 mL	12015	05/10/17 11:36	MRS	TAL SPK
Total/NA	Analysis	8260C		1	0.86 mL	43 mL	12017	05/10/17 17:18	MRS	TAL SPK
Total/NA	Prep	5035			5.347 g	5 mL	12015	05/10/17 11:36	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	12018	05/10/17 17:18	MRS	TAL SPK

Client Sample ID: MW-12 (8.5-9)

Date Collected: 05/09/17 13:50

Date Received: 05/10/17 09:20

Lab Sample ID: 590-6100-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			12057	05/12/17 09:00	MRS	TAL SPK

Client Sample ID: MW-12 (8.5-9)

Date Collected: 05/09/17 13:50

Date Received: 05/10/17 09:20

Lab Sample ID: 590-6100-2

Matrix: Solid

Percent Solids: 78.4

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			6.898 g	5 mL	12015	05/10/17 11:36	MRS	TAL SPK
Total/NA	Analysis	8260C		1	0.86 mL	43 mL	12017	05/10/17 17:40	MRS	TAL SPK
Total/NA	Prep	5035			6.898 g	5 mL	12015	05/10/17 11:36	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	12018	05/10/17 17:40	MRS	TAL SPK

Client Sample ID: MW-14 (3-3.5)

Date Collected: 05/08/17 09:30

Date Received: 05/10/17 09:20

Lab Sample ID: 590-6100-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	Moisture		1			12057	05/12/17 09:00	MRS	TAL SPK

Client Sample ID: MW-14 (3-3.5)

Date Collected: 05/08/17 09:30

Date Received: 05/10/17 09:20

Lab Sample ID: 590-6100-3

Matrix: Solid

Percent Solids: 78.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			5.567 g	5 mL	12015	05/10/17 11:36	MRS	TAL SPK

TestAmerica Spokane

Lab Chronicle

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6100-1

Client Sample ID: MW-14 (3-3.5)

Date Collected: 05/08/17 09:30

Date Received: 05/10/17 09:20

Lab Sample ID: 590-6100-3

Matrix: Solid

Percent Solids: 78.2

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	0.86 mL	43 mL	12017	05/10/17 18:02	MRS	TAL SPK
Total/NA	Prep	5035			5.567 g	5 mL	12015	05/10/17 11:36	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	0.86 mL	43 mL	12018	05/10/17 18:02	MRS	TAL SPK

Laboratory References:

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

Accreditation/Certification Summary

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6100-1

Laboratory: TestAmerica Spokane

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-071	10-31-17
Washington	State Program	10	C569	01-06-18

Method Summary

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6100-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	TAL SPK
Moisture	Percent Moisture	EPA	TAL SPK

Protocol References:

EPA = US Environmental Protection Agency

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

TestAmerica

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590-6100 Chain of Custody

11922 E. First Ave., Spokane WA 99206-5302
9405 SW Nimbus Ave., Beaverton, OR 97008-7145
International Airport Rd Ste A10, Anchorage, AK 99502-1119

509-924-9200 FAX 924-9290
503-906-9200 FAX 906-9210
907-563-9200 FAX 563-9210

5/15/2017

CHAIN OF CUSTODY REPORT

Work Order #:

CLIENT: <u>GeoEngineers</u>		INVOICE TO:		TURNAROUND REQUEST in Business Days * Organic & Inorganic Analyses ☒ 10 7 5 4 3 2 1 <1 STD. Petroleum Hydrocarbon Analyses ☒ 5 4 3 2 1 <1 STD.			
REPORT TO: <u>sl4then@geoengineers.com</u>		P.O. NUMBER:					
ADDRESS: <u>523 E. Second Ave</u> <u>Spokane, WA 99202</u>				OTHER Specify: * Turnaround Requests less than standard may incur Rush Charges.			
PHONE: <u>509-263-7125</u> FAX:							
PROJECT NAME: <u>Priceless Gas</u>		PRESERVATIVE		MATRIX (W, S, O) # OF CONT. LOCATION/ COMMENTS TA WO ID			
PROJECT NUMBER: <u>0504-027-05</u>							
SAMPLED BY: <u>JML</u>		REQUESTED ANALYSES					
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME	WTRH	BTEX	MTSE	Naphthalene		
1, MW-11 (8-9)	5/8/2017 1425	X	X	X	X		S 3
2, MW-12 (8.5-9)	5/9/2017 1350	X	X	X	X		↓ ↓
3, MW-14 (3-3.5)	5/8/2017 0930	X	X	X	X		
4							
5							
6							
7							
8							
9							
10							
RELEASED BY: <u>Josh Lee</u>	FIRM: <u>GCI</u>	DATE: <u>5/10/17</u>	TIME: <u>0920</u>	RECEIVED BY: <u>Walt Suda</u>	FIRM: <u>TestAmerica</u>	DATE: <u>5-10-17</u>	TIME: <u>0920</u>
PRINT NAME:	FIRM:	DATE:	TIME:	PRINT NAME:	FIRM:	DATE:	TIME:
ADDITIONAL REMARKS:						TEMP: <u>4.7°C</u>	PAGE <u>1</u> OF <u>1</u>

(12004) TAL-1000 (0714)

Page 14 of 15

Login Sample Receipt Checklist

Client: GeoEngineers Inc

Job Number: 590-6100-1

Login Number: 6100

List Source: TestAmerica Spokane

List Number: 1

Creator: Kratz, Sheila J

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Spokane

11922 East 1st Ave

Spokane, WA 99206

Tel: (509)924-9200

TestAmerica Job ID: 590-6157-1

Client Project/Site: Priceless Gas/0504-057-05

For:

GeoEngineers Inc

523 East Second Ave

Spokane, Washington 99202

Attn: Scott Lathen



Authorized for release by:

5/30/2017 3:17:17 PM

Kelsey Devries, Project Management Assistant I

(253)922-2310

kelsey.devries@testamericainc.com

Designee for

Randee Arrington, Project Manager II

(509)924-9200

randee.arrington@testamericainc.com

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This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.



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Case Narrative

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Job ID: 590-6157-1

Laboratory: TestAmerica Spokane

Narrative

Job Narrative 590-6157-1

Comments

No additional comments.

Receipt

The samples were received on 5/17/2017 3:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 4.1° C and 4.1° C.

Receipt Exceptions

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC).

The following sample was activated by the client on 05/18/17: MW-2:051617 (590-6157-2).

The turnaround time for the following sample was escalated to a 3 day per the client's request on 05/18/17: IDW:051717 (590-6157-15).

GC/MS VOA

Method(s) 8260C: The following sample was collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: East Trench:051617 (590-6157-13). The sample was analyzed within 7 days per EPA recommendation.

Method(s) NWTPH-Gx: The following sample was collected in properly preserved vials for analysis of volatile organic compounds (VOCs). However, the pH was outside the required criteria when verified by the laboratory, and corrective action was not possible: East Trench:051617 (590-6157-13). The sample was analyzed within 7 days per EPA recommendation.

Method(s) NWTPH-Gx: The following sample was diluted to bring the concentration of target analytes within the calibration range: East Trench:051617 (590-6157-13). Elevated reporting limits (RLs) are provided.

Method(s) NWTPH-Gx: The continuing calibration verification (CCV) associated with batch 590-12205 recovered above the upper control limit for Gasoline. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: (CCV 590-12205/25).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

General Chemistry

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-6157-1	MW-1:051617	Water	05/16/17 14:55	05/17/17 15:00
590-6157-2	MW-2:051617	Water	05/16/17 15:20	05/17/17 15:00
590-6157-3	MW-4:051617	Water	05/16/17 12:40	05/17/17 15:00
590-6157-4	MW-6:051617	Water	05/16/17 11:00	05/17/17 15:00
590-6157-5	MW-8:051617	Water	05/16/17 14:10	05/17/17 15:00
590-6157-6	MW-9:051617	Water	05/16/17 10:35	05/17/17 15:00
590-6157-7	MW-10:051617	Water	05/16/17 09:55	05/17/17 15:00
590-6157-8	MW-11:051717	Water	05/17/17 09:10	05/17/17 15:00
590-6157-9	MW-12:051717	Water	05/17/17 10:15	05/17/17 15:00
590-6157-10	MW-13:051717	Water	05/17/17 11:00	05/17/17 15:00
590-6157-11	MW-14:051617	Water	05/16/17 09:10	05/17/17 15:00
590-6157-12	MW-30:051617	Water	05/16/17 13:30	05/17/17 15:00
590-6157-13	East Trench:051617	Water	05/16/17 11:50	05/17/17 15:00
590-6157-14	Dup:051617	Water	05/16/17 12:00	05/17/17 15:00
590-6157-16	Trip Blank	Water	05/16/17 00:00	05/17/17 15:00

Definitions/Glossary

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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 Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Client Sample ID: MW-1:051617

Date Collected: 05/16/17 14:55

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-1

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	36		0.40		ug/L			05/24/17 15:55	1
Ethylbenzene	11		1.0		ug/L			05/24/17 15:55	1
m,p-Xylene	ND		2.0		ug/L			05/24/17 15:55	1
Methyl tert-butyl ether	50		1.0		ug/L			05/24/17 15:55	1
o-Xylene	ND		1.0		ug/L			05/24/17 15:55	1
Toluene	ND		1.0		ug/L			05/24/17 15:55	1
Xylenes, Total	ND		3.0		ug/L			05/24/17 15:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 125		05/24/17 15:55	1
4-Bromofluorobenzene (Surr)	91		69 - 120		05/24/17 15:55	1
Dibromofluoromethane (Surr)	104		80 - 120		05/24/17 15:55	1
Toluene-d8 (Surr)	97		80 - 120		05/24/17 15:55	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	500		150		ug/L			05/24/17 15:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		68.7 - 141		05/24/17 15:55	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	1.1		0.20		mg/L			05/17/17 16:56	1
Sulfate	11		0.50		mg/L			05/17/17 16:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.1		1.0		mg/L			05/26/17 21:28	1

Client Sample ID: MW-2:051617

Date Collected: 05/16/17 15:20

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-2

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.1		0.40		ug/L			05/24/17 16:15	1
Ethylbenzene	11		1.0		ug/L			05/24/17 16:15	1
m,p-Xylene	5.0		2.0		ug/L			05/24/17 16:15	1
Methyl tert-butyl ether	58		1.0		ug/L			05/24/17 16:15	1
o-Xylene	1.8		1.0		ug/L			05/24/17 16:15	1
Toluene	ND		1.0		ug/L			05/24/17 16:15	1
Xylenes, Total	6.8		3.0		ug/L			05/24/17 16:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		70 - 125		05/24/17 16:15	1
4-Bromofluorobenzene (Surr)	93		69 - 120		05/24/17 16:15	1
Dibromofluoromethane (Surr)	99		80 - 120		05/24/17 16:15	1
Toluene-d8 (Surr)	95		80 - 120		05/24/17 16:15	1

TestAmerica Spokane

Client Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Client Sample ID: MW-2:051617

Date Collected: 05/16/17 15:20

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-2

Matrix: Water

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1500		150		ug/L	-		05/24/17 16:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		68.7 - 141					05/24/17 16:15	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.20		mg/L	-		05/17/17 17:08	1
Sulfate	17		0.50		mg/L	-		05/17/17 17:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.7		1.0		mg/L	-		05/26/17 21:28	1

Client Sample ID: MW-4:051617

Date Collected: 05/16/17 12:40

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-3

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	44		0.40		ug/L	-		05/24/17 16:36	1
Ethylbenzene	2.1		1.0		ug/L	-		05/24/17 16:36	1
m,p-Xylene	ND		2.0		ug/L	-		05/24/17 16:36	1
Methyl tert-butyl ether	150		10		ug/L	-		05/22/17 17:09	10
o-Xylene	ND		1.0		ug/L	-		05/24/17 16:36	1
Toluene	ND		1.0		ug/L	-		05/24/17 16:36	1
Xylenes, Total	ND		3.0		ug/L	-		05/24/17 16:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 125					05/22/17 17:09	10
1,2-Dichloroethane-d4 (Surr)	103		70 - 125					05/24/17 16:36	1
4-Bromofluorobenzene (Surr)	90		69 - 120					05/22/17 17:09	10
4-Bromofluorobenzene (Surr)	93		69 - 120					05/24/17 16:36	1
Dibromofluoromethane (Surr)	109		80 - 120					05/22/17 17:09	10
Dibromofluoromethane (Surr)	105		80 - 120					05/24/17 16:36	1
Toluene-d8 (Surr)	99		80 - 120					05/22/17 17:09	10
Toluene-d8 (Surr)	99		80 - 120					05/24/17 16:36	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	620		150		ug/L	-		05/24/17 16:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		68.7 - 141					05/24/17 16:36	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.59		0.20		mg/L	-		05/17/17 17:20	1
Sulfate	4.2		0.50		mg/L	-		05/17/17 17:20	1

TestAmerica Spokane

Client Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Client Sample ID: MW-4:051617

Date Collected: 05/16/17 12:40

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-3

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4.8		1.0		mg/L			05/26/17 21:28	1

Client Sample ID: MW-6:051617

Date Collected: 05/16/17 11:00

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-4

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.4		0.40		ug/L			05/22/17 17:30	1
Ethylbenzene	ND		1.0		ug/L			05/22/17 17:30	1
m,p-Xylene	ND		2.0		ug/L			05/22/17 17:30	1
Methyl tert-butyl ether	16		1.0		ug/L			05/22/17 17:30	1
o-Xylene	ND		1.0		ug/L			05/22/17 17:30	1
Toluene	ND		1.0		ug/L			05/22/17 17:30	1
Xylenes, Total	ND		3.0		ug/L			05/22/17 17:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		70 - 125		05/22/17 17:30	1
4-Bromofluorobenzene (Surr)	87		69 - 120		05/22/17 17:30	1
Dibromofluoromethane (Surr)	109		80 - 120		05/22/17 17:30	1
Toluene-d8 (Surr)	99		80 - 120		05/22/17 17:30	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			05/22/17 17:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	87		68.7 - 141		05/22/17 17:30	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.20		mg/L			05/17/17 17:56	1
Sulfate	14		0.50		mg/L			05/17/17 17:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.6		1.0		mg/L			05/26/17 21:28	1

Client Sample ID: MW-8:051617

Date Collected: 05/16/17 14:10

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-5

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	41		0.40		ug/L			05/22/17 18:10	1
Ethylbenzene	ND		1.0		ug/L			05/22/17 18:10	1
m,p-Xylene	ND		2.0		ug/L			05/22/17 18:10	1
Methyl tert-butyl ether	1.4		1.0		ug/L			05/22/17 18:10	1
o-Xylene	ND		1.0		ug/L			05/22/17 18:10	1
Toluene	1.2		1.0		ug/L			05/22/17 18:10	1
Xylenes, Total	ND		3.0		ug/L			05/22/17 18:10	1

TestAmerica Spokane

Client Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Client Sample ID: MW-8:051617

Date Collected: 05/16/17 14:10

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-5

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 125		05/22/17 18:10	1
4-Bromofluorobenzene (Surr)	91		69 - 120		05/22/17 18:10	1
Dibromofluoromethane (Surr)	109		80 - 120		05/22/17 18:10	1
Toluene-d8 (Surr)	99		80 - 120		05/22/17 18:10	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	210		150		ug/L	-		05/22/17 18:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		68.7 - 141		05/22/17 18:10	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.20		mg/L	-		05/17/17 18:09	1
Sulfate	19		0.50		mg/L	-		05/17/17 18:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.9		1.0		mg/L	-		05/26/17 21:28	1

Client Sample ID: MW-9:051617

Date Collected: 05/16/17 10:35

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-6

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L	-		05/22/17 18:31	1
Ethylbenzene	ND		1.0		ug/L	-		05/22/17 18:31	1
m,p-Xylene	ND		2.0		ug/L	-		05/22/17 18:31	1
Methyl tert-butyl ether	ND		1.0		ug/L	-		05/22/17 18:31	1
o-Xylene	ND		1.0		ug/L	-		05/22/17 18:31	1
Toluene	ND		1.0		ug/L	-		05/22/17 18:31	1
Xylenes, Total	ND		3.0		ug/L	-		05/22/17 18:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		70 - 125		05/22/17 18:31	1
4-Bromofluorobenzene (Surr)	94		69 - 120		05/22/17 18:31	1
Dibromofluoromethane (Surr)	107		80 - 120		05/22/17 18:31	1
Toluene-d8 (Surr)	102		80 - 120		05/22/17 18:31	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L	-		05/22/17 18:31	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		68.7 - 141		05/22/17 18:31	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	0.55		0.20		mg/L	-		05/17/17 18:21	1
Sulfate	21		0.50		mg/L	-		05/17/17 18:21	1

TestAmerica Spokane

Client Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Client Sample ID: MW-9:051617

Date Collected: 05/16/17 10:35

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-6

Matrix: Water

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.1		1.0		mg/L			05/26/17 21:28	1

Client Sample ID: MW-10:051617

Date Collected: 05/16/17 09:55

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-7

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			05/22/17 18:51	1
Ethylbenzene	ND		1.0		ug/L			05/22/17 18:51	1
m,p-Xylene	ND		2.0		ug/L			05/22/17 18:51	1
Methyl tert-butyl ether	ND		1.0		ug/L			05/22/17 18:51	1
o-Xylene	ND		1.0		ug/L			05/22/17 18:51	1
Toluene	ND		1.0		ug/L			05/22/17 18:51	1
Xylenes, Total	ND		3.0		ug/L			05/22/17 18:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		70 - 125		05/22/17 18:51	1
4-Bromofluorobenzene (Surr)	95		69 - 120		05/22/17 18:51	1
Dibromofluoromethane (Surr)	107		80 - 120		05/22/17 18:51	1
Toluene-d8 (Surr)	99		80 - 120		05/22/17 18:51	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			05/22/17 18:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		68.7 - 141		05/22/17 18:51	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	4.8		0.20		mg/L			05/17/17 18:33	1
Sulfate	15		0.50		mg/L			05/17/17 18:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.4		1.0		mg/L			05/26/17 21:28	1

Client Sample ID: MW-11:051717

Date Collected: 05/17/17 09:10

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-8

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	330		4.0		ug/L			05/24/17 16:57	10
Ethylbenzene	130		10		ug/L			05/24/17 16:57	10
m,p-Xylene	570		20		ug/L			05/24/17 16:57	10
Methyl tert-butyl ether	64		10		ug/L			05/24/17 16:57	10
o-Xylene	190		10		ug/L			05/24/17 16:57	10
Toluene	200		10		ug/L			05/24/17 16:57	10
Xylenes, Total	760		30		ug/L			05/24/17 16:57	10

TestAmerica Spokane

Client Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Client Sample ID: MW-11:051717

Date Collected: 05/17/17 09:10

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-8

Matrix: Water

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 125		05/24/17 16:57	10
4-Bromofluorobenzene (Surr)	88		69 - 120		05/24/17 16:57	10
Dibromofluoromethane (Surr)	103		80 - 120		05/24/17 16:57	10
Toluene-d8 (Surr)	102		80 - 120		05/24/17 16:57	10

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	5700		1500		ug/L			05/24/17 16:57	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		68.7 - 141		05/24/17 16:57	10

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.20		mg/L			05/17/17 18:45	1
Sulfate	8.6		0.50		mg/L			05/17/17 18:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	4.4		1.0		mg/L			05/26/17 21:28	1

Client Sample ID: MW-12:051717

Date Collected: 05/17/17 10:15

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-9

Matrix: Water

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			05/22/17 19:33	1
Ethylbenzene	ND		1.0		ug/L			05/22/17 19:33	1
m,p-Xylene	ND		2.0		ug/L			05/22/17 19:33	1
Methyl tert-butyl ether	ND		1.0		ug/L			05/22/17 19:33	1
o-Xylene	ND		1.0		ug/L			05/22/17 19:33	1
Toluene	ND		1.0		ug/L			05/22/17 19:33	1
Xylenes, Total	ND		3.0		ug/L			05/22/17 19:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 125		05/22/17 19:33	1
4-Bromofluorobenzene (Surr)	94		69 - 120		05/22/17 19:33	1
Dibromofluoromethane (Surr)	110		80 - 120		05/22/17 19:33	1
Toluene-d8 (Surr)	100		80 - 120		05/22/17 19:33	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			05/22/17 19:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		68.7 - 141		05/22/17 19:33	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	2.1		0.20		mg/L			05/17/17 19:21	1
Sulfate	18		0.50		mg/L			05/17/17 19:21	1

TestAmerica Spokane

Client Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Client Sample ID: MW-12:051717

Lab Sample ID: 590-6157-9

Date Collected: 05/17/17 10:15

Matrix: Water

Date Received: 05/17/17 15:00

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	1.3		1.0		mg/L			05/26/17 21:28	1

Client Sample ID: MW-13:051717

Lab Sample ID: 590-6157-10

Date Collected: 05/17/17 11:00

Matrix: Water

Date Received: 05/17/17 15:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.1		0.40		ug/L			05/22/17 19:54	1
Ethylbenzene	4.6		1.0		ug/L			05/22/17 19:54	1
m,p-Xylene	2.2		2.0		ug/L			05/22/17 19:54	1
Methyl tert-butyl ether	13		1.0		ug/L			05/22/17 19:54	1
o-Xylene	ND		1.0		ug/L			05/22/17 19:54	1
Toluene	ND		1.0		ug/L			05/22/17 19:54	1
Xylenes, Total	ND		3.0		ug/L			05/22/17 19:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		70 - 125		05/22/17 19:54	1
4-Bromofluorobenzene (Surr)	94		69 - 120		05/22/17 19:54	1
Dibromofluoromethane (Surr)	107		80 - 120		05/22/17 19:54	1
Toluene-d8 (Surr)	97		80 - 120		05/22/17 19:54	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	250		150		ug/L			05/22/17 19:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		68.7 - 141		05/22/17 19:54	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.20		mg/L			05/17/17 19:34	1
Sulfate	17		0.50		mg/L			05/17/17 19:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	2.7		1.0		mg/L			05/26/17 21:28	1

Client Sample ID: MW-14:051617

Lab Sample ID: 590-6157-11

Date Collected: 05/16/17 09:10

Matrix: Water

Date Received: 05/17/17 15:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	160		4.0		ug/L			05/24/17 17:18	10
Ethylbenzene	5.0		1.0		ug/L			05/22/17 20:14	1
m,p-Xylene	42		2.0		ug/L			05/22/17 20:14	1
Methyl tert-butyl ether	7.1		1.0		ug/L			05/22/17 20:14	1
o-Xylene	25		1.0		ug/L			05/22/17 20:14	1
Toluene	9.6		1.0		ug/L			05/22/17 20:14	1
Xylenes, Total	67		3.0		ug/L			05/22/17 20:14	1

TestAmerica Spokane

Client Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Client Sample ID: MW-14:051617

Lab Sample ID: 590-6157-11

Date Collected: 05/16/17 09:10

Matrix: Water

Date Received: 05/17/17 15:00

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		70 - 125		05/22/17 20:14	1
1,2-Dichloroethane-d4 (Surr)	109		70 - 125		05/24/17 17:18	10
4-Bromofluorobenzene (Surr)	92		69 - 120		05/22/17 20:14	1
4-Bromofluorobenzene (Surr)	91		69 - 120		05/24/17 17:18	10
Dibromofluoromethane (Surr)	105		80 - 120		05/22/17 20:14	1
Dibromofluoromethane (Surr)	107		80 - 120		05/24/17 17:18	10
Toluene-d8 (Surr)	97		80 - 120		05/22/17 20:14	1
Toluene-d8 (Surr)	100		80 - 120		05/24/17 17:18	10

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	720		150		ug/L			05/22/17 20:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		68.7 - 141		05/22/17 20:14	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	14		0.20		mg/L			05/17/17 19:46	1
Sulfate	28		0.50		mg/L			05/17/17 19:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	9.7		1.0		mg/L			05/26/17 21:28	1

Client Sample ID: MW-30:051617

Lab Sample ID: 590-6157-12

Date Collected: 05/16/17 13:30

Matrix: Water

Date Received: 05/17/17 15:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			05/22/17 20:36	1
Ethylbenzene	ND		1.0		ug/L			05/22/17 20:36	1
m,p-Xylene	ND		2.0		ug/L			05/22/17 20:36	1
Methyl tert-butyl ether	ND		1.0		ug/L			05/22/17 20:36	1
o-Xylene	ND		1.0		ug/L			05/22/17 20:36	1
Toluene	ND		1.0		ug/L			05/22/17 20:36	1
Xylenes, Total	ND		3.0		ug/L			05/22/17 20:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		70 - 125		05/22/17 20:36	1
4-Bromofluorobenzene (Surr)	92		69 - 120		05/22/17 20:36	1
Dibromofluoromethane (Surr)	108		80 - 120		05/22/17 20:36	1
Toluene-d8 (Surr)	100		80 - 120		05/22/17 20:36	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			05/22/17 20:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		68.7 - 141		05/22/17 20:36	1

TestAmerica Spokane

Client Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Client Sample ID: MW-30:051617

Lab Sample ID: 590-6157-12

Date Collected: 05/16/17 13:30

Matrix: Water

Date Received: 05/17/17 15:00

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	1.7		0.20		mg/L			05/17/17 20:10	1
Sulfate	57		0.50		mg/L			05/17/17 20:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	6.6		1.0		mg/L			05/26/17 21:28	1

Client Sample ID: East Trench:051617

Lab Sample ID: 590-6157-13

Date Collected: 05/16/17 11:50

Matrix: Water

Date Received: 05/17/17 15:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	1400		8.0		ug/L			05/23/17 20:29	20
Ethylbenzene	ND		20		ug/L			05/23/17 20:29	20
m,p-Xylene	ND		40		ug/L			05/23/17 20:29	20
Methyl tert-butyl ether	40		20		ug/L			05/23/17 20:29	20
o-Xylene	ND		20		ug/L			05/23/17 20:29	20
Toluene	ND		20		ug/L			05/23/17 20:29	20
Xylenes, Total	ND		60		ug/L			05/23/17 20:29	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		70 - 125		05/23/17 20:29	20
4-Bromofluorobenzene (Surr)	92		69 - 120		05/23/17 20:29	20
Dibromofluoromethane (Surr)	113		80 - 120		05/23/17 20:29	20
Toluene-d8 (Surr)	101		80 - 120		05/23/17 20:29	20

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		3000		ug/L			05/23/17 20:29	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		68.7 - 141		05/23/17 20:29	20

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	2800		40		mg/L			05/17/17 20:22	200
Sulfate	19000		100		mg/L			05/17/17 20:22	200

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	24		1.0		mg/L			05/26/17 21:28	1

Client Sample ID: Dup:051617

Lab Sample ID: 590-6157-14

Date Collected: 05/16/17 12:00

Matrix: Water

Date Received: 05/17/17 15:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	2.5		0.40		ug/L			05/23/17 20:50	1
Ethylbenzene	ND		1.0		ug/L			05/23/17 20:50	1

TestAmerica Spokane

Client Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Client Sample ID: Dup:051617

Lab Sample ID: 590-6157-14

Date Collected: 05/16/17 12:00

Matrix: Water

Date Received: 05/17/17 15:00

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylene	ND		2.0		ug/L			05/23/17 20:50	1
Methyl tert-butyl ether	19		1.0		ug/L			05/23/17 20:50	1
o-Xylene	ND		1.0		ug/L			05/23/17 20:50	1
Toluene	ND		1.0		ug/L			05/23/17 20:50	1
Xylenes, Total	ND		3.0		ug/L			05/23/17 20:50	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		70 - 125		05/23/17 20:50	1
4-Bromofluorobenzene (Surr)	90		69 - 120		05/23/17 20:50	1
Dibromofluoromethane (Surr)	105		80 - 120		05/23/17 20:50	1
Toluene-d8 (Surr)	99		80 - 120		05/23/17 20:50	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			05/23/17 20:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		68.7 - 141					05/23/17 20:50	1

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.20		mg/L			05/17/17 20:34	1
Sulfate	14		0.50		mg/L			05/17/17 20:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	3.0		1.0		mg/L			05/26/17 21:28	1

Client Sample ID: Trip Blank

Lab Sample ID: 590-6157-16

Date Collected: 05/16/17 00:00

Matrix: Water

Date Received: 05/17/17 15:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			05/23/17 21:12	1
Ethylbenzene	ND		1.0		ug/L			05/23/17 21:12	1
m,p-Xylene	ND		2.0		ug/L			05/23/17 21:12	1
Methyl tert-butyl ether	ND		1.0		ug/L			05/23/17 21:12	1
o-Xylene	ND		1.0		ug/L			05/23/17 21:12	1
Toluene	ND		1.0		ug/L			05/23/17 21:12	1
Xylenes, Total	ND		3.0		ug/L			05/23/17 21:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		70 - 125		05/23/17 21:12	1
4-Bromofluorobenzene (Surr)	89		69 - 120		05/23/17 21:12	1
Dibromofluoromethane (Surr)	106		80 - 120		05/23/17 21:12	1
Toluene-d8 (Surr)	99		80 - 120		05/23/17 21:12	1

TestAmerica Spokane

QC Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 590-12175/5

Matrix: Water

Analysis Batch: 12175

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			05/22/17 13:03	1
Ethylbenzene	ND		1.0		ug/L			05/22/17 13:03	1
m,p-Xylene	ND		2.0		ug/L			05/22/17 13:03	1
Methyl tert-butyl ether	ND		1.0		ug/L			05/22/17 13:03	1
o-Xylene	ND		1.0		ug/L			05/22/17 13:03	1
Toluene	ND		1.0		ug/L			05/22/17 13:03	1
Xylenes, Total	ND		3.0		ug/L			05/22/17 13:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 125		05/22/17 13:03	1
4-Bromofluorobenzene (Surr)	94		69 - 120		05/22/17 13:03	1
Dibromofluoromethane (Surr)	105		80 - 120		05/22/17 13:03	1
Toluene-d8 (Surr)	101		80 - 120		05/22/17 13:03	1

Lab Sample ID: LCS 590-12175/1003

Matrix: Water

Analysis Batch: 12175

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	9.95		ug/L		99	80 - 120
Ethylbenzene	10.0	10.2		ug/L		102	80 - 120
m,p-Xylene	10.0	10.2		ug/L		102	80 - 120
Methyl tert-butyl ether	10.0	10.2		ug/L		102	71 - 128
o-Xylene	10.0	10.2		ug/L		102	80 - 120
Toluene	10.0	10.1		ug/L		101	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		70 - 125
4-Bromofluorobenzene (Surr)	92		69 - 120
Dibromofluoromethane (Surr)	107		80 - 120
Toluene-d8 (Surr)	103		80 - 120

Lab Sample ID: LCSD 590-12175/6

Matrix: Water

Analysis Batch: 12175

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	10.0	10.6		ug/L		106	80 - 120	7	25
Ethylbenzene	10.0	10.8		ug/L		108	80 - 120	6	25
m,p-Xylene	10.0	10.6		ug/L		106	80 - 120	4	25
Methyl tert-butyl ether	10.0	10.6		ug/L		106	71 - 128	4	12
o-Xylene	10.0	10.8		ug/L		108	80 - 120	5	25
Toluene	10.0	10.4		ug/L		104	80 - 123	3	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		70 - 125
4-Bromofluorobenzene (Surr)	93		69 - 120

TestAmerica Spokane

QC Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 590-12175/6

Matrix: Water

Analysis Batch: 12175

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Dibromofluoromethane (Surr)	104		80 - 120
Toluene-d8 (Surr)	101		80 - 120

Lab Sample ID: MB 590-12204/5

Matrix: Water

Analysis Batch: 12204

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			05/23/17 20:08	1
Ethylbenzene	ND		1.0		ug/L			05/23/17 20:08	1
m,p-Xylene	ND		2.0		ug/L			05/23/17 20:08	1
Methyl tert-butyl ether	ND		1.0		ug/L			05/23/17 20:08	1
o-Xylene	ND		1.0		ug/L			05/23/17 20:08	1
Toluene	ND		1.0		ug/L			05/23/17 20:08	1
Xylenes, Total	ND		3.0		ug/L			05/23/17 20:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	108		70 - 125		05/23/17 20:08	1
4-Bromofluorobenzene (Surr)	94		69 - 120		05/23/17 20:08	1
Dibromofluoromethane (Surr)	108		80 - 120		05/23/17 20:08	1
Toluene-d8 (Surr)	100		80 - 120		05/23/17 20:08	1

Lab Sample ID: LCS 590-12204/1003

Matrix: Water

Analysis Batch: 12204

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	10.1		ug/L		101	80 - 120
Ethylbenzene	10.0	10.5		ug/L		105	80 - 120
m,p-Xylene	10.0	10.2		ug/L		102	80 - 120
Methyl tert-butyl ether	10.0	11.4		ug/L		114	71 - 128
o-Xylene	10.0	10.6		ug/L		106	80 - 120
Toluene	10.0	10.1		ug/L		101	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	106		70 - 125
4-Bromofluorobenzene (Surr)	92		69 - 120
Dibromofluoromethane (Surr)	105		80 - 120
Toluene-d8 (Surr)	100		80 - 120

Lab Sample ID: MB 590-12226/5

Matrix: Water

Analysis Batch: 12226

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			05/24/17 15:34	1
Ethylbenzene	ND		1.0		ug/L			05/24/17 15:34	1

TestAmerica Spokane

QC Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 590-12226/5

Matrix: Water

Analysis Batch: 12226

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
m,p-Xylene	ND		2.0		ug/L			05/24/17 15:34	1
Methyl tert-butyl ether	ND		1.0		ug/L			05/24/17 15:34	1
o-Xylene	ND		1.0		ug/L			05/24/17 15:34	1
Toluene	ND		1.0		ug/L			05/24/17 15:34	1
Xylenes, Total	ND		3.0		ug/L			05/24/17 15:34	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	107		70 - 125		05/24/17 15:34	1
4-Bromofluorobenzene (Surr)	95		69 - 120		05/24/17 15:34	1
Dibromofluoromethane (Surr)	104		80 - 120		05/24/17 15:34	1
Toluene-d8 (Surr)	100		80 - 120		05/24/17 15:34	1

Lab Sample ID: LCS 590-12226/1003

Matrix: Water

Analysis Batch: 12226

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	10.8		ug/L		108	80 - 120
Ethylbenzene	10.0	11.4		ug/L		114	80 - 120
m,p-Xylene	10.0	11.1		ug/L		111	80 - 120
Methyl tert-butyl ether	10.0	10.5		ug/L		105	71 - 128
o-Xylene	10.0	11.1		ug/L		111	80 - 120
Toluene	10.0	10.6		ug/L		106	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		70 - 125
4-Bromofluorobenzene (Surr)	92		69 - 120
Dibromofluoromethane (Surr)	106		80 - 120
Toluene-d8 (Surr)	101		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 590-12176/5

Matrix: Water

Analysis Batch: 12176

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			05/22/17 13:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		68.7 - 141		05/22/17 13:03	1

TestAmerica Spokane

QC Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

Lab Sample ID: LCS 590-12176/1004

Matrix: Water

Analysis Batch: 12176

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline			1000	951		ug/L		95	80 - 120		
Surrogate			LCS %Recovery	LCS Qualifier	Limits						
4-Bromofluorobenzene (Surr)			89		68.7 - 141						

Lab Sample ID: LCSD 590-12176/1008

Matrix: Water

Analysis Batch: 12176

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

			Spike	LCSD	LCSD				%Rec.	RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline			1000	1040		ug/L	-	104	80 - 120	9	20
Surrogate	LCSD	LCSD									
	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	90		68.7 - 141								

Lab Sample ID: MB 590-12205/5

Matrix: Water

Analysis Batch: 12205

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L	-		05/23/17 20:08	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		68.7 - 141					05/23/17 20:08	1

Lab Sample ID: LCS 590-12205/1004

Matrix: Water

Analysis Batch: 12205

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

			Spike	LCS	LCS				%Rec.		
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits		
Gasoline			1000	1140		ug/L	-	114	80 - 120		
Surrogate	LCS	LCS									
	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	89		68.7 - 141								

Lab Sample ID: LCSD 590-12205/1015

Matrix: Water

Analysis Batch: 12205

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

			Spike	LCSD	LCSD				%Rec.	RPD	
Analyte			Added	Result	Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Gasoline			1000	1180		ug/L	-	118	80 - 120	4	20
Surrogate	LCSD	LCSD									
	%Recovery	Qualifier	Limits								
4-Bromofluorobenzene (Surr)	90		68.7 - 141								

TestAmerica Spokane

QC Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS) (Continued)

Lab Sample ID: MB 590-12227/5

Matrix: Water

Analysis Batch: 12227

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			05/24/17 15:34	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		68.7 - 141					05/24/17 15:34	1

Lab Sample ID: LCS 590-12227/1004

Matrix: Water

Analysis Batch: 12227

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Gasoline	1000	1180		ug/L		118	80 - 120		
Surrogate	%Recovery	LCS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	90		68.7 - 141						

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 590-12124/1014

Matrix: Water

Analysis Batch: 12124

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		0.50		mg/L			05/17/17 19:09	1

Lab Sample ID: LCS 590-12124/1013

Matrix: Water

Analysis Batch: 12124

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	12.5	12.2		mg/L		98	90 - 110		

Lab Sample ID: 590-6157-3 MS

Matrix: Water

Analysis Batch: 12124

Client Sample ID: MW-4:051617

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	4.2		11.4	16.4		mg/L		107	80 - 120		

Lab Sample ID: 590-6157-3 MSD

Matrix: Water

Analysis Batch: 12124

Client Sample ID: MW-4:051617

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	4.2		11.4	16.3		mg/L		107	80 - 120	0	10

TestAmerica Spokane

QC Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: 590-6157-3 DU
Matrix: Water
Analysis Batch: 12124

Client Sample ID: MW-4:051617
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Sulfate	4.2		4.18		mg/L		0.6	15.7

Lab Sample ID: MB 590-12125/1014
Matrix: Water
Analysis Batch: 12125

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.20		mg/L			05/17/17 19:09	1

Lab Sample ID: LCS 590-12125/1013
Matrix: Water
Analysis Batch: 12125

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	5.00	4.98		mg/L		100	90 - 110

Lab Sample ID: 590-6157-3 MS
Matrix: Water
Analysis Batch: 12125

Client Sample ID: MW-4:051617
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Nitrate as N	0.59		4.55	5.59		mg/L		110	80 - 120

Lab Sample ID: 590-6157-3 MSD
Matrix: Water
Analysis Batch: 12125

Client Sample ID: MW-4:051617
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Nitrate as N	0.59		4.55	5.58		mg/L		110	80 - 120	0	12.1

Lab Sample ID: 590-6157-3 DU
Matrix: Water
Analysis Batch: 12125

Client Sample ID: MW-4:051617
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Nitrate as N	0.59		0.546		mg/L		8	13.1

Method: SM 5310C - TOC

Lab Sample ID: MB 490-433309/1
Matrix: Water
Analysis Batch: 433309

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0		mg/L			05/26/17 21:28	1

TestAmerica Spokane

QC Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Method: SM 5310C - TOC (Continued)

Lab Sample ID: LCS 490-433309/5

Matrix: Water

Analysis Batch: 433309

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	9.62		mg/L		96	90 - 110
TOC Result 1	10.0	9.71		mg/L		97	90 - 110
TOC Result 2	10.0	9.52		mg/L		95	90 - 110

Lab Sample ID: 590-6157-7 MS

Matrix: Water

Analysis Batch: 433309

Client Sample ID: MW-10:051617

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	1.4		20.0	21.5		mg/L		101	75 - 122
TOC Result 1	1.4		20.0	21.7		mg/L		102	75 - 122
TOC Result 2	1.4		20.0	21.3		mg/L		100	75 - 122

Lab Sample ID: 590-6157-7 MSD

Matrix: Water

Analysis Batch: 433309

Client Sample ID: MW-10:051617

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	1.4		20.0	21.3		mg/L		99	75 - 122	1	20
TOC Result 1	1.4		20.0	21.2		mg/L		99	75 - 122	2	20
TOC Result 2	1.4		20.0	21.3		mg/L		100	75 - 122	0	20

TestAmerica Spokane

Lab Chronicle

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Client Sample ID: MW-1:051617

Date Collected: 05/16/17 14:55

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	12226	05/24/17 15:55	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	12227	05/24/17 15:55	MRS	TAL SPK
Total/NA	Analysis	300.0		1			12124	05/17/17 16:56	CBW	TAL SPK
Total/NA	Analysis	300.0		1			12125	05/17/17 16:56	CBW	TAL SPK
Total/NA	Analysis	SM 5310C		1	50 mL	50 mL	433309	05/26/17 21:28	NKK	TAL NSH

Client Sample ID: MW-2:051617

Date Collected: 05/16/17 15:20

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	12226	05/24/17 16:15	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	12227	05/24/17 16:15	MRS	TAL SPK
Total/NA	Analysis	300.0		1			12124	05/17/17 17:08	CBW	TAL SPK
Total/NA	Analysis	300.0		1			12125	05/17/17 17:08	CBW	TAL SPK
Total/NA	Analysis	SM 5310C		1	50 mL	50 mL	433309	05/26/17 21:28	NKK	TAL NSH

Client Sample ID: MW-4:051617

Date Collected: 05/16/17 12:40

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		10	43 mL	43 mL	12175	05/22/17 17:09	MRS	TAL SPK
Total/NA	Analysis	8260C		1	43 mL	43 mL	12226	05/24/17 16:36	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	12227	05/24/17 16:36	MRS	TAL SPK
Total/NA	Analysis	300.0		1			12124	05/17/17 17:20	CBW	TAL SPK
Total/NA	Analysis	300.0		1			12125	05/17/17 17:20	CBW	TAL SPK
Total/NA	Analysis	SM 5310C		1	50 mL	50 mL	433309	05/26/17 21:28	NKK	TAL NSH

Client Sample ID: MW-6:051617

Date Collected: 05/16/17 11:00

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	12175	05/22/17 17:30	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	12176	05/22/17 17:30	MRS	TAL SPK
Total/NA	Analysis	300.0		1			12124	05/17/17 17:56	CBW	TAL SPK
Total/NA	Analysis	300.0		1			12125	05/17/17 17:56	CBW	TAL SPK
Total/NA	Analysis	SM 5310C		1	50 mL	50 mL	433309	05/26/17 21:28	NKK	TAL NSH

TestAmerica Spokane

Lab Chronicle

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Client Sample ID: MW-8:051617

Date Collected: 05/16/17 14:10

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	12175	05/22/17 18:10	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	12176	05/22/17 18:10	MRS	TAL SPK
Total/NA	Analysis	300.0		1			12124	05/17/17 18:09	CBW	TAL SPK
Total/NA	Analysis	300.0		1			12125	05/17/17 18:09	CBW	TAL SPK
Total/NA	Analysis	SM 5310C		1	50 mL	50 mL	433309	05/26/17 21:28	NKK	TAL NSH

Client Sample ID: MW-9:051617

Date Collected: 05/16/17 10:35

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	12175	05/22/17 18:31	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	12176	05/22/17 18:31	MRS	TAL SPK
Total/NA	Analysis	300.0		1			12124	05/17/17 18:21	CBW	TAL SPK
Total/NA	Analysis	300.0		1			12125	05/17/17 18:21	CBW	TAL SPK
Total/NA	Analysis	SM 5310C		1	50 mL	50 mL	433309	05/26/17 21:28	NKK	TAL NSH

Client Sample ID: MW-10:051617

Date Collected: 05/16/17 09:55

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	12175	05/22/17 18:51	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	12176	05/22/17 18:51	MRS	TAL SPK
Total/NA	Analysis	300.0		1			12124	05/17/17 18:33	CBW	TAL SPK
Total/NA	Analysis	300.0		1			12125	05/17/17 18:33	CBW	TAL SPK
Total/NA	Analysis	SM 5310C		1	50 mL	50 mL	433309	05/26/17 21:28	NKK	TAL NSH

Client Sample ID: MW-11:051717

Date Collected: 05/17/17 09:10

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		10	43 mL	43 mL	12226	05/24/17 16:57	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		10	43 mL	43 mL	12227	05/24/17 16:57	MRS	TAL SPK
Total/NA	Analysis	300.0		1			12124	05/17/17 18:45	CBW	TAL SPK
Total/NA	Analysis	300.0		1			12125	05/17/17 18:45	CBW	TAL SPK
Total/NA	Analysis	SM 5310C		1	50 mL	50 mL	433309	05/26/17 21:28	NKK	TAL NSH

TestAmerica Spokane

Lab Chronicle

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Client Sample ID: MW-12:051717

Lab Sample ID: 590-6157-9

Date Collected: 05/17/17 10:15

Matrix: Water

Date Received: 05/17/17 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	12175	05/22/17 19:33	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	12176	05/22/17 19:33	MRS	TAL SPK
Total/NA	Analysis	300.0		1			12124	05/17/17 19:21	CBW	TAL SPK
Total/NA	Analysis	300.0		1			12125	05/17/17 19:21	CBW	TAL SPK
Total/NA	Analysis	SM 5310C		1	50 mL	50 mL	433309	05/26/17 21:28	NKK	TAL NSH

Client Sample ID: MW-13:051717

Lab Sample ID: 590-6157-10

Date Collected: 05/17/17 11:00

Matrix: Water

Date Received: 05/17/17 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	12175	05/22/17 19:54	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	12176	05/22/17 19:54	MRS	TAL SPK
Total/NA	Analysis	300.0		1			12124	05/17/17 19:34	CBW	TAL SPK
Total/NA	Analysis	300.0		1			12125	05/17/17 19:34	CBW	TAL SPK
Total/NA	Analysis	SM 5310C		1	50 mL	50 mL	433309	05/26/17 21:28	NKK	TAL NSH

Client Sample ID: MW-14:051617

Lab Sample ID: 590-6157-11

Date Collected: 05/16/17 09:10

Matrix: Water

Date Received: 05/17/17 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	12175	05/22/17 20:14	MRS	TAL SPK
Total/NA	Analysis	8260C		10	43 mL	43 mL	12226	05/24/17 17:18	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	12176	05/22/17 20:14	MRS	TAL SPK
Total/NA	Analysis	300.0		1			12124	05/17/17 19:46	CBW	TAL SPK
Total/NA	Analysis	300.0		1			12125	05/17/17 19:46	CBW	TAL SPK
Total/NA	Analysis	SM 5310C		1	50 mL	50 mL	433309	05/26/17 21:28	NKK	TAL NSH

Client Sample ID: MW-30:051617

Lab Sample ID: 590-6157-12

Date Collected: 05/16/17 13:30

Matrix: Water

Date Received: 05/17/17 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	12175	05/22/17 20:36	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	12176	05/22/17 20:36	MRS	TAL SPK
Total/NA	Analysis	300.0		1			12124	05/17/17 20:10	CBW	TAL SPK
Total/NA	Analysis	300.0		1			12125	05/17/17 20:10	CBW	TAL SPK
Total/NA	Analysis	SM 5310C		1	50 mL	50 mL	433309	05/26/17 21:28	NKK	TAL NSH

TestAmerica Spokane

Lab Chronicle

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Client Sample ID: East Trench:051617

Lab Sample ID: 590-6157-13

Date Collected: 05/16/17 11:50

Matrix: Water

Date Received: 05/17/17 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		20	43 mL	43 mL	12204	05/23/17 20:29	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		20	43 mL	43 mL	12205	05/23/17 20:29	MRS	TAL SPK
Total/NA	Analysis	300.0		200			12124	05/17/17 20:22	CBW	TAL SPK
Total/NA	Analysis	300.0		200			12125	05/17/17 20:22	CBW	TAL SPK
Total/NA	Analysis	SM 5310C		1	50 mL	50 mL	433309	05/26/17 21:28	NKK	TAL NSH

Client Sample ID: Dup:051617

Lab Sample ID: 590-6157-14

Date Collected: 05/16/17 12:00

Matrix: Water

Date Received: 05/17/17 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	12204	05/23/17 20:50	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	12205	05/23/17 20:50	MRS	TAL SPK
Total/NA	Analysis	300.0		1			12124	05/17/17 20:34	CBW	TAL SPK
Total/NA	Analysis	300.0		1			12125	05/17/17 20:34	CBW	TAL SPK
Total/NA	Analysis	SM 5310C		1	50 mL	50 mL	433309	05/26/17 21:28	NKK	TAL NSH

Client Sample ID: Trip Blank

Lab Sample ID: 590-6157-16

Date Collected: 05/16/17 00:00

Matrix: Water

Date Received: 05/17/17 15:00

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	12204	05/23/17 21:12	MRS	TAL SPK

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

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

Accreditation/Certification Summary

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Laboratory: TestAmerica Spokane

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-071	10-31-17
Washington	State Program	10	C569	01-06-18

Laboratory: TestAmerica Nashville

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Washington	State Program	10	C789	07-19-17

Method Summary

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-1

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	TAL SPK
300.0	Anions, Ion Chromatography	MCAWW	TAL SPK
SM 5310C	TOC	SM	TAL NSH

Protocol References:

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

NWTPH = Northwest Total Petroleum Hydrocarbon

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL NSH = TestAmerica Nashville, 2960 Foster Creighton Drive, Nashville, TN 37204, TEL (615)726-0177

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

Client Information				Lab PM: 590-6157 Chain of Custody				COC No: 590-2626-911.1											
Client Contact Scott Lathen				Phone:				Page: Page 1 of 2											
Company: GeoEngineers Inc				Due Date Requested:				Job #:											
Address: 523 East Second Ave				TAT Requested (days):				Preservation Codes:											
City: Spokane				PO #: Purchase Order not required				A - HCL M - Hexane											
State, Zip: WA, 99202				WO #:				B - NaOH N - None											
Phone: 509-251-5239(Tel)				Project #: 59000276				C - Zn Acetate O - AsNaO2											
Email: slathen@geoengineers.com				SSOW#:				D - Nitric Acid P - Na2O4S											
Project Name: Priceless Gas								E - NaHSO4 Q - Na2SO3											
Site: Washington								F - MeOH R - Na2S2O3											
								G - Amchlor S - H2SO4											
								H - Ascorbic Acid T - TSP Dodecahydrate											
								I - Ice U - Acetone											
								J - DI Water V - MCAA											
								K - EDTA W - pH 4-5											
								L - EDA Z - other (specify)											
								Other:											
Sample Identification				Sample Date		Sample Time		Sample Type (C=comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers		Special Instructions/Note:	
MW-1: 051617				5/16/17		1455				Water		X		X		5		Hold	
MW-2: 051617				5/16/17		1520				Water		X		X					
MW-4: 051617				5/16/17		1240				Water		X		X					
MW-6: 051617				5/16/17		1100				Water		X		X					
MW-8: 051617				5/16/17		1410				Water		X		X					
MW-9: 051617				5/16/17		1035				Water		X		X					
MW-10: 051617				5/16/17		955				Water		X		X					
MW-11: 051717				5/17/17		910				Water		X		X					
MW-12: 051717				5/17/17		1015				Water		X		X					
MW-13: 051717				5/17/17		1100				Water		X		X					
MW-14: 051617				5/16/17		1200 910				Water		X		X					
Possible Hazard Identification												Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)							
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological												☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months							
Deliverable Requested: I, II, III, IV, Other (specify)												Special Instructions/QC Requirements:							
Empty Kit Relinquished by:						Date:		Time:		Method of Shipment:									
Relinquished by: <i>Calla Dussell</i>						Date/Time: 5/17/17 1500		Company: GEI		Received by: <i>Shirley Trout</i> Date/Time: 5/17/17 1500 Company: TA dpm									
Relinquished by:						Date/Time:		Company:		Received by: Date/Time: Company:									
Relinquished by:						Date/Time:		Company:		Received by: Date/Time: Company:									
Custody Seals Intact: ☐ Yes ☐ No				Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks: 4.1°C IR004 4.1°C IR004											

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

5/30/2017

COOLER RECEIPT FORM



Cooler Received/Opened On 05-19-2017 @ 09:25

Time Samples Removed From Cooler 12:11 Time Samples Placed In Storage _____ (2 Hour Window)

1. Tracking # 8698 (last 4 digits, FedEx) Courier: FedEx
IR Gun ID 160656838 pH Strip Lot _____ Chlorine Strip Lot _____

2. Temperature of rep. sample or temp blank when opened: 44 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) [Signature]

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap Plastic bag Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # _____

I certify that I unloaded the cooler and answered questions 7-14 (initial) [Signature]

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) [Signature]

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) [Signature]

I certify that I attached a label with the unique LIMS number to each container (initial) [Signature]

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...# _____

COOLER RECEIPT FORM



Cooler Received/Opened On 05-19-2017 @ 09:25

Time Samples Removed From Cooler 12:11 Time Samples Placed In Storage _____ (2 Hour Window)

1. Tracking # 8698 (last 4 digits, FedEx) Courier: FedEx
IR Gun ID 160656838 pH Strip Lot _____ Chlorine Strip Lot _____

2. Temperature of rep. sample or temp blank when opened: 44 Degrees Celsius

3. If Item #2 temperature is 0°C or less, was the representative sample or temp blank frozen? YES NO...NA

4. Were custody seals on outside of cooler? YES...NO...NA

If yes, how many and where: 1 front

5. Were the seals intact, signed, and dated correctly? YES...NO...NA

6. Were custody papers inside cooler? YES...NO...NA

I certify that I opened the cooler and answered questions 1-6 (initial) py

7. Were custody seals on containers: YES NO and Intact YES...NO...NA

Were these signed and dated correctly? YES...NO...NA

8. Packing mat'l used? Bubblewrap NO Plastic bag NO Peanuts Vermiculite Foam Insert Paper Other None

9. Cooling process: Ice Ice-pack Ice (direct contact) Dry ice Other None

10. Did all containers arrive in good condition (unbroken)? YES...NO...NA

11. Were all container labels complete (#, date, signed, pres., etc)? YES...NO...NA

12. Did all container labels and tags agree with custody papers? YES...NO...NA

13a. Were VOA vials received? YES...NO...NA

b. Was there any observable headspace present in any VOA vial? YES...NO...NA

14. Was there a Trip Blank in this cooler? YES...NO...NA If multiple coolers, sequence # 5

I certify that I unloaded the cooler and answered questions 7-14 (initial) py

15a. On pres'd bottles, did pH test strips suggest preservation reached the correct pH level? YES...NO...NA

b. Did the bottle labels indicate that the correct preservatives were used YES...NO...NA

16. Was residual chlorine present? YES...NO...NA

I certify that I checked for chlorine and pH as per SOP and answered questions 15-16 (initial) py

17. Were custody papers properly filled out (ink, signed, etc)? YES...NO...NA

18. Did you sign the custody papers in the appropriate place? YES...NO...NA

19. Were correct containers used for the analysis requested? YES...NO...NA

20. Was sufficient amount of sample sent in each container? YES...NO...NA

I certify that I entered this project into LIMS and answered questions 17-20 (initial) py

I certify that I attached a label with the unique LIMS number to each container (initial) py

21. Were there Non-Conformance issues at login? YES...NO Was a NCM generated? YES...NO...#

Loc: 590
6157

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Loc: 590
6157

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5/30/2017

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Login Sample Receipt Checklist

Client: GeoEngineers Inc

Job Number: 590-6157-1

Login Number: 6157

List Source: TestAmerica Spokane

List Number: 1

Creator: Kratz, Sheila J

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: GeoEngineers Inc

Job Number: 590-6157-1

Login Number: 6157

List Number: 2

Creator: Shaw, Rashard M

List Source: TestAmerica Nashville

List Creation: 05/19/17 12:22 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Spokane

11922 East 1st Ave

Spokane, WA 99206

Tel: (509)924-9200

TestAmerica Job ID: 590-6157-2

Client Project/Site: Priceless Gas/0504-057-05

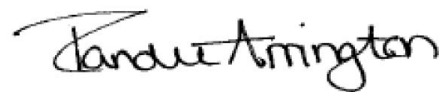
For:

GeoEngineers Inc

523 East Second Ave

Spokane, Washington 99202

Attn: Scott Lathen



Authorized for release by:

5/22/2017 3:42:10 PM

Randee Arrington, Project Manager II

(509)924-9200

randee.arrington@testamericainc.com

LINKS

Review your project
results through

TotalAccess

Have a Question?



Visit us at:

www.testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Case Narrative

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-2

Job ID: 590-6157-2

Laboratory: TestAmerica Spokane

Narrative

Receipt

The samples were received on 5/17/2017 3:00 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 4.1° C and 4.1° C.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

VOA Prep

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Sample Summary

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-2

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
590-6157-15	IDW:051717	Water	05/17/17 11:30	05/17/17 15:00

1

2

3

4

5

6

7

8

9

10

11

12

Definitions/Glossary

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-2

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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 Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-2

Client Sample ID: IDW:051717

Lab Sample ID: 590-6157-15

Date Collected: 05/17/17 11:30

Matrix: Water

Date Received: 05/17/17 15:00

Method: 8260C - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			05/22/17 13:44	1
Ethylbenzene	ND		1.0		ug/L			05/22/17 13:44	1
m,p-Xylene	ND		2.0		ug/L			05/22/17 13:44	1
Methyl tert-butyl ether	3.5		1.0		ug/L			05/22/17 13:44	1
o-Xylene	ND		1.0		ug/L			05/22/17 13:44	1
Toluene	ND		1.0		ug/L			05/22/17 13:44	1
Xylenes, Total	ND		3.0		ug/L			05/22/17 13:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	105		70 - 125		05/22/17 13:44	1
4-Bromofluorobenzene (Surr)	93		69 - 120		05/22/17 13:44	1
Dibromofluoromethane (Surr)	107		80 - 120		05/22/17 13:44	1
Toluene-d8 (Surr)	100		80 - 120		05/22/17 13:44	1

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			05/22/17 13:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		68.7 - 141		05/22/17 13:44	1

TestAmerica Spokane

QC Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-2

Method: 8260C - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 590-12175/5

Matrix: Water

Analysis Batch: 12175

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.40		ug/L			05/22/17 13:03	1
Ethylbenzene	ND		1.0		ug/L			05/22/17 13:03	1
m,p-Xylene	ND		2.0		ug/L			05/22/17 13:03	1
Methyl tert-butyl ether	ND		1.0		ug/L			05/22/17 13:03	1
o-Xylene	ND		1.0		ug/L			05/22/17 13:03	1
Toluene	ND		1.0		ug/L			05/22/17 13:03	1
Xylenes, Total	ND		3.0		ug/L			05/22/17 13:03	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 125		05/22/17 13:03	1
4-Bromofluorobenzene (Surr)	94		69 - 120		05/22/17 13:03	1
Dibromofluoromethane (Surr)	105		80 - 120		05/22/17 13:03	1
Toluene-d8 (Surr)	101		80 - 120		05/22/17 13:03	1

Lab Sample ID: LCS 590-12175/1003

Matrix: Water

Analysis Batch: 12175

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	9.95		ug/L		99	80 - 120
Ethylbenzene	10.0	10.2		ug/L		102	80 - 120
m,p-Xylene	10.0	10.2		ug/L		102	80 - 120
Methyl tert-butyl ether	10.0	10.2		ug/L		102	71 - 128
o-Xylene	10.0	10.2		ug/L		102	80 - 120
Toluene	10.0	10.1		ug/L		101	80 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	104		70 - 125
4-Bromofluorobenzene (Surr)	92		69 - 120
Dibromofluoromethane (Surr)	107		80 - 120
Toluene-d8 (Surr)	103		80 - 120

Lab Sample ID: LCSD 590-12175/6

Matrix: Water

Analysis Batch: 12175

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	10.0	10.6		ug/L		106	80 - 120	7	25
Ethylbenzene	10.0	10.8		ug/L		108	80 - 120	6	25
m,p-Xylene	10.0	10.6		ug/L		106	80 - 120	4	25
Methyl tert-butyl ether	10.0	10.6		ug/L		106	71 - 128	4	12
o-Xylene	10.0	10.8		ug/L		108	80 - 120	5	25
Toluene	10.0	10.4		ug/L		104	80 - 123	3	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	103		70 - 125
4-Bromofluorobenzene (Surr)	93		69 - 120

TestAmerica Spokane

QC Sample Results

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-2

Method: 8260C - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCSD 590-12175/6

Matrix: Water

Analysis Batch: 12175

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Dibromofluoromethane (Surr)	104		80 - 120
Toluene-d8 (Surr)	101		80 - 120

Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC/MS)

Lab Sample ID: MB 590-12176/5

Matrix: Water

Analysis Batch: 12176

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		150		ug/L			05/22/17 13:03	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		68.7 - 141					05/22/17 13:03	1

Lab Sample ID: LCS 590-12176/1004

Matrix: Water

Analysis Batch: 12176

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	951		ug/L		95	80 - 120
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	89		68.7 - 141				

Lab Sample ID: LCSD 590-12176/1008

Matrix: Water

Analysis Batch: 12176

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1000	1040		ug/L		104	80 - 120	9	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	90		68.7 - 141						

TestAmerica Spokane

Lab Chronicle

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-2

Client Sample ID: IDW:051717

Date Collected: 05/17/17 11:30

Date Received: 05/17/17 15:00

Lab Sample ID: 590-6157-15

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	43 mL	43 mL	12175	05/22/17 13:44	MRS	TAL SPK
Total/NA	Analysis	NWTPH-Gx		1	43 mL	43 mL	12176	05/22/17 13:44	MRS	TAL SPK

Laboratory References:

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

Accreditation/Certification Summary

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-2

Laboratory: TestAmerica Spokane

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	UST-071	10-31-17
Washington	State Program	10	C569	01-06-18

Method Summary

Client: GeoEngineers Inc
Project/Site: Priceless Gas/0504-057-05

TestAmerica Job ID: 590-6157-2

Method	Method Description	Protocol	Laboratory
8260C	Volatile Organic Compounds by GC/MS	SW846	TAL SPK
NWTPH-Gx	Northwest - Volatile Petroleum Products (GC/MS)	NWTPH	TAL SPK

Protocol References:

NWTPH = Northwest Total Petroleum Hydrocarbon

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

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

Client Information				Lab PM: 590-6157 Chain of Custody				COC No: 590-2626-911.1				
Client Contact Scott Lathen				Phone:				Page: Page 1 of 2				
Company: GeoEngineers Inc				E-Mail: randee.arrington@testamericancorp.com				Job #:				
Address: 523 East Second Ave				Due Date Requested:				Analysis Requested				
City: Spokane				TAT Requested (days):				Preservation Codes:				
State, Zip: WA, 99202				PO #: Purchase Order not required				A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)				
Phone: 509-251-5239(Tel)				WO #:				Other:				
Email: slathen@geoengineers.com				Project #: 59000276								
Project Name: Priceless Gas				SSOW#:								
Site: Washington												
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers				Special Instructions/Note:
MW-1: 051617		5/16/17	1455		Water			5				
MW-2: 051617		5/16/17	1520		Water							Hold
MW-4: 051617		5/16/17	1240		Water							
MW-6: 051617		5/16/17	1100		Water							
MW-8: 051617		5/16/17	1410		Water							
MW-9: 051617		5/16/17	1035		Water							
MW-10: 051617		5/16/17	955		Water							
MW-11: 051717		5/17/17	910		Water							
MW-12: 051717		5/17/17	1015		Water							
MW-13: 051717		5/17/17	1100		Water							
MW-14: 051617		5/16/17	1200 910		Water							
Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) ☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months						
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:						
Empty Kit Relinquished by:			Date:		Time:		Method of Shipment:					
Relinquished by: <i>Calla Dussell</i>			Date/Time: 5/17/17 1500		Company: GEI		Received by: <i>Shirley Trout</i>		Date/Time: 5/17/17 1500		Company: TA dpm	
Relinquished by:			Date/Time:		Company:		Received by:		Date/Time:		Company:	
Relinquished by:			Date/Time:		Company:		Received by:		Date/Time:		Company:	
Custody Seals Intact: Δ Yes Δ No		Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks: 4.1°C IR004 4.1°C IR004						

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

5/22/2017

Login Sample Receipt Checklist

Client: GeoEngineers Inc

Job Number: 590-6157-2

Login Number: 6157

List Source: TestAmerica Spokane

List Number: 1

Creator: Kratz, Sheila J

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX C

Report Limitations and Guidelines for Use

APPENDIX C

REPORT LIMITATIONS AND GUIDELINES FOR USE¹

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 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 Priceless Gas site located in Davenport, 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.

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.

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