Groundwater Compliance Monitoring Data Summary Report – February 2017

318 State Avenue NE Property
Olympia, Washington

for
City of Olympia

March 29, 2017

GeoEngineers
Earth Science + Technology

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GeoEngineers
1101 South Fawcett Avenue, Suite 200
Tacoma, Washington 98402
253.383.4940

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318 State Avenue NE Property
Olympia, Washington

File No. 0415-049-07

March 29, 2017

Prepared for:

City of Olympia
P.O. Box 1967
Olympia, Washington 98507-1967

Attention: Danelle MacEwen

Prepared by:

GeoEngineers, Inc.
1101 South Fawcett Avenue, Suite 200
Tacoma, Washington 98402
253.383.4940

Garrett R. Leque, LG
Senior Environmental Geologist

Iain H. Wingard
Associate, Environmental Scientist

GRL:IHW:ch

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INTRODUCTION

This data summary report presents the results of groundwater compliance monitoring performed by the City of Olympia (City) in February 2017 at the 318 State Avenue NE property in Olympia, Washington (Property) (Figure 1). Groundwater compliance monitoring at the Property is intended to monitor the natural attenuation of chlorinated organic solvents and associated degradation products identified as chemicals of concern (COCs) in groundwater after completion of the soil remedial action performed in September and October 2009. Remediation of soil and groundwater at the Property is being performed to support the goal of achieving a No Further Action (NFA) determination for the entire Property under the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program (VCP). An NFA determination was provided by Ecology in February 2016 for the southeast portion of the Property to support redevelopment activities by the Low Income Housing Institute (LIHI) (Ecology, 2016). Groundwater compliance monitoring is being performed at the Property to support achieving an NFA determination for the remaining portion of the Property as well as to fulfill monitoring requirements associated with the NFA for the southeast portion of the Property.

The chlorinated solvents being monitored for natural attenuation as part of groundwater compliance monitoring include tetrachloroethene (PCE) and trichloroethene (TCE) as well as associated degradation products. Monitoring also includes measurement of water quality parameters that are indicators of the natural attenuation. Monitoring of chlorinated solvents, degradation products and natural attenuation parameters is being performed in accordance with the Groundwater Compliance Monitoring Plan prepared for the Property (GeoEngineers, 2010a) as well as a groundwater monitoring plan prepared for the southeast portion of the Property (GeoEngineers, 2015).

Groundwater samples were collected on February 22, 2017 from four monitoring wells that included MW-03, MW-16, MW-18 and MW-19 (Figure 2). These samples were submitted for analysis to TestAmerica Laboratory in Fife, Washington. Groundwater samples and groundwater levels were collected from selected monitoring wells in accordance with the groundwater monitoring plans for the Property (GeoEngineers, 2010a and 2015).

The following sections summarize the background for compliance monitoring, field sampling activities, groundwater gradients at the Property and results of groundwater sampling and analysis.

BACKGROUND

Remedial actions were performed in September and October 2009 to remove soil and fill material containing volatile organic compounds (VOCs) including chlorinated solvents, metals and carcinogenic polycyclic aromatic compounds (cPAHs) at concentrations greater than the Model Toxics Control Act (MTCA) cleanup levels (CULs). Soil samples were subsequently collected from the boundary of remedial action areas to confirm that soil and fill with contaminant concentrations greater than cleanup levels were removed from the remedial excavations. The results of the soil remedial action are presented in the Remedial Action Construction Report prepared for the Property (GeoEngineers, 2010b).

Compliance monitoring is being performed after completion of soil remedial actions to evaluate the concentrations and natural attenuation of chlorinated organic solvents in groundwater at the Property. The

natural attenuation of chlorinated organic solvents has been monitored via quarterly monitoring through February 2012 and semi-annual monitoring starting in August 2012. Monitoring has included the following:

- Installation of two new monitoring wells in May 2010 during the first compliance groundwater monitoring event. Monitoring well MW-17 was installed within Contaminated Soil Zone 1 (CSZ 1) where soil remediation was performed in September and October 2009 and MW-18 was installed north of the CSZ 1 (Figure 2).
- Quarterly groundwater sampling at eight monitoring wells including MW-03, MW-04, MW-08, MW-09, MW-13 and MW-16 through MW-18 in May 2010, August 2010, November 2010 and February 2011.
- Quarterly groundwater sampling at five monitoring wells including MW-03, MW-08 and MW-16 through MW-18 in May 2011, August 2011, November 2011 and February 2012.
- Semi-annual groundwater sampling at five monitoring wells including MW-03, MW-08 and MW-16 through MW-18 in August 2012, February 2013 and August 2013.
- Semi-annual groundwater sampling at three monitoring wells including MW-03, MW-16 and MW-18 in February 2014, August 2014, February 2015, July 2015, February 2016, and July 2016.
- Installation of monitoring well MW-19 on the northern boundary of the southeast portion of the Property in July 2015 to fulfill one of Ecology's requirements to establish an Environmental Covenant and obtain an NFA determination for the southeast portion of the Property (Figure 2).
- Quarterly groundwater sampling at one monitoring well, MW-19, in July 2015, October 2015, February 2016, and May 2016.
- Inclusion of MW-19 in semi-annual monitoring performed in July 2016.
- Analysis for chlorinated organic solvents and associated degradation products including PCE, TCE, 1,1-dichloroethene (1,1-DCE), cis-dichloroethene (cis-DCE), trans-dichloroethene (trans-DCE) and vinyl chloride (VC).
- Monitoring for indicators of natural attenuation including ferrous iron, sulfate, dissolved oxygen (DO), pH, electrical conductivity and oxidation-reduction potential (ORP).
- Monitoring of groundwater gradients by measuring water levels at all existing monitoring wells at the Property through February 2012. Groundwater level measurements have been collected from each well undergoing groundwater sampling after February 2012.
- Groundwater monitoring wells MW-04 and MW-17 were decommissioned by the LIHI on March 2, 2016 to accommodate redevelopment of the SE portion of the Property.

Additionally, analysis for arsenic was performed in accordance with the CMP between May 2010 and February 2011 to provide additional information concerning arsenic concentrations in the area. Arsenic analysis was discontinued after the February 2011 groundwater compliance monitoring event because the arsenic results for sampling performed between May 2010 and February 2011 indicate that arsenic concentrations are less than the MTCA Method A CUL in groundwater on the Property. Arsenic concentrations were detected at concentrations greater than the MTCA CUL in locations upgradient of the Property that are likely related to area-wide groundwater conditions or an upgradient source. Ecology concurrence for discontinuing arsenic analysis was provided in an email from Eugene Radcliff, Ecology to Iain Wingard, GeoEngineers dated May 16, 2011.

Ecology also previously requested that groundwater be analyzed for constituents associated with a petroleum hydrocarbon release during the May 2010 groundwater compliance monitoring event to evaluate the potential impacts from a UST encountered at the Property during the remedial action for soil. The sampling and analysis requirements to assess potential impacts from the former UST were documented in an email from Iain Wingard, GeoEngineers to Eugene Radcliff; Ecology dated May 11, 2010. The additional analyses requested by Ecology were performed during the May 2010 compliance monitoring event (GeoEngineers, 2010c). Only benzene was detected in two samples at concentrations well below the MTCA Method A groundwater CUL. Based on the May 2010 sample results, no additional monitoring was necessary to assess potential impacts from the UST or petroleum hydrocarbons at the Property. However, Ecology requested in an email from Eugene Radcliff of Ecology to Iain Wingard of GeoEngineers dated July 19, 2010 that compliance groundwater monitoring include benzene analysis. Therefore, groundwater compliance monitoring performed between May 2010 and February 2011 continued to include analysis for benzene. Benzene analysis was discontinued after the February 2011 compliance monitoring event because the results for sampling performed between May 2010 and February 2011 indicated that benzene is not present at concentrations greater than the MTCA Method A CUL. Ecology concurrence for discontinuing benzene analysis was provided in an email from Eugene Radcliff, Ecology to Iain Wingard, GeoEngineers dated May 16, 2011.

Eight groundwater wells were sampled during the May 2010, August 2010, November 2010 and February 2011 groundwater compliance monitoring events. The number of groundwater monitoring locations were reduced from eight to five during the May 2011 compliance monitoring event as the results of groundwater compliance monitoring performed between May 2010 and February 2011 indicate that the concentrations of chlorinated organic solvents and associated degradation products are less than the MTCA CULs at monitoring well locations MW-13, MW-04, MW-17 and MW-09. Ecology concurrence for discontinuing groundwater monitoring at monitoring well locations MW-13, MW-04 and MW-09 was provided in an email from Eugene Radcliff, Ecology to Iain Wingard, GeoEngineers dated May 16, 2011. Groundwater compliance monitoring continued to be performed at MW-17 to monitor upgradient/ background conditions on the Property.

Quarterly groundwater compliance monitoring was implemented between May 2010 and February 2012. The frequency of groundwater monitoring was reduced from quarterly to semi-annually during the August 2012 compliance monitoring event after the results of previous groundwater compliance monitoring events indicated that the highest and lowest concentrations of chlorinated organic solvents and associated degradation products were detected during the month of February and August. Groundwater gradient mapping has also been discontinued as part of reporting and is not included in this compliance groundwater report because groundwater gradient patterns have generally been established through groundwater measurements collected between May 2010 and February 2012. Ecology concurrence for reducing compliance monitoring frequency and discontinuing groundwater gradient mapping was provided in an email from Eugene Radcliff, Ecology to Iain Wingard, GeoEngineers dated May 8, 2012.

Five groundwater wells were sampled during the August and February 2011, August and February 2012 and August and February 2013 groundwater compliance monitoring events. The number of groundwater monitoring locations were reduced from five to three during the February 2014 compliance monitoring event as the results of groundwater compliance monitoring performed between February 2011 and August 2013 indicate that the concentrations of chlorinated organic solvents and associated degradation products are less than the MTCA CULs at monitoring well locations MW-08 and MW-17. Ecology concurrence for

discontinuing groundwater monitoring at monitoring well locations MW-08 and MW-17 were provided in two emails from Eugene Radcliff, Ecology to Iain Wingard, GeoEngineers dated October 3, 2013 and November 4, 2013, respectively.

An additional monitoring well, MW-19, was installed at the Property in July 2015 on the eastern portion of the property to support the redevelopment of the southeast portion of the property (Figure 2). The City sold the southeastern portion of the Property for redevelopment by LIHI. LIHI is constructing a multistory, low income residential housing structure with vapor intrusion mitigation controls in accordance with the environmental covenant established as part of the NFA determination by Ecology (Ecology, 2016). Monitoring well MW-19 is located adjacent to northern boundary of the southeast portion of the Property to characterize groundwater from the southeast portion of the Property. A groundwater monitoring plan was prepared that identifies the monitoring approach and schedule for groundwater from MW-19 (GeoEngineers, 2015).

FIELD ACTIVITIES

Groundwater monitoring samples were collected from MW-03, MW-16, MW-18 and MW-19 on February 22, 2017 (Figure 2). Groundwater samples were collected using low-flow/low-turbidity sampling techniques to minimize the suspension of particulates in the samples. Groundwater samples were obtained from the wells using dedicated submersible electric pumps (Whale Pump Brand) with dedicated flexible vinyl tubing. Groundwater was pumped at approximately 0.5 liters per minute from the approximate mid-point of the screened interval to collect the samples.

Water quality parameters were measured during purging using a calibrated YSI 556 MPS water quality meter with a flow-through cell. The measured water quality parameters included electrical conductivity, dissolved oxygen (DO), potential hydrogen (pH), reduction potential (ORP), salinity, total dissolved solids (TDS) and temperature. Turbidity was monitored using a Hach turbidimeter. Groundwater samples were collected once the water quality parameters generally varied by less than 10 percent on three consecutive measurements. All field measurements were documented on the field logs.

Following well purging, the flow-through cell was disconnected and the groundwater samples were collected in appropriate laboratory-prepared and -provided containers. The samples were protected and placed into a cooler with ice and delivered to TestAmerica Laboratory in Fife, Washington, for analysis following appropriate chain-of-custody procedures. Purge water was stored in labeled 55-gallon drums for future permitted off-site disposal. The groundwater samples were submitted for the following analyses to provide results for chlorinated organic solvents and associated degradation products as well as water quality parameters as specified in the CMP:

- VOCs by Environmental Protection Agency (EPA) Method 8260
- Sulfate by EPA Method 300.0

Ferrous iron concentrations were measured in the field using a Hach field test kit and the results were recorded on the field logs prior to collection of samples for laboratory analysis.

ANALYTICAL RESULTS

The results from semi-annual groundwater sample collection and analysis from MW-03, MW-16 and MW-18 performed in February 2017 are described in the following sections. Table 1 presents the results for the chemical analyses performed as part of semi-annual groundwater compliance monitoring in February 2017. Table 1 also includes the results from previous groundwater compliance monitoring for comparison purposes.

The results from monitoring MW-19 installed in July 2015 are also described below and presented in Table 1. MW-19 is being monitored in accordance with a separate groundwater monitoring plan that was prepared for monitoring groundwater from the southeast portion of the Property and that identifies the monitoring approach and schedule for sampling and analysis of groundwater from MW-19 (GeoEngineers, 2015).

The results for groundwater samples from MW-03, MW-16, MW-18 and MW-19 are compared to MTCA groundwater CULs protective of the highest beneficial use for groundwater. Ecology does not consider groundwater at the Property as a likely potable water source (Ecology, 2015). Therefore, the highest beneficial use for groundwater is as marine surface water. The results were also compared to the MTCA Method B groundwater screening level protective of soil vapor intrusion provided in Ecology's Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State (Ecology, 2009) as updated in April 2015 to revise the soil gas screening levels provided in Appendix B of the guidance document (Ecology, 2015). The CULs and screening levels are presented in Table 1. Table 2 summarizes water quality and natural attenuation parameter measurements collected in February 2017 and also includes the results from previous groundwater compliance monitoring for comparison. Finally, Appendix A contains the laboratory analytical reports and Appendix B contains the Data Quality Assessment Report presenting the results of data validation of the chemical analyses performed in February 2017.

Groundwater Compliance Monitoring Analyses

Natural Attenuation Parameters

The geochemical indicators of natural attenuation measured in February 2017 generally fit the historical pattern for the Property. Historically, winter measurements indicate a higher water table and more oxidizing conditions (less reducing conditions) compared to summer (Table 2). It should be noted February 2017 was one of the wettest Februaries on record.

Chlorinated Organic Solvents and Associated Degradation Products

TCE was detected in MW-03 at a concentration of 2.8 µg/L, which is greater than the screening level for soil vapor intrusion but less than the CUL for protection of surface water (Table 1 and Figure 3). cis-DCE, trans-DCE and/or VC were detected in groundwater from at least one monitoring well (Table 1). cis-DCE and trans-DCE were either not detected in groundwater at the Property or were detected at concentrations less than the MTCA Method B groundwater CULs based on protection of surface water and the screening level for soil vapor intrusion. VC was detected in groundwater from MW-18 at a concentration greater than the MTCA Method B screening level for soil vapor intrusion but was less than the CUL for protection of surface water (Table 1 and Figure 3). VC was detected at a concentration less than the CUL for protection of surface water and screening level for soil vapor intrusion in groundwater from MW-03, MW-16 and MW-19.

Natural Attenuation of Chlorinated Solvents and Associated Degradation Products in Groundwater

Temporal analysis of the detected concentrations of chlorinated compounds in groundwater at the Property is being performed to assess trends in the natural attenuation of the chlorinated compounds at the Property. The detected chlorinated compound concentrations plotted through time are presented in Figures 4 through 7. The data presented for monitoring wells MW-03 and MW-16 include the results of the groundwater monitoring event performed prior to remedial actions for soil (i.e., March 2009) as well as the groundwater monitoring events that have been performed after the completion of soil remediation. The data presented for monitoring well MW-18 include the groundwater monitoring events performed after the soil remedial actions as this well was installed after completion of the soil remedial actions. Monitoring well MW-19 was installed in July 2015 and has been sampled in July 2015, October 2015, February 2016, May 2016, July 2016, and February 2017.

The following summarizes the results of the trend analysis for MW-03, MW-16, MW-18 and MW-19:

- MW-03 – Monitoring well MW-03 is located downgradient/crossgradient of the soil remedial action area on the southeast portion of the Property (CSZ 1) (Figure 3). The concentrations of chlorinated compounds have fluctuated (i.e., increased and decreased) in groundwater at MW-03 between the soil remedial action and 2017 (Figure 4 and Table 1). Higher concentrations of chlorinated compounds are generally present in groundwater at MW-03 in the winter when groundwater levels are higher (Figure 4 and Tables 1 and 2). The concentration of TCE continues to be detected at concentrations greater than the MTCA screening level for soil vapor intrusion (1.55 µg/L) during sampling events performed in the winter (i.e., February 2017, February 2016, February 2014 and February November 2011) but is less than the cleanup level for protection of surface water (7 µg/L). The concentration of TCE has generally been below the MTCA screening level for soil vapor intrusion during monitoring events occurring in the summer (i.e., July 2015, August 2014, August 2013, and August 2012). However, the concentration of TCE detected in groundwater from MW-03 during the July 2016 monitoring event was greater than the screening level for soil vapor intrusion (Figure 4 and Table 1). The results for TCE at MW-03 in July 2016 may be attributed to groundwater conditions from infiltration of firefighting water at or near the Property on July 5, 2016. The concentration of VC was periodically greater than the MTCA screening level for soil vapor intrusion (0.347 µg/L) during sampling events performed in the winter until 2015 (i.e., February 2015 through February 2012). The concentration of VC was greater than the cleanup level for protection of surface water (1.6 µg/L) during one event (i.e., February 2015). The concentration of VC has been below both screening levels since 2015, however, including winter sampling events in February 2016 and 2017. Similar to TCE, VC has generally been below the MTCA screening level for soil vapor intrusion during monitoring events occurring in the summer (i.e., July 2016, July 2015, August 2014, August 2013, and August 2012). PCE and DCE are either not detected or are detected at concentrations less than the MTCA cleanup levels for protection of surface water and screening level for soil vapor intrusion in groundwater from MW-03 (Table 1).
- MW-16 – Monitoring well MW-16 is located downgradient of the soil remedial action area on the southeast portion of the Property (Figure 3). The concentration of VC in groundwater from MW-16 as well as other chlorinated compounds decreased after completion of soil remedial actions (Figure 5 and Table 1). Higher VC concentrations and concentrations greater than the screening level for soil vapor intrusion are generally present in groundwater in MW-16 during monitoring events performed in the summer (i.e., July 2015, August 2014, August 2013, and August 2012), which is likely attributed to the

degradation of TCE and DCE in groundwater flowing from the upgradient area in proximity to MW-03. However, a lower VC concentration and a concentration less than the screening level was observed during the July 2016 sampling event, which may be attributed to infiltration of firefighting water at or near the Property. PCE, TCE, and DCE have been either not detected or detected at concentrations less than the MTCA cleanup level for protection of surface water and screening level for soil vapor intrusion in groundwater from MW-16. The concentration of TCE increased during the July 2016 monitoring event, which may also be attributed to infiltration of firefighting water at or near the Property. The concentration of TCE remained below the cleanup and screening levels in February 2017.

- MW-18 – Monitoring well MW-18 is located downgradient of soil remedial action area on the southeast portion of the Property (Figure 3). The VC concentrations in groundwater at monitoring well MW-18 have fluctuated during the time between the soil remedial action and February 2017 (Figure 6 and Table 1). Similar to MW-16, higher concentrations of VC are generally present in groundwater in MW-18 during summer monitoring events which is likely attributed to the degradation of TCE and DCE in groundwater flowing from the upgradient area in proximity to MW-03. Also similar to MW-16, a lower VC concentration was observed during the July 2016 sampling event which may be attributed to infiltration of firefighting water at or near the Property. The concentration of VC in groundwater from MW-18 was greater than the screening level for soil vapor instruction but was less than the cleanup level for protection of surface water in February 2017. PCE, TCE, and DCE at MW-18 are consistently either not detected or are detected at concentrations less than the MTCA cleanup and screening levels.
- MW-19 – Monitoring well MW-19 was installed in July 2015 to monitor groundwater from the southeast portion of the Property (Figure 3). VC has been detected in groundwater from MW-19 at concentrations greater than the screening level for soil vapor intrusion but less than the cleanup level for protection of surface water (Figure 7 and Table 1). TCE has been detected at concentrations less than the CUL for protection of surface water and the MTCA screening level for soil vapor intrusion with the exception of the February 2016 monitoring event. PCE and DCE at MW-19 are either not detected or are detected at concentrations less than the cleanup and screening levels.

Overview of Groundwater Compliance Monitoring Results

TCE was detected at a concentration greater than the MTCA screening level for soil vapor intrusion at one location, MW-03, during the February 2017 monitoring event (Table 1 and Figure 3). VC was also detected at a concentration greater than the MTCA screening level for soil vapor intrusion at one location, MW-18, during the February 2017 monitoring event. Other chlorinated compounds were either not detected or less than the MTCA cleanup level for protection of surface water and screening level for soil vapor intrusion in groundwater during the February 2017 monitoring event

Geochemical indicators of natural attenuation have fluctuated seasonally between reductive and oxidative conditions during compliance monitoring events performed at the Property. The groundwater conditions observed in winter are due to increased precipitation and associated increase in stormwater infiltration on and around the Property. February 2017 was one of the wettest Februaries on record, and the groundwater conditions that were measured fit the typical winter conditions.

Future Groundwater Compliance Monitoring

The next round of semi-annual groundwater compliance monitoring is scheduled to be performed in July 2017. Groundwater compliance monitoring will be performed at groundwater monitoring wells MW-03, MW-16, MW-18, and MW-19.

REFERENCES

Ecology, 2016, No Further Action at a Property associated with a Site: 318 State Ave NE, Olympia, WA 98501, Opinion Letter, dated February 23, 2016.

Email from Iain Wingard, GeoEngineers to Eugene Radcliff, Ecology "Subject: City of Olympia Groundwater Compliance Monitoring," dated May 11, 2010.

Email from Eugene Radcliff of Ecology to Iain Wingard of GeoEngineers, "Subject: State Avenue Property May 2010 Groundwater Compliance Monitoring Report," dated July 19, 2010.

Email from Eugene Radcliff, Ecology to Iain Wingard, GeoEngineers, "Subject: Ecology response to the February 2011 Groundwater Monitoring Report," dated May 16, 2011.

Email from Eugene Radcliff, Ecology to Iain Wingard, GeoEngineers, "Subject: Monitoring and Reporting at the City of Olympia 318 State Avenue Property," dated May 8, 2012.

Email from Eugene Radcliff, Ecology to Iain Wingard, GeoEngineers, "Subject: Groundwater Monitoring Report for City of Olympia 318 S State Street Property," dated October 3, 2013.

Email from Eugene Radcliff, Ecology to Iain Wingard, GeoEngineers, "Subject: Groundwater Monitoring Report for City of Olympia 318 S State Street Property," dated November 4, 2013.

GeoEngineers, 2010a, "Groundwater Compliance Monitoring Plan, 318 State Avenue NE, Olympia, Washington," April 16, 2010.

GeoEngineers, 2010b, "Remedial Action Construction Report, 318 State Avenue NE, Olympia, Washington," January 5, 2010.

GeoEngineers, 2010c, "Groundwater Compliance Monitoring Data Summary Report – May 2010, 318 State Avenue NE, Olympia, Washington," July 16, 2010.

GeoEngineers, 2015, "Groundwater Monitoring Plan, Southeast Portion of the 318 State Avenue NE Property, Olympia, Washington," October 1, 2015.

LIMITATIONS

This Groundwater Monitoring Report has been prepared for use by the City of Olympia. GeoEngineers has performed these services in general accordance with the scope and limitations of our proposal.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with the generally accepted environmental science practices for groundwater monitoring in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

TABLE 1

SUMMARY OF GROUNDWATER MONITORING PARAMETERS[1] - FEBRUARY 2017

318 STATE AVENUE NE

OLYMPIA, WASHINGTON

			Volatile Organic Compounds					
		Analyte	Tetrachloroethene (PCE)	Trichloroethene (TCE)	1,1-Dichloroethene (1,1-DCE)	Cis-1,2-Dichloroethene (cis 1,2-DCE)	Trans-1,2-Dichloroethene (trans 1,2-DCE)	Vinyl Chloride (VC)
		Unit	µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
		MTCA Groundwater Cleanup Levels[2]	8.85	7	3.2	NE	4,000	1.6
		Groundwater Screening Level for Soil Vapor Intrusion[3]	22.9	1.55	130	NE	NE	0.347
Location	Sample ID	Sample Date						
MW-03	MW3-052410-W	05/24/10	0.1 U	**0.48**	0.1 U	**0.14**	0.1 U	**0.48**
	MW3-082510-W	08/25/10	0.1 U	**0.26**	0.1 U	**0.11**	0.1 U	**0.12**
	MW3-112410-W	11/24/10	0.1 U	**1.3**	0.1 U	**0.28**	0.1 U	**1.1**
	MW3-022311-W	02/23/11	0.1 U	**1.6**	0.1 U	**0.59**	0.1 U	**0.92**
	MW3-052511-W	05/25/11	0.1 U	**1.5**	0.1 U	**0.60**	**0.15**	**0.83**
	DUP-052511-W[4]	05/25/11	0.1 U	**1.2**	0.1 U	**0.36**	**0.12**	**0.69**
	MW3-082411-W	08/24/11	0.1 U	**0.64 J**	0.1 U	**0.31**	**0.11**	**0.37 J**
	DUP-082411-W[5]	08/24/11	0.1 U	**0.49 J**	0.1 U	**0.23**	0.1 U	**0.27 J**
	MW3-112911-W	11/29/11	0.1 U	**2.6**	0.1 U	**0.39**	**0.11**	**0.45**
	DUP-112911-W[6]	11/29/11	0.1 U	**2.7**	0.1 U	**0.41**	**0.10**	**0.52**
	MW3-022812-W	02/28/12	0.1 U	**0.99**	0.1 U	**0.63**	**0.18**	**1.4**
	DUP-022812-W[7]	02/28/12	0.1 U	**1.3**	0.1 U	**0.84**	**0.19**	**1.9**
	MW3-082312-W	08/23/12	0.1 U	**0.11**	0.1 U	**0.36**	**0.30**	**0.27**
	DUP-082312-W[8]	08/23/12	0.1 U	**0.11**	0.1 U	**0.34**	**0.33**	**0.26**
	MW3-022813-W	02/28/13	0.1 U	**0.70**	0.1 U	**0.34**	**0.14**	**0.72**
	DUP-022813-W[9]	02/28/13	0.1 U	**0.68**	0.1 U	**0.32**	**0.12**	**0.69**
	MW03-82213-W	08/22/13	0.1 U	0.1 U	0.1 U	**0.24**	**0.28**	**0.15**
	DUP01-82213-W[10]	08/22/13	0.1 U	0.1 U	0.1 U	**0.23**	**0.32**	**0.16**
	MW3-140227-W	02/27/14	0.1 U	**2.5**	0.1 U	**0.75**	**0.12**	**0.79**
	MW03-140825-W	08/25/14	0.1 U	0.1 U	0.1 U	**0.35**	**0.36**	**0.25**
	MW03-150225-W	02/25/15	0.5 U	**0.58**	0.1 U	**1.8**	0.2 U	**3.6**
	MW03-150723-W	07/23/15	0.5 U	0.2 U	0.1 U	**0.34**	**0.34**	**0.28**
	MW3-160217-W	02/17/16	0.5 U	**4.0**	0.1 U	**0.41**	0.2 U	**0.19**
	MW-3-160705-W	07/05/16	0.5 U	**2.2**	0.1 U	**0.84**	0.2 U	**0.34**
	MW-3-170222-W	02/22/17	0.5 U	**2.8**	0.1 U	**0.31**	0.2 U	**0.27**
MW-16	MW16-052410-W	05/24/10	0.1 U	**0.44**	0.1 U	**0.20**	**0.18**	**0.76**
	MW16-082510-W	08/25/10	0.1 U	**0.46**	0.1 U	**0.32**	**0.34**	**1.0**
	MW16-112410-W	11/24/10	0.1 U	**0.49**	0.1 U	**0.17**	**0.19**	**0.33**
	DUP-1-112410-W[11]	11/24/10	0.1 U	**0.50**	0.1 U	**0.16**	**0.21**	**0.38**
	MW16-022311-W	02/23/11	0.1 U	**0.42**	0.1 U	**0.13**	**0.13**	**0.22**
	DUP-1-022311-W[12]	02/23/11	0.1 U	**0.43**	0.1 U	**0.11**	**0.15**	**0.23**
	MW16-052511-W	05/25/11	0.1 U	**0.47**	0.1 U	0.1 U	**0.16**	**0.18**
	MW16-082411-W	08/24/11	0.1 U	**0.41**	0.1 U	**0.26**	**0.24**	**0.70**
	MW16-112911-W	11/29/11	0.1 U	**0.35**	0.1 U	**0.10**	**0.12**	**0.15**
	MW16-022812-W	02/28/12	0.1 U	**0.40**	0.1 U	0.1 U	**0.13**	**0.17**
	MW16-082312-W	08/23/12	0.1 U	**0.52**	0.1 U	**0.21**	**0.20**	**0.47**
	MW16-022813-W	02/28/13	0.1 U	**0.28**	0.1 U	0.1 U	0.1 U	**0.086**
	MW16-82213-W	08/22/13	0.1 U	**0.26**	0.1 U	**0.22**	**0.13**	**0.44**
	MW16-140227-W	02/27/14	0.1 U	**0.24**	0.1 U	0.1 U	0.1 U	**0.093**
	DUP01-140227-W[13]	02/27/14	0.1 U	**0.26**	0.1 U	0.1 U	0.1 U	**0.090**
	MW16-140825-W	08/25/14	0.1 U	**0.37**	0.1 U	**0.25**	**0.18**	**0.52**
	DUP01-140825-W[14]	08/25/14	0.1 U	**0.36**	0.1 U	**0.25**	**0.19**	**0.51**
	MW16-150225-W	02/25/15	0.5 U	**0.24**	0.1 U	0.2 U	0.2 U	**0.16**
	DUP01-150225-W[15]	02/25/15	0.5 U	**0.23**	0.1 U	0.2 U	0.2 U	**0.15**
	MW16-150712-W	07/23/15	0.5 U	**0.23**	0.1 U	**0.27**	0.2 U	**0.60**
	DUP01-150723-W[16]	07/23/15	0.5 U	**0.24**	0.1 U	**0.28**	0.2 U	**0.54**
	MW16-160217-W	02/17/16	0.5 U	**0.23**	0.1 U	0.2 U	0.2 U	0.02 U
	DUP1-160217-W[17]	02/17/16	0.5 U	**0.25**	0.1 U	0.2 U	0.2 U	0.02 U
	MW-16-160705-W	07/05/16	0.5 U	**0.78**	0.1 U	0.2 U	0.2 U	0.02 U
	DUP01-160705-W[19]	07/05/16	0.5 U	**0.96**	0.1 U	0.2 U	0.2 U	0.02 U
	MW-16-170222-W	02/22/17	0.5 U	**0.21**	0.1 U	**0.098 J**	0.2 U	**0.084**
MW-18	MW18-052410-W	05/24/10	0.1 U	**0.62**	0.1 U	**0.28**	**0.16**	**2.3**
	MW18-082510-W	08/25/10	0.1 U	**0.25**	0.1 U	**0.22**	**0.13**	**1.9**
	MW18-112410-W	11/24/10	0.1 U	**0.81**	0.1 U	**0.34**	**0.23**	**1.7**
	MW18-022311-W	02/23/11	0.1 U	**0.72**	0.1 U	**0.30**	**0.16**	**0.90**
	MW18-052511-W	05/25/11	0.1 U	**0.63**	0.1 U	**0.21**	**0.14**	**1.2**
	MW18-082411-W	08/24/11	0.1 U	**0.40**	0.1 U	**0.39**	**0.24**	**2.3**
	MW18-112911-W	11/29/11	0.1 U	**0.57**	0.1 U	**0.30**	**0.15**	**0.86**
	MW18-022812-W	02/28/12	0.1 U	**0.49**	0.1 U	**0.20**	**0.16**	**1.20**
	MW18-082312-W	08/23/12	0.1 U	**0.62**	0.1 U	**0.43**	**0.29**	**2.7**
	MW18-022813-W	02/28/13	0.1 U	**0.34**	0.1 U	0.1 U	0.1 U	**0.15**
	MW18-82213-W	08/22/13	0.1 U	**0.61**	0.1 U	**0.45**	**0.28**	**2.1**
	MW18-140227-W	02/27/14	0.1 U	**0.57**	0.1 U	**0.26**	**0.26**	**1.3**
	MW18-140825-W	08/25/14	0.1 U	**0.48**	0.1 U	**0.51**	**0.43**	**2.7**
	MW18-150225-W	02/25/15	0.5 U	**0.68**	0.1 U	**0.23**	**0.20**	**1.5**
	MW18-150723-W	07/23/15	0.5 U	**0.29**	0.1 U	**0.34**	**0.27**	**2.0**
	MW18-160217-W	02/17/16	0.5 U	**0.48**	0.1 U	**0.26**	**0.26**	**1.5**
	MW18-160705-W	07/05/16	**0.13 J**	**0.16 J**	0.1 U	0.2 U	0.2 U	**0.060**
	MW-18-170222-W	02/22/17	0.5 U	**0.41**	0.1 U	**0.24**	**0.14 J**	**0.87**

Analyte			Tetrachloroethene (PCE)	Trichloroethene (TCE)	1,1-Dichloroethene (1,1-DCE)	Cis-1,2-Dichloroethene (cis 1,2-DCE)	Trans-1,2-Dichloroethene (trans 1,2-DCE)	Vinyl Chloride (VC)
Unit			µg/l	µg/l	µg/l	µg/l	µg/l	µg/l
MTCA Groundwater Cleanup Levels[2]			8.85	7	3.2	NE	4,000	1.6
Groundwater Screening Level for Soil Vapor Intrusion[3]			22.9	1.55	130	NE	NE	0.347
Location	**Sample ID**	**Sample Date**						
MW-19	MW-19-150723-W	07/23/15	0.5 U	**0.47**	0.1 U	0.2 U	0.2 U	**0.89**
	MW-19-151027-W	10/27/15	0.5 U	**0.91**	0.1 U	0.2 U	0.2 U	**0.41**
	MW19-160217-W	02/17/16	0.5 U	**1.7**	0.1 U	0.2 U	0.2 U	0.02 U
	MW19-160503-W	05/03/16	0.5 U	**1.2**	0.1 U	**0.1 J**	0.2 U	**0.51**
	DUP1-160503-W[18]	05/03/16	0.5 U	**1.5**	0.1 U	0.2 U	0.2 U	**0.41**
	MW-19-160705-W	07/05/16	0.5 U	**1.5**	0.1 U	**0.31**	**0.18 J**	**1.4**
	MW-19-170222-W	02/22/17	0.5 U	**1.4**	0.1 U	**0.082 J**	0.2 U	**0.078 J**
	DUP 1-170222[20]	02/22/17	0.5 U	**1.4**	0.1 U	**0.037 J**	0.2 U	**0.053 J**

Notes:

[1] The parameters presented are the groundwater compliance monitoring parameters specified in the Groundwater Compliance Monitoring Plan (GeoEngineers, 2010) for the property and groundwater monitoring plan for the southeast portion of the property (GeoEngineers, 2015).

[2] MTCA groundwater cleanup levels based on the highest beneficial use of groundwater as marine surface water. The cleanup levels provided are the lowest of the available marine surface water criteria including MTCA Method B surface water (Chapter 173-340 WAC). Water Quality Standards for Surface Waters of the State of Washington (Chapter 173-201A WAC), National Recommended Water Quality Criteria (Clean Water Act Section 304) and National Toxics Rule (40 CFR 131).

[3] Groundwater Screening Level based on Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation on Remedial Action (Ecology, 2009) as updated in 2015 (Ecology, 2015) to revise screening levels in Appendix B.

[4] Sample DUP-052511-W is a field duplicate of sample MW3-052511-W.

[5] Sample DUP-082411-W is a field duplicate of sample MW3-082411-W.

[6] Sample DUP-112911-W is a field duplicate of sample MW3-112911-W.

[7] Sample DUP-022812-W is a field duplicate of sample MW3-022812-W.

[8] Sample DUP-082312-W is a field duplicate of sample MW3-082312-W.

[9] Sample DUP-022813-W is a field duplicate of sample MW3-022813-W.

[10] Sample DUP01-82213-W is a field duplicate of sample MW03-82213-W.

[11] Sample DUP-1-112410-W is a field duplicate of sample MW16-112410-W.

[12] Sample DUP-1-022311-W is a field duplicate of sample MW16-022311-W.

[13] Sample DUP01-140227-W is a field duplicate of sample MW16-140227-W.

[14] Sample DUP01-140825-W is a field duplicate of sample MW16-140825-W.

[15] Sample DUP01-150225-W is a field duplicate of sample MW16-150225-W.

[16] Sample DUP01-150723-W is a field duplicate of sample MW16-150723-W.

[17] Sample DUP1-160217-W is a field duplicate of sample MW16-160217-W.

[18] Sample DUP-1-160503-W is a field duplicate of sample MW19-160503-W.

[19] Sample DUP01-160507-W is a field duplicate of sample MW16-160507-W.

[20] Sample DUP 1-170222-W is a field duplicate of sample MW19-170222-W.

MTCA = Model Toxics Control Act

µg/l = microgram per liter

mg/l = milligram per liter

J = The analyte concentration is estimated

U = The analyte was not detected at a concentration greater than the identified reporting limit

UJ = The analyte was not detected at a concentration greater than the identified reporting limit and the reporting limit concentration is estimated

NE = Not Established

Bold indicates analyte was detected.

Green shading indicates sample results for the current monitoring event.

Gray shading indicates concentration is greater than groundwater cleanup and/or screening level.

TABLE 2

SUMMARY OF GROUNDWATER QUALITY PARAMETERS[1] - FEBRUARY 2017

318 STATE AVENUE NE
OLYMPIA, WASHINGTON

Location ID	Sample Date	Ferrous Iron (mg/l)	Sulfate (mg/l)	Dissolved Oxygen (mg/l)	pH	Conductivity (mS/m)	Salinity (ppt)	Total Dissolved Solids (g/l)	Turbidity (NTU)	Temperature (C)	ORP[2] (mv)	Water Level (ft btoc)
MW-03	05/24/10	0.9	7.5	4.38	9.79	27.2	0.1	1.4	0.89	16.2	-211	4.27
	08/25/10	1.4	1.2 U	0.31	6.96	75.0	0	0.48	0.94	21.32	-133	4.99
	11/24/10	0.8	6.6	0.00	7.04	66.7	0	0.43	0.84	15.53	-94	3.80
	02/23/11	0.6	2.5	0.01	7.10	46.3	0	0.3	2.51	11.26	-117	4.05
	05/25/11	0.8	2.4	0.01	7.07	46.7	NC	NC	0.59	15.12	-130	4.10
	08/24/11	1.1	1 U	0.40	7.20	72.3	0	0.46	0.44	21.02	-90	4.82
	11/29/11	0.6	11	5.00	7.10	59.0	0	0.38	3.06	13.67	89	3.49
	02/28/12	0.8	40 UJ	2.60	7.25	41.5	0	0.27	5.45	10.99	-59	3.75
	08/23/12	1.0	1.2 U	7.14	6.87	53.0	0	0.34	0.59	21.3	-117	4.92
	02/28/13	1.5	2.1	0.78	6.53	48.0	0	0.31	17.6	11.52	-48	3.98
	08/22/13	1.6	1.2 U	0.10	7.61	61.7	0	0.40	37.4[3]	23.2	-156	4.98
	02/27/14	0.0	11	3.80	7.30	33.2	0	0.31	0.63	10.3	204.4	3.44
	08/25/14	1.8	1.2 U	0.68	7.25	52.0	0.26	0.35	2.48	22.99	-108.6	4.78
	02/25/15	0.5	2.1	1.25	7.31	31.9	0.2	0.26	1.56	12.21	-70.3	4.14
	07/23/15	0.5	1.2 U	0.09	7.11	48.8	0.25	0.34	0.81	22.6	-150	5.04
	02/17/16	0.0	12	4.94	7.50	30.0	0.19	0.25	2.3	12.7	46.5	3.41
	07/05/16	0.7	8.2	2.58	7.04	46.1	0.23	0.32	3.18	22.1	-133.8	3.50
	02/22/17	0.0	99.0	3.69	7.40	42.2	0.29	0.39	1.21	9.6	1.9	3.35
MW-16	05/24/10	0.0	20.0	2.44	8.19	26.6	0	0.17	2.9	15.1	-116	4.24
	08/25/10	0.4	42.0	0.04	7.26	69.8	0	0.44	1.2	21.91	-106	5.02
	11/24/10	0.0	28	1.93	7.54	49.8	0	0.36	1.16	15.42	-34	3.68
	02/23/11	0.0	17	5.08	7.53	37.5	0	0.24	2.58	11.53	-9	4.04
	05/25/11	0.0	11	1.02	7.55	33.1	NC	NC	2.28	13.87	64	4.06
	08/24/11	1.2	4.9	1.00	7.66	51.0	0	0.33	1.28	20.26	-56	4.86
	11/29/11	0.4	19	6.20	7.60	35.3	0	0.23	4.00	13.82	96	3.33
	02/28/12	0.0	54 UJ	6.80	7.70	29.8	0	0.19	1.87	10.89	87	3.72
	08/23/12	0.0	3.9	3.21	7.02	31.4	0	0.2	1.22	19.7	-109	4.91
	02/28/13	0.0	7.7	5.86	6.84	29.4	0	0.19	0.40	11.36	115	3.86
	08/22/13	0.0	3.5	0.11	7.93	46.5	0	0.3	62[3]	22.9	-177	4.91
	02/27/14	0.0	7.3	2.61	7.24	23.6	0	0.21	0.31	10.9	206.2	3.33
	08/25/14	0.5	3.1	0.72	7.59	42.1	0.21	0.28	0.42	22.35	-30.8	4.73
	02/25/15	0.0	5.7	3.07	7.64	23.1	0.15	0.2	1.39	11.51	-52.2	4.09
	07/23/15	0.5	1.2 U	0.11	7.41	42.6	0.22	0.31	0.91	20.6	-168.8	4.93
	02/17/16	0.0	8.5	3.32	7.66	21.3	0.13	0.18	2.65	12.6	40.1	3.28
	07/05/16	0.0	23	5.10	7.23	38.9	0.21	0.28	3.4	19.4	3.2	1.85
	02/22/17	0.0	24	2.74	7.49	32.7	0.23	0.30	4.38	9.4	2.3	3.23
MW-18	05/24/10	0.0	34.0	3.92	9.16	9.0	0	0.5	1.9	14.3	-194	4.39
	08/25/10	0.2	11.0	0.00	6.81	71.9	0	0.46	4.12	21.82	-75	5.09
	11/24/10	0.0	38	0.01	7.11	47.9	0	0.31	0.61	15.52	39	3.87
	02/23/11	0.0	23	0.17	7.22	40.3	0	0.26	0.99	11.7	55	4.15
	05/25/11	0.0	17	0.00	7.15	40.8	NC	NC	1.07	12.8	31	4.21
	08/24/11	0.2	18.5	0.50	7.33	74.1	0	0.47	0.48	19.54	-48	4.97
	11/29/11	0.4	23	3.50	6.81	34.3	0	0.22	2.82	13.18	183	3.53
	02/28/12	0.0	67 UJ	8.20	7.21	32.9	0	0.21	1.56	10.33	93	3.87
	08/23/12	1.0	7.5	4.03	7.08	53.4	0	0.34	3	18.2	-110	5.02
	02/28/13	0.0	7.4	5.68	6.05	21.1	0	0.14	7	10.94	182	4.02
	08/22/13	1.1	4.1	1.90	7.72	59.3	0	0.38	54.8[3]	20.9	-153	5.04
	02/27/14	0.0	11	3.00	7.1	22.2	0	0.2	0.48	10.6	201.3	3.52
	08/25/14	0.8	1.2 U	2.02	9.23	46.7	0.25	0.33	2.79	20.37	-102.9	4.85
	02/25/15	0.0	5.9	1.71	7.37	25.4	0.17	0.23	1.81	11.2	-35.2	4.21
	07/23/15	0.6	1.2 U	0.07	7.06	44.2	0.24	0.31	3.67	20.4	-102.6	5.08
	02/17/16	0.0	6.7	1.56	7.23	20.8	0.13	0.18	3.2	11.9	-5.2	3.53
	07/05/16	0.0	140 J	3.47	6.05	48.4	0.25	0.343	3.4	20.9	31.4	2.26
	02/22/17	0.0	47 J	2.69	7.17	34.1	0.23	0.317	3.26	9.4	1.0	3.43
MW-19	07/23/15	0.5	1.2 U	0.11	7.36	47.6	0.34	0.33	5.02	21.6	-144.5	4.66
	10/27/15	1.0	5.0	0.24	7.07	37.8	0.21	0.28	12.9	18.3	-136.7	3.47
	02/17/16	0.0	8.1	6.85	7.69	15.4	0.10	0.13	5.2	12.3	23.4	2.85
	05/03/16	0.0	11.0	0.28	7.02	290	0.17	0.23	4.54	15.5	-46.2	3.99
	07/05/16	0.02	13	0.61	7.21	47	0.26	0.35	4.62	18.5	-103.1	1.78
	02/22/17	0.00	350	4.59	7.62	61.9	0.44	0.58	1.62	8.7	-7.0	2.78

Notes:

[1] Groundwater quality parameters include the analytes ferrous iron and sulfate to evaluate and monitor natural attenuation.

[2] ORP field readings are considered to be an estimate.

[3] Turbidity measurements collected at this compliance monitoring location are considered to be biased high due to a water quality equipment malfunction. Visual observation made at the time of sampling identified that the sample was clear and free of particulates.

ORP = Oxidation/reduction potential

mg/l = milligrams per liter

g/l = grams per liter

ppt = parts per trillion

mv = Millivolts

mS/m = milliSiemens per meter

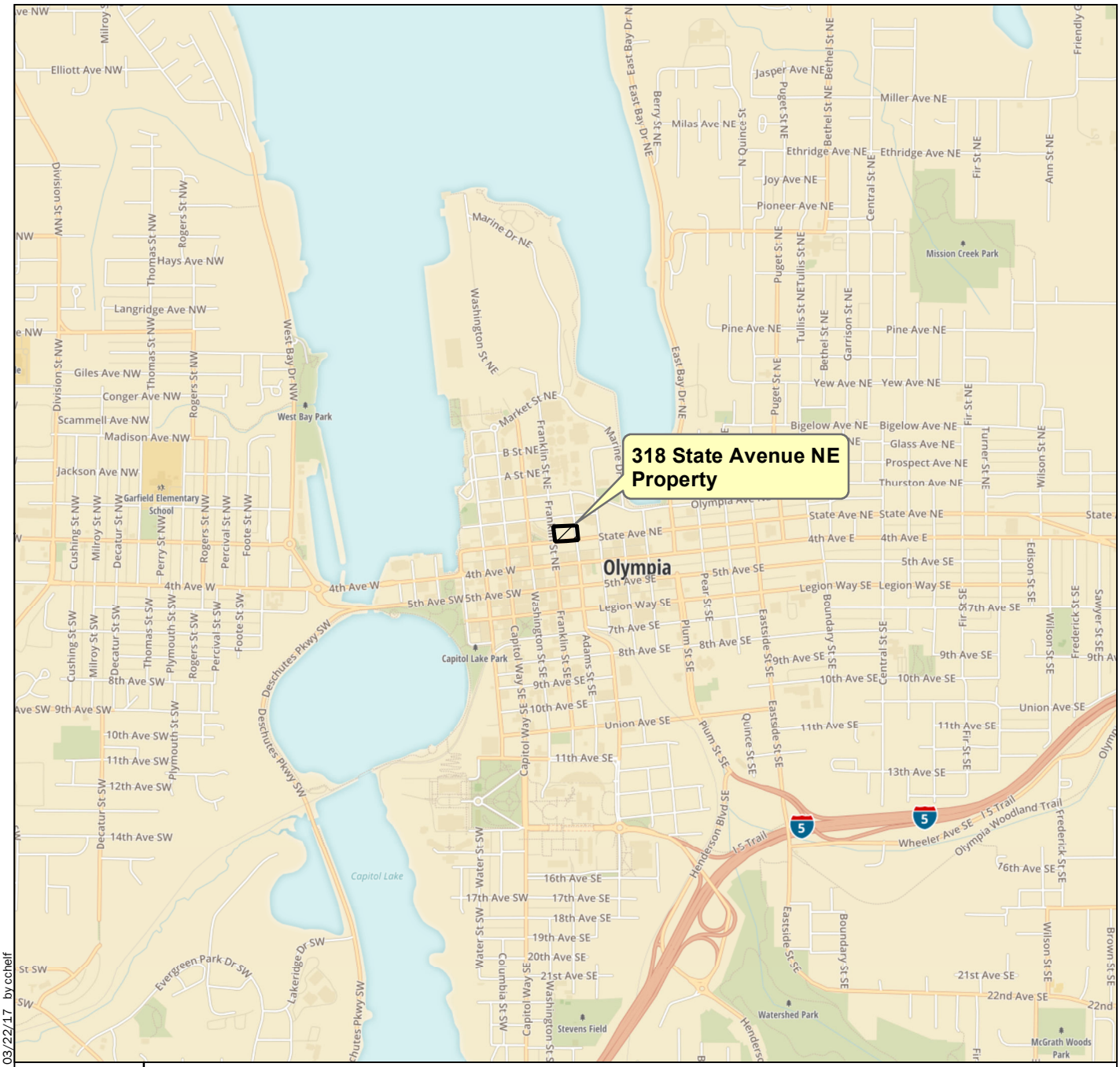
C = Celsius

NTU = nephelometric turbidity unit

NC = Not collected

ft btoc = feet below the top of monitoring well casing

Green shading indicates sample results for the current monitoring event.



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Feet

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Mapbox Open Street Map, 2016

Projection: NAD 1983 UTM Zone 10N

Vicinity Map

318 State Avenue NE Property
Olympia, Washington

GeoEngineers

Figure 1

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Legend

CSZ 1 — Contaminated Soil Zones (CSZ) Remediated in September-October 2009

Approximate 318 State Avenue NE Property Boundary

Southeast portion of property redeveloped by LIHI

MW-03 — Monitoring well currently being monitored as part of semi-annual monitoring events

MW-19 — Monitoring well installed to monitor groundwater from the southeast portion of the property that is currently being monitored as part of Semi-annual monitoring events.

MW-01 — Monitoring well that was previously monitored as part of quarterly or semi-annual monitoring events

MW-04 — Decommissioned Monitoring Well

N W E S

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Feet

Notes:
1. The locations of all features shown are approximate.
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Data Sources: Approximate Property Boundary from Thurston County parcels (revised by GeoEngineers).
Aerial photograph 2016 from GoogleEarth Pro. Data Frame Rotated 356 degrees.

Projection: NAD_1983_StatePlane_Washington_South_FIPS_4602_Feet
Datum: D_North_American_1983

Groundwater Monitoring Locations

318 State Avenue NE
Olympia, Washington

GeoEngineers

Figure 2

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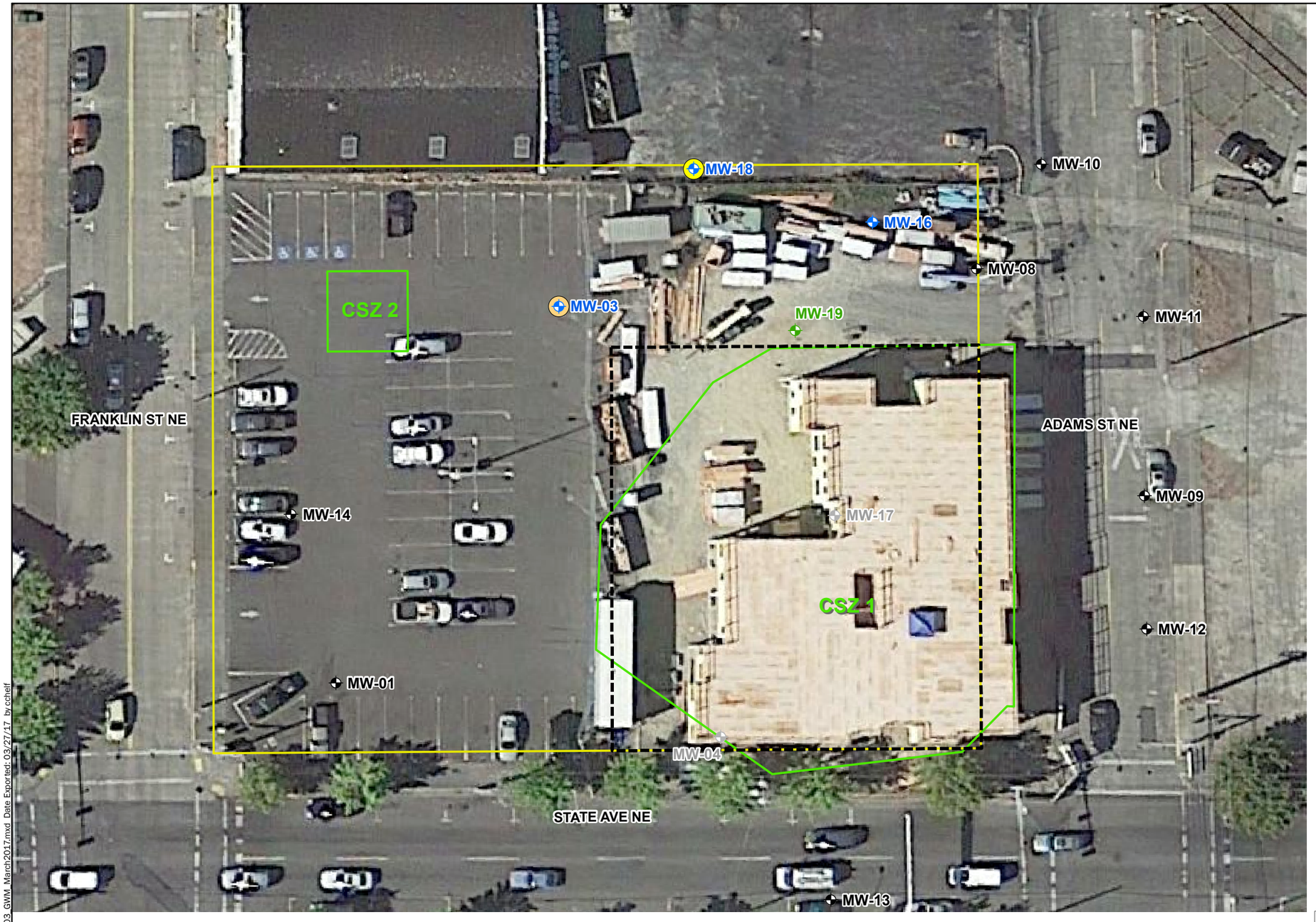

Legend

CSZ 1 — Contaminated Soil Zones (CSZ) Remediated in September-October 2009

Approximate 318 State Avenue NE Property Boundary

Southeast portion of property redeveloped by LIHI

MW-03 — Monitoring well currently being monitored as part of semi-annual monitoring events

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MW-04 — Decommissioned Monitoring Well

MW-01 — Monitoring well that was previously monitored as part of quarterly or semi-annual monitoring events

Trichloroethene (TCE) at concentration greater than the screening level based on Guidance for Evaluating Soil Vapor Intrusion in Washington State (1.55 µg/L)

Vinyl Chloride (VC) at concentration greater than the screening level based on Guidance for Evaluating Soil Vapor Intrusion in Washington State (0.347 ug/L)

Well	Event	Result
MW-03		
TCE	February 2017	2.8 µg/L
MW-18		
VC	February 2017	0.87 µg/L

N W E S

35 0 35

Feet

Notes:
1. MTCA = Model Toxics Control Act, µg/L = micrograms per liter.
2. The locations of all features shown are approximate.
3. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Sources: Approximate Property Boundary from Thurston County parcels (revised by GeoEngineers). Aerial photograph 2016 from GoogleEarth Pro. Data Frame Rotated 356 degrees.

Projection: NAD_1983_StatePlane_Washington_South_FIPS_4602_Feet
Datum: D_North_American_1983

Chemical Analytical Results Exceeding Compliance Criteria

318 State Avenue NE
Olympia, Washington

GeoEngineers

Figure 3

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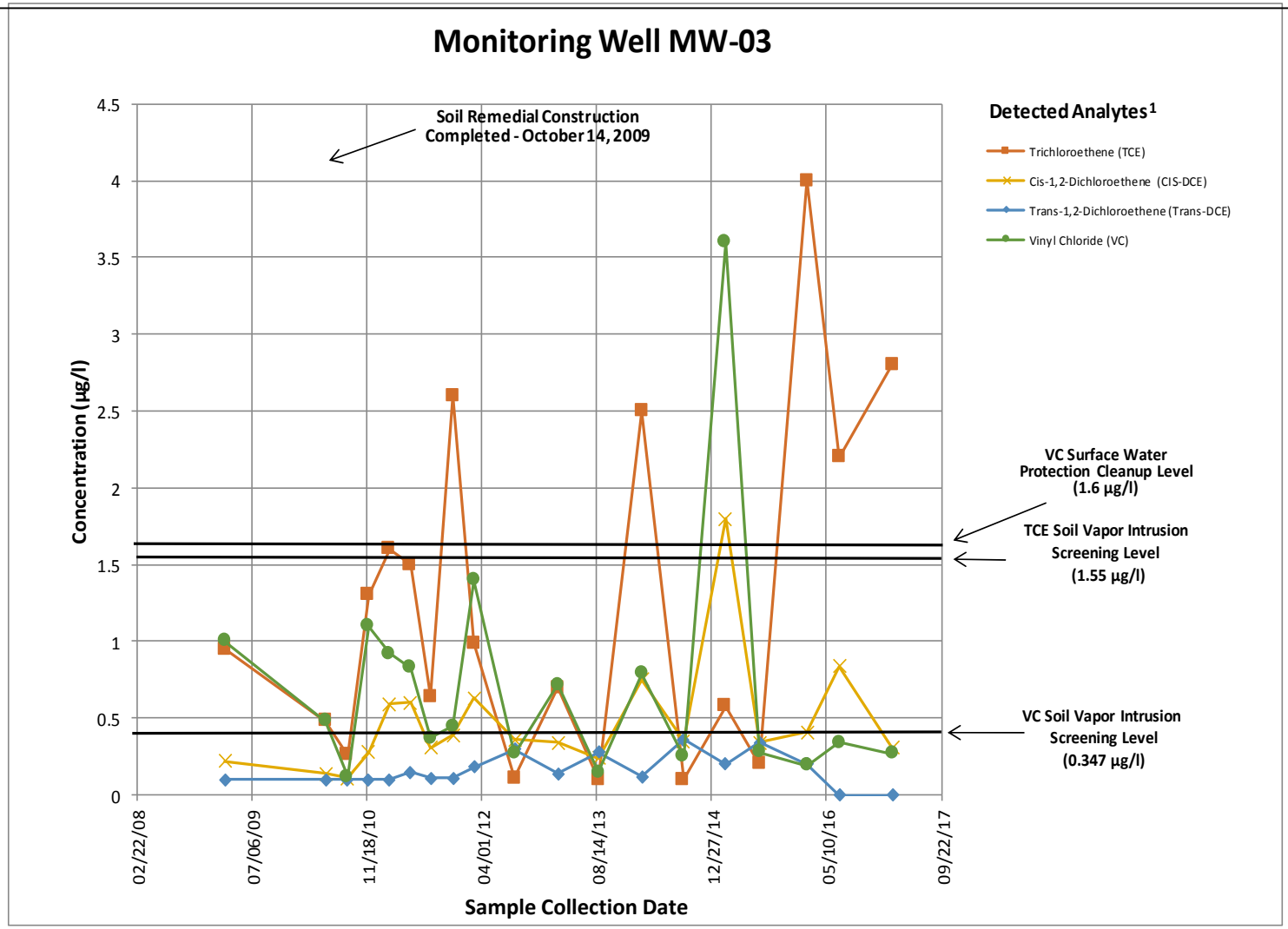


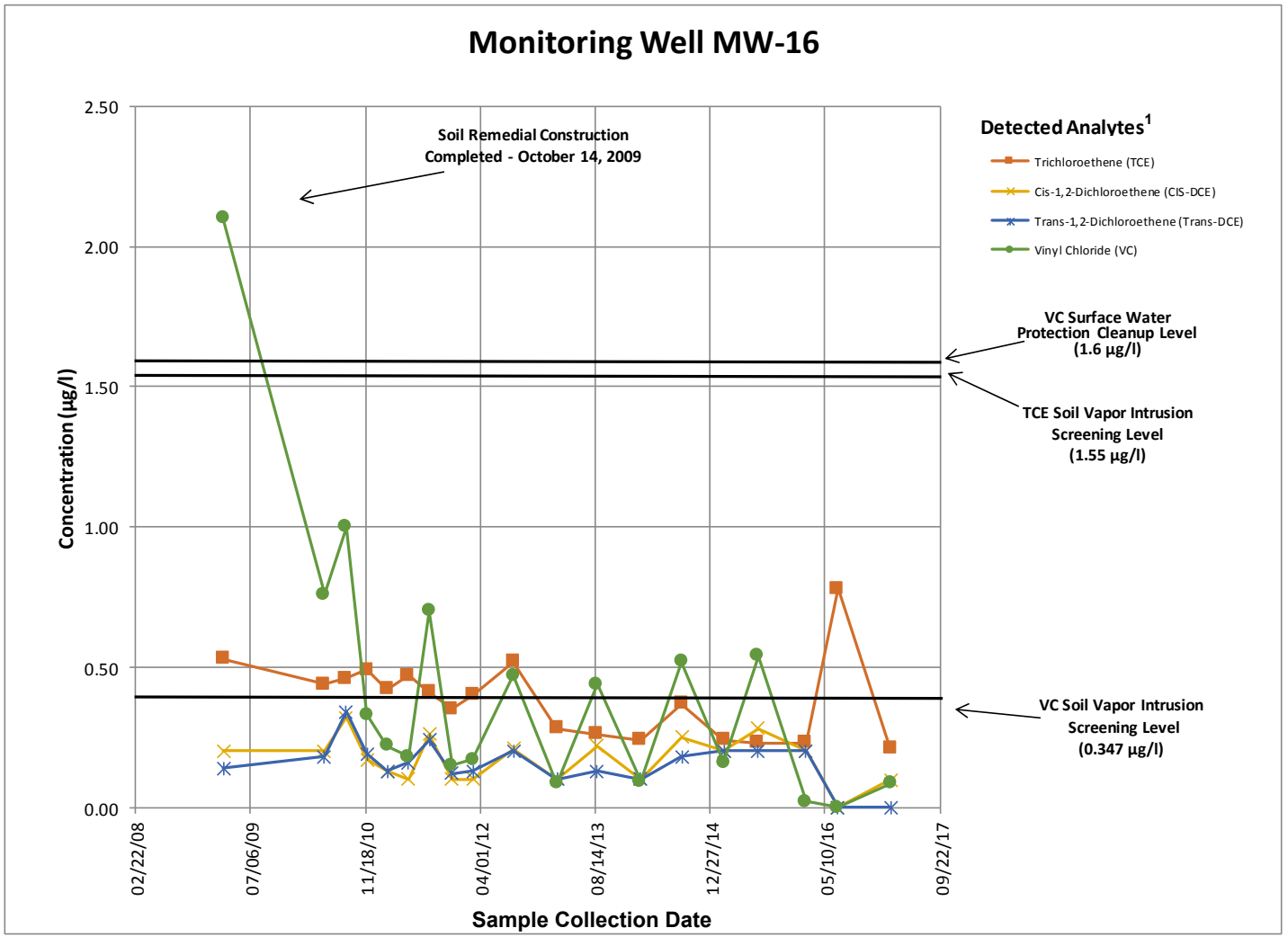
Note:
[1] See Table 1 for a comprehensive summary of the groundwater monitoring results and groundwater cleanup and screening levels.

Trend Analysis – February 2017

318 State Avenue NE
Olympia, Washington

GeoEngineers

Figure 4



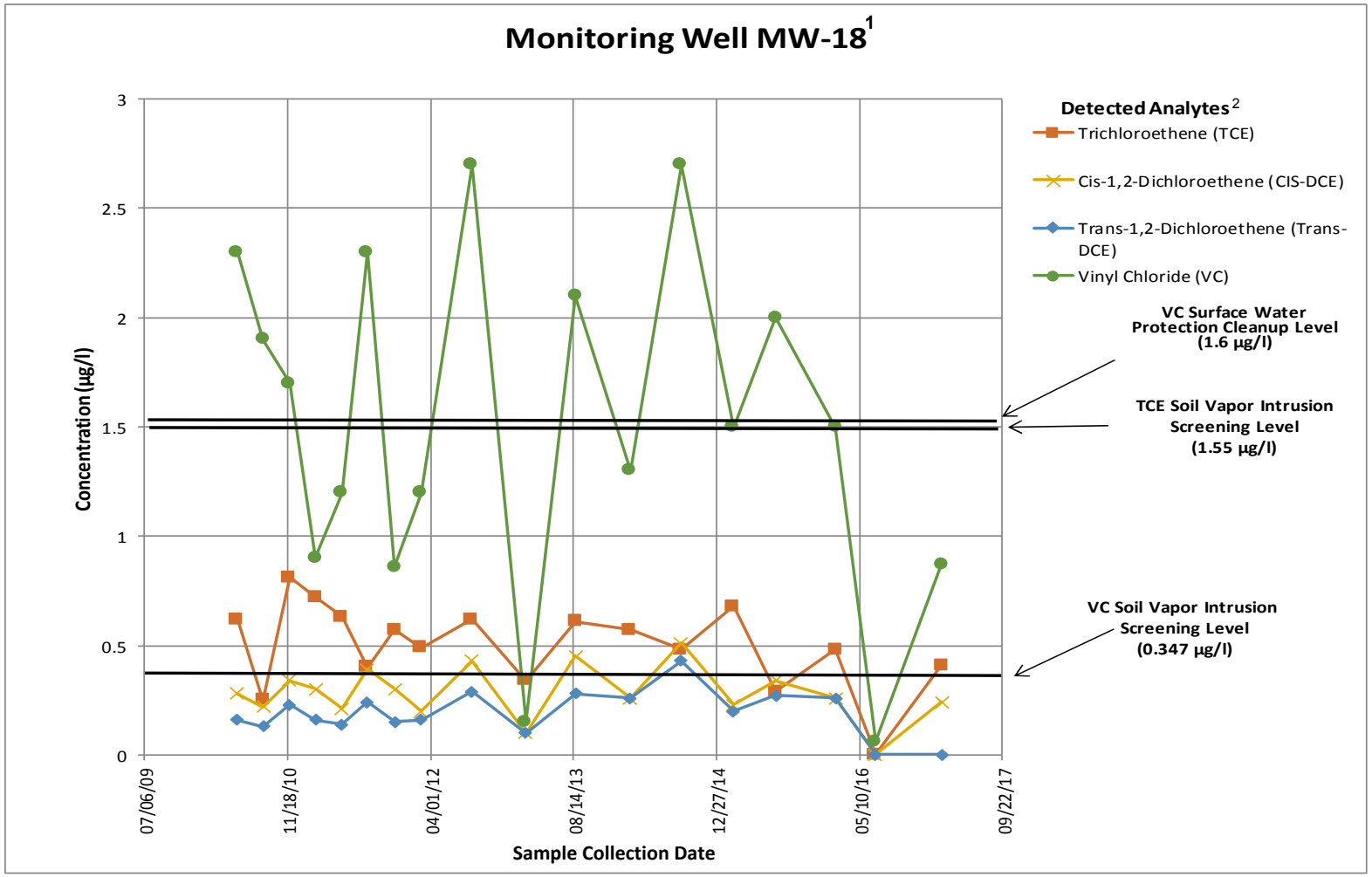
Note:
[1] See Table 1 for a comprehensive summary of the groundwater monitoring results and groundwater cleanup and screening levels.

Trend Analysis – February 2017

318 State Avenue NE
Olympia, Washington

GeoEngineers

Figure 5



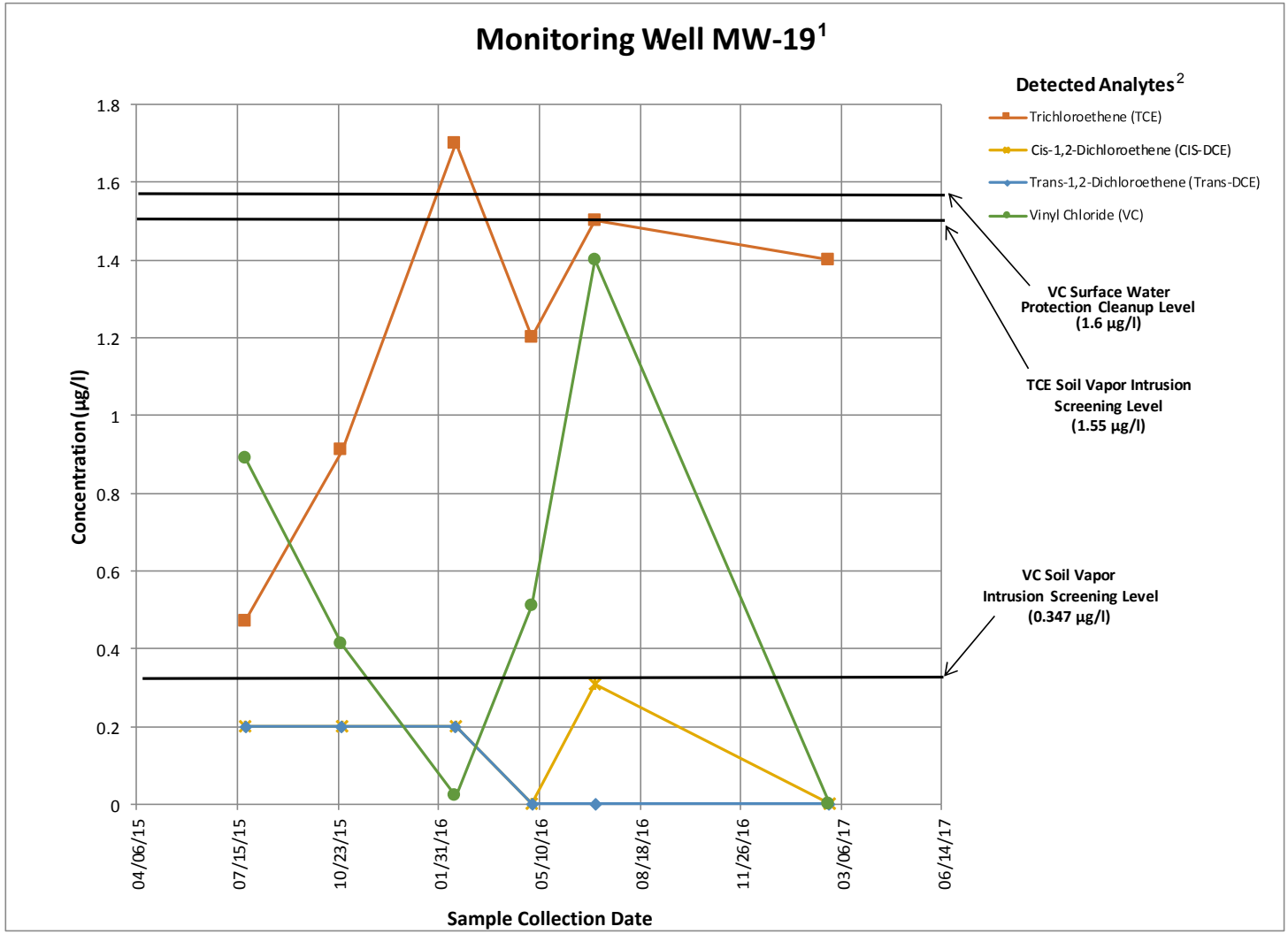
Notes:
[1] MW-18 was installed after remedial actions for soil were completed on October 14, 2009.
[2] See Table 1 for a comprehensive summary of the groundwater monitoring results and groundwater cleanup and screening levels.

Trend Analysis – February 2017

318 State Avenue NE
Olympia, Washington

GeoEngineers

Figure 6



Notes:
[1] MW-19 was installed on July 16, 2015 as part of monitoring groundwater from the southeast portion of the property.
[2] See Table 1 for a comprehensive summary of the groundwater monitoring results and groundwater cleanup and screening levels.

Trend Analysis – February 2017

318 State Avenue NE
Olympia, Washington

GeoEngineers

Figure 7

APPENDIX A
Laboratory Analytical Reports

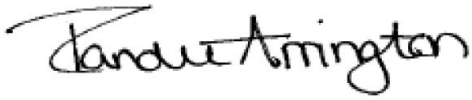
ANALYTICAL REPORT

Job Number: 580-66304-1

Job Description: 318 State AVE NE (WA)

For:
GeoEngineers Inc
1101 Fawcett, Suite 200
Tacoma, WA 98402

Attention: Mr. Iain Wingard



Approved for release.
Randee E Arrington
Project Manager II
3/1/2017 1:13 PM

Randee E Arrington, Project Manager II
11922 East 1st Ave, Spokane, WA, 99206
(509)924-9200
randee.arrington@testamericainc.com
03/01/2017

cc: Nick Rohrbach

TestAmerica Tacoma is a part of TestAmerica Laboratories, Inc.

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan and meet all requirements of NELAC. All data have been found to be compliant with laboratory protocol, with the exception of any items noted in the case narrative.

Table of Contents

Table of Contents

Receipt
The samples were received on 2/23/2017 9:27 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.3º C.

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

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

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD0.02 580-238604/2 Client Sample ID:

Date Analyzed: 02/16/17 16:12 Lab File ID: B162017002.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Chloromethane	4.43	Incomplete Integration	kolowinskih	02/17/17 12:32
Vinyl chloride	4.70	Assign Peak	kolowinskih	02/17/17 11:40
Acetone	6.18	Incomplete Integration	kolowinskih	02/17/17 12:32
Acrylonitrile	6.66	Incomplete Integration	kolowinskih	02/17/17 12:32
Iodomethane	6.67	Incomplete Integration	kolowinskih	02/17/17 12:32
Methylene Chloride	6.78	Incomplete Integration	kolowinskih	02/17/17 12:32
1,1,2-Trichloro-1,2,2-trifluoroethane	6.81	Incomplete Integration	kolowinskih	02/17/17 12:32
Carbon disulfide	7.03	Incomplete Integration	kolowinskih	02/17/17 12:32
1,1-Dichloroethane	7.62	Incomplete Integration	kolowinskih	02/17/17 12:32
Hexane	7.96	Incomplete Integration	kolowinskih	02/17/17 12:32
2-Butanone (MEK)	7.98	Incomplete Integration	kolowinskih	02/17/17 12:32
Tert-butyl ethyl ether	8.32	Incomplete Integration	kolowinskih	02/17/17 12:32
2,2-Dichloropropane	8.37	Incomplete Integration	kolowinskih	02/17/17 12:32
1,2-Dichloroethane	8.86	Incomplete Integration	kolowinskih	02/17/17 12:32
1,1,1-Trichloroethane	8.94	Incomplete Integration	kolowinskih	02/17/17 12:32
Carbon tetrachloride	9.24	Incomplete Integration	kolowinskih	02/17/17 12:32
Benzene	9.28	Incomplete Integration	kolowinskih	02/17/17 12:32

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD0.02 580-238604/2 Client Sample ID:

Date Analyzed: 02/16/17 16:12 Lab File ID: B162017002.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Tert-amyl methyl ether	9.37	Incomplete Integration	kolowinskih	02/17/17 12:32
1,2-Dichloropropane	9.76	Incomplete Integration	kolowinskih	02/17/17 12:32
Trichloroethene	9.80	Incomplete Integration	kolowinskih	02/17/17 12:32
Dichlorobromomethane	9.84	Incomplete Integration	kolowinskih	02/17/17 12:32
cis-1,3-Dichloropropene	10.38	Incomplete Integration	kolowinskih	02/17/17 12:32
4-Methyl-2-pentanone (MIBK)	10.44	Incomplete Integration	kolowinskih	02/17/17 12:32
trans-1,3-Dichloropropene	10.75	Incomplete Integration	kolowinskih	02/17/17 12:32
Toluene	11.09	Incomplete Integration	kolowinskih	02/17/17 12:32
1,3-Dichloropropane	11.13	Incomplete Integration	kolowinskih	02/17/17 12:32
2-Hexanone	11.22	Incomplete Integration	kolowinskih	02/17/17 12:32
Chlorodibromomethane	11.42	Incomplete Integration	kolowinskih	02/17/17 12:32
Ethylene Dibromide	11.65	Incomplete Integration	kolowinskih	02/17/17 12:32
Tetrachloroethene	11.78	Incomplete Integration	kolowinskih	02/17/17 12:32
1,1,1,2-Tetrachloroethane	12.34	Incomplete Integration	kolowinskih	02/17/17 12:32
Chlorobenzene	12.41	Incomplete Integration	kolowinskih	02/17/17 12:32
Ethylbenzene	12.57	Incomplete Integration	kolowinskih	02/17/17 12:32
m-Xylene & p-Xylene	12.74	Incomplete Integration	kolowinskih	02/17/17 12:32

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD0.02 580-238604/2 Client Sample ID:

Date Analyzed: 02/16/17 16:12 Lab File ID: B162017002.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Styrene	13.06	Incomplete Integration	kolowinskih	02/17/17 12:32
1,1,2,2-Tetrachloroethane	13.13	Incomplete Integration	kolowinskih	02/17/17 12:32
o-Xylene	13.13	Incomplete Integration	kolowinskih	02/17/17 12:32
Bromobenzene	13.72	Incomplete Integration	kolowinskih	02/17/17 12:32
2-Chlorotoluene	13.95	Incomplete Integration	kolowinskih	02/17/17 12:32
4-Chlorotoluene	14.02	Incomplete Integration	kolowinskih	02/17/17 12:32
1,3,5-Trimethylbenzene	14.08	Incomplete Integration	kolowinskih	02/17/17 12:32
tert-Butylbenzene	14.35	Incomplete Integration	kolowinskih	02/17/17 12:32
1,3-Dichlorobenzene	14.65	Incomplete Integration	kolowinskih	02/17/17 12:32
1,4-Dichlorobenzene	14.70	Incomplete Integration	kolowinskih	02/17/17 12:32
4-Isopropyltoluene	14.70	Incomplete Integration	kolowinskih	02/17/17 12:32
1,2-Dichlorobenzene	15.03	Incomplete Integration	kolowinskih	02/17/17 12:32
1,3,5-Trichlorobenzene	16.27	Incomplete Integration	kolowinskih	02/17/17 12:32
1,2,4-Trichlorobenzene	16.84	Incomplete Integration	kolowinskih	02/17/17 12:32

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD0.1 580-238604/3 Client Sample ID:

Date Analyzed: 02/16/17 16:38 Lab File ID: B162017003.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dichlorodifluoromethane	4.20	Incomplete Integration	kolowinskih	02/17/17 12:25
Chloromethane	4.43	Incomplete Integration	kolowinskih	02/17/17 12:25
Vinyl chloride	4.70	Incomplete Integration	kolowinskih	02/17/17 11:41
Bromomethane	5.23	Incomplete Integration	kolowinskih	02/17/17 12:25
Chloroethane	5.42	Incomplete Integration	kolowinskih	02/17/17 12:25
Acrolein	6.04	Incomplete Integration	kolowinskih	02/17/17 12:25
Trichlorofluoromethane	6.07	Incomplete Integration	kolowinskih	02/17/17 12:25
Acetone	6.18	Incomplete Integration	kolowinskih	02/17/17 12:25
1,1-Dichloroethene	6.62	Incomplete Integration	kolowinskih	02/17/17 12:25
2-Methyl-2-propanol	6.62	Incomplete Integration	kolowinskih	02/17/17 12:25
Acrylonitrile	6.65	Incomplete Integration	kolowinskih	02/17/17 12:25
Iodomethane	6.68	Incomplete Integration	kolowinskih	02/17/17 12:25
Methylene Chloride	6.77	Incomplete Integration	kolowinskih	02/17/17 12:25
1,1,2-Trichloro-1,2,2-trifluoroethane	6.81	Incomplete Integration	kolowinskih	02/17/17 12:25
Carbon disulfide	7.03	Incomplete Integration	kolowinskih	02/17/17 12:25
trans-1,2-Dichloroethene	7.38	Incomplete Integration	kolowinskih	02/17/17 12:25
Methyl tert-butyl ether	7.47	Incomplete Integration	kolowinskih	02/17/17 12:25

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD0.1 580-238604/3 Client Sample ID:

Date Analyzed: 02/16/17 16:38 Lab File ID: B162017003.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,1-Dichloroethane	7.61	Incomplete Integration	kolowinskih	02/17/17 12:25
Vinyl acetate	7.69	Incomplete Integration	kolowinskih	02/17/17 12:25
Hexane	7.96	Incomplete Integration	kolowinskih	02/17/17 12:25
2-Butanone (MEK)	7.98	Incomplete Integration	kolowinskih	02/17/17 12:25
cis-1,2-Dichloroethene	8.12	Incomplete Integration	kolowinskih	02/17/17 12:25
Chlorobromomethane	8.26	Incomplete Integration	kolowinskih	02/17/17 12:25
Chloroform	8.29	Incomplete Integration	kolowinskih	02/17/17 12:25
Tert-butyl ethyl ether	8.32	Incomplete Integration	kolowinskih	02/17/17 12:25
2,2-Dichloropropane	8.37	Incomplete Integration	kolowinskih	02/17/17 12:25
1,2-Dichloroethane	8.85	Incomplete Integration	kolowinskih	02/17/17 12:25
1,1,1-Trichloroethane	8.94	Incomplete Integration	kolowinskih	02/17/17 12:25
Carbon tetrachloride	9.25	Incomplete Integration	kolowinskih	02/17/17 12:25
Benzene	9.27	Incomplete Integration	kolowinskih	02/17/17 12:25
Tert-amyl methyl ether	9.37	Incomplete Integration	kolowinskih	02/17/17 12:25
Dibromomethane	9.75	Incomplete Integration	kolowinskih	02/17/17 12:25
1,2-Dichloropropane	9.76	Incomplete Integration	kolowinskih	02/17/17 12:25
Dichlorobromomethane	9.85	Incomplete Integration	kolowinskih	02/17/17 12:25

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD0.1 580-238604/3 Client Sample ID:

Date Analyzed: 02/16/17 16:38 Lab File ID: B162017003.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2-Chloroethyl vinyl ether	10.15	Incomplete Integration	kolowinskih	02/17/17 12:25
trans-1,3-Dichloropropene	10.76	Incomplete Integration	kolowinskih	02/17/17 12:25
1,1,2-Trichloroethane	10.91	Incomplete Integration	kolowinskih	02/17/17 12:25
Chlorodibromomethane	11.41	Incomplete Integration	kolowinskih	02/17/17 12:25
Ethylene Dibromide	11.64	Incomplete Integration	kolowinskih	02/17/17 12:25
Tetrachloroethene	11.79	Incomplete Integration	kolowinskih	02/17/17 12:25
1,1,1,2-Tetrachloroethane	12.34	Incomplete Integration	kolowinskih	02/17/17 12:25
Chlorobenzene	12.41	Incomplete Integration	kolowinskih	02/17/17 12:25
Ethylbenzene	12.57	Incomplete Integration	kolowinskih	02/17/17 12:25
Bromoform	12.91	Incomplete Integration	kolowinskih	02/17/17 12:25
1,1,2,2-Tetrachloroethane	13.13	Incomplete Integration	kolowinskih	02/17/17 12:25
trans-1,4-Dichloro-2-butene	13.26	Incomplete Integration	kolowinskih	02/17/17 12:25
1,2,3-Trichloropropane	13.27	Incomplete Integration	kolowinskih	02/17/17 12:25
1,3-Dichlorobenzene	14.64	Incomplete Integration	kolowinskih	02/17/17 12:25
1,4-Dichlorobenzene	14.70	Incomplete Integration	kolowinskih	02/17/17 12:25
n-Butylbenzene	15.07	Incomplete Integration	kolowinskih	02/17/17 12:25
1,2-Dibromo-3-Chloropropane	15.47	Incomplete Integration	kolowinskih	02/17/17 12:25

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD0.1 580-238604/3 Client Sample ID:

Date Analyzed: 02/16/17 16:38 Lab File ID: B162017003.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,3,5-Trichlorobenzene	16.28	Incomplete Integration	kolowinskih	02/17/17 12:25
1,2,4-Trichlorobenzene	16.84	Incomplete Integration	kolowinskih	02/17/17 12:25
Naphthalene	17.14	Incomplete Integration	kolowinskih	02/17/17 12:25
Hexachlorobutadiene	17.16	Incomplete Integration	kolowinskih	02/17/17 12:25
1,2,3-Trichlorobenzene	17.36	Incomplete Integration	kolowinskih	02/17/17 12:25

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD0.2 580-238604/4 Client Sample ID:

Date Analyzed: 02/16/17 17:05 Lab File ID: B162017004.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dichlorodifluoromethane	4.22	Incomplete Integration	kolowinskih	02/17/17 12:18
Chloromethane	4.43	Incomplete Integration	kolowinskih	02/17/17 12:18
Vinyl chloride	4.70	Incomplete Integration	kolowinskih	02/17/17 11:41
Bromomethane	5.23	Incomplete Integration	kolowinskih	02/17/17 12:18
Chloroethane	5.42	Incomplete Integration	kolowinskih	02/17/17 12:18
Acrolein	6.03	Incomplete Integration	kolowinskih	02/17/17 12:18
Trichlorofluoromethane	6.06	Incomplete Integration	kolowinskih	02/17/17 12:18
Acetone	6.17	Incomplete Integration	kolowinskih	02/17/17 12:18
2-Methyl-2-propanol	6.61	Incomplete Integration	kolowinskih	02/17/17 12:18
1,1-Dichloroethene	6.63	Incomplete Integration	kolowinskih	02/17/17 12:18
Acrylonitrile	6.65	Incomplete Integration	kolowinskih	02/17/17 12:18
Iodomethane	6.68	Incomplete Integration	kolowinskih	02/17/17 12:18
Methylene Chloride	6.76	Incomplete Integration	kolowinskih	02/17/17 12:18
1,1,2-Trichloro-1,2,2-trifluoroethane	6.81	Incomplete Integration	kolowinskih	02/17/17 12:18
Carbon disulfide	7.02	Incomplete Integration	kolowinskih	02/17/17 12:18
trans-1,2-Dichloroethene	7.39	Incomplete Integration	kolowinskih	02/17/17 12:18
Methyl tert-butyl ether	7.47	Incomplete Integration	kolowinskih	02/17/17 12:18

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD0.2 580-238604/4 Client Sample ID:

Date Analyzed: 02/16/17 17:05 Lab File ID: B162017004.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Vinyl acetate	7.70	Incomplete Integration	kolowinskih	02/17/17 12:18
Hexane	7.95	Incomplete Integration	kolowinskih	02/17/17 12:18
2-Butanone (MEK)	7.98	Incomplete Integration	kolowinskih	02/17/17 12:18
cis-1,2-Dichloroethene	8.12	Incomplete Integration	kolowinskih	02/17/17 12:18
Chlorobromomethane	8.27	Incomplete Integration	kolowinskih	02/17/17 12:18
Chloroform	8.29	Incomplete Integration	kolowinskih	02/17/17 12:18
Tert-butyl ethyl ether	8.31	Incomplete Integration	kolowinskih	02/17/17 12:18
2,2-Dichloropropane	8.36	Incomplete Integration	kolowinskih	02/17/17 12:18
1,1,1-Trichloroethane	8.93	Incomplete Integration	kolowinskih	02/17/17 12:18
1,1-Dichloropropene	9.08	Incomplete Integration	kolowinskih	02/17/17 12:18
Carbon tetrachloride	9.25	Incomplete Integration	kolowinskih	02/17/17 12:18
Dibromomethane	9.74	Incomplete Integration	kolowinskih	02/17/17 12:18
Dichlorobromomethane	9.85	Incomplete Integration	kolowinskih	02/17/17 12:18
2-Chloroethyl vinyl ether	10.15	Incomplete Integration	kolowinskih	02/17/17 12:18
Ethylene Dibromide	11.64	Incomplete Integration	kolowinskih	02/17/17 12:18
1,1,1,2-Tetrachloroethane	12.34	Incomplete Integration	kolowinskih	02/17/17 12:18
Chlorobenzene	12.41	Incomplete Integration	kolowinskih	02/17/17 12:18

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD0.2 580-238604/4 Client Sample ID:

Date Analyzed: 02/16/17 17:05 Lab File ID: B162017004.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Bromoform	12.92	Incomplete Integration	kolowinskih	02/17/17 12:18
1,1,2,2-Tetrachloroethane	13.13	Incomplete Integration	kolowinskih	02/17/17 12:18
trans-1,4-Dichloro-2-butene	13.25	Incomplete Integration	kolowinskih	02/17/17 12:18
1,2-Dibromo-3-Chloropropane	15.47	Incomplete Integration	kolowinskih	02/17/17 12:18
1,2,4-Trichlorobenzene	16.85	Incomplete Integration	kolowinskih	02/17/17 12:18
Naphthalene	17.13	Incomplete Integration	kolowinskih	02/17/17 12:18
Hexachlorobutadiene	17.17	Incomplete Integration	kolowinskih	02/17/17 12:18
1,2,3-Trichlorobenzene	17.37	Incomplete Integration	kolowinskih	02/17/17 12:18

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD0.4 580-238604/5 Client Sample ID:

Date Analyzed: 02/16/17 17:30 Lab File ID: B162017005.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dichlorodifluoromethane	4.22	Incomplete Integration	kolowinskih	02/17/17 12:41
Chloromethane	4.43	Incomplete Integration	kolowinskih	02/17/17 12:41
Vinyl chloride	4.71	Incomplete Integration	kolowinskih	02/17/17 11:41
Bromomethane	5.24	Incomplete Integration	kolowinskih	02/17/17 12:41
Chloroethane	5.42	Incomplete Integration	kolowinskih	02/17/17 12:41
Acrolein	6.04	Incomplete Integration	kolowinskih	02/17/17 12:41
Trichlorofluoromethane	6.07	Incomplete Integration	kolowinskih	02/17/17 12:41
Acetone	6.19	Incomplete Integration	kolowinskih	02/17/17 12:41
2-Methyl-2-propanol	6.61	Incomplete Integration	kolowinskih	02/17/17 12:41
1,1-Dichloroethene	6.63	Incomplete Integration	kolowinskih	02/17/17 12:41
Acrylonitrile	6.66	Incomplete Integration	kolowinskih	02/17/17 12:41
Iodomethane	6.69	Incomplete Integration	kolowinskih	02/17/17 12:41
Methylene Chloride	6.75	Incomplete Integration	kolowinskih	02/17/17 12:41
1,1,2-Trichloro-1,2,2-trifluoroethane	6.81	Incomplete Integration	kolowinskih	02/17/17 12:41
Carbon disulfide	7.02	Incomplete Integration	kolowinskih	02/17/17 12:41
trans-1,2-Dichloroethene	7.39	Incomplete Integration	kolowinskih	02/17/17 12:41
Vinyl acetate	7.71	Incomplete Integration	kolowinskih	02/17/17 12:41

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD0.4 580-238604/5 Client Sample ID:

Date Analyzed: 02/16/17 17:30 Lab File ID: B162017005.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Hexane	7.96	Incomplete Integration	kolowinskih	02/17/17 12:41
2-Butanone (MEK)	7.97	Incomplete Integration	kolowinskih	02/17/17 12:41
cis-1,2-Dichloroethene	8.11	Incomplete Integration	kolowinskih	02/17/17 12:41
Chlorobromomethane	8.26	Incomplete Integration	kolowinskih	02/17/17 12:41
Tert-butyl ethyl ether	8.31	Incomplete Integration	kolowinskih	02/17/17 12:41
2,2-Dichloropropane	8.36	Incomplete Integration	kolowinskih	02/17/17 12:41
Carbon tetrachloride	9.25	Incomplete Integration	kolowinskih	02/17/17 12:41
Dibromomethane	9.75	Incomplete Integration	kolowinskih	02/17/17 12:41
1,2-Dichloropropane	9.76	Incomplete Integration	kolowinskih	02/17/17 12:41
Dichlorobromomethane	9.85	Incomplete Integration	kolowinskih	02/17/17 12:41
2-Chloroethyl vinyl ether	10.14	Incomplete Integration	kolowinskih	02/17/17 12:41
4-Methyl-2-pentanone (MIBK)	10.45	Incomplete Integration	kolowinskih	02/17/17 12:12
1,1,2-Trichloroethane	10.91	Incomplete Integration	kolowinskih	02/17/17 12:12
Ethylene Dibromide	11.64	Incomplete Integration	kolowinskih	02/17/17 12:41
Tetrachloroethene	11.77	Incomplete Integration	kolowinskih	02/17/17 12:12
1,1,1,2-Tetrachloroethane	12.33	Incomplete Integration	kolowinskih	02/17/17 12:12
Chlorobenzene	12.41	Incomplete Integration	kolowinskih	02/17/17 12:12

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD0.4 580-238604/5 Client Sample ID:

Date Analyzed: 02/16/17 17:30 Lab File ID: B162017005.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
m-Xylene & p-Xylene	12.75	Incomplete Integration	kolowinskih	02/17/17 12:12
1,2,3-Trichloropropane	13.26	Incomplete Integration	kolowinskih	02/17/17 12:12
1,2-Dibromo-3-Chloropropane	15.47	Incomplete Integration	kolowinskih	02/17/17 12:12
1,3,5-Trichlorobenzene	16.27	Incomplete Integration	kolowinskih	02/17/17 12:12
Naphthalene	17.14	Incomplete Integration	kolowinskih	02/17/17 12:12
Hexachlorobutadiene	17.16	Incomplete Integration	kolowinskih	02/17/17 12:12

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD001 580-238604/6 IC Client Sample ID:

Date Analyzed: 02/16/17 17:56 Lab File ID: B162017006.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dichlorodifluoromethane	4.21	Incomplete Integration	kolowinskih	02/17/17 12:09
Vinyl chloride	4.71	Incomplete Integration	kolowinskih	02/17/17 11:42
Chloroethane	5.42	Incomplete Integration	kolowinskih	02/17/17 12:09
Acrolein	6.04	Incomplete Integration	kolowinskih	02/17/17 12:09
Trichlorofluoromethane	6.07	Incomplete Integration	kolowinskih	02/17/17 12:09
Acetone	6.17	Incomplete Integration	kolowinskih	02/17/17 12:09
2-Methyl-2-propanol	6.61	Incomplete Integration	kolowinskih	02/17/17 12:09
1,1-Dichloroethene	6.62	Incomplete Integration	kolowinskih	02/17/17 12:09
Acrylonitrile	6.65	Incomplete Integration	kolowinskih	02/17/17 12:09
Methylene Chloride	6.76	Incomplete Integration	kolowinskih	02/17/17 12:09
1,1,2-Trichloro-1,2,2-trifluoroethane	6.81	Incomplete Integration	kolowinskih	02/17/17 12:09
Vinyl acetate	7.70	Incomplete Integration	kolowinskih	02/17/17 12:09
2-Butanone (MEK)	7.97	Incomplete Integration	kolowinskih	02/17/17 12:09
1,3-Dichloropropane	11.13	Peak Tail	kolowinskih	02/17/17 12:09
Ethylene Dibromide	11.64	Incomplete Integration	kolowinskih	02/17/17 12:09
1,2-Dibromo-3-Chloropropane	15.47	Peak Tail	kolowinskih	02/17/17 12:09
1,2,4-Trichlorobenzene	16.84	Peak Tail	kolowinskih	02/17/17 12:09

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD001 580-238604/6 IC Client Sample ID:

Date Analyzed: 02/16/17 17:56 Lab File ID: B162017006.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Hexachlorobutadiene	17.16	Peak Tail	kolowinskih	02/17/17 12:09

Lab Sample ID: STD005 580-238604/7 IC Client Sample ID:

Date Analyzed: 02/16/17 18:22 Lab File ID: B162017007.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dichlorodifluoromethane	4.21	Incomplete Integration	kolowinskih	02/17/17 12:05
Chloroethane	5.42	Peak Tail	kolowinskih	02/17/17 12:05
Trichlorofluoromethane	6.09	Incomplete Integration	kolowinskih	02/17/17 12:05
Acetone	6.16	Assign Peak	kolowinskih	02/17/17 12:05
2-Methyl-2-propanol	6.61	Incomplete Integration	kolowinskih	02/17/17 12:05
Methylene Chloride	6.76	Assign Peak	kolowinskih	02/17/17 12:05
1,3-Dichloropropane	11.13	Peak Tail	kolowinskih	02/17/17 12:05

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: ICIS 580-238604/8 Client Sample ID:

Date Analyzed: 02/16/17 18:48 Lab File ID: B162017008.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dichlorodifluoromethane	4.21	Incomplete Integration	kolowinskih	02/17/17 12:02
Vinyl chloride	4.72	Incomplete Integration	kolowinskih	02/17/17 11:43
Chloroethane	5.42	Peak Tail	kolowinskih	02/17/17 12:02
Trichlorofluoromethane	6.09	Incomplete Integration	kolowinskih	02/17/17 12:02
Acetone	6.17	Incomplete Integration	kolowinskih	02/17/17 12:02
TBA-d9 (IS)	6.53	Assign Peak	kolowinskih	02/17/17 12:02
Methylene Chloride	6.76	Incomplete Integration	kolowinskih	02/17/17 12:02
1,3-Dichloropropane	11.13	Peak Tail	kolowinskih	02/17/17 12:00

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD025 580-238604/9 IC Client Sample ID:

Date Analyzed: 02/16/17 19:14 Lab File ID: B162017009.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dichlorodifluoromethane	4.21	Assign Peak	kolowinskih	02/17/17 12:00
Chloroethane	5.42	Peak Tail	kolowinskih	02/17/17 12:00
Trichlorofluoromethane	6.10	Incomplete Integration	kolowinskih	02/17/17 12:00
Acetone	6.15	Incomplete Integration	kolowinskih	02/17/17 12:00
2-Methyl-2-propanol	6.60	Incomplete Integration	kolowinskih	02/17/17 12:00
Methylene Chloride	6.77	Assign Peak	kolowinskih	02/17/17 12:00
1,3-Dichloropropane	11.13	Peak Tail	kolowinskih	02/17/17 12:00

Lab Sample ID: STD050 580-238604/10 IC Client Sample ID:

Date Analyzed: 02/16/17 19:40 Lab File ID: B162017010.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dichlorodifluoromethane	4.21	Incomplete Integration	kolowinskih	02/17/17 11:55
Chloroethane	5.42	Peak Tail	kolowinskih	02/17/17 11:55
Trichlorofluoromethane	6.10	Incomplete Integration	kolowinskih	02/17/17 11:55
1,3-Dichloropropane	11.13	Peak Tail	kolowinskih	02/17/17 11:55

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.:

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 238604

Lab Sample ID: STD080 580-238604/11 IC Client Sample ID:

Date Analyzed: 02/16/17 20:05 Lab File ID: B162017011.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dichlorodifluoromethane	4.22	Incomplete Integration	kolowinskih	02/17/17 11:47
Chloroethane	5.41	Peak Tail	kolowinskih	02/17/17 11:47
Trichlorofluoromethane	6.10	Incomplete Integration	kolowinskih	02/17/17 11:47
2-Methyl-2-propanol	6.61	Peak Tail	kolowinskih	02/17/17 11:50
1,3-Dichloropropane	11.13	Peak Tail	kolowinskih	02/17/17 11:56

Lab Sample ID: ICV 580-238604/14 Client Sample ID:

Date Analyzed: 02/16/17 21:23 Lab File ID: B162017014.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dichlorodifluoromethane	4.21	Incomplete Integration	kolowinskih	02/17/17 11:53
Bromomethane	5.24	Incomplete Integration	kolowinskih	02/17/17 11:53
Trichlorofluoromethane	6.09	Incomplete Integration	kolowinskih	02/17/17 11:53

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 239330

Lab Sample ID: CCVIS 580-239330/2 Client Sample ID:

Date Analyzed: 02/27/17 10:38 Lab File ID: B272017002.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dichlorodifluoromethane	4.22	Incomplete Integration	kolowinskih	02/27/17 11:28
Chloroethane	5.42	Incomplete Integration	kolowinskih	02/27/17 11:28
Trichlorofluoromethane	6.09	Peak Tail	kolowinskih	02/27/17 11:28
1,1-Dichloroethene	6.62	Incomplete Integration	kolowinskih	02/27/17 11:28
1,1,2-Trichloro-1,2,2-trifluoroethane	6.81	Incomplete Integration	kolowinskih	02/27/17 11:28

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 239330

Lab Sample ID: CCVL 580-239330/3 Client Sample ID:

Date Analyzed: 02/27/17 11:04 Lab File ID: B272017003.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dichlorodifluoromethane	4.22	Assign Peak	limwirojt	02/28/17 09:46
Chloromethane	4.44	Baseline	limwirojt	02/28/17 09:46
Vinyl chloride	4.70	Incomplete Integration	limwirojt	02/28/17 09:46
Bromomethane	5.25	Incomplete Integration	limwirojt	02/28/17 09:46
Chloroethane	5.42	Incomplete Integration	limwirojt	02/28/17 09:46
Acrolein	6.04	Incomplete Integration	limwirojt	02/28/17 09:46
Trichlorofluoromethane	6.07	Incomplete Integration	limwirojt	02/28/17 09:46
Acetone	6.17	Assign Peak	limwirojt	02/28/17 09:46
2-Methyl-2-propanol	6.61	Incomplete Integration	limwirojt	02/28/17 09:46
1,1-Dichloroethene	6.64	Assign Peak	limwirojt	02/28/17 09:46
Acrylonitrile	6.66	Incomplete Integration	limwirojt	02/28/17 09:46
Iodomethane	6.68	Incomplete Integration	limwirojt	02/28/17 09:46
Methylene Chloride	6.75	Incomplete Integration	limwirojt	02/28/17 09:46
1,1,2-Trichloro-1,2,2-trifluoroethane	6.81	Incomplete Integration	limwirojt	02/28/17 09:46
Carbon disulfide	7.02	Incomplete Integration	limwirojt	02/28/17 09:46
trans-1,2-Dichloroethene	7.39	Incomplete Integration	limwirojt	02/28/17 09:46
Methyl tert-butyl ether	7.47	Incomplete Integration	limwirojt	02/28/17 09:46
Vinyl acetate	7.70	Incomplete Integration	limwirojt	02/28/17 09:46
Hexane	7.96	Assign Peak	limwirojt	02/28/17 09:46
2-Butanone (MEK)	7.98	Assign Peak	limwirojt	02/28/17 09:46
cis-1,2-Dichloroethene	8.12	Assign Peak	limwirojt	02/28/17 09:46
Chlorobromomethane	8.26	Assign Peak	limwirojt	02/28/17 09:46
Chloroform	8.30	Incomplete Integration	limwirojt	02/28/17 09:46
Tert-butyl ethyl ether	8.31	Incomplete Integration	limwirojt	02/28/17 09:46
2,2-Dichloropropane	8.36	Incomplete Integration	limwirojt	02/28/17 09:46
1,1,1-Trichloroethane	8.94	Incomplete Integration	limwirojt	02/28/17 09:46
Benzene	9.28	Incomplete Integration	limwirojt	02/28/17 09:46
Trichloroethene	9.80	Assign Peak	limwirojt	02/28/17 09:46
Dichlorobromomethane	9.85	Incomplete Integration	limwirojt	02/28/17 09:46

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 239330

Lab Sample ID: CCVL 580-239330/3 Client Sample ID:

Date Analyzed: 02/27/17 11:04 Lab File ID: B272017003.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
1,3-Dichloropropane	11.13	Incomplete Integration	limwirojt	02/28/17 09:46
Chlorodibromomethane	11.42	Incomplete Integration	limwirojt	02/28/17 09:46
Ethylene Dibromide	11.65	Incomplete Integration	limwirojt	02/28/17 09:46
Ethylbenzene	12.58	Incomplete Integration	limwirojt	02/28/17 09:46
Bromoform	12.92	Incomplete Integration	limwirojt	02/28/17 09:46
trans-1,4-Dichloro-2-butene	13.25	Incomplete Integration	limwirojt	02/28/17 09:46
1,2,3-Trichloropropane	13.26	Incomplete Integration	limwirojt	02/28/17 09:46
1,3-Dichlorobenzene	14.64	Incomplete Integration	limwirojt	02/28/17 09:46
1,4-Dichlorobenzene	14.70	Incomplete Integration	limwirojt	02/28/17 09:46
1,2-Dibromo-3-Chloropropane	15.47	Incomplete Integration	limwirojt	02/28/17 09:46

Lab Sample ID: 580-66304-1 Client Sample ID: MW-3-170222

Date Analyzed: 02/27/17 16:41 Lab File ID: B272017016.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Vinyl chloride	4.72	Incomplete Integration	limwirojt	02/28/17 10:44
cis-1,2-Dichloroethene	8.12	Incomplete Integration	limwirojt	02/28/17 10:44

Lab Sample ID: 580-66304-2 Client Sample ID: MW-16-170222

Date Analyzed: 02/27/17 17:07 Lab File ID: B272017017.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Vinyl chloride	4.71	Assign Peak	limwirojt	02/28/17 10:46
Tetrachloroethene	11.77	Assign Peak	limwirojt	02/28/17 10:46

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 239330

Lab Sample ID: 580-66304-4 Client Sample ID: MW-19-170222

Date Analyzed: 02/27/17 17:33 Lab File ID: B272017018.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Vinyl chloride	4.72	Incomplete Integration	limwirojt	02/28/17 10:47
cis-1,2-Dichloroethene	8.11	Incomplete Integration	limwirojt	02/28/17 10:47
Tetrachloroethene	11.77	Incomplete Integration	limwirojt	02/28/17 10:47

Lab Sample ID: 580-66304-5 Client Sample ID: DUP 1-170222

Date Analyzed: 02/27/17 17:59 Lab File ID: B272017019.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Vinyl chloride	4.72	Incomplete Integration	limwirojt	02/28/17 10:48
cis-1,2-Dichloroethene	8.12	Incomplete Integration	limwirojt	02/28/17 10:48
Tetrachloroethene	11.77	Assign Peak	limwirojt	02/28/17 10:48

Lab Sample ID: 580-66304-3 Client Sample ID: MW-18-170222

Date Analyzed: 02/27/17 18:25 Lab File ID: B272017020.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Vinyl chloride	4.71	Incomplete Integration	limwirojt	02/28/17 10:59
trans-1,2-Dichloroethene	7.38	Incomplete Integration	limwirojt	02/28/17 10:59
Tetrachloroethene	11.78	Incomplete Integration	limwirojt	02/28/17 10:59

Lab Sample ID: 580-66304-3 MS Client Sample ID: MW-18-170222 MS

Date Analyzed: 02/27/17 18:51 Lab File ID: B272017021.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Vinyl chloride	4.72	Assign Peak	limwirojt	02/28/17 11:17

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 239343

Lab Sample ID: CCVIS 580-239343/2 Client Sample ID:

Date Analyzed: 02/27/17 21:01 Lab File ID: B272017026.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dichlorodifluoromethane	4.21	Incomplete Integration	jantanuc	02/28/17 12:39
Trichlorofluoromethane	6.09	Incomplete Integration	jantanuc	02/28/17 12:39
Iodomethane	6.68	Incomplete Integration	jantanuc	02/28/17 12:39
1,1,2-Trichloro-1,2,2-trifluoroethane	6.81	Incomplete Integration	jantanuc	02/28/17 12:39
Hexachlorobutadiene	17.17	Incomplete Integration	jantanuc	02/28/17 12:39

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 239343

Lab Sample ID: CCVL 580-239343/3 Client Sample ID:

Date Analyzed: 02/27/17 21:27 Lab File ID: B272017027.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Dichlorodifluoromethane	4.20	Incomplete Integration	jantanuc	02/28/17 13:13
Vinyl chloride	4.70	Incomplete Integration	jantanuc	02/28/17 13:13
Bromomethane	5.24	Incomplete Integration	jantanuc	02/28/17 13:13
Chloroethane	5.42	Incomplete Integration	jantanuc	02/28/17 13:13
Trichlorofluoromethane	6.07	Incomplete Integration	jantanuc	02/28/17 13:13
Acetone	6.17	Incomplete Integration	jantanuc	02/28/17 13:13
2-Methyl-2-propanol	6.61	Incomplete Integration	jantanuc	02/28/17 13:13
1,1-Dichloroethene	6.62	Incomplete Integration	jantanuc	02/28/17 13:13
Acrylonitrile	6.65	Incomplete Integration	jantanuc	02/28/17 13:13
Iodomethane	6.68	Incomplete Integration	jantanuc	02/28/17 13:13
Methylene Chloride	6.75	Incomplete Integration	jantanuc	02/28/17 13:13
1,1,2-Trichloro-1,2,2-trifluoroethane	6.80	Incomplete Integration	jantanuc	02/28/17 13:13
Carbon disulfide	7.02	Incomplete Integration	jantanuc	02/28/17 13:13
trans-1,2-Dichloroethene	7.39	Incomplete Integration	jantanuc	02/28/17 13:13
Methyl tert-butyl ether	7.47	Incomplete Integration	jantanuc	02/28/17 13:13
1,1-Dichloroethane	7.61	Incomplete Integration	jantanuc	02/28/17 13:13
Vinyl acetate	7.71	Incomplete Integration	jantanuc	02/28/17 13:13
Hexane	7.95	Incomplete Integration	jantanuc	02/28/17 13:13
2-Butanone (MEK)	7.98	Incomplete Integration	jantanuc	02/28/17 13:13
Chlorobromomethane	8.27	Incomplete Integration	jantanuc	02/28/17 13:13
Chloroform	8.29	Incomplete Integration	jantanuc	02/28/17 13:13
Tert-butyl ethyl ether	8.31	Incomplete Integration	jantanuc	02/28/17 13:13
2,2-Dichloropropane	8.36	Incomplete Integration	jantanuc	02/28/17 13:13
1,2-Dichloroethane	8.85	Incomplete Integration	jantanuc	02/28/17 13:13
1,1,1-Trichloroethane	8.94	Incomplete Integration	jantanuc	02/28/17 13:13
Dibromomethane	9.75	Incomplete Integration	jantanuc	02/28/17 13:13
1,2-Dichloropropane	9.76	Incomplete Integration	jantanuc	02/28/17 13:13
Trichloroethene	9.80	Incomplete Integration	jantanuc	02/28/17 13:13
2-Chloroethyl vinyl ether	10.15	Incomplete Integration	jantanuc	02/28/17 13:13

GC/MS VOA MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Instrument ID: TAC048 Analysis Batch Number: 239343

Lab Sample ID: CCVL 580-239343/3 Client Sample ID:

Date Analyzed: 02/27/17 21:27 Lab File ID: B272017027.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
4-Methyl-2-pentanone (MIBK)	10.44	Incomplete Integration	jantanuc	02/28/17 13:13
trans-1,3-Dichloropropene	10.76	Incomplete Integration	jantanuc	02/28/17 13:13
1,1,2-Trichloroethane	10.91	Incomplete Integration	jantanuc	02/28/17 13:13
1,1,1,2-Tetrachloroethane	12.34	Incomplete Integration	jantanuc	02/28/17 13:13
Chlorobenzene	12.42	Incomplete Integration	jantanuc	02/28/17 13:13
m-Xylene & p-Xylene	12.74	Incomplete Integration	jantanuc	02/28/17 13:13
1,1,2,2-Tetrachloroethane	13.13	Incomplete Integration	jantanuc	02/28/17 13:13
1,2,3-Trichloropropane	13.26	Incomplete Integration	jantanuc	02/28/17 13:13
2-Chlorotoluene	13.95	Incomplete Integration	jantanuc	02/28/17 13:13
1,3-Dichlorobenzene	14.64	Incomplete Integration	jantanuc	02/28/17 13:13
1,4-Dichlorobenzene	14.70	Incomplete Integration	jantanuc	02/28/17 13:13
Naphthalene	17.14	Incomplete Integration	jantanuc	02/28/17 13:13
Hexachlorobutadiene	17.16	Incomplete Integration	jantanuc	02/28/17 13:13
1,2,3-Trichlorobenzene	17.37	Incomplete Integration	jantanuc	02/28/17 13:13

Lab Sample ID: LCSD 580-239343/6 Client Sample ID:

Date Analyzed: 02/27/17 22:45 Lab File ID: B272017030.D GC Column: DB-VRX ID: 0.25(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Vinyl chloride	4.71	Incomplete Integration	jantanuc	02/28/17 14:06
1,1-Dichloroethene	6.62	Incomplete Integration	jantanuc	02/28/17 14:06

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Spokane Job No.:

SDG No.:

Instrument ID: IC Analysis Batch Number: 10208

Lab Sample ID: IC 590-10208/3 Client Sample ID:

Date Analyzed: 01/03/17 10:52 Lab File ID: 010317003.d GC Column: AS14 ID: 4(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Fluoride	2.08	Assign Peak	sudam	01/03/17 14:06
Sulfate	7.55	Incomplete Integration	sudam	01/03/17 14:06

Lab Sample ID: IC 590-10208/4 Client Sample ID:

Date Analyzed: 01/03/17 11:05 Lab File ID: 010317004.d GC Column: AS14 ID: 4(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Chloride	2.72	Shouldering	sudam	01/03/17 14:08
Sulfate	7.68	Assign Peak	sudam	01/03/17 14:08

Lab Sample ID: IC 590-10208/5 Client Sample ID:

Date Analyzed: 01/03/17 11:17 Lab File ID: 010317005.d GC Column: AS14 ID: 4(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Fluoride	1.85	Incomplete Integration	sudam	01/03/17 14:08

Lab Sample ID: IC 590-10208/6 Client Sample ID:

Date Analyzed: 01/03/17 11:29 Lab File ID: 010317006.d GC Column: AS14 ID: 4(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Fluoride	1.83	Incomplete Integration	sudam	01/03/17 14:08

HPLC/IC MANUAL INTEGRATION SUMMARY

Lab Name: TestAmerica Spokane Job No.: 580-66304-1

SDG No.:

Instrument ID: IC Analysis Batch Number: 10894

Lab Sample ID: CCV 590-10894/3 Client Sample ID:

Date Analyzed: 02/28/17 13:13 Lab File ID: 022817003.d GC Column: AS14 ID: 4(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Fluoride	1.78	Incomplete Integration	sudam	02/28/17 16:41

Lab Sample ID: CCV 590-10894/12 Client Sample ID:

Date Analyzed: 02/28/17 15:03 Lab File ID: 022817012.d GC Column: AS14 ID: 4(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Fluoride	1.80	Incomplete Integration	sudam	02/28/17 16:43

SAMPLE SUMMARY

Client: GeoEngineers Inc

Job Number: 580-66304-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
580-66304-1	MW-3-170222	Water	02/22/2017 1420	02/23/2017 0927
580-66304-2	MW-16-170222	Water	02/22/2017 1215	02/23/2017 0927
580-66304-3	MW-18-170222	Water	02/22/2017 1315	02/23/2017 0927
580-66304-3MS	MW-18-170222	Water	02/22/2017 1315	02/23/2017 0927
580-66304-3MSD	MW-18-170222	Water	02/22/2017 1315	02/23/2017 0927
580-66304-4	MW-19-170222	Water	02/22/2017 1130	02/23/2017 0927
580-66304-5	DUP 1-170222	Water	02/22/2017 1200	02/23/2017 0927
580-66304-6	Trip BLank-170222	Water	02/22/2017 0001	02/23/2017 0927

EXECUTIVE SUMMARY - Detections

Client: GeoEngineers Inc

Job Number: 580-66304-1

Lab Sample ID / Analyte	Client Sample ID	Result	Qualifier	Reporting Limit	Units	Method
580-66304-1	**MW-3-170222**					
Vinyl chloride		0.27		0.020	ug/L	8260C
cis-1,2-Dichloroethene		0.31		0.20	ug/L	8260C
Trichloroethene		2.8		0.20	ug/L	8260C
Sulfate		99		1.2	mg/L	300.0
580-66304-2	**MW-16-170222**					
Vinyl chloride		0.084		0.020	ug/L	8260C
cis-1,2-Dichloroethene		0.098	J	0.20	ug/L	8260C
Trichloroethene		0.21		0.20	ug/L	8260C
Sulfate		24		1.2	mg/L	300.0
580-66304-3	**MW-18-170222**					
Vinyl chloride		0.87		0.020	ug/L	8260C
trans-1,2-Dichloroethene		0.14	J	0.20	ug/L	8260C
cis-1,2-Dichloroethene		0.24		0.20	ug/L	8260C
Trichloroethene		0.41		0.20	ug/L	8260C
Sulfate		47	F1	1.2	mg/L	300.0
580-66304-4	**MW-19-170222**					
Vinyl chloride		0.078		0.020	ug/L	8260C
cis-1,2-Dichloroethene		0.082	J	0.20	ug/L	8260C
Trichloroethene		1.4		0.20	ug/L	8260C
Sulfate		350		12	mg/L	300.0
580-66304-5	**DUP 1-170222**					
Vinyl chloride		0.053		0.020	ug/L	8260C
cis-1,2-Dichloroethene		0.037	J	0.20	ug/L	8260C
Trichloroethene		1.4		0.20	ug/L	8260C
Sulfate		330		12	mg/L	300.0

METHOD SUMMARY

Client: GeoEngineers Inc Job Number: 580-66304-1

Description	Lab Location	Method	Preparation Method
Matrix:			
Matrix: Water			
Volatile Organic Compounds (GC/MS)	TAL SEA	SW846 8260C	
Purge and Trap	TAL SEA		SW846 5030B
Anions, Ion Chromatography	TAL SPK	MCAWW 300.0	

Lab References:

TAL SEA = TestAmerica Seattle

TAL SPK = TestAmerica Spokane

Method References:

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

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

METHOD / ANALYST SUMMARY

Client: GeoEngineers Inc

Job Number: 580-66304-1

Method	Analyst	Analyst ID
SW846 8260C	Jantanu, Charinporn	CJ
SW846 8260C	Limwiroj, Thanyawan 1	TL1
MCAWW 300.0	Suda, Matt R	MRS

Client: GeoEngineers Inc

Job Number: 580-66304-1

Client Sample ID: **MW-3-170222**

Lab Sample ID: 580-66304-1
Client Matrix: Water

Date Sampled: 02/22/2017 1420
Date Received: 02/23/2017 0927

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	580-239330	Instrument ID:	TAC048
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	B272017016.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	02/27/2017 1641			Final Weight/Volume:	10 mL
Prep Date:	02/27/2017 1641				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.27		0.013	0.020
1,1-Dichloroethene	ND		0.018	0.10
trans-1,2-Dichloroethene	ND		0.025	0.20
cis-1,2-Dichloroethene	0.31		0.025	0.20
Trichloroethene	2.8		0.025	0.20
Tetrachloroethene	ND		0.070	0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	97		75 - 125
Trifluorotoluene (Surr)	97		74 - 118
Dibromofluoromethane (Surr)	99		42 - 132
4-Bromofluorobenzene (Surr)	102		81 - 120
1,2-Dichloroethane-d4 (Surr)	100		46 - 150

Client: GeoEngineers Inc

Job Number: 580-66304-1

Client Sample ID: **MW-16-170222**

Lab Sample ID: 580-66304-2
Client Matrix: Water

Date Sampled: 02/22/2017 1215
Date Received: 02/23/2017 0927

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	580-239330	Instrument ID:	TAC048
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	B272017017.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	02/27/2017 1707			Final Weight/Volume:	10 mL
Prep Date:	02/27/2017 1707				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.084		0.013	0.020
1,1-Dichloroethene	ND		0.018	0.10
trans-1,2-Dichloroethene	ND		0.025	0.20
cis-1,2-Dichloroethene	0.098	J	0.025	0.20
Trichloroethene	0.21		0.025	0.20
Tetrachloroethene	ND		0.070	0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	98		75 - 125
Trifluorotoluene (Surr)	94		74 - 118
Dibromofluoromethane (Surr)	100		42 - 132
4-Bromofluorobenzene (Surr)	102		81 - 120
1,2-Dichloroethane-d4 (Surr)	101		46 - 150

Client: GeoEngineers Inc

Job Number: 580-66304-1

Client Sample ID: **MW-18-170222**

Lab Sample ID: 580-66304-3
Client Matrix: Water

Date Sampled: 02/22/2017 1315
Date Received: 02/23/2017 0927

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	580-239330	Instrument ID:	TAC048
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	B272017020.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	02/27/2017 1825			Final Weight/Volume:	10 mL
Prep Date:	02/27/2017 1825				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.87		0.013	0.020
1,1-Dichloroethene	ND		0.018	0.10
trans-1,2-Dichloroethene	0.14	J	0.025	0.20
cis-1,2-Dichloroethene	0.24		0.025	0.20
Trichloroethene	0.41		0.025	0.20
Tetrachloroethene	ND		0.070	0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	98		75 - 125
Trifluorotoluene (Surr)	95		74 - 118
Dibromofluoromethane (Surr)	101		42 - 132
4-Bromofluorobenzene (Surr)	102		81 - 120
1,2-Dichloroethane-d4 (Surr)	101		46 - 150

Client: GeoEngineers Inc

Job Number: 580-66304-1

Client Sample ID: **MW-19-170222**

Lab Sample ID: 580-66304-4
Client Matrix: Water

Date Sampled: 02/22/2017 1130
Date Received: 02/23/2017 0927

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	580-239330	Instrument ID:	TAC048
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	B272017018.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	02/27/2017 1733			Final Weight/Volume:	10 mL
Prep Date:	02/27/2017 1733				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.078		0.013	0.020
1,1-Dichloroethene	ND		0.018	0.10
trans-1,2-Dichloroethene	ND		0.025	0.20
cis-1,2-Dichloroethene	0.082	J	0.025	0.20
Trichloroethene	1.4		0.025	0.20
Tetrachloroethene	ND		0.070	0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	97		75 - 125
Trifluorotoluene (Surr)	93		74 - 118
Dibromofluoromethane (Surr)	101		42 - 132
4-Bromofluorobenzene (Surr)	102		81 - 120
1,2-Dichloroethane-d4 (Surr)	101		46 - 150

Client: GeoEngineers Inc

Job Number: 580-66304-1

Client Sample ID: **DUP 1-170222**

Lab Sample ID: 580-66304-5
Client Matrix: Water

Date Sampled: 02/22/2017 1200
Date Received: 02/23/2017 0927

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	580-239330	Instrument ID:	TAC048
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	B272017019.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	02/27/2017 1759			Final Weight/Volume:	10 mL
Prep Date:	02/27/2017 1759				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	0.053		0.013	0.020
1,1-Dichloroethene	ND		0.018	0.10
trans-1,2-Dichloroethene	ND		0.025	0.20
cis-1,2-Dichloroethene	0.037	J	0.025	0.20
Trichloroethene	1.4		0.025	0.20
Tetrachloroethene	ND		0.070	0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	97		75 - 125
Trifluorotoluene (Surr)	93		74 - 118
Dibromofluoromethane (Surr)	100		42 - 132
4-Bromofluorobenzene (Surr)	103		81 - 120
1,2-Dichloroethane-d4 (Surr)	99		46 - 150

Client: GeoEngineers Inc

Job Number: 580-66304-1

Client Sample ID: **Trip BLank-170222**

Lab Sample ID: 580-66304-6
Client Matrix: Water

Date Sampled: 02/22/2017 0001
Date Received: 02/23/2017 0927

8260C Volatile Organic Compounds (GC/MS)

Analysis Method:	8260C	Analysis Batch:	580-239343	Instrument ID:	TAC048
Prep Method:	5030B	Prep Batch:	N/A	Lab File ID:	B272017033.D
Dilution:	1.0			Initial Weight/Volume:	10 mL
Analysis Date:	02/28/2017 0003			Final Weight/Volume:	10 mL
Prep Date:	02/28/2017 0003				

Analyte	Result (ug/L)	Qualifier	MDL	RL
Vinyl chloride	ND		0.013	0.020
1,1-Dichloroethene	ND		0.018	0.10
trans-1,2-Dichloroethene	ND		0.025	0.20
cis-1,2-Dichloroethene	ND		0.025	0.20
Trichloroethene	ND		0.025	0.20
Tetrachloroethene	ND		0.070	0.50

Surrogate	%Rec	Qualifier	Acceptance Limits
Toluene-d8 (Surr)	97		75 - 125
Trifluorotoluene (Surr)	97		74 - 118
Dibromofluoromethane (Surr)	101		42 - 132
4-Bromofluorobenzene (Surr)	102		81 - 120
1,2-Dichloroethane-d4 (Surr)	101		46 - 150

Client: GeoEngineers Inc

Job Number: 580-66304-1

Client Sample ID: **MW-3-170222**

Lab Sample ID: 580-66304-1
Client Matrix: Water

Date Sampled: 02/22/2017 1420
Date Received: 02/23/2017 0927

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	590-10894	Instrument ID:	IC
	N/A	Prep Batch:	N/A	Lab File ID:	022817004.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	02/28/2017 1325			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	5 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	99		0.13	1.2

Client: GeoEngineers Inc

Job Number: 580-66304-1

Client Sample ID: **MW-16-170222**

Lab Sample ID: 580-66304-2
Client Matrix: Water

Date Sampled: 02/22/2017 1215
Date Received: 02/23/2017 0927

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	590-10894	Instrument ID:	IC
	N/A	Prep Batch:	N/A	Lab File ID:	022817005.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	02/28/2017 1337			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	5 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	24		0.13	1.2

Client: GeoEngineers Inc

Job Number: 580-66304-1

Client Sample ID: **MW-18-170222**

Lab Sample ID: 580-66304-3
Client Matrix: Water

Date Sampled: 02/22/2017 1315
Date Received: 02/23/2017 0927

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	590-10894	Instrument ID:	IC
	N/A	Prep Batch:	N/A	Lab File ID:	022817007.d
Dilution:	1.0			Initial Weight/Volume:	5 mL
Analysis Date:	02/28/2017 1402			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	5 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	47	F1	0.13	1.2

Client: GeoEngineers Inc

Job Number: 580-66304-1

Client Sample ID: **MW-19-170222**

Lab Sample ID: 580-66304-4
Client Matrix: Water

Date Sampled: 02/22/2017 1130
Date Received: 02/23/2017 0927

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	590-10894	Instrument ID:	IC
	N/A	Prep Batch:	N/A	Lab File ID:	022817014.d
Dilution:	10			Initial Weight/Volume:	5 mL
Analysis Date:	02/28/2017 1540			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	5 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	350		1.3	12

Client: GeoEngineers Inc

Job Number: 580-66304-1

Client Sample ID: **DUP 1-170222**

Lab Sample ID: 580-66304-5
Client Matrix: Water

Date Sampled: 02/22/2017 1200
Date Received: 02/23/2017 0927

300.0 Anions, Ion Chromatography

Analysis Method:	300.0	Analysis Batch:	590-10894	Instrument ID:	IC
	N/A	Prep Batch:	N/A	Lab File ID:	022817015.d
Dilution:	10			Initial Weight/Volume:	5 mL
Analysis Date:	02/28/2017 1552			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	5 mL

Analyte	Result (mg/L)	Qualifier	MDL	RL
Sulfate	330		1.3	12

Client: GeoEngineers Inc

Job Number: 580-66304-1

Surrogate Recovery Report

8260C Volatile Organic Compounds (GC/MS)

Client Matrix: Water

Lab Sample ID	Client Sample ID	DBFM %Rec	DCA %Rec	TFT %Rec	TOL %Rec	BFB %Rec
580-66304-1	MW-3-170222	99	100	97	97	102
580-66304-2	MW-16-170222	100	101	94	98	102
580-66304-3	MW-18-170222	101	101	95	98	102
580-66304-4	MW-19-170222	101	101	93	97	102
580-66304-5	DUP 1-170222	100	99	93	97	103
580-66304-6	Trip BLank-170222	101	101	97	97	102
MB 580-239330/4		101	101	99	97	102
MB 580-239343/4		101	101	98	98	102
LCS 580-239330/5		101	101	96	97	102
LCS 580-239343/5		102	100	94	96	103
LCSD 580-239330/6		101	99	94	98	102
LCSD 580-239343/6		101	99	95	97	102
580-66304-3 MS	MW-18-170222 MS	101	100	93	97	102
580-66304-3 MSD	MW-18-170222 MSD	101	100	93	97	104

Surrogate	Acceptance Limits
DBFM = Dibromofluoromethane (Surr)	42-132
DCA = 1,2-Dichloroethane-d4 (Surr)	46-150
TFT = Trifluorotoluene (Surr)	74-118
TOL = Toluene-d8 (Surr)	75-125
BFB = 4-Bromofluorobenzene (Surr)	81-120

Client: GeoEngineers Inc

Job Number: 580-66304-1

Method Blank - Batch: 580-239330

Method: 8260C
Preparation: 5030B

Lab Sample ID:	MB 580-239330/4	Analysis Batch:	580-239330	Instrument ID:	TAC048
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B272017004.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	02/27/2017 1131	Units:	ug/L	Final Weight/Volume:	10 mL
Prep Date:	02/27/2017 1131				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Vinyl chloride	ND		0.013	0.020
1,1-Dichloroethene	ND		0.018	0.10
trans-1,2-Dichloroethene	ND		0.025	0.20
cis-1,2-Dichloroethene	ND		0.025	0.20
Trichloroethene	ND		0.025	0.20
Tetrachloroethene	ND		0.070	0.50

Surrogate	% Rec	Acceptance Limits
Toluene-d8 (Surr)	97	75 - 125
Trifluorotoluene (Surr)	99	74 - 118
Dibromofluoromethane (Surr)	101	42 - 132
4-Bromofluorobenzene (Surr)	102	81 - 120
1,2-Dichloroethane-d4 (Surr)	101	46 - 150

Client: GeoEngineers Inc

Job Number: 580-66304-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 580-239330

Method: 8260C
Preparation: 5030B

LCS Lab Sample ID:	LCS 580-239330/5	Analysis Batch:	580-239330	Instrument ID:	TAC048
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B272017005.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	02/27/2017 1157	Units:	ug/L	Final Weight/Volume:	10 mL
Prep Date:	02/27/2017 1157				10 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 580-239330/6	Analysis Batch:	580-239330	Instrument ID:	TAC048
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B272017006.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	02/27/2017 1223	Units:	ug/L	Final Weight/Volume:	10 mL
Prep Date:	02/27/2017 1223				10 mL
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Vinyl chloride	89	90	59 - 140	1	30		
1,1-Dichloroethene	97	97	64 - 125	0	28		
trans-1,2-Dichloroethene	101	103	69 - 124	2	27		
cis-1,2-Dichloroethene	100	102	73 - 130	3	20		
Trichloroethene	100	102	72 - 123	2	20		
Tetrachloroethene	96	99	67 - 123	3	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	97	98	75 - 125
Trifluorotoluene (Surr)	96	94	74 - 118
Dibromofluoromethane (Surr)	101	101	42 - 132
4-Bromofluorobenzene (Surr)	102	102	81 - 120
1,2-Dichloroethane-d4 (Surr)	101	99	46 - 150

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 580-239330

Method: 8260C
Preparation: 5030B

LCS Lab Sample ID:	LCS 580-239330/5	Units:	ug/L	LCSD Lab Sample ID:	LCSD 580-239330/6
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/27/2017 1157			Analysis Date:	02/27/2017 1223
Prep Date:	02/27/2017 1157			Prep Date:	02/27/2017 1223
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Vinyl chloride	5.00	5.00	4.45	4.50
1,1-Dichloroethene	5.00	5.00	4.83	4.84
trans-1,2-Dichloroethene	5.00	5.00	5.03	5.13
cis-1,2-Dichloroethene	5.00	5.00	4.98	5.12
Trichloroethene	5.00	5.00	4.98	5.11
Tetrachloroethene	5.00	5.00	4.79	4.93

Client: GeoEngineers Inc

Job Number: 580-66304-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 580-239330

Method: 8260C
Preparation: 5030B

MS Lab Sample ID:	580-66304-3	Analysis Batch:	580-239330	Instrument ID:	TAC048
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B272017021.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	02/27/2017 1851			Final Weight/Volume:	10 mL
Prep Date:	02/27/2017 1851				10 mL
Leach Date:	N/A				

MSD Lab Sample ID:	580-66304-3	Analysis Batch:	580-239330	Instrument ID:	TAC048
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B272017022.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	02/27/2017 1917			Final Weight/Volume:	10 mL
Prep Date:	02/27/2017 1917				10 mL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Vinyl chloride	85	90	59 - 140	5	35		
1,1-Dichloroethene	95	96	64 - 125	1	35		
trans-1,2-Dichloroethene	103	101	69 - 124	2	35		
cis-1,2-Dichloroethene	101	98	73 - 130	3	35		
Trichloroethene	95	94	72 - 123	1	35		
Tetrachloroethene	93	93	67 - 123	1	35		

Surrogate	MS % Rec	MSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	97	97	75 - 125
Trifluorotoluene (Surr)	93	93	74 - 118
Dibromofluoromethane (Surr)	101	101	42 - 132
4-Bromofluorobenzene (Surr)	102	104	81 - 120
1,2-Dichloroethane-d4 (Surr)	100	100	46 - 150

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 580-239330

Method: 8260C
Preparation: 5030B

MS Lab Sample ID:	580-66304-3	Units:	ug/L	MSD Lab Sample ID:	580-66304-3
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/27/2017 1851			Analysis Date:	02/27/2017 1917
Prep Date:	02/27/2017 1851			Prep Date:	02/27/2017 1917
Leach Date:	N/A			Leach Date:	N/A

Analyte	Sample Result/Qual		MS Spike Amount	MSD Spike Amount	MS Result/Qual	MSD Result/Qual
Vinyl chloride	0.87		5.00	5.00	5.13	5.37
1,1-Dichloroethene	ND		5.00	5.00	4.74	4.79
trans-1,2-Dichloroethene	0.14	J	5.00	5.00	5.27	5.17
cis-1,2-Dichloroethene	0.24		5.00	5.00	5.31	5.15
Trichloroethene	0.41		5.00	5.00	5.16	5.13
Tetrachloroethene	ND		5.00	5.00	4.67	4.63

Client: GeoEngineers Inc

Job Number: 580-66304-1

Method Blank - Batch: 580-239343

Method: 8260C
Preparation: 5030B

Lab Sample ID:	MB 580-239343/4	Analysis Batch:	580-239343	Instrument ID:	TAC048
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B272017028.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	02/27/2017 2153	Units:	ug/L	Final Weight/Volume:	10 mL
Prep Date:	02/27/2017 2153				
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Vinyl chloride	ND		0.013	0.020
1,1-Dichloroethene	ND		0.018	0.10
trans-1,2-Dichloroethene	ND		0.025	0.20
cis-1,2-Dichloroethene	ND		0.025	0.20
Trichloroethene	ND		0.025	0.20
Tetrachloroethene	ND		0.070	0.50

Surrogate	% Rec	Acceptance Limits
Toluene-d8 (Surr)	98	75 - 125
Trifluorotoluene (Surr)	98	74 - 118
Dibromofluoromethane (Surr)	101	42 - 132
4-Bromofluorobenzene (Surr)	102	81 - 120
1,2-Dichloroethane-d4 (Surr)	101	46 - 150

Client: GeoEngineers Inc

Job Number: 580-66304-1

Lab Control Sample/
Lab Control Sample Duplicate Recovery Report - Batch: 580-239343

Method: 8260C
Preparation: 5030B

LCS Lab Sample ID:	LCS 580-239343/5	Analysis Batch:	580-239343	Instrument ID:	TAC048
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B272017029.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	02/27/2017 2219	Units:	ug/L	Final Weight/Volume:	10 mL
Prep Date:	02/27/2017 2219				10 mL
Leach Date:	N/A				

LCSD Lab Sample ID:	LCSD 580-239343/6	Analysis Batch:	580-239343	Instrument ID:	TAC048
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	B272017030.D
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	10 mL
Analysis Date:	02/27/2017 2245	Units:	ug/L	Final Weight/Volume:	10 mL
Prep Date:	02/27/2017 2245				10 mL
Leach Date:	N/A				

Analyte	% Rec. LCS	% Rec. LCSD	Limit	RPD	RPD Limit	LCS Qual	LCSD Qual
Vinyl chloride	89	90	59 - 140	1	30		
1,1-Dichloroethene	100	97	64 - 125	3	28		
trans-1,2-Dichloroethene	100	101	69 - 124	1	27		
cis-1,2-Dichloroethene	100	100	73 - 130	0	20		
Trichloroethene	103	104	72 - 123	1	20		
Tetrachloroethene	95	95	67 - 123	1	20		

Surrogate	LCS % Rec	LCSD % Rec	Acceptance Limits
Toluene-d8 (Surr)	96	97	75 - 125
Trifluorotoluene (Surr)	94	95	74 - 118
Dibromofluoromethane (Surr)	102	101	42 - 132
4-Bromofluorobenzene (Surr)	103	102	81 - 120
1,2-Dichloroethane-d4 (Surr)	100	99	46 - 150

Laboratory Control/
Laboratory Duplicate Data Report - Batch: 580-239343

Method: 8260C
Preparation: 5030B

LCS Lab Sample ID:	LCS 580-239343/5	Units: ug/L		LCSD Lab Sample ID:	LCSD 580-239343/6
Client Matrix:	Water			Client Matrix:	Water
Dilution:	1.0			Dilution:	1.0
Analysis Date:	02/27/2017 2219			Analysis Date:	02/27/2017 2245
Prep Date:	02/27/2017 2219			Prep Date:	02/27/2017 2245
Leach Date:	N/A			Leach Date:	N/A

Analyte	LCS Spike Amount	LCSD Spike Amount	LCS Result/Qual	LCSD Result/Qual
Vinyl chloride	5.00	5.00	4.47	4.49
1,1-Dichloroethene	5.00	5.00	4.99	4.85
trans-1,2-Dichloroethene	5.00	5.00	4.98	5.05
cis-1,2-Dichloroethene	5.00	5.00	5.02	5.00
Trichloroethene	5.00	5.00	5.13	5.19
Tetrachloroethene	5.00	5.00	4.75	4.73

Client: GeoEngineers Inc

Job Number: 580-66304-1

Method Blank - Batch: 590-10894

Method: 300.0
Preparation: N/A

Lab Sample ID:	MB 590-10894/1013	Analysis Batch:	590-10894	Instrument ID:	IC
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	022817013-MB.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	02/28/2017 1528	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	5 mL
Leach Date:	N/A				

Analyte	Result	Qual	MDL	RL
Sulfate	ND		0.13	1.2

Lab Control Sample - Batch: 590-10894

Method: 300.0
Preparation: N/A

Lab Sample ID:	LCS 590-10894/1012	Analysis Batch:	590-10894	Instrument ID:	IC
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	022817012-LCS.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	02/28/2017 1503	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	5 mL
Leach Date:	N/A				

Analyte	Spike Amount	Result	% Rec.	Limit	Qual
Sulfate	12.5	13.2	106	90 - 110	

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 590-10894

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	580-66304-3	Analysis Batch:	590-10894	Instrument ID:	IC
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	022817006.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	02/28/2017 1350			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	5 mL
Leach Date:	N/A				

MSD Lab Sample ID:	580-66304-3	Analysis Batch:	590-10894	Instrument ID:	IC
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	022817010.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	02/28/2017 1438			Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	5 mL
Leach Date:	N/A				

	% Rec.						
Analyte	MS	MSD	Limit	RPD	RPD Limit	MS Qual	MSD Qual
Sulfate	55	58	80 - 120	1	10	F1	F1

Client: GeoEngineers Inc

Job Number: 580-66304-1

Matrix Spike/
Matrix Spike Duplicate Recovery Report - Batch: 590-10894

Method: 300.0
Preparation: N/A

MS Lab Sample ID:	580-66304-3	Units: mg/L	MSD Lab Sample ID:	580-66304-3	
Client Matrix:	Water		Client Matrix:	Water	
Dilution:	1.0		Dilution:	1.0	
Analysis Date:	02/28/2017 1350		Analysis Date:	02/28/2017 1438	
Prep Date:	N/A		Prep Date:	N/A	
Leach Date:	N/A		Leach Date:	N/A	

Analyte	Sample Result/Qual	MS Spike Amount	MSD Spike Amount	MS Result/Qual		MSD Result/Qual	
Sulfate	47	12.5	12.5	53.7	F1	54.0	F1

Duplicate - Batch: 590-10894

Method: 300.0
Preparation: N/A

Lab Sample ID:	580-66304-3	Analysis Batch:	590-10894	Instrument ID:	IC
Client Matrix:	Water	Prep Batch:	N/A	Lab File ID:	022817008.d
Dilution:	1.0	Leach Batch:	N/A	Initial Weight/Volume:	5 mL
Analysis Date:	02/28/2017 1414	Units:	mg/L	Final Weight/Volume:	
Prep Date:	N/A			Injection Volume:	5 mL
Leach Date:	N/A				

Analyte	Sample Result/Qual	Result	RPD	Limit	Qual
Sulfate	47	46.7	0.1	15.7	

DATA REPORTING QUALIFIERS

Client: GeoEngineers Inc Job Number: 580-66304-1

Lab Section	Qualifier	Description
GC/MS VOA		
	J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
HPLC/IC		
	F1	MS and/or MSD Recovery is outside acceptance limits.

Client: GeoEngineers Inc

Job Number: 580-66304-1

QC Association Summary

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
GC/MS VOA					
Analysis Batch:580-238604					
				8260C	
				8260C	
				8260C	
				8260C	
Analysis Batch:580-239330					
LCS 580-239330/5	Lab Control Sample	T	Water	8260C	
LCSD 580-239330/6	Lab Control Sample Duplicate	T	Water	8260C	
MB 580-239330/4	Method Blank	T	Water	8260C	
580-66304-1	MW-3-170222	T	Water	8260C	
580-66304-2	MW-16-170222	T	Water	8260C	
580-66304-3	MW-18-170222	T	Water	8260C	
580-66304-3MS	Matrix Spike	T	Water	8260C	
580-66304-3MSD	Matrix Spike Duplicate	T	Water	8260C	
580-66304-4	MW-19-170222	T	Water	8260C	
580-66304-5	DUP 1-170222	T	Water	8260C	
Analysis Batch:580-239343					
LCS 580-239343/5	Lab Control Sample	T	Water	8260C	
LCSD 580-239343/6	Lab Control Sample Duplicate	T	Water	8260C	
MB 580-239343/4	Method Blank	T	Water	8260C	
580-66304-6	Trip BLank-170222	T	Water	8260C	

Report Basis
T = Total

HPLC/IC

Lab Sample ID	Client Sample ID	Report Basis	Client Matrix	Method	Prep Batch
Analysis Batch:590-10894					
LCS 590-10894/1012	Lab Control Sample	T	Water	300.0	
MB 590-10894/1013	Method Blank	T	Water	300.0	
580-66304-1	MW-3-170222	T	Water	300.0	
580-66304-2	MW-16-170222	T	Water	300.0	
580-66304-3	MW-18-170222	T	Water	300.0	
580-66304-3DU	Duplicate	T	Water	300.0	
580-66304-3MS	Matrix Spike	T	Water	300.0	
580-66304-3MSD	Matrix Spike Duplicate	T	Water	300.0	
580-66304-4	MW-19-170222	T	Water	300.0	
580-66304-5	DUP 1-170222	T	Water	300.0	

Report Basis
T = Total

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
SURR/IS/TFT_00075	04/19/17	01/12/17	blk, Lot voarsurr/is_00036	25 mL	V-TFTStk_00030	625 uL	Trifluorotoluene (Surr)	249.9 ppm
					VOARSURR/IS_00036	14.375 mL	1,2-Dichloroethane-d4 (Surr)	243.75 ppm
							1,4-Dichlorobenzene-d4	243.75 ppm
							4-Bromofluorobenzene (Surr)	243.75 ppm
							Chlorobenzene-d5	243.75 ppm
							Dibromofluoromethane (Surr)	243.75 ppm
							Fluorobenzene (IS)	243.75 ppm
							TBA-d9 (IS)	4875 ppm
							Toluene-d8 (Surr)	243.75 ppm
					VOARSURR/IS_00037	10 mL	1,2-Dichloroethane-d4 (Surr)	243.75 ppm
							1,4-Dichlorobenzene-d4	243.75 ppm
							4-Bromofluorobenzene (Surr)	243.75 ppm
							Chlorobenzene-d5	243.75 ppm
							Dibromofluoromethane (Surr)	243.75 ppm
							Fluorobenzene (IS)	243.75 ppm
							TBA-d9 (IS)	4875 ppm
							Toluene-d8 (Surr)	243.75 ppm
.V-TFTStk_00030	04/19/17	10/19/16	methanol, Lot 0000118655	50 mL	TFTneat_00011	420 uL	Trifluorotoluene (Surr)	9996 mg/L
..TFTneat_00011	04/26/17	Sigma-Aldrich, Lot STBG0539V			(Purchased Reagent)		Trifluorotoluene (Surr)	1190000 mg/L
.VOARSURR/IS_00036	07/30/21	Restek, Lot A0120630			(Purchased Reagent)		1,2-Dichloroethane-d4 (Surr)	250 ug/mL
							1,4-Dichlorobenzene-d4	250 ug/mL
							4-Bromofluorobenzene (Surr)	250 ug/mL
							Chlorobenzene-d5	250 ug/mL
							Dibromofluoromethane (Surr)	250 ug/mL
							Fluorobenzene (IS)	250 ug/mL
							TBA-d9 (IS)	5000 ug/mL
							Toluene-d8 (Surr)	250 ug/mL
.VOARSURR/IS_00037	07/31/21	Restek, Lot A0120630			(Purchased Reagent)		1,2-Dichloroethane-d4 (Surr)	250 ug/mL
							1,4-Dichlorobenzene-d4	250 ug/mL
							4-Bromofluorobenzene (Surr)	250 ug/mL
							Chlorobenzene-d5	250 ug/mL
							Dibromofluoromethane (Surr)	250 ug/mL
							Fluorobenzene (IS)	250 ug/mL
							TBA-d9 (IS)	5000 ug/mL
							Toluene-d8 (Surr)	250 ug/mL
VOAMasterMix_00004	05/31/17	02/02/17	methanol, Lot 147462	25 mL	VOAR2CEVE__00007	500 uL	2-Chloroethyl vinyl ether	50 ug/mL
					VOARAcrolein_00031	375 uL	Acrolein	300 ug/mL
					VOARADDCOM__00012	500 uL	1,3,5-Trichlorobenzene	50 ug/mL
					VOARGAS__00010	500 uL	Bromomethane	50 ug/mL
							Chloroethane	50 ug/mL
							Chloromethane	50 ug/mL
							Dichlorodifluoromethane	50 ug/mL
							Trichlorofluoromethane	50 ug/mL
							Vinyl chloride	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
					VOARKETON__00007	500 uL	2-Butanone (MEK)	250 ug/mL
							2-Hexanone	250 ug/mL
							4-Methyl-2-pentanone (MIBK)	250 ug/mL
							Acetone	250 ug/mL
					VOARMegMix__00015	500 uL	1,1,1,2-Tetrachloroethane	50 ug/mL
							1,1,1-Trichloroethane	50 ug/mL
							1,1,2,2-Tetrachloroethane	50 ug/mL
							1,1,2-Trichloro-1,2,2-trifluoroethane	50 ug/mL
							1,1,2-Trichloroethane	50 ug/mL
							1,1-Dichloroethane	50 ug/mL
							1,1-Dichloroethene	50 ug/mL
							1,1-Dichloropropene	50 ug/mL
							1,2,3-Trichlorobenzene	50 ug/mL
							1,2,3-Trichloropropane	50 ug/mL
							1,2,4-Trichlorobenzene	50 ug/mL
							1,2,4-Trimethylbenzene	50 ug/mL
							1,2-Dibromo-3-Chloropropane	50 ug/mL
							1,2-Dichlorobenzene	50 ug/mL
							1,2-Dichloroethane	50 ug/mL
							1,2-Dichloropropane	50 ug/mL
							1,3,5-Trimethylbenzene	50 ug/mL
							1,3-Dichlorobenzene	50 ug/mL
							1,3-Dichloropropane	50 ug/mL
							1,4-Dichlorobenzene	50 ug/mL
							2,2-Dichloropropane	50 ug/mL
							2-Chlorotoluene	50 ug/mL
							2-Methyl-2-propanol	500 ug/mL
							4-Chlorotoluene	50 ug/mL
							4-Isopropyltoluene	50 ug/mL
							Acrylonitrile	500 ug/mL
							Benzene	50 ug/mL
							Bromobenzene	50 ug/mL
							Bromoform	50 ug/mL
							Carbon disulfide	50 ug/mL
							Carbon tetrachloride	50 ug/mL
							Chlorobenzene	50 ug/mL
							Chlorobromomethane	50 ug/mL
							Chlorodibromomethane	50 ug/mL
							Chloroform	50 ug/mL
							cis-1,2-Dichloroethene	50 ug/mL
							cis-1,3-Dichloropropene	50 ug/mL
							Dibromomethane	50 ug/mL
							Dichlorobromomethane	50 ug/mL
							Ethylbenzene	50 ug/mL
							Ethylene Dibromide	50 ug/mL
							Hexachlorobutadiene	50 ug/mL
							Hexane	50 ug/mL

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							Iodomethane	50 ug/mL
							Isopropylbenzene	50 ug/mL
							m-Xylene & p-Xylene	50 ug/mL
							Methyl tert-butyl ether	50 ug/mL
							Methylene Chloride	50 ug/mL
							n-Butylbenzene	50 ug/mL
							N-Propylbenzene	50 ug/mL
							Naphthalene	50 ug/mL
							o-Xylene	50 ug/mL
							sec-Butylbenzene	50 ug/mL
							Styrene	50 ug/mL
							tert-Butylbenzene	50 ug/mL
							Tetrachloroethene	50 ug/mL
							Toluene	50 ug/mL
							trans-1,2-Dichloroethene	50 ug/mL
							trans-1,3-Dichloropropene	50 ug/mL
							trans-1,4-Dichloro-2-butene	50 ug/mL
							Trichloroethene	50 ug/mL
					VOARPOLARAD__00004	625 uL	Tert-amyl methyl ether	62.5 ug/mL
							Tert-butyl ethyl ether	62.5 ug/mL
					VOARVA__00023	625 uL	Vinyl acetate	125 ug/mL
.VOAR2CEVE__00007	11/30/18		Restek, Lot A0115628		(Purchased Reagent)		2-Chloroethyl vinyl ether	2500 ug/mL
.VOARAcrolein_00031	07/31/17		Restek, Lot A0121648		(Purchased Reagent)		Acrolein	20000 ug/mL
.VOARADDCOM__00012	06/30/18		Restek, Lot A0123685		(Purchased Reagent)		1,3,5-Trichlorobenzene	2500 ug/mL
.VOARGAS__00010	01/31/20		Restek, Lot A0124278		(Purchased Reagent)		Bromomethane	2500 ug/mL
							Chloroethane	2500 ug/mL
							Chloromethane	2500 ug/mL
							Dichlorodifluoromethane	2500 ug/mL
							Trichlorofluoromethane	2500 ug/mL
							Vinyl chloride	2500 ug/mL
.VOARKETON__00007	11/30/18		Restek, Lot A0115554		(Purchased Reagent)		2-Butanone (MEK)	12500 ug/mL
							2-Hexanone	12500 ug/mL
							4-Methyl-2-pentanone (MIBK)	12500 ug/mL
							Acetone	12500 ug/mL
.VOARMegMix__00015	03/31/18		Restek, Lot A0118177		(Purchased Reagent)		1,1,1,2-Tetrachloroethane	2500 mg/L
							1,1,1-Trichloroethane	2500 mg/L
							1,1,2,2-Tetrachloroethane	2500 mg/L
							1,1,2-Trichloro-1,2,2-trifluoroethane	2500 mg/L
							1,1,2-Trichloroethane	2500 mg/L
							1,1-Dichloroethane	2500 mg/L
							1,1-Dichloroethene	2500 mg/L
							1,1-Dichloropropene	2500 mg/L
							1,2,3-Trichlorobenzene	2500 mg/L
							1,2,3-Trichloropropane	2500 mg/L
							1,2,4-Trichlorobenzene	2500 mg/L
							1,2,4-Trimethylbenzene	2500 mg/L
							1,2-Dibromo-3-Chloropropane	2500 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
							1,2-Dichlorobenzene	2500 mg/L
							1,2-Dichloroethane	2500 mg/L
							1,2-Dichloropropane	2500 mg/L
							1,3,5-Trimethylbenzene	2500 mg/L
							1,3-Dichlorobenzene	2500 mg/L
							1,3-Dichloropropane	2500 mg/L
							1,4-Dichlorobenzene	2500 mg/L
							2,2-Dichloropropane	2500 mg/L
							2-Chlorotoluene	2500 mg/L
							2-Methyl-2-propanol	25000 mg/L
							4-Chlorotoluene	2500 mg/L
							4-Isopropyltoluene	2500 mg/L
							Acrylonitrile	25000 mg/L
							Benzene	2500 mg/L
							Bromobenzene	2500 mg/L
							Bromoform	2500 mg/L
							Carbon disulfide	2500 mg/L
							Carbon tetrachloride	2500 mg/L
							Chlorobenzene	2500 mg/L
							Chlorobromomethane	2500 mg/L
							Chlorodibromomethane	2500 mg/L
							Chloroform	2500 mg/L
							cis-1,2-Dichloroethene	2500 mg/L
							cis-1,3-Dichloropropene	2500 mg/L
							Dibromomethane	2500 mg/L
							Dichlorobromomethane	2500 mg/L
							Ethylbenzene	2500 mg/L
							Ethylene Dibromide	2500 mg/L
							Hexachlorobutadiene	2500 mg/L
							Hexane	2500 mg/L
							Iodomethane	2500 mg/L
							Isopropylbenzene	2500 mg/L
							m-Xylene & p-Xylene	2500 mg/L
							Methyl tert-butyl ether	2500 mg/L
							Methylene Chloride	2500 mg/L
							n-Butylbenzene	2500 mg/L
							N-Propylbenzene	2500 mg/L
							Naphthalene	2500 mg/L
							o-Xylene	2500 mg/L
							sec-Butylbenzene	2500 mg/L
							Styrene	2500 mg/L
							tert-Butylbenzene	2500 mg/L
							Tetrachloroethene	2500 mg/L
							Toluene	2500 mg/L
							trans-1,2-Dichloroethene	2500 mg/L
							trans-1,3-Dichloropropene	2500 mg/L
							trans-1,4-Dichloro-2-butene	2500 mg/L
							Trichloroethene	2500 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
.VOARPOLARAD__00004	10/31/17		Restek, Lot A0114666		(Purchased Reagent)		Tert-amyl methyl ether	2500 ug/mL
							Tert-butyl ethyl ether	2500 ug/mL
.VOARVA__00023	05/31/17		Restek, Lot A0123104		(Purchased Reagent)		Vinyl acetate	5000 ug/mL
VOAMasterSEC_00001	04/30/17	02/02/17	methanol, Lot 147462	25 mL	VOASGAS2__00011	500 uL	Vinyl chloride	50 ug/mL
					VOASMegMix2__00012	500 uL	1,1-Dichloroethene	50 ug/mL
							cis-1,2-Dichloroethene	50 ug/mL
							Tetrachloroethene	50 ug/mL
							trans-1,2-Dichloroethene	50 ug/mL
							Trichloroethene	50 ug/mL
.VOASGAS2__00011	11/30/18		Restek, Lot A0115484		(Purchased Reagent)		Vinyl chloride	2500 ug/mL
.VOASMegMix2__00012	07/31/18		Restek, Lot A0120604		(Purchased Reagent)		1,1-Dichloroethene	2500 mg/L
							cis-1,2-Dichloroethene	2500 mg/L
							Tetrachloroethene	2500 mg/L
							trans-1,2-Dichloroethene	2500 mg/L
							Trichloroethene	2500 mg/L

REAGENT TRACEABILITY SUMMARY

Lab Name: TestAmerica Spokane Job No.: 580-66304-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
GEN_IC_CAL_00016	03/15/17	01/03/17	DI Water, Lot NA	25 mL	GEN_IC_CCV1_00014	10 mL	Chloride	100 ug/mL
							Fluoride	40 ug/mL
							Sulfate	100 ug/mL
.GEN_IC_CCV1_00014	07/03/17	01/03/17	DI Water, Lot NA	100 mL	GEN_IC_P1_00002	5 mL	Chloride	250 ug/mL
							Fluoride	100 ug/mL
							Sulfate	250 ug/mL
..GEN_IC_P1_00002	07/05/17	Environmental Express, Lot 1618212			(Purchased Reagent)		Chloride	5000 ug/mL
							Fluoride	2000 ug/mL
							Sulfate	5000 ug/mL
GEN_IC_CCV1_00014	07/03/17	01/03/17	DI Water, Lot NA	100 mL	GEN_IC_P1_00002	5 mL	Sulfate	250 ug/mL
.GEN_IC_P1_00002	07/05/17	Environmental Express, Lot 1618212			(Purchased Reagent)		Sulfate	5000 ug/mL

Certification Summary

Client: GeoEngineers Inc
Project/Site: 318 State AVE NE (WA)

TestAmerica Job ID: 580-66304-1

Laboratory	Authority	Program	EPA Region	Certification ID
TestAmerica Seattle	Alaska (UST)	State Program	10	UST-022
TestAmerica Seattle	California	State Program	9	2901
TestAmerica Seattle	L-A-B	DoD ELAP		L2236
TestAmerica Seattle	L-A-B	ISO/IEC 17025		L2236
TestAmerica Seattle	Montana (UST)	State Program	8	N/A
TestAmerica Seattle	Oregon	NELAP	10	WA100007
TestAmerica Seattle	US Fish & Wildlife	Federal		LE058448-0
TestAmerica Seattle	USDA	Federal		P330-14-00126
TestAmerica Seattle	Washington	State Program	10	C553
TestAmerica Spokane	Alaska (UST)	State Program	10	UST-071
TestAmerica Spokane	Washington	State Program	10	C569

Accreditation may not be offered or required for all methods and analytes reported in this package. Please contact your project manager for the laboratory's current list of certified methods and analytes.

Method 8260C Low Level

Volatile Organic Compounds (GC/MS) by Method 8260C Low Level

FORM II
GC/MS VOA SURROGATE RECOVERY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Matrix: Water Level: Low

GC Column (1): DB-VRX ID: 0.25(mm)

Client Sample ID	Lab Sample ID	DBFM #	DCA #	TFT #	TOL #	BFB #
MW-3-170222	580-66304-1	99	100	97	97	102
MW-16-170222	580-66304-2	100	101	94	98	102
MW-18-170222	580-66304-3	101	101	95	98	102
MW-19-170222	580-66304-4	101	101	93	97	102
DUP 1-170222	580-66304-5	100	99	93	97	103
Trip BLank-170222	580-66304-6	101	101	97	97	102
	MB 580-239330/4	101	101	99	97	102
	MB 580-239343/4	101	101	98	98	102
	LCS 580-239330/5	101	101	96	97	102
	LCS 580-239343/5	102	100	94	96	103
	LCSD 580-239330/6	101	99	94	98	102
	LCSD 580-239343/6	101	99	95	97	102
MW-18-170222 MS	580-66304-3 MS	101	100	93	97	102
MW-18-170222 MSD	580-66304-3 MSD	101	100	93	97	104

	QC LIMITS
DBFM = Dibromofluoromethane (Surr)	42-132
DCA = 1,2-Dichloroethane-d4 (Surr)	46-150
TFT = Trifluorotoluene (Surr)	74-118
TOL = Toluene-d8 (Surr)	75-125
BFB = 4-Bromofluorobenzene (Surr)	81-120

Column to be used to flag recovery values

FORM II 8260C

FORM III
GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Matrix: Water Level: Low Lab File ID: B272017005.D

Lab ID: LCS 580-239330/5 Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Vinyl chloride	5.00	4.45	89	59-140	
1,1-Dichloroethene	5.00	4.83	97	64-125	
trans-1,2-Dichloroethene	5.00	5.03	101	69-124	
cis-1,2-Dichloroethene	5.00	4.98	100	73-130	
Trichloroethene	5.00	4.98	100	72-123	
Tetrachloroethene	5.00	4.79	96	67-123	

Column to be used to flag recovery and RPD values

FORM III 8260C

FORM III
GC/MS VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Matrix: Water Level: Low Lab File ID: B272017029.D

Lab ID: LCS 580-239343/5 Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	QC LIMITS REC	#
Vinyl chloride	5.00	4.47	89	59-140	
1,1-Dichloroethene	5.00	4.99	100	64-125	
trans-1,2-Dichloroethene	5.00	4.98	100	69-124	
cis-1,2-Dichloroethene	5.00	5.02	100	73-130	
Trichloroethene	5.00	5.13	103	72-123	
Tetrachloroethene	5.00	4.75	95	67-123	

Column to be used to flag recovery and RPD values

FORM III 8260C

FORM III
GC/MS VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Matrix: Water Level: Low Lab File ID: B272017006.D

Lab ID: LCSD 580-239330/6 Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Vinyl chloride	5.00	4.50	90	1	30	59-140	
1,1-Dichloroethene	5.00	4.84	97	0	28	64-125	
trans-1,2-Dichloroethene	5.00	5.13	103	2	27	69-124	
cis-1,2-Dichloroethene	5.00	5.12	102	3	20	73-130	
Trichloroethene	5.00	5.11	102	2	20	72-123	
Tetrachloroethene	5.00	4.93	99	3	20	67-123	

Column to be used to flag recovery and RPD values

FORM III 8260C

FORM III
GC/MS VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Matrix: Water Level: Low Lab File ID: B272017030.D

Lab ID: LCSD 580-239343/6 Client ID:

COMPOUND	SPIKE ADDED (ug/L)	LCSD CONCENTRATION (ug/L)	LCSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Vinyl chloride	5.00	4.49	90	1	30	59-140	
1,1-Dichloroethene	5.00	4.85	97	3	28	64-125	
trans-1,2-Dichloroethene	5.00	5.05	101	1	27	69-124	
cis-1,2-Dichloroethene	5.00	5.00	100	0	20	73-130	
Trichloroethene	5.00	5.19	104	1	20	72-123	
Tetrachloroethene	5.00	4.73	95	1	20	67-123	

Column to be used to flag recovery and RPD values

FORM III 8260C

FORM III
GC/MS VOA MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Matrix: Water Level: Low Lab File ID: B272017021.D

Lab ID: 580-66304-3 MS Client ID: MW-18-170222 MS

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	QC LIMITS REC	#
Vinyl chloride	5.00	0.87	5.13	85	59-140	
1,1-Dichloroethene	5.00	ND	4.74	95	64-125	
trans-1,2-Dichloroethene	5.00	0.14 J	5.27	103	69-124	
cis-1,2-Dichloroethene	5.00	0.24	5.31	101	73-130	
Trichloroethene	5.00	0.41	5.16	95	72-123	
Tetrachloroethene	5.00	ND	4.67	93	67-123	

Column to be used to flag recovery and RPD values

FORM III 8260C

FORM III
GC/MS VOA MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Matrix: Water Level: Low Lab File ID: B272017022.D

Lab ID: 580-66304-3 MSD Client ID: MW-18-170222 MSD

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Vinyl chloride	5.00	5.37	90	5	35	59-140	
1,1-Dichloroethene	5.00	4.79	96	1	35	64-125	
trans-1,2-Dichloroethene	5.00	5.17	101	2	35	69-124	
cis-1,2-Dichloroethene	5.00	5.15	98	3	35	73-130	
Trichloroethene	5.00	5.13	94	1	35	72-123	
Tetrachloroethene	5.00	4.63	93	1	35	67-123	

Column to be used to flag recovery and RPD values

FORM III 8260C

FORM IV
GC/MS VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab File ID: B272017004.D Lab Sample ID: MB 580-239330/4

Matrix: Water Heated Purge:(Y/N) N

Instrument ID: TAC048 Date Analyzed: 02/27/2017 11:31

GC Column: DB-VRX ID: 0.25(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 580-239330/5	B272017005.D	02/27/2017 11:57
	LCSD 580-239330/6	B272017006.D	02/27/2017 12:23
MW-3-170222	580-66304-1	B272017016.D	02/27/2017 16:41
MW-16-170222	580-66304-2	B272017017.D	02/27/2017 17:07
MW-19-170222	580-66304-4	B272017018.D	02/27/2017 17:33
DUP 1-170222	580-66304-5	B272017019.D	02/27/2017 17:59
MW-18-170222	580-66304-3	B272017020.D	02/27/2017 18:25
MW-18-170222 MS	580-66304-3 MS	B272017021.D	02/27/2017 18:51
MW-18-170222 MSD	580-66304-3 MSD	B272017022.D	02/27/2017 19:17

FORM IV
GC/MS VOA METHOD BLANK SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab File ID: B272017028.D Lab Sample ID: MB 580-239343/4

Matrix: Water Heated Purge:(Y/N) N

Instrument ID: TAC048 Date Analyzed: 02/27/2017 21:53

GC Column: DB-VRX ID: 0.25(mm)

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	LCS 580-239343/5	B272017029.D	02/27/2017 22:19
	LCSD 580-239343/6	B272017030.D	02/27/2017 22:45
Trip BLank-170222	580-66304-6	B272017033.D	02/28/2017 00:03

FORM V
GC/MS VOA INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab File ID: B162017001.D BFB Injection Date: 02/16/2017

Instrument ID: TAC048 BFB Injection Time: 15:46

Analysis Batch No.: 238604

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0 % of mass 95	18.9	
75	30.0 - 60.0 % of mass 95	48.4	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0 % of mass 95	6.4	
173	Less than 2.0 % of mass 174	0.6	(0.8) 1
174	50.0 - 120.00 % of mass 95	80.3	
175	5.0 - 9.0 % of mass 174	5.8	(7.3) 1
176	95.0 - 101.0 % of mass 174	77.8	(97.0) 1
177	5.0 - 9.0 % of mass 176	5.2	(6.6) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	STD0.02 580-238604/2	B162017002.D	02/16/2017	16:12
	STD0.1 580-238604/3	B162017003.D	02/16/2017	16:38
	STD0.2 580-238604/4	B162017004.D	02/16/2017	17:05
	STD0.4 580-238604/5	B162017005.D	02/16/2017	17:30
	STD001 580-238604/6	B162017006.D	02/16/2017	17:56
	STD005 580-238604/7	B162017007.D	02/16/2017	18:22
	ICIS 580-238604/8	B162017008.D	02/16/2017	18:48
	STD025 580-238604/9	B162017009.D	02/16/2017	19:14
	STD050 580-238604/10	B162017010.D	02/16/2017	19:40
	STD080 580-238604/11	B162017011.D	02/16/2017	20:05
	ICV 580-238604/14	B162017014.D	02/16/2017	21:23

FORM V
GC/MS VOA INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab File ID: B272017001.D BFB Injection Date: 02/27/2017

Instrument ID: TAC048 BFB Injection Time: 10:13

Analysis Batch No.: 239330

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0 % of mass 95	18.5	
75	30.0 - 60.0 % of mass 95	48.4	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0 % of mass 95	6.5	
173	Less than 2.0 % of mass 174	0.6	(0.7) 1
174	50.0 - 120.00 % of mass 95	81.0	
175	5.0 - 9.0 % of mass 174	5.8	(7.1) 1
176	95.0 - 101.0 % of mass 174	77.9	(96.2) 1
177	5.0 - 9.0 % of mass 176	5.0	(6.4) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 580-239330/2	B272017002.D	02/27/2017	10:38
	CCVL 580-239330/3	B272017003.D	02/27/2017	11:04
	MB 580-239330/4	B272017004.D	02/27/2017	11:31
	LCS 580-239330/5	B272017005.D	02/27/2017	11:57
	LCSD 580-239330/6	B272017006.D	02/27/2017	12:23
MW-3-170222	580-66304-1	B272017016.D	02/27/2017	16:41
MW-16-170222	580-66304-2	B272017017.D	02/27/2017	17:07
MW-19-170222	580-66304-4	B272017018.D	02/27/2017	17:33
DUP 1-170222	580-66304-5	B272017019.D	02/27/2017	17:59
MW-18-170222	580-66304-3	B272017020.D	02/27/2017	18:25
MW-18-170222 MS	580-66304-3 MS	B272017021.D	02/27/2017	18:51
MW-18-170222 MSD	580-66304-3 MSD	B272017022.D	02/27/2017	19:17

FORM V
GC/MS VOA INSTRUMENT PERFORMANCE CHECK
BROMOFLUOROBENZENE (BFB)

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab File ID: B272017025.D BFB Injection Date: 02/27/2017

Instrument ID: TAC048 BFB Injection Time: 20:35

Analysis Batch No.: 239343

M/E	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE	
50	15.0 - 40.0 % of mass 95	18.5	
75	30.0 - 60.0 % of mass 95	48.0	
95	Base Peak, 100% relative abundance	100.0	
96	5.0 - 9.0 % of mass 95	6.5	
173	Less than 2.0 % of mass 174	0.6	(0.7) 1
174	50.0 - 120.00 % of mass 95	79.3	
175	5.0 - 9.0 % of mass 174	5.6	(7.1) 1
176	95.0 - 101.0 % of mass 174	76.6	(96.6) 1
177	5.0 - 9.0 % of mass 176	5.1	(6.6) 2

1-Value is % mass 174 2-Value is % mass 176

THIS CHECK APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS AND STANDARDS:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
	CCVIS 580-239343/2	B272017026.D	02/27/2017	21:01
	CCVL 580-239343/3	B272017027.D	02/27/2017	21:27
	MB 580-239343/4	B272017028.D	02/27/2017	21:53
	LCS 580-239343/5	B272017029.D	02/27/2017	22:19
	LCSD 580-239343/6	B272017030.D	02/27/2017	22:45
Trip BLank-170222	580-66304-6	B272017033.D	02/28/2017	00:03

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Sample No.: ICIS 580-238604/8 Date Analyzed: 02/16/2017 18:48

Instrument ID: TAC048 GC Column: DB-VRX ID: 0.25(mm)

Lab File ID (Standard): B162017008.D Heated Purge: (Y/N) N

Calibration ID: 24515

		TBAd9		FB		CBNZd5	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		526364	6.53	1656618	9.43	1288875	12.38
UPPER LIMIT			7.03		9.93		12.88
LOWER LIMIT			6.03		8.93		11.88
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 580-238604/14		513809	6.53	1596712	9.43	1239204	12.38

TBAd9 = TBA-d9 (IS)
FB = Fluorobenzene (IS)
CBNZd5 = Chlorobenzene-d5

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8260C

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Sample No.: ICIS 580-238604/8 Date Analyzed: 02/16/2017 18:48

Instrument ID: TAC048 GC Column: DB-VRX ID: 0.25(mm)

Lab File ID (Standard): B162017008.D Heated Purge: (Y/N) N

Calibration ID: 24515

		DCBd4					
		AREA #	RT #	AREA #	RT #	AREA #	RT #
INITIAL CALIBRATION MID-POINT		659194	14.67				
UPPER LIMIT			15.17				
LOWER LIMIT			14.17				
LAB SAMPLE ID	CLIENT SAMPLE ID						
ICV 580-238604/14		633165	14.67				

DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8260C

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Sample No.: CCVIS 580-239330/2 Date Analyzed: 02/27/2017 10:38

Instrument ID: TAC048 GC Column: DB-VRX ID: 0.25(mm)

Lab File ID (Standard): B272017002.D Heated Purge: (Y/N) N

Calibration ID: 24515

		FB		CBNZd5		DCBd4	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		1565494	9.43	1284339	12.38	674844	14.67
UPPER LIMIT			9.93		12.88		15.17
LOWER LIMIT			8.93		11.88		14.17
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVL 580-239330/3		1530261	9.43	1240725	12.38	637589	14.67
MB 580-239330/4		1477136	9.43	1200240	12.38	604194	14.67
LCS 580-239330/5		1572756	9.43	1279729	12.38	657499	14.67
LCSD 580-239330/6		1544944	9.43	1251564	12.38	659020	14.67
580-66304-1	MW-3-170222	1484492	9.43	1202062	12.38	615074	14.67
580-66304-2	MW-16-170222	1517565	9.43	1220463	12.38	648286	14.67
580-66304-4	MW-19-170222	1497329	9.43	1208411	12.38	643565	14.67
580-66304-5	DUP 1-170222	1490133	9.43	1206523	12.38	639602	14.67
580-66304-3	MW-18-170222	1500171	9.43	1207148	12.38	633980	14.67
580-66304-3 MS	MW-18-170222 MS	1548063	9.43	1250883	12.38	666622	14.67
580-66304-3 MSD	MW-18-170222 MSD	1543667	9.43	1263817	12.38	667905	14.67

FB = Fluorobenzene (IS)
CBNZd5 = Chlorobenzene-d5
DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8260C

FORM VIII
GC/MS VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Sample No.: CCVIS 580-239343/2 Date Analyzed: 02/27/2017 21:01

Instrument ID: TAC048 GC Column: DB-VRX ID: 0.25(mm)

Lab File ID (Standard): B272017026.D Heated Purge: (Y/N) N

Calibration ID: 24515

		FB		CBNZd5		DCBd4	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
12/24 HOUR STD		1521930	9.43	1244068	12.38	648067	14.67
UPPER LIMIT			9.93		12.88		15.17
LOWER LIMIT			8.93		11.88		14.17
LAB SAMPLE ID	CLIENT SAMPLE ID						
CCVL 580-239343/3		1478778	9.43	1204511	12.38	611362	14.67
MB 580-239343/4		1487444	9.43	1196525	12.38	611503	14.67
LCS 580-239343/5		1490683	9.43	1215388	12.38	634627	14.67
LCSD 580-239343/6		1507588	9.43	1227592	12.38	637091	14.67
580-66304-6	Trip BLank-170222	1509918	9.43	1226651	12.38	632626	14.67

FB = Fluorobenzene (IS)
CBNZd5 = Chlorobenzene-d5
DCBd4 = 1,4-Dichlorobenzene-d4

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM VIII 8260C

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Seattle | Job No.: 580-66304-1

SDG No.:

Client Sample ID: MW-3-170222 | Lab Sample ID: 580-66304-1

Matrix: Water | Lab File ID: B272017016.D

Analysis Method: 8260C | Date Collected: 02/22/2017 14:20

Sample wt/vol: 10(mL) | Date Analyzed: 02/27/2017 16:41

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-VRX ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 239330 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	0.27		0.020	0.013
75-35-4	1,1-Dichloroethene	ND		0.10	0.018
156-60-5	trans-1,2-Dichloroethene	ND		0.20	0.025
156-59-2	cis-1,2-Dichloroethene	0.31		0.20	0.025
79-01-6	Trichloroethene	2.8		0.20	0.025
127-18-4	Tetrachloroethene	ND		0.50	0.070

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	97		75-125
98-08-8	Trifluorotoluene (Surr)	97		74-118
1868-53-7	Dibromofluoromethane (Surr)	99		42-132
460-00-4	4-Bromofluorobenzene (Surr)	102		81-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	100		46-150

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Seattle | Job No.: 580-66304-1

SDG No.:

Client Sample ID: MW-16-170222 | Lab Sample ID: 580-66304-2

Matrix: Water | Lab File ID: B272017017.D

Analysis Method: 8260C | Date Collected: 02/22/2017 12:15

Sample wt/vol: 10(mL) | Date Analyzed: 02/27/2017 17:07

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-VRX ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 239330 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	0.084		0.020	0.013
75-35-4	1,1-Dichloroethene	ND		0.10	0.018
156-60-5	trans-1,2-Dichloroethene	ND		0.20	0.025
156-59-2	cis-1,2-Dichloroethene	0.098	J	0.20	0.025
79-01-6	Trichloroethene	0.21		0.20	0.025
127-18-4	Tetrachloroethene	ND		0.50	0.070

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	98		75-125
98-08-8	Trifluorotoluene (Surr)	94		74-118
1868-53-7	Dibromofluoromethane (Surr)	100		42-132
460-00-4	4-Bromofluorobenzene (Surr)	102		81-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	101		46-150

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Seattle | Job No.: 580-66304-1

SDG No.:

Client Sample ID: MW-18-170222 | Lab Sample ID: 580-66304-3

Matrix: Water | Lab File ID: B272017020.D

Analysis Method: 8260C | Date Collected: 02/22/2017 13:15

Sample wt/vol: 10(mL) | Date Analyzed: 02/27/2017 18:25

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-VRX ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 239330 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	0.87		0.020	0.013
75-35-4	1,1-Dichloroethene	ND		0.10	0.018
156-60-5	trans-1,2-Dichloroethene	0.14	J	0.20	0.025
156-59-2	cis-1,2-Dichloroethene	0.24		0.20	0.025
79-01-6	Trichloroethene	0.41		0.20	0.025
127-18-4	Tetrachloroethene	ND		0.50	0.070

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	98		75-125
98-08-8	Trifluorotoluene (Surr)	95		74-118
1868-53-7	Dibromofluoromethane (Surr)	101		42-132
460-00-4	4-Bromofluorobenzene (Surr)	102		81-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	101		46-150

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Seattle | Job No.: 580-66304-1

SDG No.:

Client Sample ID: MW-19-170222 | Lab Sample ID: 580-66304-4

Matrix: Water | Lab File ID: B272017018.D

Analysis Method: 8260C | Date Collected: 02/22/2017 11:30

Sample wt/vol: 10(mL) | Date Analyzed: 02/27/2017 17:33

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-VRX ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 239330 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	0.078		0.020	0.013
75-35-4	1,1-Dichloroethene	ND		0.10	0.018
156-60-5	trans-1,2-Dichloroethene	ND		0.20	0.025
156-59-2	cis-1,2-Dichloroethene	0.082	J	0.20	0.025
79-01-6	Trichloroethene	1.4		0.20	0.025
127-18-4	Tetrachloroethene	ND		0.50	0.070

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	97		75-125
98-08-8	Trifluorotoluene (Surr)	93		74-118
1868-53-7	Dibromofluoromethane (Surr)	101		42-132
460-00-4	4-Bromofluorobenzene (Surr)	102		81-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	101		46-150

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Seattle | Job No.: 580-66304-1

SDG No.:

Client Sample ID: DUP 1-170222 | Lab Sample ID: 580-66304-5

Matrix: Water | Lab File ID: B272017019.D

Analysis Method: 8260C | Date Collected: 02/22/2017 12:00

Sample wt/vol: 10(mL) | Date Analyzed: 02/27/2017 17:59

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-VRX ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 239330 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	0.053		0.020	0.013
75-35-4	1,1-Dichloroethene	ND		0.10	0.018
156-60-5	trans-1,2-Dichloroethene	ND		0.20	0.025
156-59-2	cis-1,2-Dichloroethene	0.037	J	0.20	0.025
79-01-6	Trichloroethene	1.4		0.20	0.025
127-18-4	Tetrachloroethene	ND		0.50	0.070

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	97		75-125
98-08-8	Trifluorotoluene (Surr)	93		74-118
1868-53-7	Dibromofluoromethane (Surr)	100		42-132
460-00-4	4-Bromofluorobenzene (Surr)	103		81-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	99		46-150

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Seattle | Job No.: 580-66304-1

SDG No.:

Client Sample ID: Trip BLank-170222 | Lab Sample ID: 580-66304-6

Matrix: Water | Lab File ID: B272017033.D

Analysis Method: 8260C | Date Collected: 02/22/2017 00:01

Sample wt/vol: 10(mL) | Date Analyzed: 02/28/2017 00:03

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-VRX ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 239343 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	ND		0.020	0.013
75-35-4	1,1-Dichloroethene	ND		0.10	0.018
156-60-5	trans-1,2-Dichloroethene	ND		0.20	0.025
156-59-2	cis-1,2-Dichloroethene	ND		0.20	0.025
79-01-6	Trichloroethene	ND		0.20	0.025
127-18-4	Tetrachloroethene	ND		0.50	0.070

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	97		75-125
98-08-8	Trifluorotoluene (Surr)	97		74-118
1868-53-7	Dibromofluoromethane (Surr)	101		42-132
460-00-4	4-Bromofluorobenzene (Surr)	102		81-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	101		46-150

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Seattle Job No.: 580-66304-1 Analy Batch No.: 238604

SDG No.:

Instrument ID: TAC048 GC Column: DB-VRX ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/16/2017 16:12 Calibration End Date: 02/16/2017 20:05 Calibration ID: 24515

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD0.02 580-238604/2	B162017002.D
Level 2	STD0.1 580-238604/3	B162017003.D
Level 3	STD0.2 580-238604/4	B162017004.D
Level 4	STD0.4 580-238604/5	B162017005.D
Level 5	STD001 580-238604/6	B162017006.D
Level 6	STD005 580-238604/7	B162017007.D
Level 7	ICIS 580-238604/8	B162017008.D
Level 8	STD025 580-238604/9	B162017009.D
Level 9	STD050 580-238604/10	B162017010.D
Level 10	STD080 580-238604/11	B162017011.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10		B	M1	M2								
Dichlorodifluoromethane	+++++ 0.2490	0.2546 0.2424	0.2572 0.2472	0.2726 0.2344	0.2389 0.2423	Ave		0.2487			0.1000	4.6		20.0			
Chloromethane	1.1393 0.3344	0.4841 0.3255	0.4096 0.3210	0.3696 0.3120	0.3396 0.3114	Lin2	0.0164	0.3220			0.1000				1.0000		0.9900
Vinyl chloride	0.2465 0.3450	0.3500 0.3457	0.3545 0.3513	0.3635 0.3445	0.3502 0.3393	Lin2	-0.002	0.3530			0.1000				0.9990		0.9900
Bromomethane	+++++ 0.1933	+++++ 0.1934	+++++ 0.1938	+++++ 0.1872	0.1924 0.1913	Lin1	0.0065	0.1904			0.1000				1.0000		0.9900
Chloroethane	+++++ 0.0568	+++++ 0.0553	+++++ 0.0531	0.0486 0.0542	0.0545 0.0541	Lin2	-0.002	0.0550		*	0.0600				0.9990		0.9900
Acrolein	+++++ 0.0258	+++++ 0.0244	+++++ 0.0243	+++++ 0.0225	0.0256 0.0228	Lin1	0.0341	0.0229							0.9990		0.9900
Trichlorofluoromethane	+++++ 0.2421	+++++ 0.2484	+++++ 0.2677	0.2052 0.2836	0.2225 0.3314	Qua2	-0.013	0.2371	0.0011230		0.1000				1.0000		0.9900
Acetone	+++++ 0.0479	+++++ 0.0413	+++++ 0.0419	0.0557 0.0350	0.0508 0.0345	Ave		0.0439			0.0200	18.2		20.0			
2-Methyl-2-propanol	+++++ 0.0167	+++++ 0.0159	0.0150 0.0155	0.0157 0.0133	0.0166 0.0123	Ave		0.0151				10.3		20.0			
1,1-Dichloroethene	+++++ 0.2602	0.4287 0.2544	0.3668 0.2646	0.3104 0.2543	0.2744 0.2442	Lin2	0.0183	0.2571			0.1000				0.9980		0.9900
Acrylonitrile	0.0419 0.0635	0.0550 0.0596	0.0509 0.0593	0.0539 0.0546	0.0574 0.0521	Lin2	-0.003	0.0569							0.9960		0.9900
Iodomethane	+++++ 0.4010	+++++ 0.3929	0.3933 0.3978	0.4089 0.3911	0.3880 0.3843	Ave		0.3947				2.0		20.0			
Methylene Chloride	+++++ 0.2762	+++++ 0.2671	+++++ 0.2675	0.3549 0.2605	0.2974 0.2580	Lin2	0.0367	0.2628			0.1000				1.0000		0.9900

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Seattle Job No.: 580-66304-1 Analy Batch No.: 238604

SDG No.:

Instrument ID: TAC048 GC Column: DB-VRX ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/16/2017 16:12 Calibration End Date: 02/16/2017 20:05 Calibration ID: 24515

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10		B	M1	M2								
1,1,2-Trichloro-1,2,2-trifluoroethane	+++++ 0.1859	0.1885 0.1856	0.1908 0.1931	0.1867 0.1855	0.1850 0.1832	Ave		0.1872			0.1000	1.7		20.0			
Carbon disulfide	0.8321 0.8406	0.7834 0.8240	0.8206 0.8237	0.8326 0.8132	0.8348 0.8308	Ave		0.8236			0.1000	2.0		20.0			
trans-1,2-Dichloroethene	+++++ 0.2590	+++++ 0.2580	0.3685 0.2595	0.3101 0.2548	0.2650 0.2536	Lin2	0.0226	0.2535			0.1000				1.0000		0.9900
Methyl tert-butyl ether	+++++ 0.6680	0.6806 0.6607	0.6719 0.6680	0.6141 0.6495	0.6230 0.6391	Lin2	0.0027	0.6471			0.1000				0.9990		0.9900
1,1-Dichloroethane	+++++ 0.4727	0.4739 0.4690	0.4687 0.4700	0.4662 0.4606	0.4616 0.4539	Ave		0.4663			0.2000	1.4		20.0			
Vinyl acetate	+++++ 0.0354	+++++ 0.0325	0.0337 0.0397	0.0379 0.0377	0.0353 0.0314	Ave		0.0354				8.1		20.0			
Hexane	0.6789 0.4171	0.4617 0.4145	0.4327 0.4159	0.4334 0.3998	0.3759 0.3913	Lin2	0.0055	0.4042							0.9990		0.9900
2-Butanone (MEK)	+++++ 0.0224	+++++ 0.0214	+++++ 0.0224	+++++ 0.0204	0.0227 0.0189	Lin2	0.0106	0.0209			0.0200				0.9960		0.9900
cis-1,2-Dichloroethene	+++++ 0.2853	0.4356 0.2904	0.3761 0.2853	0.3459 0.2778	0.2862 0.2782	Lin2	0.0161	0.2841			0.1000				0.9980		0.9900
Chlorobromomethane	+++++ 0.1614	0.1432 0.1623	0.1701 0.1612	0.1594 0.1570	0.1543 0.1564	Ave		0.1584				4.6		20.0			
Chloroform	0.6963 0.4518	0.5118 0.4528	0.4583 0.4455	0.4662 0.4377	0.4366 0.4335	Lin2	0.0051	0.4439			0.2000				0.9990		0.9900
Tert-butyl ethyl ether	+++++ 0.3510	0.3328 0.3554	0.3509 0.3524	0.3366 0.3403	0.3268 0.3342	Ave		0.3423				3.0		20.0			
2,2-Dichloropropane	+++++ 0.2389	+++++ 0.2237	+++++ 0.2020	0.2362 0.1950	0.2399 0.1971	Ave		0.2190				9.3		20.0			
1,2-Dichloroethane	+++++ 0.3181	0.5421 0.3134	0.4092 0.3148	0.3585 0.3031	0.3279 0.3014	Lin2	0.0229	0.3063			0.1000				0.9990		0.9900
1,1,1-Trichloroethane	0.4020 0.3587	0.3455 0.3472	0.3495 0.3461	0.3397 0.3451	0.3406 0.3563	Lin2	0.0011	0.3457			0.1000				0.9990		0.9900
1,1-Dichloropropene	+++++ 0.3705	0.3718 0.3661	0.3577 0.3667	0.3669 0.3624	0.3635 0.3594	Ave		0.3650				1.3		20.0			
Carbon tetrachloride	0.3193 0.3315	0.3237 0.3278	0.3158 0.3303	0.3182 0.3272	0.3190 0.3319	Lin2	0	0.3255			0.1000				1.0000		0.9900
Benzene	1.2948 1.0433	1.1203 1.0434	1.0423 1.0289	1.0348 0.9853	1.0194 0.9457	Lin2	0.0058	1.0161			0.5000				0.9990		0.9900
Tert-amyl methyl ether	0.6505 0.6967	0.7261 0.7090	0.6560 0.7002	0.6511 0.6865	0.6406 0.6574	Ave		0.6774				4.4		20.0			
Dibromomethane	+++++ 0.1469	0.1256 0.1493	0.1409 0.1480	0.1385 0.1417	0.1400 0.1399	Lin2	-0.002	0.1449							0.9990		0.9900

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Seattle Job No.: 580-66304-1 Analy Batch No.: 238604

SDG No.:

Instrument ID: TAC048 GC Column: DB-VRX ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/16/2017 16:12 Calibration End Date: 02/16/2017 20:05 Calibration ID: 24515

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10		B	M1	M2								
1,2-Dichloropropane	0.2511 0.2655	0.2507 0.2667	0.2610 0.2652	0.2576 0.2599	0.2462 0.2588	Ave		0.2583			0.1000	2.7		20.0			
Trichloroethene	0.2511 0.2855	0.2702 0.2862	0.2775 0.2794	0.2783 0.2724	0.2745 0.2755	Lin2	-0.001	0.2790			0.2000				1.0000		0.9900
Dichlorobromomethane	0.2617 0.3284	0.3311 0.3237	0.3207 0.3348	0.3274 0.3214	0.3158 0.3240	Lin2	-0.001	0.3275			0.2000				0.9990		0.9900
2-Chloroethyl vinyl ether	+++++ 0.1770	0.1655 0.1790	0.1706 0.1883	0.1818 0.1810	0.1653 0.1856	Ave		0.1771				4.7		20.0			
cis-1,3-Dichloropropene	+++++ 0.5592	0.5446 0.5591	0.5373 0.5572	0.5423 0.5474	0.5240 0.5535	Lin1	-0.003	0.5527			0.2000				1.0000		0.9900
4-Methyl-2-pentanone (MIBK)	+++++ 0.0953	+++++ 0.0978	+++++ 0.0979	0.0919 0.0924	0.0866 0.0935	Ave		0.0936			0.0600	4.2		20.0			
trans-1,3-Dichloropropene	0.5192 0.4800	0.4627 0.4818	0.4603 0.4838	0.4723 0.4729	0.4455 0.4772	Lin2	0.0009	0.4694			0.1000				0.9990		0.9900
1,1,2-Trichloroethane	+++++ 0.2507	0.2511 0.2538	0.2556 0.2520	0.2565 0.2431	0.2420 0.2485	Ave		0.2504			0.1000	2.0		20.0			
Toluene	1.6110 1.4589	1.4643 1.4190	1.4173 1.3974	1.4204 1.3314	1.3781 1.2769	Lin2	0.0047	1.3852			0.4000				0.9990		0.9900
1,3-Dichloropropane	+++++ 0.4772	0.4591 0.4732	0.4710 0.4660	0.4587 0.4482	0.4408 0.4611	Ave		0.4617				2.6		20.0			
2-Hexanone	+++++ 0.0922	+++++ 0.0962	0.0748 0.0971	0.0843 0.0904	0.0801 0.0903	Lin2	-0.018	0.0922			0.0600				0.9970		0.9900
Chlorodibromomethane	0.2016 0.3075	0.2809 0.3141	0.2809 0.3169	0.2953 0.3084	0.2883 0.3145	Lin2	-0.002	0.3055			0.1000				0.9990		0.9900
Ethylene Dibromide	0.2561 0.2569	0.2575 0.2584	0.2521 0.2568	0.2515 0.2468	0.2416 0.2503	Lin1	0.0003	0.2509			0.1000				1.0000		0.9900
Tetrachloroethene	0.2772 0.2796	0.2887 0.2731	0.2692 0.2729	0.2761 0.2692	0.2728 0.2753	Lin2	0.0001	0.2748			0.2000				1.0000		0.9900
1,1,1,2-Tetrachloroethane	+++++ 0.3259	0.3704 0.3266	0.3200 0.3251	0.3227 0.3130	0.3068 0.3096	Lin2	0.0045	0.3151							0.9980		0.9900
Chlorobenzene	1.1291 0.9392	0.9470 0.9322	0.9142 0.9208	0.9326 0.8821	0.9120 0.8597	Lin2	0.0044	0.9064			0.5000				0.9990		0.9900
Ethylbenzene	1.7915 1.6219	1.6264 1.6044	1.5767 1.5902	1.5612 1.4969	1.5459 1.3822	Lin2	0.0051	1.5447			0.1000				0.9980		0.9900
m-Xylene & p-Xylene	1.4578 1.2505	1.2504 1.2471	1.2301 1.2441	1.1975 1.1967	1.1809 1.1476	Lin2	0.0050	1.2059			0.1000				0.9990		0.9900
Bromoform	+++++ 0.1946	0.1652 0.1946	0.1578 0.2040	0.1804 0.1964	0.1729 0.1897	Lin2	-0.004	0.1915			0.1000				0.9970		0.9900
Styrene	0.8781 0.9884	0.9528 0.9931	0.9126 0.9982	0.9031 0.9428	0.8956 0.8936	Lin2	-0.001	0.9452			0.3000				0.9980		0.9900

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Seattle Job No.: 580-66304-1 Analy Batch No.: 238604

SDG No.:

Instrument ID: TAC048 GC Column: DB-VRX ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/16/2017 16:12 Calibration End Date: 02/16/2017 20:05 Calibration ID: 24515

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10		B	M1	M2								
o-Xylene	1.4225 1.2957	1.2831 1.2925	1.2285 1.2825	1.2167 1.2008	1.2440 1.0998	Lin2	0.0039	1.2301			0.3000				0.9980		0.9900
1,1,2,2-Tetrachloroethane	0.5134 0.5508	0.5975 0.5492	0.5390 0.5618	0.5714 0.5495	0.5402 0.5378	Ave		0.5511			0.3000	4.1		20.0			
trans-1,4-Dichloro-2-butene	+++++ 0.1733	+++++ 0.1789	+++++ 0.1817	0.1689 0.1796	0.1547 0.1878	Ave		0.1750				6.2		20.0			
1,2,3-Trichloropropane	+++++ 0.1785	+++++ 0.1747	0.1416 0.1764	0.1828 0.1738	0.1688 0.1853	Lin2	-0.006	0.1793							0.9970		0.9900
Isopropylbenzene	+++++ 1.6157	1.5514 1.5983	1.5181 1.5741	1.5221 1.4366	1.5114 1.2613	Lin2	0.0056	1.4982			0.1000				0.9940		0.9900
Bromobenzene	+++++ 0.7629	0.7830 0.7700	0.7645 0.7611	0.7621 0.7605	0.7368 0.8049	Ave		0.7673				2.4		20.0			
N-Propylbenzene	+++++ 3.7042	3.8469 3.7540	3.5632 3.6618	3.7393 3.4611	3.5839 3.2907	Ave		3.6228				4.7		20.0			
2-Chlorotoluene	0.7912 0.7390	0.7324 0.7440	0.6908 0.7317	0.7635 0.7223	0.7144 0.7452	Lin2	0.0011	0.7296							0.9990		0.9900
4-Chlorotoluene	0.8032 0.7601	0.7904 0.7711	0.7182 0.7622	0.7792 0.7544	0.7198 0.7806	Lin2	0.0009	0.7576							0.9990		0.9900
1,3,5-Trimethylbenzene	+++++ 2.5532	2.6462 2.5858	2.4253 2.5486	2.4595 2.4308	2.4060 2.3455	Ave		2.4890				4.0		20.0			
tert-Butylbenzene	3.2210 2.2068	2.2076 2.2373	2.1994 2.1922	2.2039 2.0972	2.1129 2.0463	Lin2	0.0213	2.1255							0.9990		0.9900
1,2,4-Trimethylbenzene	3.1707 2.6103	2.6334 2.6531	2.5273 2.5999	2.5241 2.4790	2.4946 2.3907	Lin2	0.0128	2.5201							0.9990		0.9900
sec-Butylbenzene	+++++ 3.3608	3.4868 3.3828	3.2619 3.2946	3.2795 3.0632	3.1188 2.8871	Ave		3.2373				5.7		20.0			
1,3-Dichlorobenzene	+++++ 1.4337	1.5278 1.4363	1.3930 1.4108	1.4437 1.3765	1.3513 1.3664	Ave		1.4155			0.6000	3.8		20.0			
4-Isopropyltoluene	4.9906 2.8524	2.9696 2.8570	2.7919 2.7647	2.8091 2.5605	2.6583 2.3806	Lin2	0.0463	2.6449							0.9960		0.9900
1,4-Dichlorobenzene	+++++ 1.4376	1.5216 1.4509	1.4239 1.4118	1.4273 1.3542	1.4189 1.2962	Ave		1.4158			0.5000	4.4		20.0			
1,2-Dichlorobenzene	+++++ 1.3050	1.2435 1.2977	1.2450 1.2712	1.2243 1.2402	1.2631 1.2222	Ave		1.2569			0.4000	2.4		20.0			
n-Butylbenzene	+++++ 0.6946	0.8258 0.6944	0.7196 0.6793	0.7125 0.6659	0.6430 0.6545	Lin1	0.0165	0.6643							1.0000		0.9900
1,2-Dibromo-3-Chloropropane	+++++ 0.1017	+++++ 0.1041	+++++ 0.0997	0.0957 0.1002	0.0964 0.0946	Ave		0.0989			0.0500	3.5		20.0			
1,3,5-Trichlorobenzene	1.0911 0.8742	0.8415 0.8498	0.8633 0.7994	0.7626 0.8000	0.7838 0.7946	Lin2	0.0056	0.8077							0.9980		0.9900

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Seattle Job No.: 580-66304-1 Analy Batch No.: 238604

SDG No.:

Instrument ID: TAC048 GC Column: DB-VRX ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/16/2017 16:12 Calibration End Date: 02/16/2017 20:05 Calibration ID: 24515

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10		B	M1	M2								
1,2,4-Trichlorobenzene	+++++ 0.5724	+++++ 0.5658	0.5141 0.5257	0.4549 0.5584	0.4891 0.5469	Lin2	-0.013	0.5423			0.2000				0.9950		0.9900
Naphthalene	+++++ 0.9654	+++++ 0.9902	+++++ 0.9150	0.7073 0.9986	0.7989 0.9342	Lin1	-0.101	0.9572							0.9990		0.9900
Hexachlorobutadiene	+++++ 0.3366	0.4366 0.3303	0.3781 0.3057	0.3224 0.3083	0.2990 0.3357	Lin2	0.0117	0.3147							0.9960		0.9900
1,2,3-Trichlorobenzene	+++++ 0.3305	+++++ 0.3348	+++++ 0.2907	0.2488 0.3351	0.2662 0.3101	Lin1	-0.027	0.3173							0.9970		0.9900
Dibromofluoromethane (Surr)	0.2455 0.2442	0.2427 0.2452	0.2439 0.2442	0.2427 0.2421	0.2462 0.2425	Ave		0.2439				0.6		20.0			
1,2-Dichloroethane-d4 (Surr)	0.2812 0.2817	0.2799 0.2822	0.2859 0.2810	0.2881 0.2748	0.2832 0.2730	Ave		0.2811				1.6		20.0			
Trifluorotoluene (Surr)	1.2559 1.1856	1.2330 1.1946	1.1992 1.1885	1.2629 1.2656	1.2150 +++++	Ave		1.2223				2.7		20.0			
Toluene-d8 (Surr)	1.2820 1.2878	1.2826 1.2673	1.2754 1.2717	1.2833 1.2771	1.2784 1.3161	Ave		1.2822				1.0		20.0			
4-Bromofluorobenzene (Surr)	0.4029 0.4072	0.4038 0.4066	0.4060 0.4098	0.3989 0.3974	0.4069 0.3810	Ave		0.4020				2.1		20.0			

Note: The m1 coefficient is the same as Ave RRF for an Ave curve type.

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Seattle Job No.: 580-66304-1 Analy Batch No.: 238604

SDG No.:

Instrument ID: TAC048 GC Column: DB-VRX ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/16/2017 16:12 Calibration End Date: 02/16/2017 20:05 Calibration ID: 24515

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	STD0.02 580-238604/2	B162017002.D
Level 2	STD0.1 580-238604/3	B162017003.D
Level 3	STD0.2 580-238604/4	B162017004.D
Level 4	STD0.4 580-238604/5	B162017005.D
Level 5	STD001 580-238604/6	B162017006.D
Level 6	STD005 580-238604/7	B162017007.D
Level 7	ICIS 580-238604/8	B162017008.D
Level 8	STD025 580-238604/9	B162017009.D
Level 9	STD050 580-238604/10	B162017010.D
Level 10	STD080 580-238604/11	B162017011.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10
Dichlorodifluoromethane	FB	Ave	+++++ 82603	1627 164777	3259 410455	6977 799705	15879 1354806	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Chloromethane	FB	Lin2	1502 110917	3094 221219	5189 532951	9462 1064455	22577 1741502	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Vinyl chloride	FB	Lin2	325 114425	2237 234928	4491 583229	9306 1175405	23282 1897122	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Bromomethane	FB	Lin1	+++++ 64122	+++++ 131438	+++++ 321670	+++++ 638481	12790 1069535	+++++ 5.00	+++++ 10.0	+++++ 25.0	+++++ 50.0	1.00 80.0
Chloroethane	FB	Lin2	+++++ 18853	+++++ 37566	+++++ 88173	1245 185040	3620 302259	+++++ 5.00	+++++ 10.0	+++++ 25.0	0.400 50.0	1.00 80.0
Acrolein	FB	Lin1	+++++ 51314	+++++ 99470	+++++ 241986	+++++ 461125	10230 765450	+++++ 30.0	+++++ 60.0	+++++ 150	+++++ 300	6.00 480
Trichlorofluoromethane	FB	Qua2	+++++ 80291	+++++ 168797	+++++ 444386	5253 967472	14788 1853025	+++++ 5.00	+++++ 10.0	+++++ 25.0	0.400 50.0	1.00 80.0
Acetone	FB	Ave	+++++ 79489	+++++ 140447	+++++ 347774	7132 596900	16869 963275	+++++ 25.0	+++++ 50.0	+++++ 125	2.00 250	5.00 400
2-Methyl-2-propanol	FB	Ave	+++++ 55262	+++++ 108011	1897 257539	4028 452534	11029 689790	+++++ 50.0	+++++ 100	2.00 250	4.00 500	10.0 800
1,1-Dichloroethene	FB	Lin2	+++++ 86323	2740 172912	4647 439295	7945 867688	18241 1365809	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Acrylonitrile	FB	Lin2	552 210763	3515 404977	6455 984453	13787 1863630	38178 2911603	0.200 50.0	1.00 100	2.00 250	4.00 500	10.0 800
Iodomethane	FB	Ave	+++++ 133026	+++++ 267059	4983 660480	10468 1334299	25794 2148794	+++++ 5.00	+++++ 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Methylene Chloride	FB	Lin2	+++++ 91604	+++++ 181503	+++++ 444155	9084 888623	19769 1442473	+++++ 5.00	+++++ 10.0	+++++ 25.0	0.400 50.0	1.00 80.0
1,1,2-Trichloro-1,2,2-trifluoroethane	FB	Ave	+++++ 61664	1205 126143	2417 320655	4780 632946	12299 1024492	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Seattle Job No.: 580-66304-1 Analy Batch No.: 238604

SDG No.:

Instrument ID: TAC048 GC Column: DB-VRX ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/16/2017 16:12 Calibration End Date: 02/16/2017 20:05 Calibration ID: 24515

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10
Carbon disulfide	FB	Ave	1097 278818	5007 560048	10397 1367457	21313 2774022	55494 4645444	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
trans-1,2-Dichloroethene	FB	Lin2	+++++ 85900	+++++ 175322	4669 430750	7939 869110	17613 1418336	+++++ 5.00	+++++ 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Methyl tert-butyl ether	FB	Lin2	+++++ 221571	4350 449056	8513 1109051	15721 2215746	41414 3573565	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
1,1-Dichloroethane	FB	Ave	+++++ 156809	3029 318769	5939 780209	11935 1571212	30686 2538031	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Vinyl acetate	FB	Ave	+++++ 29315	+++++ 55165	1066 164843	2427 321496	5870 438384	+++++ 12.5	+++++ 25.0	0.500 62.5	1.00 125	2.50 200
Hexane	FB	Lin2	895 138341	2951 281683	5482 690523	11095 1364032	24988 2187893	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
2-Butanone (MEK)	FB	Lin2	+++++ 37178	+++++ 72648	+++++ 185740	+++++ 347949	7552 528395	+++++ 25.0	+++++ 50.0	+++++ 125	+++++ 250	5.00 400
cis-1,2-Dichloroethene	FB	Lin2	+++++ 94631	2784 197379	4765 473709	8855 947779	19026 1555380	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Chlorobromomethane	FB	Ave	+++++ 53522	915 110316	2155 267632	4081 535761	10258 874393	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Chloroform	FB	Lin2	918 149878	3271 307725	5807 739635	11933 1493333	29024 2423915	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Tert-butyl ethyl ether	FB	Ave	+++++ 145554	2659 301959	5557 731194	10769 1451195	27158 2335820	+++++ 6.25	0.125 12.5	0.250 31.3	0.500 62.5	1.25 100
2,2-Dichloropropane	FB	Ave	+++++ 79232	+++++ 152020	+++++ 335340	6047 665062	15947 1102305	+++++ 5.00	+++++ 10.0	+++++ 25.0	0.400 50.0	1.00 80.0
1,2-Dichloroethane	FB	Lin2	+++++ 105507	3465 213022	5185 522669	9176 1034011	21794 1685126	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
1,1,1-Trichloroethane	FB	Lin2	530 118968	2208 236000	4428 574559	8696 1177297	22639 1992164	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
1,1-Dichloropropene	FB	Ave	+++++ 122899	2376 248848	4532 608775	9393 1236416	24160 2009674	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Carbon tetrachloride	FB	Lin2	421 109963	2069 222806	4001 548314	8145 1116251	21205 1855718	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Benzene	FB	Lin2	1707 346055	7160 709154	13206 1708100	26488 3361244	67762 5288321	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Tert-amyl methyl ether	FB	Ave	1072 288873	5801 602307	10389 1453138	20833 2927507	53229 4594897	0.0250 6.25	0.125 12.5	0.250 31.3	0.500 62.5	1.25 100
Dibromomethane	FB	Lin2	+++++ 48719	803 101445	1785 245624	3546 483251	9307 782553	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
1,2-Dichloropropane	FB	Ave	331 88057	1602 181237	3307 440293	6594 886585	16364 1446996	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Trichloroethene	FB	Lin2	331 94708	1727 194503	3516 463864	7125 929316	18247 1540701	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Seattle Job No.: 580-66304-1 Analy Batch No.: 238604

SDG No.:

Instrument ID: TAC048 GC Column: DB-VRX ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/16/2017 16:12 Calibration End Date: 02/16/2017 20:05 Calibration ID: 24515

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10
Dichlorobromomethane	FB	Lin2	345 108942	2116 219986	4063 555786	8380 1096438	20990 1811574	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
2-Chloroethyl vinyl ether	CBNZ d5	Ave	+++++ 44890	800 94637	1665 242468	3631 472695	8382 775200	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
cis-1,3-Dichloropropene	CBNZ d5	Lin1	+++++ 141808	2633 295646	5244 717628	10832 1429410	26564 2311590	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
4-Methyl-2-pentanone (MIBK)	CBNZ d5	Ave	+++++ 120792	+++++ 258685	+++++ 630348	9174 1206000	21944 1952573	+++++ 25.0	+++++ 50.0	+++++ 125	2.00 250	5.00 400
trans-1,3-Dichloropropene	CBNZ d5	Lin2	515 121710	2237 254744	4492 623161	9435 1234863	22587 1992979	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
1,1,2-Trichloroethane	CBNZ d5	Ave	+++++ 63584	1214 134189	2494 324567	5124 634873	12270 1037740	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Toluene	CBNZ d5	Lin2	1598 369944	7080 750335	13832 1799865	28373 3476857	69865 5332658	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
1,3-Dichloropropane	CBNZ d5	Ave	+++++ 121003	2220 250192	4597 600257	9162 1170563	22344 1925751	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
2-Hexanone	CBNZ d5	Lin2	+++++ 116868	+++++ 254207	3648 625383	8423 1180412	20296 1885513	+++++ 25.0	+++++ 50.0	1.00 125	2.00 250	5.00 400
Chlorodibromomethane	CBNZ d5	Lin2	200 77970	1358 166103	2741 408187	5899 805429	14613 1313538	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Ethylene Dibromide	CBNZ d5	Lin1	254 65152	1245 136656	2460 330814	5023 644618	12246 1045320	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Tetrachloroethene	CBNZ d5	Lin2	275 70901	1396 144402	2627 351541	5515 703124	13830 1149702	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
1,1,1,2-Tetrachloroethane	CBNZ d5	Lin2	+++++ 82651	1791 172694	3123 418743	6446 817396	15552 1293145	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Chlorobenzene	CBNZ d5	Lin2	1120 238159	4579 492900	8922 1185920	18629 2303624	46235 3590491	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Ethylbenzene	CBNZ d5	Lin2	1777 411280	7864 848347	15387 2048203	31186 3909137	78368 5772437	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
m-Xylene & p-Xylene	CBNZ d5	Lin2	1446 317089	6046 659449	12005 1602431	23920 3125096	59864 4792718	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Bromoform	CBNZ d5	Lin2	+++++ 49336	799 102923	1540 262716	3604 512835	8765 792135	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Styrene	CBNZ d5	Lin2	871 250647	4607 525095	8906 1285699	18039 2462048	45404 3731885	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
o-Xylene	CBNZ d5	Lin2	1411 328556	6204 683448	11989 1651813	24304 3135832	63065 4593304	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
1,1,2,2-Tetrachloroethane	DCBd 4	Ave	255 72916	1452 148532	2699 372585	5568 697572	13997 965269	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
trans-1,4-Dichloro-2-butene	DCBd 4	Ave	+++++ 22940	+++++ 48374	+++++ 120485	1646 227977	4009 337015	+++++ 5.00	+++++ 10.0	+++++ 25.0	0.400 50.0	1.00 80.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Seattle Job No.: 580-66304-1 Analy Batch No.: 238604

SDG No.:

Instrument ID: TAC048 GC Column: DB-VRX ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/16/2017 16:12 Calibration End Date: 02/16/2017 20:05 Calibration ID: 24515

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10
1,2,3-Trichloropropane	DCBd 4	Lin2	+++++ 23628	+++++ 47250	709 116977	1781 220586	4373 332556	+++++ 5.00	+++++ 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Isopropylbenzene	CBNZ d5	Lin2	+++++ 409714	7501 845129	14815 2027407	30404 3751515	76621 5267658	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Bromobenzene	DCBd 4	Ave	+++++ 100985	1903 208242	3828 504751	7426 965439	19092 1444707	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
N-Propylbenzene	DCBd 4	Ave	+++++ 490331	9349 1015215	17842 2428474	36435 4393642	92868 5906274	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
2-Chlorotoluene	DCBd 4	Lin2	393 97819	1780 201197	3459 485252	7439 916984	18512 1337425	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
4-Chlorotoluene	DCBd 4	Lin2	399 100621	1921 208543	3596 505504	7592 957615	18651 1401091	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
1,3,5-Trimethylbenzene	DCBd 4	Ave	+++++ 337972	6431 699298	12144 1690209	23965 3085831	62346 4209736	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
tert-Butylbenzene	DCBd 4	Lin2	1600 292115	5365 605063	11013 1453859	21474 2662264	54751 3672685	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
1,2,4-Trimethylbenzene	DCBd 4	Lin2	1575 345527	6400 717512	12655 1724213	24594 3146950	64643 4290923	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
sec-Butylbenzene	DCBd 4	Ave	+++++ 444877	8474 914849	16333 2184924	31955 3888540	80817 5181813	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
1,3-Dichlorobenzene	DCBd 4	Ave	+++++ 189785	3713 388442	6975 935620	14067 1747381	35015 2452544	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
4-Isopropyltoluene	DCBd 4	Lin2	2479 377581	7217 772644	13980 1833514	27371 3250455	68883 4272741	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
1,4-Dichlorobenzene	DCBd 4	Ave	+++++ 190302	3698 392382	7130 936265	13907 1719113	36768 2326492	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
1,2-Dichlorobenzene	DCBd 4	Ave	+++++ 172750	3022 350950	6234 843016	11929 1574340	32731 2193572	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
n-Butylbenzene	DCBd 4	Lin1	+++++ 91940	2007 187794	3603 450530	6942 845276	16663 1174798	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
1,2-Dibromo-3-Chloropropane	DCBd 4	Ave	+++++ 13468	+++++ 28148	+++++ 66097	932 127170	2498 169714	+++++ 5.00	+++++ 10.0	+++++ 25.0	0.400 50.0	1.00 80.0
1,3,5-Trichlorobenzene	DCBd 4	Lin2	542 115719	2045 229825	4323 530134	7431 1015609	20311 1426106	0.0200 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
1,2,4-Trichlorobenzene	DCBd 4	Lin2	+++++ 75768	+++++ 153025	2574 348611	4432 708806	12675 981528	+++++ 5.00	+++++ 10.0	0.200 25.0	0.400 50.0	1.00 80.0
Naphthalene	DCBd 4	Lin1	+++++ 127795	+++++ 267796	+++++ 606815	6892 1267630	20701 1676792	+++++ 5.00	+++++ 10.0	+++++ 25.0	0.400 50.0	1.00 80.0
Hexachlorobutadiene	DCBd 4	Lin2	+++++ 44557	1061 89323	1893 202745	3141 391417	7747 602512	+++++ 5.00	0.100 10.0	0.200 25.0	0.400 50.0	1.00 80.0
1,2,3-Trichlorobenzene	DCBd 4	Lin1	+++++ 43752	+++++ 90544	+++++ 192794	2424 425357	6898 556607	+++++ 5.00	+++++ 10.0	+++++ 25.0	0.400 50.0	1.00 80.0

FORM VI
GC/MS VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Seattle Job No.: 580-66304-1 Analy Batch No.: 238604

SDG No.:

Instrument ID: TAC048 GC Column: DB-VRX ID: 0.25(mm) Heated Purge: (Y/N) N

Calibration Start Date: 02/16/2017 16:12 Calibration End Date: 02/16/2017 20:05 Calibration ID: 24515

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/L)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3 LVL 8	LVL 4 LVL 9	LVL 5 LVL 10
Dibromofluoromethane (Surr)	FB	Ave	394470	378141	376610	378636	398855	24.4	24.4	24.4	24.4	24.4
			394825	406136	395225	402624	413114	24.4	24.4	24.4	24.4	24.4
1,2-Dichloroethane-d4 (Surr)	FB	Ave	451812	435968	441535	449388	458888	24.4	24.4	24.4	24.4	24.4
			455518	467455	454810	457053	465113	24.4	24.4	24.4	24.4	24.4
Trifluorotoluene (Surr)	DCBd 4	Ave	779526	748819	750282	768801	786812	25.0	25.0	25.0	25.0	25.0
			784397	807340	787868	803016	+++++	25.0	25.0	25.0	25.0	+++++
Toluene-d8 (Surr)	CBNZ d5	Ave	1549758	1511671	1516970	1562065	1579765	24.4	24.4	24.4	24.4	24.4
			1591987	1633387	1596941	1625779	1674734	24.4	24.4	24.4	24.4	24.4
4-Bromofluorobenzene (Surr)	CBNZ d5	Ave	487074	475940	482907	485601	502799	24.4	24.4	24.4	24.4	24.4
			503333	523997	514621	505956	484764	24.4	24.4	24.4	24.4	24.4

Curve Type Legend:

Ave = Average ISTD
Lin1 = Linear 1/conc ISTD
Lin2 = Linear 1/conc^2 ISTD
Qua2 = Quadratic 1/conc^2 ISTD

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab Sample ID: ICV 580-238604/14 Calibration Date: 02/16/2017 21:23

Instrument ID: TAC048 Calib Start Date: 02/16/2017 16:12

GC Column: DB-VRX ID: 0.25(mm) Calib End Date: 02/16/2017 20:05

Lab File ID: B162017014.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Ave	0.2487	0.2925	0.1000	11.8	10.0	17.6	30.0
Chloromethane	Lin2		0.3368	0.1000	10.4	10.0	4.1	30.0
Vinyl chloride	Lin2		0.3555	0.1000	10.1	10.0	0.8	30.0
Bromomethane	Lin1		0.1854	0.1000	9.70	10.0	-3.0	30.0
Chloroethane	Lin2		0.0583*	0.0600	10.6	10.0	6.3	30.0
Acrolein	Lin1		0.0266		67.9	60.0	13.2	30.0
Trichlorofluoromethane	Qua2		0.2734	0.1000	11.0	10.0	10.1	30.0
Acetone	Ave	0.0439	0.0444	0.0200	50.6	50.0	1.2	30.0
2-Methyl-2-propanol	Ave	0.0151	0.0159		105	100	5.1	30.0
1,1-Dichloroethene	Lin2		0.2551	0.1000	9.85	10.0	-1.5	30.0
Acrylonitrile	Lin2		0.0607		107	100	6.6	30.0
Iodomethane	Ave	0.3947	0.4085		10.3	10.0	3.5	30.0
Methylene Chloride	Lin2		0.2669	0.1000	10.0	10.0	0.2	30.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	0.1872	0.1887	0.1000	10.1	10.0	0.8	30.0
Carbon disulfide	Ave	0.8236	0.8400	0.1000	10.2	10.0	2.0	30.0
trans-1,2-Dichloroethene	Lin2		0.2680	0.1000	10.5	10.0	4.8	30.0
Methyl tert-butyl ether	Lin2		0.6722	0.1000	10.4	10.0	3.8	30.0
1,1-Dichloroethane	Ave	0.4663	0.4688	0.2000	10.1	10.0	0.5	30.0
Vinyl acetate	Ave	0.0354	0.0307		21.6	25.0	-13.5	30.0
Hexane	Lin2		0.4035		9.97	10.0	-0.3	30.0
2-Butanone (MEK)	Lin2		0.0219	0.0200	52.0	50.0	3.9	30.0
cis-1,2-Dichloroethene	Lin2		0.2877	0.1000	10.1	10.0	0.7	30.0
Chlorobromomethane	Ave	0.1584	0.1627		10.3	10.0	2.7	30.0
Chloroform	Lin2		0.4454	0.2000	10.0	10.0	0.2	30.0
Tert-butyl ethyl ether	Ave	0.3423	0.3481		12.7	12.5	1.7	30.0
2,2-Dichloropropane	Ave	0.2190	0.1960		8.95	10.0	-10.5	30.0
1,2-Dichloroethane	Lin2		0.3160	0.1000	10.2	10.0	2.4	30.0
1,1,1-Trichloroethane	Lin2		0.3566	0.1000	10.3	10.0	3.1	30.0
1,1-Dichloropropene	Ave	0.3650	0.3817		10.5	10.0	4.6	30.0
Carbon tetrachloride	Lin2		0.3288	0.1000	10.1	10.0	1.0	30.0
Benzene	Lin2		1.043	0.5000	10.3	10.0	2.6	30.0
Tert-amyl methyl ether	Ave	0.6774	0.7096		13.1	12.5	4.7	30.0
Dibromomethane	Lin2		0.1483		10.3	10.0	2.5	30.0
1,2-Dichloropropane	Ave	0.2583	0.2653	0.1000	10.3	10.0	2.7	30.0
Trichloroethene	Lin2		0.2872	0.2000	10.3	10.0	3.0	30.0
Dichlorobromomethane	Lin2		0.3311	0.2000	10.1	10.0	1.1	30.0
2-Chloroethyl vinyl ether	Ave	0.1771	0.1805		10.2	10.0	1.9	30.0
cis-1,3-Dichloropropene	Lin1		0.5461	0.2000	9.89	10.0	-1.1	30.0
4-Methyl-2-pentanone (MIBK)	Ave	0.0936	0.0951	0.0600	50.8	50.0	1.6	30.0
trans-1,3-Dichloropropene	Lin2		0.4620	0.1000	9.84	10.0	-1.6	30.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab Sample ID: ICV 580-238604/14 Calibration Date: 02/16/2017 21:23

Instrument ID: TAC048 Calib Start Date: 02/16/2017 16:12

GC Column: DB-VRX ID: 0.25(mm) Calib End Date: 02/16/2017 20:05

Lab File ID: B162017014.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,1,2-Trichloroethane	Ave	0.2504	0.2557	0.1000	10.2	10.0	2.1	30.0
Toluene	Lin2		1.411	0.4000	10.2	10.0	1.8	30.0
1,3-Dichloropropane	Ave	0.4617	0.4606		9.98	10.0	-0.2	30.0
2-Hexanone	Lin2		0.0928	0.0600	50.5	50.0	1.0	30.0
Chlorodibromomethane	Lin2		0.3105	0.1000	10.2	10.0	1.7	30.0
Ethylene Dibromide	Lin1		0.2547	0.1000	10.2	10.0	1.5	30.0
Tetrachloroethene	Lin2		0.2710	0.2000	9.86	10.0	-1.4	30.0
1,1,1,2-Tetrachloroethane	Lin2		0.3302		10.5	10.0	4.7	30.0
Chlorobenzene	Lin2		0.9253	0.5000	10.2	10.0	2.0	30.0
Ethylbenzene	Lin2		1.593	0.1000	10.3	10.0	3.1	30.0
m-Xylene & p-Xylene	Lin2		1.234	0.1000	10.2	10.0	2.2	30.0
Bromoform	Lin2		0.1933	0.1000	10.1	10.0	1.1	30.0
Styrene	Lin2		1.002	0.3000	10.6	10.0	6.0	30.0
o-Xylene	Lin2		1.281	0.3000	10.4	10.0	4.1	30.0
1,1,2,2-Tetrachloroethane	Ave	0.5511	0.5408	0.3000	9.81	10.0	-1.9	30.0
trans-1,4-Dichloro-2-butene	Ave	0.1750	0.1781		10.2	10.0	1.8	30.0
1,2,3-Trichloropropane	Lin2		0.1807		10.1	10.0	1.1	30.0
Isopropylbenzene	Lin2		1.577	0.1000	10.5	10.0	5.2	30.0
Bromobenzene	Ave	0.7673	0.7636		9.95	10.0	-0.5	30.0
N-Propylbenzene	Ave	3.623	3.693		10.2	10.0	1.9	30.0
2-Chlorotoluene	Lin2		0.7374		10.1	10.0	1.1	30.0
4-Chlorotoluene	Lin2		0.7719		10.2	10.0	1.9	30.0
1,3,5-Trimethylbenzene	Ave	2.489	2.555		10.3	10.0	2.6	30.0
tert-Butylbenzene	Lin2		2.220		10.4	10.0	4.3	30.0
1,2,4-Trimethylbenzene	Lin2		2.581		10.2	10.0	2.4	30.0
sec-Butylbenzene	Ave	3.237	3.303		10.2	10.0	2.0	30.0
1,3-Dichlorobenzene	Ave	1.416	1.417	0.6000	10.0	10.0	0.0	30.0
4-Isopropyltoluene	Lin2		2.776		10.5	10.0	4.8	30.0
1,4-Dichlorobenzene	Ave	1.416	1.452	0.5000	10.3	10.0	2.5	30.0
1,2-Dichlorobenzene	Ave	1.257	1.290	0.4000	10.3	10.0	2.7	30.0
n-Butylbenzene	Lin1		0.6723		10.1	10.0	0.9	30.0
1,2-Dibromo-3-Chloropropane	Ave	0.0989	0.1008	0.0500	10.2	10.0	2.0	30.0
1,3,5-Trichlorobenzene	Lin2		0.8062		9.97	10.0	-0.3	30.0
1,2,4-Trichlorobenzene	Lin2		0.5139	0.2000	9.50	10.0	-5.0	30.0
Naphthalene	Lin1		0.8771		9.27	10.0	-7.3	30.0
Hexachlorobutadiene	Lin2		0.3169		10.0	10.0	0.3	30.0
1,2,3-Trichlorobenzene	Lin1		0.2913		9.27	10.0	-7.3	30.0
Dibromofluoromethane (Surr)	Ave	0.2439	0.2450		24.5	24.4	0.5	30.0
1,2-Dichloroethane-d4 (Surr)	Ave	0.2811	0.2836		24.6	24.4	0.9	30.0
Trifluorotoluene (Surr)	Ave	1.222	1.207		24.7	25.0	-1.3	30.0
Toluene-d8 (Surr)	Ave	1.282	1.267		24.1	24.4	-1.2	30.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab Sample ID: ICV 580-238604/14 Calibration Date: 02/16/2017 21:23

Instrument ID: TAC048 Calib Start Date: 02/16/2017 16:12

GC Column: DB-VRX ID: 0.25(mm) Calib End Date: 02/16/2017 20:05

Lab File ID: B162017014.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
4-Bromofluorobenzene (Surr)	Ave	0.4020	0.4077		24.7	24.4	1.4	30.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCVIS 580-239330/2 Calibration Date: 02/27/2017 10:38

Instrument ID: TAC048 Calib Start Date: 02/16/2017 16:12

GC Column: DB-VRX ID: 0.25(mm) Calib End Date: 02/16/2017 20:05

Lab File ID: B272017002.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Ave	0.2487	0.1840	0.1000	7.40	10.0	-26.0*	20.0
Chloromethane	Lin2		0.3038	0.1000	9.39	10.0	-6.1	20.0
Vinyl chloride	Lin2		0.3188	0.1000	9.04	10.0	-9.6	20.0
Bromomethane	Lin1		0.1834	0.1000	9.60	10.0	-4.0	20.0
Chloroethane	Lin2		0.0567*	0.0600	10.3	10.0	3.4	20.0
Acrolein	Lin1		0.0257		65.7	60.0	9.5	20.0
Trichlorofluoromethane	Qua2		0.2990	0.1000	12.0	10.0	19.9	20.0
Acetone	Ave	0.0439	0.0477	0.0200	54.3	50.0	8.7	20.0
2-Methyl-2-propanol	Ave	0.0151	0.0149		98.7	100	-1.3	20.0
1,1-Dichloroethene	Lin2		0.2528	0.1000	9.76	10.0	-2.4	20.0
Acrylonitrile	Lin2		0.0591		104	100	3.8	20.0
Iodomethane	Ave	0.3947	0.3977		10.1	10.0	0.8	20.0
Methylene Chloride	Lin2		0.2672	0.1000	10.0	10.0	0.3	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	0.1872	0.1918	0.1000	10.2	10.0	2.5	20.0
Carbon disulfide	Ave	0.8236	0.8538	0.1000	10.4	10.0	3.7	20.0
trans-1,2-Dichloroethene	Lin2		0.2658	0.1000	10.4	10.0	4.0	20.0
Methyl tert-butyl ether	Lin2		0.6588	0.1000	10.2	10.0	1.8	20.0
1,1-Dichloroethane	Ave	0.4663	0.4879	0.2000	10.5	10.0	4.6	20.0
Vinyl acetate	Ave	0.0354	0.0406		28.6	25.0	14.6	20.0
Hexane	Lin2		0.4349		10.7	10.0	7.5	20.0
2-Butanone (MEK)	Lin2		0.0209	0.0200	49.5	50.0	-1.1	20.0
cis-1,2-Dichloroethene	Lin2		0.2957	0.1000	10.4	10.0	3.5	20.0
Chlorobromomethane	Ave	0.1584	0.1619		10.2	10.0	2.2	20.0
Chloroform	Lin2		0.4633	0.2000	10.4	10.0	4.2	20.0
Tert-butyl ethyl ether	Ave	0.3423	0.3573		13.0	12.5	4.4	20.0
2,2-Dichloropropane	Ave	0.2190	0.2659		12.1	10.0	21.4*	20.0
1,2-Dichloroethane	Lin2		0.3164	0.1000	10.3	10.0	2.6	20.0
1,1,1-Trichloroethane	Lin2		0.3691	0.1000	10.7	10.0	6.7	20.0
1,1-Dichloropropene	Ave	0.3650	0.3841		10.5	10.0	5.2	20.0
Carbon tetrachloride	Lin2		0.3413	0.1000	10.5	10.0	4.9	20.0
Benzene	Lin2		1.068	0.5000	10.5	10.0	5.0	20.0
Tert-amyl methyl ether	Ave	0.6774	0.7012		12.9	12.5	3.5	20.0
Dibromomethane	Lin2		0.1472		10.2	10.0	1.7	20.0
1,2-Dichloropropane	Ave	0.2583	0.2738	0.1000	10.6	10.0	6.0	20.0
Trichloroethene	Lin2		0.2792	0.2000	10.0	10.0	0.0	20.0
Dichlorobromomethane	Lin2		0.3345	0.2000	10.2	10.0	2.2	20.0
2-Chloroethyl vinyl ether	Ave	0.1771	0.1641		9.26	10.0	-7.4	20.0
cis-1,3-Dichloropropene	Lin1		0.5388	0.2000	9.75	10.0	-2.5	20.0
4-Methyl-2-pentanone (MIBK)	Ave	0.0936	0.0861	0.0600	46.0	50.0	-8.0	20.0
trans-1,3-Dichloropropene	Lin2		0.4575	0.1000	9.74	10.0	-2.6	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCVIS 580-239330/2 Calibration Date: 02/27/2017 10:38

Instrument ID: TAC048 Calib Start Date: 02/16/2017 16:12

GC Column: DB-VRX ID: 0.25(mm) Calib End Date: 02/16/2017 20:05

Lab File ID: B272017002.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,1,2-Trichloroethane	Ave	0.2504	0.2351	0.1000	9.39	10.0	-6.1	20.0
Toluene	Lin2		1.389	0.4000	10.0	10.0	0.3	20.0
1,3-Dichloropropane	Ave	0.4617	0.4398		9.53	10.0	-4.7	20.0
2-Hexanone	Lin2		0.0841	0.0600	45.8	50.0	-8.4	20.0
Chlorodibromomethane	Lin2		0.2943	0.1000	9.64	10.0	-3.6	20.0
Ethylene Dibromide	Lin1		0.2358	0.1000	9.40	10.0	-6.0	20.0
Tetrachloroethene	Lin2		0.2691	0.2000	9.79	10.0	-2.1	20.0
1,1,1,2-Tetrachloroethane	Lin2		0.3183		10.1	10.0	0.9	20.0
Chlorobenzene	Lin2		0.9045	0.5000	9.97	10.0	-0.3	20.0
Ethylbenzene	Lin2		1.579	0.1000	10.2	10.0	2.2	20.0
m-Xylene & p-Xylene	Lin2		1.223	0.1000	10.1	10.0	1.4	20.0
Bromoform	Lin2		0.1799	0.1000	9.41	10.0	-5.9	20.0
Styrene	Lin2		0.9675	0.3000	10.2	10.0	2.4	20.0
o-Xylene	Lin2		1.271	0.3000	10.3	10.0	3.3	20.0
1,1,2,2-Tetrachloroethane	Ave	0.5511	0.5312	0.3000	9.64	10.0	-3.6	20.0
trans-1,4-Dichloro-2-butene	Ave	0.1750	0.1611		9.21	10.0	-7.9	20.0
1,2,3-Trichloropropane	Lin2		0.1546		8.66	10.0	-13.4	20.0
Isopropylbenzene	Lin2		1.573	0.1000	10.5	10.0	4.9	20.0
Bromobenzene	Ave	0.7673	0.7256		9.46	10.0	-5.4	20.0
N-Propylbenzene	Ave	3.623	3.607		9.96	10.0	-0.4	20.0
2-Chlorotoluene	Lin2		0.7107		9.74	10.0	-2.6	20.0
4-Chlorotoluene	Lin2		0.7371		9.73	10.0	-2.7	20.0
1,3,5-Trimethylbenzene	Ave	2.489	2.495		10.0	10.0	0.2	20.0
tert-Butylbenzene	Lin2		2.156		10.1	10.0	1.4	20.0
1,2,4-Trimethylbenzene	Lin2		2.571		10.2	10.0	2.0	20.0
sec-Butylbenzene	Ave	3.237	3.300		10.2	10.0	1.9	20.0
1,3-Dichlorobenzene	Ave	1.416	1.380	0.6000	9.75	10.0	-2.5	20.0
4-Isopropyltoluene	Lin2		2.807		10.6	10.0	6.0	20.0
1,4-Dichlorobenzene	Ave	1.416	1.391	0.5000	9.83	10.0	-1.7	20.0
1,2-Dichlorobenzene	Ave	1.257	1.235	0.4000	9.82	10.0	-1.8	20.0
n-Butylbenzene	Lin1		0.6913		10.4	10.0	3.8	20.0
1,2-Dibromo-3-Chloropropane	Ave	0.0989	0.0892	0.0500	9.02	10.0	-9.8	20.0
1,3,5-Trichlorobenzene	Lin2		0.8880		11.0	10.0	9.9	20.0
1,2,4-Trichlorobenzene	Lin2		0.6168	0.2000	11.4	10.0	14.0	20.0
Naphthalene	Lin1		0.9916		10.5	10.0	4.6	20.0
Hexachlorobutadiene	Lin2		0.3536		11.2	10.0	12.0	20.0
1,2,3-Trichlorobenzene	Lin1		0.3708		11.8	10.0	17.7	20.0
Dibromofluoromethane (Surr)	Ave	0.2439	0.2487		24.8	24.4	1.9	20.0
1,2-Dichloroethane-d4 (Surr)	Ave	0.2811	0.2780		24.1	24.4	-1.1	20.0
Trifluorotoluene (Surr)	Ave	1.222	1.143		23.4	25.0	-6.4	20.0
Toluene-d8 (Surr)	Ave	1.282	1.240		23.6	24.4	-3.3	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCVIS 580-239330/2 Calibration Date: 02/27/2017 10:38

Instrument ID: TAC048 Calib Start Date: 02/16/2017 16:12

GC Column: DB-VRX ID: 0.25(mm) Calib End Date: 02/16/2017 20:05

Lab File ID: B272017002.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
4-Bromofluorobenzene (Surr)	Ave	0.4020	0.4096		24.8	24.4	1.9	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCVL 580-239330/3 Calibration Date: 02/27/2017 11:04

Instrument ID: TAC048 Calib Start Date: 02/16/2017 16:12

GC Column: DB-VRX ID: 0.25(mm) Calib End Date: 02/16/2017 20:05

Lab File ID: B272017003.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Ave	0.2487	0.1762	0.1000	0.142	0.200	-29.2	
Chloromethane	Lin2		0.4454	0.1000	0.226	0.200	12.9	
Vinyl chloride	Lin2		0.3390	0.1000	0.198	0.200	-1.1	
Bromomethane	Lin1		0.1744	0.1000		0.200	-25.5	
Chloroethane	Lin2		0.0648	0.0600	0.276	0.200	38.1	
Acrolein	Lin1		0.0289			1.20	-98.1	
Trichlorofluoromethane	Qua2		0.1905	0.1000	0.216	0.200	8.2	
Acetone	Ave	0.0439	0.1334	0.0200	3.04	1.00	204.0	
2-Methyl-2-propanol	Ave	0.0151	0.0289		3.82	2.00	91.1	
1,1-Dichloroethene	Lin2		0.2482	0.1000	0.122	0.200	-39.0	
Acrylonitrile	Lin2		0.0633		2.28	2.00	13.9	
Iodomethane	Ave	0.3947	0.3951		0.200	0.200	0.1	
Methylene Chloride	Lin2		0.3593	0.1000	0.134	0.200	-33.1	
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	0.1872	0.2019	0.1000	0.216	0.200	7.9	
Carbon disulfide	Ave	0.8236	0.8288	0.1000	0.201	0.200	0.6	
trans-1,2-Dichloroethene	Lin2		0.2854	0.1000	0.136	0.200	-32.0	
Methyl tert-butyl ether	Lin2		0.6307	0.1000	0.191	0.200	-4.6	
1,1-Dichloroethane	Ave	0.4663	0.4704	0.2000	0.202	0.200	0.9	
Vinyl acetate	Ave	0.0354	0.0357		0.503	0.500	0.7	
Hexane	Lin2		0.4764		0.222	0.200	11.1	
2-Butanone (MEK)	Lin2		0.0291	0.0200		1.00	-11.0	
cis-1,2-Dichloroethene	Lin2		0.2861	0.1000	0.145	0.200	-27.7	
Chlorobromomethane	Ave	0.1584	0.1609		0.203	0.200	1.6	
Chloroform	Lin2		0.5092	0.2000	0.218	0.200	8.9	
Tert-butyl ethyl ether	Ave	0.3423	0.3309		0.242	0.250	-3.3	
2,2-Dichloropropane	Ave	0.2190	0.2449		0.224	0.200	11.8	
1,2-Dichloroethane	Lin2		0.4383	0.1000	0.211	0.200	5.7	
1,1,1-Trichloroethane	Lin2		0.3488	0.1000	0.199	0.200	-0.6	
1,1-Dichloropropene	Ave	0.3650	0.4027		0.221	0.200	10.3	
Carbon tetrachloride	Lin2		0.3261	0.1000	0.201	0.200	0.4	
Benzene	Lin2		1.087	0.5000	0.208	0.200	4.1	
Tert-amyl methyl ether	Ave	0.6774	0.6944		0.256	0.250	2.5	
Dibromomethane	Lin2		0.1351		0.199	0.200	-0.7	
1,2-Dichloropropane	Ave	0.2583	0.2625	0.1000	0.203	0.200	1.6	
Trichloroethene	Lin2		0.2864	0.2000	0.207	0.200	3.7	
Dichlorobromomethane	Lin2		0.3189	0.2000	0.199	0.200	-0.7	
2-Chloroethyl vinyl ether	Ave	0.1771	0.1625		0.183	0.200	-8.3	
cis-1,3-Dichloropropene	Lin1		0.5103	0.2000	0.189	0.200	-5.3	
4-Methyl-2-pentanone (MIBK)	Ave	0.0936	0.0858	0.0600	0.916	1.00	-8.4	
trans-1,3-Dichloropropene	Lin2		0.4696	0.1000	0.198	0.200	-0.9	

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCVL 580-239330/3 Calibration Date: 02/27/2017 11:04

Instrument ID: TAC048 Calib Start Date: 02/16/2017 16:12

GC Column: DB-VRX ID: 0.25(mm) Calib End Date: 02/16/2017 20:05

Lab File ID: B272017003.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,1,2-Trichloroethane	Ave	0.2504	0.2567	0.1000	0.205	0.200	2.5	
Toluene	Lin2		1.394	0.4000	0.198	0.200	-1.0	
1,3-Dichloropropane	Ave	0.4617	0.4408		0.191	0.200	-4.5	
2-Hexanone	Lin2		0.0899	0.0600	1.17	1.00	17.4	
Chlorodibromomethane	Lin2		0.2975	0.1000	0.202	0.200	0.9	
Ethylene Dibromide	Lin1		0.2486	0.1000	0.197	0.200	-1.5	
Tetrachloroethene	Lin2		0.2819	0.2000	0.205	0.200	2.4	
1,1,1,2-Tetrachloroethane	Lin2		0.3429		0.203	0.200	1.7	
Chlorobenzene	Lin2		0.9615	0.5000	0.207	0.200	3.6	
Ethylbenzene	Lin2		1.598	0.1000	0.204	0.200	1.8	
m-Xylene & p-Xylene	Lin2		1.246	0.1000	0.202	0.200	1.2	
Bromoform	Lin2		0.1889	0.1000	0.216	0.200	8.0	
Styrene	Lin2		0.9521	0.3000	0.203	0.200	1.5	
o-Xylene	Lin2		1.308	0.3000	0.210	0.200	4.8	
1,1,2,2-Tetrachloroethane	Ave	0.5511	0.6998	0.3000	0.254	0.200	27.0	
trans-1,4-Dichloro-2-butene	Ave	0.1750	0.1862			0.200	6.4	
1,2,3-Trichloropropane	Lin2		0.1980		0.254	0.200	26.9	
Isopropylbenzene	Lin2		1.583	0.1000	0.208	0.200	3.8	
Bromobenzene	Ave	0.7673	0.8137		0.212	0.200	6.0	
N-Propylbenzene	Ave	3.623	3.836		0.212	0.200	5.9	
2-Chlorotoluene	Lin2		0.7635		0.208	0.200	3.9	
4-Chlorotoluene	Lin2		0.8325		0.219	0.200	9.3	
1,3,5-Trimethylbenzene	Ave	2.489	2.603		0.209	0.200	4.6	
tert-Butylbenzene	Lin2		2.269		0.203	0.200	1.7	
1,2,4-Trimethylbenzene	Lin2		2.711		0.210	0.200	5.0	
sec-Butylbenzene	Ave	3.237	3.477		0.215	0.200	7.4	
1,3-Dichlorobenzene	Ave	1.416	1.535	0.6000	0.217	0.200	8.4	
4-Isopropyltoluene	Lin2		3.003		0.210	0.200	4.8	
1,4-Dichlorobenzene	Ave	1.416	1.563	0.5000	0.221	0.200	10.4	
1,2-Dichlorobenzene	Ave	1.257	1.403	0.4000	0.223	0.200	11.6	
n-Butylbenzene	Lin1		0.7669		0.206	0.200	3.0	
1,2-Dibromo-3-Chloropropane	Ave	0.0989	0.1206	0.0500		0.200	22.0	
1,3,5-Trichlorobenzene	Lin2		0.9743		0.234	0.200	17.2	
1,2,4-Trichlorobenzene	Lin2		0.7178	0.2000	0.288	0.200	43.9	
Naphthalene	Lin1		1.509		0.421	0.200	110.3	
Hexachlorobutadiene	Lin2		0.4976		0.279	0.200	39.6	
1,2,3-Trichlorobenzene	Lin1		0.4274		0.355	0.200	77.4	
Dibromofluoromethane (Surr)	Ave	0.2439	0.2490		24.9	24.4	2.1	
1,2-Dichloroethane-d4 (Surr)	Ave	0.2811	0.2837		24.6	24.4	0.9	
Trifluorotoluene (Surr)	Ave	1.222	1.173		24.0	25.0	-4.0	
Toluene-d8 (Surr)	Ave	1.282	1.244		23.6	24.4	-3.0	

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCVL 580-239330/3 Calibration Date: 02/27/2017 11:04

Instrument ID: TAC048 Calib Start Date: 02/16/2017 16:12

GC Column: DB-VRX ID: 0.25(mm) Calib End Date: 02/16/2017 20:05

Lab File ID: B272017003.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
4-Bromofluorobenzene (Surr)	Ave	0.4020	0.4151		25.2	24.4	3.2	

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCVIS 580-239343/2 Calibration Date: 02/27/2017 21:01

Instrument ID: TAC048 Calib Start Date: 02/16/2017 16:12

GC Column: DB-VRX ID: 0.25(mm) Calib End Date: 02/16/2017 20:05

Lab File ID: B272017026.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Ave	0.2487	0.1675	0.1000	6.73	10.0	-32.7*	20.0
Chloromethane	Lin2		0.2901	0.1000	8.96	10.0	-10.4	20.0
Vinyl chloride	Lin2		0.3093	0.1000	8.77	10.0	-12.3	20.0
Bromomethane	Lin1		0.1747	0.1000	9.14	10.0	-8.6	20.0
Chloroethane	Lin2		0.0528*	0.0600	9.63	10.0	-3.7	20.0
Acrolein	Lin1		0.0231		58.9	60.0	-1.8	20.0
Trichlorofluoromethane	Qua2		0.2544	0.1000	10.3	10.0	2.9	20.0
Acetone	Ave	0.0439	0.0501	0.0200	57.1	50.0	14.1	20.0
2-Methyl-2-propanol	Ave	0.0151	0.0167		111	100	10.7	20.0
1,1-Dichloroethene	Lin2		0.2473	0.1000	9.55	10.0	-4.5	20.0
Acrylonitrile	Lin2		0.0621		109	100	9.1	20.0
Iodomethane	Ave	0.3947	0.3896		9.87	10.0	-1.3	20.0
Methylene Chloride	Lin2		0.2676	0.1000	10.0	10.0	0.4	20.0
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	0.1872	0.1862	0.1000	9.95	10.0	-0.5	20.0
Carbon disulfide	Ave	0.8236	0.8083	0.1000	9.81	10.0	-1.9	20.0
trans-1,2-Dichloroethene	Lin2		0.2562	0.1000	10.0	10.0	0.2	20.0
Methyl tert-butyl ether	Lin2		0.6473	0.1000	10.0	10.0	-0.0	20.0
1,1-Dichloroethane	Ave	0.4663	0.4695	0.2000	10.1	10.0	0.7	20.0
Vinyl acetate	Ave	0.0354	0.0292		20.6	25.0	-17.6	20.0
Hexane	Lin2		0.3954		9.77	10.0	-2.3	20.0
2-Butanone (MEK)	Lin2		0.0230	0.0200	54.7	50.0	9.3	20.0
cis-1,2-Dichloroethene	Lin2		0.2868	0.1000	10.0	10.0	0.4	20.0
Chlorobromomethane	Ave	0.1584	0.1619		10.2	10.0	2.2	20.0
Chloroform	Lin2		0.4501	0.2000	10.1	10.0	1.3	20.0
Tert-butyl ethyl ether	Ave	0.3423	0.3443		12.6	12.5	0.6	20.0
2,2-Dichloropropane	Ave	0.2190	0.2333		10.7	10.0	6.5	20.0
1,2-Dichloroethane	Lin2		0.3151	0.1000	10.2	10.0	2.1	20.0
1,1,1-Trichloroethane	Lin2		0.3548	0.1000	10.3	10.0	2.6	20.0
1,1-Dichloropropene	Ave	0.3650	0.3664		10.0	10.0	0.4	20.0
Carbon tetrachloride	Lin2		0.3248	0.1000	9.98	10.0	-0.2	20.0
Benzene	Lin2		1.041	0.5000	10.2	10.0	2.4	20.0
Tert-amyl methyl ether	Ave	0.6774	0.6873		12.7	12.5	1.5	20.0
Dibromomethane	Lin2		0.1470		10.2	10.0	1.6	20.0
1,2-Dichloropropane	Ave	0.2583	0.2662	0.1000	10.3	10.0	3.1	20.0
Trichloroethene	Lin2		0.2802	0.2000	10.0	10.0	0.5	20.0
Dichlorobromomethane	Lin2		0.3365	0.2000	10.3	10.0	2.8	20.0
2-Chloroethyl vinyl ether	Ave	0.1771	0.1667		9.41	10.0	-5.9	20.0
cis-1,3-Dichloropropene	Lin1		0.5277	0.2000	9.55	10.0	-4.5	20.0
4-Methyl-2-pentanone (MIBK)	Ave	0.0936	0.0898	0.0600	48.0	50.0	-4.1	20.0
trans-1,3-Dichloropropene	Lin2		0.4547	0.1000	9.68	10.0	-3.2	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCVIS 580-239343/2 Calibration Date: 02/27/2017 21:01

Instrument ID: TAC048 Calib Start Date: 02/16/2017 16:12

GC Column: DB-VRX ID: 0.25(mm) Calib End Date: 02/16/2017 20:05

Lab File ID: B272017026.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
1,1,2-Trichloroethane	Ave	0.2504	0.2373	0.1000	9.48	10.0	-5.2	20.0
Toluene	Lin2		1.348	0.4000	9.73	10.0	-2.7	20.0
1,3-Dichloropropane	Ave	0.4617	0.4421		9.58	10.0	-4.2	20.0
2-Hexanone	Lin2		0.0905	0.0600	49.2	50.0	-1.5	20.0
Chlorodibromomethane	Lin2		0.2974	0.1000	9.74	10.0	-2.6	20.0
Ethylene Dibromide	Lin1		0.2404	0.1000	9.58	10.0	-4.2	20.0
Tetrachloroethene	Lin2		0.2604	0.2000	9.47	10.0	-5.3	20.0
1,1,1,2-Tetrachloroethane	Lin2		0.3085		9.78	10.0	-2.2	20.0
Chlorobenzene	Lin2		0.8890	0.5000	9.80	10.0	-2.0	20.0
Ethylbenzene	Lin2		1.533	0.1000	9.92	10.0	-0.8	20.0
m-Xylene & p-Xylene	Lin2		1.183	0.1000	9.81	10.0	-1.9	20.0
Bromoform	Lin2		0.1841	0.1000	9.63	10.0	-3.7	20.0
Styrene	Lin2		0.9450	0.3000	10.0	10.0	0.0	20.0
o-Xylene	Lin2		1.231	0.3000	10.0	10.0	0.0	20.0
1,1,2,2-Tetrachloroethane	Ave	0.5511	0.5214	0.3000	9.46	10.0	-5.4	20.0
trans-1,4-Dichloro-2-butene	Ave	0.1750	0.1570		8.97	10.0	-10.3	20.0
1,2,3-Trichloropropane	Lin2		0.1601		8.96	10.0	-10.4	20.0
Isopropylbenzene	Lin2		1.506	0.1000	10.0	10.0	0.5	20.0
Bromobenzene	Ave	0.7673	0.7163		9.34	10.0	-6.6	20.0
N-Propylbenzene	Ave	3.623	3.488		9.63	10.0	-3.7	20.0
2-Chlorotoluene	Lin2		0.6920		9.48	10.0	-5.2	20.0
4-Chlorotoluene	Lin2		0.7221		9.53	10.0	-4.7	20.0
1,3,5-Trimethylbenzene	Ave	2.489	2.383		9.58	10.0	-4.2	20.0
tert-Butylbenzene	Lin2		2.073		9.74	10.0	-2.6	20.0
1,2,4-Trimethylbenzene	Lin2		2.445		9.70	10.0	-3.0	20.0
sec-Butylbenzene	Ave	3.237	3.125		9.65	10.0	-3.5	20.0
1,3-Dichlorobenzene	Ave	1.416	1.343	0.6000	9.49	10.0	-5.1	20.0
4-Isopropyltoluene	Lin2		2.629		9.92	10.0	-0.8	20.0
1,4-Dichlorobenzene	Ave	1.416	1.352	0.5000	9.55	10.0	-4.5	20.0
1,2-Dichlorobenzene	Ave	1.257	1.198	0.4000	9.53	10.0	-4.7	20.0
n-Butylbenzene	Lin1		0.6410		9.62	10.0	-3.8	20.0
1,2-Dibromo-3-Chloropropane	Ave	0.0989	0.0904	0.0500	9.14	10.0	-8.6	20.0
1,3,5-Trichlorobenzene	Lin2		0.7616		9.42	10.0	-5.8	20.0
1,2,4-Trichlorobenzene	Lin2		0.5103	0.2000	9.43	10.0	-5.7	20.0
Naphthalene	Lin1		0.8473		8.96	10.0	-10.4	20.0
Hexachlorobutadiene	Lin2		0.2894		9.16	10.0	-8.4	20.0
1,2,3-Trichlorobenzene	Lin1		0.2983		9.49	10.0	-5.1	20.0
Dibromofluoromethane (Surr)	Ave	0.2439	0.2454		24.5	24.4	0.6	20.0
1,2-Dichloroethane-d4 (Surr)	Ave	0.2811	0.2785		24.2	24.4	-0.9	20.0
Trifluorotoluene (Surr)	Ave	1.222	1.158		23.7	25.0	-5.3	20.0
Toluene-d8 (Surr)	Ave	1.282	1.239		23.5	24.4	-3.4	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCVIS 580-239343/2 Calibration Date: 02/27/2017 21:01

Instrument ID: TAC048 Calib Start Date: 02/16/2017 16:12

GC Column: DB-VRX ID: 0.25(mm) Calib End Date: 02/16/2017 20:05

Lab File ID: B272017026.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
4-Bromofluorobenzene (Surr)	Ave	0.4020	0.4127		25.0	24.4	2.7	20.0

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCVL 580-239343/3 Calibration Date: 02/27/2017 21:27

Instrument ID: TAC048 Calib Start Date: 02/16/2017 16:12

GC Column: DB-VRX ID: 0.25(mm) Calib End Date: 02/16/2017 20:05

Lab File ID: B272017027.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Dichlorodifluoromethane	Ave	0.2487	0.1564	0.1000	0.126	0.200	-37.1	
Chloromethane	Lin2		0.3960	0.1000	0.195	0.200	-2.4	
Vinyl chloride	Lin2		0.3124	0.1000	0.183	0.200	-8.6	
Bromomethane	Lin1		0.1582	0.1000		0.200	-34.0	
Chloroethane	Lin2		0.0586*	0.0600	0.254	0.200	26.8	
Trichlorofluoromethane	Qua2		0.1639	0.1000	0.194	0.200	-3.0	
Acetone	Ave	0.0439	0.1449	0.0200	3.30	1.00	230.2	
2-Methyl-2-propanol	Ave	0.0151	0.0250		3.31	2.00	65.4	
1,1-Dichloroethene	Lin2		0.2898	0.1000	0.154	0.200	-22.8	
Acrylonitrile	Lin2		0.0622		2.24	2.00	12.0	
Iodomethane	Ave	0.3947	0.3743		0.190	0.200	-5.2	
Methylene Chloride	Lin2		0.6023	0.1000	0.319	0.200	59.3	
1,1,2-Trichloro-1,2,2-trifluoroethane	Ave	0.1872	0.1983	0.1000	0.212	0.200	5.9	
Carbon disulfide	Ave	0.8236	0.8349	0.1000	0.203	0.200	1.4	
trans-1,2-Dichloroethene	Lin2		0.3109	0.1000	0.156	0.200	-21.9	
Methyl tert-butyl ether	Lin2		0.7219	0.1000	0.219	0.200	9.5	
1,1-Dichloroethane	Ave	0.4663	0.4635	0.2000	0.199	0.200	-0.6	
Vinyl acetate	Ave	0.0354	0.0208		0.294	0.500	-41.3	
Hexane	Lin2		0.4403		0.204	0.200	2.1	
2-Butanone (MEK)	Lin2		0.0270	0.0200		1.00	-21.3	
cis-1,2-Dichloroethene	Lin2		0.3307	0.1000	0.176	0.200	-11.9	
Chlorobromomethane	Ave	0.1584	0.1533		0.194	0.200	-3.2	
Chloroform	Lin2		0.4812	0.2000	0.205	0.200	2.7	
Tert-butyl ethyl ether	Ave	0.3423	0.3736		0.273	0.250	9.1	
2,2-Dichloropropane	Ave	0.2190	0.2322		0.212	0.200	6.0	
1,2-Dichloroethane	Lin2		0.4347	0.1000	0.209	0.200	4.6	
1,1,1-Trichloroethane	Lin2		0.3485	0.1000	0.199	0.200	-0.7	
1,1-Dichloropropene	Ave	0.3650	0.3780		0.207	0.200	3.5	
Carbon tetrachloride	Lin2		0.3075	0.1000	0.189	0.200	-5.3	
Benzene	Lin2		1.081	0.5000	0.207	0.200	3.5	
Tert-amyl methyl ether	Ave	0.6774	0.6990		0.258	0.250	3.2	
Dibromomethane	Lin2		0.1468		0.215	0.200	7.4	
1,2-Dichloropropane	Ave	0.2583	0.2618	0.1000	0.203	0.200	1.4	
Trichloroethene	Lin2		0.2968	0.2000	0.215	0.200	7.4	
Dichlorobromomethane	Lin2		0.3340	0.2000	0.208	0.200	3.9	
2-Chloroethyl vinyl ether	Ave	0.1771	0.1541		0.174	0.200	-13.0	
cis-1,3-Dichloropropene	Lin1		0.5002	0.2000	0.186	0.200	-7.1	
4-Methyl-2-pentanone (MIBK)	Ave	0.0936	0.0824	0.0600	0.880	1.00	-12.0	
trans-1,3-Dichloropropene	Lin2		0.4522	0.1000	0.191	0.200	-4.6	
1,1,2-Trichloroethane	Ave	0.2504	0.2490	0.1000	0.199	0.200	-0.5	

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCVL 580-239343/3 Calibration Date: 02/27/2017 21:27

Instrument ID: TAC048 Calib Start Date: 02/16/2017 16:12

GC Column: DB-VRX ID: 0.25(mm) Calib End Date: 02/16/2017 20:05

Lab File ID: B272017027.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Toluene	Lin2		1.376	0.4000	0.195	0.200	-2.4	
1,3-Dichloropropane	Ave	0.4617	0.4671		0.202	0.200	1.2	
2-Hexanone	Lin2		0.0818	0.0600	1.09	1.00	8.6	
Chlorodibromomethane	Lin2		0.2850	0.1000	0.194	0.200	-3.2	
Ethylene Dibromide	Lin1		0.2299	0.1000	0.182	0.200	-8.9	
Tetrachloroethene	Lin2		0.2577	0.2000	0.187	0.200	-6.4	
1,1,1,2-Tetrachloroethane	Lin2		0.3008		0.177	0.200	-11.6	
Chlorobenzene	Lin2		0.9110	0.5000	0.196	0.200	-1.9	
Ethylbenzene	Lin2		1.618	0.1000	0.206	0.200	3.1	
m-Xylene & p-Xylene	Lin2		1.235	0.1000	0.201	0.200	0.3	
Bromoform	Lin2		0.1623	0.1000	0.188	0.200	-5.9	
Styrene	Lin2		0.8832	0.3000	0.188	0.200	-5.8	
o-Xylene	Lin2		1.247	0.3000	0.200	0.200	-0.2	
1,1,2,2-Tetrachloroethane	Ave	0.5511	0.5614	0.3000	0.204	0.200	1.9	
trans-1,4-Dichloro-2-butene	Ave	0.1750	0.1352			0.200	-22.8	
1,2,3-Trichloropropane	Lin2		0.1730		0.226	0.200	13.0	
Isopropylbenzene	Lin2		1.498	0.1000	0.196	0.200	-1.8	
Bromobenzene	Ave	0.7673	0.7739		0.202	0.200	0.9	
N-Propylbenzene	Ave	3.623	3.653		0.202	0.200	0.8	
2-Chlorotoluene	Lin2		0.7412		0.202	0.200	0.8	
4-Chlorotoluene	Lin2		0.7854		0.206	0.200	3.1	
1,3,5-Trimethylbenzene	Ave	2.489	2.454		0.197	0.200	-1.4	
tert-Butylbenzene	Lin2		2.159		0.193	0.200	-3.4	
1,2,4-Trimethylbenzene	Lin2		2.572		0.199	0.200	-0.5	
sec-Butylbenzene	Ave	3.237	3.356		0.207	0.200	3.7	
1,3-Dichlorobenzene	Ave	1.416	1.420	0.6000	0.201	0.200	0.3	
4-Isopropyltoluene	Lin2		2.872		0.200	0.200	-0.2	
1,4-Dichlorobenzene	Ave	1.416	1.516	0.5000	0.214	0.200	7.1	
1,2-Dichlorobenzene	Ave	1.257	1.304	0.4000	0.208	0.200	3.8	
n-Butylbenzene	Lin1		0.7374		0.197	0.200	-1.4	
1,2-Dibromo-3-Chloropropane	Ave	0.0989	0.0917	0.0500		0.200	-7.3	
1,3,5-Trichlorobenzene	Lin2		0.9166		0.220	0.200	10.0	
1,2,4-Trichlorobenzene	Lin2		0.5861	0.2000	0.239	0.200	19.6	
Naphthalene	Lin1		1.250		0.366	0.200	83.2	
Hexachlorobutadiene	Lin2		0.4308		0.237	0.200	18.3	
1,2,3-Trichlorobenzene	Lin1		0.3951		0.334	0.200	67.2	
Acrolein	Lin1					1.20	-100.0	
Dibromofluoromethane (Surr)	Ave	0.2439	0.2455		24.5	24.4	0.7	
1,2-Dichloroethane-d4 (Surr)	Ave	0.2811	0.2819		24.4	24.4	0.3	
Trifluorotoluene (Surr)	Ave	1.222	1.201		24.6	25.0	-1.7	
Toluene-d8 (Surr)	Ave	1.282	1.248		23.7	24.4	-2.7	

FORM VII
GC/MS VOA CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCVL 580-239343/3 Calibration Date: 02/27/2017 21:27

Instrument ID: TAC048 Calib Start Date: 02/16/2017 16:12

GC Column: DB-VRX ID: 0.25(mm) Calib End Date: 02/16/2017 20:05

Lab File ID: B272017027.D Conc. Units: ug/L Heated Purge: (Y/N) N

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
4-Bromofluorobenzene (Surr)	Ave	0.4020	0.4105		24.9	24.4	2.1	

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Seattle | Job No.: 580-66304-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 580-239330/4

Matrix: Water | Lab File ID: B272017004.D

Analysis Method: 8260C | Date Collected:

Sample wt/vol: 10(mL) | Date Analyzed: 02/27/2017 11:31

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-VRX ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 239330 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	ND		0.020	0.013
75-35-4	1,1-Dichloroethene	ND		0.10	0.018
156-60-5	trans-1,2-Dichloroethene	ND		0.20	0.025
156-59-2	cis-1,2-Dichloroethene	ND		0.20	0.025
79-01-6	Trichloroethene	ND		0.20	0.025
127-18-4	Tetrachloroethene	ND		0.50	0.070

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	97		75-125
98-08-8	Trifluorotoluene (Surr)	99		74-118
1868-53-7	Dibromofluoromethane (Surr)	101		42-132
460-00-4	4-Bromofluorobenzene (Surr)	102		81-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	101		46-150

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Seattle | Job No.: 580-66304-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 580-239343/4

Matrix: Water | Lab File ID: B272017028.D

Analysis Method: 8260C | Date Collected:

Sample wt/vol: 10(mL) | Date Analyzed: 02/27/2017 21:53

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-VRX ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 239343 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	ND		0.020	0.013
75-35-4	1,1-Dichloroethene	ND		0.10	0.018
156-60-5	trans-1,2-Dichloroethene	ND		0.20	0.025
156-59-2	cis-1,2-Dichloroethene	ND		0.20	0.025
79-01-6	Trichloroethene	ND		0.20	0.025
127-18-4	Tetrachloroethene	ND		0.50	0.070

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	98		75-125
98-08-8	Trifluorotoluene (Surr)	98		74-118
1868-53-7	Dibromofluoromethane (Surr)	101		42-132
460-00-4	4-Bromofluorobenzene (Surr)	102		81-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	101		46-150

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Seattle | Job No.: 580-66304-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 580-239330/5

Matrix: Water | Lab File ID: B272017005.D

Analysis Method: 8260C | Date Collected:

Sample wt/vol: 10(mL) | Date Analyzed: 02/27/2017 11:57

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-VRX ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 239330 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	4.45		0.020	0.013
75-35-4	1,1-Dichloroethene	4.83		0.10	0.018
156-60-5	trans-1,2-Dichloroethene	5.03		0.20	0.025
156-59-2	cis-1,2-Dichloroethene	4.98		0.20	0.025
79-01-6	Trichloroethene	4.98		0.20	0.025
127-18-4	Tetrachloroethene	4.79		0.50	0.070

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	97		75-125
98-08-8	Trifluorotoluene (Surr)	96		74-118
1868-53-7	Dibromofluoromethane (Surr)	101		42-132
460-00-4	4-Bromofluorobenzene (Surr)	102		81-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	101		46-150

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Seattle | Job No.: 580-66304-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 580-239343/5

Matrix: Water | Lab File ID: B272017029.D

Analysis Method: 8260C | Date Collected:

Sample wt/vol: 10(mL) | Date Analyzed: 02/27/2017 22:19

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-VRX ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 239343 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	4.47		0.020	0.013
75-35-4	1,1-Dichloroethene	4.99		0.10	0.018
156-60-5	trans-1,2-Dichloroethene	4.98		0.20	0.025
156-59-2	cis-1,2-Dichloroethene	5.02		0.20	0.025
79-01-6	Trichloroethene	5.13		0.20	0.025
127-18-4	Tetrachloroethene	4.75		0.50	0.070

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	96		75-125
98-08-8	Trifluorotoluene (Surr)	94		74-118
1868-53-7	Dibromofluoromethane (Surr)	102		42-132
460-00-4	4-Bromofluorobenzene (Surr)	103		81-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	100		46-150

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Seattle | Job No.: 580-66304-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 580-239330/6

Matrix: Water | Lab File ID: B272017006.D

Analysis Method: 8260C | Date Collected:

Sample wt/vol: 10(mL) | Date Analyzed: 02/27/2017 12:23

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-VRX ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 239330 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	4.50		0.020	0.013
75-35-4	1,1-Dichloroethene	4.84		0.10	0.018
156-60-5	trans-1,2-Dichloroethene	5.13		0.20	0.025
156-59-2	cis-1,2-Dichloroethene	5.12		0.20	0.025
79-01-6	Trichloroethene	5.11		0.20	0.025
127-18-4	Tetrachloroethene	4.93		0.50	0.070

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	98		75-125
98-08-8	Trifluorotoluene (Surr)	94		74-118
1868-53-7	Dibromofluoromethane (Surr)	101		42-132
460-00-4	4-Bromofluorobenzene (Surr)	102		81-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	99		46-150

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Seattle | Job No.: 580-66304-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCSD 580-239343/6

Matrix: Water | Lab File ID: B272017030.D

Analysis Method: 8260C | Date Collected:

Sample wt/vol: 10(mL) | Date Analyzed: 02/27/2017 22:45

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-VRX ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 239343 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	4.49		0.020	0.013
75-35-4	1,1-Dichloroethene	4.85		0.10	0.018
156-60-5	trans-1,2-Dichloroethene	5.05		0.20	0.025
156-59-2	cis-1,2-Dichloroethene	5.00		0.20	0.025
79-01-6	Trichloroethene	5.19		0.20	0.025
127-18-4	Tetrachloroethene	4.73		0.50	0.070

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	97		75-125
98-08-8	Trifluorotoluene (Surr)	95		74-118
1868-53-7	Dibromofluoromethane (Surr)	101		42-132
460-00-4	4-Bromofluorobenzene (Surr)	102		81-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	99		46-150

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Seattle | Job No.: 580-66304-1

SDG No.:

Client Sample ID: MW-18-170222 MS | Lab Sample ID: 580-66304-3 MS

Matrix: Water | Lab File ID: B272017021.D

Analysis Method: 8260C | Date Collected: 02/22/2017 13:15

Sample wt/vol: 10(mL) | Date Analyzed: 02/27/2017 18:51

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-VRX ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 239330 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	5.13		0.020	0.013
75-35-4	1,1-Dichloroethene	4.74		0.10	0.018
156-60-5	trans-1,2-Dichloroethene	5.27		0.20	0.025
156-59-2	cis-1,2-Dichloroethene	5.31		0.20	0.025
79-01-6	Trichloroethene	5.16		0.20	0.025
127-18-4	Tetrachloroethene	4.67		0.50	0.070

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	97		75-125
98-08-8	Trifluorotoluene (Surr)	93		74-118
1868-53-7	Dibromofluoromethane (Surr)	101		42-132
460-00-4	4-Bromofluorobenzene (Surr)	102		81-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	100		46-150

FORM I
GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Seattle | Job No.: 580-66304-1

SDG No.:

Client Sample ID: MW-18-170222 MSD | Lab Sample ID: 580-66304-3 MSD

Matrix: Water | Lab File ID: B272017022.D

Analysis Method: 8260C | Date Collected: 02/22/2017 13:15

Sample wt/vol: 10(mL) | Date Analyzed: 02/27/2017 19:17

Soil Aliquot Vol: | Dilution Factor: 1

Soil Extract Vol.: | GC Column: DB-VRX ID: 0.25(mm)

% Moisture: | Level: (low/med) Low

Analysis Batch No.: 239330 | Units: ug/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-01-4	Vinyl chloride	5.37		0.020	0.013
75-35-4	1,1-Dichloroethene	4.79		0.10	0.018
156-60-5	trans-1,2-Dichloroethene	5.17		0.20	0.025
156-59-2	cis-1,2-Dichloroethene	5.15		0.20	0.025
79-01-6	Trichloroethene	5.13		0.20	0.025
127-18-4	Tetrachloroethene	4.63		0.50	0.070

CAS NO.	SURROGATE	%REC	Q	LIMITS
2037-26-5	Toluene-d8 (Surr)	97		75-125
98-08-8	Trifluorotoluene (Surr)	93		74-118
1868-53-7	Dibromofluoromethane (Surr)	101		42-132
460-00-4	4-Bromofluorobenzene (Surr)	104		81-120
17060-07-0	1,2-Dichloroethane-d4 (Surr)	100		46-150

GC/MS VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Instrument ID: TAC048 Start Date: 02/16/2017 15:46

Analysis Batch Number: 238604 End Date: 02/16/2017 21:23

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 580-238604/1		02/16/2017 15:46	1	B162017001.D	DB-VRX 0.25(mm)
STD0.02 580-238604/2		02/16/2017 16:12	1	B162017002.D	DB-VRX 0.25(mm)
STD0.1 580-238604/3		02/16/2017 16:38	1	B162017003.D	DB-VRX 0.25(mm)
STD0.2 580-238604/4		02/16/2017 17:05	1	B162017004.D	DB-VRX 0.25(mm)
STD0.4 580-238604/5		02/16/2017 17:30	1	B162017005.D	DB-VRX 0.25(mm)
STD001 580-238604/6 IC		02/16/2017 17:56	1	B162017006.D	DB-VRX 0.25(mm)
STD005 580-238604/7 IC		02/16/2017 18:22	1	B162017007.D	DB-VRX 0.25(mm)
ICIS 580-238604/8		02/16/2017 18:48	1	B162017008.D	DB-VRX 0.25(mm)
STD025 580-238604/9 IC		02/16/2017 19:14	1	B162017009.D	DB-VRX 0.25(mm)
STD050 580-238604/10 IC		02/16/2017 19:40	1	B162017010.D	DB-VRX 0.25(mm)
STD080 580-238604/11 IC		02/16/2017 20:05	1	B162017011.D	DB-VRX 0.25(mm)
ICV 580-238604/14		02/16/2017 21:23	1	B162017014.D	DB-VRX 0.25(mm)

GC/MS VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Instrument ID: TAC048 Start Date: 02/27/2017 10:13

Analysis Batch Number: 239330 End Date: 02/27/2017 19:43

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 580-239330/1		02/27/2017 10:13	1	B272017001.D	DB-VRX 0.25(mm)
CCVIS 580-239330/2		02/27/2017 10:38	1	B272017002.D	DB-VRX 0.25(mm)
CCVL 580-239330/3		02/27/2017 11:04	1	B272017003.D	DB-VRX 0.25(mm)
MB 580-239330/4		02/27/2017 11:31	1	B272017004.D	DB-VRX 0.25(mm)
LCS 580-239330/5		02/27/2017 11:57	1	B272017005.D	DB-VRX 0.25(mm)
LCSD 580-239330/6		02/27/2017 12:23	1	B272017006.D	DB-VRX 0.25(mm)
ZZZZZ		02/27/2017 12:49	1		DB-VRX 0.25(mm)
ZZZZZ		02/27/2017 13:15	1		DB-VRX 0.25(mm)
ZZZZZ		02/27/2017 13:40	1		DB-VRX 0.25(mm)
ZZZZZ		02/27/2017 14:06	1		DB-VRX 0.25(mm)
ZZZZZ		02/27/2017 14:32	1		DB-VRX 0.25(mm)
ZZZZZ		02/27/2017 14:58	1		DB-VRX 0.25(mm)
ZZZZZ		02/27/2017 15:24	1		DB-VRX 0.25(mm)
ZZZZZ		02/27/2017 15:50	1		DB-VRX 0.25(mm)
ZZZZZ		02/27/2017 16:16	1		DB-VRX 0.25(mm)
580-66304-1		02/27/2017 16:41	1	B272017016.D	DB-VRX 0.25(mm)
580-66304-2		02/27/2017 17:07	1	B272017017.D	DB-VRX 0.25(mm)
580-66304-4		02/27/2017 17:33	1	B272017018.D	DB-VRX 0.25(mm)
580-66304-5		02/27/2017 17:59	1	B272017019.D	DB-VRX 0.25(mm)
580-66304-3		02/27/2017 18:25	1	B272017020.D	DB-VRX 0.25(mm)
580-66304-3 MS		02/27/2017 18:51	1	B272017021.D	DB-VRX 0.25(mm)
580-66304-3 MSD		02/27/2017 19:17	1	B272017022.D	DB-VRX 0.25(mm)
ZZZZZ		02/27/2017 19:43	50		DB-VRX 0.25(mm)

GC/MS VOA ANALYSIS RUN LOG

Lab Name: TestAmerica Seattle Job No.: 580-66304-1

SDG No.:

Instrument ID: TAC048 Start Date: 02/27/2017 20:35

Analysis Batch Number: 239343 End Date: 02/28/2017 02:38

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
BFB 580-239343/1		02/27/2017 20:35	1	B272017025.D	DB-VRX 0.25(mm)
CCVIS 580-239343/2		02/27/2017 21:01	1	B272017026.D	DB-VRX 0.25(mm)
CCVL 580-239343/3		02/27/2017 21:27	1	B272017027.D	DB-VRX 0.25(mm)
MB 580-239343/4		02/27/2017 21:53	1	B272017028.D	DB-VRX 0.25(mm)
LCS 580-239343/5		02/27/2017 22:19	1	B272017029.D	DB-VRX 0.25(mm)
LCSD 580-239343/6		02/27/2017 22:45	1	B272017030.D	DB-VRX 0.25(mm)
ZZZZZ		02/27/2017 23:11	1		DB-VRX 0.25(mm)
ZZZZZ		02/27/2017 23:37	1		DB-VRX 0.25(mm)
580-66304-6		02/28/2017 00:03	1	B272017033.D	DB-VRX 0.25(mm)
ZZZZZ		02/28/2017 00:29	1		DB-VRX 0.25(mm)
ZZZZZ		02/28/2017 00:55	10		DB-VRX 0.25(mm)
ZZZZZ		02/28/2017 01:21	10		DB-VRX 0.25(mm)
ZZZZZ		02/28/2017 01:46	100		DB-VRX 0.25(mm)
ZZZZZ		02/28/2017 02:12	100		DB-VRX 0.25(mm)
ZZZZZ		02/28/2017 02:38	50		DB-VRX 0.25(mm)

Method 300.0

Anions (IC) by Method 300.0

FORM III
HPLC/IC LAB CONTROL SAMPLE RECOVERY

Lab Name: TestAmerica Spokane Job No.: 580-66304-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 022817012-LCS.d

Lab ID: LCS 590-10894/1012 Client ID:

COMPOUND	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC	QC LIMITS REC	#
Sulfate	12.5	13.2	106	90-110	

Column to be used to flag recovery and RPD values

FORM III 300.0

FORM III
HPLC/IC MATRIX SPIKE RECOVERY

Lab Name: TestAmerica Spokane Job No.: 580-66304-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 022817006.d

Lab ID: 580-66304-3 MS Client ID: MW-18-170222 MS

COMPOUND	SPIKE ADDED (mg/L)	SAMPLE CONCENTRATION (mg/L)	MS CONCENTRATION (mg/L)	MS % REC	QC LIMITS REC	#
Sulfate	12.5	47	53.7	55	80-120	F1

Column to be used to flag recovery and RPD values

FORM III 300.0

FORM III
HPLC/IC MATRIX SPIKE DUPLICATE RECOVERY

Lab Name: TestAmerica Spokane Job No.: 580-66304-1

SDG No.:

Matrix: Water Level: Low Lab File ID: 022817010.d

Lab ID: 580-66304-3 MSD Client ID: MW-18-170222 MSD

COMPOUND	SPIKE ADDED (mg/L)	MSD CONCENTRATION (mg/L)	MSD % REC	% RPD	QC LIMITS RPD	QC LIMITS REC	#
Sulfate	12.5	54.0	58	1	10	80-120	F1

Column to be used to flag recovery and RPD values

FORM III 300.0

FORM IV
HPLC/IC METHOD BLANK SUMMARY

Lab Name: TestAmerica Spokane Job No.: 580-66304-1

SDG No.:

Lab File ID: 022817013-MB.d Lab Sample ID: MB 590-10894/1013

Matrix: Water Date Extracted:

Instrument ID: IC Date Analyzed: 02/28/2017 15:28

Level:(Low/Med) Low

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED
	CCB 590-10894/2	022817002.d	02/28/2017 13:01
MW-3-170222	580-66304-1	022817004.d	02/28/2017 13:25
MW-16-170222	580-66304-2	022817005.d	02/28/2017 13:37
MW-18-170222 MS	580-66304-3 MS	022817006.d	02/28/2017 13:50
MW-18-170222	580-66304-3	022817007.d	02/28/2017 14:02
MW-18-170222 DU	580-66304-3 DU	022817008.d	02/28/2017 14:14
MW-18-170222 MSD	580-66304-3 MSD	022817010.d	02/28/2017 14:38
	LCS 590-10894/1012	022817012-LCS.d	02/28/2017 15:03
	CCB 590-10894/13	022817013.d	02/28/2017 15:28
MW-19-170222	580-66304-4	022817014.d	02/28/2017 15:40
DUP 1-170222	580-66304-5	022817015.d	02/28/2017 15:52
	CCB 590-10894/16	022817017.d	02/28/2017 16:16

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Spokane | Job No.: 580-66304-1

SDG No.:

Client Sample ID: MW-3-170222 | Lab Sample ID: 580-66304-1

Matrix: Water | Lab File ID: 022817004.d

Analysis Method: 300.0 | Date Collected: 02/22/2017 14:20

Extraction Method: | Date Extracted:

Sample wt/vol: 5(mL) | Date Analyzed: 02/28/2017 13:25

Con. Extract Vol.: | Dilution Factor: 1

Injection Volume: 5(mL) | GC Column: AS14 ID: 4(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 10894 | Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
14808-79-8	Sulfate	99		1.2	0.13

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Spokane | Job No.: 580-66304-1

SDG No.:

Client Sample ID: MW-16-170222 | Lab Sample ID: 580-66304-2

Matrix: Water | Lab File ID: 022817005.d

Analysis Method: 300.0 | Date Collected: 02/22/2017 12:15

Extraction Method: | Date Extracted:

Sample wt/vol: 5(mL) | Date Analyzed: 02/28/2017 13:37

Con. Extract Vol.: | Dilution Factor: 1

Injection Volume: 5(mL) | GC Column: AS14 ID: 4(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 10894 | Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
14808-79-8	Sulfate	24		1.2	0.13

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Spokane | Job No.: 580-66304-1

SDG No.:

Client Sample ID: MW-18-170222 | Lab Sample ID: 580-66304-3

Matrix: Water | Lab File ID: 022817007.d

Analysis Method: 300.0 | Date Collected: 02/22/2017 13:15

Extraction Method: | Date Extracted:

Sample wt/vol: 5(mL) | Date Analyzed: 02/28/2017 14:02

Con. Extract Vol.: | Dilution Factor: 1

Injection Volume: 5(mL) | GC Column: AS14 ID: 4(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 10894 | Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
14808-79-8	Sulfate	47	F1	1.2	0.13

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Spokane | Job No.: 580-66304-1

SDG No.:

Client Sample ID: MW-19-170222 | Lab Sample ID: 580-66304-4

Matrix: Water | Lab File ID: 022817014.d

Analysis Method: 300.0 | Date Collected: 02/22/2017 11:30

Extraction Method: | Date Extracted:

Sample wt/vol: 5(mL) | Date Analyzed: 02/28/2017 15:40

Con. Extract Vol.: | Dilution Factor: 10

Injection Volume: 5(mL) | GC Column: AS14 ID: 4(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 10894 | Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
14808-79-8	Sulfate	350		12	1.3

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Spokane | Job No.: 580-66304-1

SDG No.:

Client Sample ID: DUP 1-170222 | Lab Sample ID: 580-66304-5

Matrix: Water | Lab File ID: 022817015.d

Analysis Method: 300.0 | Date Collected: 02/22/2017 12:00

Extraction Method: | Date Extracted:

Sample wt/vol: 5(mL) | Date Analyzed: 02/28/2017 15:52

Con. Extract Vol.: | Dilution Factor: 10

Injection Volume: 5(mL) | GC Column: AS14 ID: 4(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 10894 | Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
14808-79-8	Sulfate	330		12	1.3

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RETENTION TIME SUMMARY

Lab Name: TestAmerica Spokane Job No.: 580-66304-1 Analy Batch No.: 10208

SDG No.:

Instrument ID: IC GC Column: AS14 ID: 4(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/03/2017 10:52 Calibration End Date: 01/03/2017 12:05 Calibration ID: 1786

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 590-10208/4	010317004.d
Level 2	IC 590-10208/3	010317003.d
Level 3	IC 590-10208/5	010317005.d
Level 4	IC 590-10208/6	010317006.d
Level 5	IC 590-10208/7	010317007.d
Level 6	IC 590-10208/8	010317008.d
Level 7	IC 590-10208/9	010317009.d

ANALYTE	LVL 1	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6	LVL 7				RT WINDOW	AVG RT
Fluoride		2.083	1.850	1.833	1.833	1.850	1.850				1.333 - 2.333	1.883
Chloride	+++++	2.700	2.700	2.700	2.700	2.700	2.667				2.450 - 2.950	2.695
Sulfate	+++++	7.550	7.467	7.417	7.367	7.317	7.250				7.117 - 7.617	7.395

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: TestAmerica Spokane Job No.: 580-66304-1 Analy Batch No.: 10208

SDG No.:

Instrument ID: IC GC Column: AS14 ID: 4(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/03/2017 10:52 Calibration End Date: 01/03/2017 12:05 Calibration ID: 1786

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 590-10208/4	010317004.d
Level 2	IC 590-10208/3	010317003.d
Level 3	IC 590-10208/5	010317005.d
Level 4	IC 590-10208/6	010317006.d
Level 5	IC 590-10208/7	010317007.d
Level 6	IC 590-10208/8	010317008.d
Level 7	IC 590-10208/9	010317009.d

ANALYTE	CF				CURVE TYPE	COEFFICIENT			#	MIN CF	%RSD	#	MAX %RSD	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 5	LVL 2 LVL 6	LVL 3 LVL 7	LVL 4		B	M1	M2								
Fluoride	31896	7035.0 35661	21319 36852	27077	Qua2	-4225.6767	27647.0650	274.228006						0.9960		0.9950
Chloride	+++++ 32299	27342 35717	24691 37766	28802	Qua2	-410.99626	27552.0747	117.340012						0.9960		0.9950
Sulfate	+++++ 18807	12560 21706	14472 24203	16612	Qua2	-1842.3321	16003.6114	89.4237188						0.9980		0.9950

Note: The m1 coefficient is the same as Ave CF for an Ave curve type.

FORM VI
HPLC/IC BY EXTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: TestAmerica Spokane Job No.: 580-66304-1 Analy Batch No.: 10208

SDG No.:

Instrument ID: IC GC Column: AS14 ID: 4(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/03/2017 10:52 Calibration End Date: 01/03/2017 12:05 Calibration ID: 1786

Calibration Files:

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 590-10208/4	010317004.d
Level 2	IC 590-10208/3	010317003.d
Level 3	IC 590-10208/5	010317005.d
Level 4	IC 590-10208/6	010317006.d
Level 5	IC 590-10208/7	010317007.d
Level 6	IC 590-10208/8	010317008.d
Level 7	IC 590-10208/9	010317009.d

ANALYTE	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
		LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Fluoride	Qua2	713226	1407 1474079	21319	135385	318956	20.0	0.200 40.0	1.00	5.00	10.0
Chloride	Qua2	+++++ 1785871	13671 3776618	61728	360021	807480	+++++ 50.0	0.500 100	2.50	12.5	25.0
Sulfate	Qua2	+++++ 1085285	6280 2420312	36179	207645	470173	+++++ 50.0	0.500 100	2.50	12.5	25.0

Curve Type Legend:
Qua2 = Quadratic 1/conc^2

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Spokane Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCV 590-10894/3 Calibration Date: 02/28/2017 13:13

Instrument ID: IC Calib Start Date: 01/03/2017 10:52

GC Column: AS14 ID: 4.00(mm) Calib End Date: 01/03/2017 12:05

Lab File ID: 022817003.d Conc. Units: mg/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Fluoride	Qua2		28409		5.04	5.00	0.8	10.0
Chloride	Qua2		29375		12.7	12.5	1.3	10.0
Sulfate	Qua2		17329		12.7	12.5	1.9	10.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Spokane Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCV 590-10894/3 Calibration Date: 02/28/2017 13:13

Instrument ID: IC Calib Start Date: 01/03/2017 10:52

GC Column: AS14 ID: 4.00(mm) Calib End Date: 01/03/2017 12:05

Lab File ID: 022817003.d

Analyte	RT	RT WINDOW	
		FROM	TO
Fluoride	1.78	1.28	2.28
Chloride	2.53	2.28	2.78
Sulfate	6.78	6.53	7.03

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Spokane Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCV 590-10894/12 Calibration Date: 02/28/2017 15:03

Instrument ID: IC Calib Start Date: 01/03/2017 10:52

GC Column: AS14 ID: 4.00(mm) Calib End Date: 01/03/2017 12:05

Lab File ID: 022817012.d Conc. Units: mg/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Fluoride	Qua2		29084		5.15	5.00	3.0	10.0
Chloride	Qua2		30103		13.0	12.5	3.7	10.0
Sulfate	Qua2		17987		13.2	12.5	5.5	10.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Spokane Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCV 590-10894/12 Calibration Date: 02/28/2017 15:03

Instrument ID: IC Calib Start Date: 01/03/2017 10:52

GC Column: AS14 ID: 4.00(mm) Calib End Date: 01/03/2017 12:05

Lab File ID: 022817012.d

Analyte	RT	RT WINDOW	
		FROM	TO
Fluoride	1.80	1.30	2.30
Chloride	2.57	2.32	2.82
Sulfate	6.87	6.62	7.12

FORM VII
HPLC/IC CONTINUING CALIBRATION DATA

Lab Name: TestAmerica Spokane Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCV 590-10894/17 Calibration Date: 02/28/2017 16:04

Instrument ID: IC Calib Start Date: 01/03/2017 10:52

GC Column: AS14 ID: 4.00(mm) Calib End Date: 01/03/2017 12:05

Lab File ID: 022817016.d Conc. Units: mg/L

ANALYTE	CURVE TYPE	AVE CF	CF	MIN CF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Fluoride	Qua2		29894		5.28	5.00	5.6	10.0
Chloride	Qua2		30161		13.0	12.5	3.8	10.0
Sulfate	Qua2		17961		13.2	12.5	5.4	10.0

FORM VII
HPLC/IC CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: TestAmerica Spokane Job No.: 580-66304-1

SDG No.:

Lab Sample ID: CCV 590-10894/17 Calibration Date: 02/28/2017 16:04

Instrument ID: IC Calib Start Date: 01/03/2017 10:52

GC Column: AS14 ID: 4.00(mm) Calib End Date: 01/03/2017 12:05

Lab File ID: 022817016.d

Analyte	RT	RT WINDOW	
		FROM	TO
Fluoride	1.82	1.32	2.32
Chloride	2.58	2.33	2.83
Sulfate	6.92	6.67	7.17

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Spokane | Job No.: 580-66304-1

SDG No.:

Client Sample ID: | Lab Sample ID: MB 590-10894/1013

Matrix: Water | Lab File ID: 022817013-MB.d

Analysis Method: 300.0 | Date Collected:

Extraction Method: | Date Extracted:

Sample wt/vol: 5(mL) | Date Analyzed: 02/28/2017 15:28

Con. Extract Vol.: | Dilution Factor: 1

Injection Volume: 5(mL) | GC Column: AS14 ID: 4(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 10894 | Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
14808-79-8	Sulfate	ND		1.2	0.13

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Spokane | Job No.: 580-66304-1

SDG No.:

Client Sample ID: | Lab Sample ID: CCB 590-10894/2

Matrix: Water | Lab File ID: 022817002.d

Analysis Method: 300.0 | Date Collected:

Extraction Method: | Date Extracted:

Sample wt/vol: 5(mL) | Date Analyzed: 02/28/2017 13:01

Con. Extract Vol.: | Dilution Factor: 1

Injection Volume: 5(mL) | GC Column: AS14 ID: 4(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 10894 | Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
14808-79-8	Sulfate	ND		0.50	0.13

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Spokane | Job No.: 580-66304-1

SDG No.:

Client Sample ID: | Lab Sample ID: CCB 590-10894/13

Matrix: Water | Lab File ID: 022817013.d

Analysis Method: 300.0 | Date Collected:

Extraction Method: | Date Extracted:

Sample wt/vol: 5(mL) | Date Analyzed: 02/28/2017 15:28

Con. Extract Vol.: | Dilution Factor: 1

Injection Volume: 5(mL) | GC Column: AS14 ID: 4(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 10894 | Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
14808-79-8	Sulfate	ND		0.50	0.13

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Spokane | Job No.: 580-66304-1

SDG No.:

Client Sample ID: | Lab Sample ID: CCB 590-10894/16

Matrix: Water | Lab File ID: 022817017.d

Analysis Method: 300.0 | Date Collected:

Extraction Method: | Date Extracted:

Sample wt/vol: 5(mL) | Date Analyzed: 02/28/2017 16:16

Con. Extract Vol.: | Dilution Factor: 1

Injection Volume: 5(mL) | GC Column: AS14 ID: 4(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 10894 | Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
14808-79-8	Sulfate	ND		0.50	0.13

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Spokane | Job No.: 580-66304-1

SDG No.:

Client Sample ID: | Lab Sample ID: LCS 590-10894/1012

Matrix: Water | Lab File ID: 022817012-LCS.d

Analysis Method: 300.0 | Date Collected:

Extraction Method: | Date Extracted:

Sample wt/vol: 5(mL) | Date Analyzed: 02/28/2017 15:03

Con. Extract Vol.: | Dilution Factor: 1

Injection Volume: 5(mL) | GC Column: AS14 ID: 4(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 10894 | Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
14808-79-8	Sulfate	13.2		1.2	0.13

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Spokane | Job No.: 580-66304-1

SDG No.:

Client Sample ID: MW-18-170222 MS | Lab Sample ID: 580-66304-3 MS

Matrix: Water | Lab File ID: 022817006.d

Analysis Method: 300.0 | Date Collected: 02/22/2017 13:15

Extraction Method: | Date Extracted:

Sample wt/vol: 5(mL) | Date Analyzed: 02/28/2017 13:50

Con. Extract Vol.: | Dilution Factor: 1

Injection Volume: 5(mL) | GC Column: AS14 ID: 4(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 10894 | Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
14808-79-8	Sulfate	53.7		1.2	0.13

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Spokane | Job No.: 580-66304-1

SDG No.:

Client Sample ID: MW-18-170222 MSD | Lab Sample ID: 580-66304-3 MSD

Matrix: Water | Lab File ID: 022817010.d

Analysis Method: 300.0 | Date Collected: 02/22/2017 13:15

Extraction Method: | Date Extracted:

Sample wt/vol: 5(mL) | Date Analyzed: 02/28/2017 14:38

Con. Extract Vol.: | Dilution Factor: 1

Injection Volume: 5(mL) | GC Column: AS14 ID: 4(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 10894 | Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
14808-79-8	Sulfate	54.0		1.2	0.13

FORM I
HPLC/IC ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Spokane | Job No.: 580-66304-1

SDG No.:

Client Sample ID: MW-18-170222 DU | Lab Sample ID: 580-66304-3 DU

Matrix: Water | Lab File ID: 022817008.d

Analysis Method: 300.0 | Date Collected: 02/22/2017 13:15

Extraction Method: | Date Extracted:

Sample wt/vol: 5(mL) | Date Analyzed: 02/28/2017 14:14

Con. Extract Vol.: | Dilution Factor: 1

Injection Volume: 5(mL) | GC Column: AS14 ID: 4(mm)

% Moisture: | GPC Cleanup:(Y/N) N

Analysis Batch No.: 10894 | Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
14808-79-8	Sulfate	46.7		1.2	0.13

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Spokane Job No.: 580-66304-1

SDG No.:

Instrument ID: IC Start Date: 01/03/2017 10:40

Analysis Batch Number: 10208 End Date: 01/03/2017 16:11

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
ICB 590-10208/2		01/03/2017 10:40	1		AS14 4(mm)
IC 590-10208/3		01/03/2017 10:52	1	010317003.d	AS14 4(mm)
IC 590-10208/4		01/03/2017 11:05	1	010317004.d	AS14 4(mm)
IC 590-10208/5		01/03/2017 11:17	1	010317005.d	AS14 4(mm)
IC 590-10208/6		01/03/2017 11:29	1	010317006.d	AS14 4(mm)
IC 590-10208/7		01/03/2017 11:41	1	010317007.d	AS14 4(mm)
IC 590-10208/8		01/03/2017 11:53	1	010317008.d	AS14 4(mm)
IC 590-10208/9		01/03/2017 12:05	1	010317009.d	AS14 4(mm)
ICV 590-10208/11		01/03/2017 12:30	1		AS14 4(mm)
CCV 590-10208/14		01/03/2017 14:46	1		AS14 4(mm)
ZZZZZ		01/03/2017 15:10	4		AS14 4(mm)
ZZZZZ		01/03/2017 15:35	4		AS14 4(mm)
ZZZZZ		01/03/2017 15:47	4		AS14 4(mm)
CCV 590-10208/20		01/03/2017 15:59	1		AS14 4(mm)
ZZZZZ		01/03/2017 15:59	1		AS14 4(mm)
CCB 590-10208/21		01/03/2017 16:11	1		AS14 4(mm)
ZZZZZ		01/03/2017 16:11	1		AS14 4(mm)

HPLC/IC ANALYSIS RUN LOG

Lab Name: TestAmerica Spokane Job No.: 580-66304-1

SDG No.:

Instrument ID: IC Start Date: 02/28/2017 13:01

Analysis Batch Number: 10894 End Date: 02/28/2017 16:16

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCB 590-10894/2		02/28/2017 13:01	1	022817002.d	AS14 4(mm)
CCV 590-10894/3		02/28/2017 13:13	1	022817003.d	AS14 4(mm)
580-66304-1		02/28/2017 13:25	1	022817004.d	AS14 4(mm)
580-66304-2		02/28/2017 13:37	1	022817005.d	AS14 4(mm)
580-66304-3 MS		02/28/2017 13:50	1	022817006.d	AS14 4(mm)
580-66304-3		02/28/2017 14:02	1	022817007.d	AS14 4(mm)
580-66304-3 DU		02/28/2017 14:14	1	022817008.d	AS14 4(mm)
580-66304-3 MSD		02/28/2017 14:38	1	022817010.d	AS14 4(mm)
CCV 590-10894/12		02/28/2017 15:03	1	022817012.d	AS14 4(mm)
LCS 590-10894/1012		02/28/2017 15:03	1	022817012-LCS.d	AS14 4(mm)
CCB 590-10894/13		02/28/2017 15:28	1	022817013.d	AS14 4(mm)
MB 590-10894/1013		02/28/2017 15:28	1	022817013-MB.d	AS14 4(mm)
580-66304-4		02/28/2017 15:40	10	022817014.d	AS14 4(mm)
580-66304-5		02/28/2017 15:52	10	022817015.d	AS14 4(mm)
CCV 590-10894/17		02/28/2017 16:04	1	022817016.d	AS14 4(mm)
CCB 590-10894/16		02/28/2017 16:16	1	022817017.d	AS14 4(mm)

Subcontract Data

Shipping and Receiving Documents

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.testamericainc.com

☒ Rush
☐ Short Hold

Chain of Custody Record

Client: GEOENGINEERS	Client Contact: NICK ROHRBACH	Date: 2/23/17	Chain of Custody Number: 34005
Address: 1201 S. Fawcett Ave #200	Telephone Number (Area Code)/Fax Number: 253-383-4940	Lab Number: 66304	Page 1 of 1
City: TACOMA State: WA Zip Code:	Sampler: PDR	Lab Contact:	
Project Name and Location (State): 313 STATE AVE	Billing Contact:		
Contract/Purchase Order/Quote No.: GEI # 0415-049-07			

Analysis (Attach list if more space is needed): VOC 8260*, Sulfate

	Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	VOC 8260*	Sulfate	Special Instructions/Conditions of Receipt
-1	MW-3-170222-W	2/22	1420		X			1			3			X	X	*Reporting limits
-2	MW-16-170222-W		1215		X			1			3			X	X	Analyte list, QA/QC
-3	MW-18-170222-W		1315		X			1			3			X	X	to be achieved
-3	MW-18-170222-MS		1317		X			1			3			X	X	see table B-4 of
3-5	MW-18-170222-MSD		1319		X			1			3			X	X	monitoring
-4	MW-19-170222-W		1130		X			1			3			X	X	plan
-5	DUP01-170222		1200		X			1			3			X	X	
-6	Trip Blank-170222	2/22			X						2			X		

TB 2/24/17

TB [illegible] Cooler ___ Cor 3.3 Unc 4.2
Cooler Dsc Red R/W @Lab
Wet/Packs Packing Bubble
Cli dr w/c

580-66304 Chain of Custody

Cooler ☐ Yes ☐ No Cooler Temp: ____

Possible Hazard Identification ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown | ☐ Return To Client ☐ Archive For ____ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days) ☐ 24 Hours ☐ 48 Hours ☒ 5 Days ☐ 10 Days ☐ 15 Days ☐ Other ____

QC Requirements (Specify)

1. Relinquished By Sign/Print: [signature] PAUL ROBINETTE	Date: 2/23/17	Time: 0927	1. Received By Sign/Print: B. Gall B. Gall SEA TA	Date: 2.23.17	Time: 0927
2. Relinquished By Sign/Print	Date	Time	2. Received By Sign/Print	Date	Time
3. Relinquished By Sign/Print	Date	Time	3. Received By Sign/Print	Date	Time

Comments

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy

TAL-8274-580 (0210)

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

TestAmerica
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Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arrington, Randee E	Carrier Tracking No(s):	COC No: 580-44633.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: randee.arrington@testamericainc.com	State of Origin: Washington	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note): State Program - Washington		Job #: 580-66304-1
Address: 11922 East 1st Ave, ,	Due Date Requested: 3/1/2017			
City: Spokane	TAT Requested (days):			
State, Zip: WA, 99206				
Phone: 509-924-9200(Tel) 509-924-9290(Fax)	PO #:			
Email:	WO #:			
Project Name: 318 State AVE NE (WA)	Project #: 58003899			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	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)	300_ORGFM_28D/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-3-170222 (580-66304-1)	2/22/17	14:20 Pacific		Water			X	1	
MW-16-170222 (580-66304-2)	2/22/17	12:15 Pacific		Water			X	1	
MW-18-170222 (580-66304-3)	2/22/17	13:15 Pacific		Water			X	1	
MW-18-170222 (580-66304-3MS)	2/22/17	13:15 Pacific	MS	Water			X	1	
MW-18-170222 (580-66304-3MSD)	2/22/17	13:15 Pacific	MSD	Water			X	1	
MW-19-170222 (580-66304-4)	2/22/17	11:30 Pacific		Water			X	1	
DUP 1-170222 (580-66304-5)	2/22/17	12:00 Pacific		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FEDEX 772230739740		
Relinquished by: Tom Bl	Date/Time: 2/27/17	Company: TA-SEA	Received by: Sheila Kady	Date/Time: 2/28/17 10:10	Company: TA-SEA
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.: 623038	Cooler Temperature(s) °C and Other Remarks: 1.2°C IR004

Login Sample Receipt Checklist

Client: GeoEngineers Inc

Job Number: 580-66304-1

Login Number: 66304
List Number: 1
Creator: Blankinship, Tom X

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
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.	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 <6mm (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: 580-66304-1

Login Number: 66304
List Number: 2
Creator: Kratz, Sheila J

List Source: TestAmerica Spokane
List Creation: 02/28/17 10:13 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
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?	N/A	Received project as a subcontract.
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 <6mm (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 Seattle
5755 8th Street East
Tacoma, WA 98424
Tel: (253)922-2310

TestAmerica Job ID: 580-66304-1
Client Project/Site: 318 State AVE NE (WA)

For:
GeoEngineers Inc
1101 Fawcett, Suite 200
Tacoma, Washington 98402

Attn: Mr. Iain Wingard

Authorized for release by:
3/1/2017 12:55:57 PM

Randee Arrington, Project Manager II
(509)924-9200
randee.arrington@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: 318 State AVE NE (WA)

TestAmerica Job ID: 580-66304-1

Job ID: 580-66304-1

Laboratory: TestAmerica Seattle

Narrative

Receipt
The samples were received on 2/23/2017 9:27 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.3º C.

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

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

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD Recovery is outside acceptance limits.

Glossary

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

Client: GeoEngineers Inc
Project/Site: 318 State AVE NE (WA)

TestAmerica Job ID: 580-66304-1

Client Sample ID: MW-3-170222
Date Collected: 02/22/17 14:20
Date Received: 02/23/17 09:27

Lab Sample ID: 580-66304-1
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.27**		0.020	0.013	ug/L			02/27/17 16:41	1
1,1-Dichloroethene	ND		0.10	0.018	ug/L			02/27/17 16:41	1
trans-1,2-Dichloroethene	ND		0.20	0.025	ug/L			02/27/17 16:41	1
cis-1,2-Dichloroethene	**0.31**		0.20	0.025	ug/L			02/27/17 16:41	1
Trichloroethene	**2.8**		0.20	0.025	ug/L			02/27/17 16:41	1
Tetrachloroethene	ND		0.50	0.070	ug/L			02/27/17 16:41	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*75 - 125*		*02/27/17 16:41*	*1*
Trifluorotoluene (Surr)	*97*		*74 - 118*		*02/27/17 16:41*	*1*
Dibromofluoromethane (Surr)	*99*		*42 - 132*		*02/27/17 16:41*	*1*
4-Bromofluorobenzene (Surr)	*102*		*81 - 120*		*02/27/17 16:41*	*1*
1,2-Dichloroethane-d4 (Surr)	*100*		*46 - 150*		*02/27/17 16:41*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**99**		1.2	0.13	mg/L			02/28/17 13:25	1

Client: GeoEngineers Inc
Project/Site: 318 State AVE NE (WA)

TestAmerica Job ID: 580-66304-1

Client Sample ID: MW-16-170222
Date Collected: 02/22/17 12:15
Date Received: 02/23/17 09:27

Lab Sample ID: 580-66304-2
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.084**		0.020	0.013	ug/L			02/27/17 17:07	1
1,1-Dichloroethene	ND		0.10	0.018	ug/L			02/27/17 17:07	1
trans-1,2-Dichloroethene	ND		0.20	0.025	ug/L			02/27/17 17:07	1
cis-1,2-Dichloroethene	**0.098**	**J**	0.20	0.025	ug/L			02/27/17 17:07	1
Trichloroethene	**0.21**		0.20	0.025	ug/L			02/27/17 17:07	1
Tetrachloroethene	ND		0.50	0.070	ug/L			02/27/17 17:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*75 - 125*		*02/27/17 17:07*	*1*
Trifluorotoluene (Surr)	*94*		*74 - 118*		*02/27/17 17:07*	*1*
Dibromofluoromethane (Surr)	*100*		*42 - 132*		*02/27/17 17:07*	*1*
4-Bromofluorobenzene (Surr)	*102*		*81 - 120*		*02/27/17 17:07*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*46 - 150*		*02/27/17 17:07*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**24**		1.2	0.13	mg/L			02/28/17 13:37	1

Client: GeoEngineers Inc
Project/Site: 318 State AVE NE (WA)

TestAmerica Job ID: 580-66304-1

Client Sample ID: MW-18-170222
Date Collected: 02/22/17 13:15
Date Received: 02/23/17 09:27

Lab Sample ID: 580-66304-3
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.87**		0.020	0.013	ug/L			02/27/17 18:25	1
1,1-Dichloroethene	ND		0.10	0.018	ug/L			02/27/17 18:25	1
trans-1,2-Dichloroethene	**0.14**	**J**	0.20	0.025	ug/L			02/27/17 18:25	1
cis-1,2-Dichloroethene	**0.24**		0.20	0.025	ug/L			02/27/17 18:25	1
Trichloroethene	**0.41**		0.20	0.025	ug/L			02/27/17 18:25	1
Tetrachloroethene	ND		0.50	0.070	ug/L			02/27/17 18:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*75 - 125*		*02/27/17 18:25*	*1*
Trifluorotoluene (Surr)	*95*		*74 - 118*		*02/27/17 18:25*	*1*
Dibromofluoromethane (Surr)	*101*		*42 - 132*		*02/27/17 18:25*	*1*
4-Bromofluorobenzene (Surr)	*102*		*81 - 120*		*02/27/17 18:25*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*46 - 150*		*02/27/17 18:25*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**47**	**F1**	1.2	0.13	mg/L			02/28/17 14:02	1

Client: GeoEngineers Inc
Project/Site: 318 State AVE NE (WA)

TestAmerica Job ID: 580-66304-1

Client Sample ID: MW-19-170222
Date Collected: 02/22/17 11:30
Date Received: 02/23/17 09:27

Lab Sample ID: 580-66304-4
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.078**		0.020	0.013	ug/L			02/27/17 17:33	1
1,1-Dichloroethene	ND		0.10	0.018	ug/L			02/27/17 17:33	1
trans-1,2-Dichloroethene	ND		0.20	0.025	ug/L			02/27/17 17:33	1
cis-1,2-Dichloroethene	**0.082**	**J**	0.20	0.025	ug/L			02/27/17 17:33	1
Trichloroethene	**1.4**		0.20	0.025	ug/L			02/27/17 17:33	1
Tetrachloroethene	ND		0.50	0.070	ug/L			02/27/17 17:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*75 - 125*		*02/27/17 17:33*	*1*
Trifluorotoluene (Surr)	*93*		*74 - 118*		*02/27/17 17:33*	*1*
Dibromofluoromethane (Surr)	*101*		*42 - 132*		*02/27/17 17:33*	*1*
4-Bromofluorobenzene (Surr)	*102*		*81 - 120*		*02/27/17 17:33*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*46 - 150*		*02/27/17 17:33*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**350**		12	1.3	mg/L			02/28/17 15:40	10

Client: GeoEngineers Inc
Project/Site: 318 State AVE NE (WA)

TestAmerica Job ID: 580-66304-1

Client Sample ID: DUP 1-170222
Date Collected: 02/22/17 12:00
Date Received: 02/23/17 09:27

Lab Sample ID: 580-66304-5
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	**0.053**		0.020	0.013	ug/L			02/27/17 17:59	1
1,1-Dichloroethene	ND		0.10	0.018	ug/L			02/27/17 17:59	1
trans-1,2-Dichloroethene	ND		0.20	0.025	ug/L			02/27/17 17:59	1
cis-1,2-Dichloroethene	**0.037**	**J**	0.20	0.025	ug/L			02/27/17 17:59	1
Trichloroethene	**1.4**		0.20	0.025	ug/L			02/27/17 17:59	1
Tetrachloroethene	ND		0.50	0.070	ug/L			02/27/17 17:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*75 - 125*		*02/27/17 17:59*	*1*
Trifluorotoluene (Surr)	*93*		*74 - 118*		*02/27/17 17:59*	*1*
Dibromofluoromethane (Surr)	*100*		*42 - 132*		*02/27/17 17:59*	*1*
4-Bromofluorobenzene (Surr)	*103*		*81 - 120*		*02/27/17 17:59*	*1*
1,2-Dichloroethane-d4 (Surr)	*99*		*46 - 150*		*02/27/17 17:59*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**330**		12	1.3	mg/L			02/28/17 15:52	10

Client: GeoEngineers Inc
Project/Site: 318 State AVE NE (WA)

TestAmerica Job ID: 580-66304-1

Client Sample ID: Trip BLank-170222
Date Collected: 02/22/17 00:01
Date Received: 02/23/17 09:27

Lab Sample ID: 580-66304-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020	0.013	ug/L			02/28/17 00:03	1
1,1-Dichloroethene	ND		0.10	0.018	ug/L			02/28/17 00:03	1
trans-1,2-Dichloroethene	ND		0.20	0.025	ug/L			02/28/17 00:03	1
cis-1,2-Dichloroethene	ND		0.20	0.025	ug/L			02/28/17 00:03	1
Trichloroethene	ND		0.20	0.025	ug/L			02/28/17 00:03	1
Tetrachloroethene	ND		0.50	0.070	ug/L			02/28/17 00:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*75 - 125*		*02/28/17 00:03*	*1*
Trifluorotoluene (Surr)	*97*		*74 - 118*		*02/28/17 00:03*	*1*
Dibromofluoromethane (Surr)	*101*		*42 - 132*		*02/28/17 00:03*	*1*
4-Bromofluorobenzene (Surr)	*102*		*81 - 120*		*02/28/17 00:03*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*46 - 150*		*02/28/17 00:03*	*1*

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

Lab Sample ID: MB 580-239330/4
Matrix: Water
Analysis Batch: 239330

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020	0.013	ug/L			02/27/17 11:31	1
1,1-Dichloroethene	ND		0.10	0.018	ug/L			02/27/17 11:31	1
trans-1,2-Dichloroethene	ND		0.20	0.025	ug/L			02/27/17 11:31	1
cis-1,2-Dichloroethene	ND		0.20	0.025	ug/L			02/27/17 11:31	1
Trichloroethene	ND		0.20	0.025	ug/L			02/27/17 11:31	1
Tetrachloroethene	ND		0.50	0.070	ug/L			02/27/17 11:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*97*		*75 - 125*		*02/27/17 11:31*	*1*
Trifluorotoluene (Surr)	*99*		*74 - 118*		*02/27/17 11:31*	*1*
Dibromofluoromethane (Surr)	*101*		*42 - 132*		*02/27/17 11:31*	*1*
4-Bromofluorobenzene (Surr)	*102*		*81 - 120*		*02/27/17 11:31*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*46 - 150*		*02/27/17 11:31*	*1*

Lab Sample ID: LCS 580-239330/5
Matrix: Water
Analysis Batch: 239330

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	5.00	4.45		ug/L		89	59 - 140
1,1-Dichloroethene	5.00	4.83		ug/L		97	64 - 125
trans-1,2-Dichloroethene	5.00	5.03		ug/L		101	69 - 124
cis-1,2-Dichloroethene	5.00	4.98		ug/L		100	73 - 130
Trichloroethene	5.00	4.98		ug/L		100	72 - 123
Tetrachloroethene	5.00	4.79		ug/L		96	67 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*97*		*75 - 125*
Trifluorotoluene (Surr)	*96*		*74 - 118*
Dibromofluoromethane (Surr)	*101*		*42 - 132*
4-Bromofluorobenzene (Surr)	*102*		*81 - 120*
1,2-Dichloroethane-d4 (Surr)	*101*		*46 - 150*

Lab Sample ID: LCSD 580-239330/6
Matrix: Water
Analysis Batch: 239330

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
Vinyl chloride	5.00	4.50		ug/L		90	59 - 140	1	30
1,1-Dichloroethene	5.00	4.84		ug/L		97	64 - 125	0	28
trans-1,2-Dichloroethene	5.00	5.13		ug/L		103	69 - 124	2	27
cis-1,2-Dichloroethene	5.00	5.12		ug/L		102	73 - 130	3	20
Trichloroethene	5.00	5.11		ug/L		102	72 - 123	2	20
Tetrachloroethene	5.00	4.93		ug/L		99	67 - 123	3	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*98*		*75 - 125*

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

Lab Sample ID: LCSD 580-239330/6
Matrix: Water
Analysis Batch: 239330

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

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Trifluorotoluene (Surr)	*94*		*74 - 118*
Dibromofluoromethane (Surr)	*101*		*42 - 132*
4-Bromofluorobenzene (Surr)	*102*		*81 - 120*
1,2-Dichloroethane-d4 (Surr)	*99*		*46 - 150*

Lab Sample ID: 580-66304-3 MS
Matrix: Water
Analysis Batch: 239330

Client Sample ID: MW-18-170222
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	0.87		5.00	5.13		ug/L		85	59 - 140
1,1-Dichloroethene	ND		5.00	4.74		ug/L		95	64 - 125
trans-1,2-Dichloroethene	0.14	J	5.00	5.27		ug/L		103	69 - 124
cis-1,2-Dichloroethene	0.24		5.00	5.31		ug/L		101	73 - 130
Trichloroethene	0.41		5.00	5.16		ug/L		95	72 - 123
Tetrachloroethene	ND		5.00	4.67		ug/L		93	67 - 123

Surrogate	MS %Recovery	MS Qualifier	Limits
Toluene-d8 (Surr)	*97*		*75 - 125*
Trifluorotoluene (Surr)	*93*		*74 - 118*
Dibromofluoromethane (Surr)	*101*		*42 - 132*
4-Bromofluorobenzene (Surr)	*102*		*81 - 120*
1,2-Dichloroethane-d4 (Surr)	*100*		*46 - 150*

Lab Sample ID: 580-66304-3 MSD
Matrix: Water
Analysis Batch: 239330

Client Sample ID: MW-18-170222
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Vinyl chloride	0.87		5.00	5.37		ug/L		90	59 - 140	5	35
1,1-Dichloroethene	ND		5.00	4.79		ug/L		96	64 - 125	1	35
trans-1,2-Dichloroethene	0.14	J	5.00	5.17		ug/L		101	69 - 124	2	35
cis-1,2-Dichloroethene	0.24		5.00	5.15		ug/L		98	73 - 130	3	35
Trichloroethene	0.41		5.00	5.13		ug/L		94	72 - 123	1	35
Tetrachloroethene	ND		5.00	4.63		ug/L		93	67 - 123	1	35

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Toluene-d8 (Surr)	*97*		*75 - 125*
Trifluorotoluene (Surr)	*93*		*74 - 118*
Dibromofluoromethane (Surr)	*101*		*42 - 132*
4-Bromofluorobenzene (Surr)	*104*		*81 - 120*
1,2-Dichloroethane-d4 (Surr)	*100*		*46 - 150*

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

Lab Sample ID: MB 580-239343/4
Matrix: Water
Analysis Batch: 239343

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.020	0.013	ug/L			02/27/17 21:53	1
1,1-Dichloroethene	ND		0.10	0.018	ug/L			02/27/17 21:53	1
trans-1,2-Dichloroethene	ND		0.20	0.025	ug/L			02/27/17 21:53	1
cis-1,2-Dichloroethene	ND		0.20	0.025	ug/L			02/27/17 21:53	1
Trichloroethene	ND		0.20	0.025	ug/L			02/27/17 21:53	1
Tetrachloroethene	ND		0.50	0.070	ug/L			02/27/17 21:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*75 - 125*		*02/27/17 21:53*	*1*
Trifluorotoluene (Surr)	*98*		*74 - 118*		*02/27/17 21:53*	*1*
Dibromofluoromethane (Surr)	*101*		*42 - 132*		*02/27/17 21:53*	*1*
4-Bromofluorobenzene (Surr)	*102*		*81 - 120*		*02/27/17 21:53*	*1*
1,2-Dichloroethane-d4 (Surr)	*101*		*46 - 150*		*02/27/17 21:53*	*1*

Lab Sample ID: LCS 580-239343/5
Matrix: Water
Analysis Batch: 239343

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	5.00	4.47		ug/L		89	59 - 140
1,1-Dichloroethene	5.00	4.99		ug/L		100	64 - 125
trans-1,2-Dichloroethene	5.00	4.98		ug/L		100	69 - 124
cis-1,2-Dichloroethene	5.00	5.02		ug/L		100	73 - 130
Trichloroethene	5.00	5.13		ug/L		103	72 - 123
Tetrachloroethene	5.00	4.75		ug/L		95	67 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Toluene-d8 (Surr)	*96*		*75 - 125*
Trifluorotoluene (Surr)	*94*		*74 - 118*
Dibromofluoromethane (Surr)	*102*		*42 - 132*
4-Bromofluorobenzene (Surr)	*103*		*81 - 120*
1,2-Dichloroethane-d4 (Surr)	*100*		*46 - 150*

Lab Sample ID: LCSD 580-239343/6
Matrix: Water
Analysis Batch: 239343

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
Vinyl chloride	5.00	4.49		ug/L		90	59 - 140	1	30
1,1-Dichloroethene	5.00	4.85		ug/L		97	64 - 125	3	28
trans-1,2-Dichloroethene	5.00	5.05		ug/L		101	69 - 124	1	27
cis-1,2-Dichloroethene	5.00	5.00		ug/L		100	73 - 130	0	20
Trichloroethene	5.00	5.19		ug/L		104	72 - 123	1	20
Tetrachloroethene	5.00	4.73		ug/L		95	67 - 123	1	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Toluene-d8 (Surr)	*97*		*75 - 125*

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

Lab Sample ID: LCSD 580-239343/6
Matrix: Water
Analysis Batch: 239343

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

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Trifluorotoluene (Surr)	*95*		*74 - 118*
Dibromofluoromethane (Surr)	*101*		*42 - 132*
4-Bromofluorobenzene (Surr)	*102*		*81 - 120*
1,2-Dichloroethane-d4 (Surr)	*99*		*46 - 150*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 590-10894/1013
Matrix: Water
Analysis Batch: 10894

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.2	0.13	mg/L			02/28/17 15:28	1

Lab Sample ID: LCS 590-10894/1012
Matrix: Water
Analysis Batch: 10894

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	13.2		mg/L		106	90 - 110		

Lab Sample ID: 580-66304-3 MS
Matrix: Water
Analysis Batch: 10894

Client Sample ID: MW-18-170222
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sulfate	47	F1	12.5	53.7	F1	mg/L		55	80 - 120		

Lab Sample ID: 580-66304-3 MSD
Matrix: Water
Analysis Batch: 10894

Client Sample ID: MW-18-170222
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Sulfate	47	F1	12.5	54.0	F1	mg/L		58	80 - 120	1	10

Lab Sample ID: 580-66304-3 DU
Matrix: Water
Analysis Batch: 10894

Client Sample ID: MW-18-170222
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfate	47	F1	46.7		mg/L		0.1	15.7

Lab Chronicle

Client: GeoEngineers Inc
Project/Site: 318 State AVE NE (WA)

TestAmerica Job ID: 580-66304-1

Client Sample ID: MW-3-170222 — Lab Sample ID: 580-66304-1

Date Collected: 02/22/17 14:20 — **Matrix: Water**
Date Received: 02/23/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	239330	02/27/17 16:41	TL1	TAL SEA
Total/NA	Analysis	300.0		1	10894	02/28/17 13:25	MRS	TAL SPK

Client Sample ID: MW-16-170222 — Lab Sample ID: 580-66304-2

Date Collected: 02/22/17 12:15 — **Matrix: Water**
Date Received: 02/23/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	239330	02/27/17 17:07	TL1	TAL SEA
Total/NA	Analysis	300.0		1	10894	02/28/17 13:37	MRS	TAL SPK

Client Sample ID: MW-18-170222 — Lab Sample ID: 580-66304-3

Date Collected: 02/22/17 13:15 — **Matrix: Water**
Date Received: 02/23/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	239330	02/27/17 18:25	TL1	TAL SEA
Total/NA	Analysis	300.0		1	10894	02/28/17 14:02	MRS	TAL SPK

Client Sample ID: MW-19-170222 — Lab Sample ID: 580-66304-4

Date Collected: 02/22/17 11:30 — **Matrix: Water**
Date Received: 02/23/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	239330	02/27/17 17:33	TL1	TAL SEA
Total/NA	Analysis	300.0		10	10894	02/28/17 15:40	MRS	TAL SPK

Client Sample ID: DUP 1-170222 — Lab Sample ID: 580-66304-5

Date Collected: 02/22/17 12:00 — **Matrix: Water**
Date Received: 02/23/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	239330	02/27/17 17:59	TL1	TAL SEA
Total/NA	Analysis	300.0		10	10894	02/28/17 15:52	MRS	TAL SPK

Client Sample ID: Trip BLank-170222 — Lab Sample ID: 580-66304-6

Date Collected: 02/22/17 00:01 — **Matrix: Water**
Date Received: 02/23/17 09:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	239343	02/28/17 00:03	CJ	TAL SEA

Lab Chronicle

Client: GeoEngineers Inc
Project/Site: 318 State AVE NE (WA)

TestAmerica Job ID: 580-66304-1

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

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

Certification Summary

Client: GeoEngineers Inc
Project/Site: 318 State AVE NE (WA)

TestAmerica Job ID: 580-66304-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Washington	State Program	10	C553	02-17-18

Analysis Method	Prep Method	Matrix	Analyte

Laboratory: TestAmerica Spokane

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

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

Sample Summary

Client: GeoEngineers Inc
Project/Site: 318 State AVE NE (WA)

TestAmerica Job ID: 580-66304-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-66304-1	MW-3-170222	Water	02/22/17 14:20	02/23/17 09:27
580-66304-2	MW-16-170222	Water	02/22/17 12:15	02/23/17 09:27
580-66304-3	MW-18-170222	Water	02/22/17 13:15	02/23/17 09:27
580-66304-4	MW-19-170222	Water	02/22/17 11:30	02/23/17 09:27
580-66304-5	DUP 1-170222	Water	02/22/17 12:00	02/23/17 09:27
580-66304-6	Trip BLank-170222	Water	02/22/17 00:01	02/23/17 09:27

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

TestAmerica Seattle
5755 8th Street E.
Tacoma, WA 98424
Tel. 253-922-2310
Fax 253-922-5047
www.testamericainc.com

[X] Rush
[ ] Short Hold

Chain of Custody Record

Client: GeoEngineers	Client Contact: Nick Rohrbach	Date: 2/23/17	Chain of Custody Number: 34005
Address: 1201 S. Fawcett Ave #200	Telephone Number (Area Code)/Fax Number: 253-383-4940	Lab Number: 66304	Page 1 of 1
City: Tacoma; State: WA; Zip Code:	Sampler: PDR	Lab Contact:	
Project Name and Location (State): 318 State Ave	Billing Contact:		
Contract/Purchase Order/Quote No.: GEI # 0415-049-09			

	Sample I.D. and Location/Description (Containers for each sample may be combined on one line)	Date	Time	Air	Aqueous	Sed.	Soil	Unpres.	H2SO4	HNO3	HCl	NaOH	ZnAc/NaOH	VOC 8260*	Sulfate	Special Instructions/Conditions of Receipt
-1	MW-3-170222-W	2/22	1420		X			1			3			X	X	*Reporting Limits
-2	MW-16-170222-W		1218		X			1			3			X	X	Analyte list, 2x/Rx
-3	MW-18-170222-W		1315		X			1			3			X	X	to be achieved
-3	MW-18-170222-MS		1317		X			1			3			X	X	see table B-4 of
-3	MW-18-170222-MSD		1319		X			1			3			X	X	monitoring
-4	MW-19-170222-W		1130		X			1			3			X	X	plan
-5	DUP01-170222		1200		X			1			3			X	X	
-6	Trip Blank-170222	2/22			X						2			X		

TB AM Cooler ___ Cor 3.1 Unc 4.2
Cooler Dsc Med R/W @Lab
Wet/Packs Packing Bubble
Cli dis w/c

580-66304 Chain of Custody

Cooler: [ ] Yes [ ] No Cooler Temp: ______

Possible Hazard Identification: [ ] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal: [ ] Return To Client [ ] Disposal By Lab [ ] Archive For ______ Months (A fee may be assessed if samples are retained longer than 1 month)

Turn Around Time Required (business days): [ ] 24 Hours [ ] 48 Hours [X] 5 Days [ ] 10 Days [ ] 15 Days [ ] Other ______

QC Requirements (Specify):

1. Relinquished By Sign/Print	Date	Time	1. Received By Sign/Print	Date	Time
Paul Robinette	2/23/17	0927	B. Gall B. Gall SEA TA	2.23.17	0927
2. Relinquished By Sign/Print	Date	Time	2. Received By Sign/Print	Date	Time
3. Relinquished By Sign/Print	Date	Time	3. Received By Sign/Print	Date	Time

Comments

DISTRIBUTION: WHITE – Stays with the Samples; CANARY – Returned to Client with Report; PINK – Field Copy

TAL-8274 (0210) 3/1/2017

TestAmerica Seattle
5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Arrington, Randee E	Carrier Tracking No(s):	COC No: 580-44633.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: randee.arrington@testamericainc.com	State of Origin: Washington	Page: Page 1 of 1
Company: TestAmerica Laboratories, Inc		Accreditations Required (See note): State Program - Washington		Job #: 580-66304-1
Address: 11922 East 1st Ave, ,	Due Date Requested: 3/1/2017			
City: Spokane	TAT Requested (days):			
State, Zip: WA, 99206				
Phone: 509-924-9200(Tel) 509-924-9290(Fax)	PO #:			
Email:	WO #:			
Project Name: 318 State AVE NE (WA)	Project #: 58003899			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:

A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)

Other:

Sample Identification - Client ID (Lab ID)	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)	300_ORGFM_28D/ (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-3-170222 (580-66304-1)	2/22/17	14:20 Pacific		Water			X	1	
MW-16-170222 (580-66304-2)	2/22/17	12:15 Pacific		Water			X	1	
MW-18-170222 (580-66304-3)	2/22/17	13:15 Pacific		Water			X	1	
MW-18-170222 (580-66304-3MS)	2/22/17	13:15 Pacific	MS	Water			X	1	
MW-18-170222 (580-66304-3MSD)	2/22/17	13:15 Pacific	MSD	Water			X	1	
MW-19-170222 (580-66304-4)	2/22/17	11:30 Pacific		Water			X	1	
DUP 1-170222 (580-66304-5)	2/22/17	12:00 Pacific		Water			X	1	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon out subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the TestAmerica laboratory or other instructions will be provided. Any changes to accreditation status should be brought to TestAmerica Laboratories, Inc. attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said complicance to TestAmerica Laboratories, Inc.

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment: FEDEX 772230439740			
Relinquished by: Tom Blunt	Date/Time: 2/27/17	Company TA-SEA	Received by: Sheila Kraly	Date/Time: 2/28/17 10:10	Company TA-SEA	
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.: 623038	Cooler Temperature(s) °C and Other Remarks: 1.2°C IR004

3/1/2017

Login Sample Receipt Checklist

Client: GeoEngineers Inc

Job Number: 580-66304-1

Login Number: 66304

List Source: TestAmerica Seattle

List Number: 1

Creator: Blankinship, Tom X

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
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.	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 <6mm (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: 580-66304-1

Login Number: 66304
List Number: 2
Creator: Kratz, Sheila J

List Source: TestAmerica Spokane
List Creation: 02/28/17 10:13 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
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?	N/A	Received project as a subcontract.
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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX B
Data Quality Assessment Summary

GeoEngineers

1101 Fawcett Avenue, Suite 200, Tacoma, Washington 98402, Telephone: 253.383.4940, Fax: 253.383.4923 www.geoengineers.com

Data Validation Report

Project: City of Olympia – 318 NE State Avenue Site
Tenth Semi-annual Groundwater Monitoring, February 2017

GEI File No: 0415-049-07

Date: March 7, 2017

This report documents the results of a United States Environmental Protection Agency (USEPA)-defined Stage 2A data validation (USEPA Document 540-R-08-005; USEPA, 2009) of analytical data from the analyses of groundwater samples collected as part of the Tenth Semi-annual Groundwater Monitoring sampling event, and the associated laboratory and field quality control (QC) samples. The samples were obtained from the 318 NE State Avenue Property located in Olympia, Washington.

OBJECTIVE AND QUALITY CONTROL ELEMENTS

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

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

In accordance with the Quality Assurance Project Plan (QAPP), Appendix B of the Groundwater Compliance Monitoring Plan (GeoEngineers, 2015), the data validation included review of the following QC elements:

- Data Package Completeness
- Chain-of-Custody Documentation
- Holding Times and Sample Preservation
- Surrogate Recoveries
- Method and Trip Blanks
- Matrix Spikes/Matrix Spike Duplicates
- Laboratory Control Samples/Laboratory Control Sample Duplicates
- Laboratory/Field Duplicates

VALIDATED SAMPLE DELIVERY GROUPS

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

TABLE 1: SUMMARY OF VALIDATED SAMPLE DELIVERY GROUPS

Laboratory SDG	Samples Validated
580-66304-1	MW-3-170222, MW-16-170222, MW-18-170222, MW-19-170222, DUP 1-170222, Trip Blank-170222

CHEMICAL ANALYSIS PERFORMED

TestAmerica Laboratories, Inc. (TestAmerica), located in Tacoma, Washington, performed laboratory analysis on the groundwater samples using the following methods:

- Volatile Organic Compounds (VOCs) by Method SW8260C
- Sulfate Anions by Method EPA300.0

DATA VALIDATION SUMMARY

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

Data Package Completeness

TestAmerica provided all required deliverables for the data validation according to the National Functional Guidelines. The laboratory followed adequate corrective action processes and all identified anomalies were discussed in the relevant laboratory case narrative.

Chain-of-Custody Documentation

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

Holding Times and Sample Preservation

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

Surrogate Recoveries

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

calculated following analysis. All surrogate percent recoveries for field samples were within the laboratory control limits.

Method and Trip Blanks

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

Trip blanks are analyzed to assess whether field sampling or sample transport processes may have introduced measurable concentrations of volatile analytes of interest into project samples. None of the analytes of interest were detected above the reporting limits in the trip blank.

Matrix Spikes/Matrix Spike Duplicates

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

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

SDG 580-66304-1: (Sulfate) The laboratory performed an MS/MSD sample set on Sample MW-18-170222. The percent recovery for sulfate was less than the control limits in the MS/MSD extracted on 2/28/2017. The positive result for sulfate was qualified as estimated (J) in Sample MW-18-170222.

Laboratory Control Samples/Laboratory Control Sample Duplicates

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

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

LABORATORY DUPLICATES (SULFATE ANIONS ONLY)

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

Field Duplicates

In order to assess precision, a field duplicate sample was collected and analyzed along with the reviewed sample batches. The duplicate sample was analyzed for the same parameters as the associated parent sample. Precision is determined by calculating the RPD of sample concentrations between each pair of samples. If one or more of the sample analytes has a concentration greater than five times the reporting limit for that sample, then the absolute difference is used instead of the RPD. The RPD control limit for water samples is 30 percent.

SDG 580-66304-1: One field duplicate sample pair, MW-19-170222 and DUP 1-170222, was submitted with this SDG. The precision criteria for all target analytes were met for this sample pair, with the exception of vinyl chloride. The positive results for this target analyte were qualified as estimated (J) in this sample pair.

OVERALL ASSESSMENT

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

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

TABLE 2. SUMMARY OF QUALIFIED SAMPLES

Sample ID	Analyte	Qualifier	Reason
MW-18-170222	Sulfate	J	MS/MSD %R
MW-19-170222	Vinyl chloride	J	Field Duplicate RPD
DUP 1-170222	Vinyl chloride	J	Field Duplicate RPD

REFERENCES

U.S. Environmental Protection Agency (USEPA). "Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use," EPA-540-R-08-005. January 2009.

U.S. Environmental Protection Agency (USEPA). "Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review," EPA-540-R-08-01. June 2008.

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

GeoEngineers, Inc. "Groundwater Compliance Monitoring Plan," prepared for City of Olympia. October 1, 2015.