

Tesoro 2 Go Mart #76  
ADEC File #2265.26.037

April 2019  
Monitoring Event Report

Prepared For



TESORO

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## ACRONYMS AND ABBREVIATIONS

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ADEC	Alaska Department of Environmental Conservation
AK	Alaska Test Method
BTEX	benzene, toluene, ethylbenzene, xylenes
DO	dissolved oxygen
DRO	diesel range organics
EPA	U.S. Environmental Protection Agency
GCL	groundwater cleanup level
GRO	gasoline range organics
mg/L	milligrams per liter
mV	millivolts
ORP	oxidation-reduction potential
PID	photoionization detector
ppmv	parts per million volatile
QA	quality assurance
QC	quality control
Stantec	Stantec Consulting Services Inc.
SVE	soil vapor extraction
TCA	trichloroethane
TMB	trimethylbenzene
VOC	volatile organic compound

## 1.0 EXECUTIVE SUMMARY

This second quarter 2019 monitoring event report was prepared by Stantec Consulting Services Inc. (Stantec), on behalf of Tesoro Refining and Marketing Company for Tesoro 2 Go Mart #76, located at 3600 Palmer-Wasilla Highway, Wasilla, Alaska (**Figure 1**). The methods used for this monitoring event were conducted in accordance with the Alaska Department of Environmental Conservation (ADEC) approved 2019 Corrective Action Work Plan for this site.

This monitoring event was conducted on April 25, 2019, by Roxanne Russell and Jakob Keldsen, both Environmental Engineers-in-Training (EITs) with Stantec. The monitoring event included: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, and MW-4, as well as the on-site drinking water well (**Figure 2**).

Results of the groundwater analytical sampling showed that analytes detected above ADEC groundwater cleanup levels (GCLs) in the primary samples were:

- Monitoring Well MW-2: Benzene, xylenes, gasoline range organics (GRO), 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB, and naphthalene.
- Monitoring Well MW-3: Benzene, GRO, and naphthalene.

A representative water sample from the on-site drinking water well serving the Tesoro 2Go Mart was sampled and tested for volatile organic compounds (VOCs). The water sample was found to have no detectable levels of contaminants of concern, except the laboratory reporting limits were over the GCLs for 1,1,2-trichloroethane (TCA), 1,2,3-trichloropropane, 1,2-dibromoethane, and vinyl chloride.

The hydraulic gradient across the site was found to be approximately 0.04 feet per foot directed toward the west-northwest at 290 degrees. The groundwater flow direction and gradient are inconsistent with past monitoring events in that the direction of flow is to the west rather than historically to the north with a slightly higher gradient. A historical summary of the groundwater flow is shown in the “rose diagram” presented on **Figure 2**.

The existing bio-sparge treatment system is not functional and will be replaced. Stantec is in the process of installing a groundwater recirculation system based on pump and treat technology. The proposed 4” diameter remediation well is scheduled to be installed by September 2019. The new remediation well will be connected to the existing underground piping system (formerly used for the bio-sparge system) with chemical oxidation injection before the onset of winter 2019 or possibly in the spring of 2020.

The contaminant vapor mass removal with the existing soil vapor extraction (SVE) system has been documented to be very low for the past couple of years; and therefore, suggests that performance requires additional optimization. Alternative treatment options for the pump and treat system with chemical oxidation and vapor extraction are currently being prepared by Stantec. Subject to the findings and performance of the proposed 4” diameter remediation well, a new work

plan will be prepared and presented to ADEC for review and approval prior to making any changes to the groundwater treatment system.

## 2.0 SITE BACKGROUND

Background information for this site is summarized in **Appendix A**.

## 3.0 FIELD ACTIVITIES

The following field activities were conducted at the site during this monitoring event:

- Measured the depth to groundwater in Monitoring Wells MW-1, MW-2, MW-3, and MW-4. Groundwater depth measurements were used to calculate the hydraulic gradient and direction of flow for the groundwater table.
- Measured the following field intrinsic water quality parameters in all four monitoring wells: pH, temperature, dissolved oxygen (DO), oxidation-reduction potential (ORP), and specific conductance.
- Collected groundwater samples from all four monitoring wells and submitted them for laboratory analysis of: U.S. Environmental Protection Agency (EPA) Method 8260C for benzene, ethylbenzene, toluene, and xylenes (BTEX) and VOCs; Alaska Test Method (AK)101 for GRO; and AK102 for diesel range organics (DRO).
- Collected a representative water sample from the store's sink and submitted it for laboratory analysis of drinking water analytes by EPA Method 524.2 for VOCs and DRO by test method AK102.
- Check the operation on the SVE treatment system.

Field methods and procedures are provided in **Appendix B**, and field measurements and notes are provided in **Appendix C**.

## 4.0 GROUNDWATER MONITORING RESULTS

**Groundwater Levels.** **Table 1** presents groundwater elevations at this site based on the depths to static groundwater levels measured during this monitoring event. The average hydraulic gradient across the site was found to be approximately 0.04 feet per foot directed toward the west-northwest at 290 degrees. All available groundwater gradients and bearings from past site work are presented in the “rose diagram” on **Figure 2**.

**Table 1 Groundwater Elevations**

Measured on April 25, 2019

Monitoring Well Identification	Top of Casing Elevation (feet above datum) <sup>1</sup>	Depth to Groundwater (feet btoc)	Groundwater Elevation (feet above datum) <sup>1</sup>
MW-1	97.09	19.15	77.94
MW-2	97.43	17.93	79.50
MW-3	96.88	17.30	79.58
MW-4	97.38	20.15	77.23

Key:

1 – Based on a vertical control survey of September 1, 2017, using an elevation datum of 100.00 feet established on the concrete sono tube off the south east corner of the store.

feet btoc – feet below top of monitoring well casing

**Water Sample Intrinsic Field Parameters.** The results of intrinsic water quality parameter testing of the water samples collected during this monitoring event are presented in **Table 2**. The ORP measurements ranged from 136.3 millivolts (mV) in Monitoring Well MW-3 to 186.8 mV in Monitoring Well MW-1, which indicates a limited potential for oxidation of petroleum compounds. The pH values were consistent between monitoring wells and within an expected range at slightly below or near neutral. Conductivity readings were also within typical values for groundwater. Dissolved oxygen measurements ranged from 0.98 milligrams per liter (mg/L) in Monitoring Well MW-3 to 1.70 mg/L in Monitoring Well MW-2.

**Table 2 Field Measured Intrinsic Water Quality Parameters**

Measurements taken on April 25, 2019

Well ID	Volume Purged (gallons)	Sheen/Odor	Temp. (°C)	pH	Dissolved Oxygen (mg/L)	ORP (mV)	Specific Conductance (µS/cm °C)
MW-1	2.6	N/N	7.36	6.05	1.64	186.8	1,596
MW-2	4.8	N/Y (slight)	4.53	6.53	1.70	140.3	898
MW-3	4.4	N/Y (slight)	4.51	6.74	0.98	136.3	904
MW-4	4.1	N/N	3.61	6.51	1.30	148.6	1,072

Key:

°C – degrees Celsius

µS/cm°C – microSiemens per centimeter °C

mg/L – milligrams per liter

mV – millivolts

ORP – oxidation-reduction potential

pH – -log [H<sup>+</sup>]

SC – specific conductance at 25°C

Temp. – temperature

**Water Sample Laboratory Analytical Results.** Historical monitoring data for this site are tabulated in **Appendix D**. Laboratory analytical results for BTEX, GRO, and DRO detected in groundwater samples collected during this monitoring event are summarized in **Table 3**. The other VOC analytes with laboratory reporting limits that exceeded their GCLs are provided in **Table E-1, Appendix E**, and the laboratory analytical report is provided in **Appendix F**.

**Table 3 Groundwater Analytical Results for BTEX, GRO, and DRO**  
Samples collected on April 25, 2019

Sample Identification	Benzene <sup>1</sup> (mg/L)	Toluene <sup>1</sup> (mg/L)	Ethylbenzene <sup>1</sup> (mg/L)	Xylenes <sup>1</sup> (mg/L)	GRO (mg/L)	DRO (mg/L)
MW-1	U (0.003)	U (0.002)	U (0.003)	U (0.003)	U (0.25)	U (0.27)
MW-2	<b>0.051</b>	0.13	U (0.003)	<b>1.28</b>	<b>3.6</b>	0.93
MW-3	<b>0.14</b>	0.13	<b>U (1.5)</b>	<b>U (1.5)</b>	<b>11</b>	0.64
MW-4	U (0.003)	U (0.002)	U (0.003)	U (0.003)	U (0.25)	U (0.27)
TNS 76 (DUP MW-3)	<b>0.13</b>	0.12	<b>U (1.5)</b>	<b>U (1.5)</b>	<b>10</b>	1.0
Drinking Water	NT	NT	NT	NT	NT	U (0.26)
Trip Blank	U (0.003)	U (0.002)	U (0.003)	U (0.003)	U (0.25)	NT
<b>GCLs</b>	<b>0.0046</b>	<b>1.1</b>	<b>0.015</b>	<b>0.19</b>	<b>2.2</b>	<b>1.5</b>

Key:

1 – Analyzed by U.S. Environmental Protection Agency Method 8260C

AK – Alaska Test Method

BTEX – benzene, toluene, ethylbenzene, and xylenes

DRO – Diesel range organics, analyzed by AK102

GCLs – Groundwater cleanup levels, per Alaska Department of Environmental Conservation 18 Alaska Administrative Code 75.345, Table C, updated September 29, 2018.

GRO – Gasoline range organics, analyzed by AK101

mg/L – milligrams per liter

NT – Not tested

U – Undetected above laboratory reporting limits shown in parentheses

**Bold** indicates the concentration exceeds the GCL or, if not detected, the laboratory reporting limit exceeds the GCL.

The DRO results from Monitoring Wells MW-2, MW-3, and TNS 76 were flagged by the laboratory with notes indicating that the detected hydrocarbons appear to be due to gasoline overlap.

**Quality Assurance (QA)/ Quality Control (QC) Review.** TestAmerica, Inc. performed all analysis of groundwater samples for this sampling event; however, analysis of the water sample from the store’s sink by EPA Method 524.2 was subcontracted to Eurofins Eaton Analytical. **Table 4** provides a summary of the laboratory QC objectives and outcomes for this monitoring event. Laboratory QC data and the ADEC Laboratory Data Review Checklist are included with the laboratory report in **Appendix F**. Not all QC criteria were met by the laboratories, as indicated below.

**Table 4 Laboratory Quality Control Objectives**

Quality Control Designation	Tolerance	Results for this Event
<b>Holding Times</b>		
DRO/Water/to analyze	40 days	12 days
DRO/Water/to extract	14 days	12 days
GRO/Water/to analyze	14 days	11 days

VOCs/Water/to analyze	14 days	6 to 10 days
<b>Field Duplicates – Precision</b>		
Benzene/Water	± 30%	7.41%
Toluene/Water	± 30%	8.00%
Ethylbenzene/Water	± 30%	0.00%
Xylenes/Water	± 30%	0.00%
GRO/Water	± 30%	9.52%
DRO/Water	± 30%	<b>43.90%</b>
Naphthalene	± 30%	15.38%

Key:

% – percent

± – plus or minus

DRO – diesel range organics

GRO – gasoline range organics

VOCs – volatile organic compounds

A duplicate sample set was collected to determine the precision of the field collection and laboratory analyses for this sampling event. Sample TNS 76 is a duplicate of Sample MW-3. Data presented in **Table 4** show that the precision for the duplicate sample set (analytes that were detected above the laboratory reporting limit and exceeded GCLs) was within the established QA criteria tolerances for BTEX, GRO, and naphthalene, but not for DRO.

## 5.0 REMEDIATION SYSTEM

During the April 25, 2019, monitoring event, no petroleum odors could be detected by olfactory means in the vapor discharged from the SVE blower. The photoionization detector (PID) measurement from the SVE vapor exhaust pipe was recorded at 0.4 parts per million volatile (ppmv). An analytical sample was not collected from the SVE blower exhaust per the approved Work Plan guidance; therefore, the removal rate was not calculated.

Stantec plans to repurpose the current bio-sparg system and convert it into a groundwater recirculation system to allow injection of chemical oxidation products. The implementation of this change in the remediation system will occur in the 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2019.

## 6.0 DISCUSSION OF FINDINGS

Historical graphs of contaminant concentrations for Monitoring Wells MW-1, MW-2, MW-3, and MW-4 are presented on **Figure 3**. Results for previous monitoring events are presented in **Appendix D**.

Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs were:

- Monitoring Well MW-2: Benzene, xylenes, GRO, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB, and naphthalene.



- Monitoring Well MW-3: Benzene, GRO and naphthalene.

The approximate hydraulic gradient across the site was found to be approximately 0.04 feet per foot directed toward the east-northeast at 290 degrees. The groundwater flow direction and gradient are inconsistent with past monitoring events in that the direction of flow is to the west rather than historically to the north with a slightly higher gradient.

The SVE contaminant vapor mass removal is very low and, based on the recent pattern of decline, suggests that the SVE system performance requires additional optimization. Stantec plans to repurpose the current bio-sparg system and convert it into a groundwater recirculation system to allow injection of chemical oxidation products. The implementation of this change in the remediation system will occur in the 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2019

## **7.0 CONCLUSIONS AND RECOMMENDATIONS**

No anomalies were found during the April 2019 monitoring event at this site that would require additional corrective action or changes to the ADEC-approved year 2019 Corrective Action Work Plan for this site.

## **8.0 LIMITATIONS**

Stantec conducted this monitoring event in accordance with the Corrective Action Work Plan approved by ADEC, and in a manner consistent with the level of skill ordinarily exercised by members of the profession currently practicing under similar conditions. All sampling activities were completed in accordance with the ADEC *Underground Storage Tanks Procedures Manual – Standard Sampling Procedures* (March 22, 2017). No other warranty, expressed or implied, is made. Data and recommendations made herein were prepared for Tesoro 2 Go Mart #76 and Tesoro Refining and Marketing Company. Information herein is for use at this site in accordance with the purpose of the report described.

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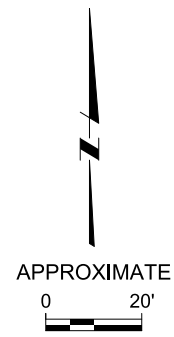
## **FIGURES**

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- Figure 1 Location and Vicinity Map
- Figure 2 Site Plan with Groundwater Levels and Analytical Results
- Figure 3 Graphs of Contaminant Concentrations and Groundwater Elevations
-



E. PALMER WASILLA HWY

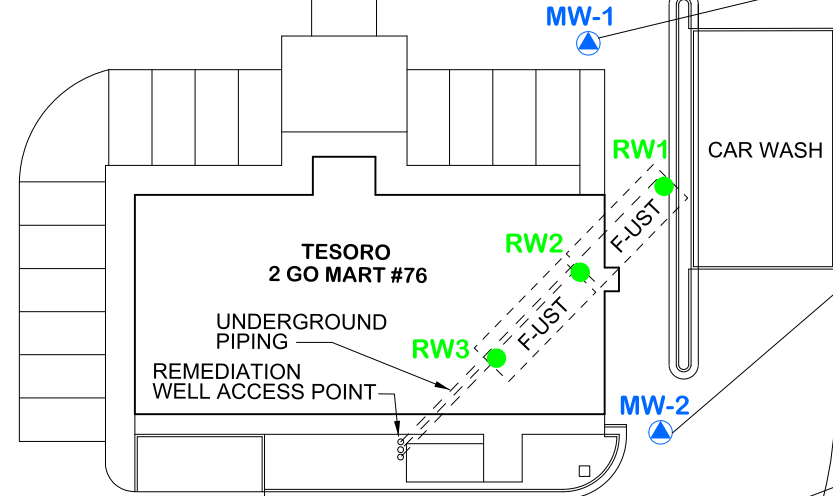


APPROXIMATE LOCATION OF PROPERTY LINE  
3600 PALMER-WASILLA HWY

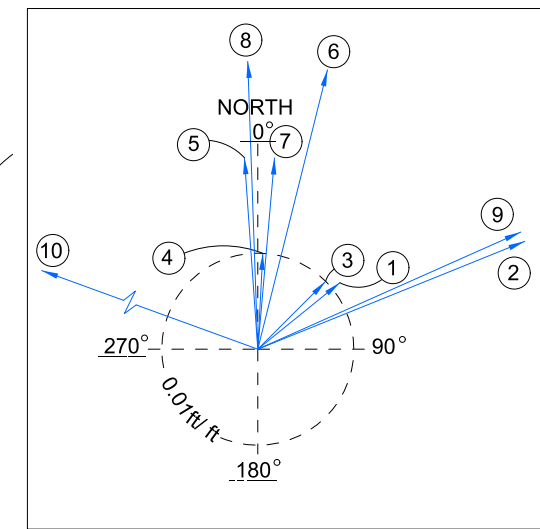
WATER SUPPLY WELL LOCATION

UNDERGROUND STORAGE TANK  
CANOPY  
FUEL DISPENSER (TYP)

SEPTIC SYSTEM



CAMERON ACRES  
BLOCK 1  
LOT 7



GROUNDWATER FLOW SUMMARY			
	DATE	BEARING	GRADIENT (ft/ft)
①	DEC. 9, 2016	51°	0.011
②	FEB. 8, 2017	68°	0.03
③	APRIL 24, 2017	45°	0.01
④	SEP. 1, 2017	3°	0.01
⑤	FEB. 15, 2018	356°	0.02
⑥	JUNE 29, 2018	14°	0.03
⑦	SEP. 11, 2018	5°	0.02
⑧	OCT. 26, 2018	358°	0.03
⑨	FEB. 25, 2019	66°	0.03
⑩	APRIL 25, 2019	290°	0.04

MW-1	
Benzene	U (0.003)
Toluene	U (0.002)
Ethylbenzene	U (0.003)
Xylenes	U (0.003)
1,2,4-Trimethylbenzene	U (0.003)
1,3,5-Trimethylbenzene	U (0.003)
Naphthalene <sup>1</sup>	U (0.0005)
GRO	U (0.25)
DRO	U (0.27)
GW Elev	77.94'

MW-2	
Benzene	<b>0.051</b>
Toluene	0.13
Ethylbenzene	U (0.003)
Xylenes	<b>1.28</b>
1,2,4-Trimethylbenzene	<b>0.14</b>
1,3,5-Trimethylbenzene	<b>0.11</b>
Naphthalene <sup>1</sup>	<b>0.013</b>
GRO	<b>3.6</b>
DRO	0.93
GW Elev	79.50'

MW-3	
Benzene	<b>0.14</b>
Toluene	0.13
Ethylbenzene	<b>U (1.5)</b>
Xylenes	<b>U (1.5)</b>
1,2,4-Trimethylbenzene	<b>U (1.5)</b>
1,3,5-Trimethylbenzene	<b>U (1.5)</b>
Naphthalene <sup>1</sup>	<b>0.024</b>
GRO	<b>11</b>
DRO	0.64
GW Elev	79.58'

MW-3 (Duplicate)	
Benzene	<b>0.13</b>
Toluene	0.12
Ethylbenzene	<b>U (1.5)</b>
Xylenes	<b>U (1.5)</b>
1,2,4-Trimethylbenzene	<b>U (1.5)</b>
1,3,5-Trimethylbenzene	<b>U (1.5)</b>
Naphthalene <sup>1</sup>	<b>0.028</b>
GRO	<b>10</b>
DRO	1.0
GW Elev	79.58'

MW-4	
Benzene	U (0.003)
Toluene	U (0.002)
Ethylbenzene	U (0.003)
Xylenes	U (0.003)
1,2,4-Trimethylbenzene	U (0.003)
1,3,5-Trimethylbenzene	U (0.003)
Naphthalene <sup>1</sup>	U (0.0005)
GRO	U (0.25)
DRO	U (0.27)
GW Elev	77.23'

LEGEND:

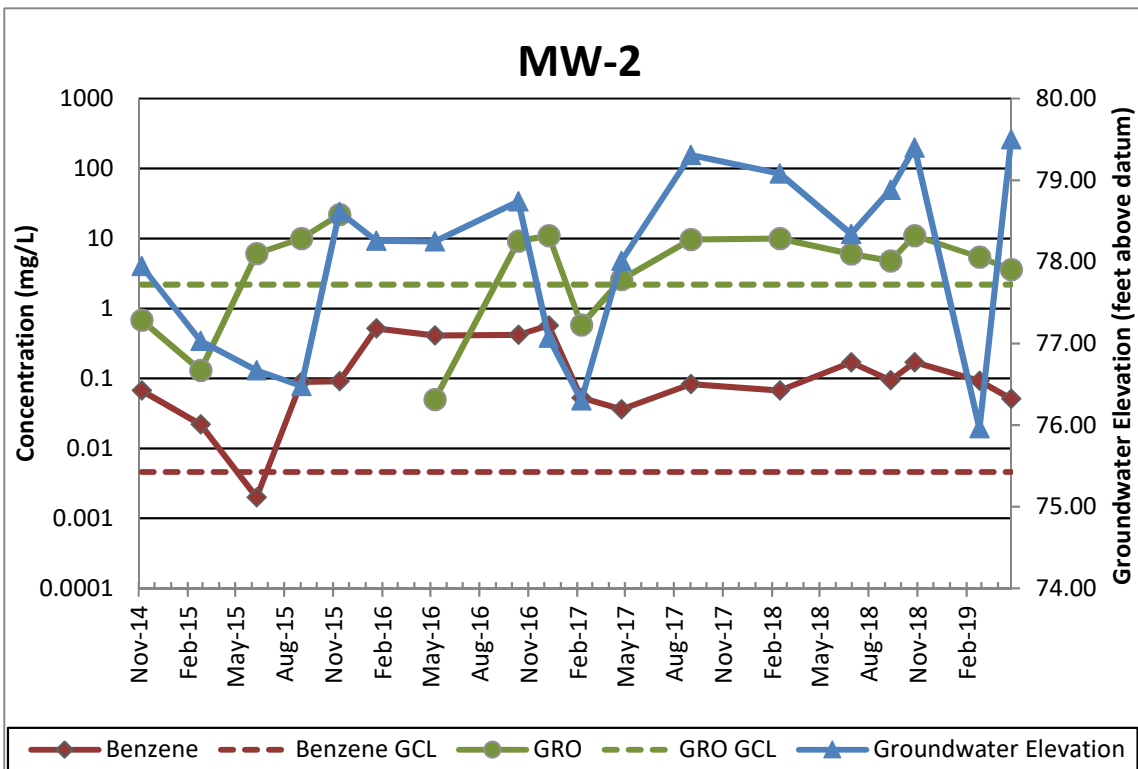
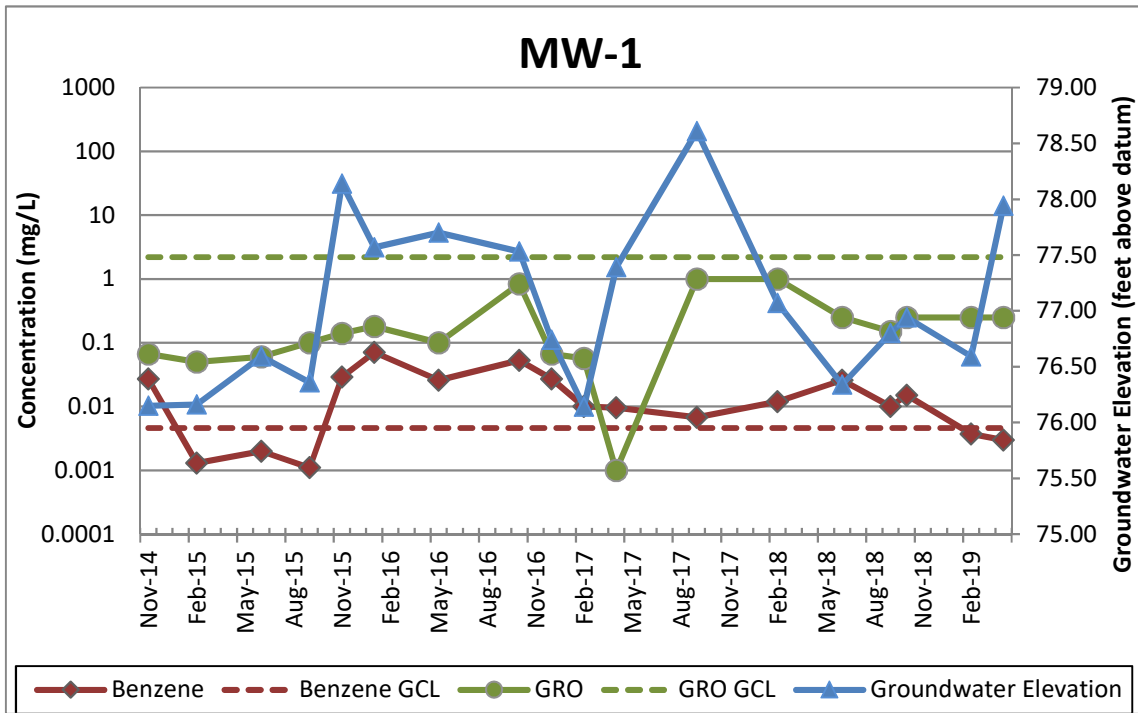
- F-UST FORMER UNDERGROUND STORAGE TANK
- ▲ MONITORING WELL LOCATION
- REMEDIATION WELL LOCATION
- DRO DIESEL RANGE ORGANICS
- GRO GASOLINE RANGE ORGANICS
- H SAMPLE WAS PREPPED OR ANALYZED BEYOND THE SPECIFIED HOLDING TIME
- RW REMEDIATION WELL
- U UNDETECTED ABOVE PRACTICAL QUANTITATION LIMITS SHOWN IN PARENTHESES
- W DRINKING WATER WELL

NOTES:

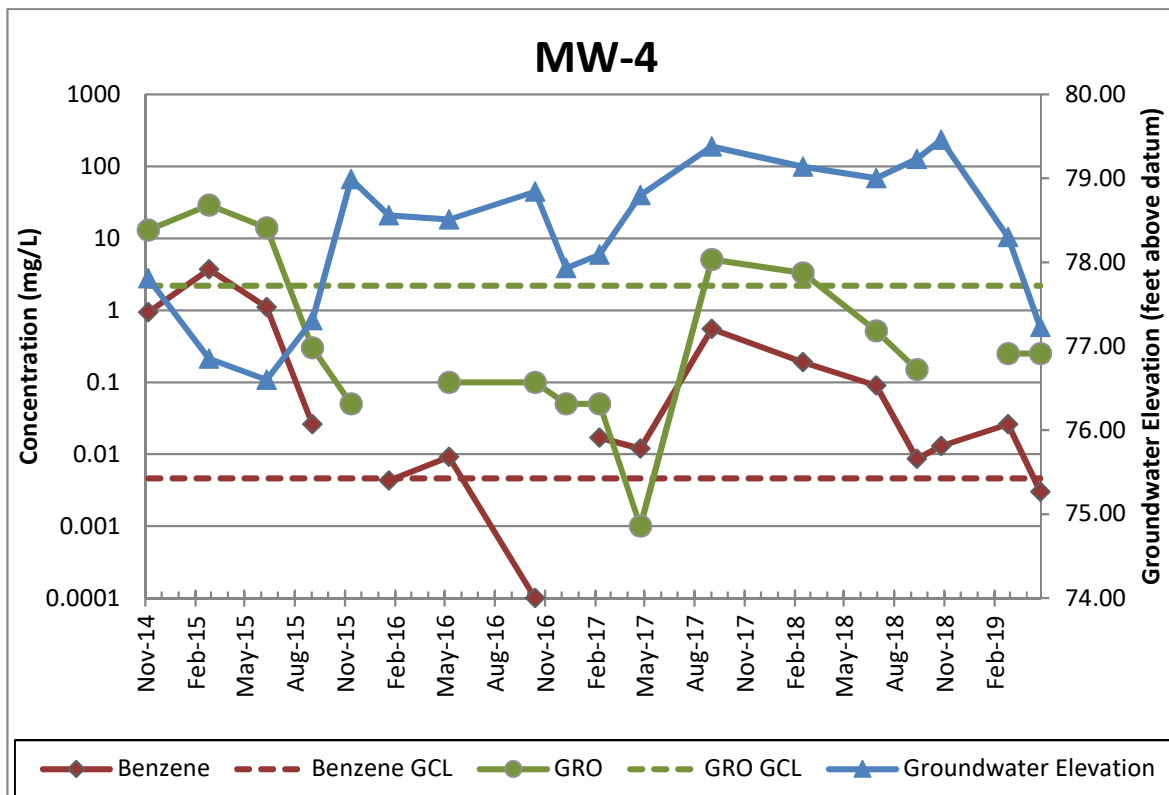
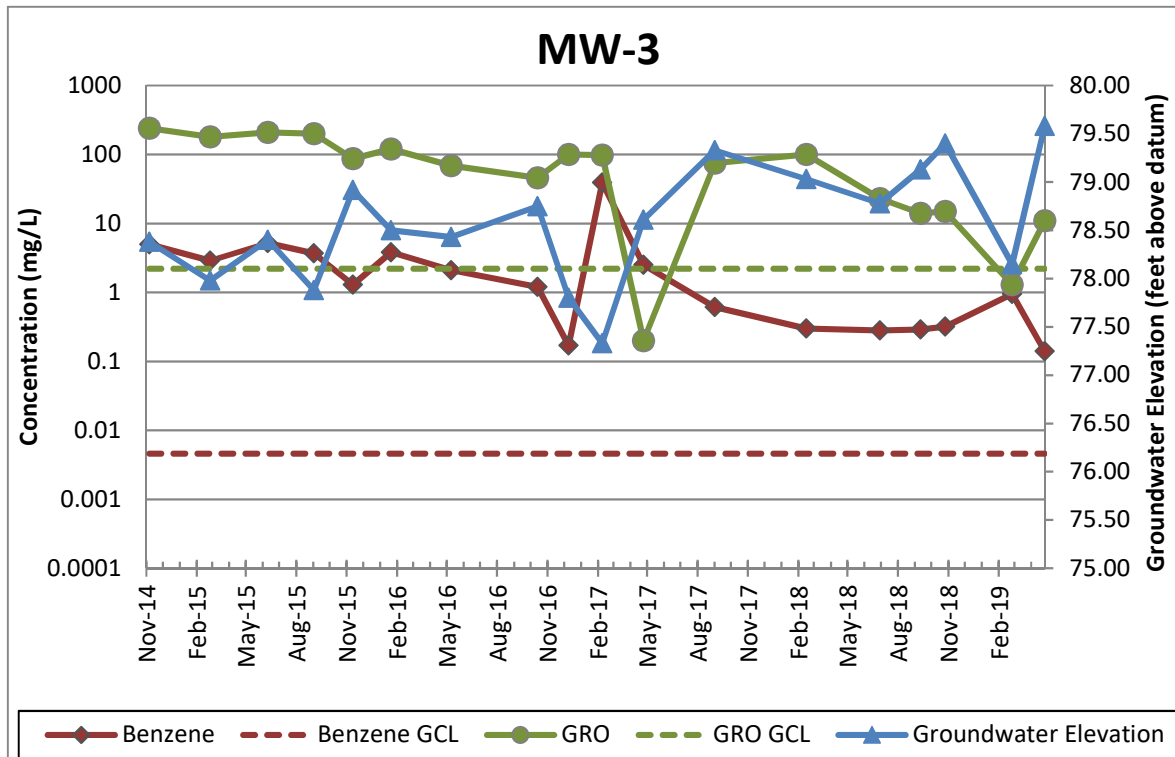
1. RESULTS SHOWN ARE FOR WELLS SAMPLED ON APRIL 25, 2019
2. RESULTS ARE IN MILLIGRAMS PER LITER
3. BOLD/ RED TEXT INDICATES CONTAMINANT CONCENTRATIONS ABOVE CLEANUP LEVELS FOR THIS SITE

FILE: C:\D\CAD\Proj\Tesoro\TGM\Mar076\_185751226\MonEvent\2019\April\2019\Fig02\_Site Plan with GndWtr.dgn  
TIME: 12-AUG-2019 14:10

**Figure 3**  
**Graphs of Contaminant Concentrations and Groundwater Elevations**



**Figure 3**  
**Graphs of Contaminant Concentrations and Groundwater Elevations**



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**APPENDIX A**

*Site Background*

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## APPENDIX A – SITE BACKGROUND

**Tesoro 2 Go Mart #76** (3600 Palmer-Wasilla Highway, Wasilla, Alaska)  
**ADEC File #100.26.159**

Tesoro 2 Go Mart #76 is a retail fuel and convenience store facility located at 3600 Palmer-Wasilla Highway, Wasilla, Alaska (Figure 1). The legal description for the property is Lot 7, Block 1, Cameron Acres Subdivision, Matanuska-Susitna Borough.

Two 15,000-gallon underground storage tanks (USTs) were installed at the site in 1995. Based on historical records, this is the first retail fuel convenience store to occupy this location. The site is covered with asphalt paving with concrete in the area over the USTs and fuel dispenser islands. The former UST system and dispensing components were removed from September to October 2014 and replaced with a new UST fueling system. The new UST fueling system consists of two 15,000-gallon fiberglass-reinforced plastic, double-walled USTs installed on January 29, 2015, and seven fuel dispensers (six gasoline and one diesel). Distribution piping consists of 2-inch fiberglass primary and 3-inch fiberglass secondary.

In addition, the former convenience store was demolished and replaced with a new convenience store that was constructed at a different location on the property. The property is over 1 acre in size and is served with an on-site drinking water well and on-site septic tank and drainfield system.

**October 2014.** During the 2014 Site Assessment of the UST closure, a petroleum fuel release was discovered in the subsurface soils partially surrounding and underlying the USTs. At that time, a very deep test pit was excavated beneath the former USTs to the groundwater table. Field screening with a photoionization detector (PID) indicated that petroleum contamination was present throughout the vadose zone and extended to the underlying groundwater table. Due to site safety concerns with sloughing soils, it was not feasible to excavate all of the contaminated soil below the former USTs.

A Release Investigation (RI) was conducted by MWH Americas, Inc. (MWH) subsequent to the closure of the former USTs. The RI included the installation of a soil vapor extraction (SVE) remediation well and several groundwater monitoring wells. MWH completed a groundwater monitoring event after the monitoring wells were installed. Follow-up water samples were collected from the onsite drinking water well for appropriate laboratory analyses.

The findings of the RI indicated a significant amount of petroleum contamination had impacted the subsurface soils and shallow groundwater table at the site. The soil samples collected indicate higher concentrations of gasoline range organics (GRO) and benzene, toluene, ethylbenzene, and xylenes (BTEX) constituents directly below the location occupied by the former USTs at Remediation Wells RW-2 and RW-3. Benzene was detected above Alaska Department of Environmental Conservation (ADEC) groundwater cleanup level (GCL) in groundwater at monitoring wells installed at the site. GRO contaminants have also impacted the groundwater table. The system has been monitored on a quarterly basis since the completion of the RI.



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**February 2015.** Benzene exceeded the GCL in Monitoring Well MW-2. BTEX, GRO, and diesel range organics (DRO) exceeded GCLs in Monitoring Well MW-3. Benzene, toluene, and GRO exceeded GCLs in Monitoring Well MW-4.

**June 2015.** MWH installed and placed into operation a SVE system at the site. Early results indicate that the system is effectively removing petroleum-related vapors from the subsurface. Additionally, a surface water sample was collected from an on-site nearby wetland surface water area. Xylenes and DRO were detected in the water sample; however, the concentrations were below the ADEC groundwater and surface water cleanup levels.

**September 2015.** Benzene and DRO exceeded GCLs in Monitoring Well MW-2. BTEX and DRO exceeded GCLs in Monitoring Well MW-3. Benzene exceeded GCL in Monitoring Well MW-4. The SVE remediation system blower was offline, requiring maintenance.

**November 2015.** Benzene exceeded GCL in Monitoring Well MW-1. Benzene, GRO, and DRO exceeded the GCL in Monitoring Well MW-2. Benzene, toluene, and GRO all remained above their GCLs, consistent with the past five monitoring events, at Monitoring Well MW-3.

**December 2015.** Maintenance was performed on the SVE system on December 31, 2015. A replacement SVE system blower was installed. The system was brought back online on the date of the replacement blower installation. A PID was used to monitor the system effluent after the initial 15 minutes of operation and indicated that 424 parts per million by volume were being removed by the system.

**January 2016.** Benzene exceeded the GCL in Monitoring Well MW-1. Benzene, toluene, ethylbenzene, and DRO exceeded their GCLs in Monitoring Well MW-2; and benzene, toluene, ethylbenzene, xylenes, GRO, and DRO exceeded their GCLs in Monitoring Well MW-3. The laboratory did not provide results for requested GRO analyses for samples from Monitoring Wells MW-2 and MW-4.

**May 2016.** In Monitoring Wells MW-1, MW-2, and MW-4, only benzene exceeded GCL. MW-3 exceeded GCLs for all analytes tested. There were no detections in the Carmen Lot 7 drinking water sample. An SVE effluent sample was collected to monitor SVE performance.

**October 2016.** In Monitoring Well MW-1, only benzene exceeded GCL. In Monitoring Well MW-2, all analytes but toluene and DRO exceeded GCLs. Monitoring Well MW-3 exceeded GCLs for all analytes tested. Monitoring Well MW-4 had no exceedances. There were no detections in the Carmen Lot 7 drinking water sample. An SVE effluent sample was collected to monitor SVE performance.

**December 2016.** In Monitoring Well MW-1, only benzene exceeded GCL. In Monitoring Well MW-2, all analytes but toluene exceeded GCLs. Monitoring Well MW-3 exceeded GCLs for benzene, GRO, and DRO. Monitoring Well MW-4 and the Carmen Lot 7 drinking water sample had no exceedances. Both Monitoring Wells MW-3 and MW-4 had insufficient sample volumes to complete all analytical testing. The SVE system observed for operation and performance.

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**February 2017.** Benzene was the only analyte to exceed the GCL in Monitoring Wells MW-1 and MW-4. Benzene and ethylbenzene exceeded GCLs in Monitoring Well MW-2, and all analytes exceeded their GCLs in Monitoring Well MW-3. The SVE system was frozen due to record cold temperatures experienced during January 2017. A subsequent site visit on February 16, 2017, was made to thaw and restore the SVE system to normal operation.

**April 2017.** In addition to testing for BTEX, DRO, and GRO, expanded testing for volatile organic compounds (VOCs), and polynuclear aromatic hydrocarbons (PAHs) were conducted on all monitoring wells. Benzene was the only analyte to exceed the GCL in Monitoring Wells MW-1 and MW-4. BTEX (minus toluene) and GRO exceeded their GCLs in Monitoring Well MW-2, consistent with previous monitoring events. The expanded testing found 1,2,4-trimethylbenzene and naphthalene to also exceed GCLs. In Monitoring Well MW-3, BTEX and DRO exceeded their GCLs, also consistent with previous monitoring events. The expanded testing found 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene to also exceed GCLs. Pilot Testing (conducted in May 2017) of air injection into remediation wells to volatilize groundwater and smear zone contaminants indicated a slight increase of volatilization when air is injected into RW-2, and RW-3.

**September 2017.** Except for the following, all analytes were below GCLs in the wells sampled:

- Monitoring Well MW-1 – benzene exceeded the GCL.
- Monitoring Well MW-2 – benzene, ethylbenzene, xylenes and GRO exceeded their GCLs.
- Monitoring Well MW-3 – BTEX, GRO, and DRO were above their GCLs. The MW-3 duplicate sample provided results within established Quality Assurance/Quality Control (QA/QC) standards.
- Monitoring Well MW-4 – benzene, ethylbenzene, xylenes, and GRO exceeded their GCLs.

The SVE contaminant vapor mass removal was less than observed during pilot test in May 2017 and requires additional optimization.

**February 2018.** Except for the following, all analytes were below GCLs in the wells sampled:

- Monitoring Well MW-1 – benzene.
- Monitoring Well MW-2 – benzene, ethylbenzene, xylenes, and GRO (GRO was not detected, but the Reporting Limit exceeded the GCL).
- Monitoring Well MW-3 – BTEX and GRO (GRO was not detected, but the Reporting Limit exceeded the GCL). The MW-3 duplicate sample provided results within established QA/QC standards.
- Monitoring Well MW-4 – benzene, ethylbenzene, xylenes, and GRO.

The SVE contaminant vapor mass removal was less than previously observed on site. In addition, the field work included an assessment of the buried piping systems for the air sparging (AS) and SVE systems. The assessment was performed with a downhole camera capable of recording photographs and video of the interior conditions of the piping system. The findings of the downhole camera assessment of the buried piping system was inconclusive.

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**June 2018.** The results from the June 29, 2018, monitoring event supports the continued pattern that GRO contamination persists on site and is observed in Monitoring Wells MW-2 and MW-3. In addition, Monitoring Well MW-3 is consistently the most contaminated well. In summary, the results of the groundwater analytical sampling showed that analytes detected above the GCLs were:

- Monitoring Well MW-1: Benzene.
- Monitoring Well MW-2: Benzene, ethylbenzene, xylenes, GRO, and naphthalene.
- Monitoring Well MW-3: BTEX, GRO and naphthalene. Except for GRO, the duplicate sample provided results within established QA/QC standards.
- Monitoring Well MW-4: Benzene, ethylbenzene, and naphthalene.

A representative water sample from the on-site drinking water well serving the Tesoro 2 Go Mart was sampled and tested for VOCs. The water sample was found to have no detectable levels of contaminants of concern, except the laboratory reporting limits were over the GCLs for 1,1,2-trichloroethane (TCA) and vinyl chloride.

The SVE contaminant vapor mass removal is very low and based on the recent pattern of decline suggest that the SVE system performance requires additional optimization. Alternative treatment options are currently being evaluated and, if determine feasible, a new work plan will be presented to ADEC for review and approval prior to making any changes.

**September 2018.** Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs were:

- Monitoring Well MW-1: Benzene.
- Monitoring Well MW-2: Benzene, ethylbenzene, xylenes, GRO, naphthalene, 1,2,4 trimethylbenzene, and 1,3,5 trimethylbenzene.
- Monitoring Well MW-3: Benzene, ethylbenzene, xylenes, GRO, naphthalene, 1,2,4 trimethylbenzene, and 1,3,5 trimethylbenzene.
- Monitoring Well MW-4: Benzene, and 1,2,4 trimethylbenzene.

Several analytes for VOCs were reported as undetected but had laboratory reporting limits that equaled or exceeded their corresponding GCLs. The results from this monitoring event supports the continued pattern that GRO contamination persists at the site and is observed in Monitoring Wells MW-2 and MW-3. In addition, Monitoring Well MW-3 is consistently the most contaminated well.

The approximate hydraulic gradient across the site was found to be approximately 0.03 feet per foot directed toward the north-northeast at 14 degrees. The groundwater flow direction and gradient are consistent with past monitoring events.

The SVE contaminant vapor mass removal is very low and, based on the recent pattern of decline, suggests that the SVE system performance requires additional optimization. Alternative treatment

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options are currently being evaluated and, if determine feasible, a new work plan will be presented to ADEC for review and approval prior to making any changes.

**October 2018.** Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs were:

- Monitoring Well MW-1: Benzene.
- Monitoring Wells MW-2 and MW-3: Benzene, ethylbenzene, xylenes, GRO, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene.
- Monitoring Well MW-4: Benzene.

Several VOCs were reported as undetected but had laboratory reporting limits that equaled or exceeded their corresponding GCLs. The results from this October 26, 2018, monitoring event supports the continued pattern that GRO contamination persists at the site and is observed in Monitoring Wells MW-2 and MW-3. In addition, Monitoring Well MW-3 is consistently the most contaminated on-site monitoring well.

The approximate hydraulic gradient across the site was found to be approximately 0.03 feet per foot directed toward the north at 358 degrees. The groundwater flow direction and gradient are consistent with past monitoring events.

The SVE contaminant vapor mass removal is very low and, based on the recent pattern of decline, suggests that the SVE system performance requires additional optimization. Alternative treatment options are currently being evaluated and, if determined to be feasible, a new work plan will be presented to ADEC in 2019 for review and approval prior to making any changes.

**February 2019.** Results of the groundwater analytical sampling showed that analytes detected above ADEC GCLs were:

- Monitoring Well MW-2: Benzene, ethylbenzene, xylenes, and GRO.
- Monitoring Well MW-3: Benzene, ethylbenzene, xylenes, and DRO.
- Monitoring Well MW-4: Benzene

The existing bio-sparge treatment system is not functional and will be replaced. In the 2<sup>nd</sup> quarter of 2019, Stantec plans to install a groundwater recirculation system based on pump and treat technology. The SVE contaminant vapor mass removal is very low and, based on the recent pattern of decline, suggests that the SVE system performance requires additional optimization. Alternative treatment options are currently being evaluated and, if determine feasible, a new work plan will be presented to ADEC for review and approval prior to making any changes.

**April 2019.** The monitoring event included: measuring the depth to groundwater; measuring water quality parameters; and collecting and analyzing groundwater samples from Monitoring Wells MW-1, MW-2, MW-3, and MW-4, as well as the on-site drinking water well.

Results of the groundwater analytical sampling showed that analytes detected above ADEC groundwater cleanup levels (GCLs) in the primary samples were:

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- Monitoring Well MW-2: Benzene, xylenes, gasoline range organics (GRO), 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB, and naphthalene.
  - Monitoring Well MW-3: Benzene, GRO, and naphthalene.

A representative water sample from the on-site drinking water well serving the Tesoro 2Go Mart was sampled and tested for volatile organic compounds (VOCs). The water sample was found to have no detectable levels of contaminants of concern, except the laboratory reporting limits were over the GCLs for 1,1,2-trichloroethane (TCA), 1,2,3-trichloropropane, 1,2-dibromoethane, and vinyl chloride.

The groundwater hydraulic gradient across the site was found to be approximately 0.04 feet per foot directed toward the west-northwest at 290 degrees. The groundwater flow direction and gradient are inconsistent with past monitoring events in that the direction of flow is to the west rather than historically to the north with a slightly higher gradient.

Stantec plans to drill a new 4" diameter remediation well and repurpose the current bio-sparg system. The new well and bio-sparg system will be converted it into a groundwater recirculation system to allow injection of chemical oxidation products. The implementation of this change in the remediation system will occur in the 3<sup>rd</sup> and 4<sup>th</sup> quarters of 2019.

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## **APPENDIX B**

### *Field Methods and Procedures*

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## APPENDIX B – FIELD METHODS AND PROCEDURES

**Tesoro 2 Go Mart #76** (3600 Palmer-Wasilla Highway, Fairbanks, Alaska)  
**Lot 7, Block 1, Cameron Acres Subdivision, Matanuska-Susitna Borough**  
**ADEC File #2265.26.037**

The following table presents the proposed tasks for the Alaska Department of Environmental Conservation (ADEC)-approved 2019 Corrective Action Work Plan. The scope of these tasks is based on the results and findings of the monitoring and remediation completed to date at Tesoro 2 Go Mart #76 (ADEC File #2265.26.037).

### 2019 Work Plan Schedule

Work Plan Task		1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
Task 1	MW-1, MW-2, MW-3, and MW-4	B, G, D, I	G, D, V, P, I	B, G, D, I	B, G, D, I
	On-site Domestic Drinking Water Well		D,E		
Task 2	Remediation System O&M	O&M	O&M	O&M	O&M
Task 3	Install Groundwater Pump and Treat System	✓	✓	✓	

Key:

AK – Alaska Test Method

B – Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8260C.

D – Diesel range organics by AK102.

E – Drinking Water parameters by EPA Test Method 524.2.

EPA – U.S. Environmental Protection Agency

G – Gasoline range organics by AK101.

I – Indicators, parameters tested include: dissolved oxygen, specific conductance, oxygen-reduction potential, pH, and temperature.

O&M – operation and maintenance

P – Polynuclear aromatic hydrocarbons (PAHs), i.e., semi-volatile organic compounds, by EPA Test Method 8270D Selective Ion Monitoring.

V – Volatile organic compounds by EPA Test Method 8260C.

All sampling activities will be completed in accordance with ADEC’s *Underground Storage Tanks Procedures Manual – Standard Sampling Procedures* (November 7, 2002). The methods that will be used for conducting each monitoring event, unless otherwise noted in the monitoring report, include:

- The static water levels in the monitoring wells will be measured with respect to the top of each well casing. The elevation of the static water level will be based on an arbitrary datum established during a vertical control survey completed by Stantec.
- The monitoring wells will not be purged prior to sampling. A new, disposable, Teflon<sup>®</sup> bailer will be used to sample each well. The first bail of water removed from each well will be examined for petroleum odor, sheen, and any other unique physical features.

- Water and vapor samples will be collected in laboratory-supplied sample containers. The samples will be delivered to an ADEC-approved laboratory in accordance with standard chain-of-custody procedures.
- Remediation system vapors will be measured with a calibrated photoionization detector (PID).
- Additional water samples will be collected from the monitoring wells and tested in the field for chemical and physical parameters.



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## **APPENDIX C**

*Field Measurements, Notes, and  
Hydraulic Gradient Plot*

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**Appendix C  
Field Measurements and Notes**

Project: **Tesoro 2 Go Mart #76**  
Project number: **185751226**

Date: **4/25/2019**  
Samplers: **JWK/RR**

Temperature: 38°F      Wind: 10 mph ENE      Humidity: 41%      Pressure: 30.12      wx source: KAKWASIL56

Well ID	Volume Purged (gallons)	Sheen/Odor	Temp. (°C)	pH	Dissolved Oxygen (mg/L)	ORP (mV)	Specific Conductance (µs/cm °c)	Top of Casing* (feet)	Depth to GW (feet btoc)	GW Elev.* (feet)	Total Depth (feet btoc)
MW-1	2.60	N/N	7.36	6.05	1.64	186.8	1596	97.09	19.15	77.94	24.20
MW-2	4.8	N/Y (Slight)	4.53	6.53	1.70	140.3	898	97.43	17.93	79.50	27.33
MW-3	4.4	N/Y (Slight)	4.51	6.74	0.98	136.3	904	96.88	17.30	79.58	25.96
MW-4	4.1	N/N	3.61	6.51	1.3	148.6	1072	97.38	20.15	77.23	28.29

°C - degree Celsius      NM - Not measured  
µs/cm - microsiemens per centimeter      ORP - oxidation reduction potential  
btoc - below top of casing      Y - yes  
elev. - elevation  
GW - groundwater  
mg/L - milligrams per liter  
N - no

Instruments/methods used for above measurements	Model	
Static water level	Heron	H01L
Conductivity	YSI	556
Dissolved Oxygen	YSI	556
Temperature	YSI	556
ORP	YSI	556
pH	YSI	556

\* Based on a vertical control survey of September 1, 2017

**Notes:**

Well	Observations	Well Dia.	Time	8260C	AK101	AK102	EPA 524.2
MW-1	Small bugs in water	2"	1015	X	X	X	
MW-2	Light tan color	2"	1130	X	X	X	
MW-3	Light tan color	2"	1205	X	X	X	
MW-4	Small bugs in water; light red color	2"	1055	X	X	X	
TNS 76	Duplicate of MW-3	NA	800	X	X	X	
Drinking Water	Tap water for utility sink	NA	1225			X	X

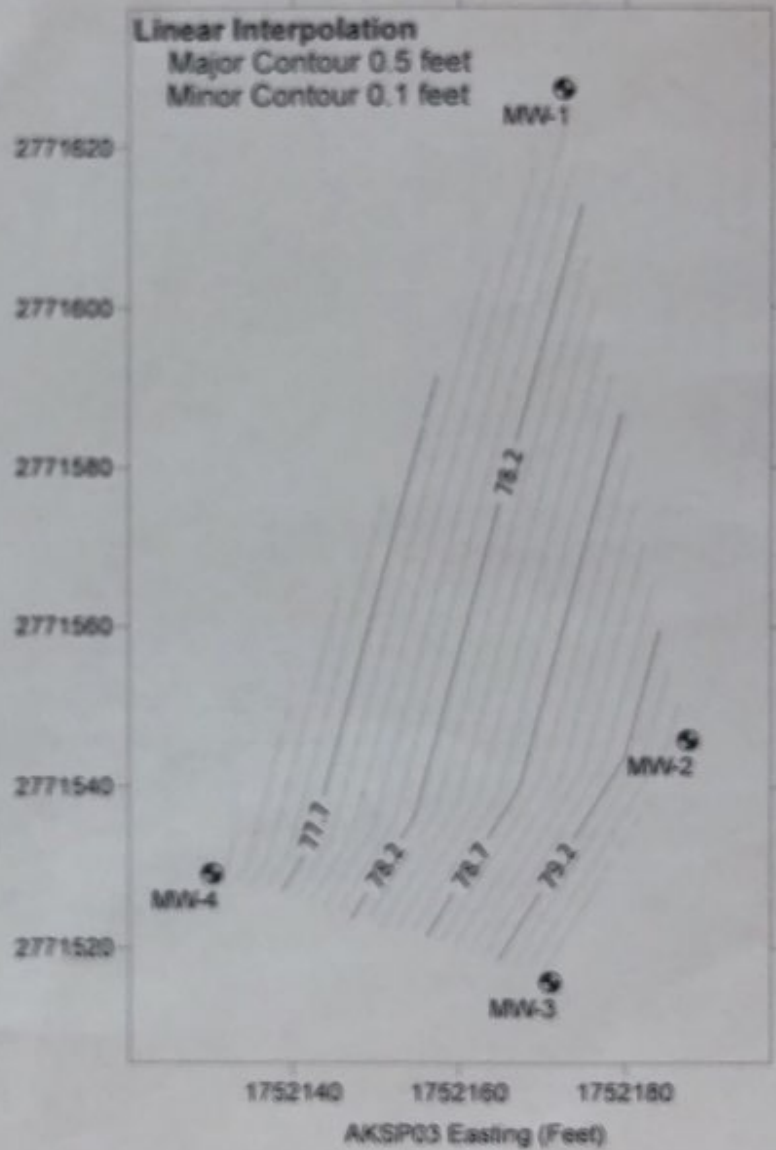
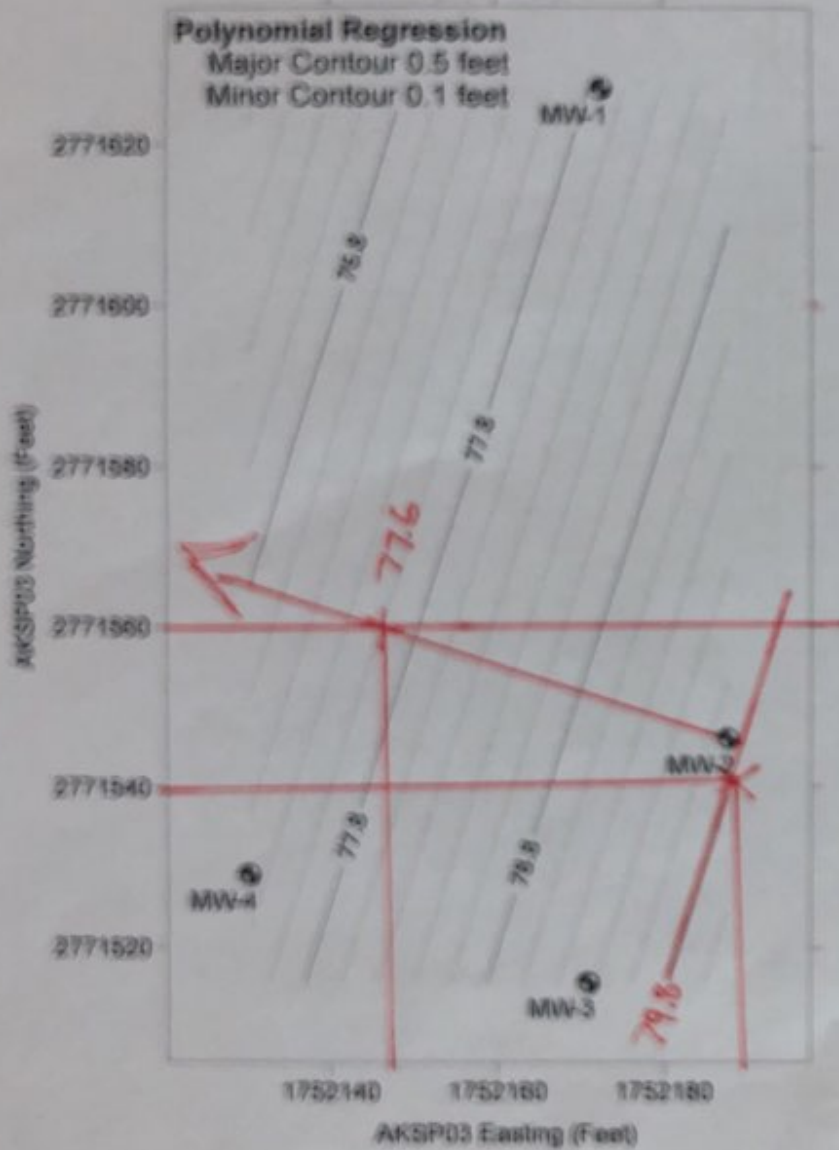
Extraction SVE Well RM-3	
Discharge (cfs)	
Vacuum (IWC)	
PID (ppmv)	0.4

$$\frac{79.8 - 77.6}{2771560 - 2771540} = 0.0411$$

2771560  
2771540

$$= 0.0411 \quad 290^\circ$$

2 Go Mart #76 - Groundwater Elevations  
April 25, 2019



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## **APPENDIX D**

### *Tables of Historical Monitoring Data*

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**Appendix D  
Tables of Historical Monitoring Data**

**Monitoring Well MW-1**

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	GW Elev (feet)
06-Nov-14	0.027	U (0.0005)	U (0.0005)	U (0.0015)	0.067	0.36	76.15
25-Feb-15	0.0013	U (0.0005)	U (0.0005)	U (0.0015)	U (0.05)	U (0.41)	76.16
10-Jun-15	U (0.002)	U (0.002)	U (0.003)	U (0.002)	U (0.060)	0.50	76.59
02-Sep-15	0.0011	U (0.001)	U (0.001)	U (0.003)	U (0.1)	U (0.40)	76.36
12-Nov-15	0.029	U (0.002)	U (0.003)	U (0.002)	0.14	U (0.21)	78.14
20-Jan-16	0.071	U (0.002)	U (0.003)	U (0.002)	0.18	0.22	77.57
09-May-16	0.026	U (0.001)	U (0.001)	U (0.003)	0.1	U (0.45)	77.70
13-Oct-16	0.053	U (0.001)	U (0.001)	U (0.003)	0.84	0.36	77.53
09-Dec-16	0.027	U (0.002)	U (0.002)	U (0.003)	0.067	0.67	76.74
08-Feb-17	0.010	U (0.002)	U (0.003)	U (0.002)	0.057	0.27	76.14
24-Apr-17	0.0096	U (0.002)	U (0.003)	U (0.003)	U (0.001)	U (0.0003)	77.39
01-Sep-17	0.0068	U (0.002)	U (0.003)	U (0.002)	U (1.0)	0.250	78.61
15-Feb-18	0.012	U (0.002)	U (0.003)	U (0.003)	U (1.0)	U (0.13)	77.07
29-Jun-18	0.026	U (0.002)	U (0.003)	U (0.003)	U (0.25) H	0.30	76.34
11-Sep-18	0.01	U (0.001)	U (0.001)	U (0.002)	U (0.15)	U (0.27)	76.80
26-Oct-18	0.015	U (0.002)	U (0.003)	U (0.003)	U (0.25)	0.31	76.94
25-Feb-19	0.0037	U (0.002)	U (0.003)	U (0.003)	U (0.25)	0.19	76.59
25-Apr-19	U (0.003)	U (0.002)	U (0.003)	U (0.003)	U (0.25)	U (0.27)	77.94
<b>GCLs</b>	<b>0.0046</b>	<b>1.1</b>	<b>0.015</b>	<b>0.19</b>	<b>2.2</b>	<b>1.5</b>	<b>NA</b>

**Monitoring Well MW-2**

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	GW Elev (feet)
06-Nov-14	0.067	0.026	0.016	0.130	0.68	0.19	77.95
25-Feb-15	0.022	0.0045	0.0034	0.020	0.130	U (0.41)	77.03
10-Jun-15	U (0.002)	U (0.002)	U (0.003)	1.8	6.1	1.1	76.67
02-Sep-15	0.089	0.056	0.065	1.4	U (10)	1.8	76.48
12-Nov-15	0.091	0.11	0.13	0.179	22	1.8	78.61
20-Jan-16	0.520	1.5	0.83	5.1	NL	1.6	78.28
09-May-16	0.41	0.37	0.35	2.8	U (10)	0.95	78.25
13-Oct-16	0.42	0.63	0.48	2.62	9.2	0.98	78.74
09-Dec-16	0.57	0.17	0.50	1.01	11	1.7	77.07
08-Feb-17	0.053	U (0.002)	0.02	0.096	0.58	0.20	77.32
24-Apr-17	0.036	0.012	0.035	0.66	2.6	0.94	78.01
01-Sep-17	0.083	0.026	0.450	2.330	9.7	1.3	79.31
15-Feb-18	0.067	0.02	0.14	0.97	U (10)	0.98	79.08
29-Jun-18	0.17	0.25	0.59	3.3	6.0 H	1.2	78.34
11-Sep-18	0.094	0.13	0.18	1.08	4.8	0.74	78.88
26-Oct-18	0.17	0.28	0.48	3.01	11	1.0	79.40
25-Feb-19	0.092	0.22	0.18	1.41	5.4	1.2	75.96
25-Apr-19	0.051	0.13	U (0.003)	1.28	3.6	0.93	79.50
<b>GCLs</b>	<b>0.0046</b>	<b>1.1</b>	<b>0.015</b>	<b>0.19</b>	<b>2.2</b>	<b>1.5</b>	<b>NA</b>

**Appendix D  
Tables of Historical Monitoring Data**

**Monitoring Well MW-3**

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	GW Elev (feet)
06-Nov-14	5.0	7.4	37	39	240	3.5	78.38
25-Feb-15	2.9	34	6.7	37	180	8.6	77.98
10-Jun-15	5.2	38	8.2	48	210	9.5	78.40
02-Sep-15	3.7	24	4.4	28	U (200)	5.1	77.88
12-Nov-15	1.3	2.1	0.21	1.69	87	3.6	78.92
20-Jan-16	3.8	13	4.2	25.3	120	4.1	78.50
09-May-16	2.1	21	2.2	33	69	1.5	78.43
13-Oct-16	1.2	4.2	2.9	14.6	46	2	78.75
09-Dec-16	0.17 (E)	NL	NL	0.54 (E)	100	3.3	77.80
08-Feb-17	39	99	53	103	98	3.9	77.61
24-Apr-17	2.5	14	5.2	28.9	U (200)	6.7	78.61
01-Sep-17	0.610	9.300	3.700	21.400	75	1.9	79.33
15-Feb-18	0.3	3.8	2.9	15.6	U (100)	1.3	79.03
29-Jun-18	0.28	1.1	1.7	8.2 H	23 H	1.1	78.78
11-Sep-18	0.29	0.53	1	5.6	14	0.91	79.13
26-Oct-18	0.32	0.36	0.89	4.3	15	0.93	79.40
25-Feb-19	0.95	0.69	2.3	11.4	U (1.3)	4.6	78.15
25-Apr-19	0.14	0.13	U (1.5)	U (1.5)	11	0.64	79.58
<b>GCLs</b>	<b>0.0046</b>	<b>1.1</b>	<b>0.015</b>	<b>0.19</b>	<b>2.2</b>	<b>1.5</b>	<b>NA</b>

**Monitoring Well MW-4**

Date	Benzene (mg/L)	Toluene (mg/L)	Ethylbenzene (mg/L)	Xylenes (mg/L)	GRO (mg/L)	DRO (mg/L)	GW Elev (feet)
06-Nov-14	0.940	1.9	0.3	1.5	13	0.45	77.81
25-Feb-15	3.7	6.6	0.56	2.7	29	1.0	76.85
10-Jun-15	1.1	2.3	0.54	2.7	14	1.0	76.60
02-Sep-15	0.026	U (0.001)	0.007	0.03	0.3	U (0.40)	77.31
12-Nov-15	NL	NL	NL	NL	U (0.050)	U (0.21)	78.99
20-Jan-16	0.0043	U (0.002)	U (0.003)	U (0.002)	NL	0.15	78.56
09-May-16	0.0092	U (0.001)	U (0.001)	U (0.003)	U (0.1)	U (0.42)	78.51
13-Oct-16	U (0.00020)	U (0.001)	U (0.001)	U (0.003)	U (0.1)	0.18	78.84
09-Dec-16	NL	NL	NL	NL	U (0.05)	0.18	77.93
08-Feb-17	0.017	U (0.002)	U (0.003)	U (0.002)	U (0.05)	0.18	78.81
24-Apr-17	0.012	U (0.002)	0.0049	U (0.003)	U (0.001)	U (0.0003)	78.8
01-Sep-17	0.550	U (0.050)	0.380	0.740	5.1	0.48	79.38
15-Feb-18	0.19	U (0.10)	0.26	0.438	3.3	0.29	79.14
29-Jun-18	0.09	U (0.002)	0.022	0.027	0.52	0.19	79.00
11-Sep-18	0.0086	U (0.001)	0.0052	0.0062	U (0.15)	U (0.28)	79.23
26-Oct-18	0.013	U (0.002)	0.0045	0.0089	U (0.25)	0.15	79.46
25-Feb-19	0.026	U (0.002)	0.0034	0.0089	U (0.25)	0.20	78.30
25-Apr-19	U (0.003)	U (0.002)	U (0.003)	U (0.003)	U (0.25)	U (0.27)	77.23
<b>GCLs</b>	<b>0.0046</b>	<b>1.1</b>	<b>0.015</b>	<b>0.19</b>	<b>2.2</b>	<b>1.5</b>	<b>NA</b>

## Appendix D Tables of Historical Monitoring Data

Key: DRO - diesel range organics  
E – There was insufficient sample to perform a re-extraction.  
GCL - ground water cleanup level  
GRO - gasoline range organics  
GW Elev - groundwater elevation  
H – Sample was prepped or analyzed beyond the specified holding time.  
mg/L - milligrams per liter  
NA - not applicable  
NM - not measured  
NL - Not analyzed due to laboratory error.  
U - Undetected above practical quantitation limits.  
Xylenes - total xylenes  
**Bold**, shade indicates concentration exceeds the GCL.

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## **APPENDIX E**

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### *Laboratory Analytical Results for Expanded List of VOCs*

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**Table E-1 Groundwater Analytical Results for Expanded List of VOCs**  
 Samples collected on April 25, 2019

Sample Identification	1,1,2-Trichloroethane <sup>2</sup> (mg/L)	1,2,3-Trichloropropane <sup>2</sup> (mg/L)	1,2,4-Trimethylbenzene <sup>1</sup> (mg/L)	1,3,5-Trimethylbenzene <sup>1</sup> (mg/L)	1,2-Dibromoethane <sup>2</sup> (mg/L)	Naphthalene <sup>1</sup> (mg/L)	Vinyl Chloride <sup>2</sup> (mg/L)
MW-1	NT	NT	U (0.003)	U (0.003)	NT	U (0.0005)	NT
MW-2	NT	NT	<b>0.14</b>	<b>0.11</b>	NT	<b>0.013</b>	NT
MW-3	NT	NT	<b>U (1.5)</b>	<b>U (1.5)</b>	NT	<b>0.024</b>	NT
MW-4	NT	NT	U (0.003)	U (0.003)	NT	U (0.0005)	NT
TNS76 (Duplicate of MW-3)	NT	NT	<b>U (1.5)</b>	<b>U (1.5)</b>	NT	<b>0.028</b>	NT
Drinking Water	<b>U (0.0005)</b>	<b>U (0.0005)</b>	U (0.0005) <sup>2</sup>	U (0.0005) <sup>2</sup>	<b>U (0.0002)</b>	U (0.0005) <sup>2</sup>	<b>U (0.0002)</b>
Trip Blank	NT	NT	U (0.003)	U (0.003)	NT	U (0.0005)	NT
<b>GCLs</b>	<b>0.00041</b>	<b>0.000075</b>	<b>0.056</b>	<b>0.06</b>	<b>0.000075</b>	<b>0.0017</b>	<b>0.00019</b>

Key:

1 – Analyzed by EPA Method 8260C

2 – Analyzed by EPA Method 524.2

EPA – U.S. Environmental Protection Agency

GCLs – Groundwater cleanup levels, per Alaska

Department of Environmental Conservation 18 Alaska Administrative Code 75.345, Table C, updated September 29, 2018.

mg/L – milligrams per liter

NT – Not tested

U – Undetected above laboratory reporting limits shown in parentheses

VOC - volatile organic compound

**Bold** indicates the concentration exceeds the GCL or, if not detected, the laboratory reporting limit exceeds the GCL

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## **APPENDIX F**

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*Laboratory Analytical Report and  
ADEC Laboratory Data Review  
Checklist*

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## ANALYTICAL REPORT

Eurofins TestAmerica, Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-85799-1  
Client Project/Site: Tesoro - 2Go Mart 76

For:  
Stantec Consulting Services Inc  
1835 S. Bragraw  
Suite 350  
Anchorage, Alaska 99508

Attn: John Marshall

*M. Elaine Walker*

Authorized for release by:  
6/12/2019 5:10:30 PM

Elaine Walker, Project Manager II  
(253)248-4972  
[elaine.walker@testamericainc.com](mailto:elaine.walker@testamericainc.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:  
[www.testamericainc.com](http://www.testamericainc.com)

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

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



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# Case Narrative

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

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## Job ID: 580-85799-1

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### Laboratory: Eurofins TestAmerica, Seattle

#### Narrative

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#### Job Narrative 580-85799-1

#### Receipt

Seven samples were received on 4/26/2019 3:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.1° C.

The 524.2 Drinking Water VOCs were subcontracted to Eurofins Eaton Analytical , LLC, located in South Bend, IN. Their reported is included as an addendum in this report.

#### GC/MS VOA

Method(s) 8260C: Surrogate 4-Bromofluorobenzene (Surr) recovery for LCSD associated with batch 299771 was outside the control limit (low by 2%). This surrogate as well as all other surrogates fell within acceptance criteria throughout the rest of the analytical window; therefore, the data have been reported. (LCSD 580-299771/6).

Method(s) 8260C: The following analyte recovered outside control limits for the LCSD associated with analytical batch 580-299771: Isopropylbenzene. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

Method(s) 8260C: The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for batch analytical batch 580-299771 recovered outside control limits for the following analyte: Isopropylbenzene.

Method(s) 8260C: The following samples were diluted to bring the concentration of target analytes within the calibration range: MW-2 (580-85799-4), MW-3 (580-85799-5) and TNS 76 (580-85799-6). Elevated reporting limits (RLs) are provided.

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

#### GC VOA

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

#### GC Semi VOA

Method(s) AK102 & 103: Detected hydrocarbons appear to be due to gasoline overlap for the following samples: MW-2 (580-85799-4), MW-3 (580-85799-5) and TNS 76 (580-85799-6).

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

#### Subcontract non-Sister

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

# Definitions/Glossary

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
*	RPD of the LCS and LCSD exceeds the control limits
X	Surrogate is outside control 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	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

# Client Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

**Client Sample ID: TB01**

**Lab Sample ID: 580-85799-1**

**Date Collected: 04/25/19 08:00**

**Matrix: Water**

**Date Received: 04/26/19 15:30**

**Method: 8260C SIM - Volatile Organic Compounds (GC/MS)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.50		ug/L			04/30/19 19:19	1
<b>Surrogate</b>									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	101		80 - 120					04/30/19 19:19	1
Toluene-d8 (Surr)	102		75 - 120					04/30/19 19:19	1
1,2-Dichloroethane-d4 (Surr)	71		48 - 150					04/30/19 19:19	1
4-Bromofluorobenzene (Surr)	86		75 - 120					04/30/19 19:19	1
Dibromofluoromethane (Surr)	85		80 - 120					04/30/19 19:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		3.0		ug/L			05/01/19 22:03	1
1,3,5-Trimethylbenzene	ND		3.0		ug/L			05/01/19 22:03	1
Benzene	ND		3.0		ug/L			05/01/19 22:03	1
Ethylbenzene	ND		3.0		ug/L			05/01/19 22:03	1
Isopropylbenzene	ND *		2.0		ug/L			05/01/19 22:03	1
m-Xylene & p-Xylene	ND		3.0		ug/L			05/01/19 22:03	1
n-Butylbenzene	ND		3.0		ug/L			05/01/19 22:03	1
o-Xylene	ND		2.0		ug/L			05/01/19 22:03	1
sec-Butylbenzene	ND		3.0		ug/L			05/01/19 22:03	1
t-Butylbenzene	ND		3.0		ug/L			05/01/19 22:03	1
Toluene	ND		2.0		ug/L			05/01/19 22:03	1
<b>Surrogate</b>									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	87		80 - 126					05/01/19 22:03	1
4-Bromofluorobenzene (Surr)	98		80 - 125					05/01/19 22:03	1
Dibromofluoromethane (Surr)	92		77 - 120					05/01/19 22:03	1
Toluene-d8 (Surr)	102		80 - 122					05/01/19 22:03	1
Trifluorotoluene (Surr)	97		80 - 120					05/01/19 22:03	1

**Method: AK101 - Alaska - Gasoline Range Organics (GC)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		0.25		mg/L			05/06/19 15:58	1
<b>Surrogate</b>									
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	110		50 - 150					05/06/19 15:58	1
4-Bromofluorobenzene (Surr)	77		50 - 150					05/06/19 15:58	1

# Client Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

**Client Sample ID: MW-1**

**Lab Sample ID: 580-85799-2**

Date Collected: 04/25/19 10:15

Matrix: Water

Date Received: 04/26/19 15:30

### Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.50		ug/L			05/01/19 01:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	99		80 - 120		05/01/19 01:15	1
Toluene-d8 (Surr)	103		75 - 120		05/01/19 01:15	1
1,2-Dichloroethane-d4 (Surr)	69		48 - 150		05/01/19 01:15	1
4-Bromofluorobenzene (Surr)	85		75 - 120		05/01/19 01:15	1
Dibromofluoromethane (Surr)	83		80 - 120		05/01/19 01:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		3.0		ug/L			05/01/19 22:27	1
1,3,5-Trimethylbenzene	ND		3.0		ug/L			05/01/19 22:27	1
Benzene	ND		3.0		ug/L			05/01/19 22:27	1
Ethylbenzene	ND		3.0		ug/L			05/01/19 22:27	1
Isopropylbenzene	ND *		2.0		ug/L			05/01/19 22:27	1
m-Xylene & p-Xylene	ND		3.0		ug/L			05/01/19 22:27	1
n-Butylbenzene	ND		3.0		ug/L			05/01/19 22:27	1
o-Xylene	ND		2.0		ug/L			05/01/19 22:27	1
sec-Butylbenzene	ND		3.0		ug/L			05/01/19 22:27	1
t-Butylbenzene	ND		3.0		ug/L			05/01/19 22:27	1
Toluene	ND		2.0		ug/L			05/01/19 22:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	86		80 - 126		05/01/19 22:27	1
4-Bromofluorobenzene (Surr)	94		80 - 125		05/01/19 22:27	1
Dibromofluoromethane (Surr)	88		77 - 120		05/01/19 22:27	1
Toluene-d8 (Surr)	110		80 - 122		05/01/19 22:27	1
Trifluorotoluene (Surr)	110		80 - 120		05/01/19 22:27	1

### Method: AK101 - Alaska - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		0.25		mg/L			05/06/19 16:25	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	114		50 - 150		05/06/19 16:25	1
4-Bromofluorobenzene (Surr)	77		50 - 150		05/06/19 16:25	1

### Method: AK102 - DRO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.27		mg/L		05/07/19 12:28	05/07/19 18:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150	05/07/19 12:28	05/07/19 18:24	1
n-Triacontane-d62	91		50 - 150	05/07/19 12:28	05/07/19 18:24	1

Eurofins TestAmerica, Seattle



# Client Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

**Client Sample ID: MW-4**

**Lab Sample ID: 580-85799-3**

Date Collected: 04/25/19 10:55

Matrix: Water

Date Received: 04/26/19 15:30

### Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.50		ug/L			05/01/19 01:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	100		80 - 120		05/01/19 01:40	1
Toluene-d8 (Surr)	103		75 - 120		05/01/19 01:40	1
1,2-Dichloroethane-d4 (Surr)	70		48 - 150		05/01/19 01:40	1
4-Bromofluorobenzene (Surr)	84		75 - 120		05/01/19 01:40	1
Dibromofluoromethane (Surr)	83		80 - 120		05/01/19 01:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		3.0		ug/L			05/01/19 22:51	1
1,3,5-Trimethylbenzene	ND		3.0		ug/L			05/01/19 22:51	1
Benzene	ND		3.0		ug/L			05/01/19 22:51	1
Ethylbenzene	ND		3.0		ug/L			05/01/19 22:51	1
Isopropylbenzene	ND *		2.0		ug/L			05/01/19 22:51	1
m-Xylene & p-Xylene	ND		3.0		ug/L			05/01/19 22:51	1
n-Butylbenzene	ND		3.0		ug/L			05/01/19 22:51	1
o-Xylene	ND		2.0		ug/L			05/01/19 22:51	1
sec-Butylbenzene	ND		3.0		ug/L			05/01/19 22:51	1
t-Butylbenzene	ND		3.0		ug/L			05/01/19 22:51	1
Toluene	ND		2.0		ug/L			05/01/19 22:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	81		80 - 126		05/01/19 22:51	1
4-Bromofluorobenzene (Surr)	92		80 - 125		05/01/19 22:51	1
Dibromofluoromethane (Surr)	81		77 - 120		05/01/19 22:51	1
Toluene-d8 (Surr)	105		80 - 122		05/01/19 22:51	1
Trifluorotoluene (Surr)	87		80 - 120		05/01/19 22:51	1

### Method: AK101 - Alaska - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		0.25		mg/L			05/06/19 16:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	122		50 - 150		05/06/19 16:53	1
4-Bromofluorobenzene (Surr)	75		50 - 150		05/06/19 16:53	1

### Method: AK102 - DRO

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.27		mg/L		05/07/19 12:28	05/07/19 18:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	88		50 - 150	05/07/19 12:28	05/07/19 18:44	1
n-Triacontane-d62	91		50 - 150	05/07/19 12:28	05/07/19 18:44	1

# Client Sample Results

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

**Client Sample ID: MW-2**

**Lab Sample ID: 580-85799-4**

Date Collected: 04/25/19 11:30

Matrix: Water

Date Received: 04/26/19 15:30

## Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Naphthalene</b>	<b>13</b>		0.50		ug/L			05/01/19 02:05	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Trifluorotoluene (Surr)	98		80 - 120					05/01/19 02:05	1
Toluene-d8 (Surr)	101		75 - 120					05/01/19 02:05	1
1,2-Dichloroethane-d4 (Surr)	69		48 - 150					05/01/19 02:05	1
4-Bromofluorobenzene (Surr)	94		75 - 120					05/01/19 02:05	1
Dibromofluoromethane (Surr)	82		80 - 120					05/01/19 02:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>1,2,4-Trimethylbenzene</b>	<b>140</b>		3.0		ug/L			05/01/19 23:15	1
<b>1,3,5-Trimethylbenzene</b>	<b>110</b>		3.0		ug/L			05/01/19 23:15	1
<b>Benzene</b>	<b>51</b>		3.0		ug/L			05/01/19 23:15	1
<b>Isopropylbenzene</b>	<b>12 *</b>		2.0		ug/L			05/01/19 23:15	1
<b>n-Butylbenzene</b>	<b>34</b>		3.0		ug/L			05/01/19 23:15	1
sec-Butylbenzene	ND		3.0		ug/L			05/01/19 23:15	1
t-Butylbenzene	ND		3.0		ug/L			05/01/19 23:15	1
<b>Toluene</b>	<b>130</b>		2.0		ug/L			05/01/19 23:15	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	86		80 - 126					05/01/19 23:15	1
4-Bromofluorobenzene (Surr)	99		80 - 125					05/01/19 23:15	1
Dibromofluoromethane (Surr)	88		77 - 120					05/01/19 23:15	1
Toluene-d8 (Surr)	117		80 - 122					05/01/19 23:15	1
Trifluorotoluene (Surr)	102		80 - 120					05/01/19 23:15	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		300		ug/L			05/03/19 00:57	100
<b>m-Xylene &amp; p-Xylene</b>	<b>800</b>		300		ug/L			05/03/19 00:57	100
<b>o-Xylene</b>	<b>480</b>		200		ug/L			05/03/19 00:57	100
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	106		80 - 126					05/03/19 00:57	100
4-Bromofluorobenzene (Surr)	97		80 - 125					05/03/19 00:57	100
Dibromofluoromethane (Surr)	95		77 - 120					05/03/19 00:57	100
Toluene-d8 (Surr)	104		80 - 122					05/03/19 00:57	100
Trifluorotoluene (Surr)	102		80 - 120					05/03/19 00:57	100

## Method: AK101 - Alaska - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline Range Organics (GRO) -C6-C10</b>	<b>3.6</b>		0.25		mg/L			05/06/19 17:20	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Trifluorotoluene (Surr)	103		50 - 150					05/06/19 17:20	1
4-Bromofluorobenzene (Surr)	81		50 - 150					05/06/19 17:20	1

Eurofins TestAmerica, Seattle

# Client Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

**Client Sample ID: MW-2**

**Lab Sample ID: 580-85799-4**

Date Collected: 04/25/19 11:30

Matrix: Water

Date Received: 04/26/19 15:30

**Method: AK102 - DRO**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	0.93		0.27		mg/L		05/07/19 12:28	05/07/19 19:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	93		50 - 150				05/07/19 12:28	05/07/19 19:03	1
<i>n</i> -Triacontane-d62	101		50 - 150				05/07/19 12:28	05/07/19 19:03	1



# Client Sample Results

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

**Client Sample ID: MW-3**

**Lab Sample ID: 580-85799-5**

Date Collected: 04/25/19 12:05

Matrix: Water

Date Received: 04/26/19 15:30

### Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Naphthalene</b>	<b>24</b>		0.50		ug/L			05/01/19 02:29	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Trifluorotoluene (Surr)	100		80 - 120					05/01/19 02:29	1
Toluene-d8 (Surr)	101		75 - 120					05/01/19 02:29	1
1,2-Dichloroethane-d4 (Surr)	67		48 - 150					05/01/19 02:29	1
4-Bromofluorobenzene (Surr)	80		75 - 120					05/01/19 02:29	1
Dibromofluoromethane (Surr)	81		80 - 120					05/01/19 02:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>140</b>		3.0		ug/L			05/01/19 23:40	1
<b>Isopropylbenzene</b>	<b>44 *</b>		2.0		ug/L			05/01/19 23:40	1
<b>n-Butylbenzene</b>	<b>67</b>		3.0		ug/L			05/01/19 23:40	1
<b>sec-Butylbenzene</b>	<b>4.5</b>		3.0		ug/L			05/01/19 23:40	1
t-Butylbenzene	ND		3.0		ug/L			05/01/19 23:40	1
<b>Toluene</b>	<b>130</b>		2.0		ug/L			05/01/19 23:40	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	86		80 - 126					05/01/19 23:40	1
4-Bromofluorobenzene (Surr)	102		80 - 125					05/01/19 23:40	1
Dibromofluoromethane (Surr)	86		77 - 120					05/01/19 23:40	1
Toluene-d8 (Surr)	104		80 - 122					05/01/19 23:40	1
Trifluorotoluene (Surr)	102		80 - 120					05/01/19 23:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		1500		ug/L			05/03/19 00:09	500
1,3,5-Trimethylbenzene	ND		1500		ug/L			05/03/19 00:09	500
Ethylbenzene	ND		1500		ug/L			05/03/19 00:09	500
m-Xylene & p-Xylene	ND		1500		ug/L			05/03/19 00:09	500
o-Xylene	ND		1000		ug/L			05/03/19 00:09	500
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	106		80 - 126					05/03/19 00:09	500
4-Bromofluorobenzene (Surr)	94		80 - 125					05/03/19 00:09	500
Dibromofluoromethane (Surr)	99		77 - 120					05/03/19 00:09	500
Toluene-d8 (Surr)	108		80 - 122					05/03/19 00:09	500
Trifluorotoluene (Surr)	106		80 - 120					05/03/19 00:09	500

### Method: AK101 - Alaska - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline Range Organics (GRO) -C6-C10</b>	<b>11</b>		0.25		mg/L			05/06/19 19:36	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Trifluorotoluene (Surr)	101		50 - 150					05/06/19 19:36	1
4-Bromofluorobenzene (Surr)	133		50 - 150					05/06/19 19:36	1

Eurofins TestAmerica, Seattle

# Client Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

**Client Sample ID: MW-3**  
**Date Collected: 04/25/19 12:05**  
**Date Received: 04/26/19 15:30**

**Lab Sample ID: 580-85799-5**  
**Matrix: Water**

**Method: AK102 - DRO**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Diesel Range Organics (DRO) (C10-C25)</b>	<b>0.64</b>		0.27		mg/L		05/07/19 12:28	05/07/19 19:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o-Terphenyl</i>	92		50 - 150				05/07/19 12:28	05/07/19 19:23	1
<i>n-Triacontane-d62</i>	96		50 - 150				05/07/19 12:28	05/07/19 19:23	1



# Client Sample Results

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

**Client Sample ID: TNS 76**

**Lab Sample ID: 580-85799-6**

Date Collected: 04/25/19 08:00

Matrix: Water

Date Received: 04/26/19 15:30

## Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Naphthalene</b>	<b>28</b>		0.50		ug/L			05/01/19 02:54	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Trifluorotoluene (Surr)	98		80 - 120					05/01/19 02:54	1
Toluene-d8 (Surr)	103		75 - 120					05/01/19 02:54	1
1,2-Dichloroethane-d4 (Surr)	67		48 - 150					05/01/19 02:54	1
4-Bromofluorobenzene (Surr)	86		75 - 120					05/01/19 02:54	1
Dibromofluoromethane (Surr)	80		80 - 120					05/01/19 02:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Benzene</b>	<b>130</b>		3.0		ug/L			05/02/19 00:04	1
<b>Isopropylbenzene</b>	<b>40 *</b>		2.0		ug/L			05/02/19 00:04	1
<b>n-Butylbenzene</b>	<b>65</b>		3.0		ug/L			05/02/19 00:04	1
<b>sec-Butylbenzene</b>	<b>4.0</b>		3.0		ug/L			05/02/19 00:04	1
t-Butylbenzene	ND		3.0		ug/L			05/02/19 00:04	1
<b>Toluene</b>	<b>120</b>		2.0		ug/L			05/02/19 00:04	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	82		80 - 126					05/02/19 00:04	1
4-Bromofluorobenzene (Surr)	92		80 - 125					05/02/19 00:04	1
Dibromofluoromethane (Surr)	77		77 - 120					05/02/19 00:04	1
Toluene-d8 (Surr)	99		80 - 122					05/02/19 00:04	1
Trifluorotoluene (Surr)	98		80 - 120					05/02/19 00:04	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		1500		ug/L			05/03/19 00:33	500
1,3,5-Trimethylbenzene	ND		1500		ug/L			05/03/19 00:33	500
Ethylbenzene	ND		1500		ug/L			05/03/19 00:33	500
m-Xylene & p-Xylene	ND		1500		ug/L			05/03/19 00:33	500
o-Xylene	ND		1000		ug/L			05/03/19 00:33	500
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
1,2-Dichloroethane-d4 (Surr)	107		80 - 126					05/03/19 00:33	500
4-Bromofluorobenzene (Surr)	94		80 - 125					05/03/19 00:33	500
Dibromofluoromethane (Surr)	99		77 - 120					05/03/19 00:33	500
Toluene-d8 (Surr)	104		80 - 122					05/03/19 00:33	500
Trifluorotoluene (Surr)	101		80 - 120					05/03/19 00:33	500

## Method: AK101 - Alaska - Gasoline Range Organics (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline Range Organics (GRO) -C6-C10</b>	<b>10</b>		0.25		mg/L			05/06/19 20:03	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
Trifluorotoluene (Surr)	102		50 - 150					05/06/19 20:03	1
4-Bromofluorobenzene (Surr)	121		50 - 150					05/06/19 20:03	1

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# Client Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

**Client Sample ID: TNS 76**

**Lab Sample ID: 580-85799-6**

Date Collected: 04/25/19 08:00

Matrix: Water

Date Received: 04/26/19 15:30

**Method: AK102 - DRO**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	1.0		0.26		mg/L		05/07/19 12:28	05/07/19 19:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	95		50 - 150				05/07/19 12:28	05/07/19 19:43	1
<i>n</i> -Triacontane-d62	95		50 - 150				05/07/19 12:28	05/07/19 19:43	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

# Client Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

**Client Sample ID: Drinking Water**

**Lab Sample ID: 580-85799-7**

**Date Collected: 04/25/19 12:25**

**Matrix: Water**

**Date Received: 04/26/19 15:30**

**Method: AK102 - DRO**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics (DRO) (C10-C25)	ND		0.26		mg/L		05/07/19 12:28	05/07/19 20:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	89		50 - 150				05/07/19 12:28	05/07/19 20:03	1
<i>n</i> -Triacontane-d62	91		50 - 150				05/07/19 12:28	05/07/19 20:03	1





# QC Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

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

**Lab Sample ID: MB 580-299771/4**  
**Matrix: Water**  
**Analysis Batch: 299771**

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,2,4-Trimethylbenzene	ND		3.0		ug/L			05/01/19 14:21	1
1,3,5-Trimethylbenzene	ND		3.0		ug/L			05/01/19 14:21	1
Benzene	ND		3.0		ug/L			05/01/19 14:21	1
Ethylbenzene	ND		3.0		ug/L			05/01/19 14:21	1
Isopropylbenzene	ND		2.0		ug/L			05/01/19 14:21	1
m-Xylene & p-Xylene	ND		3.0		ug/L			05/01/19 14:21	1
n-Butylbenzene	ND		3.0		ug/L			05/01/19 14:21	1
o-Xylene	ND		2.0		ug/L			05/01/19 14:21	1
sec-Butylbenzene	ND		3.0		ug/L			05/01/19 14:21	1
t-Butylbenzene	ND		3.0		ug/L			05/01/19 14:21	1
Toluene	ND		2.0		ug/L			05/01/19 14:21	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	82		80 - 126		05/01/19 14:21	1
4-Bromofluorobenzene (Surr)	92		80 - 125		05/01/19 14:21	1
Dibromofluoromethane (Surr)	85		77 - 120		05/01/19 14:21	1
Toluene-d8 (Surr)	96		80 - 122		05/01/19 14:21	1
Trifluorotoluene (Surr)	96		80 - 120		05/01/19 14:21	1

**Lab Sample ID: LCS 580-299771/5**  
**Matrix: Water**  
**Analysis Batch: 299771**

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec. Limits
		Result	Qualifier				
1,2,4-Trimethylbenzene	10.0	10.4		ug/L		104	75 - 121
1,3,5-Trimethylbenzene	10.0	9.67		ug/L		97	75 - 122
Benzene	10.0	9.73		ug/L		97	75 - 128
Ethylbenzene	10.0	9.34		ug/L		93	75 - 120
Isopropylbenzene	10.0	9.45		ug/L		95	75 - 120
m-Xylene & p-Xylene	10.0	9.99		ug/L		100	75 - 120
n-Butylbenzene	10.0	9.06		ug/L		91	78 - 120
o-Xylene	10.0	9.69		ug/L		97	74 - 120
sec-Butylbenzene	10.0	9.20		ug/L		92	78 - 125
t-Butylbenzene	10.0	10.2		ug/L		102	80 - 121
Toluene	10.0	9.83		ug/L		98	75 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
1,2-Dichloroethane-d4 (Surr)	95		80 - 126
4-Bromofluorobenzene (Surr)	96		80 - 125
Dibromofluoromethane (Surr)	93		77 - 120
Toluene-d8 (Surr)	103		80 - 122
Trifluorotoluene (Surr)	102		80 - 120

# QC Sample Results

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

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

**Lab Sample ID: LCSD 580-299771/6**

**Matrix: Water**

**Analysis Batch: 299771**

**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
1,2,4-Trimethylbenzene	10.0	9.88		ug/L		99	75 - 121	5	16
1,3,5-Trimethylbenzene	10.0	9.10		ug/L		91	75 - 122	6	14
Benzene	10.0	9.97		ug/L		100	75 - 128	2	14
Ethylbenzene	10.0	8.66		ug/L		87	75 - 120	8	14
Isopropylbenzene	10.0	6.86	*	ug/L		69	75 - 120	32	20
m-Xylene & p-Xylene	10.0	9.05		ug/L		91	75 - 120	10	14
n-Butylbenzene	10.0	8.38		ug/L		84	78 - 120	8	14
o-Xylene	10.0	8.52		ug/L		85	74 - 120	13	16
sec-Butylbenzene	10.0	8.94		ug/L		89	78 - 125	3	15
t-Butylbenzene	10.0	9.35		ug/L		93	80 - 121	8	14
Toluene	10.0	9.71		ug/L		97	75 - 120	1	13

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
1,2-Dichloroethane-d4 (Surr)	83		80 - 126
4-Bromofluorobenzene (Surr)	78	X	80 - 125
Dibromofluoromethane (Surr)	82		77 - 120
Toluene-d8 (Surr)	100		80 - 122
Trifluorotoluene (Surr)	97		80 - 120

**Lab Sample ID: MB 580-299920/6**

**Matrix: Water**

**Analysis Batch: 299920**

**Client Sample ID: Method Blank**

**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2,4-Trimethylbenzene	ND		3.0		ug/L			05/02/19 23:20	1
1,3,5-Trimethylbenzene	ND		3.0		ug/L			05/02/19 23:20	1
Benzene	ND		3.0		ug/L			05/02/19 23:20	1
Ethylbenzene	ND		3.0		ug/L			05/02/19 23:20	1
Isopropylbenzene	ND		2.0		ug/L			05/02/19 23:20	1
m-Xylene & p-Xylene	ND		3.0		ug/L			05/02/19 23:20	1
n-Butylbenzene	ND		3.0		ug/L			05/02/19 23:20	1
o-Xylene	ND		2.0		ug/L			05/02/19 23:20	1
sec-Butylbenzene	ND		3.0		ug/L			05/02/19 23:20	1
t-Butylbenzene	ND		3.0		ug/L			05/02/19 23:20	1
Toluene	ND		2.0		ug/L			05/02/19 23:20	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		80 - 126		05/02/19 23:20	1
4-Bromofluorobenzene (Surr)	99		80 - 125		05/02/19 23:20	1
Dibromofluoromethane (Surr)	94		77 - 120		05/02/19 23:20	1
Toluene-d8 (Surr)	107		80 - 122		05/02/19 23:20	1
Trifluorotoluene (Surr)	101		80 - 120		05/02/19 23:20	1

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# QC Sample Results

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

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

**Lab Sample ID: LCS 580-299920/4**

**Matrix: Water**

**Analysis Batch: 299920**

**Client Sample ID: Lab Control Sample**

**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,4-Trimethylbenzene	20.0	19.6		ug/L		98	75 - 121
1,3,5-Trimethylbenzene	20.0	19.0		ug/L		95	75 - 122
Benzene	20.0	18.6		ug/L		93	75 - 128
Ethylbenzene	20.0	18.4		ug/L		92	75 - 120
Isopropylbenzene	20.0	18.1		ug/L		90	75 - 120
m-Xylene & p-Xylene	20.0	19.5		ug/L		97	75 - 120
n-Butylbenzene	20.0	17.4		ug/L		87	78 - 120
o-Xylene	20.0	18.8		ug/L		94	74 - 120
sec-Butylbenzene	20.0	18.1		ug/L		90	78 - 125
t-Butylbenzene	20.0	20.4		ug/L		102	80 - 121
Toluene	20.0	19.0		ug/L		95	75 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	102		80 - 126
4-Bromofluorobenzene (Surr)	102		80 - 125
Dibromofluoromethane (Surr)	95		77 - 120
Toluene-d8 (Surr)	99		80 - 122
Trifluorotoluene (Surr)	100		80 - 120

**Lab Sample ID: LCSD 580-299920/5**

**Matrix: Water**

**Analysis Batch: 299920**

**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
1,2,4-Trimethylbenzene	20.0	19.2		ug/L		96	75 - 121	2	16
1,3,5-Trimethylbenzene	20.0	18.9		ug/L		94	75 - 122	1	14
Benzene	20.0	18.1		ug/L		91	75 - 128	2	14
Ethylbenzene	20.0	18.1		ug/L		91	75 - 120	1	14
Isopropylbenzene	20.0	17.6		ug/L		88	75 - 120	3	20
m-Xylene & p-Xylene	20.0	19.1		ug/L		96	75 - 120	2	14
n-Butylbenzene	20.0	16.8		ug/L		84	78 - 120	4	14
o-Xylene	20.0	18.5		ug/L		92	74 - 120	2	16
sec-Butylbenzene	20.0	17.3		ug/L		87	78 - 125	4	15
t-Butylbenzene	20.0	18.9		ug/L		94	80 - 121	8	14
Toluene	20.0	18.3		ug/L		92	75 - 120	3	13

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	107		80 - 126
4-Bromofluorobenzene (Surr)	99		80 - 125
Dibromofluoromethane (Surr)	97		77 - 120
Toluene-d8 (Surr)	98		80 - 122
Trifluorotoluene (Surr)	107		80 - 120

# QC Sample Results

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

## Method: 8260C SIM - Volatile Organic Compounds (GC/MS)

**Lab Sample ID: MB 580-299721/7**  
**Matrix: Water**  
**Analysis Batch: 299721**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		0.50		ug/L			04/30/19 18:56	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Trifluorotoluene (Surr)	101		80 - 120					04/30/19 18:56	1
Toluene-d8 (Surr)	101		75 - 120					04/30/19 18:56	1
1,2-Dichloroethane-d4 (Surr)	71		48 - 150					04/30/19 18:56	1
4-Bromofluorobenzene (Surr)	87		75 - 120					04/30/19 18:56	1
Dibromofluoromethane (Surr)	84		80 - 120					04/30/19 18:56	1

**Lab Sample ID: LCS 580-299721/4**  
**Matrix: Water**  
**Analysis Batch: 299721**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	5.00	4.68		ug/L		94	69 - 134
Surrogate	%Recovery	LCS Qualifier	Limits				
Trifluorotoluene (Surr)	101		80 - 120				
Toluene-d8 (Surr)	96		75 - 120				
1,2-Dichloroethane-d4 (Surr)	70		48 - 150				
4-Bromofluorobenzene (Surr)	81		75 - 120				
Dibromofluoromethane (Surr)	85		80 - 120				

**Lab Sample ID: LCSD 580-299721/5**  
**Matrix: Water**  
**Analysis Batch: 299721**

**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
Naphthalene	5.00	5.08		ug/L		102	69 - 134	8	13
Surrogate	%Recovery	LCSD Qualifier	Limits						
Trifluorotoluene (Surr)	100		80 - 120						
Toluene-d8 (Surr)	102		75 - 120						
1,2-Dichloroethane-d4 (Surr)	70		48 - 150						
4-Bromofluorobenzene (Surr)	86		75 - 120						
Dibromofluoromethane (Surr)	86		80 - 120						

## Method: AK101 - Alaska - Gasoline Range Organics (GC)

**Lab Sample ID: MB 580-300036/6**  
**Matrix: Water**  
**Analysis Batch: 300036**

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C10	ND		0.25		mg/L			05/06/19 14:37	1

Eurofins TestAmerica, Seattle

# QC Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

## Method: AK101 - Alaska - Gasoline Range Organics (GC) (Continued)

**Lab Sample ID: MB 580-300036/6**  
**Matrix: Water**  
**Analysis Batch: 300036**

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

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Trifluorotoluene (Surr)	116		50 - 150		05/06/19 14:37	1
4-Bromofluorobenzene (Surr)	78		50 - 150		05/06/19 14:37	1

**Lab Sample ID: LCS 580-300036/7**  
**Matrix: Water**  
**Analysis Batch: 300036**

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Trifluorotoluene (Surr)	106		50 - 150
4-Bromofluorobenzene (Surr)	85		50 - 150

**Lab Sample ID: LCSD 580-300036/8**  
**Matrix: Water**  
**Analysis Batch: 300036**

**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

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Trifluorotoluene (Surr)	95		50 - 150
4-Bromofluorobenzene (Surr)	79		50 - 150

## Method: AK102 - DRO

**Lab Sample ID: MB 590-22068/1-A**  
**Matrix: Water**  
**Analysis Batch: 22067**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 22068**

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Diesel Range Organics (DRO) (C10-C25)	ND		0.25		mg/L		05/07/19 12:28	05/07/19 13:28	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
o-Terphenyl	85		50 - 150	05/07/19 12:28	05/07/19 13:28	1
n-Triacontane-d62	86		50 - 150	05/07/19 12:28	05/07/19 13:28	1

**Lab Sample ID: LCS 590-22068/2-A**  
**Matrix: Water**  
**Analysis Batch: 22067**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 22068**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits

Eurofins TestAmerica, Seattle

# QC Sample Results

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

## Method: AK102 - DRO (Continued)

**Lab Sample ID: LCS 590-22068/2-A**  
**Matrix: Water**  
**Analysis Batch: 22067**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 22068**

Surrogate	LCS		Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl	103		50 - 150
<i>n</i> -Triacontane-d62	100		50 - 150

**Lab Sample ID: LCSD 590-22068/3-A**  
**Matrix: Water**  
**Analysis Batch: 22067**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 22068**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.		RPD
							Limits	RPD	
Diesel Range Organics (DRO) (C10-C25)	1.60	1.35		mg/L		84	75 - 125	12	20

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
<i>o</i> -Terphenyl	90		50 - 150
<i>n</i> -Triacontane-d62	93		50 - 150

# Lab Chronicle

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

**Client Sample ID: TB01**  
**Date Collected: 04/25/19 08:00**  
**Date Received: 04/26/19 15:30**

**Lab Sample ID: 580-85799-1**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	299771	05/01/19 22:03	T1W	TAL SEA
Total/NA	Analysis	8260C SIM		1	299721	04/30/19 19:19	T1W	TAL SEA
Total/NA	Analysis	AK101		1	300036	05/06/19 15:58	CJ	TAL SEA

**Client Sample ID: MW-1**  
**Date Collected: 04/25/19 10:15**  
**Date Received: 04/26/19 15:30**

**Lab Sample ID: 580-85799-2**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	299771	05/01/19 22:27	T1W	TAL SEA
Total/NA	Analysis	8260C SIM		1	299721	05/01/19 01:15	T1W	TAL SEA
Total/NA	Analysis	AK101		1	300036	05/06/19 16:25	CJ	TAL SEA
Total/NA	Prep	3510C			22068	05/07/19 12:28	NMI	TAL SPK
Total/NA	Analysis	AK102		1	22067	05/07/19 18:24	NMI	TAL SPK

**Client Sample ID: MW-4**  
**Date Collected: 04/25/19 10:55**  
**Date Received: 04/26/19 15:30**

**Lab Sample ID: 580-85799-3**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	299771	05/01/19 22:51	T1W	TAL SEA
Total/NA	Analysis	8260C SIM		1	299721	05/01/19 01:40	T1W	TAL SEA
Total/NA	Analysis	AK101		1	300036	05/06/19 16:53	CJ	TAL SEA
Total/NA	Prep	3510C			22068	05/07/19 12:28	NMI	TAL SPK
Total/NA	Analysis	AK102		1	22067	05/07/19 18:44	NMI	TAL SPK

**Client Sample ID: MW-2**  
**Date Collected: 04/25/19 11:30**  
**Date Received: 04/26/19 15:30**

**Lab Sample ID: 580-85799-4**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	299771	05/01/19 23:15	T1W	TAL SEA
Total/NA	Analysis	8260C	DL	100	299920	05/03/19 00:57	CJ	TAL SEA
Total/NA	Analysis	8260C SIM		1	299721	05/01/19 02:05	T1W	TAL SEA
Total/NA	Analysis	AK101		1	300036	05/06/19 17:20	CJ	TAL SEA
Total/NA	Prep	3510C			22068	05/07/19 12:28	NMI	TAL SPK
Total/NA	Analysis	AK102		1	22067	05/07/19 19:03	NMI	TAL SPK

**Client Sample ID: MW-3**  
**Date Collected: 04/25/19 12:05**  
**Date Received: 04/26/19 15:30**

**Lab Sample ID: 580-85799-5**  
**Matrix: Water**

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	299771	05/01/19 23:40	T1W	TAL SEA

# Lab Chronicle

Client: Stantec Consulting Services Inc  
 Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

## Client Sample ID: MW-3

Date Collected: 04/25/19 12:05

Date Received: 04/26/19 15:30

## Lab Sample ID: 580-85799-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C	DL	500	299920	05/03/19 00:09	CJ	TAL SEA
Total/NA	Analysis	8260C SIM		1	299721	05/01/19 02:29	T1W	TAL SEA
Total/NA	Analysis	AK101		1	300036	05/06/19 19:36	CJ	TAL SEA
Total/NA	Prep	3510C			22068	05/07/19 12:28	NMI	TAL SPK
Total/NA	Analysis	AK102		1	22067	05/07/19 19:23	NMI	TAL SPK

## Client Sample ID: TNS 76

Date Collected: 04/25/19 08:00

Date Received: 04/26/19 15:30

## Lab Sample ID: 580-85799-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	299771	05/02/19 00:04	T1W	TAL SEA
Total/NA	Analysis	8260C	DL	500	299920	05/03/19 00:33	CJ	TAL SEA
Total/NA	Analysis	8260C SIM		1	299721	05/01/19 02:54	T1W	TAL SEA
Total/NA	Analysis	AK101		1	300036	05/06/19 20:03	CJ	TAL SEA
Total/NA	Prep	3510C			22068	05/07/19 12:28	NMI	TAL SPK
Total/NA	Analysis	AK102		1	22067	05/07/19 19:43	NMI	TAL SPK

## Client Sample ID: Drinking Water

Date Collected: 04/25/19 12:25

Date Received: 04/26/19 15:30

## Lab Sample ID: 580-85799-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			22068	05/07/19 12:28	NMI	TAL SPK
Total/NA	Analysis	AK102		1	22067	05/07/19 20:03	NMI	TAL SPK

### Laboratory References:

Eurofin SB = Eurofins Eaton Analytical, 110 S Hill Street, South Bend, IN 46617

TAL SEA = Eurofins TestAmerica, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

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



# Accreditation/Certification Summary

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

## Laboratory: Eurofins TestAmerica, Seattle

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-20
ANAB	DoD		L2236	01-19-22
ANAB	ISO/IEC 17025		L2236	01-19-22
California	State Program	9	2901	11-05-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-20

## Laboratory: Eurofins TestAmerica, Spokane

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-025	12-07-19
Oregon	NELAP	10	4137	12-07-19
Washington	State Program	10	C569	01-06-20

# Sample Summary

Client: Stantec Consulting Services Inc  
Project/Site: Tesoro - 2Go Mart 76

Job ID: 580-85799-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
580-85799-1	TB01	Water	04/25/19 08:00	04/26/19 15:30	
580-85799-2	MW-1	Water	04/25/19 10:15	04/26/19 15:30	
580-85799-3	MW-4	Water	04/25/19 10:55	04/26/19 15:30	
580-85799-4	MW-2	Water	04/25/19 11:30	04/26/19 15:30	
580-85799-5	MW-3	Water	04/25/19 12:05	04/26/19 15:30	
580-85799-6	TNS 76	Water	04/25/19 08:00	04/26/19 15:30	
580-85799-7	Drinking Water	Water	04/25/19 12:25	04/26/19 15:30	

## LABORATORY REPORT

If you have any questions concerning this report, please do not hesitate to call us at (800) 332-4345 or (574) 233-4777.

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## STATE CERTIFICATION LIST

State	Certification	State	Certification
Alabama	40700	Missouri	880
Alaska	IN00035	Montana	CERT0026
Arizona	AZ0432	Nebraska	NE-OS-05-04
Arkansas	IN00035	Nevada	IN00035
California	2920	New Hampshire*	2124
Colorado	IN00035	New Jersey*	IN598
Colorado Radiochemistry	IN00035	New Mexico	IN00035
Connecticut	PH-0132	New York*	11398
Delaware	IN035	North Carolina	18700
Florida*	E87775	North Dakota	R-035
Georgia	929	Ohio	87775
Hawaii	IN035	Oklahoma	D9508
Idaho	IN00035	Oregon (Primary AB)*	4074
Illinois*	200001	Pennsylvania*	68-00466
Illinois Microbiology	17767	Puerto Rico	IN00035
Illinois Radiochemistry	IN00035	Rhode Island	LAO00343
Indiana Chemistry	C-71-01	South Carolina	95005
Indiana Microbiology	M-76-07	South Dakota	IN00035
Iowa	098	Tennessee	TN02973
Kansas*	E-10233	Texas*	T104704187-18-12
Kentucky	90056	Texas/TCEQ	TX207
Louisiana*	LA014	Utah*	IN00035
Maine	IN00035	Vermont	VT-8775
Maryland	209	Virginia*	460275
Massachusetts	M-IN035	Washington	C837
Michigan	9926	West Virginia	9927 C
Minnesota*	018-999-338	Wisconsin	999766900
Mississippi	IN035	Wyoming	IN035
EPA	IN00035		

\*NELAP/TNI Recognized Accreditation Bodies

110 South Hill Street  
 South Bend, IN 46617  
 Tel: (574) 233-4777  
 Fax: (574) 233-8207  
 1 800 332 4345

## Laboratory Report

Client: TestAmerica - Richland, WA

Report: 450900

Attn: Elaine Walker  
 5755 8th Street East  
 Tacoma, WA 98424

Priority: Standard Written

Status: Final

PWS ID: Not Supplied

Alaska Lab ID #: IN00035

Sample Information					
EEA ID #	Client ID	Method	Collected Date / Time	Collected By:	Received Date / Time
4281358	(580-85799-7) Drinking Water	524.2	04/25/19 12:25	Client	05/01/19 08:45

### Report Summary

Note: Sample containers were provided by the client.

Detailed quantitative results are presented on the following pages. The results presented relate only to the samples provided for analysis.

We appreciate the opportunity to provide you with this analysis. If you have any questions concerning this report, please do not hesitate to call Kelly Blackburn at (574) 233-4777.

Note: This report may not be reproduced, except in full, without written approval from EEA.

*Kelly Blackburn ASM*

Authorized Signature

Title

05/07/2019

Date

Client Name: TestAmerica - Richland, WA

Report #: 450900

Sampling Point: (580-85799-7) Drinking Water

PWS ID: Not Supplied

Volatile Organic Chemicals									
Analyte ID #	Analyte	Method	Reg Limit	MRL†	Result	Units	Preparation Date	Analyzed Date	EEA ID #
71-43-2	Benzene	524.2	5 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
108-86-1	Bromobenzene \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
74-97-5	Bromochloromethane \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
75-27-4	Bromodichloromethane	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
75-25-2	Bromoform	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
74-83-9	Bromomethane \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
104-51-8	n-Butylbenzene \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
135-98-8	sec-Butylbenzene \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
98-06-6	tert-Butylbenzene \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
56-23-5	Carbon tetrachloride	524.2	5 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
108-90-7	Chlorobenzene	524.2	100 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
75-00-3	Chloroethane \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
67-66-3	Chloroform	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
74-87-3	Chloromethane \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
95-49-8	2-Chlorotoluene \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
106-43-4	4-Chlorotoluene \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
124-48-1	Dibromochloromethane	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
---	Total Trihalomethanes	524.2	80 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
96-12-8	1,2-Dibromo-3-chloropropane (DBCP) \$	524.2	---	0.2	< 0.2	ug/L	---	05/05/19 06:14	4281358
106-93-4	1,2-Dibromoethane (EDB) \$	524.2	---	0.2	< 0.2	ug/L	---	05/05/19 06:14	4281358
74-95-3	Dibromomethane \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
95-50-1	1,2-Dichlorobenzene	524.2	600 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
541-73-1	1,3-Dichlorobenzene \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
106-46-7	1,4-Dichlorobenzene	524.2	75 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
25321-22-6	Total Dichlorobenzene \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
75-71-8	Dichlorodifluoromethane \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
75-34-3	1,1-Dichloroethane \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
107-06-2	1,2-Dichloroethane	524.2	5 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
75-35-4	1,1-Dichloroethylene	524.2	7 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
156-59-2	cis-1,2-Dichloroethylene	524.2	70 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
156-60-5	trans-1,2-Dichloroethylene	524.2	100 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
75-09-2	Dichloromethane	524.2	5 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
78-87-5	1,2-Dichloropropane	524.2	5 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
142-28-9	1,3-Dichloropropane \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
594-20-7	2,2-Dichloropropane \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
563-58-6	1,1-Dichloropropylene \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
10061-01-5	cis-1,3-Dichloropropylene \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
10061-02-6	trans-1,3-Dichloropropylene \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
542-75-6	1,3-Dichloropropylene, cis & trans \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
100-41-4	Ethylbenzene	524.2	700 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
87-68-3	Hexachlorobutadiene \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
98-82-8	Isopropylbenzene \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
99-87-6	4-Isopropyltoluene \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
1634-04-4	Methyl-t-butyl ether (MTBE) \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
91-20-3	Naphthalene \$	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358

103-65-1	n-Propylbenzene §	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
100-42-5	Styrene	524.2	100 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
630-20-6	1,1,1,2-Tetrachloroethane §	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
79-34-5	1,1,2,2-Tetrachloroethane §	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
127-18-4	Tetrachloroethylene	524.2	5 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
108-88-3	Toluene	524.2	1000 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
87-61-6	1,2,3-Trichlorobenzene §	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
120-82-1	1,2,4-Trichlorobenzene	524.2	70 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
71-55-6	1,1,1-Trichloroethane	524.2	200 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
79-00-5	1,1,2-Trichloroethane	524.2	5 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
79-01-6	Trichloroethylene	524.2	5 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
75-69-4	Trichlorofluoromethane §	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
96-18-4	1,2,3-Trichloropropane §	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
95-63-6	1,2,4-Trimethylbenzene §	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
108-67-8	1,3,5-Trimethylbenzene §	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
75-01-4	Vinyl chloride	524.2	2 *	0.2	< 0.2	ug/L	---	05/05/19 06:14	4281358
95-47-6	1,2-Xylene	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
179601-23-1	1,3 + 1,4-Xylene	524.2	---	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358
1330-20-7	Xylenes, Total	524.2	10000 *	0.5	< 0.5	ug/L	---	05/05/19 06:14	4281358

Compliance monitoring for 1,2-Dibromo-3-chloropropane (DBCP) must be done using EPA method 504.1.

Compliance monitoring for 1,2-Dibromoethane (EDB) must be done using EPA method 504.1.

§ The state of origin does not offer certification for this parameter.

† EEA has demonstrated it can achieve these report limits in reagent water, but can not document them in all sample matrices.

Reg Limit Type:	MCL	SMCL	AL
Symbol:	*	^	!

## Lab Definitions

**Continuing Calibration Check Standard (CCC) / Continuing Calibration Verification (CCV) / Initial Calibration Verification Standard (ICV) / Initial Performance Check (IPC)** - is a standard containing one or more of the target analytes that is prepared from the same standards used to calibrate the instrument. This standard is used to verify the calibration curve at the beginning of each analytical sequence, and may also be analyzed throughout and at the end of the sequence. The concentration of continuing standards may be varied, when prescribed by the reference method, so that the range of the calibration curve is verified on a regular basis. CCL, CCM, and CCH are the CCC standards at low, mid, and high concentration levels, respectively.

**Internal Standards (IS)** - are pure compounds with properties similar to the analytes of interest, which are added to field samples or extracts, calibration standards, and quality control standards at a known concentration. They are used to measure the relative responses of the analytes of interest and surrogates in the sample, calibration standard or quality control standard.

**Laboratory Duplicate (LD)** - is a field sample aliquot taken from the same sample container in the laboratory and analyzed separately using identical procedures. Analysis of laboratory duplicates provides a measure of the precision of the laboratory procedures.

**Laboratory Fortified Blank (LFB) / Laboratory Control Sample (LCS)** - is an aliquot of reagent water to which known concentrations of the analytes of interest are added. The LFB is analyzed exactly the same as the field samples. LFBs are used to determine whether the method is in control. FBL, FBM, and FBH are the LFB samples at low, mid, and high concentration levels, respectively.

**Laboratory Method Blank (LMB) / Laboratory Reagent Blank (LRB)** - is a sample of reagent water included in the sample batch analyzed in the same way as the associated field samples. The LMB is used to determine if method analytes or other background contamination have been introduced during the preparation or analytical procedure. The LMB is analyzed exactly the same as the field samples.

**Laboratory Trip Blank (LTB) / Field Reagent Blank (FRB)** - is a sample of laboratory reagent water placed in a sample container in the laboratory and treated as a field sample, including storage, preservation, and all analytical procedures. The FRB/LTB container follows the collection bottles to and from the collection site, but the FRB/LTB is not opened at any time during the trip. The FRB/LTB is primarily a travel blank used to verify that the samples were not contaminated during shipment.

**Matrix Spike Duplicate Sample (MSD) / Laboratory Fortified Sample Matrix Duplicate (LFSMD)** - is a sample aliquot taken from the same field sample source as the Matrix Spike Sample to which known quantities of the analytes of interest are added in the laboratory. The MSD is analyzed exactly the same as the field samples. Analysis of the MSD provides a measure of the precision of the laboratory procedures in a specific matrix. SDL, SDM, and SDH / LFSMDL, LFSMDM, and LFSMDH are the MSD or LFSMD at low, mid, and high concentration levels, respectively.

**Matrix Spike Sample (MS) / Laboratory Fortified Sample Matrix (LFSM)** - is a sample aliquot taken from field sample source to which known quantities of the analytes of interest are added in the laboratory. The MS is analyzed exactly the same as the field samples. The purpose is to demonstrate recovery of the analytes from a sample matrix to determine if the specific matrix contributes bias to the analytical results. MSL, MSM, and MSH / LFSML, LFSMM, and LFSMH are the MS or LFSM at low, mid, and high concentration levels, respectively.

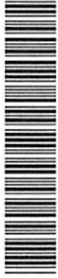
**Quality Control Standard (QCS) / Second Source Calibration Verification (SSCV)** - is a solution containing known concentrations of the analytes of interest prepared from a source different from the source of the calibration standards. The solution is obtained from a second manufacturer or lot if the lot can be demonstrated by the manufacturer as prepared independently from other lots. The QCS sample is analyzed using the same procedures as field samples. The QCS is used as a check on the calibration standards used in the method on a routine basis.

**Reporting Limit Check (RLC) / Initial Calibration Check Standard (ICCS)** - is a procedural standard that is analyzed each day to evaluate instrument performance at or below the minimum reporting limit (MRL).

**Surrogate Standard (SS) / Surrogate Analyte (SUR)** - is a pure compound with properties similar to the analytes of interest, which is highly unlikely to be found in any field sample, that is added to the field samples, calibration standards, blanks and quality control standards before sample preparation. The SS is used to evaluate the efficiency of the sample preparation process.



**Chain of Custody Record**



<b>Client Information (Sub Contract Lab)</b>		Lab PIV: Walker, Elaine M		Carrier Tracking No(s):	
Client Contact: Shipping/Receiving		E-Mail: elaine.walker@testamericainc.com		State of Origin: Alaska	
Company: Eurofins Eaton Analytical		Accreditations Required (See note):		Page: Page 1 of 1	
Address: 110 S Hill Street, South Bend, IN, 46617		Due Date Requested: 5/8/2019		COG No: 580-65573.1	
City: South Bend		TAT Requested (days):		Job #: 580-85799-1	
State: IN, Zip: 46617		PO #:		Preservation Codes:	
Phone:		WO #:		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 Other:	
Project Name: Tesoro - 2Go Mart 76		Project #: 58012975		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)	
Site:		SSOW#:		Total Number of containers	
<b>Sample Identification - Client ID (Lab ID)</b>		<b>Sample Date</b>		<b>Field Filtered Sample (Yes or No)</b>	
Drinking Water (580-85799-7)		4/25/19		X	
		12:25 Alaskan		SUB (Drinking Water 5242/ Drinking Water 5242)	
		Matrix (W-water, S-solid, O-waste/oil, BT=Tissue, A-Air)		Perform MS/MSD (Yes or No)	
		Water		X	
		Sample Type (C-Comp, G-grab)		Special Instructions/Note:	
		Preservation Code:		3 428/358	
		NO LAB RECEIVED. 4/25/19			
		Client Provided Sample Container			

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our 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 compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**  
 Unconfirmed  
 Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2  
 Empty Kit Relinquished by: Date: Method of Shipment:  
 Relinquished by: Keny Hiba Date: 4-30-19 Company: Tasea Company  
 Relinquished by: Date/Time: Received by: Jmaats Date/Time: 5/1/19 0845 Company: EEA-513  
 Relinquished by: Date/Time: Received by: Date/Time: Company: Company  
 Custody Seals Intact: Custody Seal No.: Cooler Temperature(s) °C and Other Remarks: 0.6°C  
 Δ Yes X No

**Eurofins Eaton Analytical  
Run Log**

Run ID: **258701** Method: **524.2**

<u>Type</u>	<u>Sample Id</u>	<u>Sample Site</u>	<u>Matrix</u>	<u>Instrument ID</u>	<u>Analysis D:</u>
CCL	4281628		RW	PW2	05/04/2019 1:
LMB	4281629		RW	PW2	05/04/2019 1:
CCC	4281921		RW	PW2	05/04/2019 2:
LMB	4281922		RW	PW2	05/05/2019 0:
FS	4281358	(580-85799-7) Drinking Water	DW	PW2	05/05/2019 0:
CCC	4281923		RW	PW2	05/05/2019 0:



## QC Summary Report

Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit
CCL	IS-1,4-Difluorobenzene	524.2	N/A	---		288381	288381	ug/L	100	50 - 150	---	---
CCL	SS-Bromofluorobenzene	524.2	N/A	---		4.7700	5.0	ug/L	95	70 - 130	---	---
CCL	SS-1,2-Dichlorobenzene-d4	524.2	N/A	---		9.3180	10.0	ug/L	93	70 - 130	---	---
CCL	SS-1,2-Dichloroethane-d4	524.2	N/A	---		9.6800	10.0	ug/L	97	70 - 130	---	---
CCL	SS-Toluene-d8	524.2	N/A	---		9.7790	10.0	ug/L	98	70 - 130	---	---
CCL	Benzene	524.2	0.5	---		0.5010	0.5	ug/L	100	50 - 150	---	---
CCL	Bromodichloromethane	524.2	0.5	---		0.5020	0.5	ug/L	100	50 - 150	---	---
CCL	Bromoform	524.2	0.5	---		0.4770	0.5	ug/L	95	50 - 150	---	---
CCL	Carbon tetrachloride	524.2	0.5	---		0.4730	0.5	ug/L	95	50 - 150	---	---
CCL	Chlorobenzene	524.2	0.5	---		0.5260	0.5	ug/L	105	50 - 150	---	---
CCL	Chloroform	524.2	0.5	---		0.5140	0.5	ug/L	103	50 - 150	---	---
CCL	Dibromochloromethane	524.2	0.5	---		0.4460	0.5	ug/L	89	50 - 150	---	---
CCL	1,2-Dichlorobenzene	524.2	0.5	---		0.5210	0.5	ug/L	104	50 - 150	---	---
CCL	1,4-Dichlorobenzene	524.2	0.5	---		0.4990	0.5	ug/L	100	50 - 150	---	---
CCL	1,2-Dichloroethane	524.2	0.5	---		0.4910	0.5	ug/L	98	50 - 150	---	---
CCL	1,1-Dichloroethylene	524.2	0.5	---		0.4600	0.5	ug/L	92	50 - 150	---	---
CCL	cis-1,2-Dichloroethylene	524.2	0.5	---		0.4920	0.5	ug/L	98	50 - 150	---	---
CCL	trans-1,2-Dichloroethylene	524.2	0.5	---		0.4670	0.5	ug/L	93	50 - 150	---	---
CCL	Dichloromethane	524.2	0.5	---		0.5730	0.5	ug/L	115	50 - 150	---	---
CCL	1,2-Dichloropropane	524.2	0.5	---		0.4860	0.5	ug/L	97	50 - 150	---	---
CCL	Ethylbenzene	524.2	0.5	---		0.4680	0.5	ug/L	94	50 - 150	---	---
CCL	Styrene	524.2	0.5	---		0.4760	0.5	ug/L	95	50 - 150	---	---
CCL	Tetrachloroethylene	524.2	0.5	---		0.4440	0.5	ug/L	89	50 - 150	---	---
CCL	Toluene	524.2	0.5	---		0.4820	0.5	ug/L	96	50 - 150	---	---
CCL	1,2,4-Trichlorobenzene	524.2	0.5	---		0.5130	0.5	ug/L	103	50 - 150	---	---
CCL	1,1,1-Trichloroethane	524.2	0.5	---		0.4890	0.5	ug/L	98	50 - 150	---	---
CCL	1,1,2-Trichloroethane	524.2	0.5	---		0.4680	0.5	ug/L	94	50 - 150	---	---
CCL	Trichloroethylene	524.2	0.5	---		0.4710	0.5	ug/L	94	50 - 150	---	---
CCL	Vinyl chloride	524.2	0.2	---		0.4810	0.5	ug/L	96	50 - 150	---	---
CCL	1,2-Xylene	524.2	0.5	---		0.4740	0.5	ug/L	95	50 - 150	---	---
CCL	1,3 + 1,4-Xylene	524.2	0.5	---		0.9470	1.0	ug/L	95	50 - 150	---	---
LMB	IS-1,4-Difluorobenzene	524.2	N/A	---		284771	288381	ug/L	99	70 - 130	---	---
LMB	SS-Bromofluorobenzene	524.2	N/A	---		4.5880	5.0	ug/L	92	70 - 130	---	---
LMB	SS-1,2-Dichlorobenzene-d4	524.2	N/A	---		9.4530	10.0	ug/L	95	70 - 130	---	---
LMB	SS-1,2-Dichloroethane-d4	524.2	N/A	---		9.5000	10.0	ug/L	95	70 - 130	---	---
LMB	SS-Toluene-d8	524.2	N/A	---		9.5510	10.0	ug/L	96	70 - 130	---	---

QC Summary Report (cont.)											
Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD Limit
LMB	Bromoform	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Bromomethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	n-Butylbenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	sec-Butylbenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	tert-Butylbenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Carbon tetrachloride	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Chlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Chloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Chloroform	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Chloromethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	2-Chlorotoluene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	4-Chlorotoluene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Dibromochloromethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,2-Dibromo-3-chloropropane (DBCP)	524.2	0.2	---	<	0.2		ug/L	---	---	---
LMB	1,2-Dibromoethane (EDB)	524.2	0.2	---	<	0.2		ug/L	---	---	---
LMB	Dibromomethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,2-Dichlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,3-Dichlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,4-Dichlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Dichlorodifluoromethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,1-Dichloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,2-Dichloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,1-Dichloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	cis-1,2-Dichloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	trans-1,2-Dichloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Dichloromethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,2-Dichloropropane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,3-Dichloropropane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	2,2-Dichloropropane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,1-Dichloropropylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	cis-1,3-Dichloropropylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	trans-1,3-Dichloropropylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Ethylbenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Hexachlorobutadiene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Isopropylbenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	4-Isopropyltoluene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Methyl-t-butyl ether (MTBE)	524.2	0.5	---	<	0.5		ug/L	---	---	---



QC Summary Report (cont.)											
Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD Limit
LMB	1,1,1,2-Tetrachloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Tetrachloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Toluene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,2,3-Trichlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,2,4-Trichlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,1,1-Trichloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,1,2-Trichloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Trichloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Trichlorofluoromethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,2,3-Trichloropropane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,2,4-Trimethylbenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,3,5-Trimethylbenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Vinyl chloride	524.2	0.2	---	<	0.2		ug/L	---	---	---
LMB	1,2-Xylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,3 + 1,4-Xylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
CCC	IS-1,4-Difluorobenzene	524.2	N/A	---		279457	279457	ug/L	100	50 - 150	---
CCC	SS-Bromofluorobenzene	524.2	N/A	---		4.9580	5.0	ug/L	99	70 - 130	---
CCC	SS-1,2-Dichlorobenzene-d4	524.2	N/A	---		9.9260	10.0	ug/L	99	70 - 130	---
CCC	SS-1,2-Dichloroethane-d4	524.2	N/A	---		9.8190	10.0	ug/L	98	70 - 130	---
CCC	SS-Toluene-d8	524.2	N/A	---		9.8790	10.0	ug/L	99	70 - 130	---
CCC	Benzene	524.2	0.5	---		10.0650	10.0	ug/L	101	70 - 130	---
CCC	Bromobenzene	524.2	0.5	---		9.7790	10.0	ug/L	98	70 - 130	---
CCC	Bromochloromethane	524.2	0.5	---		9.7250	10.0	ug/L	97	70 - 130	---
CCC	Bromodichloromethane	524.2	0.5	---		9.9060	10.0	ug/L	99	70 - 130	---
CCC	Bromoform	524.2	0.5	---		10.2010	10.0	ug/L	102	70 - 130	---
CCC	Bromomethane	524.2	0.5	---		9.5620	10.0	ug/L	96	70 - 130	---
CCC	n-Butylbenzene	524.2	0.5	---		10.1840	10.0	ug/L	102	70 - 130	---
CCC	sec-Butylbenzene	524.2	0.5	---		9.8980	10.0	ug/L	99	70 - 130	---
CCC	tert-Butylbenzene	524.2	0.5	---		10.0010	10.0	ug/L	100	70 - 130	---
CCC	Carbon tetrachloride	524.2	0.5	---		10.1030	10.0	ug/L	101	70 - 130	---
CCC	Chlorobenzene	524.2	0.5	---		9.8340	10.0	ug/L	98	70 - 130	---
CCC	Chloroethane	524.2	0.5	---		9.8070	10.0	ug/L	98	70 - 130	---
CCC	Chloroform	524.2	0.5	---		9.2290	10.0	ug/L	92	70 - 130	---
CCC	Chloromethane	524.2	0.5	---		10.5250	10.0	ug/L	105	70 - 130	---
CCC	2-Chlorotoluene	524.2	0.5	---		9.8780	10.0	ug/L	99	70 - 130	---
CCC	4-Chlorotoluene	524.2	0.5	---		9.8170	10.0	ug/L	98	70 - 130	---
CCC	Dibromochloromethane	524.2	0.5	---		10.6650	10.0	ug/L	107	70 - 130	---

QC Summary Report (cont.)											
Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD Limit
CCC	1,3-Dichlorobenzene	524.2	0.5	---		9.7560	10.0	ug/L	98	70 - 130	---
CCC	1,4-Dichlorobenzene	524.2	0.5	---		10.1880	10.0	ug/L	102	70 - 130	---
CCC	Dichlorodifluoromethane	524.2	0.5	---		9.9350	10.0	ug/L	99	70 - 130	---
CCC	1,1-Dichloroethane	524.2	0.5	---		9.8300	10.0	ug/L	98	70 - 130	---
CCC	1,2-Dichloroethane	524.2	0.5	---		10.1100	10.0	ug/L	101	70 - 130	---
CCC	1,1-Dichloroethylene	524.2	0.5	---		9.9410	10.0	ug/L	99	70 - 130	---
CCC	cis-1,2-Dichloroethylene	524.2	0.5	---		9.9280	10.0	ug/L	99	70 - 130	---
CCC	trans-1,2-Dichloroethylene	524.2	0.5	---		9.9530	10.0	ug/L	100	70 - 130	---
CCC	Dichloromethane	524.2	0.5	---		10.1890	10.0	ug/L	102	70 - 130	---
CCC	1,2-Dichloropropane	524.2	0.5	---		9.9830	10.0	ug/L	100	70 - 130	---
CCC	1,3-Dichloropropane	524.2	0.5	---		9.8100	10.0	ug/L	98	70 - 130	---
CCC	2,2-Dichloropropane	524.2	0.5	---		10.7370	10.0	ug/L	107	70 - 130	---
CCC	1,1-Dichloropropylene	524.2	0.5	---		9.9230	10.0	ug/L	99	70 - 130	---
CCC	cis-1,3-Dichloropropylene	524.2	0.5	---		9.6900	10.0	ug/L	97	70 - 130	---
CCC	trans-1,3-Dichloropropylene	524.2	0.5	---		9.7060	10.0	ug/L	97	70 - 130	---
CCC	Ethylbenzene	524.2	0.5	---		10.1210	10.0	ug/L	101	70 - 130	---
CCC	Hexachlorobutadiene	524.2	0.5	---		10.1240	10.0	ug/L	101	70 - 130	---
CCC	Isopropylbenzene	524.2	0.5	---		9.8200	10.0	ug/L	98	70 - 130	---
CCC	4-Isopropyltoluene	524.2	0.5	---		9.8790	10.0	ug/L	99	70 - 130	---
CCC	Methyl-t-butyl ether (MTBE)	524.2	0.5	---		10.2820	10.0	ug/L	103	70 - 130	---
CCC	Naphthalene	524.2	0.5	---		10.2000	10.0	ug/L	102	70 - 130	---
CCC	n-Propylbenzene	524.2	0.5	---		9.8210	10.0	ug/L	98	70 - 130	---
CCC	Styrene	524.2	0.5	---		9.9300	10.0	ug/L	99	70 - 130	---
CCC	1,1,1,2-Tetrachloroethane	524.2	0.5	---		9.9870	10.0	ug/L	100	70 - 130	---
CCC	1,1,2,2-Tetrachloroethane	524.2	0.5	---		9.4240	10.0	ug/L	94	70 - 130	---
CCC	Tetrachloroethylene	524.2	0.5	---		10.2530	10.0	ug/L	103	70 - 130	---
CCC	Toluene	524.2	0.5	---		9.7480	10.0	ug/L	97	70 - 130	---
CCC	1,2,3-Trichlorobenzene	524.2	0.5	---		9.9610	10.0	ug/L	100	70 - 130	---
CCC	1,2,4-Trichlorobenzene	524.2	0.5	---		9.8750	10.0	ug/L	99	70 - 130	---
CCC	1,1,1-Trichloroethane	524.2	0.5	---		10.1170	10.0	ug/L	101	70 - 130	---
CCC	1,1,2-Trichloroethane	524.2	0.5	---		9.9860	10.0	ug/L	100	70 - 130	---
CCC	Trichloroethylene	524.2	0.5	---		10.2390	10.0	ug/L	102	70 - 130	---
CCC	Trichlorofluoromethane	524.2	0.5	---		9.9450	10.0	ug/L	99	70 - 130	---
CCC	1,2,3-Trichloropropane	524.2	0.5	---		9.7110	10.0	ug/L	97	70 - 130	---
CCC	1,2,4-Trichloropropane	524.2	0.5	---		9.9860	10.0	ug/L	100	70 - 130	---
CCC	1,3,5-Trimethylbenzene	524.2	0.5	---		9.7000	10.0	ug/L	97	70 - 130	---
CCC	1,3,5-Trimethylbenzene	524.2	0.5	---		10.4690	10.0	ug/L	105	70 - 130	---
CCC	Vinyl chloride	524.2	0.2	---							

QC Summary Report (cont.)											
Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD Limit
LMB	SS-1,2-Dichlorobenzene-d4	524.2	N/A	---		9.4160	10.0	ug/L	94	70 - 130	---
LMB	SS-1,2-Dichloroethane-d4	524.2	N/A	---		9.3660	10.0	ug/L	94	70 - 130	---
LMB	SS-Toluene-d8	524.2	N/A	---		9.3640	10.0	ug/L	94	70 - 130	---
LMB	Benzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Bromobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Bromochloromethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Bromodichloromethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Bromoform	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Bromomethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	n-Butylbenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	sec-Butylbenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	tert-Butylbenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Carbon tetrachloride	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Chlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Chloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Chloroform	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Chloromethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	2-Chlorotoluene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	4-Chlorotoluene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Dibromochloromethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,2-Dibromo-3-chloropropane (DBCP)	524.2	0.2	---	<	0.2		ug/L	---	---	---
LMB	1,2-Dibromoethane (EDB)	524.2	0.2	---	<	0.2		ug/L	---	---	---
LMB	Dibromomethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,2-Dichlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,3-Dichlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,4-Dichlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Dichlorodifluoromethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,1-Dichloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,2-Dichloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,1-Dichloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	cis-1,2-Dichloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	trans-1,2-Dichloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Dichloromethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,2-Dichloropropane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,3-Dichloropropane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	2,2-Dichloropropane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,1-Dichloropropylene	524.2	0.5	---	<	0.5		ug/L	---	---	---



QC Summary Report (cont.)											
Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD Limit
LMB	Isopropylbenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	4-Isopropyltoluene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Methyl-t-butyl ether (MTBE)	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Naphthalene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	n-Propylbenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Styrene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,1,1,2-Tetrachloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,1,2,2-Tetrachloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Tetrachloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Toluene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,2,3-Trichlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,2,4-Trichlorobenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,1,1-Trichloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,1,2-Trichloroethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Trichloroethylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Trichlorofluoromethane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,2,3-Trichloropropane	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,2,4-Trimethylbenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,3,5-Trimethylbenzene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	Vinyl chloride	524.2	0.2	---	<	0.2		ug/L	---	---	---
LMB	1,2-Xylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
LMB	1,3 + 1,4-Xylene	524.2	0.5	---	<	0.5		ug/L	---	---	---
FS	IS-1,4-Difluorobenzene	524.2	N/A	(580-85795-7) Drinking Water		278882	279457	ug/L	100	70 - 130	---
FS	SS-Bromofluorobenzene	524.2	N/A	(580-85795-7) Drinking Water		4.8130	5.0	ug/L	96	70 - 130	---
FS	SS-1,2-Dichlorobenzene-d4	524.2	N/A	(580-85795-7) Drinking Water		9.7320	10.0	ug/L	97	70 - 130	---
FS	SS-1,2-Dichloroethane-d4	524.2	N/A	(580-85795-7) Drinking Water		9.6900	10.0	ug/L	97	70 - 130	---
FS	SS-Toluene-d8	524.2	N/A	(580-85795-7) Drinking Water		9.8920	10.0	ug/L	99	70 - 130	---
FS	Benzene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---
FS	Bromobenzene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---
FS	Bromochloromethane	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---
FS	Bromodichloromethane	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---
FS	Bromoform	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---
FS	Bromomethane	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---
FS	n-Butylbenzene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---
FS	sec-Butylbenzene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---
FS	tert-Butylbenzene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---
FS	Carbon tetrachloride	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---



QC Summary Report (cont.)												
Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit
FS	2-Chlorotoluene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	4-Chlorotoluene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	Dibromochloromethane	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	1,2-Dibromo-3-chloropropane (DBCP)	524.2	0.2	(580-85795-7) Drinking Water	<	0.2		ug/L	---	---	---	---
FS	1,2-Dibromoethane (EDB)	524.2	0.2	(580-85795-7) Drinking Water	<	0.2		ug/L	---	---	---	---
FS	Dibromomethane	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	1,2-Dichlorobenzene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	1,3-Dichlorobenzene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	1,4-Dichlorobenzene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	Total Dichlorobenzene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	Dichlorodifluoromethane	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	1,1-Dichloroethane	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	1,2-Dichloroethane	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	1,1-Dichloroethylene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	cis-1,2-Dichloroethylene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	trans-1,2-Dichloroethylene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	Dichloromethane	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	1,2-Dichloropropane	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	1,3-Dichloropropane	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	2,2-Dichloropropane	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	1,1-Dichloropropylene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	1,3-Dichloropropylene, cis & trans	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	cis-1,3-Dichloropropylene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	trans-1,3-Dichloropropylene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	Ethylbenzene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	Hexachlorobutadiene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	Isopropylbenzene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	4-Isopropyltoluene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	Methyl-t-butyl ether (MTBE)	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	Naphthalene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	n-Propylbenzene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	Styrene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	1,1,1,2-Tetrachloroethane	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	1,1,1,2,2-Tetrachloroethane	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	Tetrachloroethylene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	Toluene	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---
FS	Total Trihalomethanes	524.2	0.5	(580-85795-7) Drinking Water	<	0.5		ug/L	---	---	---	---

QC Summary Report (cont.)											
Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD Limit
FS	Trichloroethylene	524.2	0.5	(580-85798-7) Drinking Water	<	0.5		ug/L	---	---	---
FS	Trichlorofluoromethane	524.2	0.5	(580-85798-7) Drinking Water	<	0.5		ug/L	---	---	---
FS	1,2,3-Trichloropropane	524.2	0.5	(580-85798-7) Drinking Water	<	0.5		ug/L	---	---	---
FS	1,2,4-Trimethylbenzene	524.2	0.5	(580-85798-7) Drinking Water	<	0.5		ug/L	---	---	---
FS	1,3,5-Trimethylbenzene	524.2	0.5	(580-85798-7) Drinking Water	<	0.5		ug/L	---	---	---
FS	Vinyl chloride	524.2	0.2	(580-85798-7) Drinking Water	<	0.2		ug/L	---	---	---
FS	1,2-Xylene	524.2	0.5	(580-85798-7) Drinking Water	<	0.5		ug/L	---	---	---
FS	1,3 + 1,4-Xylene	524.2	0.5	(580-85798-7) Drinking Water	<	0.5		ug/L	---	---	---
FS	Xylenes, Total	524.2	0.5	(580-85798-7) Drinking Water	<	0.5		ug/L	---	---	---
CCC	IS-1,4-Difluorobenzene	524.2	N/A	---		271204	271204	ug/L	100	50 - 150	---
CCC	SS-Bromofluorobenzene	524.2	N/A	---		5.0040	5.0	ug/L	100	70 - 130	---
CCC	SS-1,2-Dichlorobenzene-d4	524.2	N/A	---		10.0920	10.0	ug/L	101	70 - 130	---
CCC	SS-1,2-Dichloroethane-d4	524.2	N/A	---		10.0560	10.0	ug/L	101	70 - 130	---
CCC	SS-Toluene-d8	524.2	N/A	---		9.9960	10.0	ug/L	100	70 - 130	---
CCC	Benzene	524.2	0.5	---		17.1510	18.0	ug/L	95	70 - 130	---
CCC	Bromobenzene	524.2	0.5	---		17.2770	18.0	ug/L	96	70 - 130	---
CCC	Bromochloromethane	524.2	0.5	---		17.5850	18.0	ug/L	98	70 - 130	---
CCC	Bromodichloromethane	524.2	0.5	---		17.3560	18.0	ug/L	96	70 - 130	---
CCC	Bromoform	524.2	0.5	---		18.1110	18.0	ug/L	101	70 - 130	---
CCC	Bromomethane	524.2	0.5	---		16.4600	18.0	ug/L	91	70 - 130	---
CCC	n-Butylbenzene	524.2	0.5	---		16.7630	18.0	ug/L	93	70 - 130	---
CCC	sec-Butylbenzene	524.2	0.5	---		17.2630	18.0	ug/L	96	70 - 130	---
CCC	tert-Butylbenzene	524.2	0.5	---		17.4360	18.0	ug/L	97	70 - 130	---
CCC	Carbon tetrachloride	524.2	0.5	---		17.9990	18.0	ug/L	100	70 - 130	---
CCC	Chlorobenzene	524.2	0.5	---		17.5610	18.0	ug/L	98	70 - 130	---
CCC	Chloroethane	524.2	0.5	---		17.3990	18.0	ug/L	97	70 - 130	---
CCC	Chloroform	524.2	0.5	---		16.6880	18.0	ug/L	93	70 - 130	---
CCC	Chloromethane	524.2	0.5	---		18.5380	18.0	ug/L	103	70 - 130	---
CCC	2-Chlorotoluene	524.2	0.5	---		16.9620	18.0	ug/L	94	70 - 130	---
CCC	4-Chlorotoluene	524.2	0.5	---		16.9990	18.0	ug/L	94	70 - 130	---
CCC	Dibromochloromethane	524.2	0.5	---		18.2140	18.0	ug/L	101	70 - 130	---
CCC	1,2-Dibromo-3-chloropropane (DBCP)	524.2	0.2	---		17.6550	18.0	ug/L	98	70 - 130	---
CCC	1,2-Dibromoethane (EDB)	524.2	0.2	---		17.7230	18.0	ug/L	98	70 - 130	---
CCC	Dibromomethane	524.2	0.5	---		17.8270	18.0	ug/L	99	70 - 130	---
CCC	1,2-Dichlorobenzene	524.2	0.5	---		17.3970	18.0	ug/L	97	70 - 130	---
CCC	1,3-Dichlorobenzene	524.2	0.5	---		17.5120	18.0	ug/L	97	70 - 130	---
CCC	1,4-Dichlorobenzene	524.2	0.5	---		17.5870	18.0	ug/L	98	70 - 130	---

QC Summary Report (cont.)												
Sample Type	Analyte	Method	MRL	Client ID	Result Flag	Amount	Target	Units	% Recovery	Recovery Limits	RPD	RPD Limit
CCC	cis-1,2-Dichloroethylene	524.2	0.5	---		17.5340	18.0	ug/L	97	70 - 130	---	---
CCC	trans-1,2-Dichloroethylene	524.2	0.5	---		17.5800	18.0	ug/L	98	70 - 130	---	---
CCC	Dichloromethane	524.2	0.5	---		17.9990	18.0	ug/L	100	70 - 130	---	---
CCC	1,2-Dichloropropane	524.2	0.5	---		17.8260	18.0	ug/L	99	70 - 130	---	---
CCC	1,3-Dichloropropane	524.2	0.5	---		18.0740	18.0	ug/L	100	70 - 130	---	---
CCC	2,2-Dichloropropane	524.2	0.5	---		16.8250	18.0	ug/L	93	70 - 130	---	---
CCC	1,1-Dichloropropylene	524.2	0.5	---		17.6520	18.0	ug/L	98	70 - 130	---	---
CCC	cis-1,3-Dichloropropylene	524.2	0.5	---		16.9930	18.0	ug/L	94	70 - 130	---	---
CCC	trans-1,3-Dichloropropylene	524.2	0.5	---		17.7330	18.0	ug/L	99	70 - 130	---	---
CCC	Ethylbenzene	524.2	0.5	---		17.5900	18.0	ug/L	98	70 - 130	---	---
CCC	Hexachlorobutadiene	524.2	0.5	---		16.8740	18.0	ug/L	94	70 - 130	---	---
CCC	Isopropylbenzene	524.2	0.5	---		17.1990	18.0	ug/L	96	70 - 130	---	---
CCC	4-Isopropyltoluene	524.2	0.5	---		17.0830	18.0	ug/L	95	70 - 130	---	---
CCC	Methyl-t-butyl ether (MTBE)	524.2	0.5	---		18.0590	18.0	ug/L	100	70 - 130	---	---
CCC	Naphthalene	524.2	0.5	---		17.7280	18.0	ug/L	98	70 - 130	---	---
CCC	n-Propylbenzene	524.2	0.5	---		17.1780	18.0	ug/L	95	70 - 130	---	---
CCC	Styrene	524.2	0.5	---		17.5520	18.0	ug/L	98	70 - 130	---	---
CCC	1,1,1,2-Tetrachloroethane	524.2	0.5	---		18.2710	18.0	ug/L	102	70 - 130	---	---
CCC	1,1,2,2-Tetrachloroethane	524.2	0.5	---		16.7630	18.0	ug/L	93	70 - 130	---	---
CCC	Tetrachloroethylene	524.2	0.5	---		17.5080	18.0	ug/L	97	70 - 130	---	---
CCC	Toluene	524.2	0.5	---		17.2600	18.0	ug/L	96	70 - 130	---	---
CCC	1,2,3-Trichlorobenzene	524.2	0.5	---		17.8190	18.0	ug/L	99	70 - 130	---	---
CCC	1,2,4-Trichlorobenzene	524.2	0.5	---		17.3780	18.0	ug/L	97	70 - 130	---	---
CCC	1,1,1-Trichloroethane	524.2	0.5	---		17.5070	18.0	ug/L	97	70 - 130	---	---
CCC	1,1,2-Trichloroethane	524.2	0.5	---		17.9110	18.0	ug/L	100	70 - 130	---	---
CCC	Trichloroethylene	524.2	0.5	---		17.8930	18.0	ug/L	99	70 - 130	---	---
CCC	Trichlorofluoromethane	524.2	0.5	---		17.5350	18.0	ug/L	97	70 - 130	---	---
CCC	1,2,3-Trichloropropane	524.2	0.5	---		16.9970	18.0	ug/L	94	70 - 130	---	---
CCC	1,2,4-Trimethylbenzene	524.2	0.5	---		17.6180	18.0	ug/L	98	70 - 130	---	---
CCC	1,3,5-Trimethylbenzene	524.2	0.5	---		17.2590	18.0	ug/L	96	70 - 130	---	---
CCC	Vinyl chloride	524.2	0.2	---		17.4900	18.0	ug/L	97	70 - 130	---	---
CCC	1,2-Xylene	524.2	0.5	---		17.0890	18.0	ug/L	95	70 - 130	---	---
CCC	1,3 + 1,4-Xylene	524.2	0.5	---		34.1250	36.0	ug/L	95	70 - 130	---	---



## Sample Type Key

<u>Type (Abbr.)</u>	<u>Sample Type</u>	<u>Type (Abbr.)</u>	<u>Sample Type</u>
CCC	Continuing Calibration Check		
CCL	Continuing Calibration Low		
FS	Field Sample		
LMB	Laboratory Method Blank		

1
2
3
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9
<b>10</b>
11
12

END OF REPORT

# TestAmerica Anchorage

2000 N. International Airport Road  
Suite A10

Anchorage, AK 99507  
Phone: 907.563.9200 Fax: 907.563.9210

## Chain of Custody Record

249273

# TestAmerica


THE LEADER IN ENVIRONMENTAL TESTING  
TestAmerica Laboratories, Inc.

TAL-8210 (0713)

Regulatory Program:  DW  NPDES  RCRA  Other:

Client Contact		Project Manager: <u>Mike Zidek</u>		Site Contact: -		Date: <u>4-25-19</u>		COC No:					
Company Name: <u>Stantec</u>		Tel/Fax: <u>907-266-1126</u>		Lab Contact: <u>Andrew Pilch</u>		Carrier:		1 of 1 COCs					
Address: <u>725 E Firwood #200</u>		<b>Analysis Turnaround Time</b> <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS TAT if different from Below _____ <input checked="" type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Filtered Sample (Y/N) Perform MS/MSD (Y/N) GRO by AK101 PRO by AK102 Naphthalene by 8260-SIM VOCs (see list below) by 8260 Drinking water by 524.2		Loc: 580 <b>85799</b>		Sampler:		For Lab Use Only:			
City/State/Zip: <u>Anchorage AK</u>								Walk-in Client:		ab Sampling:		ib / SDG No.:	
Phone: <u>907-276-4245</u>								Project Name: <u>T2GM #76</u>		Sample Specific Notes:			
Fax:								Site:					
PO# <u>185751226</u>													

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Sample Specific Notes:	
TBO1	4-25-19	0800	-	W	3	N	N		
MW-1	4-25-19	1015	G	W	10	N	N	X X X	
MW-4	4-25-19	1055	G	W	10	N	N	X X X	
MW-2	4-25-19	1130	G	W	10	N	N	X X X	Sample straw in one of the 250ml Amber HCl bottles
MW-3	4-25-19	1205	G	W	10	N	N	X X X	
TNS 76	4-25-19	0800	G	W	10	N	N	X X X	
Drinking Water	4-25-19	1225	G	W	5	N	N	X	



580-85799 Chain of Custody

Therm. ID: AZ Cor: 3.1 ° Unc: 3.5 °

Cooler Desc: 2, Blue

Packing: Bubble FedEx: \_\_\_\_\_

Cust. Seal: Yes  No \_\_\_\_\_ UPS: \_\_\_\_\_

Blue Ice, Wet, Dry, None \_\_\_\_\_ Lab Cour:  \_\_\_\_\_

Other: \_\_\_\_\_

Preservation Used: 1=Ice, 2=HCl, 3=H2SO4, 4=HNO3, 5=NaOH, 6=Other

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

Non-Hazard  Flammable  Skin Irritant  Poison B  Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client  Disposal by Lab  Archive for \_\_\_\_\_ Months

Special Instructions/QC Requirements & Comments: VOCs: Benzene, n-Butylbenzene, sec-Butylbenzene, tert-Butylbenzene, ethylbenzene, isopropylbenzene, toluene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, m,p-xylene, o-xylene [not full 8260 VOC list]

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temp/(°C): Obs'd: _____	Corr'd: _____	Therm ID No.:
Relinquished by: <u>Roxanne Russell</u>	Company: <u>Stantec</u>	Date/Time: <u>4/25/19/1430</u>	Received by: <u>[Signature]</u>	Company: <u>TA-AIC</u>
Relinquished by: <u>[Signature]</u>	Company: <u>TA-AK</u>	Date/Time: <u>4/25/19 16:30</u>	Received by: <u>[Signature]</u>	Company: <u>TA-SEA</u>
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:

**Chain of Custody Record**



<b>Client Information (Sub Contract Lab)</b>	Sampler:	Lab Pat:	Carrier Tracking No(s):	COC No:
Company: TestAmerica Laboratories, Inc	Phone:	Walker, Elaine M		580-65570-1
Address: 11922 East 1st Ave.		E-Mail: elaine.walker@testamericainc.com	State of Origin: Alaska	Page: 1 of 1
City: Spokane	Due Date Requested: 5/8/2019	Accreditations Required (See note):		Job #: 580-85799-1
State, zip: WA, 99206	TAT Requested (days):			
Phone: 509-924-9200(Tel) 509-924-9290(Fax)				
Email: W.O.#:				
Project Name: Tesoro - 2Go Mat 76	Project #:			
Site: SSOV#:	58012975			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (Water, Sediment, Other/Issue, A=NI)	Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers	Special Instructions/Note:
					Preservation Code:	AK102_103/3510C_LVI_14d Diesel Range Organics				
MMW-1 (580-85799-2)	4/25/19	10:15	Water	Water					2	
MMW-4 (580-85799-3)	4/25/19	10:55	Water	Water					2	
MMW-2 (580-85799-4)	4/25/19	11:30	Water	Water					2	
MMW-3 (580-85799-5)	4/25/19	12:05	Water	Water					2	
TNS 76 (580-85799-6)	4/25/19	08:00	Water	Water					2	
Drinking Water (580-85799-7)	4/25/19	12:25	Water	Water					2	

Note: Since laboratory accreditations are subject to change, TestAmerica Laboratories, Inc. places the ownership of method, analyte & accreditation compliance upon our 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/parameters 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 compliance to TestAmerica Laboratories, Inc.

**Possible Hazard Identification**

Unconfirmed

Deliverable Requested: I, II, III, IV, Other (specify) \_\_\_\_\_ Primary Deliverable Rank: 2

Special Instructions/QC Requirements: \_\_\_\_\_

Return To Client  Disposal By Lab  Archive For \_\_\_\_\_ Months

Empty Kit Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_

Relinquished by: *Henry Akbar* Date/Time: *4:30:19* Company: *TIBCO* Received by: *MARICA GROVE* Date/Time: *5/1/19 11:08* Company: *AKRC*

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Company: \_\_\_\_\_

Custody Seals Intact:  Yes  No Custody Seal No.: \_\_\_\_\_ Cooler Temperature(s) °C and Other Remarks: *2.3°C*

# Login Sample Receipt Checklist

Client: Stantec Consulting Services Inc

Job Number: 580-85799-1

**Login Number: 85799**

**List Source: Eurofins TestAmerica, Seattle**

**List Number: 1**

**Creator: Hobbs, Kenneth F**

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



## Login Sample Receipt Checklist

Client: Stantec Consulting Services Inc

Job Number: 580-85799-1

**Login Number: 85799**  
**List Number: 2**  
**Creator: O'Toole, Maria C**

**List Source: Eurofins TestAmerica, Spokane**  
**List Creation: 05/01/19 11:35 AM**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> 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	496742
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	2.7
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	Not listed on COC
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	No analysis requiring residual chlorine check assigned.

## Laboratory Data Review Checklist

Completed By:

Erin O'Malley

Title:

Environmental Engineer

Date:

7/17/2019

CS Report Name:

April 2019 2Go Mart 76 Monitoring Event

Report Date:

6/12/2019

Consultant Firm:

Stantec Consulting Services Inc.

Laboratory Name:

TestAmerica Seattle

Laboratory Report Number:

580-85799-1

ADEC File Number:

2265.26.037

Hazard Identification Number:

26295

1. Laboratory

- a. Did an ADEC CS approved laboratory receive and
- perform
- all of the submitted sample analyses?

 Yes  No

Comments:

- b. If the samples were transferred to another “network” laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

 Yes  No

Comments:

2. Chain of Custody (CoC)

- a. CoC information completed, signed, and dated (including released/received by)?

 Yes  No

Comments:

- b. Correct Analyses requested?

 Yes  No

Comments:

3. Laboratory Sample Receipt Documentation

- a. Sample/cooler temperature documented and within range at receipt (0° to 6° C)?

 Yes  No

Comments:

- b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

 Yes  No

Comments:

- c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)?

 Yes  No

Comments:

Samples received in good condition and properly preserved.

- d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?

 Yes  No

Comments:

e. Data quality or usability affected?

Comments:

No.

4. Case Narrative

a. Present and understandable?

Yes  No

Comments:

b. Discrepancies, errors, or QC failures identified by the lab?

Yes  No

Comments:

c. Were all corrective actions documented?

Yes  No

Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

See below Sections.

5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes  No

Comments:

b. All applicable holding times met?

Yes  No

Comments:

c. All soils reported on a dry weight basis?

Yes  No

Comments:

No soil samples.

- d. Are the reported LOQs less than the Cleanup Level or the minimum required detection level for the project?

Yes  No

Comments:

There are a number of LOQs that exceed the GCLs for all samples. See Appendix E.

- e. Data quality or usability affected?

Yes  No

Comments:

All non-detect results where the LOQ exceeds the GCL are affected.

## 6. QC Samples

- a. Method Blank

- i. One method blank reported per matrix, analysis and 20 samples?

Yes  No

Comments:

- ii. All method blank results less than limit of quantitation (LOQ)?

Yes  No

Comments:

- iii. If above LOQ, what samples are affected?

Comments:

Not applicable.

- iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No

Comments:

Not applicable.

- v. Data quality or usability affected?

Comments:

No.

- b. Laboratory Control Sample/Duplicate (LCS/LCSD)

- i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes  No

Comments:

- ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes  No

Comments:

No metals or inorganics analyzed.

- iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes  No

Comments:

For Method 8260C, Isopropylbenzene recovered outside control limits for the LCSD associated with analytical batch 580-299771.

- iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes  No

Comments:

For Method 8260C, the RPD of the LCS and LCSD for analytical batch 580-299771 recovered outside control limits for Isopropylbenzene.

- v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

TB01, MW-1, MW-4, MW-2, MW-3, TNS 76

- vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes  No

Comments:

- vii. Data quality or usability affected? (Use comment box to explain.)

Comments:

No. Per laboratory, this is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

- c. Surrogates – Organics Only

- i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples?

Yes  No

Comments:

- ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes  No

Comments:

For Method 8260C, surrogate 4-Bromofluorobenzene (Surr) recovery for LCSD associated with analytical batch 580-299771 was outside the control limit (low by 2%). This surrogate as well as all other surrogates fell within acceptance criteria throughout the rest of the analytical window; therefore, the data have been reported.

- iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes  No

Comments:

- iv. Data quality or usability affected?

Comments:

No.

- d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

- i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples?  
(If not, enter explanation below.)

Yes  No

Comments:

- ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes  No

Comments:

- iii. All results less than LOQ?

Yes  No

Comments:

- iv. If above LOQ, what samples are affected?

Comments:

Not applicable.

v. Data quality or usability affected?

Comments:

No.

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes  No

Comments:

ii. Submitted blind to lab?

Yes  No

Comments:

Yes, samples MW-3 and TNS 76

iii. Precision – All relative percent differences (RPD) less than specified DQOs?  
(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where  $R_1$  = Sample Concentration

$R_2$  = Field Duplicate Concentration

Yes  No

Comments:

RPD met the DQOs for all detected analytes, except DRO.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

Reported concentrations were consistently below the GCL for DRO in both primary and duplicate samples.

f. Decontamination or Equipment Blank (If not applicable, a comment stating why must be entered below).

Yes  No  Not Applicable

i. All results less than LOQ?

Yes  No

Comments:

No decontamination or equipment blanks submitted.



ii. If above LOQ, what samples are affected?

Comments:

No decontamination or equipment blanks submitted.

iii. Data quality or usability affected?

Comments:

No decontamination or equipment blanks submitted.

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes  No

Comments: