



December 27, 2016

Via Email

Mr. Patrick Cabbage, L.G.
Eastern Regional Office-Toxics Cleanup Program
WA Department of Ecology
4601 N. Monroe Street
Spokane, WA 99205-1295

Re: **1st Semi-Annual 2016 Ground-Water Monitoring Data Transmittal**
Tesoro Logistics (Former Chevron) Pasco Bulk Fuel Terminal
2900 Sacajawea Park Road, Pasco, Washington 99301
Ecology Facility Site ID: 55763995; Cleanup Site ID: 4867

Dear Mr. Cabbage:

Enclosed please find monitoring data summary tables, site figures, and copies of laboratory data reports for the 1st semi-annual 2016 ground-water monitoring event completed on August 29-30, 2016 at the Tesoro Logistics (Former Chevron) Pasco Bulk Fuel Terminal on Sacajawea Road in Pasco, Washington. These data are transmitted on behalf of Tesoro Logistics Operations LLC (Tesoro).

Please feel free to call me at (650) 827-7474 if you have any questions.

Sincerely,
CEECON Testing, Inc.

A handwritten signature in blue ink, appearing to read "Michael Hodges".

Michael Hodges
President

cc: Jeffrey M. Baker, P.E., Tesoro
Ryan Biggs, Tesoro Logistics

CEECON Testing, Inc.
434 North Canal Street, Suite Six
South San Francisco, CA 94080
CEECON@msn.com

TABLES

TABLE 1
AUGUST 2016 GROUND-WATER MONITORING DATA - TESORO WELLS
Tesoro Logistics Pasco Terminal
Pasco, Washington

Sample Location	Date Sampled	Ground-Water Sample Analysis Results (ug/l)											Ground-Water Elevation Data (feet)				
		TPHmo (NWTPH- Rx)	TPHd (NWTPH- Dx)	TPHg (NWTPH- Gx)	Benz- ene	Tol- uene	Ethyl- benzene	Total Xylenes	MTBE	Ethanol	1,2- DCA	Naph- thalene	Well Screen Depth Interval	TOC Elevation	DTW	Elev- ation (MSL)	Change in Elevation
Tesoro Logistics (former CPL)																	
MW-1	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	73.9 - 93.9	419.40	Dry	--	--
MW-2	8/29/16	710	1,400	<50	<2.0	<2.0	<3.0	<3.0	<1.0	<10,000	<1.0	<2.0	63.3 - 83.3	417.28	74.52	342.76	-0.10
MW-3	8/30/16	1,100	11,000	1,400	<2.0	<2.0	<3.0	<3.0	<1.0	<10,000	<1.0	2.5	74.95 - 94.95	423.42	80.60	342.82	-0.02
MW-4	8/30/16	<250	<110	<50	<2.0	<2.0	<3.0	<3.0	<1.0	<10,000	<1.0	<2.0	56.75 - 76.75	412.09	69.66	342.43	-0.14
MW-5	Well destroyed May 1987																
MW-6	8/30/16	<250	<110	<50	<2.0	<2.0	<3.0	<3.0	<1.0	<10,000	<1.0	<2.0	8.5 - 23.5	358.61	17.15	341.46	0.00
MW-7	8/30/16	<250	<110	<50	<2.0	<2.0	<3.0	<3.0	<1.0	<10,000	<1.0	<2.0	57 - 77	411.40	68.74	342.66	-0.13
MW-8	8/30/16	<250	<110	<50	<2.0	<2.0	<3.0	<3.0	<1.0	<10,000	<1.0	<2.0	29 - 54	383.91	40.30	343.61	0.83
MW-9	Well destroyed May 1987																
MW-10	8/30/16	<250	<110	<50	<2.0	<2.0	<3.0	<3.0	<1.0	<10,000	<1.0	<2.0	55 - 78	407.91	65.22	342.69	-0.20
MW-11	8/29/16	<250	520	<50	<2.0	<2.0	<3.0	<3.0	<1.0	<10,000	<1.0	<2.0	84.5 - 74.5	423.48	80.42	343.06	0.25
MW-12	8/29/16	270	750	58	6.0	<2.0	<3.0	<3.0	<1.0	<10,000	<1.0	<2.0	33 - 60;	423.65	80.98	342.67	-0.15
	Duplicate	270	730	<50	4.3	<2.0	<3.0	<3.0	<1.0	<10,000	<1.0	<2.0	75 - 85				
MW-13	--	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	18.5 - 47.5	--	Dry	--	--
MW-14	8/29/16	<250	120	<50	<2.0	<2.0	<3.0	<3.0	<1.0	<10,000	<1.0	<2.0	27.5 - 53;	421.97	79.32	342.65	-0.14
													72.5 - 82.5				
RW-1	--	Well buried - status unknown											64- 98	417.29	--	--	--
Equipment Blank:																	
C-EB	8/29/16	<250	140	<50	<2.0	<2.0	<3.0	<3.0	<1.0	<10,000	<1.0	<2.0					
Trip Blank:																	
Trip Blank	8/29/16	--	--	--	<2.0	<2.0	<3.0	<3.0	<1.0	<10,000	<1.0	<2.0					
Ecology Criteria ⁽¹⁾		500	500	1,000	5	1,000	700	1,000	20	NE	5	160					

TABLE 1 (cont.)

Notes:

- (1) Washington Department of Ecology Method A cleanup levels as listed in Table 720-1 of the Model Toxics Control Act, revised 10/12/07

Concentrations in **bold** exceed Ecology Method A cleanup levels.

Change in elevations calculated using previous data collected 9/28/2015.

TPHmo = Total Petroleum Hydrocarbons as Motor Oil

TPHd = Total Petroleum Hydrocarbons as Diesel

TPHg = Total Petroleum Hydrocarbons as Gasoline

TOC = Top of casing elevation in feet MSL

DTW = Depth to water

MSL = Mean sea level

NS = Not sampled

-- = Not analyzed

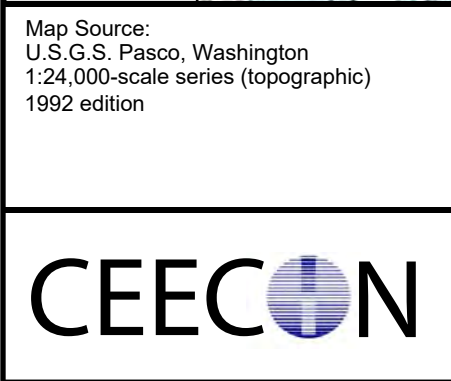
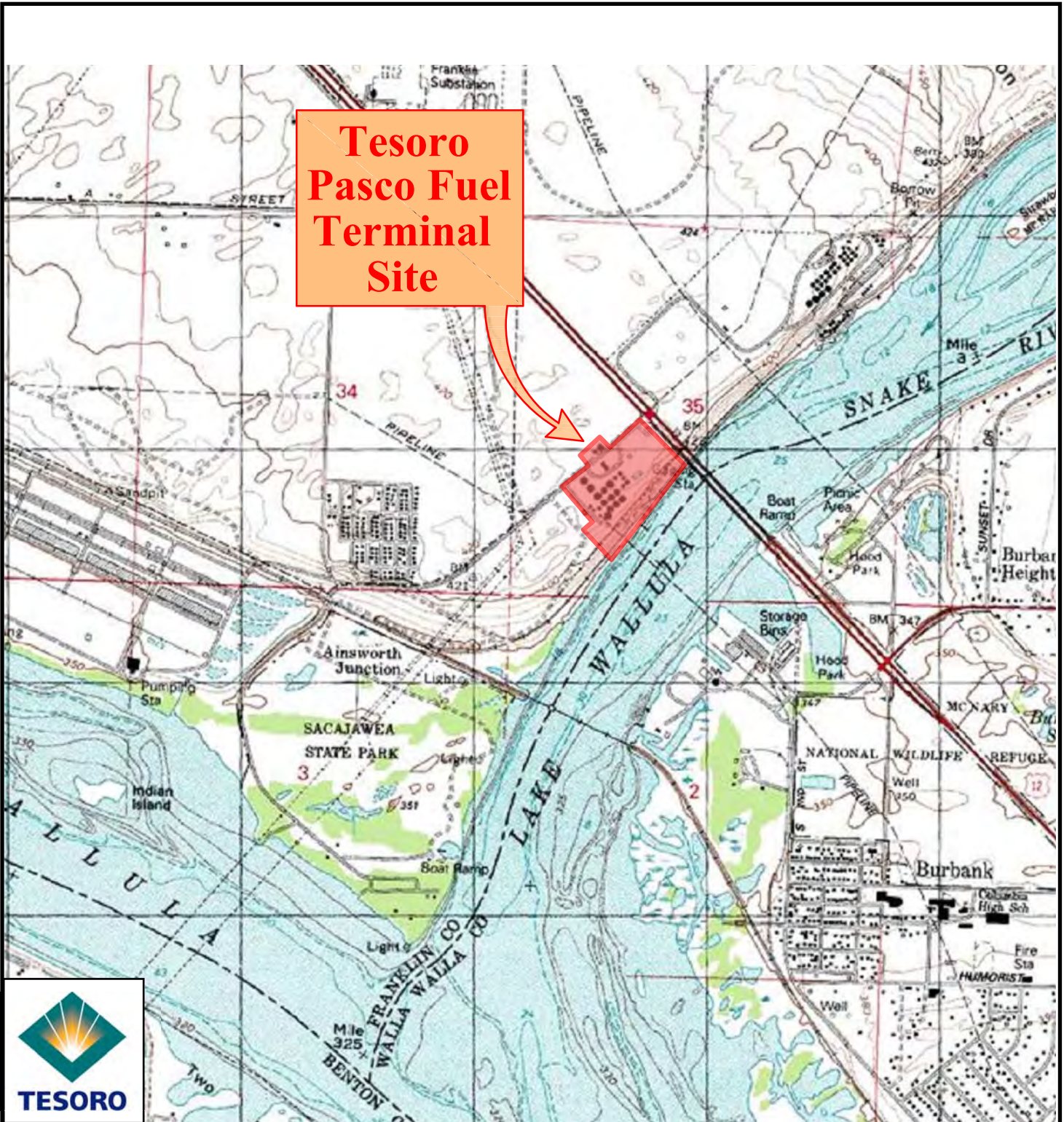
TABLE 2
AUGUST 2016 WATER QUALITY AND NATURAL ATTENUATION
PARAMETER DATA - TESORO WELLS
Tesoro Logistics Pasco Terminal
Pasco, Washington

Sample ID	Date	FIELD MEASUREMENTS					ANALYTICAL PARAMETERS (Field and Lab)					
		pH	Specific Conductance	DO	Temp.	ORP	Sulfate	Nitrate	Ferrous Iron	Manganese	Methane	Alkalinity
		S.U.	mS/cm	mg/L	°C	mV	mg/L	ppm	ppm	mg/L	mg/L	mg/L
Tesoro Logistics (former CPL)												
MW-1	--	--	--	--	--	--	--	--	--	--	--	--
MW-2	8/29/16	7.38	1.4	1.74	19.89	94	110	--	--	<0.020	<0.0050	--
MW-3	8/30/16	7.13	1.19	2.42	18.13	-153	--	--	--	--	--	--
MW-4	8/30/16	8.36	0.813	7.34	18.32	59	--	--	--	--	--	--
MW-6	8/30/16	8.30	0.836	7.39	18.88	110	100	--	--	<0.020	<0.0050	--
MW-7	8/30/16	7.96	0.964	6.92	19.01	94	--	--	--	--	--	--
MW-8	8/30/16	7.72	0.843	5.29	19.46	143	100	--	--	<0.020	<0.0050	--
MW-10	8/30/16	8.28	0.831	5.40	18.26	100	--	--	--	--	--	--
MW-11	8/29/16	7.32	0.952	2.67	19.99	148	--	--	--	--	--	--
MW-12	8/29/16	7.45	1.29	1.10	19.42	-10	83	--	--	0.25	0.76	--
MW-13	--	--	--	--	--	--	--	--	--	--	--	--
MW-14	8/29/16	7.71	0.877	5.19	18.76	120	--	--	--	--	--	--
RW-1	8/30/16	Well buried - status unknown										

Notes:

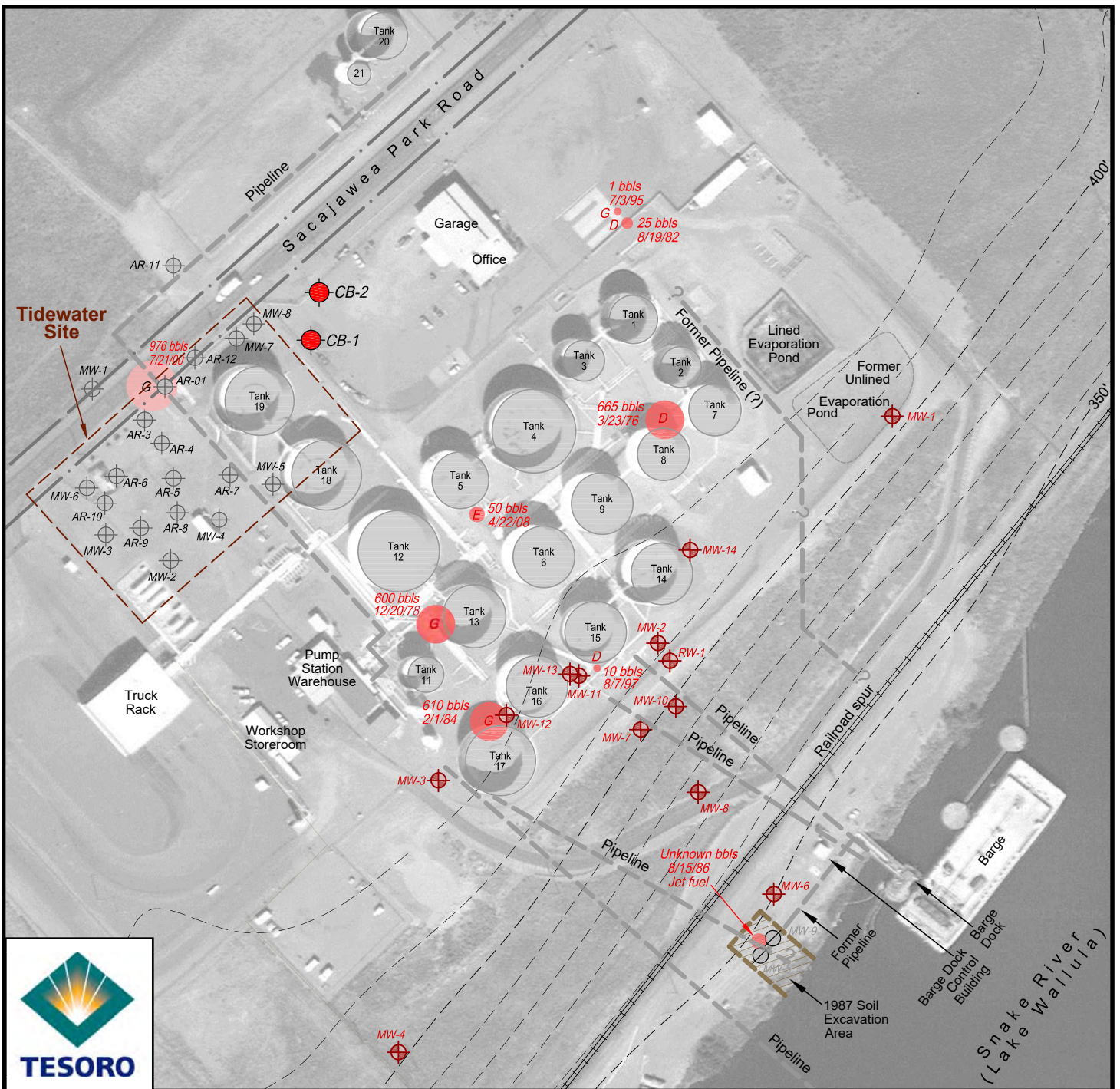
- | | | |
|-------|-------------------------------|---|
| -- | Not analyzed or measured | Water quality parameters collected in the field using a multiparameter Horiba U-55 meter. |
| S.U. | Standard Unit | Dissolved oxygen (DO) measured using portable meter with downhole probe. |
| mS/cm | millisiemens per centimeter | Sulfate analyzed by EPA Method 300. |
| mg/L | milligrams per liter | Nitrate and ferrous iron measured in the field using colorimeter test kits. |
| ppm | parts per million | Manganese analyzed by EPA Method 200.7. |
| °C | degrees celsius | Methane analyzed by Method RSK 175M. |
| mV | millivolts | Alkalinity analyzed by SM2320B. |
| ORP | Oxidation Reduction Potential | |

FIGURES



SITE VICINITY MAP
 Tesoro Pasco Fuel Terminal Site
 Pasco, Washington

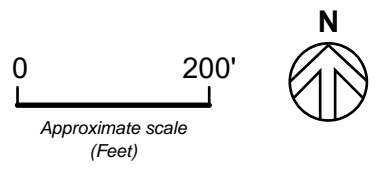
FIGURE 1
DEC 2016



EXPLANATION

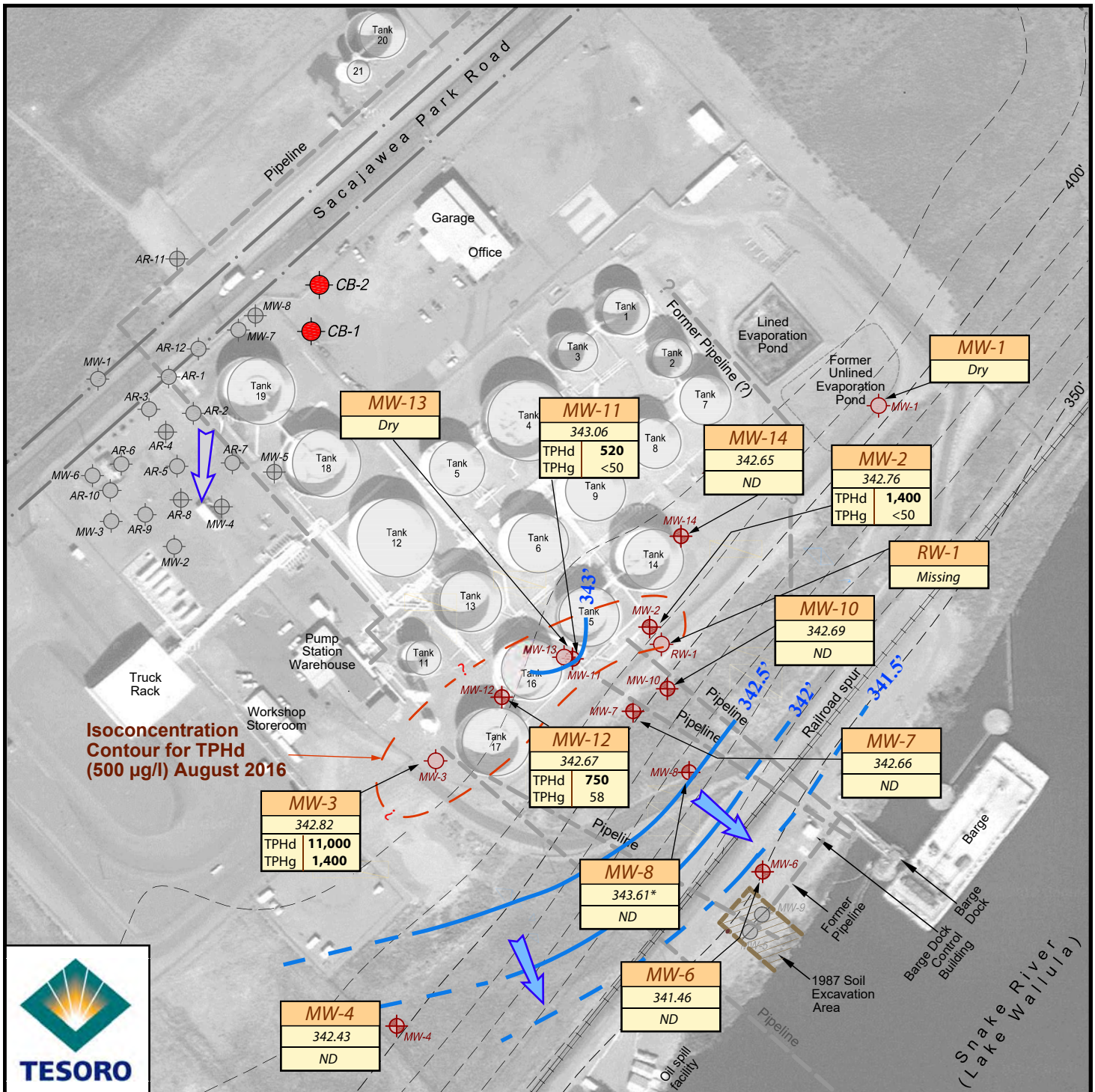
- Tesoro well
 - Tidewater well
 - Former well
 - Tesoro boring (6/15)
- | | | |
|--|-----------------|--------------|
| | Previous spill | |
| Number of barrels (circle relative to size of spill) | Date of spill | Fuel spilled |
| | 610 bbls 2/1/84 | |

Imagery: earthexplorer.usgs.gov
 Site information: URS, 2011,
 GeoEngineers, 1987



AREA MAP
 Tesoro Pasco Fuel Terminal Site
 Pasco, Washington

FIGURE 2
 DEC 2016



EXPLANATION

- Tesoro well
- Tidewater well
- Former well
- Tesoro boring (6/15)

MW-3	342.82'	TPHd 11,000	TPHg 1,400
ND	Non-detect for all constituents		
NS	Not sampled		

Ground-water flow direction inferred from historical conditions (nearly flat gradient)

Ground-water flow direction near Snake River

Concentrations in **bold** exceed Ecology cleanup levels

* Anomalous data point not contoured

Ground-water elevation contour (feet MSL; dashed where inferred)

0 100' 200'

Imagery: earthexplorer.usgs.gov
Site information: URS, 2011
GeoEngineers, 1987



2016 GROUND-WATER MONITORING RESULTS AUGUST 29-30
Tesoro Pasco Fuel Terminal Site
Pasco, Washington

FIGURE 3
DEC 2016

AUGUST 2016 LABORATORY DATA REPORTS

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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

TestAmerica Job ID: 580-62238-1
Client Project/Site: Tesoro Pasco

For:
Tesoro Logistics Operations LLC
3450 South 344th Way, Suite 201
Auburn, Washington 98001-9540

Attn: Jeff Baker



Authorized for release by:
9/16/2016 1:29:55 PM

Christabel Escarez, Project Manager I
(253)922-2310
christabel.escarez@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

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

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

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Case Narrative

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Job ID: 580-62238-1

Laboratory: TestAmerica Seattle

Narrative

Receipt

The samples were received on 9/1/2016 1:30 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 4 coolers at receipt time were 0.0° C, 0.0° C, 0.1° C and 1.6° C.

Receipt Exceptions

The container label time for the all samples did not match the information listed on the Chain-of-Custody (COC). The container labels list various times, only one container for each sample matched the time on the COC lists. Samples were logged in per the time listed on the COC.

A trip blank was submitted for analysis with these samples; however, it was not listed on the Chain of Custody (COC). The client instructed us to add VOC analysis.

Three VOA vials were submitted for the matrix spike and three VOA vials for the matrix spike duplicate. However, all analytes are marked for analysis. The client instructed us to add VOC analysis.

GC/MS VOA

Method(s) NWTPH-Gx: Analytical batch 580-226837 was run with only the secondary source standard for the CCV, LCS and LCSD. A new primary gas standard was made and failed low. The following samples are impacted: (CCV 580-226837/15), (CCV 580-226837/22) and (CCVRT 580-226837/4).

Method(s) NWTPH-Gx: Analytical batch 580-226986 was run with only the secondary source standard for the CCV, LCS and LCSD. A new primary gas standard was made and failed low. The following samples are impacted: (CCV 580-226986/12) and (CCVRT 580-226986/4).

Method(s) 8260C: The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 580-227041 recovered outside control limits for Methyl tert-butyl ether, Naphthalene and t-Butyl alcohol. These analytes were biased high in the LCS/LCSD and were not detected in the associated samples; therefore, the data have been reported.

Method(s) 8260C: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for analytical batch 580-227089 recovered outside control limits for Naphthalene and t-Butyl alcohol. These analytes were biased high in the LCS/LCSD and were not detected in the associated samples; therefore, the data have been reported.

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 580-227041 recovered above the upper control limit for Methyl tert-butyl ether, 2-Methyl-2-propanol, Naphthalene and Ethylene Dibromide. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following samples are impacted: C-MW-11 (580-62238-8), C-MW-12 (580-62238-9), C-MW-12D (580-62238-10), C-MW-14 (580-62238-11), C-EB (580-62238-12), Trip Blank (580-62238-13) and (CCVIS 580-227041/2).

Method(s) 8260C: The continuing calibration verification (CCV) associated with batch 580-227089 recovered above the upper control limit for Methyl tert-butyl ether, 2-Methyl-2-propanol, 1,2-Dibromo-3-Chloropropane and 2-Butanone (MEK). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The following sample is impacted: (CCVIS 580-227089/2).

Method(s) 8260C: The BFB tune report associated with analytical batch 580-227089 (BFB 580-227089/1) shows the 95.0% relative abundance for m/z 174 failing the 95 to 101% method criteria. This value meets method criteria and is the result of a rounding/significant figure precision error. The data have been reported.

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

GC Semi VOA

Method(s) NWTPH-Dx: The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: C-MW-02 (580-62238-1), C-MW-12 (580-62238-9), C-MW-12D (580-62238-10) and C-MW-14 (580-62238-11).

Method(s) 8015C: Surrogate recovery for the following sample was outside the upper control limit: C-MW-08 (580-62238-6). This sample did not contain any target analytes; therefore, re-extraction and/or re-analysis was not performed.

Case Narrative

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Job ID: 580-62238-1 (Continued)

Laboratory: TestAmerica Seattle (Continued)

Method(s) 8015C: The following sample(s) was analyzed outside of analytical holding time due to an error in login. Sample was not received properly in loginC-MW-12D (580-62238-10).

Method(s) RSK-175: The following sample were diluted due to an abundance of target analyte. As such, surrogate and MS/MSD spike recoveries were diluted.

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

Metals

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

General Chemistry

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

Organic Prep

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

Definitions/Glossary

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance limits.
F1	MS and/or MSD Recovery is outside acceptance limits.

GC VOA

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
X	Surrogate is outside control limits

Glossary

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

Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-02

Lab Sample ID: 580-62238-1

Date Collected: 08/29/16 16:00

Matrix: Water

Date Received: 09/01/16 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0		ug/L			09/09/16 22:02	1
1,2-DCA	ND		1.0		ug/L			09/09/16 22:02	1
Benzene	ND		2.0		ug/L			09/09/16 22:02	1
DIPE	ND		1.0		ug/L			09/09/16 22:02	1
Ethyl-t-butyl ether (ETBE)	ND		5.0		ug/L			09/09/16 22:02	1
Ethylbenzene	ND		3.0		ug/L			09/09/16 22:02	1
MTBE	ND		1.0		ug/L			09/09/16 22:02	1
Naphthalene	ND *		2.0		ug/L			09/09/16 22:02	1
t-Butyl alcohol	ND *		25		ug/L			09/09/16 22:02	1
Tert-amyl methyl ether	ND		5.0		ug/L			09/09/16 22:02	1
Toluene	ND		2.0		ug/L			09/09/16 22:02	1
Xylenes, Total	ND		3.0		ug/L			09/09/16 22:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	110		65 - 143		09/09/16 22:02	1
4-Bromofluorobenzene (Surr)	103		75 - 125		09/09/16 22:02	1
Dibromofluoromethane (Surr)	96		77 - 118		09/09/16 22:02	1
Toluene-d8 (Surr)	100		82 - 122		09/09/16 22:02	1
Trifluorotoluene (Surr)	103		80 - 141		09/09/16 22:02	1

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		10		mg/L			09/12/16 18:30	1
Methanol	ND		10		mg/L			09/12/16 18:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Isopropyl acetate (Surr)	124		52 - 128		09/12/16 18:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			09/07/16 14:11	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150		09/07/16 14:11	1
Trifluorotoluene (Surr)	93		50 - 150		09/07/16 14:11	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		0.0050		mg/L			09/12/16 22:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Acetylene (Surr)	108		62 - 124		09/12/16 22:55	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	1.4		0.11		mg/L		09/12/16 10:20	09/12/16 18:28	1
Motor Oil (>C24-C36)	0.71		0.25		mg/L		09/12/16 10:20	09/12/16 18:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	59		50 - 150		09/12/16 10:20	1

TestAmerica Seattle

Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-02

Date Collected: 08/29/16 16:00

Date Received: 09/01/16 13:30

Lab Sample ID: 580-62238-1

Matrix: Water

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020		mg/L		09/09/16 18:14	09/12/16 18:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	110		12		mg/L			09/08/16 09:50	10

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

Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-03

Lab Sample ID: 580-62238-2

Date Collected: 08/30/16 15:49

Matrix: Water

Date Received: 09/01/16 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND	F1	1.0		ug/L			09/09/16 22:30	1
1,2-DCA	ND		1.0		ug/L			09/09/16 22:30	1
Benzene	ND	F1	2.0		ug/L			09/09/16 22:30	1
DIPE	ND		1.0		ug/L			09/09/16 22:30	1
Ethyl-t-butyl ether (ETBE)	ND		5.0		ug/L			09/09/16 22:30	1
Ethylbenzene	ND		3.0		ug/L			09/09/16 22:30	1
MTBE	ND	F1	1.0		ug/L			09/09/16 22:30	1
t-Butyl alcohol	ND	F1 *	25		ug/L			09/09/16 22:30	1
Tert-amyl methyl ether	ND		5.0		ug/L			09/09/16 22:30	1
Toluene	ND		2.0		ug/L			09/09/16 22:30	1
Xylenes, Total	ND		3.0		ug/L			09/09/16 22:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		65 - 143		09/09/16 22:30	1
4-Bromofluorobenzene (Surr)	107		75 - 125		09/09/16 22:30	1
Dibromofluoromethane (Surr)	102		77 - 118		09/09/16 22:30	1
Toluene-d8 (Surr)	98		82 - 122		09/09/16 22:30	1
Trifluorotoluene (Surr)	105		80 - 141		09/09/16 22:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	2.5		2.0		ug/L			09/13/16 17:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		65 - 143		09/13/16 17:55	1
4-Bromofluorobenzene (Surr)	101		75 - 125		09/13/16 17:55	1
Dibromofluoromethane (Surr)	99		77 - 118		09/13/16 17:55	1
Toluene-d8 (Surr)	101		82 - 122		09/13/16 17:55	1
Trifluorotoluene (Surr)	101		80 - 141		09/13/16 17:55	1

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		10		mg/L			09/12/16 15:46	1
Methanol	ND		10		mg/L			09/12/16 15:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Isopropyl acetate (Surr)	65		52 - 128		09/12/16 15:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	1.4		0.050		mg/L			09/07/16 14:43	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		50 - 150		09/07/16 14:43	1
Trifluorotoluene (Surr)	93		50 - 150		09/07/16 14:43	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	11		0.11		mg/L		09/12/16 10:20	09/12/16 18:50	1
Motor Oil (>C24-C36)	1.1		0.25		mg/L		09/12/16 10:20	09/12/16 18:50	1

TestAmerica Seattle

Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-03

Date Collected: 08/30/16 15:49

Date Received: 09/01/16 13:30

Lab Sample ID: 580-62238-2

Matrix: Water

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>o-Terphenyl</i>	72		50 - 150	09/12/16 10:20	09/12/16 18:50	1

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Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-04

Lab Sample ID: 580-62238-3

Date Collected: 08/30/16 11:16

Matrix: Water

Date Received: 09/01/16 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0		ug/L			09/09/16 20:08	1
1,2-DCA	ND		1.0		ug/L			09/09/16 20:08	1
Benzene	ND		2.0		ug/L			09/09/16 20:08	1
DIPE	ND		1.0		ug/L			09/09/16 20:08	1
Ethyl-t-butyl ether (ETBE)	ND		5.0		ug/L			09/09/16 20:08	1
Ethylbenzene	ND		3.0		ug/L			09/09/16 20:08	1
MTBE	ND		1.0		ug/L			09/09/16 20:08	1
Naphthalene	ND *		2.0		ug/L			09/09/16 20:08	1
t-Butyl alcohol	ND *		25		ug/L			09/09/16 20:08	1
Tert-amyl methyl ether	ND		5.0		ug/L			09/09/16 20:08	1
Toluene	ND		2.0		ug/L			09/09/16 20:08	1
Xylenes, Total	ND		3.0		ug/L			09/09/16 20:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		65 - 143		09/09/16 20:08	1
4-Bromofluorobenzene (Surr)	101		75 - 125		09/09/16 20:08	1
Dibromofluoromethane (Surr)	93		77 - 118		09/09/16 20:08	1
Toluene-d8 (Surr)	102		82 - 122		09/09/16 20:08	1
Trifluorotoluene (Surr)	99		80 - 141		09/09/16 20:08	1

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		10		mg/L			09/12/16 15:52	1
Methanol	ND		10		mg/L			09/12/16 15:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Isopropyl acetate (Surr)	57		52 - 128		09/12/16 15:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			09/08/16 20:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		50 - 150		09/08/16 20:09	1
Trifluorotoluene (Surr)	98		50 - 150		09/08/16 20:09	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.11		mg/L		09/12/16 10:20	09/12/16 19:33	1
Motor Oil (>C24-C36)	ND		0.25		mg/L		09/12/16 10:20	09/12/16 19:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
o-Terphenyl	78		50 - 150		09/12/16 10:20	09/12/16 19:33	1

TestAmerica Seattle

Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-06

Lab Sample ID: 580-62238-4

Date Collected: 08/30/16 13:00

Matrix: Water

Date Received: 09/01/16 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0		ug/L			09/09/16 21:33	1
1,2-DCA	ND		1.0		ug/L			09/09/16 21:33	1
Benzene	ND		2.0		ug/L			09/09/16 21:33	1
DIPE	ND		1.0		ug/L			09/09/16 21:33	1
Ethyl-t-butyl ether (ETBE)	ND		5.0		ug/L			09/09/16 21:33	1
Ethylbenzene	ND		3.0		ug/L			09/09/16 21:33	1
MTBE	ND		1.0		ug/L			09/09/16 21:33	1
Naphthalene	ND *		2.0		ug/L			09/09/16 21:33	1
t-Butyl alcohol	ND *		25		ug/L			09/09/16 21:33	1
Tert-amyl methyl ether	ND		5.0		ug/L			09/09/16 21:33	1
Toluene	ND		2.0		ug/L			09/09/16 21:33	1
Xylenes, Total	ND		3.0		ug/L			09/09/16 21:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		65 - 143		09/09/16 21:33	1
4-Bromofluorobenzene (Surr)	101		75 - 125		09/09/16 21:33	1
Dibromofluoromethane (Surr)	97		77 - 118		09/09/16 21:33	1
Toluene-d8 (Surr)	99		82 - 122		09/09/16 21:33	1
Trifluorotoluene (Surr)	103		80 - 141		09/09/16 21:33	1

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		10		mg/L			09/12/16 15:59	1
Methanol	ND		10		mg/L			09/12/16 15:59	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Isopropyl acetate (Surr)	59		52 - 128		09/12/16 15:59	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			09/07/16 15:47	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		50 - 150		09/07/16 15:47	1
Trifluorotoluene (Surr)	94		50 - 150		09/07/16 15:47	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		0.0050		mg/L			09/12/16 21:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Acetylene (Surr)	84		62 - 124		09/12/16 21:28	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.11		mg/L		09/12/16 10:20	09/12/16 19:54	1
Motor Oil (>C24-C36)	ND		0.25		mg/L		09/12/16 10:20	09/12/16 19:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
o-Terphenyl	79		50 - 150		09/12/16 10:20	09/12/16 19:54	1

TestAmerica Seattle

Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-06

Date Collected: 08/30/16 13:00

Date Received: 09/01/16 13:30

Lab Sample ID: 580-62238-4

Matrix: Water

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020		mg/L		09/09/16 18:14	09/12/16 18:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	100		12		mg/L			09/08/16 10:08	10

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- 2
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- 10
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Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-07

Lab Sample ID: 580-62238-5

Date Collected: 08/30/16 10:14

Matrix: Water

Date Received: 09/01/16 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0		ug/L			09/09/16 20:37	1
1,2-DCA	ND		1.0		ug/L			09/09/16 20:37	1
Benzene	ND		2.0		ug/L			09/09/16 20:37	1
DIPE	ND		1.0		ug/L			09/09/16 20:37	1
Ethyl-t-butyl ether (ETBE)	ND		5.0		ug/L			09/09/16 20:37	1
Ethylbenzene	ND		3.0		ug/L			09/09/16 20:37	1
MTBE	ND		1.0		ug/L			09/09/16 20:37	1
Naphthalene	ND *		2.0		ug/L			09/09/16 20:37	1
t-Butyl alcohol	ND *		25		ug/L			09/09/16 20:37	1
Tert-amyl methyl ether	ND		5.0		ug/L			09/09/16 20:37	1
Toluene	ND		2.0		ug/L			09/09/16 20:37	1
Xylenes, Total	ND		3.0		ug/L			09/09/16 20:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	109		65 - 143		09/09/16 20:37	1
4-Bromofluorobenzene (Surr)	103		75 - 125		09/09/16 20:37	1
Dibromofluoromethane (Surr)	98		77 - 118		09/09/16 20:37	1
Toluene-d8 (Surr)	99		82 - 122		09/09/16 20:37	1
Trifluorotoluene (Surr)	102		80 - 141		09/09/16 20:37	1

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		10		mg/L			09/12/16 16:05	1
Methanol	ND		10		mg/L			09/12/16 16:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Isopropyl acetate (Surr)	73		52 - 128		09/12/16 16:05	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			09/07/16 16:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150		09/07/16 16:19	1
Trifluorotoluene (Surr)	94		50 - 150		09/07/16 16:19	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.11		mg/L		09/12/16 10:20	09/12/16 20:15	1
Motor Oil (>C24-C36)	ND		0.25		mg/L		09/12/16 10:20	09/12/16 20:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
o-Terphenyl	80		50 - 150		09/12/16 10:20	09/12/16 20:15	1

TestAmerica Seattle

Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-08

Lab Sample ID: 580-62238-6

Date Collected: 08/30/16 14:31

Matrix: Water

Date Received: 09/01/16 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0		ug/L			09/09/16 21:05	1
1,2-DCA	ND		1.0		ug/L			09/09/16 21:05	1
Benzene	ND		2.0		ug/L			09/09/16 21:05	1
DIPE	ND		1.0		ug/L			09/09/16 21:05	1
Ethyl-t-butyl ether (ETBE)	ND		5.0		ug/L			09/09/16 21:05	1
Ethylbenzene	ND		3.0		ug/L			09/09/16 21:05	1
MTBE	ND		1.0		ug/L			09/09/16 21:05	1
Naphthalene	ND	*	2.0		ug/L			09/09/16 21:05	1
t-Butyl alcohol	ND	*	25		ug/L			09/09/16 21:05	1
Tert-amyl methyl ether	ND		5.0		ug/L			09/09/16 21:05	1
Toluene	ND		2.0		ug/L			09/09/16 21:05	1
Xylenes, Total	ND		3.0		ug/L			09/09/16 21:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		65 - 143		09/09/16 21:05	1
4-Bromofluorobenzene (Surr)	102		75 - 125		09/09/16 21:05	1
Dibromofluoromethane (Surr)	97		77 - 118		09/09/16 21:05	1
Toluene-d8 (Surr)	101		82 - 122		09/09/16 21:05	1
Trifluorotoluene (Surr)	103		80 - 141		09/09/16 21:05	1

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		10		mg/L			09/12/16 18:36	1
Methanol	ND		10		mg/L			09/12/16 18:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Isopropyl acetate (Surr)	150	X	52 - 128		09/12/16 18:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			09/07/16 16:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150		09/07/16 16:51	1
Trifluorotoluene (Surr)	94		50 - 150		09/07/16 16:51	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		0.0050		mg/L			09/12/16 21:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Acetylene (Surr)	108		62 - 124		09/12/16 21:32	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.11		mg/L		09/12/16 10:20	09/12/16 20:37	1
Motor Oil (>C24-C36)	ND		0.25		mg/L		09/12/16 10:20	09/12/16 20:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	74		50 - 150	09/12/16 10:20	09/12/16 20:37	1

TestAmerica Seattle

Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-08

Date Collected: 08/30/16 14:31

Date Received: 09/01/16 13:30

Lab Sample ID: 580-62238-6

Matrix: Water

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020		mg/L		09/09/16 18:14	09/12/16 18:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	100		12		mg/L			09/08/16 10:26	10

- 1
- 2
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Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-10

Lab Sample ID: 580-62238-7

Date Collected: 08/30/16 09:12

Matrix: Water

Date Received: 09/01/16 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0		ug/L			09/09/16 19:40	1
1,2-DCA	ND		1.0		ug/L			09/09/16 19:40	1
Benzene	ND		2.0		ug/L			09/09/16 19:40	1
DIPE	ND		1.0		ug/L			09/09/16 19:40	1
Ethyl-t-butyl ether (ETBE)	ND		5.0		ug/L			09/09/16 19:40	1
Ethylbenzene	ND		3.0		ug/L			09/09/16 19:40	1
MTBE	ND		1.0		ug/L			09/09/16 19:40	1
Naphthalene	ND *		2.0		ug/L			09/09/16 19:40	1
t-Butyl alcohol	ND *		25		ug/L			09/09/16 19:40	1
Tert-amyl methyl ether	ND		5.0		ug/L			09/09/16 19:40	1
Toluene	ND		2.0		ug/L			09/09/16 19:40	1
Xylenes, Total	ND		3.0		ug/L			09/09/16 19:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		65 - 143		09/09/16 19:40	1
4-Bromofluorobenzene (Surr)	104		75 - 125		09/09/16 19:40	1
Dibromofluoromethane (Surr)	94		77 - 118		09/09/16 19:40	1
Toluene-d8 (Surr)	100		82 - 122		09/09/16 19:40	1
Trifluorotoluene (Surr)	96		80 - 141		09/09/16 19:40	1

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		10		mg/L			09/12/16 16:17	1
Methanol	ND		10		mg/L			09/12/16 16:17	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Isopropyl acetate (Surr)	57		52 - 128		09/12/16 16:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			09/07/16 17:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	93		50 - 150		09/07/16 17:56	1
Trifluorotoluene (Surr)	93		50 - 150		09/07/16 17:56	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.11		mg/L		09/12/16 10:20	09/12/16 20:58	1
Motor Oil (>C24-C36)	ND		0.25		mg/L		09/12/16 10:20	09/12/16 20:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
o-Terphenyl	80		50 - 150		09/12/16 10:20	09/12/16 20:58	1

TestAmerica Seattle

Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-11

Lab Sample ID: 580-62238-8

Date Collected: 08/29/16 12:00

Matrix: Water

Date Received: 09/01/16 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0		ug/L			09/09/16 07:16	1
1,2-DCA	ND		1.0		ug/L			09/09/16 07:16	1
Benzene	ND		2.0		ug/L			09/09/16 07:16	1
DIPE	ND		1.0		ug/L			09/09/16 07:16	1
Ethyl-t-butyl ether (ETBE)	ND		5.0		ug/L			09/09/16 07:16	1
Ethylbenzene	ND		3.0		ug/L			09/09/16 07:16	1
MTBE	ND *		1.0		ug/L			09/09/16 07:16	1
Naphthalene	ND *		2.0		ug/L			09/09/16 07:16	1
t-Butyl alcohol	ND *		25		ug/L			09/09/16 07:16	1
Tert-amyl methyl ether	ND		5.0		ug/L			09/09/16 07:16	1
Toluene	ND		2.0		ug/L			09/09/16 07:16	1
Xylenes, Total	ND		3.0		ug/L			09/09/16 07:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		65 - 143		09/09/16 07:16	1
4-Bromofluorobenzene (Surr)	103		75 - 125		09/09/16 07:16	1
Dibromofluoromethane (Surr)	102		77 - 118		09/09/16 07:16	1
Toluene-d8 (Surr)	101		82 - 122		09/09/16 07:16	1
Trifluorotoluene (Surr)	108		80 - 141		09/09/16 07:16	1

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		10		mg/L			09/12/16 16:23	1
Methanol	ND		10		mg/L			09/12/16 16:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Isopropyl acetate (Surr)	60		52 - 128		09/12/16 16:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			09/07/16 18:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150		09/07/16 18:28	1
Trifluorotoluene (Surr)	93		50 - 150		09/07/16 18:28	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.52		0.11		mg/L		09/12/16 10:20	09/12/16 21:19	1
Motor Oil (>C24-C36)	ND		0.25		mg/L		09/12/16 10:20	09/12/16 21:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
o-Terphenyl	68		50 - 150		09/12/16 10:20	09/12/16 21:19	1

TestAmerica Seattle

Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-12

Lab Sample ID: 580-62238-9

Date Collected: 08/29/16 14:02

Matrix: Water

Date Received: 09/01/16 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0		ug/L			09/09/16 07:44	1
1,2-DCA	ND		1.0		ug/L			09/09/16 07:44	1
Benzene	6.0		2.0		ug/L			09/09/16 07:44	1
DIPE	ND		1.0		ug/L			09/09/16 07:44	1
Ethyl-t-butyl ether (ETBE)	ND		5.0		ug/L			09/09/16 07:44	1
Ethylbenzene	ND		3.0		ug/L			09/09/16 07:44	1
MTBE	ND	*	1.0		ug/L			09/09/16 07:44	1
Naphthalene	ND	*	2.0		ug/L			09/09/16 07:44	1
t-Butyl alcohol	ND	*	25		ug/L			09/09/16 07:44	1
Tert-amyl methyl ether	ND		5.0		ug/L			09/09/16 07:44	1
Toluene	ND		2.0		ug/L			09/09/16 07:44	1
Xylenes, Total	ND		3.0		ug/L			09/09/16 07:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		65 - 143		09/09/16 07:44	1
4-Bromofluorobenzene (Surr)	103		75 - 125		09/09/16 07:44	1
Dibromofluoromethane (Surr)	101		77 - 118		09/09/16 07:44	1
Toluene-d8 (Surr)	99		82 - 122		09/09/16 07:44	1
Trifluorotoluene (Surr)	107		80 - 141		09/09/16 07:44	1

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		10		mg/L			09/12/16 16:29	1
Methanol	ND		10		mg/L			09/12/16 16:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Isopropyl acetate (Surr)	74		52 - 128		09/12/16 16:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	0.058		0.050		mg/L			09/07/16 19:00	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		50 - 150		09/07/16 19:00	1
Trifluorotoluene (Surr)	94		50 - 150		09/07/16 19:00	1

Method: RSK-175 - Dissolved Gases (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	0.76		0.010		mg/L			09/12/16 21:41	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Acetylene (Surr)	112		62 - 124		09/12/16 21:37	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.75		0.11		mg/L		09/12/16 10:20	09/12/16 21:40	1
Motor Oil (>C24-C36)	0.27		0.25		mg/L		09/12/16 10:20	09/12/16 21:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
o-Terphenyl	64		50 - 150		09/12/16 10:20	09/12/16 21:40	1

TestAmerica Seattle

Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-12

Date Collected: 08/29/16 14:02

Date Received: 09/01/16 13:30

Lab Sample ID: 580-62238-9

Matrix: Water

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	0.25		0.020		mg/L		09/09/16 18:14	09/12/16 18:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	83		1.2		mg/L			09/07/16 17:40	1

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

Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-12D

Lab Sample ID: 580-62238-10

Date Collected: 08/29/16 14:02

Matrix: Water

Date Received: 09/01/16 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0		ug/L			09/09/16 08:41	1
1,2-DCA	ND		1.0		ug/L			09/09/16 08:41	1
Benzene	4.3		2.0		ug/L			09/09/16 08:41	1
DIPE	ND		1.0		ug/L			09/09/16 08:41	1
Ethyl-t-butyl ether (ETBE)	ND		5.0		ug/L			09/09/16 08:41	1
Ethylbenzene	ND		3.0		ug/L			09/09/16 08:41	1
MTBE	ND *		1.0		ug/L			09/09/16 08:41	1
Naphthalene	ND *		2.0		ug/L			09/09/16 08:41	1
t-Butyl alcohol	ND *		25		ug/L			09/09/16 08:41	1
Tert-amyl methyl ether	ND		5.0		ug/L			09/09/16 08:41	1
Toluene	ND		2.0		ug/L			09/09/16 08:41	1
Xylenes, Total	ND		3.0		ug/L			09/09/16 08:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	117		65 - 143		09/09/16 08:41	1
4-Bromofluorobenzene (Surr)	102		75 - 125		09/09/16 08:41	1
Dibromofluoromethane (Surr)	101		77 - 118		09/09/16 08:41	1
Toluene-d8 (Surr)	100		82 - 122		09/09/16 08:41	1
Trifluorotoluene (Surr)	106		80 - 141		09/09/16 08:41	1

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND	H	10		mg/L			09/15/16 13:41	1
Methanol	ND	H	10		mg/L			09/15/16 13:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Isopropyl acetate (Surr)	89		52 - 128		09/15/16 13:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			09/07/16 19:32	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		50 - 150		09/07/16 19:32	1
Trifluorotoluene (Surr)	93		50 - 150		09/07/16 19:32	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.73		0.11		mg/L		09/12/16 10:20	09/12/16 22:01	1
Motor Oil (>C24-C36)	0.27		0.25		mg/L		09/12/16 10:20	09/12/16 22:01	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
o-Terphenyl	62		50 - 150		09/12/16 10:20	09/12/16 22:01	1

TestAmerica Seattle

Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-14

Lab Sample ID: 580-62238-11

Date Collected: 08/29/16 10:35

Matrix: Water

Date Received: 09/01/16 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0		ug/L			09/09/16 09:10	1
1,2-DCA	ND		1.0		ug/L			09/09/16 09:10	1
Benzene	ND		2.0		ug/L			09/09/16 09:10	1
DIPE	ND		1.0		ug/L			09/09/16 09:10	1
Ethyl-t-butyl ether (ETBE)	ND		5.0		ug/L			09/09/16 09:10	1
Ethylbenzene	ND		3.0		ug/L			09/09/16 09:10	1
MTBE	ND	*	1.0		ug/L			09/09/16 09:10	1
Naphthalene	ND	*	2.0		ug/L			09/09/16 09:10	1
t-Butyl alcohol	ND	*	25		ug/L			09/09/16 09:10	1
Tert-amyl methyl ether	ND		5.0		ug/L			09/09/16 09:10	1
Toluene	ND		2.0		ug/L			09/09/16 09:10	1
Xylenes, Total	ND		3.0		ug/L			09/09/16 09:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	113		65 - 143		09/09/16 09:10	1
4-Bromofluorobenzene (Surr)	101		75 - 125		09/09/16 09:10	1
Dibromofluoromethane (Surr)	100		77 - 118		09/09/16 09:10	1
Toluene-d8 (Surr)	99		82 - 122		09/09/16 09:10	1
Trifluorotoluene (Surr)	104		80 - 141		09/09/16 09:10	1

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		10		mg/L			09/12/16 16:35	1
Methanol	ND		10		mg/L			09/12/16 16:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Isopropyl acetate (Surr)	92		52 - 128		09/12/16 16:35	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			09/07/16 20:05	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150		09/07/16 20:05	1
Trifluorotoluene (Surr)	93		50 - 150		09/07/16 20:05	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.12		0.11		mg/L		09/12/16 10:20	09/12/16 22:22	1
Motor Oil (>C24-C36)	ND		0.25		mg/L		09/12/16 10:20	09/12/16 22:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
o-Terphenyl	82		50 - 150		09/12/16 10:20	09/12/16 22:22	1

TestAmerica Seattle

Client Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-EB
Date Collected: 08/29/16 15:05
Date Received: 09/01/16 13:30

Lab Sample ID: 580-62238-12
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0		ug/L			09/09/16 08:13	1
1,2-DCA	ND		1.0		ug/L			09/09/16 08:13	1
Benzene	ND		2.0		ug/L			09/09/16 08:13	1
DIPE	ND		1.0		ug/L			09/09/16 08:13	1
Ethyl-t-butyl ether (ETBE)	ND		5.0		ug/L			09/09/16 08:13	1
Ethylbenzene	ND		3.0		ug/L			09/09/16 08:13	1
MTBE	ND	*	1.0		ug/L			09/09/16 08:13	1
Naphthalene	ND	*	2.0		ug/L			09/09/16 08:13	1
t-Butyl alcohol	ND	*	25		ug/L			09/09/16 08:13	1
Tert-amyl methyl ether	ND		5.0		ug/L			09/09/16 08:13	1
Toluene	ND		2.0		ug/L			09/09/16 08:13	1
Xylenes, Total	ND		3.0		ug/L			09/09/16 08:13	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	115		65 - 143		09/09/16 08:13	1
4-Bromofluorobenzene (Surr)	102		75 - 125		09/09/16 08:13	1
Dibromofluoromethane (Surr)	103		77 - 118		09/09/16 08:13	1
Toluene-d8 (Surr)	100		82 - 122		09/09/16 08:13	1
Trifluorotoluene (Surr)	108		80 - 141		09/09/16 08:13	1

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		10		mg/L			09/12/16 16:41	1
Methanol	ND		10		mg/L			09/12/16 16:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Isopropyl acetate (Surr)	86		52 - 128		09/12/16 16:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			09/07/16 20:37	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150		09/07/16 20:37	1
Trifluorotoluene (Surr)	95		50 - 150		09/07/16 20:37	1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.14		0.11		mg/L		09/12/16 10:20	09/12/16 22:42	1
Motor Oil (>C24-C36)	ND		0.25		mg/L		09/12/16 10:20	09/12/16 22:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac	
o-Terphenyl	83		50 - 150		09/12/16 10:20	09/12/16 22:42	1

TestAmerica Seattle

Client Sample Results

Client: Tesoro Logistics Operations LLC
 Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: Trip Blank

Lab Sample ID: 580-62238-13

Date Collected: 08/29/16 00:00

Matrix: Water

Date Received: 09/01/16 13:30

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0		ug/L			09/09/16 02:02	1
1,2-DCA	ND		1.0		ug/L			09/09/16 02:02	1
Benzene	ND		2.0		ug/L			09/09/16 02:02	1
DIPE	ND		1.0		ug/L			09/09/16 02:02	1
Ethyl-t-butyl ether (ETBE)	ND		5.0		ug/L			09/09/16 02:02	1
Ethylbenzene	ND		3.0		ug/L			09/09/16 02:02	1
MTBE	ND	*	1.0		ug/L			09/09/16 02:02	1
Naphthalene	ND	*	2.0		ug/L			09/09/16 02:02	1
t-Butyl alcohol	ND	*	25		ug/L			09/09/16 02:02	1
Tert-amyl methyl ether	ND		5.0		ug/L			09/09/16 02:02	1
Toluene	ND		2.0		ug/L			09/09/16 02:02	1
Xylenes, Total	ND		3.0		ug/L			09/09/16 02:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		65 - 143		09/09/16 02:02	1
4-Bromofluorobenzene (Surr)	103		75 - 125		09/09/16 02:02	1
Dibromofluoromethane (Surr)	101		77 - 118		09/09/16 02:02	1
Toluene-d8 (Surr)	98		82 - 122		09/09/16 02:02	1
Trifluorotoluene (Surr)	110		80 - 141		09/09/16 02:02	1

QC Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

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

Lab Sample ID: MB 580-227041/4

Matrix: Water

Analysis Batch: 227041

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0		ug/L			09/09/16 00:08	1
1,2-DCA	ND		1.0		ug/L			09/09/16 00:08	1
Benzene	ND		2.0		ug/L			09/09/16 00:08	1
DIPE	ND		1.0		ug/L			09/09/16 00:08	1
Ethyl-t-butyl ether (ETBE)	ND		5.0		ug/L			09/09/16 00:08	1
Ethylbenzene	ND		3.0		ug/L			09/09/16 00:08	1
MTBE	ND		1.0		ug/L			09/09/16 00:08	1
Naphthalene	ND		2.0		ug/L			09/09/16 00:08	1
t-Butyl alcohol	ND		25		ug/L			09/09/16 00:08	1
Tert-amyl methyl ether	ND		5.0		ug/L			09/09/16 00:08	1
Toluene	ND		2.0		ug/L			09/09/16 00:08	1
Xylenes, Total	ND		3.0		ug/L			09/09/16 00:08	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	111		65 - 143		09/09/16 00:08	1
4-Bromofluorobenzene (Surr)	103		75 - 125		09/09/16 00:08	1
Dibromofluoromethane (Surr)	99		77 - 118		09/09/16 00:08	1
Toluene-d8 (Surr)	100		82 - 122		09/09/16 00:08	1
Trifluorotoluene (Surr)	106		80 - 141		09/09/16 00:08	1

Lab Sample ID: LCS 580-227041/5

Matrix: Water

Analysis Batch: 227041

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane	10.0	13.0		ug/L		130	66 - 133
1,2-DCA	10.0	11.9		ug/L		119	58 - 143
Benzene	10.0	10.9		ug/L		108	80 - 120
DIPE	12.5	14.0		ug/L		112	51 - 150
Ethyl-t-butyl ether (ETBE)	12.5	13.4		ug/L		107	73 - 116
Ethylbenzene	10.0	10.3		ug/L		103	75 - 119
MTBE	10.0	12.7	*	ug/L		127	65 - 125
m-Xylene & p-Xylene	10.0	10.4		ug/L		103	75 - 119
Naphthalene	10.0	15.6	*	ug/L		156	55 - 134
o-Xylene	10.0	10.7		ug/L		107	74 - 120
t-Butyl alcohol	100	166	*	ug/L		166	20 - 150
Tert-amyl methyl ether	12.5	14.5		ug/L		116	75 - 125
Toluene	10.0	10.3		ug/L		103	75 - 120
Xylenes, Total	20.0	21.1		ug/L		105	75 - 119

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	111		65 - 143
4-Bromofluorobenzene (Surr)	107		75 - 125
Dibromofluoromethane (Surr)	100		77 - 118
Toluene-d8 (Surr)	99		82 - 122
Trifluorotoluene (Surr)	106		80 - 141

TestAmerica Seattle

QC Sample Results

Client: Tesoro Logistics Operations LLC
 Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

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

Lab Sample ID: LCSD 580-227041/6

Matrix: Water

Analysis Batch: 227041

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-Dibromoethane	10.0	13.0		ug/L		130	66 - 133	0	17
1,2-DCA	10.0	11.7		ug/L		117	58 - 143	2	17
Benzene	10.0	10.8		ug/L		108	80 - 120	0	14
DIPE	12.5	13.9		ug/L		111	51 - 150	1	20
Ethyl-t-butyl ether (ETBE)	12.5	14.0		ug/L		112	73 - 116	4	17
Ethylbenzene	10.0	10.2		ug/L		102	75 - 119	1	14
MTBE	10.0	12.7	*	ug/L		127	65 - 125	0	18
m-Xylene & p-Xylene	10.0	10.1		ug/L		101	75 - 119	2	14
Naphthalene	10.0	15.8	*	ug/L		158	55 - 134	1	30
o-Xylene	10.0	10.5		ug/L		105	74 - 120	3	16
t-Butyl alcohol	100	163	*	ug/L		163	20 - 150	1	13
Tert-amyl methyl ether	12.5	14.4		ug/L		115	75 - 125	1	16
Toluene	10.0	9.91		ug/L		99	75 - 120	4	19
Xylenes, Total	20.0	20.6		ug/L		103	75 - 119	2	15

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
1,2-Dichloroethane-d4 (Surr)	111		65 - 143
4-Bromofluorobenzene (Surr)	106		75 - 125
Dibromofluoromethane (Surr)	101		77 - 118
Toluene-d8 (Surr)	98		82 - 122
Trifluorotoluene (Surr)	106		80 - 141

Lab Sample ID: MB 580-227089/4

Matrix: Water

Analysis Batch: 227089

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	ND		1.0		ug/L			09/09/16 13:57	1
1,2-DCA	ND		1.0		ug/L			09/09/16 13:57	1
Benzene	ND		2.0		ug/L			09/09/16 13:57	1
DIPE	ND		1.0		ug/L			09/09/16 13:57	1
Ethyl-t-butyl ether (ETBE)	ND		5.0		ug/L			09/09/16 13:57	1
Ethylbenzene	ND		3.0		ug/L			09/09/16 13:57	1
MTBE	ND		1.0		ug/L			09/09/16 13:57	1
Naphthalene	ND		2.0		ug/L			09/09/16 13:57	1
t-Butyl alcohol	ND		25		ug/L			09/09/16 13:57	1
Tert-amyl methyl ether	ND		5.0		ug/L			09/09/16 13:57	1
Toluene	ND		2.0		ug/L			09/09/16 13:57	1
Xylenes, Total	ND		3.0		ug/L			09/09/16 13:57	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	114		65 - 143		09/09/16 13:57	1
4-Bromofluorobenzene (Surr)	103		75 - 125		09/09/16 13:57	1
Dibromofluoromethane (Surr)	102		77 - 118		09/09/16 13:57	1
Toluene-d8 (Surr)	100		82 - 122		09/09/16 13:57	1
Trifluorotoluene (Surr)	108		80 - 141		09/09/16 13:57	1

TestAmerica Seattle

QC Sample Results

Client: Tesoro Logistics Operations LLC
 Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

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

Lab Sample ID: LCS 580-227089/5

Matrix: Water

Analysis Batch: 227089

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane	10.0	12.0		ug/L		119	66 - 133
1,2-DCA	10.0	11.0		ug/L		110	58 - 143
Benzene	10.0	10.3		ug/L		102	80 - 120
DIPE	12.5	13.9		ug/L		111	51 - 150
Ethyl-t-butyl ether (ETBE)	12.5	12.7		ug/L		102	73 - 116
Ethylbenzene	10.0	9.55		ug/L		95	75 - 119
MTBE	10.0	11.4		ug/L		114	65 - 125
m-Xylene & p-Xylene	10.0	9.67		ug/L		96	75 - 119
Naphthalene	10.0	13.5	*	ug/L		135	55 - 134
o-Xylene	10.0	9.78		ug/L		98	74 - 120
t-Butyl alcohol	100	155	*	ug/L		155	20 - 150
Tert-amyl methyl ether	12.5	13.5		ug/L		108	75 - 125
Toluene	10.0	9.71		ug/L		97	75 - 120
Xylenes, Total	20.0	19.5		ug/L		97	75 - 119

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	112		65 - 143
4-Bromofluorobenzene (Surr)	105		75 - 125
Dibromofluoromethane (Surr)	103		77 - 118
Toluene-d8 (Surr)	98		82 - 122
Trifluorotoluene (Surr)	103		80 - 141

Lab Sample ID: LCSD 580-227089/6

Matrix: Water

Analysis Batch: 227089

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-Dibromoethane	10.0	11.9		ug/L		119	66 - 133	0	17
1,2-DCA	10.0	11.4		ug/L		114	58 - 143	4	17
Benzene	10.0	10.6		ug/L		105	80 - 120	3	14
DIPE	12.5	14.3		ug/L		115	51 - 150	3	20
Ethyl-t-butyl ether (ETBE)	12.5	13.0		ug/L		104	73 - 116	2	17
Ethylbenzene	10.0	9.76		ug/L		97	75 - 119	2	14
MTBE	10.0	12.1		ug/L		121	65 - 125	6	18
m-Xylene & p-Xylene	10.0	9.79		ug/L		98	75 - 119	1	14
Naphthalene	10.0	13.2		ug/L		132	55 - 134	2	30
o-Xylene	10.0	9.92		ug/L		99	74 - 120	1	16
t-Butyl alcohol	100	154	*	ug/L		154	20 - 150	1	13
Tert-amyl methyl ether	12.5	13.8		ug/L		111	75 - 125	3	16
Toluene	10.0	9.87		ug/L		99	75 - 120	2	19
Xylenes, Total	20.0	19.7		ug/L		98	75 - 119	1	15

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	112		65 - 143
4-Bromofluorobenzene (Surr)	104		75 - 125
Dibromofluoromethane (Surr)	101		77 - 118
Toluene-d8 (Surr)	98		82 - 122

TestAmerica Seattle

QC Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

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

Lab Sample ID: LCSD 580-227089/6

Matrix: Water

Analysis Batch: 227089

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

<i>Surrogate</i>	<i>LCS D</i> <i>%Recovery</i>	<i>LCS D</i> <i>Qualifier</i>	<i>Limits</i>
<i>Trifluorotoluene (Surr)</i>	105		80 - 141

Lab Sample ID: 580-62238-2 MS

Matrix: Water

Analysis Batch: 227089

Client Sample ID: C-MW-03

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dibromoethane	ND	F1	10.0	13.7	F1	ug/L		136	66 - 133
1,2-DCA	ND		10.0	12.5		ug/L		123	58 - 143
Benzene	ND	F1	10.0	11.9		ug/L		119	80 - 120
DIPE	ND		12.5	14.7		ug/L		118	51 - 150
Ethyl-t-butyl ether (ETBE)	ND		12.5	13.9		ug/L		111	73 - 116
Ethylbenzene	ND		10.0	10.9		ug/L		109	75 - 119
MTBE	ND	F1	10.0	12.4		ug/L		124	65 - 125
m-Xylene & p-Xylene	ND		10.0	11.3		ug/L		112	75 - 119
Naphthalene	3.2	F1 *	10.0	20.8	F1	ug/L		176	55 - 134
o-Xylene	ND		10.0	11.1		ug/L		111	74 - 120
t-Butyl alcohol	ND	F1 *	100	156	F1	ug/L		156	20 - 150
Tert-amyl methyl ether	ND		12.5	14.6		ug/L		117	75 - 125
Toluene	ND		10.0	11.4		ug/L		114	75 - 120
Xylenes, Total	ND		20.0	22.4		ug/L		112	75 - 119

<i>Surrogate</i>	<i>MS</i> <i>%Recovery</i>	<i>MS</i> <i>Qualifier</i>	<i>Limits</i>
<i>1,2-Dichloroethane-d4 (Surr)</i>	111		65 - 143
<i>4-Bromofluorobenzene (Surr)</i>	111		75 - 125
<i>Dibromofluoromethane (Surr)</i>	101		77 - 118
<i>Toluene-d8 (Surr)</i>	100		82 - 122
<i>Trifluorotoluene (Surr)</i>	106		80 - 141

Lab Sample ID: 580-62238-2 MSD

Matrix: Water

Analysis Batch: 227089

Client Sample ID: C-MW-03

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,2-Dibromoethane	ND	F1	10.0	13.2		ug/L		132	66 - 133	3	35
1,2-DCA	ND		10.0	12.7		ug/L		125	58 - 143	2	35
Benzene	ND	F1	10.0	12.2	F1	ug/L		121	80 - 120	2	35
DIPE	ND		12.5	14.5		ug/L		116	51 - 150	2	35
Ethyl-t-butyl ether (ETBE)	ND		12.5	13.9		ug/L		111	73 - 116	0	35
Ethylbenzene	ND		10.0	11.0		ug/L		109	75 - 119	0	35
MTBE	ND	F1	10.0	13.4	F1	ug/L		134	65 - 125	8	35
m-Xylene & p-Xylene	ND		10.0	11.2		ug/L		112	75 - 119	0	35
Naphthalene	3.2	F1 *	10.0	20.1	F1	ug/L		169	55 - 134	3	35
o-Xylene	ND		10.0	11.0		ug/L		110	74 - 120	1	35
t-Butyl alcohol	ND	F1 *	100	148		ug/L		148	20 - 150	6	35
Tert-amyl methyl ether	ND		12.5	15.2		ug/L		122	75 - 125	4	35
Toluene	ND		10.0	11.6		ug/L		116	75 - 120	1	35
Xylenes, Total	ND		20.0	22.2		ug/L		111	75 - 119	1	35

TestAmerica Seattle

QC Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Surrogate	MSD %Recovery	MSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	110		65 - 143
4-Bromofluorobenzene (Surr)	108		75 - 125
Dibromofluoromethane (Surr)	101		77 - 118
Toluene-d8 (Surr)	96		82 - 122
Trifluorotoluene (Surr)	107		80 - 141

Lab Sample ID: MB 580-227394/4
Matrix: Water
Analysis Batch: 227394

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	ND		2.0		ug/L			09/13/16 16:28	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		65 - 143		09/13/16 16:28	1
4-Bromofluorobenzene (Surr)	99		75 - 125		09/13/16 16:28	1
Dibromofluoromethane (Surr)	99		77 - 118		09/13/16 16:28	1
Toluene-d8 (Surr)	104		82 - 122		09/13/16 16:28	1
Trifluorotoluene (Surr)	103		80 - 141		09/13/16 16:28	1

Lab Sample ID: LCS 580-227394/5
Matrix: Water
Analysis Batch: 227394

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Naphthalene	10.0	9.16		ug/L		91	55 - 134

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		65 - 143
4-Bromofluorobenzene (Surr)	98		75 - 125
Dibromofluoromethane (Surr)	101		77 - 118
Toluene-d8 (Surr)	100		82 - 122
Trifluorotoluene (Surr)	100		80 - 141

Lab Sample ID: LCSD 580-227394/6
Matrix: Water
Analysis Batch: 227394

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	10.0	9.49		ug/L		95	55 - 134	4	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		65 - 143
4-Bromofluorobenzene (Surr)	98		75 - 125
Dibromofluoromethane (Surr)	99		77 - 118
Toluene-d8 (Surr)	99		82 - 122
Trifluorotoluene (Surr)	99		80 - 141

QC Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Lab Sample ID: MB 490-369438/4

Matrix: Water

Analysis Batch: 369438

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		10		mg/L			09/12/16 14:44	1
Methanol	ND		10		mg/L			09/12/16 14:44	1
Surrogate	%Recovery	MB Qualifier	Limits			D	Prepared	Analyzed	Dil Fac
Isopropyl acetate (Surr)	109		52 - 128					09/12/16 14:44	1

Lab Sample ID: LCS 490-369438/5

Matrix: Water

Analysis Batch: 369438

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethanol	50.0	52.0		mg/L		104	70 - 130
Methanol	50.0	51.6		mg/L		103	70 - 130
Surrogate	%Recovery	LCS Qualifier	Limits			D	%Rec. Limits
Isopropyl acetate (Surr)	99		52 - 128				

Lab Sample ID: 580-62238-1 MS

Matrix: Water

Analysis Batch: 369438

Client Sample ID: C-MW-02

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethanol	ND		50.0	51.8		mg/L		104	65 - 130
Methanol	ND		50.0	51.1		mg/L		102	64 - 138
Surrogate	%Recovery	MS Qualifier	Limits			D	%Rec	%Rec. Limits	
Isopropyl acetate (Surr)	71		52 - 128						

Lab Sample ID: 580-62238-1 MSD

Matrix: Water

Analysis Batch: 369438

Client Sample ID: C-MW-02

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethanol	ND		50.0	50.5		mg/L		101	65 - 130	2	11
Methanol	ND		50.0	50.8		mg/L		102	64 - 138	1	21
Surrogate	%Recovery	MSD Qualifier	Limits			D	%Rec	%Rec. Limits	RPD	RPD Limit	
Isopropyl acetate (Surr)	80		52 - 128								

Lab Sample ID: MB 490-370398/4

Matrix: Water

Analysis Batch: 370398

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethanol	ND		10		mg/L			09/15/16 12:59	1
Methanol	ND		10		mg/L			09/15/16 12:59	1

TestAmerica Seattle

QC Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection) (Continued)

Lab Sample ID: MB 490-370398/4
Matrix: Water
Analysis Batch: 370398

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

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Isopropyl acetate (Surr)	73		52 - 128		09/15/16 12:59	1

Lab Sample ID: LCS 490-370398/5
Matrix: Water
Analysis Batch: 370398

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methanol	50.0	48.9		mg/L		98	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Isopropyl acetate (Surr)	72		52 - 128

Lab Sample ID: LCSD 490-370398/6
Matrix: Water
Analysis Batch: 370398

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
Ethanol	50.0	55.2		mg/L		110	70 - 130	9	11
Methanol	50.0	53.0		mg/L		106	70 - 130	8	21

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
Isopropyl acetate (Surr)	89		52 - 128

Lab Sample ID: 580-62238-10 MS
Matrix: Water
Analysis Batch: 370398

Client Sample ID: C-MW-12D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methanol	ND	H	50.0	53.8		mg/L		108	64 - 138

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
Isopropyl acetate (Surr)	102		52 - 128

Lab Sample ID: 580-62238-10 MSD
Matrix: Water
Analysis Batch: 370398

Client Sample ID: C-MW-12D
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	
										RPD	Limit
Ethanol	ND	H	50.0	50.4		mg/L		101	65 - 130	11	11
Methanol	ND	H	50.0	48.7		mg/L		97	64 - 138	10	21

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
Isopropyl acetate (Surr)	93		52 - 128

TestAmerica Seattle

QC Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

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

Lab Sample ID: MB 580-226837/5

Matrix: Water

Analysis Batch: 226837

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			09/07/16 12:02	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150		09/07/16 12:02	1
Trifluorotoluene (Surr)	95		50 - 150		09/07/16 12:02	1

Lab Sample ID: LCS 580-226837/6

Matrix: Water

Analysis Batch: 226837

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1.16	1.04		mg/L		90	79 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		50 - 150
Trifluorotoluene (Surr)	94		50 - 150

Lab Sample ID: LCSD 580-226837/7

Matrix: Water

Analysis Batch: 226837

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1.16	1.05		mg/L		90	79 - 110	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		50 - 150
Trifluorotoluene (Surr)	97		50 - 150

Lab Sample ID: MB 580-226986/5

Matrix: Water

Analysis Batch: 226986

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.050		mg/L			09/08/16 16:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		50 - 150		09/08/16 16:56	1
Trifluorotoluene (Surr)	91		50 - 150		09/08/16 16:56	1

Lab Sample ID: LCS 580-226986/6

Matrix: Water

Analysis Batch: 226986

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1.16	1.03		mg/L		88	79 - 110

TestAmerica Seattle

QC Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

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

Lab Sample ID: LCS 580-226986/6
Matrix: Water
Analysis Batch: 226986

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

Surrogate	LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	100		50 - 150
Trifluorotoluene (Surr)	94		50 - 150

Lab Sample ID: LCSD 580-226986/7
Matrix: Water
Analysis Batch: 226986

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1.16	1.04		mg/L		89	79 - 110	1	20

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	100		50 - 150
Trifluorotoluene (Surr)	94		50 - 150

Method: RSK-175 - Dissolved Gases (GC)

Lab Sample ID: MB 490-369539/9
Matrix: Water
Analysis Batch: 369539

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methane	ND		0.0050		mg/L			09/12/16 19:53	1

Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Acetylene (Surr)	77		62 - 124		09/12/16 19:53	1

Lab Sample ID: LCS 490-369539/10
Matrix: Water
Analysis Batch: 369539

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methane	0.279	0.268		mg/L		96	80 - 120

Surrogate	LCS		Limits
	%Recovery	Qualifier	
Acetylene (Surr)	107		62 - 124

Lab Sample ID: LCSD 490-369539/11
Matrix: Water
Analysis Batch: 369539

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
Methane	0.279	0.259		mg/L		93	80 - 120	4	33

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
Acetylene (Surr)	104		62 - 124

TestAmerica Seattle

QC Sample Results

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-227221/1-A
Matrix: Water
Analysis Batch: 227232

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 227221

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.11		mg/L		09/12/16 10:20	09/12/16 17:25	1
Motor Oil (>C24-C36)	ND		0.25		mg/L		09/12/16 10:20	09/12/16 17:25	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
<i>o</i> -Terphenyl	83		50 - 150				09/12/16 10:20	09/12/16 17:25	1

Lab Sample ID: LCS 580-227221/2-A
Matrix: Water
Analysis Batch: 227232

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 227221

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
#2 Diesel (C10-C24)	2.01	1.74		mg/L		86	59 - 120		
Motor Oil (>C24-C36)	2.01	1.87		mg/L		93	53 - 129		
Surrogate	%Recovery	LCS Qualifier	Limits						
<i>o</i> -Terphenyl	92		50 - 150						

Lab Sample ID: LCSD 580-227221/3-A
Matrix: Water
Analysis Batch: 227232

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 227221

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
#2 Diesel (C10-C24)	2.01	1.61		mg/L		80	59 - 120	8	27
Motor Oil (>C24-C36)	2.01	1.68		mg/L		83	53 - 129	11	19
Surrogate	%Recovery	LCSD Qualifier	Limits						
<i>o</i> -Terphenyl	78		50 - 150						

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: LCS 580-227168/15-A
Matrix: Water
Analysis Batch: 227302

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 227168

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits		
Manganese	0.100	0.0951		mg/L		95	85 - 115		

Lab Sample ID: LCSD 580-227168/16-A
Matrix: Water
Analysis Batch: 227302

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 227168

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Manganese	0.100	0.0970		mg/L		97	85 - 115	2	20

TestAmerica Seattle

QC Sample Results

Client: Tesoro Logistics Operations LLC
 Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: MB 580-226917/11-B
Matrix: Water
Analysis Batch: 227302

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 227168

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Manganese	ND		0.020		mg/L		09/09/16 18:14	09/12/16 17:37	1

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 580-226989/10
Matrix: Water
Analysis Batch: 226989

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	ND		1.2		mg/L			09/07/16 09:36	1

Lab Sample ID: LCS 580-226989/11
Matrix: Water
Analysis Batch: 226989

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Sulfate	50.0	47.3		mg/L		95	90 - 110

Lab Sample ID: LCSD 580-226989/12
Matrix: Water
Analysis Batch: 226989

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
Sulfate	50.0	47.5		mg/L		95	90 - 110	0	15

Lab Chronicle

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-02

Date Collected: 08/29/16 16:00

Date Received: 09/01/16 13:30

Lab Sample ID: 580-62238-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	227089	09/09/16 22:02	CJ	TAL SEA
Total/NA	Analysis	8015C		1	369438	09/12/16 18:30	SH	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	226837	09/07/16 14:11	D1R	TAL SEA
Total/NA	Analysis	RSK-175		1	369539	09/12/16 22:55	SH	TAL NSH
Total/NA	Prep	3510C			227221	09/12/16 10:20	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	227232	09/12/16 18:28	CJ	TAL SEA
Dissolved	Filtration	FILTRATION			226917	09/07/16 15:26	PAB	TAL SEA
Dissolved	Prep	200.7			227168	09/09/16 18:14	PAB	TAL SEA
Dissolved	Analysis	200.7 Rev 4.4		1	227302	09/12/16 18:16	HJM	TAL SEA
Total/NA	Analysis	300.0		10	226989	09/08/16 09:50	RSB	TAL SEA

Client Sample ID: C-MW-03

Date Collected: 08/30/16 15:49

Date Received: 09/01/16 13:30

Lab Sample ID: 580-62238-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	227089	09/09/16 22:30	CJ	TAL SEA
Total/NA	Analysis	8260C	RA	1	227394	09/13/16 17:55	W1T	TAL SEA
Total/NA	Analysis	8015C		1	369438	09/12/16 15:46	SH	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	226837	09/07/16 14:43	D1R	TAL SEA
Total/NA	Prep	3510C			227221	09/12/16 10:20	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	227232	09/12/16 18:50	CJ	TAL SEA

Client Sample ID: C-MW-04

Date Collected: 08/30/16 11:16

Date Received: 09/01/16 13:30

Lab Sample ID: 580-62238-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	227089	09/09/16 20:08	CJ	TAL SEA
Total/NA	Analysis	8015C		1	369438	09/12/16 15:52	SH	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	226986	09/08/16 20:09	W1T	TAL SEA
Total/NA	Prep	3510C			227221	09/12/16 10:20	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	227232	09/12/16 19:33	CJ	TAL SEA

Client Sample ID: C-MW-06

Date Collected: 08/30/16 13:00

Date Received: 09/01/16 13:30

Lab Sample ID: 580-62238-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	227089	09/09/16 21:33	CJ	TAL SEA
Total/NA	Analysis	8015C		1	369438	09/12/16 15:59	SH	TAL NSH

TestAmerica Seattle

Lab Chronicle

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-06

Lab Sample ID: 580-62238-4

Date Collected: 08/30/16 13:00

Matrix: Water

Date Received: 09/01/16 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Gx		1	226837	09/07/16 15:47	D1R	TAL SEA
Total/NA	Analysis	RSK-175		1	369539	09/12/16 21:28	SH	TAL NSH
Total/NA	Prep	3510C			227221	09/12/16 10:20	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	227232	09/12/16 19:54	CJ	TAL SEA
Dissolved	Filtration	FILTRATION			226917	09/07/16 15:26	PAB	TAL SEA
Dissolved	Prep	200.7			227168	09/09/16 18:14	PAB	TAL SEA
Dissolved	Analysis	200.7 Rev 4.4		1	227302	09/12/16 18:19	HJM	TAL SEA
Total/NA	Analysis	300.0		10	226989	09/08/16 10:08	RSB	TAL SEA

Client Sample ID: C-MW-07

Lab Sample ID: 580-62238-5

Date Collected: 08/30/16 10:14

Matrix: Water

Date Received: 09/01/16 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	227089	09/09/16 20:37	CJ	TAL SEA
Total/NA	Analysis	8015C		1	369438	09/12/16 16:05	SH	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	226837	09/07/16 16:19	D1R	TAL SEA
Total/NA	Prep	3510C			227221	09/12/16 10:20	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	227232	09/12/16 20:15	CJ	TAL SEA

Client Sample ID: C-MW-08

Lab Sample ID: 580-62238-6

Date Collected: 08/30/16 14:31

Matrix: Water

Date Received: 09/01/16 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	227089	09/09/16 21:05	CJ	TAL SEA
Total/NA	Analysis	8015C		1	369438	09/12/16 18:36	SH	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	226837	09/07/16 16:51	D1R	TAL SEA
Total/NA	Analysis	RSK-175		1	369539	09/12/16 21:32	SH	TAL NSH
Total/NA	Prep	3510C			227221	09/12/16 10:20	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	227232	09/12/16 20:37	CJ	TAL SEA
Dissolved	Filtration	FILTRATION			226917	09/07/16 15:26	PAB	TAL SEA
Dissolved	Prep	200.7			227168	09/09/16 18:14	PAB	TAL SEA
Dissolved	Analysis	200.7 Rev 4.4		1	227302	09/12/16 18:23	HJM	TAL SEA
Total/NA	Analysis	300.0		10	226989	09/08/16 10:26	RSB	TAL SEA

Client Sample ID: C-MW-10

Lab Sample ID: 580-62238-7

Date Collected: 08/30/16 09:12

Matrix: Water

Date Received: 09/01/16 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	227089	09/09/16 19:40	CJ	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-10

Date Collected: 08/30/16 09:12

Date Received: 09/01/16 13:30

Lab Sample ID: 580-62238-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015C		1	369438	09/12/16 16:17	SH	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	226837	09/07/16 17:56	D1R	TAL SEA
Total/NA	Prep	3510C			227221	09/12/16 10:20	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	227232	09/12/16 20:58	CJ	TAL SEA

Client Sample ID: C-MW-11

Date Collected: 08/29/16 12:00

Date Received: 09/01/16 13:30

Lab Sample ID: 580-62238-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	227041	09/09/16 07:16	STA	TAL SEA
Total/NA	Analysis	8015C		1	369438	09/12/16 16:23	SH	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	226837	09/07/16 18:28	D1R	TAL SEA
Total/NA	Prep	3510C			227221	09/12/16 10:20	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	227232	09/12/16 21:19	CJ	TAL SEA

Client Sample ID: C-MW-12

Date Collected: 08/29/16 14:02

Date Received: 09/01/16 13:30

Lab Sample ID: 580-62238-9

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	227041	09/09/16 07:44	STA	TAL SEA
Total/NA	Analysis	8015C		1	369438	09/12/16 16:29	SH	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	226837	09/07/16 19:00	D1R	TAL SEA
Total/NA	Analysis	RSK-175		1	369539	09/12/16 21:37	SH	TAL NSH
Total/NA	Analysis	RSK-175		2	369539	09/12/16 21:41	SH	TAL NSH
Total/NA	Prep	3510C			227221	09/12/16 10:20	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	227232	09/12/16 21:40	CJ	TAL SEA
Dissolved	Filtration	FILTRATION			226917	09/07/16 15:26	PAB	TAL SEA
Dissolved	Prep	200.7			227168	09/09/16 18:14	PAB	TAL SEA
Dissolved	Analysis	200.7 Rev 4.4		1	227302	09/12/16 18:26	HJM	TAL SEA
Total/NA	Analysis	300.0		1	226989	09/07/16 17:40	RSB	TAL SEA

Client Sample ID: C-MW-12D

Date Collected: 08/29/16 14:02

Date Received: 09/01/16 13:30

Lab Sample ID: 580-62238-10

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	227041	09/09/16 08:41	STA	TAL SEA
Total/NA	Analysis	8015C		1	370398	09/15/16 13:41	SH	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	226837	09/07/16 19:32	D1R	TAL SEA
Total/NA	Prep	3510C			227221	09/12/16 10:20	JCV	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Client Sample ID: C-MW-12D

Lab Sample ID: 580-62238-10

Date Collected: 08/29/16 14:02

Matrix: Water

Date Received: 09/01/16 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	NWTPH-Dx		1	227232	09/12/16 22:01	CJ	TAL SEA

Client Sample ID: C-MW-14

Lab Sample ID: 580-62238-11

Date Collected: 08/29/16 10:35

Matrix: Water

Date Received: 09/01/16 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	227041	09/09/16 09:10	STA	TAL SEA
Total/NA	Analysis	8015C		1	369438	09/12/16 16:35	SH	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	226837	09/07/16 20:05	D1R	TAL SEA
Total/NA	Prep	3510C			227221	09/12/16 10:20	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	227232	09/12/16 22:22	CJ	TAL SEA

Client Sample ID: C-EB

Lab Sample ID: 580-62238-12

Date Collected: 08/29/16 15:05

Matrix: Water

Date Received: 09/01/16 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	227041	09/09/16 08:13	STA	TAL SEA
Total/NA	Analysis	8015C		1	369438	09/12/16 16:41	SH	TAL NSH
Total/NA	Analysis	NWTPH-Gx		1	226837	09/07/16 20:37	D1R	TAL SEA
Total/NA	Prep	3510C			227221	09/12/16 10:20	JCV	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	227232	09/12/16 22:42	CJ	TAL SEA

Client Sample ID: Trip Blank

Lab Sample ID: 580-62238-13

Date Collected: 08/29/16 00:00

Matrix: Water

Date Received: 09/01/16 13:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260C		1	227041	09/09/16 02:02	STA	TAL SEA

Laboratory References:

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

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

Certification Summary

Client: Tesoro Logistics Operations LLC
 Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Laboratory: TestAmerica Seattle

Unless otherwise noted, all analytes for this laboratory were covered under each certification below.

Authority	Program	EPA Region	Certification ID	Expiration Date
Washington	State Program	10	C553	02-17-17

The following analytes are included in this report, but certification is not offered by the governing authority:

Analysis Method	Prep Method	Matrix	Analyte
8260C		Water	t-Butyl alcohol
8260C		Water	Xylenes, Total

Laboratory: TestAmerica Nashville

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

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	A2LA		NA: NELAP & A2LA	12-31-17
A2LA	ISO/IEC 17025		0453.07	12-31-17
Alaska (UST)	State Program	10	UST-087	07-24-17
Arizona	State Program	9	AZ0473	05-05-17
Arkansas DEQ	State Program	6	88-0737	04-25-17
California	State Program	9	2938	10-31-16
Connecticut	State Program	1	PH-0220	12-31-17
Florida	NELAP	4	E87358	06-30-17
Georgia	State Program	4	N/A	12-31-17
Illinois	NELAP	5	200010	12-09-16 *
Iowa	State Program	7	131	04-01-18
Kansas	NELAP	7	E-10229	10-31-16 *
Kentucky (UST)	State Program	4	19	06-30-17
Kentucky (WW)	State Program	4	90038	12-31-16
Louisiana	NELAP	6	30613	06-30-17
Maine	State Program	1	TN00032	11-03-17
Maryland	State Program	3	316	03-31-17
Massachusetts	State Program	1	M-TN032	06-30-17
Minnesota	NELAP	5	047-999-345	12-31-16 *
Mississippi	State Program	4	N/A	06-30-16 *
Montana (UST)	State Program	8	NA	02-24-20
Nevada	State Program	9	TN00032	07-31-17
New Hampshire	NELAP	1	2963	10-09-16 *
New Jersey	NELAP	2	TN965	06-30-17
New York	NELAP	2	11342	03-31-17
North Carolina (WW/SW)	State Program	4	387	12-31-16
North Dakota	State Program	8	R-146	06-30-17
Ohio VAP	State Program	5	CL0033	07-10-17
Oklahoma	State Program	6	9412	08-31-17
Oregon	NELAP	10	TN200001	04-27-17
Pennsylvania	NELAP	3	68-00585	06-30-17
Rhode Island	State Program	1	LAO00268	12-30-16
South Carolina	State Program	4	84009 (001)	02-28-16 *
South Carolina (Do Not Use - DW)	State Program	4	84009 (002)	12-16-17
Tennessee	State Program	4	2008	02-23-17
Texas	NELAP	6	T104704077	08-31-17
USDA	Federal		S-48469	10-30-16
Utah	NELAP	8	TN00032	07-31-17
Virginia	NELAP	3	460152	06-14-17
Washington	State Program	10	C789	07-19-16 *

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Laboratory: TestAmerica Nashville (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
West Virginia DEP	State Program	3	219	02-28-17
Wisconsin	State Program	5	998020430	08-31-17
Wyoming (UST)	A2LA	8	453.07	12-31-17

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Sample Summary

Client: Tesoro Logistics Operations LLC
Project/Site: Tesoro Pasco

TestAmerica Job ID: 580-62238-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-62238-1	C-MW-02	Water	08/29/16 16:00	09/01/16 13:30
580-62238-2	C-MW-03	Water	08/30/16 15:49	09/01/16 13:30
580-62238-3	C-MW-04	Water	08/30/16 11:16	09/01/16 13:30
580-62238-4	C-MW-06	Water	08/30/16 13:00	09/01/16 13:30
580-62238-5	C-MW-07	Water	08/30/16 10:14	09/01/16 13:30
580-62238-6	C-MW-08	Water	08/30/16 14:31	09/01/16 13:30
580-62238-7	C-MW-10	Water	08/30/16 09:12	09/01/16 13:30
580-62238-8	C-MW-11	Water	08/29/16 12:00	09/01/16 13:30
580-62238-9	C-MW-12	Water	08/29/16 14:02	09/01/16 13:30
580-62238-10	C-MW-12D	Water	08/29/16 14:02	09/01/16 13:30
580-62238-11	C-MW-14	Water	08/29/16 10:35	09/01/16 13:30
580-62238-12	C-EB	Water	08/29/16 15:05	09/01/16 13:30
580-62238-13	Trip Blank	Water	08/29/16 00:00	09/01/16 13:30

TestAmerica Seattle

5755 8th Street East
Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client Information				Sampler: <u>Reed</u>		Lab PM: Escarez, Christabel C		Carrier Tracking No(s):		COC No: 580-20652-6943.2									
Client Contact: Michael Hodges				Phone: <u>415/359-6453</u>		E-Mail: christabel.escarez@testamericainc.com				Page: 1 of 2 Page <u>1022</u>									
Company: CEECON Testing, Inc.				Analysis Requested								Job #:							
Address: 434 North Canal Street, Suite Six												Due Date Requested:		Preservation Codes:					
City: South San Francisco				TAT Requested (days):		A - HCL		M - Hexane		B - NaOH		N - None							
State, Zip: CA, 94080				PO #: 4502279440		C - Zn Acetate		O - AsNaO2		D - Nitric Acid		P - Na2O4S							
Phone: 253-896-8708(Tel)				WO #:		E - NaHSO4		Q - Na2SO3		F - MeOH		R - Na2S2O3							
Email: ceecon@msn.com				Project #: 58009424		G - Amchlor		S - H2SO4		H - Ascorbic Acid		T - TSP Dodecahydrate							
Project Name: Pasco Sampling Event				SSOW#:		I - Ice		U - Acetone		J - DI Water		V - MCAA							
Site: Washington						K - EDTA		W - ph 4-5		L - EDA		Z - other (specify)							
						Other:													
Sample Identification				Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers		Special Instructions/Note:	
C-MW-02				8/29/16		4:00		Water		Water		X		X		A			
C-MW-03				9/30/16		3:49		Water		Water		X		X		A			
C-MW-04				8/30/16		11:16		Water		Water		X		X		A			
C-MW-06-				8/30/16		1:00		Water		Water		X		X		A			
C-MW-07-				8/30/16		10:14		Water		Water		X		X		A			
C-MW-08-				8/30/16		2:31		Water		Water		X		X		A			
C-MW-10-				8/30/16		9:12		Water		Water		X		X		A			
C-MW-11-				8/29/16		12:00		Water		Water		X		X		A			
C-MW-12-				8/29/16		2:02		Water		Water		X		X		A			
C-MW-12D-				8/29/16		2:02		Water		Water		X		X		A			
C-MW-14-				8/29/16		10:35		Water		Water		X		X		A			
Possible Hazard Identification				<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological				Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)											
Deliverable Requested: I, II, III, IV, Other (specify)								<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months											
Empty Kit Relinquished by:				Date:				Time:				Method of Shipment:							
Relinquished by: <u>Michael Hodges</u>				Date/Time: <u>9-1-2016 1:30</u>				Company: <u>CEECON</u>				Received by: <u>Tom Blount</u>							
Relinquished by:				Date/Time:				Company:				Received by:							
Relinquished by:				Date/Time:				Company:				Received by:							
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No				Custody Seal No.:				Cooler Temperature(s) °C and Other Remarks:											



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TestAmerica Seattle

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Tacoma, WA 98424
Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

Client Information		Sampler: <u>Reed</u>	Lab PM: Escarez, Christabel C	Carrier Tracking No(s):	COC No: 580-20652-6943.3
Client Contact: Michael Hodges		Phone: <u>415/359-6453</u>	E-Mail: christabel.escarez@testamericainc.com		Page: 2 of 2
Company: CEECON Testing, Inc.					Job #:

Address: 434 North Canal Street, Suite Six		Due Date Requested:		Analysis Requested												Preservation Codes:		
City: South San Francisco		TAT Requested (days):		Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	NWTPH_Dx wr silica gel 9/16/16	8015C_DAI (Ethanol, Methanol)	8260C (BTX, MTBE, DIPE, ETBE, TAME, TBA, 1,2-DCA, 1,2-EDB, Naph)	NWTPH_Gx	300.0 (Sulfate)	200.7 Diss Manganese (Lab Filter)	RSK_175 - Methane	2320B, Alkalinity	200.7_CWA - Manganese	Total Number of containers	A - HCL		M - Hexane
State, Zip: CA, 94080		PO #: 4502279440														B - NaOH		N - None
Phone: 253-896-8708(Tel)		WO #:														C - Zn Acetate		O - AsNaO2
Email: ceecon@msn.com		Project #: 58009424														D - Nitric Acid		P - Na2O4S
Project Name: Pasco Sampling Event		SSOW#:														E - NaHSO4		Q - Na2SO3
Site: Washington																F - MeOH		R - Na2S2O3

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	NWTPH_Dx wr silica gel 9/16/16	8015C_DAI (Ethanol, Methanol)	8260C (BTX, MTBE, DIPE, ETBE, TAME, TBA, 1,2-DCA, 1,2-EDB, Naph)	NWTPH_Gx	300.0 (Sulfate)	200.7 Diss Manganese (Lab Filter)	RSK_175 - Methane	2320B, Alkalinity	200.7_CWA - Manganese	Total Number of containers	Preservation Codes:	
																	A	M
C-EB-	8/24/16	3:05		Water	X	X	X	X	X	N	N	N	N					
				Water														
				Water														
				Water														
				Water														
				Water														

TB A2 Cooler Cor 1.6 Unc 1.8 - TB A2 Cooler Cor 0.0 Unc 0.2
 Cooler Dsc by B/W @ Lab - Cooler Dsc by B/W @ Lab
 Wet/Packs Packing Bubble - Wet/Packs Packing Bubble
 Cl: do W/c
 TB A2 Cooler Cor 0.0 Unc 0.2 - TB A2 Cooler Cor 0.1 Unc 0.3
 Cooler Dsc by B/W @ Lab - Cooler Dsc by B/W @ Lab
 Wet/Packs Packing Bubble - Wet/Packs Packing Bubble
 Cl: do W/c
 Cl: do W/c

Possible Hazard Identification		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
<input checked="" type="checkbox"/> Non-Hazard	<input type="checkbox"/> Flammable	<input type="checkbox"/> Skin Irritant	<input type="checkbox"/> Poison B
<input type="checkbox"/> Unknown	<input type="checkbox"/> Radiological	<input type="checkbox"/> Return To Client	
Deliverable Requested: I, II, III, IV, Other (specify)		<input type="checkbox"/> Disposal By Lab	
Empty Kit Relinquished by: _____ Date: _____		<input type="checkbox"/> Archive For _____ Months	

Relinquished by: <u>Michael Hodges</u>	Date/Time: <u>9/1/2016 1:50pm</u>	Company: <u>CEECON</u>	Received by: <u>Tom Blunt</u>	Date/Time: <u>9/1/16 1330</u>	Company: _____
Relinquished by: _____	Date/Time: _____	Company: _____	Received by: _____	Date/Time: _____	Company: _____
Relinquished by: _____	Date/Time: _____	Company: _____	Received by: _____	Date/Time: _____	Company: _____

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.: _____	Cooler Temperature(s) °C and Other Remarks: _____
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COOLER RECEIPT FORM



Cooler Received/Opened On 9/8/2016 @ 0930

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

1. Tracking # 8150 (last 4 digits, FedEx) Courier: FedEx

IR Gun ID 17960357 pH Strip Lot HC564992 Chlorine Strip Lot 012516A

2. Temperature of rep. sample or temp blank when opened: 2.1 Degrees Celsius

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

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

If yes, how many and where: 1 Front

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

TestAmerica Seattle

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Chain of Custody Record

Loc: 580
62238



LEADERS IN ENVIRONMENTAL TESTING

No: 40591.1

Page: Page 1 of 2

Job #: 580-62238-1

Client Information (Sub Contract Lab)

Client Contact: _____
Shipping/Receiving: _____
Company: TestAmerica Laboratories, Inc
Address: 2960 Foster Creighton Drive,
City: Nashville
State Zip: TN, 37204
Phone: 615-726-0177 (tel) 615-726-3404 (Fax)
Email: _____
Project Name: Tesoro Pasco
Site: Pasco WA Bulk Terminal
Project #: 58009424
SSOW#: _____

Lab P/N: _____
Escrow: Christabel C
E-Mail: christabel_escrow@testamericainc.com

Analysis Requested

Due Date Requested: 9/14/2016
TAT Requested (days): _____

Preservation Codes:
A - HCL
B - NaOH
C - Zn Acetate
D - Nitric Acid
E - NaHSO4
F - MeOH
G - Amchlor
H - Ascorbic Acid
I - Ice
J - DI Water
K - EDTA
L - EDTA
M - Hexane
N - None
O - AsHClO2
P - Na2O4S
Q - Na2SO3
R - Na2S2O3
S - H2SO4
T - TSP Dodecahydrate
U - Acetone
V - MCAA
W - pH 4.5
Z - other (specify) _____

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Seawater, Urine, Blood, etc.)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015C_DAI/ (MOD) Alcohols	RSK_175/ Methane	Total Number of containers	Special Instructions/Note:
C-MMW-02 (580-62238-1)	8/29/16	16:00 Pacific		Water	X	X			6	
C-MMW-03 (580-62238-2)	8/30/16	15:49 Pacific		Water	X				3	
C-MMW-04 (580-62238-3)	8/30/16	11:16 Pacific		Water	X				3	
C-MMW-06 (580-62238-4)	8/30/16	13:00 Pacific		Water	X	X			6	
C-MMW-07 (580-62238-5)	8/30/16	10:14 Pacific		Water	X				3	
C-MMW-08 (580-62238-6)	8/30/16	14:31 Pacific		Water	X	X			6	
C-MMW-10 (580-62238-7)	8/30/16	09:12 Pacific		Water	X				3	
C-MMW-11 (580-62238-8)	8/29/16	12:00 Pacific		Water	X				3	
C-MMW-12 (580-62238-9)	8/29/16	14:02 Pacific		Water	X	X			6	
C-MMW-12D (580-62238-10)	8/29/16	14:02 Pacific		Water	X				3	
C-MMW-14 (580-62238-11)	8/29/16	10:35 Pacific		Water	X				3	

Possible Hazard Identification

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: _____ Time: _____ Method of Shipment: _____

Relinquished by: *B. Stalle* Date/Time: *8-31-16 1337* Company: *SEHTA* Received by: *Christabel* Date/Time: *9/18/16* Company: *TAW*

Relinquished by:

Date/Time: _____ Company: _____ Received by: _____ Date/Time: _____ Company: _____

Custody Seals Intact:

Δ Yes Δ No Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: _____

TestAmerica Seattle

5755 8th Street East
 Tacoma, WA 98424
 Phone (253) 922-2310 Fax (253) 922-5047

Chain of Custody Record

LOC: 580
62238



Client Information (Sub Contract Lab)

Client Contact:
 Shipping/Receiving:
 Company: TestAmerica Laboratories, Inc

Sampler:
 Phone:
 Lab PI#: Escarez, Christabel C
 E-Mail: christabel.escarez@testamericainc.com
 Name:
 Analysis Requested

COC No: 580-40591.2
 Page: Page 2 of 2
 Job #: 580-62238-1

Address: 2960 Foster Creighton Drive,
 City: Nashville
 State Zip: TN, 37204

Due Date Requested: 9/14/2016
 TAT Requested (days):

Project Name: Tesoro Pasco
 Project #: 58009424
 Site: Pasco WA Bulk Terminal
 SOW#:

Phone: 615-726-0177 (Tel) 615-726-3404 (Fax)
 Email:

PO #:
 WOI #:

Preservation Codes:
 A - HCl
 B - NaOH
 C - Zn Acetate
 D - Nitric Acid
 E - NH4SO4
 F - MeOH
 G - Acetic Acid
 H - Ascorbic Acid
 I - Ice
 J - DI Water
 K - EDTA
 L - EDTA
 M - Hexane
 N - None
 O - AsHAcO2
 P - Na2CO3
 Q - Na2SO3
 R - Na2S2O3
 S - H2SO4
 T - TSP Dodecylhydrate
 U - Acetone
 V - MCAA
 W - pH 4.5
 Z - other (specify)

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=material, B=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015C_DAI (MOD) Alcohols	RSK_175/ Methane	Total Number of containers	Special Instructions/Note:
C-EB (580-62238-12)	8/29/16	15:05 Pacific		Water	X				3	
Trip Blank (580-62238-13)	8.29.16	12am		Water					3	

Possible Hazard Identification
 Deliverable Requested: I, II, III, IV, Other (specify) _____
 Primary Deliverable Rank: 2

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/OC Requirements:

Relinquished by: B. Stull Date/Time: 9.7.16 1337 Company: SEATA Received by: [Signature] Date/Time: 9/5/16 Company: TAN

Relinquished by: _____ Date/Time: _____ Company: _____ Received by: _____ Date/Time: _____ Company: _____

Relinquished by: _____ Date/Time: _____ Company: _____ Received by: _____ Date/Time: _____ Company: _____

Custody Seals Intact: Yes No Custody Seal No.: _____ Cooler Temperature(s) °C and Other Remarks: _____

Login Sample Receipt Checklist

Client: Tesoro Logistics Operations LLC

Job Number: 580-62238-1

Login Number: 62238
List Number: 1
Creator: Torres, Terri L

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
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.	False	Received Trip Blank(s) not listed on COC.
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	Refer to Job Narrative for details.
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	False	Refer to Job Narrative for details.
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	



Login Sample Receipt Checklist

Client: Tesoro Logistics Operations LLC

Job Number: 580-62238-1

Login Number: 62238
List Number: 2
Creator: Gundi, Hozar K

List Source: TestAmerica Nashville
List Creation: 09/08/16 03:52 PM

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



Login Sample Receipt Checklist

Client: Tesoro Logistics Operations LLC

Job Number: 580-62238-1

Login Number: 62238

List Number: 3

Creator: Ford, Easton

List Source: TestAmerica Nashville

List Creation: 09/16/16 02:05 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	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	

