

ANNUAL GROUNDWATER MONITORING REPORT

Year of 2015

ARCO Facility No. 5300

710 15th Avenue, Longview, WA

Antea[®] Group Project No. 05300EA151

February 2, 2016

Prepared for:

Atlantic Richfield Company

4 Centerpointe Drive, Suite 200, Room LPR-4-222

La Palma, CA 90623

Prepared by:

Antea Group

4006 148th Avenue NE

Redmond, WA 98052

800 477 7411

ANNUAL GROUNDWATER MONITORING REPORT
Year of 2015
Atlantic Richfield Company
February 2, 2016

ARCO Facility No.: 5300

Address: 710 15th Avenue, Longview, WA

Atlantic Richfield Project Manager: Paul Supple

Consulting Co./Contact Person: Antea Group / Mackie Stock

Consultant Project Number: 05300EA151

Primary Agency/Regulatory FS ID No.: Washington State Department of Ecology / 41995646

WORK PERFORMED DURING THE YEAR OF 2015:

- Antea®Group (Antea Group) conducted semi-annual groundwater monitoring and sampling on February 25 and August 11, 2015.
- Antea Group prepared this Semi-Annual Groundwater Monitoring Report.

WORK SCHEDULED FOR FIRST HALF OF 2016:

- Antea Group will conduct quarterly groundwater monitoring and sampling.
- Antea Group will prepare a Semi-Annual Groundwater Monitoring Report.

Current Phase of Project:	Monitoring
Frequency of Groundwater Sampling and Monitoring:	Semi-Annual
Are LPH Present On-Site:	No
LPH Recovered this Reporting Period:	None
Cumulative LPH Recovered to Date:	None
Amount of Soil Removed to Date:	9.91 tons (Dispenser Upgrades – Antea Group, December 2010)
Current Remediation Techniques:	Natural Attenuation



Approximate Depth to Groundwater:	10.72 to 11.83 ft. (2/25/15); 11.74 to 12.75 ft. (8/11/15)
Groundwater Gradient:	West-Southwest
	0.009 ft./linear ft. (2/25/15)
	0.006 ft./linear ft. (8/11/15)

The recommendations contained in this report represent Antea USA, Inc.'s professional opinions based upon the currently available information and are arrived at in accordance with currently accepted professional standards. This report is based upon a specific scope of work requested by the client. The contract between Antea USA, Inc. and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Antea USA, Inc.'s client and anyone else specifically identified in writing by Antea USA, Inc. as a user of this report. Antea USA, Inc. will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Antea USA, Inc. makes no express or implied warranty as to the contents of this report.

Sincerely,

A handwritten signature in blue ink that reads "Lauren Hamilton".

Lauren Hamilton
Staff Professional

Date: February 2, 2016

Reviewed by:

A handwritten signature in blue ink that reads "Mackie Stock".

Mackie Stock
Project Manager

Date: February 2, 2016

cc: Mr. Paul Turner, Washington Department of Ecology, Southwest Regional Office
File, Antea Group

Enclosures

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Table 1	Groundwater Gauging Data
Table 2	Groundwater Analytical Data

TABLE 1
Groundwater Gauging Data
 Arco Facility 5300
 710 15th Avenue
 Longview, WA

Well I.D.	Date	GROUNDWATER ELEVATION DATA					
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers
MW-1	9/6/2012	99.90	11.57	NP	--	88.33	--
MW-1	12/14/2012	99.90	10.45	NP	--	89.45	--
MW-1	1/9/2013	99.90	10.42	NP	--	89.48	--
MW-1	5/29/2013	99.90	10.68	NP	--	89.22	--
MW-1	8/20/2013	99.90	11.45	NP	--	88.45	--
MW-1	11/13/2013	99.90	11.08	NP	--	88.82	--
MW-1	2/19/2014	99.90	10.54	NP	--	89.36	--
MW-1	4/23/2014	99.90	10.40	NP	--	89.50	--
MW-1	8/7/2014	99.90	11.28	NP	--	88.62	--
MW-1	11/19/2014	99.90	11.12	NP	--	88.78	--
MW-1	2/25/2015	99.90	10.72	NP	--	89.18	--
MW-1	8/11/2015	99.90	11.84	NP	--	88.06	--
MW-2	9/6/2012	99.72	11.43	NP	--	88.29	--
MW-2	12/14/2012	99.72	10.45	NP	--	89.27	--
MW-2	1/9/2013	99.72	10.38	NP	--	89.34	--
MW-2	5/29/2013	99.72	10.66	NP	--	89.06	--
MW-2	8/20/2013	99.72	11.35	NP	--	88.37	--
MW-2	11/13/2013	99.72	11.02	NP	--	88.70	--
MW-2	2/19/2014	99.72	10.49	NP	--	89.23	--
MW-2	4/23/2014	99.72	10.38	NP	--	89.34	--
MW-2	8/7/2014	99.72	11.22	NP	--	88.50	--
MW-2	11/19/2014	99.72	11.03	NP	--	88.69	--
MW-2	2/25/2015	99.72	10.72	NP	--	89.00	--
MW-2	8/11/2015	99.72	11.74	NP	--	87.98	--
MW-3	9/6/2012	99.68	11.63	NP	--	88.05	--
MW-3	12/14/2012	99.68	10.51	NP	--	89.17	--
MW-3	1/9/2013	99.68	10.45	NP	--	89.23	--
MW-3	5/29/2013	99.68	10.81	NP	--	88.87	--
MW-3	8/20/2013	99.68	11.55	NP	--	88.13	--
MW-3	11/13/2013	99.68	11.10	NP	--	88.58	--
MW-3	2/19/2014	99.68	10.01	NP	--	89.67	--
MW-3	4/23/2014	99.68	10.47	NP	--	89.21	--
MW-3	8/7/2014	99.68	11.36	NP	--	88.32	--

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Well I.D.	Date	GROUNDWATER ELEVATION DATA					
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers
MW-3	11/19/2014	99.68	11.10	NP	--	88.58	--
MW-3	2/25/2015	99.68	10.92	NP	--	88.76	--
MW-3	8/11/2015	99.68	11.94	NP	--	87.74	--
MW-4	9/6/2012	100.00	12.02	NP	--	87.98	--
MW-4	12/14/2012	100.00	11.03	NP	--	88.97	--
MW-4	1/9/2013	100.00	10.90	NP	--	89.10	--
MW-4	5/29/2013	100.00	11.28	NP	--	88.72	--
MW-4	8/20/2013	100.00	11.95	NP	--	88.05	--
MW-4	11/13/2013	100.00	11.69	NP	--	88.31	--
MW-4	2/19/2014	100.00	10.73	NP	--	89.27	--
MW-4	4/23/2014	100.00	11.14	NP	--	88.86	--
MW-4	8/7/2014	100.00	11.88	NP	--	88.12	--
MW-4	11/19/2014	100.00	11.71	NP	--	88.29	--
MW-4	2/25/2015	100.00	11.43	NP	--	88.57	--
MW-4	8/11/2015	100.00	12.25	NP	--	87.75	--
MW-6	8/20/2013	99.76	11.63	NP	--	88.13	--
MW-6	11/13/2013	99.76	11.43	NP	--	88.33	--
MW-6	2/19/2014	99.76	10.51	NP	--	89.25	--
MW-6	4/23/2014	99.76	10.68	NP	--	89.08	--
MW-6	8/7/2014	99.76	11.60	NP	--	88.16	--
MW-6	11/19/2014	99.73	11.35	NP	--	88.38	--
MW-6	2/25/2015	99.73	11.04	NP	--	88.69	--
MW-6	8/11/2015	99.73	12.00	NP	--	87.73	--
MW-7	8/20/2013	100.27	12.40	NP	--	87.87	--
MW-7	11/13/2013	100.27	12.09	NP	--	88.18	--
MW-7	2/19/2014	100.27	10.91	NP	--	89.36	--
MW-7	4/23/2014	100.27	11.52	NP	--	88.75	--
MW-7	8/7/2014	100.27	12.35	NP	--	87.92	--
MW-7	11/19/2014	100.27	12.09	NP	--	88.18	--
MW-7	2/25/2015	100.27	11.83	NP	--	88.44	--
MW-7	8/11/2015	100.27	12.75	NP	--	87.52	--

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Well I.D.	Date	GROUNDWATER ELEVATION DATA					
		TOC Elevation (ft)	Water Level Depth (ft)	LNAPL Depth (ft)	LNAPL Thickness (ft)	Water Level Elevation* (ft)	Qualifiers
MW-8	8/20/2013	100.00	12.04	NP	--	87.96	--
MW-8	11/13/2013	100.00	12.73	NP	--	87.27	--
MW-8	2/19/2014	100.00	10.29	NP	--	89.71	--
MW-8	4/23/2014	100.00	11.14	NP	--	88.86	--
MW-8	8/7/2014	100.00	11.94	NP	--	88.06	--
MW-8	11/19/2014	100.00	11.70	NP	--	88.30	--
MW-8	2/25/2015	100.00	11.50	NP	--	88.50	--
MW-8	8/11/2015	100.00	12.42	NP	--	87.58	--

Notes:

TOC - Top of Casing

ft - feet

NP - No Product

LNAPL - Light Non-Aqueous Phase Liquid

* - Corrected for LNAPL if present (assumes LNAPL specific gravity = 0.75)

-- No Information Available

Dry - Well Dry

TABLE 2
Groundwater Analytical Data
 Arco Facility 5300
 710 15th Avenue
 Longview, WA

CONSTITUENT		B	T	E	X	MTBE	EDB	EDC	TPH-G	Lead (Total)	Lead (Dissolved)
UNIT		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA METHOD A CLEANUP LEVELS		5	1000	700	1000	20	0.01	5	*1000/800	15	NE
Well ID	Date										
MW-1	9/6/2012	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50.0	50.6	--
MW-1	12/14/2012	< 1.0	< 1.0	< 1.0	< 3.0	--	< 0.01	< 1.0	< 100	< 3.0	--
MW-1	1/9/2013	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 1.0	< 1.0	< 80	11	--
MW-1	5/29/2013	< 0.50	< 0.50	< 0.50	< 1.00	< 0.50	< 0.0096	< 0.50	< 50	< 10	--
MW-1	8/20/2013	< 0.50	< 0.50	< 0.50	< 1.0	< 0.50	< 0.0096	< 0.50	< 50	< 10	< 10
MW-1	11/13/2013	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-1	2/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-1	4/23/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-1	8/7/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	8.1	< 2.0
MW-1	11/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-1	2/25/2015	< 2.0*	< 2.0*	< 3.0*	< 3.0	< 1.0	--	--	< 100	< 2.0	< 2.0
MW-1	8/11/2015	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	190	< 2.0	< 2.0
MW-2	9/6/2012	< 1.0	< 1.0	< 1.0	< 3.0	2.6	< 0.010	< 1.0	< 50.0	15.8	--
MW-2	12/14/2012	< 1.0	< 1.0	< 1.0	< 3.0	--	< 0.01	< 1.0	< 100	< 3.0	--
MW-2	1/9/2013	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 1.0	< 1.0	< 80	< 1.0	--
MW-2	5/29/2013	< 0.50	< 0.50	< 0.50	< 1.00	0.66	< 0.0098	< 0.50	< 50	13.0	--
MW-2	8/20/2013	< 0.50	< 0.50	< 0.50	< 1.0	0.70	< 0.0097	< 0.50	< 50	< 10	< 10
MW-2	11/13/2013	< 1.0	2.8	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	7.8	< 2.0
MW-2	2/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-2	4/23/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-2	8/7/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-2	11/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-2	2/25/2015	< 2.0*	< 2.0*	< 3.0*	< 3.0	< 1.0	--	--	< 100	< 2.0	< 2.0
MW-2	8/11/2015	< 2.0	< 2.0	< 3.0	< 3.0	< 1.0	--	--	65	< 2.0	< 2.0
MW-3	9/6/2012	< 1.0	< 1.0	< 1.0	< 3.0	16.9	< 0.010	< 1.0	< 50.0	< 10.0	--
MW-3	12/14/2012	< 1.0	< 1.0	< 1.0	< 3.0	--	< 0.01	< 1.0	< 100	11.1	--
MW-3	1/9/2013	< 1.0	< 1.0	< 1.0	< 3.0	17	< 1.0	< 1.0	< 80	< 1.0	--
MW-3	5/29/2013	< 0.50	< 0.50	< 0.50	< 1.00	14	< 0.0097	< 0.50	< 50	10.7	--
MW-3	8/20/2013	< 0.50	< 0.50	< 0.50	< 1.0	7.9	< 0.0097	< 0.50	< 50	< 10	< 10
MW-3	11/13/2013	< 1.0	2.3	< 1.0	< 3.0	17	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-3	2/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	11	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-3	4/23/2014	< 1.0	< 1.0	< 1.0	< 3.0	14	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-3	8/7/2014	< 1.0	< 1.0	< 1.0	< 3.0	25	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-3	11/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	11	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-3	2/25/2015	< 2.0*	< 2.0*	< 3.0*	< 3.0	8.1	--	--	< 100	< 2.0	< 2.0

TABLE 2
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CONSTITUENT		B	T	E	X	MTBE	EDB	EDC	TPH-G	Lead (Total)	Lead (Dissolved)
UNIT		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA METHOD A CLEANUP LEVELS		5	1000	700	1000	20	0.01	5	*1000/800	15	NE
Well ID	Date										
MW-3	8/11/2015	< 2.0	< 2.0	< 3.0	< 3.0	3.8	--	--	54	< 2.0	< 2.0
MW-4	9/6/2012	6.1	< 1.0	290	116	3.6	< 0.010	< 1.0	10200	< 10.0	--
MW-4	12/14/2012	4.8	< 1.0	208	50.7	--	< 0.01	< 1.0	3230	15.8	--
MW-4	1/9/2013	< 5.0	< 5.0	250	56	< 5.0	< 5.0	< 5.0	4500	6.1	--
MW-4	5/29/2013	2.1	< 0.50	220	48.8	2.6	< 0.0095	< 0.50	4500	14.7	--
MW-4	8/20/2013	1.6	< 0.50	240	47	< 2.4	< 0.0098	< 0.50	4500	< 10	< 10
MW-4	11/13/2013	1.7	1.9	270	43	1.1	< 0.010	< 1.0	7100	8.9	8.2
MW-4	2/19/2014	1.1	< 1.0	180	26	2.0	< 0.010	< 1.0	5400	5.6	5.7
MW-4	4/23/2014	< 1.0	< 1.0	130	17	< 1.0	< 0.010	< 1.0	5800	8.6	6.1
MW-4	8/7/2014	< 1.0	< 1.0	170	15	< 1.0	< 0.010	< 1.0	5700	6.6	6.0
MW-4	11/19/2014	< 1.0	< 1.0	< 1.0	7.6	< 1.0	< 0.010	< 1.0	4900	9.0	6.9
MW-4	2/25/2015	< 2.0*	< 2.0*	130	5.5	< 1.0	--	--	< 100	6.1	5.3
MW-4	8/11/2015	< 2.0	< 2.0	46	< 3.0	< 1.0	--	--	3700	5.7	5.6
MW-6	8/20/2013	< 0.50	< 0.50	1.9	< 1.0	4.9	< 0.0097	< 0.50	650	< 10	< 10
MW-6	11/13/2013	< 1.0	1.4	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	400	2.1	< 2.0
MW-6	2/19/2014	< 1.0	< 1.0	1.4	< 3.0	1.6	< 0.010	< 1.0	300	< 2.0	< 2.0
MW-6	4/23/2014	< 1.0	< 1.0	1.0	< 3.0	< 1.0	< 0.010	< 1.0	830	3.4	< 2.0
MW-6	8/7/2014	< 1.0	< 1.0	3.0	< 3.0	< 1.0	< 0.010	< 1.0	570	< 2.0	< 2.0
MW-6	11/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	220	< 2.0	< 2.0
MW-6	2/25/2015	< 2.0*	< 2.0*	< 3.0*	< 3.0	< 1.0	--	--	370	< 2.0	< 2.0
MW-6	8/11/2015	< 2.0	< 2.0	< 3.0	< 3.0	2.2	--	--	88	< 2.0	< 2.0
MW-7	8/20/2013	< 0.50	< 0.50	< 0.50	< 1.0	2.0	< 0.0096	< 0.50	< 50	< 10	< 10
MW-7	11/13/2013	< 1.0	1.2	< 1.0	< 3.0	2.2	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-7	2/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-7	4/23/2014	< 1.0	< 1.0	< 1.0	< 3.0	2.2	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-7	8/7/2014	< 1.0	< 1.0	< 1.0	< 3.0	2.9	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-7	11/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	3.2	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-7	2/25/2015	< 2.0*	< 2.0*	< 3.0*	< 3.0	1.8	--	--	< 100	< 2.0	< 2.0
MW-7	8/11/2015	< 2.0	< 2.0	< 3.0	< 3.0	2.8	--	--	< 50	< 2.0	< 2.0
MW-8	8/20/2013	< 0.50	< 0.50	< 0.50	< 1.0	2.2	< 0.0097	< 0.50	< 50	< 10	< 10
MW-8	11/13/2013	< 1.0	1.0	< 1.0	< 3.0	2.3	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-8	2/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	< 1.0	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-8	4/23/2014	< 1.0	< 1.0	< 1.0	< 3.0	1.9	< 0.010	< 1.0	< 50	< 2.0	< 2.0

TABLE 2
Groundwater Analytical Data
 Arco Facility 5300
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 Longview, WA

CONSTITUENT		B	T	E	X	MTBE	EDB	EDC	TPH-G	Lead (Total)	Lead (Dissolved)
UNIT		ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MTCA METHOD A CLEANUP LEVELS		5	1000	700	1000	20	0.01	5	*1000/800	15	NE
Well ID	Date										
MW-8	8/7/2014	< 1.0	< 1.0	< 1.0	< 3.0	1.8	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-8	11/19/2014	< 1.0	< 1.0	< 1.0	< 3.0	2.7	< 0.010	< 1.0	< 50	< 2.0	< 2.0
MW-8	2/25/2015	< 2.0*	< 2.0*	< 3.0*	< 3.0	3.0	--	--	< 100	< 2.0	< 2.0
MW-8	8/11/2015	< 2.0	< 2.0	< 3.0	< 3.0	4.6	--	--	200	< 2.0	< 2.0

Notes:

B = Benzene

T = Toluene

E = Ethyl benzene

X = Xylenes, Total

MTBE = Methyl-tertiary-butyl ether

EDB = 1,2-Dibromo-ethane

EDC = 1,2-Dichloro-ethane

TPH-G = Total petroleum hydrocarbons as gasoline by Northwest Method NWTPH-Gx

TPH-D = Total petroleum hydrocarbons as diesel by Northwest Method NWTPH-Dx with silica gel cleanup

TPH-O = Total petroleum hydrocarbons as oil by Northwest Method NWTPH-Dx with silica gel cleanup

*1,000 ug/L if no detectable levels of Benzene in the sample - otherwise 800 ug/L

NE = Not evaluated

<1.0 = Concentrations were not detected above the laboratory method reporting limit.

ug/L = Micrograms per liter (ppb)

ND = Not detected

-- = No value given/Not analyzed/Not applicable

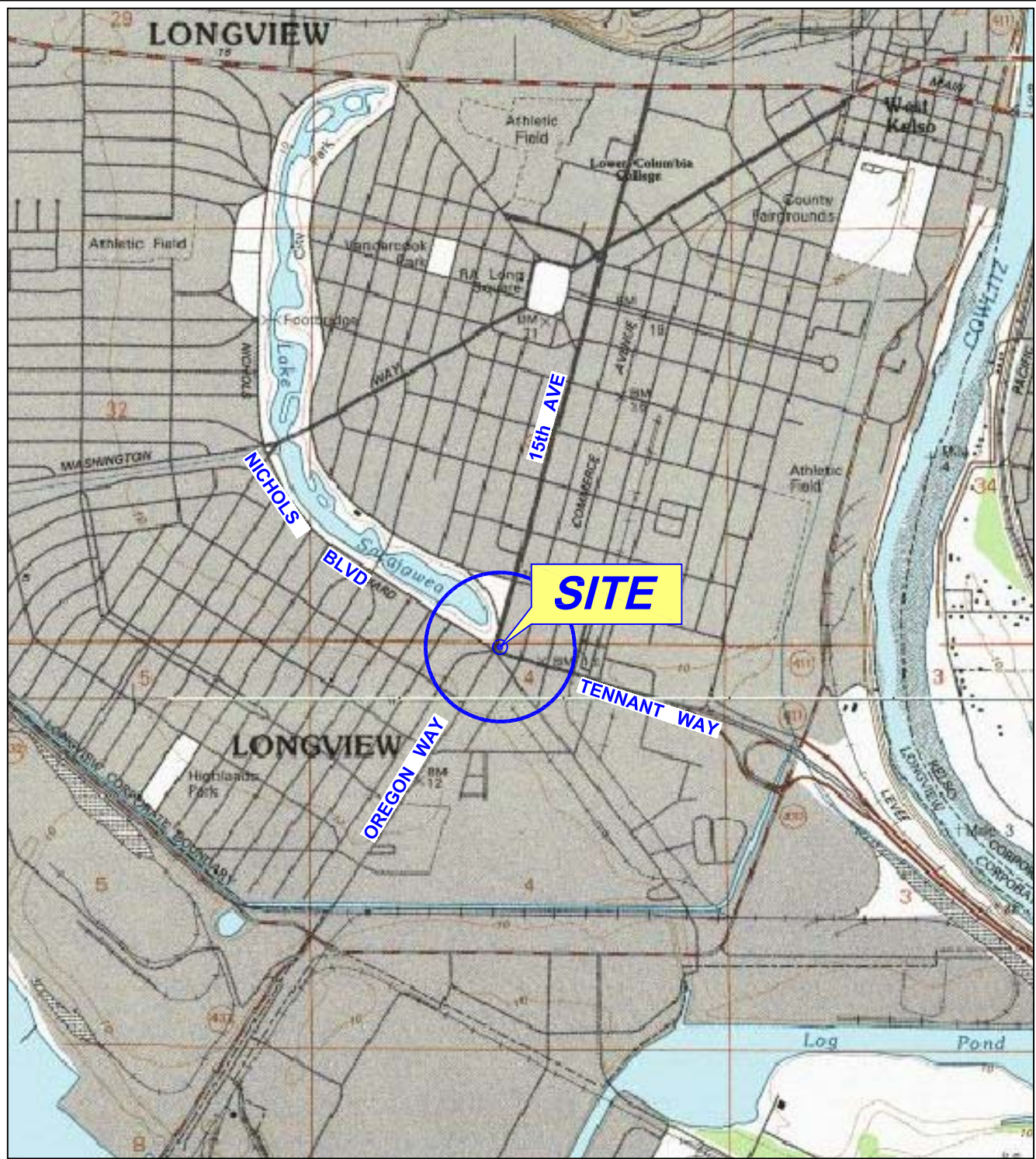
MTCA = Model Toxics Control Act

Results in **bold** indicate concentrations in excess of MTCA Method A Cleanup Levels

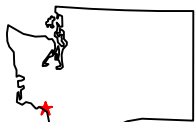
* = LCS or LCSD is outside acceptance limits

Figures

- | | |
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| Figure 1 | Site Location Map |
| Figure 2 | Site Aerial Map |
| Figure 3 | Groundwater Analytical and Elevation Contour Map – 2/25/15 |
| Figure 4 | Groundwater Analytical and Elevation Contour Map – 8/11/15 |



GENERAL NOTES:
 BASE MAP FROM TERRAIN NAVIGATOR PRO
 KELSO, WA. QUADRANGLE
 7.5 MINUTE TOPOGRAPHIC MAP
 1990



QUADRANGLE LOCATION

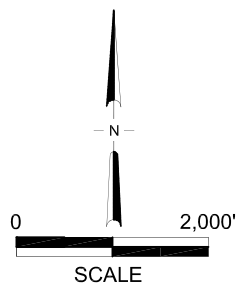


FIGURE 1
 SITE LOCATION MAP

ARCO FACILITY NO. 5300
 710 15th AVENUE
 LONGVIEW, WA.

PROJECT NO. 05300EA131	DRAWN BY K. MARTIN
FILE NO. 5300-SLM	PREPARED BY M. STOCK
DATE 04 JUN 13	REV. 0
	REVIEWED BY



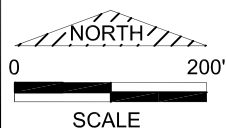
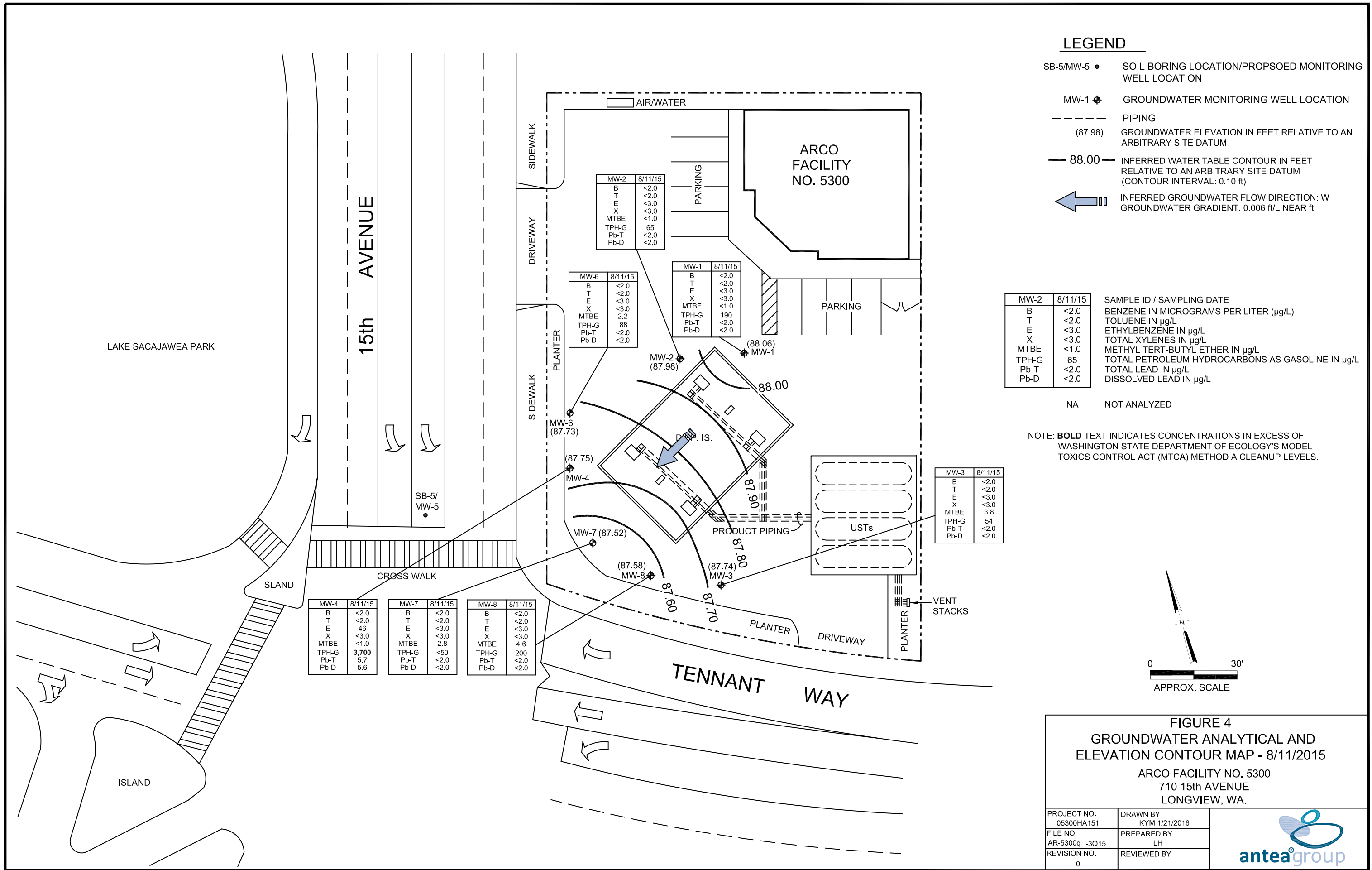


FIGURE 2
SITE AERIAL MAP
 ARCO FACILITY NO. 5300
 710 15th AVENUE
 LONGVIEW, WASHINGTON

PROJECT NO. 5300EA121	DRN KM
FILE NO. 5300G-Sam	PREPARED MS
DATE 04 JUN 13	REV. 0
	REVIEWED





Appendix A

Analytical Lab Reports and Chain-of-Custody Documentation

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Seattle

5755 8th Street East

Tacoma, WA 98424

Tel: (253)922-2310

TestAmerica Job ID: 580-47652-1

Client Project/Site: ARCO 5300

Sampling Event: ARCO 5300

Revision: 1

For:

Antea USA, Inc.

4006 148th Ave NE

Redmond, Washington 98052

Attn: Mackie Stock



Authorized for release by:

1/26/2016 8:29:46 AM

Robert Greer, Project Manager II

(253)922-2310

robert.greer@testamericainc.com

LINKS

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results through

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Visit us at:

www.testamericainc.com

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.

The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the BPLAMP Technical Specifications, applicable federal, state, local regulations and certification requirements as well as the methodologies as described in laboratory SOPs reviewed by the BPLAMP. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain of Custody is included and is an integral part of this report.



Robert Greer
Project Manager II
1/26/2016 8:29:46 AM

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Case Narrative

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Job ID: 580-47652-1

Laboratory: TestAmerica Seattle

Narrative

Report was revised on 1/26/16 as per clients request; both Iron and Manganese were reported in original report but were not requested by client.

Job Narrative 580-47652-1

Receipt

The samples were received on 2/27/2015 10:00 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.7° C.

GC/MS VOA

Method(s) 8260B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for batch 183731 recovered outside control limits for the following analytes: multi analyte. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

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.

Definitions/Glossary

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	LCS or LCSD is outside acceptance 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: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Client Sample ID: MW-1

Date Collected: 02/25/15 10:55

Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-1

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	*	2.0		ug/L			03/05/15 12:52	1
Toluene	ND	*	2.0		ug/L			03/05/15 12:52	1
Ethylbenzene	ND	*	3.0		ug/L			03/05/15 12:52	1
Methyl tert-butyl ether	ND		1.0		ug/L			03/05/15 12:52	1
Xylenes, Total	ND		3.0		ug/L			03/05/15 12:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 120		03/05/15 12:52	1
4-Bromofluorobenzene (Surr)	95		75 - 120		03/05/15 12:52	1
Toluene-d8 (Surr)	100		85 - 120		03/05/15 12:52	1
Trifluorotoluene (Surr)	100		70 - 136		03/05/15 12:52	1
Dibromofluoromethane (Surr)	100		85 - 115		03/05/15 12:52	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		100		ug/L			03/06/15 08:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		50 - 150		03/06/15 08:27	1
Trifluorotoluene (Surr)	111		50 - 150		03/06/15 08:27	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		03/05/15 10:09	03/06/15 10:16	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		03/04/15 13:09	03/05/15 11:41	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Client Sample ID: MW-2
Date Collected: 02/25/15 11:30
Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	*	2.0		ug/L			03/05/15 13:18	1
Toluene	ND	*	2.0		ug/L			03/05/15 13:18	1
Ethylbenzene	ND	*	3.0		ug/L			03/05/15 13:18	1
Methyl tert-butyl ether	ND		1.0		ug/L			03/05/15 13:18	1
Xylenes, Total	ND		3.0		ug/L			03/05/15 13:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	106		70 - 120		03/05/15 13:18	1
4-Bromofluorobenzene (Surr)	96		75 - 120		03/05/15 13:18	1
Toluene-d8 (Surr)	104		85 - 120		03/05/15 13:18	1
Trifluorotoluene (Surr)	99		70 - 136		03/05/15 13:18	1
Dibromofluoromethane (Surr)	99		85 - 115		03/05/15 13:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		100		ug/L			03/06/15 08:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		50 - 150		03/06/15 08:58	1
Trifluorotoluene (Surr)	114		50 - 150		03/06/15 08:58	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		03/05/15 10:09	03/06/15 10:43	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		03/04/15 13:09	03/05/15 12:09	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Client Sample ID: MW-3
Date Collected: 02/25/15 14:00
Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	*	2.0		ug/L			03/05/15 13:42	1
Toluene	ND	*	2.0		ug/L			03/05/15 13:42	1
Ethylbenzene	ND	*	3.0		ug/L			03/05/15 13:42	1
Methyl tert-butyl ether	8.1		1.0		ug/L			03/05/15 13:42	1
Xylenes, Total	ND		3.0		ug/L			03/05/15 13:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 120		03/05/15 13:42	1
4-Bromofluorobenzene (Surr)	98		75 - 120		03/05/15 13:42	1
Toluene-d8 (Surr)	103		85 - 120		03/05/15 13:42	1
Trifluorotoluene (Surr)	101		70 - 136		03/05/15 13:42	1
Dibromofluoromethane (Surr)	100		85 - 115		03/05/15 13:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		100		ug/L			03/06/15 09:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		50 - 150					03/06/15 09:29	1
Trifluorotoluene (Surr)	112		50 - 150					03/06/15 09:29	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		03/05/15 10:09	03/06/15 10:47	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		03/04/15 13:09	03/05/15 12:13	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Client Sample ID: MW-4
Date Collected: 02/25/15 12:30
Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	*	2.0		ug/L			03/05/15 14:08	1
Toluene	ND	*	2.0		ug/L			03/05/15 14:08	1
Methyl tert-butyl ether	ND		1.0		ug/L			03/05/15 14:08	1
Xylenes, Total	5.5		3.0		ug/L			03/05/15 14:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 120		03/05/15 14:08	1
4-Bromofluorobenzene (Surr)	106		75 - 120		03/05/15 14:08	1
Toluene-d8 (Surr)	98		85 - 120		03/05/15 14:08	1
Trifluorotoluene (Surr)	102		70 - 136		03/05/15 14:08	1
Dibromofluoromethane (Surr)	101		85 - 115		03/05/15 14:08	1

Method: 8260B - Volatile Organic Compounds (GC/MS) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	130		30		ug/L			03/07/15 22:44	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		70 - 120		03/07/15 22:44	10
4-Bromofluorobenzene (Surr)	102		75 - 120		03/07/15 22:44	10
Toluene-d8 (Surr)	99		85 - 120		03/07/15 22:44	10
Trifluorotoluene (Surr)	94		70 - 136		03/07/15 22:44	10
Dibromofluoromethane (Surr)	98		85 - 115		03/07/15 22:44	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		100		ug/L			03/06/15 12:04	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		50 - 150		03/06/15 12:04	1
Trifluorotoluene (Surr)	106		50 - 150		03/06/15 12:04	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	5.3		2.0		ug/L		03/05/15 10:09	03/06/15 10:51	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	6.1		2.0		ug/L		03/04/15 13:09	03/05/15 12:17	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Client Sample ID: MW-6
Date Collected: 02/25/15 12:00
Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	*	2.0		ug/L			03/05/15 14:33	1
Toluene	ND	*	2.0		ug/L			03/05/15 14:33	1
Ethylbenzene	ND	*	3.0		ug/L			03/05/15 14:33	1
Methyl tert-butyl ether	ND		1.0		ug/L			03/05/15 14:33	1
Xylenes, Total	ND		3.0		ug/L			03/05/15 14:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 120		03/05/15 14:33	1
4-Bromofluorobenzene (Surr)	97		75 - 120		03/05/15 14:33	1
Toluene-d8 (Surr)	108		85 - 120		03/05/15 14:33	1
Trifluorotoluene (Surr)	101		70 - 136		03/05/15 14:33	1
Dibromofluoromethane (Surr)	97		85 - 115		03/05/15 14:33	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	370		100		ug/L			03/05/15 23:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		50 - 150		03/05/15 23:10	1
Trifluorotoluene (Surr)	112		50 - 150		03/05/15 23:10	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		03/05/15 10:09	03/06/15 10:55	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		03/04/15 13:09	03/05/15 12:20	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Client Sample ID: MW-7
Date Collected: 02/25/15 13:00
Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-6
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	*	2.0		ug/L			03/05/15 14:58	1
Toluene	ND	*	2.0		ug/L			03/05/15 14:58	1
Ethylbenzene	ND	*	3.0		ug/L			03/05/15 14:58	1
Methyl tert-butyl ether	1.8		1.0		ug/L			03/05/15 14:58	1
Xylenes, Total	ND		3.0		ug/L			03/05/15 14:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	101		70 - 120		03/05/15 14:58	1
4-Bromofluorobenzene (Surr)	98		75 - 120		03/05/15 14:58	1
Toluene-d8 (Surr)	101		85 - 120		03/05/15 14:58	1
Trifluorotoluene (Surr)	101		70 - 136		03/05/15 14:58	1
Dibromofluoromethane (Surr)	99		85 - 115		03/05/15 14:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		100		ug/L	-		03/06/15 10:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		50 - 150					03/06/15 10:00	1
Trifluorotoluene (Surr)	113		50 - 150					03/06/15 10:00	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		03/05/15 10:09	03/06/15 10:59	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		03/04/15 13:09	03/05/15 12:24	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Client Sample ID: MW-8
Date Collected: 02/25/15 13:30
Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	*	2.0		ug/L			03/05/15 15:23	1
Toluene	ND	*	2.0		ug/L			03/05/15 15:23	1
Ethylbenzene	ND	*	3.0		ug/L			03/05/15 15:23	1
Methyl tert-butyl ether	3.0		1.0		ug/L			03/05/15 15:23	1
Xylenes, Total	ND		3.0		ug/L			03/05/15 15:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	104		70 - 120		03/05/15 15:23	1
4-Bromofluorobenzene (Surr)	98		75 - 120		03/05/15 15:23	1
Toluene-d8 (Surr)	104		85 - 120		03/05/15 15:23	1
Trifluorotoluene (Surr)	98		70 - 136		03/05/15 15:23	1
Dibromofluoromethane (Surr)	99		85 - 115		03/05/15 15:23	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		100		ug/L	-		03/06/15 10:31	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		50 - 150					03/06/15 10:31	1
Trifluorotoluene (Surr)	109		50 - 150					03/06/15 10:31	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		03/05/15 10:09	03/06/15 11:03	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		03/04/15 13:09	03/05/15 12:28	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Client Sample ID: Trip Blanks

Date Collected: 02/25/15 00:00

Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-8

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND	*	2.0		ug/L			03/05/15 11:10	1
Toluene	ND	*	2.0		ug/L			03/05/15 11:10	1
Ethylbenzene	ND	*	3.0		ug/L			03/05/15 11:10	1
Xylenes, Total	ND		3.0		ug/L			03/05/15 11:10	1
Methyl tert-butyl ether	ND		1.0		ug/L			03/05/15 11:10	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	103		85 - 120		03/05/15 11:10	1
Trifluorotoluene (Surr)	101		70 - 136		03/05/15 11:10	1
4-Bromofluorobenzene (Surr)	94		75 - 120		03/05/15 11:10	1
Dibromofluoromethane (Surr)	96		85 - 115		03/05/15 11:10	1
1,2-Dichloroethane-d4 (Surr)	97		70 - 120		03/05/15 11:10	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		100		ug/L			03/03/15 14:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		50 - 150		03/03/15 14:54	1
Trifluorotoluene (Surr)	103		50 - 150		03/03/15 14:54	1

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-183731/4

Matrix: Water

Analysis Batch: 183731

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			03/05/15 09:25	1
Toluene	ND		2.0		ug/L			03/05/15 09:25	1
Ethylbenzene	ND		3.0		ug/L			03/05/15 09:25	1
Xylenes, Total	ND		3.0		ug/L			03/05/15 09:25	1
Methyl tert-butyl ether	ND		1.0		ug/L			03/05/15 09:25	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	95		75 - 120		03/05/15 09:25	1
Toluene-d8 (Surr)	102		85 - 120		03/05/15 09:25	1
1,2-Dichloroethane-d4 (Surr)	99		70 - 120		03/05/15 09:25	1
Trifluorotoluene (Surr)	102		70 - 136		03/05/15 09:25	1
Dibromofluoromethane (Surr)	95		85 - 115		03/05/15 09:25	1

Lab Sample ID: LCS 580-183731/5

Matrix: Water

Analysis Batch: 183731

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	24.4	*	ug/L		122	80 - 120
Toluene	20.0	24.1	*	ug/L		121	75 - 120
Ethylbenzene	20.0	25.1	*	ug/L		126	75 - 125
m-Xylene & p-Xylene	20.0	24.2		ug/L		121	75 - 130
o-Xylene	20.0	24.0		ug/L		120	80 - 120
Xylenes, Total	40.0	48.2		ug/L		121	75 - 125
Methyl tert-butyl ether	20.0	21.8		ug/L		109	65 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		75 - 120
Toluene-d8 (Surr)	97		85 - 120
1,2-Dichloroethane-d4 (Surr)	100		70 - 120
Trifluorotoluene (Surr)	98		70 - 136
Dibromofluoromethane (Surr)	100		85 - 115

Lab Sample ID: LCSD 580-183731/6

Matrix: Water

Analysis Batch: 183731

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	20.0	25.2	*	ug/L		126	80 - 120	3	30
Toluene	20.0	24.5	*	ug/L		123	75 - 120	2	30
Ethylbenzene	20.0	25.8	*	ug/L		129	75 - 125	3	30
m-Xylene & p-Xylene	20.0	25.1		ug/L		126	75 - 130	4	30
o-Xylene	20.0	24.9	*	ug/L		125	80 - 120	4	30
Xylenes, Total	40.0	50.0		ug/L		125	75 - 125	4	30
Methyl tert-butyl ether	20.0	24.9		ug/L		125	65 - 125	14	30

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

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

Lab Sample ID: LCSD 580-183731/6

Matrix: Water

Analysis Batch: 183731

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		75 - 120
Toluene-d8 (Surr)	96		85 - 120
1,2-Dichloroethane-d4 (Surr)	98		70 - 120
Trifluorotoluene (Surr)	98		70 - 136
Dibromofluoromethane (Surr)	101		85 - 115

Lab Sample ID: 580-47652-7 MS

Matrix: Water

Analysis Batch: 183731

Client Sample ID: MW-8

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	ND	*	20.0	22.4	*	ug/L		112	80 - 120
Toluene	ND	*	20.0	21.9	*	ug/L		109	75 - 120
Ethylbenzene	ND	*	20.0	22.8	*	ug/L		114	75 - 125
m-Xylene & p-Xylene	ND		20.0	21.9		ug/L		109	75 - 130
o-Xylene	ND	*	20.0	22.2		ug/L		111	80 - 120
Xylenes, Total	ND		40.0	44.1		ug/L		110	75 - 125
Methyl tert-butyl ether	3.0		20.0	24.5		ug/L		108	65 - 125

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		75 - 120
Toluene-d8 (Surr)	97		85 - 120
1,2-Dichloroethane-d4 (Surr)	102		70 - 120
Trifluorotoluene (Surr)	100		70 - 136
Dibromofluoromethane (Surr)	103		85 - 115

Lab Sample ID: 580-47652-7 MSD

Matrix: Water

Analysis Batch: 183731

Client Sample ID: MW-8

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	ND	*	20.0	23.0	*	ug/L		115	80 - 120	3	30
Toluene	ND	*	20.0	22.4	*	ug/L		112	75 - 120	2	30
Ethylbenzene	ND	*	20.0	23.6	*	ug/L		118	75 - 125	3	30
m-Xylene & p-Xylene	ND		20.0	22.7		ug/L		114	75 - 130	4	30
o-Xylene	ND	*	20.0	22.6		ug/L		113	80 - 120	2	30
Xylenes, Total	ND		40.0	45.3		ug/L		113	75 - 125	3	30
Methyl tert-butyl ether	3.0		20.0	23.5		ug/L		103	65 - 125	4	30

Surrogate	MSD %Recovery	MSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	101		75 - 120
Toluene-d8 (Surr)	96		85 - 120
1,2-Dichloroethane-d4 (Surr)	101		70 - 120
Trifluorotoluene (Surr)	97		70 - 136
Dibromofluoromethane (Surr)	103		85 - 115

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

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

Lab Sample ID: MB 580-183906/3

Matrix: Water

Analysis Batch: 183906

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			03/07/15 17:56	1
Toluene	ND		2.0		ug/L			03/07/15 17:56	1
Ethylbenzene	ND		3.0		ug/L			03/07/15 17:56	1
Xylenes, Total	ND		3.0		ug/L			03/07/15 17:56	1
Methyl tert-butyl ether	ND		1.0		ug/L			03/07/15 17:56	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		75 - 120		03/07/15 17:56	1
Toluene-d8 (Surr)	99		85 - 120		03/07/15 17:56	1
1,2-Dichloroethane-d4 (Surr)	97		70 - 120		03/07/15 17:56	1
Trifluorotoluene (Surr)	103		70 - 136		03/07/15 17:56	1
Dibromofluoromethane (Surr)	101		85 - 115		03/07/15 17:56	1

Lab Sample ID: LCS 580-183906/4

Matrix: Water

Analysis Batch: 183906

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	19.0		ug/L		95	80 - 120
Toluene	20.0	19.4		ug/L		97	75 - 120
Ethylbenzene	20.0	19.6		ug/L		98	75 - 125
m-Xylene & p-Xylene	20.0	19.2		ug/L		96	75 - 130
o-Xylene	20.0	19.3		ug/L		97	80 - 120
Xylenes, Total	40.0	38.5		ug/L		96	75 - 125
Methyl tert-butyl ether	20.0	19.9		ug/L		100	65 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		75 - 120
Toluene-d8 (Surr)	97		85 - 120
1,2-Dichloroethane-d4 (Surr)	98		70 - 120
Trifluorotoluene (Surr)	98		70 - 136
Dibromofluoromethane (Surr)	100		85 - 115

Lab Sample ID: LCSD 580-183906/5

Matrix: Water

Analysis Batch: 183906

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	20.0	19.4		ug/L		97	80 - 120	2	30
Toluene	20.0	19.7		ug/L		98	75 - 120	1	30
Ethylbenzene	20.0	19.7		ug/L		98	75 - 125	0	30
m-Xylene & p-Xylene	20.0	19.5		ug/L		98	75 - 130	2	30
o-Xylene	20.0	19.2		ug/L		96	80 - 120	1	30
Xylenes, Total	40.0	38.7		ug/L		97	75 - 125	1	30
Methyl tert-butyl ether	20.0	20.6		ug/L		103	65 - 125	3	30

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

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

Lab Sample ID: LCSD 580-183906/5

Matrix: Water

Analysis Batch: 183906

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		75 - 120
Toluene-d8 (Surr)	99		85 - 120
1,2-Dichloroethane-d4 (Surr)	100		70 - 120
Trifluorotoluene (Surr)	102		70 - 136
Dibromofluoromethane (Surr)	99		85 - 115

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

Lab Sample ID: MB 580-183580/4

Matrix: Water

Analysis Batch: 183580

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		100		ug/L			03/03/15 13:21	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	96		50 - 150					03/03/15 13:21	1
Trifluorotoluene (Surr)	104		50 - 150					03/03/15 13:21	1

Lab Sample ID: LCS 580-183580/5

Matrix: Water

Analysis Batch: 183580

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	2000	1780		ug/L		89	79 - 110
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	105		50 - 150				
Trifluorotoluene (Surr)	94		50 - 150				

Lab Sample ID: LCSD 580-183580/6

Matrix: Water

Analysis Batch: 183580

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	2000	1810		ug/L		91	79 - 110	2	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	105		50 - 150						
Trifluorotoluene (Surr)	95		50 - 150						

Lab Sample ID: MB 580-183716/4

Matrix: Water

Analysis Batch: 183716

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		100		ug/L			03/05/15 11:50	1

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	88		50 - 150		03/05/15 11:50	1
Trifluorotoluene (Surr)	99		50 - 150		03/05/15 11:50	1

Lab Sample ID: LCS 580-183716/5

Matrix: Water

Analysis Batch: 183716

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	881		ug/L		88	79 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	98		50 - 150
Trifluorotoluene (Surr)	94		50 - 150

Lab Sample ID: LCSD 580-183716/6

Matrix: Water

Analysis Batch: 183716

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1000	941		ug/L		94	79 - 110	7	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		50 - 150
Trifluorotoluene (Surr)	99		50 - 150

Lab Sample ID: MB 580-183805/4

Matrix: Water

Analysis Batch: 183805

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		100		ug/L			03/06/15 01:45	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		50 - 150		03/06/15 01:45	1
Trifluorotoluene (Surr)	112		50 - 150		03/06/15 01:45	1

Lab Sample ID: LCS 580-183805/5

Matrix: Water

Analysis Batch: 183805

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1000	903		ug/L		90	79 - 110

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	104		50 - 150
Trifluorotoluene (Surr)	104		50 - 150

Lab Sample ID: LCSD 580-183805/6

Matrix: Water

Analysis Batch: 183805

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1000	942		ug/L		94	79 - 110	4	20

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

	<i>LCSD</i>	<i>LCSD</i>	
<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>
4-Bromofluorobenzene (Surr)	109		50 - 150
Trifluorotoluene (Surr)	103		50 - 150

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 580-183687/20-A
Matrix: Water
Analysis Batch: 183783

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 183687

	MB	MB								
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil	Fac
Lead	ND		2.0		ug/L		03/04/15 13:09	03/05/15 11:26	5	

Lab Sample ID: LCS 580-183687/21-A
Matrix: Water
Analysis Batch: 183783

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 183687

			Spike	LCS	LCS					
Analyte			Added	Result	Qualifier	Unit	D	%Rec	%Rec.	Limits
Lead			1000	982		ug/L		98		80 - 120

Lab Sample ID: LCSD 580-183687/22-A
Matrix: Water
Analysis Batch: 183783

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 183687

			Spike	LCSD	LCSD						
Analyte			Added	Result	Qualifier	Unit	D	%Rec	%Rec.	Limits	RPD
Lead			1000	1000		ug/L		100		80 - 120	2

Lab Sample ID: 580-47652-1 MS
Matrix: Water
Analysis Batch: 183783

Client Sample ID: MW-1
Prep Type: Total Recoverable
Prep Batch: 183687

	Sample	Sample	Spike	MS	MS						
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	%Rec.	Limits	
Lead	ND		1000	1020		ug/L		102		80 - 120	

Lab Sample ID: 580-47652-1 MSD
Matrix: Water
Analysis Batch: 183783

Client Sample ID: MW-1
Prep Type: Total Recoverable
Prep Batch: 183687

	Sample	Sample	Spike	MSD	MSD						
Analyte	Result	Qualifier	Added	Result	Qualifier	Unit	D	%Rec	%Rec.	Limits	RPD
Lead	ND		1000	1020		ug/L		102		80 - 120	0

Lab Sample ID: 580-47652-1 DU
Matrix: Water
Analysis Batch: 183783

Client Sample ID: MW-1
Prep Type: Total Recoverable
Prep Batch: 183687

	Sample	Sample		DU	DU						
Analyte	Result	Qualifier		Result	Qualifier	Unit	D			RPD	Limit
Lead	ND			ND		ug/L				NC	20

Method: 6020 - Dissolved Metals by ICP-MS

Lab Sample ID: LCS 580-183762/18-A
Matrix: Water
Analysis Batch: 183849

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 183762

			Spike	LCS	LCS						
Analyte			Added	Result	Qualifier	Unit	D	%Rec	%Rec.	Limits	
Lead			1000	990		ug/L		99		80 - 120	

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Lab Sample ID: LCSD 580-183762/19-A
Matrix: Water
Analysis Batch: 183849

Client Sample ID: Lab Control Sample Dup
Prep Type: Total Recoverable
Prep Batch: 183762

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	1000	978		ug/L	-	98	80 - 120	1	20

Lab Sample ID: MB 580-183570/17-B
Matrix: Water
Analysis Batch: 183849

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 183762

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L	-	03/05/15 10:09	03/06/15 10:01	5

Lab Sample ID: 580-47652-1 MS
Matrix: Water
Analysis Batch: 183849

Client Sample ID: MW-1
Prep Type: Dissolved
Prep Batch: 183762

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		1000	1010		ug/L	-	101	80 - 120

Lab Sample ID: 580-47652-1 MSD
Matrix: Water
Analysis Batch: 183849

Client Sample ID: MW-1
Prep Type: Dissolved
Prep Batch: 183762

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		1000	1020		ug/L	-	102	80 - 120	1	20

Lab Sample ID: 580-47652-1 DU
Matrix: Water
Analysis Batch: 183849

Client Sample ID: MW-1
Prep Type: Dissolved
Prep Batch: 183762

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	ND		ND		ug/L	-	NC	20

TestAmerica Seattle

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Client Sample ID: MW-1

Date Collected: 02/25/15 10:55

Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	183731	03/05/15 12:52	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	183805	03/06/15 08:27	IWH	TAL SEA
Dissolved	Filtration	FILTRATION			183570	03/03/15 10:47	PAB	TAL SEA
Dissolved	Prep	3005A			183762	03/05/15 10:09	PAB	TAL SEA
Dissolved	Analysis	6020		5	183849	03/06/15 10:16	FCW	TAL SEA
Total Recoverable	Prep	3005A			183687	03/04/15 13:09	PAB	TAL SEA
Total Recoverable	Analysis	6020		5	183783	03/05/15 11:41	FCW	TAL SEA

Client Sample ID: MW-2

Date Collected: 02/25/15 11:30

Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	183731	03/05/15 13:18	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	183805	03/06/15 08:58	IWH	TAL SEA
Dissolved	Filtration	FILTRATION			183570	03/03/15 10:47	PAB	TAL SEA
Dissolved	Prep	3005A			183762	03/05/15 10:09	PAB	TAL SEA
Dissolved	Analysis	6020		5	183849	03/06/15 10:43	FCW	TAL SEA
Total Recoverable	Prep	3005A			183687	03/04/15 13:09	PAB	TAL SEA
Total Recoverable	Analysis	6020		5	183783	03/05/15 12:09	FCW	TAL SEA

Client Sample ID: MW-3

Date Collected: 02/25/15 14:00

Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	183731	03/05/15 13:42	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	183805	03/06/15 09:29	IWH	TAL SEA
Dissolved	Filtration	FILTRATION			183570	03/03/15 10:47	PAB	TAL SEA
Dissolved	Prep	3005A			183762	03/05/15 10:09	PAB	TAL SEA
Dissolved	Analysis	6020		5	183849	03/06/15 10:47	FCW	TAL SEA
Total Recoverable	Prep	3005A			183687	03/04/15 13:09	PAB	TAL SEA
Total Recoverable	Analysis	6020		5	183783	03/05/15 12:13	FCW	TAL SEA

Client Sample ID: MW-4

Date Collected: 02/25/15 12:30

Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B	DL	10	183906	03/07/15 22:44	A1C	TAL SEA
Total/NA	Analysis	8260B		1	183731	03/05/15 14:08	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	183805	03/06/15 12:04	IWH	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Client Sample ID: MW-4

Date Collected: 02/25/15 12:30

Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Filtration	FILTRATION			183570	03/03/15 10:47	PAB	TAL SEA
Dissolved	Prep	3005A			183762	03/05/15 10:09	PAB	TAL SEA
Dissolved	Analysis	6020		5	183849	03/06/15 10:51	FCW	TAL SEA
Total Recoverable	Prep	3005A			183687	03/04/15 13:09	PAB	TAL SEA
Total Recoverable	Analysis	6020		5	183783	03/05/15 12:17	FCW	TAL SEA

Client Sample ID: MW-6

Date Collected: 02/25/15 12:00

Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	183731	03/05/15 14:33	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	183716	03/05/15 23:10	IWH	TAL SEA
Dissolved	Filtration	FILTRATION			183570	03/03/15 10:47	PAB	TAL SEA
Dissolved	Prep	3005A			183762	03/05/15 10:09	PAB	TAL SEA
Dissolved	Analysis	6020		5	183849	03/06/15 10:55	FCW	TAL SEA
Total Recoverable	Prep	3005A			183687	03/04/15 13:09	PAB	TAL SEA
Total Recoverable	Analysis	6020		5	183783	03/05/15 12:20	FCW	TAL SEA

Client Sample ID: MW-7

Date Collected: 02/25/15 13:00

Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	183731	03/05/15 14:58	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	183805	03/06/15 10:00	IWH	TAL SEA
Dissolved	Filtration	FILTRATION			183570	03/03/15 10:47	PAB	TAL SEA
Dissolved	Prep	3005A			183762	03/05/15 10:09	PAB	TAL SEA
Dissolved	Analysis	6020		5	183849	03/06/15 10:59	FCW	TAL SEA
Total Recoverable	Prep	3005A			183687	03/04/15 13:09	PAB	TAL SEA
Total Recoverable	Analysis	6020		5	183783	03/05/15 12:24	FCW	TAL SEA

Client Sample ID: MW-8

Date Collected: 02/25/15 13:30

Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	183731	03/05/15 15:23	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	183805	03/06/15 10:31	IWH	TAL SEA
Dissolved	Filtration	FILTRATION			183570	03/03/15 10:47	PAB	TAL SEA
Dissolved	Prep	3005A			183762	03/05/15 10:09	PAB	TAL SEA
Dissolved	Analysis	6020		5	183849	03/06/15 11:03	FCW	TAL SEA
Total Recoverable	Prep	3005A			183687	03/04/15 13:09	PAB	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Client Sample ID: MW-8

Date Collected: 02/25/15 13:30

Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total Recoverable	Analysis	6020		5	183783	03/05/15 12:28	FCW	TAL SEA

Client Sample ID: Trip Blanks

Date Collected: 02/25/15 00:00

Date Received: 02/27/15 10:00

Lab Sample ID: 580-47652-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	183731	03/05/15 11:10	CJ	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	183580	03/03/15 14:54	IWH	TAL SEA

Laboratory References:

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

Certification Summary

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Laboratory: TestAmerica Seattle

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-16
California	State Program	9	2901	01-31-16
L-A-B	DoD ELAP		L2236	01-19-19
L-A-B	ISO/IEC 17025		L2236	01-19-19
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-16
US Fish & Wildlife	Federal		LE058448-0	02-28-16
USDA	Federal		P330-14-00126	04-08-17
Washington	State Program	10	C553	02-17-16

Sample Summary

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-47652-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-47652-1	MW-1	Water	02/25/15 10:55	02/27/15 10:00
580-47652-2	MW-2	Water	02/25/15 11:30	02/27/15 10:00
580-47652-3	MW-3	Water	02/25/15 14:00	02/27/15 10:00
580-47652-4	MW-4	Water	02/25/15 12:30	02/27/15 10:00
580-47652-5	MW-6	Water	02/25/15 12:00	02/27/15 10:00
580-47652-6	MW-7	Water	02/25/15 13:00	02/27/15 10:00
580-47652-7	MW-8	Water	02/25/15 13:30	02/27/15 10:00
580-47652-8	Trip Blanks	Water	02/25/15 00:00	02/27/15 10:00

BP/ARC Project Name: ARCO 5300
BP/ARC Facility No.: ARCO Facility No. 5300
Lab Work Order Number: 4144

Lab Name: Test America, Inc. BP/ARC Facility Address: 710 15th Avenue Consultant/Contractor: Antea Group

Lab Address: 5755 8th Street East, Tacoma, WA City, State, ZIP Code: Longview, WA Consultant/Contractor Project No: 05300EA151

Lab PIV: David Burk Lead Regulatory Agency: Washington State Department of Ecology Address: 4006 148th Ave NE, Redmond, WA 98052

Lab Phone: (253) 922-2310 California Global ID No.: NA Consultant/Contractor PIV: Mackie Stock

Lab Shipping Account: Enfos Proposal No: 00811-0004 / WR286431 Phone: 425-498-7740

Lab Bottle Order No: Accounting Mode: Provision X OOC-BU OOC-RM Email EDD To: mackie.stock@anteagroup.com

Other Info: Stage: 40 Activity: 80 Invoice To: BP/ARC X Contractor

BP/ARC EBM: Paul Supple Matrix No. Containers / Preservative Requested Analyses Report Type & QC Level

EBM Phone: (925) 275-3801 Unpreserved HCL Sodium Thiosulfate Nitric Acid BTEX by EPA 8260 MTBE by EPA 8260 NWTPH-Gx NWTPH-D w/ silica gel NWTPH-O w/ silica gel Pb-T by EPA 6020/6010 Pb-D by EPA 6020/6010 EDB by EPA 8011 EDC by EPA 8260

EBM Email: Paul.Supple@bp.com Full Data Package

Lab No.	Sample Description	Date	Time	Soil / Solid	Water / Liquid	Air / Vapor	Total Number of Containers	Unpreserved	HCL	Sodium Thiosulfate	Nitric Acid	BTEX by EPA 8260	MTBE by EPA 8260	NWTPH-Gx	NWTPH-D w/ silica gel	NWTPH-O w/ silica gel	Pb-T by EPA 6020/6010	Pb-D by EPA 6020/6010	EDB by EPA 8011	EDC by EPA 8260	Comments
1	MM-1	2/25/15	1055	X			10	1	6	2	1	X	X	X			X	X			
2	MM-2		1130	X								X	X	X			X	X			
3	MM-3		1400	X								X	X	X			X	X			
4	MM-4		1230	X								X	X	X			X	X			
5	MM-6		1200	X								X	X	X			X	X			
6	MM-7		1300	X								X	X	X			X	X			
7	MM-8	2/25/15	1330	X			10	1	6	2	1	X	X	X			X	X			
8	Trips Blanks		0000	X								X		X							

Special Instructions: THIS LINE - LAB USE ONLY: Custody Seals in Place: Yes / No Temp Blank: Yes / No Cooler Temp on Receipt: °F/C Trip Blank: Yes / No MS/MSD Sample Submitted: Yes / No

Sampler's Name: Brad Jackson / Nelson Lewis Relinquished By / Affiliation Date Time Accepted By / Affiliation Date Time

Shipper's Company: Antea Group Ship Date: 2/26/15

Shipment Method: FedEx Shipment Tracking No:

Comments: Cooler/Dry Ice for 0.7 unc 1.2 @ Lab

Wet/Packs Packing BUBBLE

yes FedEx PO

Login Sample Receipt Checklist

Client: Antea USA, Inc.

Job Number: 580-47652-1

Login Number: 47652

List Source: TestAmerica Seattle

List Number: 1

Creator: Vance, Diane R

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

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: 580-52524-1

Client Project/Site: ARCO 5300

Sampling Event: ARCO 5300

For:

Antea USA, Inc.

4006 148th Ave NE

Redmond, Washington 98052

Attn: Mackie Stock



Authorized for release by:

8/26/2015 3:53:40 PM

Christabel Escarez, Project Manager I

(253)922-2310

christabel.escarez@testamericainc.com

Designee for

Robert Greer, Project Manager I

(253)922-2310

robert.greer@testamericainc.com

LINKS

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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.



The results listed within this Laboratory Report pertain only to the samples tested in the laboratory. The analyses contained in this report were performed in accordance with the BPLAMP Technical Specifications, applicable federal, state, local regulations and certification requirements as well as the methodologies as described in laboratory SOPs reviewed by the BPLAMP. This Laboratory Report is confidential and is intended for the sole use of TestAmerica and its client. This report shall not be reproduced, except in full, without written permission from TestAmerica. The Chain of Custody is included and is an integral part of this report.

A handwritten signature in blue ink, appearing to read 'CE', positioned above a horizontal blue line.

Christabel Escarez
Project Manager I
8/26/2015 3:53:40 PM

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Case Narrative

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Job ID: 580-52524-1

Laboratory: TestAmerica Seattle

Narrative

Job Narrative 580-52524-1

Comments

No additional comments.

Receipt

The samples were received on 8/14/2015 9:30 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 5.0° C.

GC/MS VOA

Method(s) NWTPH-Gx: Surrogate recovery for the following sample was outside control limits: MW-4 (580-52524-4). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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.

Definitions/Glossary

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Qualifiers

GC VOA

Qualifier	Qualifier Description
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: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Client Sample ID: MW-1
Date Collected: 08/11/15 14:00
Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-1
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			08/25/15 18:51	1
Toluene	ND		2.0		ug/L			08/25/15 18:51	1
Ethylbenzene	ND		3.0		ug/L			08/25/15 18:51	1
Methyl tert-butyl ether	ND		1.0		ug/L			08/25/15 18:51	1
Xylenes, Total	ND		3.0		ug/L			08/25/15 18:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		70 - 120		08/25/15 18:51	1
4-Bromofluorobenzene (Surr)	99		75 - 120		08/25/15 18:51	1
Toluene-d8 (Surr)	102		85 - 120		08/25/15 18:51	1
Trifluorotoluene (Surr)	101		70 - 136		08/25/15 18:51	1
Dibromofluoromethane (Surr)	100		85 - 115		08/25/15 18:51	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	190		50		ug/L			08/20/15 00:18	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150		08/20/15 00:18	1
Trifluorotoluene (Surr)	108		50 - 150		08/20/15 00:18	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		08/24/15 17:03	08/26/15 03:14	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		08/24/15 14:39	08/26/15 01:39	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Client Sample ID: MW-2
Date Collected: 08/11/15 10:30
Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-2
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			08/25/15 19:19	1
Toluene	ND		2.0		ug/L			08/25/15 19:19	1
Ethylbenzene	ND		3.0		ug/L			08/25/15 19:19	1
Methyl tert-butyl ether	ND		1.0		ug/L			08/25/15 19:19	1
Xylenes, Total	ND		3.0		ug/L			08/25/15 19:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	100		70 - 120		08/25/15 19:19	1
4-Bromofluorobenzene (Surr)	99		75 - 120		08/25/15 19:19	1
Toluene-d8 (Surr)	102		85 - 120		08/25/15 19:19	1
Trifluorotoluene (Surr)	98		70 - 136		08/25/15 19:19	1
Dibromofluoromethane (Surr)	98		85 - 115		08/25/15 19:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	65		50		ug/L			08/20/15 00:51	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150		08/20/15 00:51	1
Trifluorotoluene (Surr)	108		50 - 150		08/20/15 00:51	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		08/24/15 17:03	08/26/15 03:46	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		08/24/15 14:39	08/26/15 02:10	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Client Sample ID: MW-3
Date Collected: 08/11/15 13:40
Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-3
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			08/25/15 19:46	1
Toluene	ND		2.0		ug/L			08/25/15 19:46	1
Ethylbenzene	ND		3.0		ug/L			08/25/15 19:46	1
Methyl tert-butyl ether	3.8		1.0		ug/L			08/25/15 19:46	1
Xylenes, Total	ND		3.0		ug/L			08/25/15 19:46	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 120		08/25/15 19:46	1
4-Bromofluorobenzene (Surr)	100		75 - 120		08/25/15 19:46	1
Toluene-d8 (Surr)	104		85 - 120		08/25/15 19:46	1
Trifluorotoluene (Surr)	101		70 - 136		08/25/15 19:46	1
Dibromofluoromethane (Surr)	101		85 - 115		08/25/15 19:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	54		50		ug/L			08/20/15 01:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150		08/20/15 01:24	1
Trifluorotoluene (Surr)	103		50 - 150		08/20/15 01:24	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		08/24/15 17:03	08/26/15 03:50	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		08/24/15 14:39	08/26/15 02:15	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Client Sample ID: MW-4
Date Collected: 08/11/15 11:40
Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-4
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			08/25/15 20:14	1
Toluene	ND		2.0		ug/L			08/25/15 20:14	1
Ethylbenzene	46		3.0		ug/L			08/25/15 20:14	1
Methyl tert-butyl ether	ND		1.0		ug/L			08/25/15 20:14	1
Xylenes, Total	ND		3.0		ug/L			08/25/15 20:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	103		70 - 120		08/25/15 20:14	1
4-Bromofluorobenzene (Surr)	101		75 - 120		08/25/15 20:14	1
Toluene-d8 (Surr)	100		85 - 120		08/25/15 20:14	1
Trifluorotoluene (Surr)	98		70 - 136		08/25/15 20:14	1
Dibromofluoromethane (Surr)	101		85 - 115		08/25/15 20:14	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	3700		50		ug/L			08/20/15 01:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	248	X	50 - 150		08/20/15 01:56	1
Trifluorotoluene (Surr)	111		50 - 150		08/20/15 01:56	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	5.6		2.0		ug/L		08/24/15 17:03	08/26/15 03:55	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	5.7		2.0		ug/L		08/24/15 14:39	08/26/15 02:19	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Client Sample ID: MW-6
Date Collected: 08/11/15 11:10
Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-5
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			08/25/15 20:41	1
Toluene	ND		2.0		ug/L			08/25/15 20:41	1
Ethylbenzene	ND		3.0		ug/L			08/25/15 20:41	1
Methyl tert-butyl ether	2.2		1.0		ug/L			08/25/15 20:41	1
Xylenes, Total	ND		3.0		ug/L			08/25/15 20:41	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		70 - 120		08/25/15 20:41	1
4-Bromofluorobenzene (Surr)	99		75 - 120		08/25/15 20:41	1
Toluene-d8 (Surr)	104		85 - 120		08/25/15 20:41	1
Trifluorotoluene (Surr)	100		70 - 136		08/25/15 20:41	1
Dibromofluoromethane (Surr)	98		85 - 115		08/25/15 20:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	88		50		ug/L			08/21/15 16:15	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150		08/21/15 16:15	1
Trifluorotoluene (Surr)	102		50 - 150		08/21/15 16:15	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		08/24/15 17:03	08/26/15 03:59	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		08/24/15 14:39	08/26/15 02:24	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Client Sample ID: MW-7
Date Collected: 08/11/15 12:25
Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-6
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			08/25/15 21:09	1
Toluene	ND		2.0		ug/L			08/25/15 21:09	1
Ethylbenzene	ND		3.0		ug/L			08/25/15 21:09	1
Methyl tert-butyl ether	2.8		1.0		ug/L			08/25/15 21:09	1
Xylenes, Total	ND		3.0		ug/L			08/25/15 21:09	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	99		70 - 120		08/25/15 21:09	1
4-Bromofluorobenzene (Surr)	98		75 - 120		08/25/15 21:09	1
Toluene-d8 (Surr)	104		85 - 120		08/25/15 21:09	1
Trifluorotoluene (Surr)	98		70 - 136		08/25/15 21:09	1
Dibromofluoromethane (Surr)	99		85 - 115		08/25/15 21:09	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		50		ug/L			08/20/15 03:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	90		50 - 150					08/20/15 03:02	1
Trifluorotoluene (Surr)	111		50 - 150					08/20/15 03:02	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		08/24/15 17:03	08/26/15 04:04	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		08/24/15 14:39	08/26/15 02:28	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Client Sample ID: MW-8
Date Collected: 08/11/15 13:00
Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-7
Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			08/25/15 21:36	1
Toluene	ND		2.0		ug/L			08/25/15 21:36	1
Ethylbenzene	ND		3.0		ug/L			08/25/15 21:36	1
Methyl tert-butyl ether	4.6		1.0		ug/L			08/25/15 21:36	1
Xylenes, Total	ND		3.0		ug/L			08/25/15 21:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	102		70 - 120		08/25/15 21:36	1
4-Bromofluorobenzene (Surr)	100		75 - 120		08/25/15 21:36	1
Toluene-d8 (Surr)	103		85 - 120		08/25/15 21:36	1
Trifluorotoluene (Surr)	100		70 - 136		08/25/15 21:36	1
Dibromofluoromethane (Surr)	101		85 - 115		08/25/15 21:36	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	200		50		ug/L			08/20/15 03:35	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	92		50 - 150		08/20/15 03:35	1
Trifluorotoluene (Surr)	102		50 - 150		08/20/15 03:35	1

Method: 6020 - Dissolved Metals by ICP-MS - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		08/24/15 17:03	08/26/15 04:08	5

Method: 6020 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		08/24/15 14:39	08/26/15 02:33	5

TestAmerica Seattle

Client Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Client Sample ID: TB

Date Collected: 08/11/15 00:00

Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-8

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			08/25/15 14:39	1
Toluene	ND		2.0		ug/L			08/25/15 14:39	1
Ethylbenzene	ND		3.0		ug/L			08/25/15 14:39	1
Xylenes, Total	ND		3.0		ug/L			08/25/15 14:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		85 - 120		08/25/15 14:39	1
Trifluorotoluene (Surr)	97		70 - 136		08/25/15 14:39	1
4-Bromofluorobenzene (Surr)	99		75 - 120		08/25/15 14:39	1
Dibromofluoromethane (Surr)	98		85 - 115		08/25/15 14:39	1
1,2-Dichloroethane-d4 (Surr)	97		70 - 120		08/25/15 14:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		50		ug/L			08/18/15 18:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150		08/18/15 18:16	1
Trifluorotoluene (Surr)	108		50 - 150		08/18/15 18:16	1

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-198876/4

Matrix: Water

Analysis Batch: 198876

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		2.0		ug/L			08/25/15 12:27	1
Toluene	ND		2.0		ug/L			08/25/15 12:27	1
Ethylbenzene	ND		3.0		ug/L			08/25/15 12:27	1
Methyl tert-butyl ether	ND		1.0		ug/L			08/25/15 12:27	1
Xylenes, Total	ND		3.0		ug/L			08/25/15 12:27	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		75 - 120		08/25/15 12:27	1
Toluene-d8 (Surr)	103		85 - 120		08/25/15 12:27	1
1,2-Dichloroethane-d4 (Surr)	95		70 - 120		08/25/15 12:27	1
Trifluorotoluene (Surr)	100		70 - 136		08/25/15 12:27	1
Dibromofluoromethane (Surr)	97		85 - 115		08/25/15 12:27	1

Lab Sample ID: LCS 580-198876/5

Matrix: Water

Analysis Batch: 198876

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	20.0	20.1		ug/L		101	80 - 120
Toluene	20.0	19.1		ug/L		96	75 - 120
Ethylbenzene	20.0	19.5		ug/L		97	75 - 125
m-Xylene & p-Xylene	20.0	19.5		ug/L		98	75 - 130
Methyl tert-butyl ether	20.0	20.1		ug/L		100	65 - 125
o-Xylene	20.0	19.0		ug/L		95	80 - 120
Xylenes, Total	40.0	38.5		ug/L		96	75 - 125

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	97		75 - 120
Toluene-d8 (Surr)	97		85 - 120
1,2-Dichloroethane-d4 (Surr)	105		70 - 120
Trifluorotoluene (Surr)	95		70 - 136
Dibromofluoromethane (Surr)	103		85 - 115

Lab Sample ID: LCSD 580-198876/6

Matrix: Water

Analysis Batch: 198876

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	20.0	19.3		ug/L		96	80 - 120	5	30
Toluene	20.0	18.5		ug/L		93	75 - 120	3	30
Ethylbenzene	20.0	18.9		ug/L		95	75 - 125	3	30
m-Xylene & p-Xylene	20.0	18.8		ug/L		94	75 - 130	4	30
Methyl tert-butyl ether	20.0	18.7		ug/L		94	65 - 125	7	30
o-Xylene	20.0	18.6		ug/L		93	80 - 120	2	30
Xylenes, Total	40.0	37.4		ug/L		94	75 - 125	3	30

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

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

Lab Sample ID: LCSD 580-198876/6

Matrix: Water

Analysis Batch: 198876

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	100		75 - 120
Toluene-d8 (Surr)	101		85 - 120
1,2-Dichloroethane-d4 (Surr)	100		70 - 120
Trifluorotoluene (Surr)	98		70 - 136
Dibromofluoromethane (Surr)	100		85 - 115

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

Lab Sample ID: MB 580-198271/5

Matrix: Water

Analysis Batch: 198271

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		50		ug/L			08/18/15 16:04	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150					08/18/15 16:04	1
Trifluorotoluene (Surr)	108		50 - 150					08/18/15 16:04	1

Lab Sample ID: LCS 580-198271/6

Matrix: Water

Analysis Batch: 198271

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1160	1080		ug/L		93	79 - 110
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	97		50 - 150				
Trifluorotoluene (Surr)	115		50 - 150				

Lab Sample ID: LCSD 580-198271/7

Matrix: Water

Analysis Batch: 198271

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	1160	1100		ug/L		95	79 - 110	2	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	98		50 - 150						
Trifluorotoluene (Surr)	115		50 - 150						

Lab Sample ID: MB 580-198406/5

Matrix: Water

Analysis Batch: 198406

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		50		ug/L			08/19/15 16:55	1

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

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

Lab Sample ID: MB 580-198406/5

Matrix: Water

Analysis Batch: 198406

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	91		50 - 150		08/19/15 16:55	1
Trifluorotoluene (Surr)	106		50 - 150		08/19/15 16:55	1

Lab Sample ID: LCS 580-198406/6

Matrix: Water

Analysis Batch: 198406

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1160	932		ug/L		80	79 - 110
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	96		50 - 150				
Trifluorotoluene (Surr)	112		50 - 150				

Lab Sample ID: LCSD 580-198406/7

Matrix: Water

Analysis Batch: 198406

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	1160	1090		ug/L		93	79 - 110	15	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	97		50 - 150						
Trifluorotoluene (Surr)	110		50 - 150						

Lab Sample ID: MB 580-198616/5

Matrix: Water

Analysis Batch: 198616

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		50		ug/L			08/21/15 14:36	1
Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac			
4-Bromofluorobenzene (Surr)	92		50 - 150		08/21/15 14:36	1			
Trifluorotoluene (Surr)	106		50 - 150		08/21/15 14:36	1			

Lab Sample ID: LCS 580-198616/6

Matrix: Water

Analysis Batch: 198616

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1160	1060		ug/L		92	79 - 110
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	98		50 - 150				
Trifluorotoluene (Surr)	111		50 - 150				

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

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

Lab Sample ID: LCSD 580-198616/7

Matrix: Water

Analysis Batch: 198616

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	1160	1060		ug/L		91	79 - 110	1	20
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
4-Bromofluorobenzene (Surr)	98		50 - 150						
Trifluorotoluene (Surr)	109		50 - 150						

Method: 6020 - Metals (ICP/MS)

Lab Sample ID: MB 580-198817/14-A

Matrix: Water

Analysis Batch: 199003

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 198817

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		08/24/15 14:39	08/26/15 01:20	5

Lab Sample ID: LCS 580-198817/15-A

Matrix: Water

Analysis Batch: 199003

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 198817

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	1000	981		ug/L		98	80 - 120		
Iron	22000	23400		ug/L		106	80 - 120		
Manganese	1000	1000		ug/L		100	80 - 120		

Lab Sample ID: LCSD 580-198817/16-A

Matrix: Water

Analysis Batch: 199003

Client Sample ID: Lab Control Sample Dup

Prep Type: Total Recoverable

Prep Batch: 198817

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	1000	972		ug/L		97	80 - 120	1	20
Iron	22000	23500		ug/L		107	80 - 120	0	20
Manganese	1000	1010		ug/L		101	80 - 120	1	20

Lab Sample ID: 580-52524-1 MS

Matrix: Water

Analysis Batch: 199003

Client Sample ID: MW-1

Prep Type: Total Recoverable

Prep Batch: 198817

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		1000	1000		ug/L		100	80 - 120		
Iron	8600		22000	31500		ug/L		104	80 - 120		
Manganese	2500		1000	3510		ug/L		100	80 - 120		

Lab Sample ID: 580-52524-1 MSD

Matrix: Water

Analysis Batch: 199003

Client Sample ID: MW-1

Prep Type: Total Recoverable

Prep Batch: 198817

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		1000	1020		ug/L		102	80 - 120	1	20

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Method: 6020 - Metals (ICP/MS) (Continued)

Lab Sample ID: 580-52524-1 MSD

Matrix: Water

Analysis Batch: 199003

Client Sample ID: MW-1
Prep Type: Total Recoverable

Prep Batch: 198817

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Iron	8600		22000	32300		ug/L		108	80 - 120	2	20
Manganese	2500		1000	3590		ug/L		108	80 - 120	2	20

Lab Sample ID: 580-52524-1 DU

Matrix: Water

Analysis Batch: 199003

Client Sample ID: MW-1
Prep Type: Total Recoverable

Prep Batch: 198817

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Lead	ND		ND		ug/L		NC	20

Method: 6020 - Dissolved Metals by ICP-MS

Lab Sample ID: LCS 580-198827/13-A

Matrix: Water

Analysis Batch: 199003

Client Sample ID: Lab Control Sample

Prep Type: Total Recoverable

Prep Batch: 198827

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	1000	983		ug/L		98	80 - 120
Iron	22.0	22.9		mg/L		104	80 - 120

Lab Sample ID: LCSD 580-198827/14-A

Matrix: Water

Analysis Batch: 199003

Client Sample ID: Lab Control Sample Dup

Prep Type: Total Recoverable

Prep Batch: 198827

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	1000	989		ug/L		99	80 - 120	1	20
Iron	22.0	23.2		mg/L		106	80 - 120	1	20

Lab Sample ID: MB 580-198324/9-B

Matrix: Water

Analysis Batch: 199003

Client Sample ID: Method Blank

Prep Type: Dissolved

Prep Batch: 198827

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		08/24/15 17:03	08/26/15 02:56	5

Lab Sample ID: 580-52524-1 MS

Matrix: Water

Analysis Batch: 199003

Client Sample ID: MW-1

Prep Type: Dissolved

Prep Batch: 198827

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Lead	ND		1000	1050		ug/L		105	80 - 120
Iron	ND		22.0	24.0		mg/L		109	80 - 120

Lab Sample ID: 580-52524-1 MSD

Matrix: Water

Analysis Batch: 199003

Client Sample ID: MW-1

Prep Type: Dissolved

Prep Batch: 198827

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Lead	ND		1000	1030		ug/L		103	80 - 120	2	20

TestAmerica Seattle

QC Sample Results

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Method: 6020 - Dissolved Metals by ICP-MS (Continued)

Lab Sample ID: 580-52524-1 MSD

Matrix: Water

Analysis Batch: 199003

Client Sample ID: MW-1

Prep Type: Dissolved

Prep Batch: 198827

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Iron	ND		22.0	23.5		mg/L	-	106	80 - 120	2	20

Lab Sample ID: 580-52524-1 DU

Matrix: Water

Analysis Batch: 199003

Client Sample ID: MW-1

Prep Type: Dissolved

Prep Batch: 198827

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Lead	ND		ND		ug/L	-	NC	20

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Client Sample ID: MW-1

Date Collected: 08/11/15 14:00

Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	198876	08/25/15 18:51	D1R	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	198406	08/20/15 00:18	HDK	TAL SEA
Dissolved	Filtration	FILTRATION			198324	08/19/15 06:31	MKN	TAL SEA
Dissolved	Prep	3005A			198827	08/24/15 17:03	PAB	TAL SEA
Dissolved	Analysis	6020		5	199003	08/26/15 03:14	FCW	TAL SEA
Total Recoverable	Prep	3005A			198817	08/24/15 14:39	PAB	TAL SEA
Total Recoverable	Analysis	6020		5	199003	08/26/15 01:39	FCW	TAL SEA

Client Sample ID: MW-2

Date Collected: 08/11/15 10:30

Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	198876	08/25/15 19:19	D1R	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	198406	08/20/15 00:51	HDK	TAL SEA
Dissolved	Filtration	FILTRATION			198324	08/19/15 06:31	MKN	TAL SEA
Dissolved	Prep	3005A			198827	08/24/15 17:03	PAB	TAL SEA
Dissolved	Analysis	6020		5	199003	08/26/15 03:46	FCW	TAL SEA
Total Recoverable	Prep	3005A			198817	08/24/15 14:39	PAB	TAL SEA
Total Recoverable	Analysis	6020		5	199003	08/26/15 02:10	FCW	TAL SEA

Client Sample ID: MW-3

Date Collected: 08/11/15 13:40

Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	198876	08/25/15 19:46	D1R	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	198406	08/20/15 01:24	HDK	TAL SEA
Dissolved	Filtration	FILTRATION			198324	08/19/15 06:31	MKN	TAL SEA
Dissolved	Prep	3005A			198827	08/24/15 17:03	PAB	TAL SEA
Dissolved	Analysis	6020		5	199003	08/26/15 03:50	FCW	TAL SEA
Total Recoverable	Prep	3005A			198817	08/24/15 14:39	PAB	TAL SEA
Total Recoverable	Analysis	6020		5	199003	08/26/15 02:15	FCW	TAL SEA

Client Sample ID: MW-4

Date Collected: 08/11/15 11:40

Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	198876	08/25/15 20:14	D1R	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	198406	08/20/15 01:56	HDK	TAL SEA
Dissolved	Filtration	FILTRATION			198324	08/19/15 06:31	MKN	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Client Sample ID: MW-4

Date Collected: 08/11/15 11:40

Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-4

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Dissolved	Prep	3005A			198827	08/24/15 17:03	PAB	TAL SEA
Dissolved	Analysis	6020		5	199003	08/26/15 03:55	FCW	TAL SEA
Total Recoverable	Prep	3005A			198817	08/24/15 14:39	PAB	TAL SEA
Total Recoverable	Analysis	6020		5	199003	08/26/15 02:19	FCW	TAL SEA

Client Sample ID: MW-6

Date Collected: 08/11/15 11:10

Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-5

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	198876	08/25/15 20:41	D1R	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	198616	08/21/15 16:15	D1R	TAL SEA
Dissolved	Filtration	FILTRATION			198324	08/19/15 06:31	MKN	TAL SEA
Dissolved	Prep	3005A			198827	08/24/15 17:03	PAB	TAL SEA
Dissolved	Analysis	6020		5	199003	08/26/15 03:59	FCW	TAL SEA
Total Recoverable	Prep	3005A			198817	08/24/15 14:39	PAB	TAL SEA
Total Recoverable	Analysis	6020		5	199003	08/26/15 02:24	FCW	TAL SEA

Client Sample ID: MW-7

Date Collected: 08/11/15 12:25

Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-6

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	198876	08/25/15 21:09	D1R	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	198406	08/20/15 03:02	HDK	TAL SEA
Dissolved	Filtration	FILTRATION			198324	08/19/15 06:31	MKN	TAL SEA
Dissolved	Prep	3005A			198827	08/24/15 17:03	PAB	TAL SEA
Dissolved	Analysis	6020		5	199003	08/26/15 04:04	FCW	TAL SEA
Total Recoverable	Prep	3005A			198817	08/24/15 14:39	PAB	TAL SEA
Total Recoverable	Analysis	6020		5	199003	08/26/15 02:28	FCW	TAL SEA

Client Sample ID: MW-8

Date Collected: 08/11/15 13:00

Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-7

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	198876	08/25/15 21:36	D1R	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	198406	08/20/15 03:35	HDK	TAL SEA
Dissolved	Filtration	FILTRATION			198324	08/19/15 06:31	MKN	TAL SEA
Dissolved	Prep	3005A			198827	08/24/15 17:03	PAB	TAL SEA
Dissolved	Analysis	6020		5	199003	08/26/15 04:08	FCW	TAL SEA
Total Recoverable	Prep	3005A			198817	08/24/15 14:39	PAB	TAL SEA
Total Recoverable	Analysis	6020		5	199003	08/26/15 02:33	FCW	TAL SEA

TestAmerica Seattle

Lab Chronicle

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Client Sample ID: TB

Date Collected: 08/11/15 00:00

Date Received: 08/14/15 09:30

Lab Sample ID: 580-52524-8

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	198876	08/25/15 14:39	D1R	TAL SEA
Total/NA	Analysis	NWTPH-Gx		1	198271	08/18/15 18:16	TL1	TAL SEA

Laboratory References:

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

Certification Summary

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Laboratory: TestAmerica Seattle

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska (UST)	State Program	10	UST-022	03-02-16
California	State Program	9	2901	01-31-17
L-A-B	DoD ELAP		L2236	01-19-16
L-A-B	ISO/IEC 17025		L2236	01-19-16
Montana (UST)	State Program	8	N/A	04-30-20
Oregon	NELAP	10	WA100007	11-06-15
US Fish & Wildlife	Federal		LE058448-0	02-28-16
USDA	Federal		P330-14-00126	04-08-17
Washington	State Program	10	C553	02-17-16

Sample Summary

Client: Antea USA, Inc.
Project/Site: ARCO 5300

TestAmerica Job ID: 580-52524-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-52524-1	MW-1	Water	08/11/15 14:00	08/14/15 09:30
580-52524-2	MW-2	Water	08/11/15 10:30	08/14/15 09:30
580-52524-3	MW-3	Water	08/11/15 13:40	08/14/15 09:30
580-52524-4	MW-4	Water	08/11/15 11:40	08/14/15 09:30
580-52524-5	MW-6	Water	08/11/15 11:10	08/14/15 09:30
580-52524-6	MW-7	Water	08/11/15 12:25	08/14/15 09:30
580-52524-7	MW-8	Water	08/11/15 13:00	08/14/15 09:30
580-52524-8	TB	Water	08/11/15 00:00	08/14/15 09:30



Laboratory Management Program LAMP Chain of Custody Record

Page 1 of 1

BP/ARC Project Name: ARCO 5300
BP/ARC Facility No.: ARCO Facility No. 5300
Req Due Date (mm/dd/yy): Standard
Rush TAT: Yes No X
Lab Work Order Number:

Lab Name: Test America, Inc.	BP/ARC Facility Address: 710 15th Avenue	Consultant/Contractor: Antea Group
Lab Address: 5755 8th Street East, Tacoma, WA	City, State, ZIP Code: Longview, WA	Consultant/Contractor Project No: 05300EA151
Lab PM: David Burk	Lead Regulatory Agency: Washington State Department of Ecology	Address: 4006 148th Ave NE, Redmond, WA 98052
Lab Phone: (253) 922-2310	California Global ID No.: NA	Consultant/Contractor PM: Mackie Stock
Lab Shipping Acct	Enfos Proposal No: 008JJ-0004 / WR286431	Phone: 425-498-7740
Lab Bottle Order No:	Accounting Mode: Provision X OOC-BU OOC-RM	Email EDD To: mackie.stock@anteagroup.com
Other Info:	Stage: 40 Activity: 80	Invoice To: BP/ARC X Contractor

BP/ARC EBM: Paul Supple				Report Type & QC Level													
EBM Phone: (925) 275-3801				Standard ☒ w/ Access													
EBM Email: Paul.Supple@bp.com				Full Data Package ☐													
Lab No.	Sample Description	Date	Time	Requested Analyses								Report Type & QC Level					
MW-1		8/11/15	1400													580-52524 Chain of Custody 	
MW-2		1	1030	X													
MW-3		1	1340	X													
MW-4		1	1140	X													
MW-6		1	1110	X													
MW-7		1	1225	X													
MW-8		8/11/15	1300	X													
Trip Blanks			0000	X													



Sampler's Name: Brad Jackson	Relinquished By / Affiliation: Antea Group	Date: 8/13/15	Time: 1000	Accepted By / Affiliation: [Signature]	Date: 8/14/15	Time: 0930
Sampler's Company: Antea Group						
Shipment Method: FedEx	Ship Date: 8/13/15					
Shipment Tracking No:						
Special Instructions:						
THIS LINE - LAB USE ONLY: Custody Seals In Place: Yes / No Temp Blank: Yes / No Cooler Temp on Recel						

w/CS DigIR cor 5.0 June 2014
Cooler/TB Cool+@Lab 9:30
Cooler Dscle 2014/06/10
WetPacks Packing Bubble
Fed Ex Express

MSD Sample Submitted: Yes / No
BP/ARC LAMP COC Rev. 6 01/01/2009

Login Sample Receipt Checklist

Client: Antea USA, Inc.

Job Number: 580-52524-1

Login Number: 52524

List Number: 1

Creator: Neri, Tom

List Source: TestAmerica Seattle

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.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	