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GROUND WATER MONITORING REPORT

Atlantic Richfield

Annual Report for 2007

February 13, 2008

ARCO Facility No.: 5443
 Address: 701 128th Street, Everett, Washington
 Atlantic Richfield
 Environmental Business Manager: David White
 Consulting Co./Contact Person: Delta Consultants, Inc./Bryan Taylor
 Consultant Project Number: G0BHS
 Primary Agency/Regulatory ID No.: Washington State Department of Ecology

WORK PERFORMED DURING 2007:

- SAIC conducted annual ground water monitoring and sampling November 7, 2007.
- Delta prepared this annual ground water monitoring report.

WORK SCHEDULED FOR 2008:

- SAIC will conduct annual ground water monitoring and sampling.
- Delta will prepare an annual ground water monitoring report.



Current Phase of Project:	Monitoring	(Phase I, Addtl Assmnt RAP/CAP, Remed., etc)
Frequency of Ground Water Sampling and Monitoring:	Annual	(Quarterly, etc)
Are LPH Present On-Site:	No	(Yes/No)
LPH Recovered this Reporting Period:	None	(Gallons)
Cumulative LPH Recovered to Date:	None	(Gallons)
Amount of Soil Removed to Date:	2.19 tons (soil cuttings)	(Cubic yards/tons)
Current Remediation Techniques:	Natural Attenuation	(SVES/Sparge/Pump and Treat)
Approximate Depth to Ground Water:	6.98 to 9.60	(Feet)
Ground Water Gradient:	East	(Direction)
	0.03 ft./linear ft.	(Magnitude)

a member of:



The recommendations contained in this report represent Delta's professional opinions based upon the currently available information and are arrived at in accordance with currently acceptable professional standards. This report is based upon a specific scope of work requested by the client. The contract between Delta 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 Delta's client and the Department of Ecology. Delta will not and cannot be liable for unauthorized reliance by any other party. Other than as contained in this paragraph, Delta makes no express or implied warranty as to the contents of this report.



Bryan Taylor
Project Manager

Attachments:

- Table 1 – Summary of Ground Water Data
- Figure 1 – Site Location Map
- Figure 2 – Site Aerial Map
- Figure 3 – Inferred Water Table Contour Map – 11/07/07
- Figure 4 – MW-4 Hydrocarbon Concentrations and Water Elevations vs. Time
- Test America Analytical Lab Report
- Field Data Sheets

cc: Dale Meyers, Washington State Department of Ecology, NW Region

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TABLE 1
SUMMARY OF GROUND WATER DATA
ARCO FACILITY NO. 5443
701 128TH STREET
EVERETT, WASHINGTON

Well	TOC (feet)	Date Sampled	Depth to Water (feet)	GW Elevation (feet)	Dissolved Oxygen (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- Benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	1,2 Dibromo ethane (µg/L)	1,2 Dichloro ethane (µg/L)	TPH-G (µg/L)	TPH-D (µg/L)	TPH-O (µg/L)	Total Lead (µg/L)	Dissolved Lead (µg/L)	Comments
MW-1	98.19	06/02/03	5.00	93.19	6.1	<0.500	<0.500	<0.500	<1.00	<1.00	<0.010	<0.200	<50.0	NA	NA	26.5	2.45	P
MW-1	98.19	09/10/03	9.44	88.75	1.7	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	5.96	<1.00	P
MW-1	98.19	11/10/03	8.49	89.70	1.5	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	25.7	<1.00	P
MW-1	98.19	03/16/04	4.91	93.28	6.5	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	3.9	<1.00	P
MW-1	98.19	02/23/05	5.20	92.99	3.4	<0.200	<0.500	<0.500	<1.00	<2.00	NA	NA	<80.0	NA	NA	<1.00	<1.00	P
MW-1	98.19	05/23/05	4.81	93.38	3.8	<0.200	<0.500	<0.500	<1.00	<2.00	NA	NA	<80.0	NA	NA	<1.00	<1.00	P
MW-1	98.19	08/11/05	6.33	91.86	5.7	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	<1.00	<1.00	P
MW-1	98.19	11/10/05	7.15	91.04	1.6	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	<1.00	<1.00	P
MW-1	98.19	11/07/07	8.41	89.78	5.05	<0.500	<0.500	<0.500	<1.00	NA	NA	NA	<50.0	NA	NA	NA	NA	NP
MW-2	98.37	06/02/03	6.03	92.34	10.2	<0.500	<0.500	<0.500	<1.00	<1.00	<0.010	<0.200	<50.0	NA	NA	15.3	6.15	P
MW-2	98.37	09/10/03	10.41	87.96	1.2	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	7.41	<1.00	P
MW-2	98.37	11/10/03	9.24	89.13	1.6	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	22.9	<1.00	P
MW-2	98.37	03/16/04	4.45	93.92	3.3	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	3.05	<1.00	P
MW-2	98.37	02/23/05	5.81	92.56	2.6	<0.200	<0.500	<0.500	<1.00	<2.00	NA	NA	<80.0	NA	NA	<1.00	<1.00	P
MW-2	98.37	05/23/05	5.51	92.86	6.1	<0.200	<0.500	<0.500	<1.00	<2.00	NA	NA	<80.0	NA	NA	<1.00	<1.00	P
MW-2	98.37	08/11/05	7.04	91.33	4.0	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	<1.00	<1.00	P
MW-2	98.37	11/10/05	8.18	90.19	2.2	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	<1.00	<1.00	P
MW-2	98.37	11/07/07	8.22	90.15	1.25	<0.500	<0.500	<0.500	<1.00	NA	NA	NA	<50.0	NA	NA	NA	NA	NP
MW-3	98.10	06/02/03	6.10	92.00	4.6	<0.500	<0.500	<0.500	<1.00	<1.00	<0.010	<0.200	<50.0	NA	NA	3.91	1.17	P
MW-3	98.10	09/10/03	10.28	87.82	2.3	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	3.25	<1.00	P
MW-3	98.10	11/10/03	9.49	88.61	1.8	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	102	<1.00	P
MW-3	98.10	03/16/04	4.65	93.45	4.2	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	<1.00	<1.00	P
MW-3	98.10	02/23/05	6.02	92.08	2.2	<0.200	<0.500	<0.500	<1.00	<2.00	NA	NA	<80.0	NA	NA	<1.00	<1.00	P
MW-3	98.10	05/23/05	5.57	92.53	15.2	<0.200	<0.500	<0.500	<1.00	<2.00	NA	NA	<80.0	NA	NA	<1.00	<1.00	P
MW-3	98.10	08/11/05	6.98	91.12	1.9	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	<1.00	<1.00	P
MW-3	98.10	11/10/05	8.12	89.98	2.6	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	<1.00	<1.00	P
MW-3	98.10	11/07/07	9.39	88.71	7.57	<0.500	<0.500	<0.500	<1.00	NA	NA	NA	<50.0	NA	NA	NA	NA	NP
MW-4	98.10	06/02/03	7.05	91.05	6.1	1.11	<0.500	<0.500	<1.00	<1.00	<0.010	<0.200	<50.0	NA	NA	18.4	3.21	P
MW-4	98.10	09/10/03	10.32	87.78	0.7	3.05	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	4.98	<1.00	P
MW-4	98.10	11/10/03	9.81	88.29	1.1	9.74	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	11.9	<1.00	P
MW-4	98.10	03/16/04	5.66	92.44	2.2	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	5.36	<1.00	P
MW-4	98.10	02/23/05	6.83	91.27	1.9	<0.200	<0.500	<0.500	<1.00	<2.00	NA	NA	<80.0	NA	NA	<1.00	<1.00	P
MW-4	98.10	05/23/05	6.54	91.56	6.8	<0.200	<0.500	<0.500	<1.00	<2.00	NA	NA	<80.0	NA	NA	<1.00	<1.00	P
MW-4	98.10	08/11/05	7.73	90.37	2.7	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	<1.00	<1.00	P
MW-4	98.10	11/10/05	8.17	89.93	2.3	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	<1.00	<1.00	P
MW-4	98.10	11/07/07	9.60	88.50	1.90	<0.500	<0.500	<0.500	<1.00	NA	NA	NA	<50.0	NA	NA	NA	NA	NP
MW-5	97.59	06/02/03	5.00	92.59	5.2	<0.500	<0.500	<0.500	<1.00	<1.00	<0.010	<0.200	<50.0	NA	NA	3.19	<1.00	P
MW-5	97.59	09/10/03	7.85	89.74	1.5	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	1.69	<1.00	P
MW-5	97.59	11/10/03	7.44	90.15	2.0	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	3.55	<1.00	P
MW-5	97.59	03/16/04	4.31	93.28	3.6	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	<1.00	<1.00	P

TABLE 1
SUMMARY OF GROUND WATER DATA
ARCO FACILITY NO. 5443
701 128TH STREET
EVERETT, WASHINGTON

Well	TOC (feet)	Date Sampled	Depth to Water (feet)	GW Elevation (feet)	Dissolved Oxygen (mg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- Benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	1,2 Dibromo ethane (µg/L)	1,2 Dichloro ethane (µg/L)	TPH-G (µg/L)	TPH-D (µg/L)	TPH-O (µg/L)	Total Lead (µg/L)	Dissolved Lead (µg/L)	Comments
MW-5	97.59	02/23/05	4.83	92.76	2.2	<0.200	<0.500	<0.500	<1.00	<2.00	NA	NA	<80.0	NA	NA	<1.00	<1.00	P
MW-5	97.59	05/23/05	4.76	92.83	12.3	<0.200	<0.500	<0.500	<1.00	<2.00	NA	NA	<80.0	NA	NA	<1.00	<1.00	P
MW-5	97.59	08/11/05	5.48	92.11	2.8	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	<1.00	<1.00	P
MW-5	97.59	11/10/05	5.92	91.67	NM	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	<1.00	<1.00	P
MW-5	97.59	11/07/07	6.98	90.61	2.42	<0.500	<0.500	<0.500	<1.00	NA	NA	NA	<50.0	NA	NA	NA	NA	NP
MW-6	96.93	06/02/03	5.18	91.75	5.0	<0.500	<0.500	<0.500	<1.00	<1.00	<0.010	<0.200	<50.0	NA	NA	2.2	<1.00	P
MW-6	96.93	09/10/03	7.95	88.98	1.1	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	2.43	<1.00	P
MW-6	96.93	11/10/03	7.45	89.48	2.3	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	7.7	<1.00	P
MW-6	96.93	03/16/04	4.41	92.52	1.5	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	1.04	<1.00	P
MW-6	96.93	02/23/05	4.90	92.03	2.9	<0.200	<0.500	<0.500	<1.00	<2.00	NA	NA	<80.0	NA	NA	<1.00	<1.00	P
MW-6	96.93	05/23/05	4.73	92.20	9.0	<0.200	<0.500	<0.500	<1.00	<2.00	NA	NA	<80.0	NA	NA	<1.00	<1.00	P
MW-6	96.93	08/11/05	5.62	91.31	2.7	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	<1.00	<1.00	P
MW-6	96.93	11/10/05	5.90	91.03	2.7	<0.500	<0.500	<0.500	<1.00	<1.00	NA	NA	<50.0	NA	NA	<1.00	<1.00	P
MW-6	96.93	11/07/07	7.09	89.84	0.79	<0.500	<0.500	<0.500	<1.00	NA	NA	NA	<50.0	NA	NA	NA	NA	NP

Notes: Benzene, toluene, ethylbenzene, total xylenes, and methyl tert-butyl ether (MTBE) analyzed by EPA Method 8021B or EPA Method 8260B. Samples with MTBE detections above the laboratory method reporting limit using 8021B were re-analyzed using 8260B to confirm the MTBE concentration.

Sampling Frequency:

TPH-G = Gasoline-range hydrocarbons analyzed by the Northwest method NWTPH-Gx.

4Q 2007: MW-1, MW-2, MW-3, MW-4, MW-5, MW-6

TPH-D = Diesel-range hydrocarbons analyzed by the Northwest method NWTPH-Dx.

TPH-O = Oil-range hydrocarbons analyzed by the Northwest method NWTPH-Ox.

1,2-Dibromoethane (EDB) analyzed by EPA Method 8011.

1,2-Dichloroethane (EDC) analyzed by EPA Method 8260B.

Total and dissolved lead analyzed by EPA Method 6020.

mg/L = Milligrams per liter.

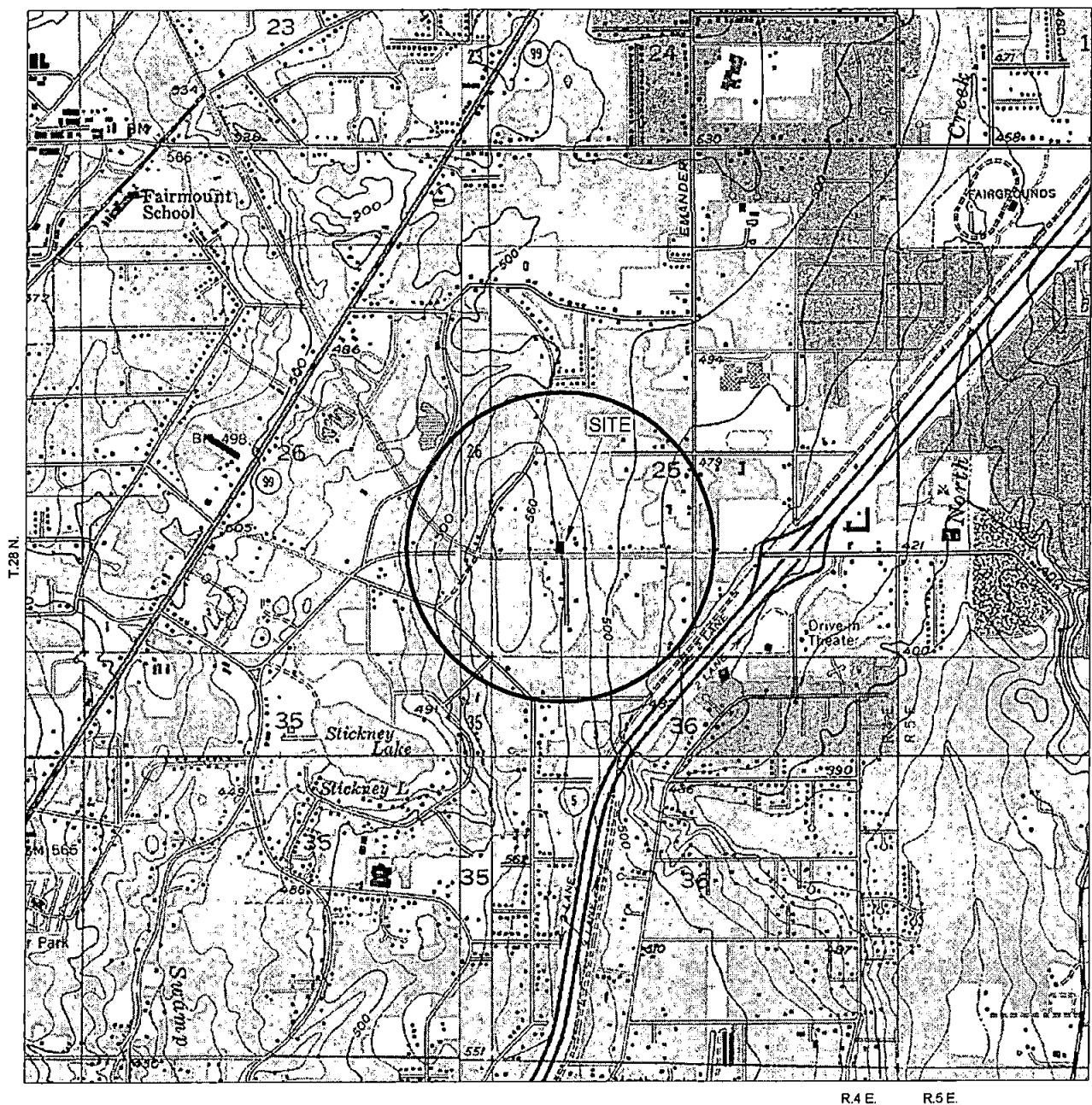
ug/L = Micrograms per liter.

<1.00 = Concentrations were not detected above the stated reporting limit.

TOC = Top of casing elevations and ground water elevations referenced to a site specific benchmark, assigned an elevation of 100.00 feet.

NA = Not analyzed.

P = purge sampling methods were utilized.



GENERAL NOTES:
 BASE MAP FROM U.S.G.S.
 WASHINGTON STATE
 MUKILTEO (P.I. '78), EVERETT (P.R. '68 & '73),
 EDMUNDS EAST (P.R. '81), BOTHELL (P.R. '81)
 7.5 MINUTE TOPOGRAPHICS

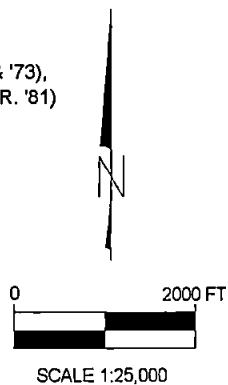


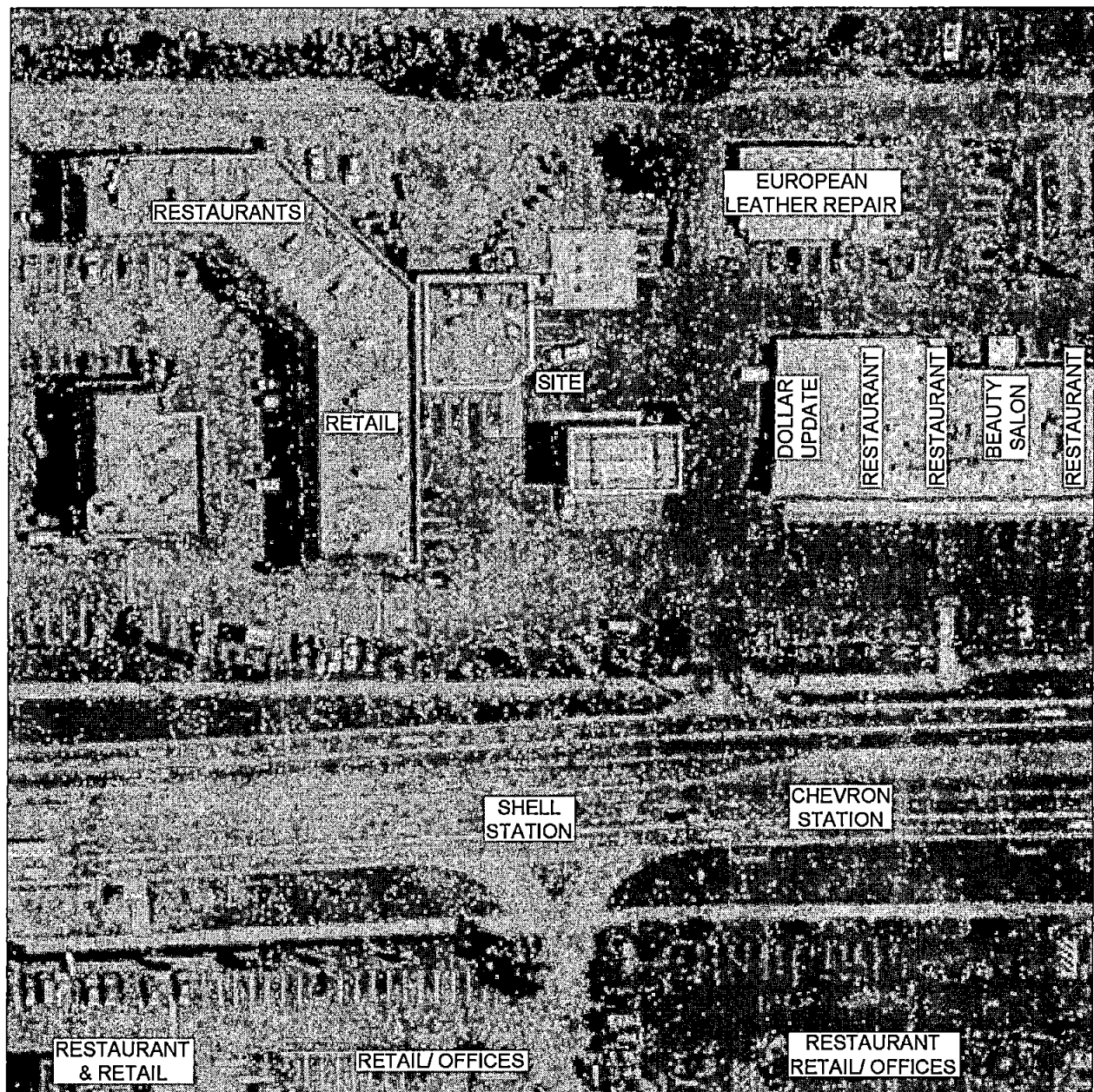
FIGURE 1
 SITE LOCATION MAP

ARCO FACILITY NO. 5443
 701 128th STREET SW
 EVERETT, WA.

PROJECT NO.
 AM00-508
 FILE NO.
 AM00508A
 REVISION NO.
 1

DRAWN BY
 M.L. 6/24/03
 PREPARED BY
 BAB
 REVIEWED BY





GENERAL NOTES:
AERIAL PHOTOGRAPH
DATED 6/13/02

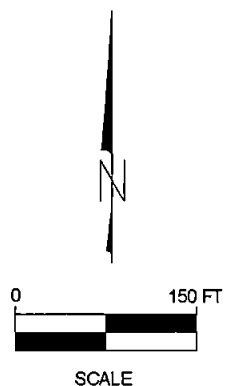


FIGURE 2
SITE AERIAL MAP

ARCO FACILITY NO. 5443
701 128th STREET SW
EVERETT, WA.

PROJECT NO. -	DRAWN BY M.L. 5/18/05
FILE NO. AM00508D	PREPARED BY SBM
REVISION NO. 1	REVIEWED BY



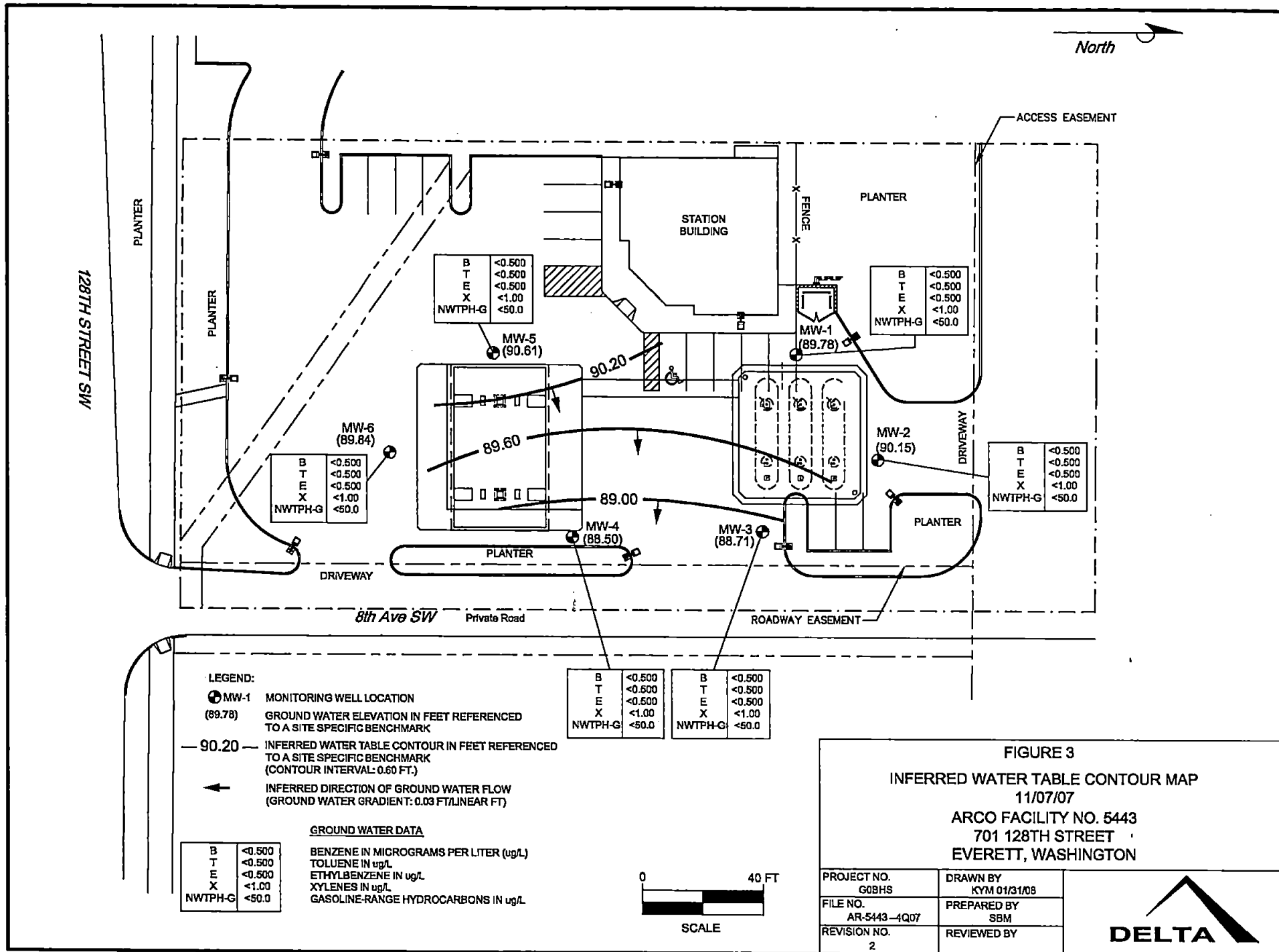
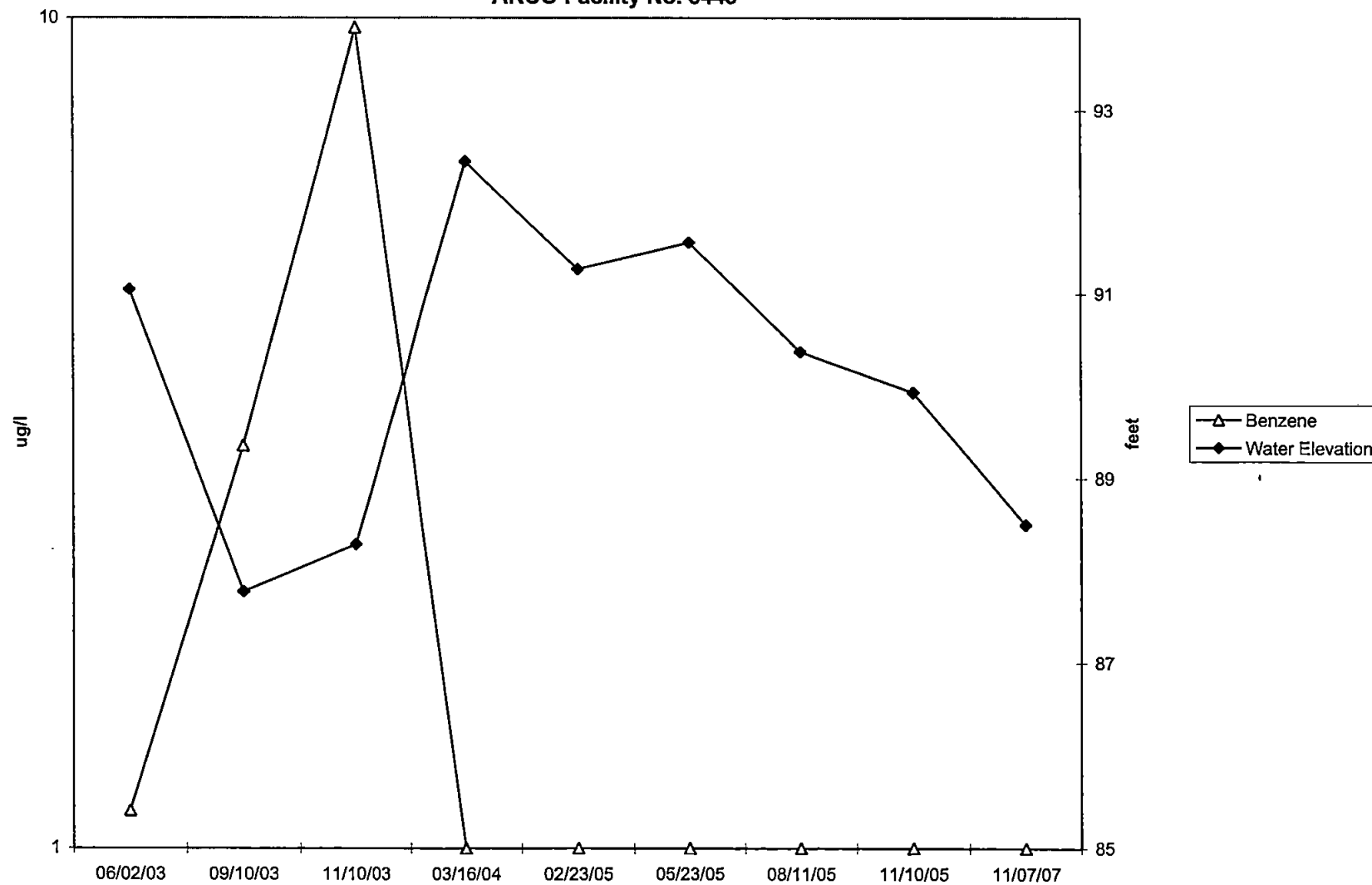


Figure 4
MW-4 Hydrocarbon Concentrations and Water Elevations vs. Time
ARCO Facility No. 5443



November 21, 2007

Mike Lange
SAIC - Bothell
18912 North Creek Parkway South, Suite 101
Bothell, WA/USA 98011

RE: ARCO #5443

Enclosed are the results of analyses for samples received by the laboratory on 11/07/07 17:35.
The following list is a summary of the Work Orders contained in this report, generated on 11/21/07 14:36.

If you have any questions concerning this report, please feel free to contact me.

<u>Work Order</u>	<u>Project</u>	<u>ProjectNumber</u>
BQK0130	ARCO #5443	GOBHS-0005

SAIC - Bothell

18912 North Creek Parkway South, Suite 101
Bothell, WA/USA 98011

Project Name: **ARCO #5443**

Project Number: **GOBHS-0005**

Project Manager: **Mike Lange**

Report Created:

11/21/07 14:36

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-1-8.41	BQK0130-01	Water	11/07/07 11:18	11/07/07 17:35
MW-2-8.22	BQK0130-02	Water	11/07/07 11:50	11/07/07 17:35
MW-3-9.39	BQK0130-03	Water	11/07/07 12:15	11/07/07 17:35
MW-4-9.60	BQK0130-04	Water	11/07/07 12:40	11/07/07 17:35
MW-5-6.98	BQK0130-05	Water	11/07/07 13:00	11/07/07 17:35
MW-6-7.09	BQK0130-06	Water	11/07/07 13:35	11/07/07 17:35
FD-1-110707	BQK0130-07	Water	11/07/07 14:00	11/07/07 17:35
TB-1-110707	BQK0130-08	Water	11/07/07 09:00	11/07/07 17:35

TestAmerica - Seattle, WA

Sandra Yakamavich

Sandra Yakamavich, Project Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report shall not be reproduced except in full, without the written approval of the laboratory.



SAIC - Bothell

18912 North Creek Parkway South, Suite 101
Bothell, WA/USA 98011

Project Name: **ARCO #5443**

Project Number: **GOBHS-0005**

Project Manager: **Mike Lange**

Report Created:

11/21/07 14:36

Volatile Petroleum Products by NWTPH-Gx

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQK0130-01 (MW-1-8.41)		Water						Sampled: 11/07/07 11:18		
Gasoline Range Hydrocarbons	NWTPH-Gx	ND	—	50.0	ug/l	1x	7K16024	11/16/07 13:09	11/16/07 17:00	
Surrogate(s): 4-BFB (FID)		83.8%		58 - 144 %	"					"
BQK0130-02 (MW-2-8.22)		Water						Sampled: 11/07/07 11:50		
Gasoline Range Hydrocarbons	NWTPH-Gx	ND	—	50.0	ug/l	1x	7K16024	11/16/07 13:09	11/16/07 18:05	
Surrogate(s): 4-BFB (FID)		83.5%		58 - 144 %	"					"
BQK0130-03 (MW-3-9.39)		Water						Sampled: 11/07/07 12:15		
Gasoline Range Hydrocarbons	NWTPH-Gx	ND	—	50.0	ug/l	1x	7K16024	11/16/07 13:09	11/17/07 05:37	
Surrogate(s): 4-BFB (FID)		84.0%		58 - 144 %	"					"
BQK0130-04 (MW-4-9.60)		Water						Sampled: 11/07/07 12:40		
Gasoline Range Hydrocarbons	NWTPH-Gx	ND	—	50.0	ug/l	1x	7K16024	11/16/07 13:09	11/17/07 06:10	
Surrogate(s): 4-BFB (FID)		83.9%		58 - 144 %	"					"
BQK0130-05 (MW-5-6.98)		Water						Sampled: 11/07/07 13:00		
Gasoline Range Hydrocarbons	NWTPH-Gx	ND	—	50.0	ug/l	1x	7K16024	11/16/07 13:09	11/17/07 06:42	
Surrogate(s): 4-BFB (FID)		83.7%		58 - 144 %	"					"
BQK0130-06 (MW-6-7.09)		Water						Sampled: 11/07/07 13:35		
Gasoline Range Hydrocarbons	NWTPH-Gx	ND	—	50.0	ug/l	1x	7K16024	11/16/07 13:09	11/17/07 07:15	
Surrogate(s): 4-BFB (FID)		83.5%		58 - 144 %	"					"
BQK0130-07 (FD-1-110707)		Water						Sampled: 11/07/07 14:00		
Gasoline Range Hydrocarbons	NWTPH-Gx	ND	—	50.0	ug/l	1x	7K16024	11/16/07 13:09	11/17/07 07:48	
Surrogate(s): 4-BFB (FID)		84.1%		58 - 144 %	"					"
BQK0130-08 (TB-1-110707)		Water						Sampled: 11/07/07 09:00		
Gasoline Range Hydrocarbons	NWTPH-Gx	ND	—	50.0	ug/l	1x	7K19048	11/19/07 14:03	11/19/07 23:51	
Surrogate(s): 4-BFB (FID)		83.5%		58 - 144 %	"					"

TestAmerica - Seattle, WA

Sandra Yakamovich

Sandra Yakamovich, Project Manager

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SAIC - Bothell

18912 North Creek Parkway South, Suite 101
Bothell, WA/USA 98011

Project Name: **ARCO #5443**

Project Number: **GOBHS-0005**

Project Manager: **Mike Lange**

Report Created:

11/21/07 14:36

BTEX by EPA Method 8021B

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQK0130-01 (MW-1-8.41)		Water					Sampled: 11/07/07 11:18			
Benzene	EPA 8021B	ND	—	0.500	ug/l	1x	7K16024	11/16/07 13:09	11/16/07 17:00	
Toluene	"	ND	—	0.500	"	"	"	"	"	
Ethylbenzene	"	ND	—	0.500	"	"	"	"	"	
Xylenes (total)	"	ND	—	1.00	"	"	"	"	"	
Surrogate(s): 4-BFB (PID)		101%		68 - 140 %	"					
BQK0130-02 (MW-2-8.22)		Water					Sampled: 11/07/07 11:50			
Benzene	EPA 8021B	ND	—	0.500	ug/l	1x	7K16024	11/16/07 13:09	11/16/07 18:05	
Toluene	"	ND	—	0.500	"	"	"	"	"	
Ethylbenzene	"	ND	—	0.500	"	"	"	"	"	
Xylenes (total)	"	ND	—	1.00	"	"	"	"	"	
Surrogate(s): 4-BFB (PID)		101%		68 - 140 %	"					
BQK0130-03 (MW-3-9.39)		Water					Sampled: 11/07/07 12:15			
Benzene	EPA 8021B	ND	—	0.500	ug/l	1x	7K16024	11/16/07 13:09	11/17/07 05:37	
Toluene	"	ND	—	0.500	"	"	"	"	"	
Ethylbenzene	"	ND	—	0.500	"	"	"	"	"	
Xylenes (total)	"	ND	—	1.00	"	"	"	"	"	
Surrogate(s): 4-BFB (PID)		104%		68 - 140 %	"					
BQK0130-04 (MW-4-9.60)		Water					Sampled: 11/07/07 12:40			
Benzene	EPA 8021B	ND	—	0.500	ug/l	1x	7K16024	11/16/07 13:09	11/17/07 06:10	
Toluene	"	ND	—	0.500	"	"	"	"	"	
Ethylbenzene	"	ND	—	0.500	"	"	"	"	"	
Xylenes (total)	"	ND	—	1.00	"	"	"	"	"	
Surrogate(s): 4-BFB (PID)		104%		68 - 140 %	"					
BQK0130-05 (MW-5-6.98)		Water					Sampled: 11/07/07 13:00			
Benzene	EPA 8021B	ND	—	0.500	ug/l	1x	7K16024	11/16/07 13:09	11/17/07 06:42	
Toluene	"	ND	—	0.500	"	"	"	"	"	
Ethylbenzene	"	ND	—	0.500	"	"	"	"	"	
Xylenes (total)	"	ND	—	1.00	"	"	"	"	"	
Surrogate(s): 4-BFB (PID)		103%		68 - 140 %	"					

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Project Name: **ARCO #5443**

Project Number: **GOBHS-0005**

Project Manager: **Mike Lange**

Report Created:

11/21/07 14:36

BTEX by EPA Method 8021B

TestAmerica - Seattle, WA

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BQK0130-06	(MW-6-7.09)	Water			Sampled: 11/07/07 13:35					
Benzene	EPA 8021B	ND	—	0.500	ug/l	1x	7K16024	11/16/07 13:09	11/17/07 07:15	
Toluene	"	ND	—	0.500	"	"	"	"	"	
Ethylbenzene	"	ND	—	0.500	"	"	"	"	"	
Xylenes (total)	"	ND	—	1.00	"	"	"	"	"	
Surrogate(s): 4-BFB (PID)		103%			68 - 140 %		"		"	
BQK0130-07	(FD-1-110707)	Water			Sampled: 11/07/07 14:00					
Benzene	EPA 8021B	ND	—	0.500	ug/l	1x	7K16024	11/16/07 13:09	11/17/07 07:48	
Toluene	"	ND	—	0.500	"	"	"	"	"	
Ethylbenzene	"	ND	—	0.500	"	"	"	"	"	
Xylenes (total)	"	ND	—	1.00	"	"	"	"	"	
Surrogate(s): 4-BFB (PID)		103%			68 - 140 %		"		"	
BQK0130-08	(TB-1-110707)	Water			Sampled: 11/07/07 09:00					
Benzene	EPA 8021B	ND	—	0.500	ug/l	1x	7K19048	11/19/07 14:03	11/19/07 23:51	
Toluene	"	ND	—	0.500	"	"	"	"	"	
Ethylbenzene	"	ND	—	0.500	"	"	"	"	"	
Xylenes (total)	"	ND	—	1.00	"	"	"	"	"	
Surrogate(s): 4-BFB (PID)		100%			68 - 140 %		"		"	

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SAIC - Bothell

18912 North Creek Parkway South, Suite 101
Bothell, WA/USA 98011

Project Name: **ARCO #5443**

Project Number: **GOBHS-0005**

Project Manager: **Mike Lange**

Report Created:
11/21/07 14:36

Volatile Petroleum Products by NWTPH-Gx - Laboratory Quality Control Results

TestAmerica - Seattle, WA

QC Batch: **7K16024**

Water Preparation Method: **EPA 5030B (P/T)**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (7K16024-BLK1)							Extracted: 11/16/07 13:09							
Gasoline Range Hydrocarbons	NWTPH-Gx	ND	---	50.0	ug/l	1x	--	--	--	--	--	--	11/16/07 15:11	
Surrogate(s): 4-BFB (FID)		Recovery: 83.6%		Limits: 58-144%		"		11/16/07 15:11						
LCS (7K16024-BS1)							Extracted: 11/16/07 13:09							
Gasoline Range Hydrocarbons	NWTPH-Gx	1040	---	50.0	ug/l	1x	--	1000	104%	(80-120)	--	--	11/16/07 15:44	
Surrogate(s): 4-BFB (FID)		Recovery: 90.6%		Limits: 58-144%		"		11/16/07 15:44						
Duplicate (7K16024-DUP1)				QC Source: BQK0130-01				Extracted: 11/16/07 13:09						
Gasoline Range Hydrocarbons	NWTPH-Gx	ND	---	50.0	ug/l	1x	ND	--	--	--	NR	(25)	11/16/07 17:32	
Surrogate(s): 4-BFB (FID)		Recovery: 83.5%		Limits: 58-144%		"		11/16/07 17:32						
Duplicate (7K16024-DUP2)				QC Source: BQK0130-02				Extracted: 11/16/07 13:09						
Gasoline Range Hydrocarbons	NWTPH-Gx	ND	---	50.0	ug/l	1x	ND	--	--	--	NR	(25)	11/16/07 18:38	
Surrogate(s): 4-BFB (FID)		Recovery: 84.3%		Limits: 58-144%		"		11/16/07 18:38						
Matrix Spike (7K16024-MS1)				QC Source: BQK0130-01				Extracted: 11/16/07 13:09						
Gasoline Range Hydrocarbons	NWTPH-Gx	1280	---	50.0	ug/l	1x	ND	1000	128%	(75-131)	--	--	11/16/07 19:44	
Surrogate(s): 4-BFB (FID)		Recovery: 97.3%		Limits: 58-144%		"		11/16/07 19:44						
Matrix Spike Dup (7K16024-MSD1)				QC Source: BQK0130-01				Extracted: 11/16/07 13:09						
Gasoline Range Hydrocarbons	NWTPH-Gx	1080	---	50.0	ug/l	1x	ND	1000	108%	(75-131)	16.5%	(25)	11/16/07 20:18	
Surrogate(s): 4-BFB (FID)		Recovery: 89.3%		Limits: 58-144%		"		11/16/07 20:18						

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Sandra Yakamovich

Sandra Yakamovich, Project Manager

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SAIC - Bothell	Project Name: ARCO #5443	Report Created:
18912 North Creek Parkway South, Suite 101	Project Number: GOBHS-0005	11/21/07 14:36
Bothell, WA/USA 98011	Project Manager: Mike Lange	

Volatile Petroleum Products by NWTPH-Gx - Laboratory Quality Control Results
TestAmerica - Seattle, WA

QC Batch: 7K19048 **Water Preparation Method:** EPA 5030B (P/T)

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes	
Blank (7K19048-BLK1)							Extracted: 11/19/07 14:03								
Gasoline Range Hydrocarbons	NWTPH-Gx	ND	---	50.0	ug/l	1x	--	--	--	--	--	--	11/19/07 15:31		
Surrogate(s): 4-BFB (FID)		Recovery: 83.7%		Limits: 58-144%		"		11/19/07 15:31							
LCS (7K19048-BS1)							Extracted: 11/19/07 14:03								
Gasoline Range Hydrocarbons	NWTPH-Gx	1050	---	50.0	ug/l	1x	--	1000	105%	(80-120)	--	--	11/19/07 16:03		
Surrogate(s): 4-BFB (FID)		Recovery: 90.4%		Limits: 58-144%		"		11/19/07 16:03							
Duplicate (7K19048-DUP1)				QC Source: BQK0119-03				Extracted: 11/19/07 14:03							
Gasoline Range Hydrocarbons	NWTPH-Gx	ND	---	50.0	ug/l	1x	ND	--	--	--	NR (25)		11/19/07 18:25		
Surrogate(s): 4-BFB (FID)		Recovery: 84.5%		Limits: 58-144%		"		11/19/07 18:25							
Duplicate (7K19048-DUP2)				QC Source: BQK0119-04				Extracted: 11/19/07 14:03							
Gasoline Range Hydrocarbons	NWTPH-Gx	148	---	50.0	ug/l	1x	152	--	--	--	2.53% (25)		11/19/07 19:30		
Surrogate(s): 4-BFB (FID)		Recovery: 89.0%		Limits: 58-144%		"		11/19/07 19:30							
Matrix Spike (7K19048-MS1)				QC Source: BQK0119-13RE1				Extracted: 11/19/07 14:03							
Gasoline Range Hydrocarbons	NWTPH-Gx	8190	---	250	ug/l	5x	1960	5000	125%	(75-131)	--	--	11/19/07 20:35		
Surrogate(s): 4-BFB (FID)		Recovery: 895%		Limits: 58-144%		"		11/19/07 20:35							ZX
Matrix Spike Dup (7K19048-MSD1)				QC Source: BQK0119-13RE1				Extracted: 11/19/07 14:03							
Gasoline Range Hydrocarbons	NWTPH-Gx	8280	---	250	ug/l	5x	1960	5000	127%	(75-131)	1.09% (25)		11/19/07 21:08		
Surrogate(s): 4-BFB (FID)		Recovery: 905%		Limits: 58-144%		"		11/19/07 21:08							ZX

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SAIC - Bothell

18912 North Creek Parkway South, Suite 101
Bothell, WA/USA 98011

Project Name: **ARCO #5443**

Project Number: - **GOBHS-0005**

Project Manager: **Mike Lange**

Report Created:

11/21/07 14:36

BTEX by EPA Method 8021B - Laboratory Quality Control Results

TestAmerica - Seattle, WA

QC Batch: 7K16024

Water Preparation Method: EPA 5030B (P/T)

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (7K16024-BLK1)														
										Extracted: 11/16/07 13:09				
Benzene	EPA 8021B	ND	---	0.500	ug/l	1x	--	--	--	--	--	--	11/16/07 15:11	
Toluene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Surrogate(s): 4-BFB (PID) Recovery: 100% Limits: 68-140% " 11/16/07 15:11														
LCS (7K16024-BS2)														
										Extracted: 11/16/07 13:09				
Benzene	EPA 8021B	29.9	---	0.500	ug/l	1x	--	30.0	99.7%	(80-120)	--	--	11/16/07 16:17	
Toluene	"	30.4	---	0.500	"	"	--	"	101%	"	--	--	"	
Ethylbenzene	"	29.9	---	0.500	"	"	--	"	99.8%	"	--	--	"	
Xylenes (total)	"	89.9	---	1.00	"	"	--	90.0	99.9%	"	--	--	"	
Surrogate(s): 4-BFB (PID) Recovery: 101% Limits: 68-140% " 11/16/07 16:17														
Duplicate (7K16024-DUP1)														
										QC Source: BQK0130-01				
										Extracted: 11/16/07 13:09				
Benzene	EPA 8021B	ND	---	0.500	ug/l	1x	ND	--	--	--	NR (25)	--	11/16/07 17:32	
Toluene	"	ND	---	0.500	"	"	ND	--	--	--	NR "	--	"	
Ethylbenzene	"	ND	---	0.500	"	"	ND	--	--	--	NR "	--	"	
Xylenes (total)	"	ND	---	1.00	"	"	ND	--	--	--	NR "	--	"	
Surrogate(s): 4-BFB (PID) Recovery: 101% Limits: 68-140% " 11/16/07 17:32														
Duplicate (7K16024-DUP2)														
										QC Source: BQK0130-02				
										Extracted: 11/16/07 13:09				
Benzene	EPA 8021B	ND	---	0.500	ug/l	1x	ND	--	--	--	NR (25)	--	11/16/07 18:38	
Toluene	"	ND	---	0.500	"	"	ND	--	--	--	NR "	--	"	
Ethylbenzene	"	ND	---	0.500	"	"	ND	--	--	--	NR "	--	"	
Xylenes (total)	"	ND	---	1.00	"	"	ND	--	--	--	NR "	--	"	
Surrogate(s): 4-BFB (PID) Recovery: 101% Limits: 68-140% " 11/16/07 18:38														
Matrix Spike (7K16024-MS2)														
										QC Source: BQK0130-02				
										Extracted: 11/16/07 13:09				
Benzene	EPA 8021B	33.5	---	0.500	ug/l	1x	ND	30.0	112%	(46-130)	--	--	11/17/07 02:53	
Toluene	"	33.9	---	0.500	"	"	ND	"	113%	(60-124)	--	--	"	
Ethylbenzene	"	34.3	---	0.500	"	"	ND	"	114%	(56-141)	--	--	"	
Xylenes (total)	"	107	---	1.00	"	"	ND	90.0	118%	(66-132)	--	--	"	
Surrogate(s): 4-BFB (PID) Recovery: 105% Limits: 68-140% " 11/17/07 02:53														

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Sandra Yakamovich

Sandra Yakamovich, Project Manager



SAIC - Bothell

18912 North Creek Parkway South, Suite 101
Bothell, WA/USA 98011

Project Name: **ARCO #5443**

Project Number: **GOBHS-0005**

Project Manager: **Mike Lange**

Report Created:

11/21/07 14:36

BTEX by EPA Method 8021B - Laboratory Quality Control Results

TestAmerica - Seattle, WA

QC Batch: **7K16024**

Water Preparation Method: **EPA 5030B (P/T)**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike Dup (7K16024-MSD2)		QC Source: BQK0130-02										Extracted: 11/16/07 13:09		
Benzene	EPA 8021B	32.8	---	0.500	ug/l	1x	ND	30.0	109%	(46-130)	2.24%	(40)	11/17/07 03:26	
Toluene	"	33.2	---	0.500	"	"	ND	"	111%	(60-124)	2.32%	"	"	
Ethylbenzene	"	33.0	---	0.500	"	"	ND	"	110%	(56-141)	3.99%	"	"	
Xylenes (total)	"	101	---	1.00	"	"	ND	90.0	113%	(66-132)	4.94%	"	"	
Surrogate(s): 4-BFB (PID)		Recovery: 104%		Limits: 68-140%		"		11/17/07 03:26						

QC Batch: **7K19048**

Water Preparation Method: **EPA 5030B (P/T)**

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Blank (7K19048-BLK1)		QC Source: BQK0119-03										Extracted: 11/19/07 14:03		
Benzene	EPA 8021B	ND	---	0.500	ug/l	1x	--	--	--	--	--	--	11/19/07 15:31	
Toluene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
Surrogate(s): 4-BFB (PID)		Recovery: 98.5%		Limits: 68-140%		"		11/19/07 15:31						

LCS (7K19048-BS2)

Extracted: **11/19/07 14:03**

Benzene	EPA 8021B	29.8	---	0.500	ug/l	1x	--	30.0	99.3%	(80-120)	--	--	11/19/07 16:36	
Toluene	"	30.2	---	0.500	"	"	--	"	101%	"	--	--	"	
Ethylbenzene	"	30.4	---	0.500	"	"	--	"	101%	"	--	--	"	
Xylenes (total)	"	89.7	---	1.00	"	"	--	90.0	99.6%	"	--	--	"	
Surrogate(s): 4-BFB (PID)		Recovery: 97.2%		Limits: 68-140%		"		11/19/07 16:36						

Duplicate (7K19048-DUP1)

QC Source: **BQK0119-03**

Extracted: **11/19/07 14:03**

Benzene	EPA 8021B	ND	---	0.500	ug/l	1x	ND	--	--	--	NR	(25)	11/19/07 18:25	
Toluene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Ethylbenzene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Xylenes (total)	"	ND	---	1.00	"	"	ND	--	--	--	NR	"	"	
Surrogate(s): 4-BFB (PID)		Recovery: 99.7%		Limits: 68-140%		"		11/19/07 18:25						

Duplicate (7K19048-DUP2)

QC Source: **BQK0119-04**

Extracted: **11/19/07 14:03**

Benzene	EPA 8021B	ND	---	0.500	ug/l	1x	ND	--	--	--	0.00%	(25)	11/19/07 19:30	
Toluene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Ethylbenzene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Xylenes (total)	"	ND	---	1.00	"	"	ND	--	--	--	NR	"	"	
Surrogate(s): 4-BFB (PID)		Recovery: 97.9%		Limits: 68-140%		"		11/19/07 19:30						

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Sandra Yakamavich, Project Manager



SAIC - Bothell

18912 North Creek Parkway South, Suite 101
Bothell, WA/USA 98011

Project Name: **ARCO #5443**

Project Number: **GOBHS-0005**

Project Manager: **Mike Lange**

Report Created:

11/21/07 14:36

BTEX by EPA Method 8021B - Laboratory Quality Control Results

TestAmerica - Seattle, WA

QC Batch: 7K19048

Water Preparation Method: EPA 5030B (P/T)

Analyte	Method	Result	MDL*	MRL	Units	Dil	Source Result	Spike Amt	% REC	(Limits)	% RPD	(Limits)	Analyzed	Notes
Matrix Spike (7K19048-MS2)		QC Source: BQK0119-13RE1						Extracted: 11/19/07 14:03						
Benzene	EPA 8021B	174	---	2.50	ug/l	5x	7.01	150	111%	(46-130)	--	--	11/20/07 03:40	
Toluene	"	168	---	2.50	"	"	0.533	"	112%	(60-124)	--	--	"	
Ethylbenzene	"	239	---	2.50	"	"	56.4	"	122%	(56-141)	--	--	"	
Xylenes (total)	"	531	---	5.00	"	"	13.5	450	115%	(66-132)	--	--	"	

Surrogate(s): 4-BFB (PID)

Recovery: 715%

Limits: 68-140% "

11/20/07 03:40

ZX

Matrix Spike Dup (7K19048-MSD2)		QC Source: BQK0119-13RE1						Extracted: 11/19/07 14:03						
Benzene	EPA 8021B	168	---	2.50	ug/l	5x	7.01	150	107%	(46-130)	3.29% (40)		11/20/07 04:13	
Toluene	"	162	---	2.50	"	"	0.533	"	108%	(60-124)	3.63%	"	"	
Ethylbenzene	"	229	---	2.50	"	"	56.4	"	115%	(56-141)	4.54%	"	"	
Xylenes (total)	"	508	---	5.00	"	"	13.5	450	110%	(66-132)	4.34%	"	"	

Surrogate(s): 4-BFB (PID)

Recovery: 702%

Limits: 68-140% "

11/20/07 04:13

ZX

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Bothell, WA/USA 98011

Project Name: **ARCO #5443**

Project Number: **GOBHS-0005**

Project Manager: **Mike Lange**

Report Created:

11/21/07 14:36

Notes and Definitions

Report Specific Notes:

ZX - Due to sample matrix effects, the surrogate recovery was outside the acceptance limits.

Laboratory Reporting Conventions:

- DET - Analyte DETECTED at or above the Reporting Limit. Qualitative Analyses only.
- ND - Analyte NOT DETECTED at or above the reporting limit (MDL or MRL, as appropriate).
- NR/NA - Not Reported / Not Available
- dry - Sample results reported on a Dry Weight Basis. Results and Reporting Limits have been corrected for Percent Dry Weight.
- wet - Sample results and reporting limits reported on a Wet Weight Basis (as received). Results with neither 'wet' nor 'dry' are reported on a Wet Weight Basis.
- RPD - RELATIVE PERCENT DIFFERENCE (RPDs calculated using Results, not Percent Recoveries).
- MRL - METHOD REPORTING LIMIT. Reporting Level at, or above, the lowest level standard of the Calibration Table.
- MDL* - METHOD DETECTION LIMIT. Reporting Level at, or above, the statistically derived limit based on 40CFR, Part 136, Appendix B.
*MDLs are listed on the report only if the data has been evaluated below the MRL. Results between the MDL and MRL are reported as Estimated Results.
- Dil - Dilutions are calculated based on deviations from the standard dilution performed for an analysis, and may not represent the dilution found on the analytical raw data.
- Reporting Limits - Reporting limits (MDLs and MRLs) are adjusted based on variations in sample preparation amounts, analytical dilutions and percent solids, where applicable.
- Electronic Signature - Electronic Signature added in accordance with TestAmerica's *Electronic Reporting and Electronic Signatures Policy*.
Application of electronic signature indicates that the report has been reviewed and approved for release by the laboratory.
Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Sandra Yakamavich





Chain of Custody Record

Project Name: ARCO # 5443
BP BU/AR Region/Enfos Segment: Washington Portfolio
State or Lead Regulatory Agency: Washington Dept. of Ecology
Requested Due Date (mm/dd/yy): Standard TAT

BU #0130

Page 1 of 1

On-site Time: <u>1030</u>	Temp: <u>58°</u>
Off-site Time: <u>1415</u>	Temp: <u>141558°</u>
Sky Conditions: <u>Overcast</u>	
Meteorological Events: <u>RAIN</u>	
Wind Speed: <u>-</u>	Direction: <u>-</u>

Lab Name: <u>Test America</u>				BP/AR Facility No.: <u>5443</u>				Consultant/Contractor: <u>SAIC</u>																
Address: <u>11720 North Creek Parkway N, Suite 400</u>				BP/AR Facility Address: <u>701 128th Street SW; Everett, WA.</u>				Address: <u>18912 North Creek Parkway, Ste 101</u>																
<u>Bothell, Washington 98011-8244</u>				Site Lat/Long: (blank)				<u>Bothell, Washington 98011</u>																
Lab PM: <u>Sandra Yakamavich</u>				California Global ID No.: <u>N/A</u>				Consultant/Contractor Project No.: <u>06-6384-00-4730-970</u>																
Tele/Fax: <u>(425) 420-9200/(425) 420-9210</u>				Enfos Project No.: <u>G00BHS - 0005</u>				Consultant/Contractor PM: <u>Michael Lange</u>																
BP/AR PM Contact: <u>David White</u>				Provision				Tele/Fax: <u>(425) 482-3319</u>																
Address: <u>4 Centerpointe Dr.</u>				Phase/WBS: <u>04 - Monitoring Only</u>				Report Type & QC Level: <u>Level 1</u>																
<u>La Palma, CA. 90623</u>				Sub Phase/Task: <u>03 - Analytical</u>				E-mail EDD To: <u>langem@saic.com</u>																
Tele/Fax: <u>(714) 228-6782/ (858) 776-1035/ (714) 228-6749</u>				Cost Element: <u>05 - Subcontracted Cost</u>				Invoice to: <u>BP</u>																
Lab Bottle Order No:				Matrix				Preservative		Requested Analysis														
Item No.	Sample Description	Time	Date	Soil/Solid	Water/Liquid	Air	Laboratory No.	No. of Containers	Unpreserved	H ₂ SO ₄	HNO ₃	HCl	Methanol	NWTPH-Gx	BTEX(8021 B)	BTEX+MTBE(8021 B)*	EDC(8260B)	EDB(8011 B)	(NWTPH-Dx)	(NWTPH-Oil)	Total Lead	Dissolved Lead	Sample Point Lat/Long and Comments	
1	MW-1- <u>8.41</u>	<u>1118</u>	<u>11/2/07</u>	X			<u>01</u>	<u>6</u>				X		X	X									BTEX/g
2	MW-2- <u>8.22</u>	<u>1150</u>	<u>11/2/07</u>		X		<u>02</u>	<u>6</u>				X		X	X									BTEX/g
3	MW-3- <u>9.39</u>	<u>1215</u>	<u>11/2/07</u>		X		<u>03</u>	<u>6</u>				X		X	X									BTEX/g
4	MW-4- <u>6.98</u>	<u>1240</u>	<u>11/2/07</u>		X		<u>04</u>	<u>6</u>				X		X	X									BTEX/g
5	MW-5- <u>7.09</u>	<u>1300</u>	<u>11/2/07</u>		X		<u>05</u>	<u>6</u>				X		X	X									BTEX/g
6	MW-6- <u>9.60</u>	<u>1335</u>	<u>11/2/07</u>		X		<u>06</u>	<u>6</u>				X		X	X									BTEX/g
7	FD-1- <u>110707</u>	<u>1400</u>	<u>11/2/07</u>		X		<u>07</u>	<u>6</u>				X		X	X									BTEX/g
8	TB-1- <u>110707</u>	<u>0900</u>	<u>11/2/07</u>		X		<u>08</u>	<u>2</u>				X		X	X									BTEX/g
9																								
10																								
Sampler's Name: <u>J. Wakefield & J. Lundy</u>				Relinquished By / Affiliation: <u>[Signature]</u>				Date: <u>11/07/07</u>	Time: <u>5:35</u>	Accepted By / Affiliation: <u>[Signature]</u>				Date: <u>11/07/07</u>	Time: <u>17:35</u>									
Sampler's Company: <u>SAIC</u>																								
Shipment Date:																								
Shipment Method:																								
Shipment Tracking No:																								
Special Instructions:																								
Custody Seals In Place Yes ☒ No ☒				Temp Blank Yes ☒ No ☒				Cooler Temperature on Receipt <u>5.8</u> °F/C				Trip Blank Yes ☒ No ☒												

Distribution: White Copy - Laboratory / Yellow Copy - BP/Atlantic Richfield Co. / Pink Copy - Consultant/Contractor

BP COC Rev. 4 10/1/04

BPMRCO Groundwater Sampling Form

Facility Location: 701 128th Street SW; Everett, WA.	
Station #: 5443	Field Technician: J. Lundy
Well Identification: MW-1	Date: 11/07/07
Well Diameter (in): 2 3 4 6 8	Depth to Water (DTW) (ft bgs): 8.41
Thickness of SPH (ft):	Depth to SPH (ft bgs):
Water Column Height (ft): 11.55	Total Depth of Well (ft bgs): 19.96

Purging Info and Calculations

Purge Method: Bailer	Sample Method: Bailer
☐ Disposable Bailer ☐ Electric Submersible Extraction Pump ☒ No	☒ Disposable Bailer ☐ Extraction Port Other:
Top of Screen: <u>Purge</u> If well is listed as a no-purge @XX feet, confirm that water level is below the top of screen. Otherwise, the well must be purged.	
Casing Volume (gal):	Specified Volume: = Calculated Purge (gal):
Start Time:	Stop Time:

Conversion Factors (gal/ft): 2 = 0.17 3 = 0.38 4 = 0.60 6 = 1.5 8 = 2.6 Other: radius² * 0.109

Purge	Time	Temp (oC)	pH	Conductivity (mS)	Volume Removed (gal)	Turbidity	DO
	11:15	15.3°C	5.21	381	0	170	5.05

D.O. (if req'd):	Pre-purge: 5.05 mg/L	Post-purge: mg/L
O.R.P. (if req'd):	Pre-purge: mV	Post-purge: mV
Did Well dewater? Yes ☒ No	Actual Purge volume (gal): 0	

Other Comments: Secured, Vault Dry, EnviroLock Secured / Good Condition

Sample Info:	
Sample ID: MW-1-8.41	Sample Date and Time: 11:18 11/07/07
Sample Containers and Selected Analysis: G-40me Vials - BTEX1g	
Purge Water Stored/Disposed of Where/How:	
Signature: [Signature]	Date: 11/07/2007
QA Signature: JMR	Date: 11/12/07

ARCO Groundwater Sampling Form

Facility Location:		701 128th Street SW; Everett, WA.	
Station #:		5443	Field Technician:
Well Identification:		MW-2	Date:
Well Diameter (in):		2 3 4 6 8	Depth to Water (DTW) (ft bgs):
Thickness of SPH (ft):			Depth to SPH (ft bgs):
Water Column Height(ft):		11.57	Total Depth of Well (ft bgs):
Purging Info and Calculations:			
Purge Method:		Sample Method:	
Bailer		Bailer	
Disposable Bailer		Disposable Bailer	
Electric Submersible		Extraction Port	
Extraction Pump		Other:	
Other:			
Top pf Screen:		If well is listed as a no-purge @XX feet, confirm that water level is below the top of screen. Otherwise, the well must be purged.	
Casing Volume (gal):		X Specific Volumes:	= Calculated Purge (gal):
Start Time:		Stop Time:	
Conversion Factors (gal/ft): 2" = 0.17 3" = 0.38 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius ² * 0.163			
Purge:			
Time	Temp (oC)	pH	Conductivity (mS)
1148	15.7	6.01	.273
D.O. (if req'd):	Pre-purge:	1.25 mg/L	Post-purge:
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:
Did Well dewater? Yes No		Actual Purge volume (gal):	
Other Comments:			
Sample Info:			
Sample ID:	MW-2-8.22	Sample Date and Time:	110707 1150
Sample Containers and Selected Analysis:	6-40 me voas- BTEX/g		
Purge Water Stored/Disposed of Where/How:			
Signature:		Date:	
QA Signature:		Date:	

B MARCO Groundwater Sampling Form

Facility Location: 701 128th Street SW; Everett, WA.						
Station #: 5443	Field Technician: <u>Lundy</u>					
VWell Identification: <u>MW-3</u>	Date: <u>11/07/07</u>					
Well Diameter (in): <u>(2) 3</u> 4 6 8	Depth to Water (DTW) (ft bgs): <u>9.39</u>					
Thickness of SPH (ft): <u>—</u>	Depth to SPH (ft bgs): <u>—</u>					
Water Column Height(ft): <u>10.50</u>	Total Depth of Well (ft bgs): <u>19.89</u>					
Purging Info and Calculations						
Purge Method: <u>Bailer</u> ☐ Disposable-Bailer ☐ Electric Submersible ☐ Extraction Pump Other: <u>no</u> Sample Method: <u>Bailer</u> ☒ Disposable Bailer ☐ Extraction Port Other: <u>—</u>						
If well is listed as a no-purge @XX feet, confirm that water level is below the top of screen. Otherwise, the well must be purged. Top of Screen: <u>—</u>						
Casing Volume (gal): <u>—</u> X Specified Volumes: <u>—</u> = Calculated Purge (gal): <u>—</u>						
Start Time: <u>1200</u> Stop Time: <u>—</u>						
Conversion Factors (gal/ft): 2" = 0.17 3" = 0.38 4" = 0.60 6" = 1.5 8" = 2.6 Other = radius * 0.163						
Purge:						
Time	Temp (oC)	pH	Conductivity (mS)	Volume Removed (gal)	Turbidity	DO
12.10	16.02	6.36	292	0	999	7.57
D.O. (if req'd):	Pre-purge:	<u>7.57</u> mg/L	Post-purge:	<u>—</u> mg/L		
O.R.P. (if req'd):	Pre-purge:	<u>—</u> mV	Post-purge:	<u>—</u> mV		
Did Well dewater? Yes ☐ No ☒			Actual Purge volume (gal): <u>0</u>			
Other Comments:		<u>2in dry, Enviro Cap decent, unsecured, High concentrations of black sediment obs</u>				
Sample Info:						
Sample ID:	<u>MW-3-9.39</u>	Sample Date and Time:	<u>11/07/07 1215</u>			
Sample Containers and Selected Analysis:	<u>6 - 40 ml, VOCs BTEX/g</u>					
Purge Water Stored/Disposed of Where/How: <u>—</u>						
Signature: <u>[Signature]</u>			Date: <u>11/07/07</u>			
QA Signature: <u>[Signature]</u>			Date: <u>11/18/07</u>			

ARCO Groundwater Sampling Form

Facility Location: 701 128th Street SW; Everett, WA.	
Station #: 5443	Field Technician: <i>W. H. H. H.</i>
Well Identification: MW-4	Date: 11/07/07
Well Diameter (in): 2 3 4 6 8	Depth to Water (DTW) (ft bgs): 9.60
Thickness of SPH (ft):	Depth to SPH (ft bgs):
Water Column Height(ft): 10.32	Total Depth of Well (ft bgs): 19.92

Purging Info and Calculations

Purge Method: <u>No</u> Bailer Disposable Bailer Electric Submersible Extraction Pump Other:	Sample Method: <u>Bailer</u> Disposable Bailer Extraction Port Other:
Top of Screen: _____ If well is listed as a no-purge @XX feet, confirm that water level is below the top of screen. Otherwise, the well must be purged.	
Casing Volume (gal): _____ * Specified Volumes: _____ = Calculated Purge (gal): _____	
Start Time: 1320 Stop Time: _____	

Conversion Factors (gal/ft): 2" = 0.17 3" = 0.38 4" = 0.65 6" = 1.5 8" = 2.6 Other = radius 0.163

Purge:	Time	Temp (oC)	pH	Conductivity (mS)	Volume Removed (gal)	Turbidity	DO
	1330	15.2	6.55	502	0	135	1.90
D.O. (if req'd):	Pre-purge:	1.90		mg/L	Post-purge:	mg/L	
O.R.P. (if req'd):	Pre-purge:	—		mV	Post-purge:	mV	

Did Well dewater? Yes (N) Actual Purge volume (gal): 0

Other Comments: H₂O in casing, secure, looks good

Sample Info

Sample ID: MW-4-9.60	Sample Date and Time: 1335 11/07/07
Sample Containers and Selected Analysis: <u>6 - 40 mL Vials BTEX/9</u>	

Purge Water Stored/Disposed of Where/How: _____

Signature: *[Signature]* Date: 11/07/07

QA Signature: *[Signature]* Date: 11/12/07

BEMARCO Groundwater Sampling Form

Facility Location: 701 128th Street SW; Everett, WA.	
Station #: 5443	Field Technician: <i>Wanfield</i>
Well Identification: MW-5	Date: 11/07/07
Well Diameter (in): 2 3 4 6 8	Depth to Water (DTW) (ft bgs): 6.98
Thickness of SPH (ft): <i>—</i>	Depth to SPH (ft bgs): <i>—</i>
Water Column Height(ft): 13.06	Total Depth of Well (ft bgs): 20.04

Purging Info and Calculations

Purge Method: Bailer Disposable Bailer Electric Submersible Extraction Pump Other: <i>No</i>		Sample Method: Bailer Disposable Bailer Extraction Port Other: <i>Purge</i>	
Top of Screen: _____ If well is listed as a no-purge @XX feet, confirm that water level is below the top of screen. Otherwise, the well must be purged.			
Casing Volume (gal): _____		X Specified Volumes: _____ = Calculated Purge (gal): _____	
Start Time: 1225		Stop Time: _____	

Conversion Factors (gal/ft): 2" = 0.17 3" = 0.38 4" = 0.66 6" = 1.5 8" = 2.6 Other = radius² * 0.109 *2w*

Purge	Time	Temp (oC)	pH	Conductivity (mS)	Volume Removed (gal)	Turbidity	DO
	1235	16.1	6.27	380	0	118	2.42
D.O. (if req'd):	Pre-purge:	2.42		mg/L	Post-purge:	mg/L	
O.R.P. (if req'd):	Pre-purge:			mV	Post-purge:	mV	
Did Well dewater? Yes ☒ No				Actual Purge volume (gal): 0			

Other Comments:

Threads Stripped, Secure, Enviro lock, Dry casing

Sample Info:

Sample ID: MW-5-6.98	Sample Date and Time: 11/07/07 1240
Sample Containers and Selected Analysis: 6-40 ml vials	BTEX/g

Purge Water Stored/Disposed of Where/How:

Signature: <i>[Signature]</i>	Date: 11/07/07
QA Signature: <i>[Signature]</i>	Date: 11/16/07

B-RCO Groundwater Sampling Form

Facility Location: 701 128th Street SW; Everett, WA.						
Station #: 5443	Field Technician: <u>WALDEN</u>					
Well Identification: <u>MW-6</u>	Date: <u>11/07/07</u>					
Well Diameter (in): <u>2</u> 3 4 6 8	Depth to Water (DTW) (ft bgs): <u>7.09</u>					
Thickness of SPH (ft): <u>—</u>	Depth to SPH (ft bgs): <u>—</u>					
Water Column Height(ft): <u>12.86</u>	Total Depth of Well (ft bgs): <u>19.95</u>					
Purging Info and Calculations:						
Purge Method: <u>No</u> ☐ Bailer ☐ Disposable Bailer ☐ Electric Submersible Extraction Pump ☐ Other: _____ Sample Method: <u>Disposable Bailer</u> ☒ Bailer ☐ Disposable Bailer ☐ Extraction Port ☐ Other: _____ If well is listed as a no-purge @XX feet, confirm that water level is below the top of screen. Otherwise, the well must be purged.						
Top of Screen: _____ Casing Volume (gal): <u>Purge</u> Specified Volumes: <u>—</u> = Calculated Purge (gal): <u>—</u> Start Time: <u>1245</u> Stop Time: <u>—</u>						
Conversion Factors (gal/ft): <u>2" = 0.17</u> <u>3" = 0.38</u> <u>4" = 0.66</u> <u>6" = 1.5</u> <u>8" = 2.6</u> Other = radius <u>0.163</u>						
Purge Data Table						
Time	Temp (oC)	pH	Conductivity (mS)	Volume Removed (gal)	Turbidity	
<u>1255</u>	<u>16.0</u>	<u>6.11</u>	<u>357</u>	<u>0</u>	<u>118</u>	<u>0.79</u>
D.O. (if req'd):	Pre-purge:	<u>0.79</u>	mg/L	Post-purge:	<u>—</u>	mg/L
O.R.P. (if req'd):	Pre-purge:	<u>—</u>	mV	Post-purge:	<u>—</u>	mV
Did Well dewater? Yes ☒ No ☐			Actual Purge volume (gal): <u>7</u>			
Other Comments:		<u>Secure, missing bolt, casing dry, gasket bad.</u>				
Sample Info:						
Sample ID: <u>MW-6-7.09</u>			Sample Date and Time: <u>11/07/07 1300</u>			
Sample Containers and Selected Analysis: <u>6 - 40me vials</u>			<u>BTX/g</u> *			
Purge Water Stored/Disposed of Where/How: _____						
Signature: <u>[Signature]</u>			Date: <u>11/07/07</u>			
QA Signature: <u>[Signature]</u>			Date: <u>11/12/07</u>			

✓ **AD Performed**



Site Name/Number: 5443
 Project Number: 06-6384-00-4730-970

SUBJECTIVE WELLHEAD EVALUATION

Address: 701 128th Street SW; Everett, WA.

Date: 11/07/07



Field Tech(s): Wakefield & Lundy

Calibration Record

TIME	INSTRUMENT I.D.	CAL GAS TYPE & CONCENTRATION	PRE-CAL READING	RE-ZERO Y/N	POST-CAL READING	BACKGROUND READING	REMARKS	FIELD TECH
9:30	Horiba	Auto Cal	4.14	-	3.97	-	-	J. Lundy

		Well ID	MW-1	MW-2	MW-3	MW-5	MW-6	Note:
Exterior	Well Perimeter Seal Condition		g	g	g	g	g	
	Well Structure Drainage		g	g	g	g	g	
	Properly Secured		Y	Y	N	Y	Y	
	Type of Well Vault		I	-	-	-	-	
	Well Marked "MONITORING WELL"		Y	Y	X	X	X	
Interior	Well Casing Condition		g	g	g	g	g	
	Locking Cap Condition		g	g	g	g	g	
	Rubber Seal Condition		g	g	g	g	g	
	Lock on Well		Enviro	Enviro	Enviro	Enviro	Enviro	
	Liquid Present in Well Vault		N	N	N	N	N	
Action	No Corrective Action Required		NA	NA	NA	NA	NA	
	Well-box Components Cleaned		Y	Y	Y	Y	Y	
	Cap Replaced		N	Y	N	N	N	
	Lock Replaced		N	N	N	N	N	
	Other Action Taken: explain		NA	NA	NA	NA	NA	
Measurements	Repair Order Submitted		NA	NA	NA	NA	NA	
	Casing Diameter (in)		2	2	2	2	2	
	Depth to Water (ft)		8.41	8.22	9.31	6.78	7.01	
	Depth to Bottom (ft)		19.96	19.71	19.87	20.04	19.95	
	Depth to Floating Product (ft)		-	-	-	-	-	
	Floating Product Thickness (ft)		-	-	-	-	-	
	Dissolved Oxygen		5.05	1.25	7.57	2.42	6.79	
	Temperature (°C or °F)		15.3	15.7	16.0	16.1	16.0	
	pH		5.24	6.01	6.36	6.27	6.11	
	Conductivity (mS)		.381	.273	.292	.380	.357	
	Turbidity		170	114	7.52	118	118	

Notes:

OR
SMK
 11/12/07

Site Name/Number: 5443
 Project Number: 06-6384-00-4730-970

SUBJECTIVE WELLHEAD EVALUATION

Address: 701 128th Street SW; Everett, WA.

Date: 11/07/07

Field Tech(s): James Lundy & Jessica Wakefield



Calibration Record

TIME	INSTRUMENT I.D.	CAL GAS TYPE & CONCENTRATION	PRE-CAL READING	RE-ZERO Y/N	POST-CAL READING	BACKGROUND READING	REMARKS	FIELD TECH
	<u>See p. 1</u>							

	Well ID	<u>MW-4</u>					Note:
Exterior	Well Perimeter Seal Condition	<u>S</u>					
	Well Structure Drainage	<u>S</u>					
	Properly Secured	<u>Y</u>					
	Type of Well Vault	<u>1</u>					
	Well Marked "MONITORING WELL"	<u>Y</u>					
Interior	Well Casing Condition	<u>S</u>					
	Locking Cap Condition	<u>S</u>					
	Rubber Seal Condition	<u>S</u>					
	Lock on Well	<u>N</u>					
	Liquid Present in Well Vault	<u>B.</u>					
Action	No Corrective Action Required	<u>NA</u>					
	Well-box Components Cleaned	<u>Y</u>					
	Cap Replaced	<u>N</u>					
	Lock Replaced	<u>N</u>					
	Other Action Taken: explain	<u>NA</u>					
Measurements	Repair Order Submitted	<u>NA</u>					
	Casing Diameter (in)	<u>2</u>					
	Depth to Water (ft)	<u>9.60</u>					
	Depth to Bottom (ft)	<u>19.12</u>					
	Depth to Floating Product (ft)	<u>-</u>					
	Floating Product Thickness (ft)	<u>-</u>					
	Dissolved Oxygen	<u>1.90</u>					
	Temperature (°C or °F)	<u>15.2</u>					
	pH	<u>6.55</u>					
	Conductivity (mS)	<u>.502</u>					
	Turbidity	<u>135</u>					

Notes: _____

TWK
11/12/07