

Tesoro SS 62154 (former Gull)

Blaine

LUST 591533

VCP NW 2215



www.soundenvironmental.com

Date: January 8, 2009

GROUNDWATER MONITORING REPORT

First and Second Semester 2008

Tesoro Refining and Marketing Company
Facility No. 62154
Blaine, Washington

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OCT 14 2009

DEPT. OF ECOLOGY
TCP-NWRO

Property Address:	<u>530 Peace Portal Drive, Blaine, Washington</u>
Client Contact:	<u>Anastasia Duarte-Wilkinson</u>
Client Work Order/Service Order:	<u>Tesoro SO #4501112478</u>
Primary Regulatory Agency/ID:	<u>Washington State Department of Ecology/ID No. 4174</u>
SES Project Number:	<u>0271-008-02</u>
SES Project Manager:	<u>Rob Honsberger</u>
Frequency of Groundwater Sampling:	<u>Biannual</u>
Owner/Property Land Use	<u>Tesoro Refining and Marketing Company/Commercial</u>
Off-Property Land Use	<u>Commercial</u>

Sound Environmental Strategies Corporation (SES) has prepared this letter report to present the results of the First and Second Semester 2008 groundwater monitoring events (monitoring events) at the Tesoro Refining and Marketing Company Facility No. 62154 located at 530 Peace Portal Drive in Blaine, Washington (herein referred to as the Property) (Figure 1). The monitoring events were performed to evaluate the environmental quality of groundwater beneath the Property and to demonstrate compliance with the Washington State Department of Ecology (Ecology) Model Toxics Control Act (MTCA) Cleanup Regulations.

The monitoring events were conducted on February 5 and September 5, 2008, at the Property and included collecting the depth-to-groundwater measurement and a groundwater sample from monitoring well MW04 (Figure 2). The chemicals of concern (COCs) for the Property include gasoline-range petroleum hydrocarbons (GRPH) and benzene, toluene, ethylbenzene, and total xylenes (BTEX).

This letter report presents field activities performed during the monitoring event, laboratory analytical results, and a description of upcoming work.

FIELD ACTIVITIES

Upon SES' arrival for the First and Second Semester monitoring events at the Property, monitoring well MW04 was opened and the water level was permitted to equilibrate with atmospheric pressure for a minimum of 15 minutes before the groundwater level measurement was obtained. The groundwater level was measured to an accuracy of 0.01 feet using an electronic water level meter. Purging and sampling of the groundwater was performed using a peristaltic pump and dedicated polyethylene tubing at flow rates ranging from 80 to 100 milliliters per minute. The tubing intake was placed approximately 2 to 3 feet below the surface of the groundwater or mid-screen in the well. During purging, water quality was monitored using a HORIBA U-22 water quality meter equipped with a flow-through cell. The water quality

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2009

parameters that were monitored and recorded included temperature, pH, specific conductance, dissolved oxygen, turbidity, and oxidation-reduction potential.

Following purging, groundwater samples were collected from the pump outlet tubing located upstream of the flow-through cell and placed directly into laboratory-prepared sample containers. The containers were placed on ice in a cooler and transported to TestAmerica Laboratories, Inc. of Bothell, Washington, under standard chain-of-custody protocols for laboratory analysis. The groundwater samples were submitted for analysis of GRPH by Northwest Total Petroleum Hydrocarbon Method NWTPH-Gx and BTEX by United States Environmental Protection Agency Method 8021B. All purge water generated during the monitoring events was placed in an appropriately labeled 55-gallon steel drum and temporarily stored on the Property pending receipt of analytical data and proper disposal.

RESULTS

The groundwater levels measured in MW04 on February 5, 2008, and September 5, 2008, were 4.55 feet and 5.47 feet, respectively, below the top of the well casing (Figure 2, Table 1). Laboratory analytical results from the monitoring event indicated the following (Figure 2, Table 1):

First Semester

- No detectable concentrations of COCs were present in the groundwater sample collected from MW04.

Second Semester

- The groundwater sample collected from MW04 contained concentrations of GRPH and benzene above the laboratory reporting limit, but below their respective MTCA Method A cleanup levels.
- No concentrations of toluene, ethylbenzene, or total xylenes were detected in the groundwater sample collected from MW04.

As requested by Ecology, SES has collected groundwater samples, in two consecutive monitoring events, which contained concentrations of COCs below their respective MTCA Method A Cleanup Levels.

Copies of the laboratory analytical reports are provided as Attachment A.

DATA QUALITY REVIEW

SES performed a quality assurance/quality control (QA/QC) review of the analytical results, which included a review of accuracy and precision of the data supplied by the laboratory; all QA/QC data were within laboratory supplied control limits.

WORK PLANNED

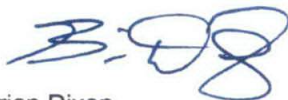
Contingent upon a determination from Ecology that No Further Action is warranted at the Property, SES does not plan on performing any additional work related to groundwater monitoring on this Property.

CLOSING

SES appreciates the opportunity to work with you on this project. Please contact the undersigned at (206) 306-1900 if you have any questions or require additional information.

Respectfully,

Sound Environmental Strategies Corporation



Brian Dixon
Staff Scientist



Ryan K. Bixby, LG #1691
Principal Geologist

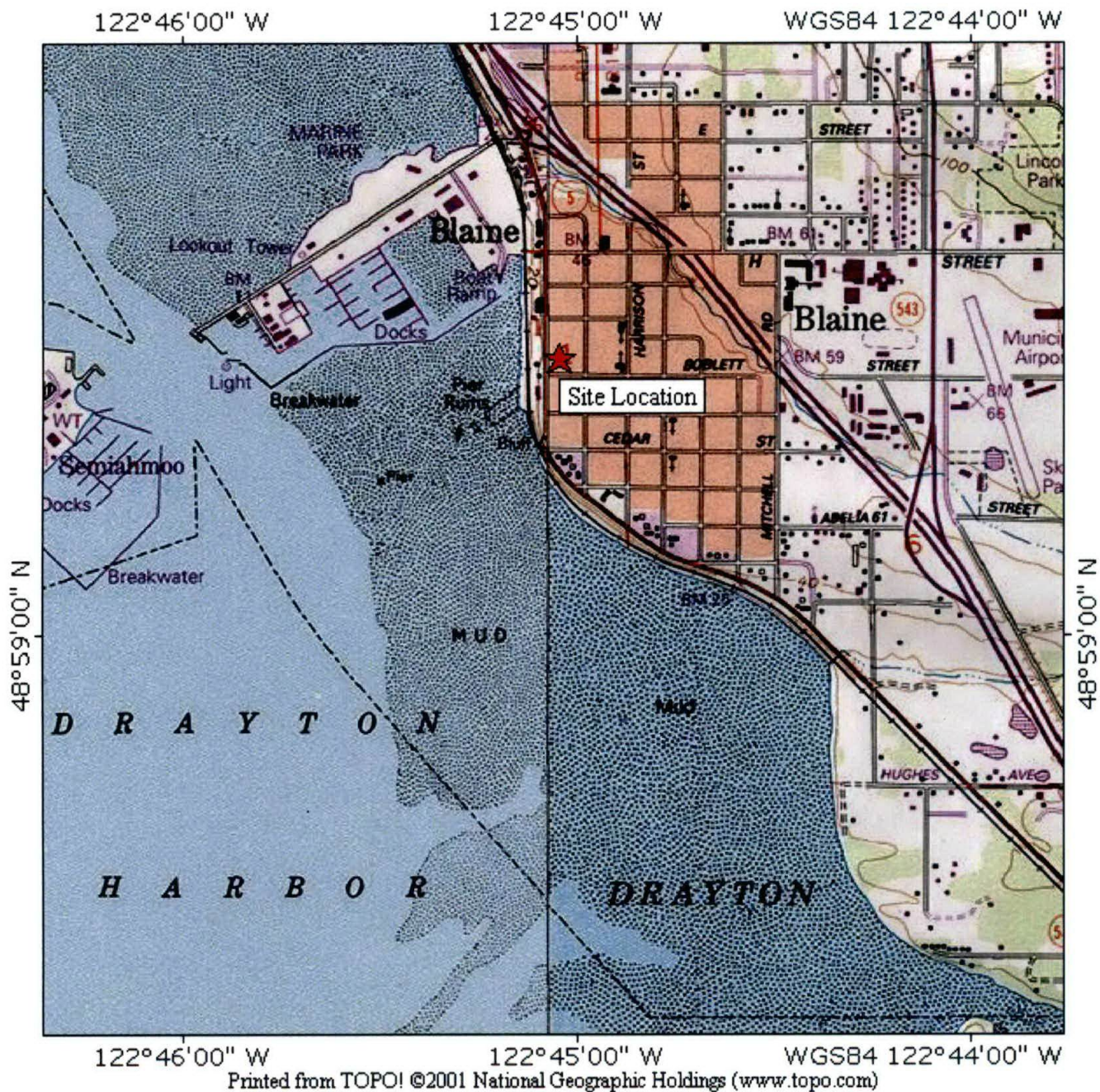


Ryan K. Bixby

Attachments: Figure 1, Property Location Map
Figure 2, Groundwater Analytical Results
Table 1, Groundwater Analytical Results
Attachment A, Laboratory Analytical Report
TestAmerica Laboratories, Inc. #BRB0055
TestAmerica Laboratories, Inc. #BRI0114

BAD/dnm

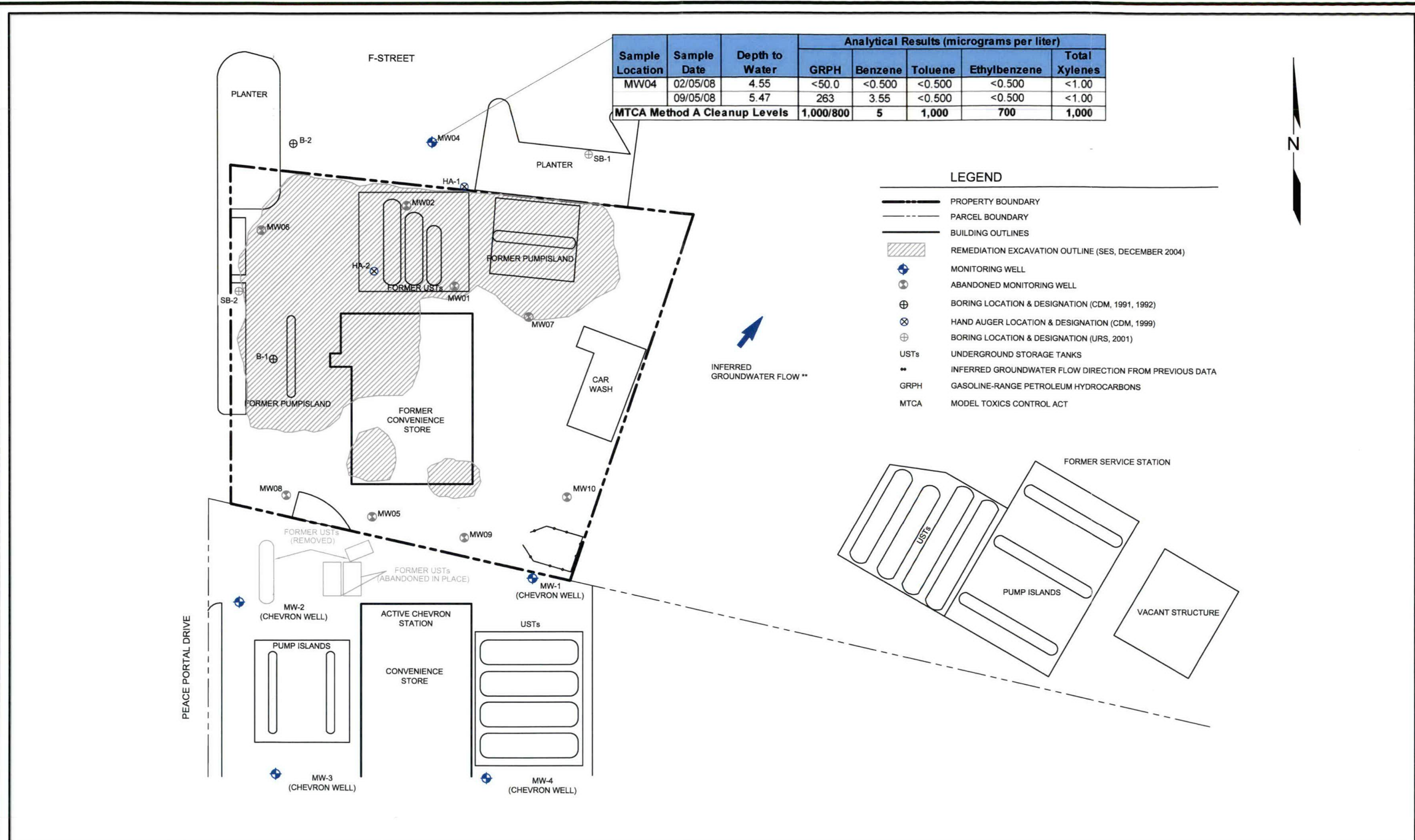
FIGURES



Date: December 18, 2008
 Drawn By: D. Richardson
 Chk By: R. Bixby
 SES Project No.: 0271-008
 File ID: 0271-008_to_1.doc

Tesoro Facility No. 62154
 530 Peace Portal Drive
 Blaine, Washington

FIGURE 1
 Property Location
 Map



Sample Location	Sample Date	Depth to Water	Analytical Results (micrograms per liter)				Total Xylenes
			GRPH	Benzene	Toluene	Ethylbenzene	
MW04	02/05/08	4.55	<50.0	<0.500	<0.500	<0.500	<1.00
	09/05/08	5.47	263	3.55	<0.500	<0.500	<1.00
MTCA Method A Cleanup Levels			1,000/800	5	1,000	700	1,000

- LEGEND**
- PROPERTY BOUNDARY
 - - - PARCEL BOUNDARY
 - BUILDING OUTLINES
 - ▨ REMEDIATION EXCAVATION OUTLINE (SES, DECEMBER 2004)
 - ⊕ MONITORING WELL
 - ⊗ ABANDONED MONITORING WELL
 - ⊕ BORING LOCATION & DESIGNATION (CDM, 1991, 1992)
 - ⊗ HAND AUGER LOCATION & DESIGNATION (CDM, 1999)
 - ⊕ BORING LOCATION & DESIGNATION (URS, 2001)
 - ⊕ USTs
 - ⊕ USTs
 - ⊕ USTs
 - ** INFERRED GROUNDWATER FLOW DIRECTION FROM PREVIOUS DATA
 - GRPH GASOLINE-RANGE PETROLEUM HYDROCARBONS
 - MTCA MODEL TOXICS CONTROL ACT



INFERRED GROUNDWATER FLOW **



DATE: 10/02/08
 DRAWN BY: JQC
 CHECKED BY: RKB
 CAD FILE: 0271-008_SEM1-SEM2_GW

PROJECT NAME: TESORO FACILITY NO. 62154
 SES PROJECT NUMBER: 0271-008-02
 STREET ADDRESS: 530 PEACE PORTAL DRIVE
 CITY, STATE: BLAINE, WASHINGTON

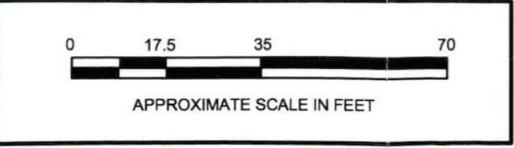
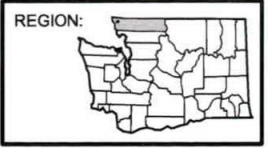


FIGURE 2
GROUNDWATER ANALYTICAL RESULTS

TABLE



**Table 1
Groundwater Analytical Results
Tesoro Facility No. 62154
530 Peace Portal Drive
Blaine, Washington**

Sample Location	Sample Date	Depth to Water	Analytical Results (µg/L)				
			GRPH ¹	Benzene ²	Toluene ²	Ethylbenzene ²	Total Xylenes ²
MW04	02/05/08	4.55	<50.0	<0.500	<0.500	<0.500	<1.00
	09/05/08	5.47	263	3.55	<0.500	<0.500	<1.00
MTCA Method A Cleanup Level³			1,000/800^a	5	1,000	700	1,000

NOTES:

Samples analyzed by TestAmerica Laboratories, Inc. of Bothell, Washington.

¹Analyzed by NWTPH Method NWTPH-Gx.

²Analyzed by EPA Method 8021B.

³MTCA Method A cleanup Levels, Table 720-1 of Section 900 of Chapter 173-340 of the Washington Administrative Code, revised November 2007.

^aCleanup level is 1,000 µg/L when benzene is not present and 800 µg/L when benzene is present.

< = not detected at a concentration exceeding the laboratory reporting limit

µg/L = micrograms per liter

EPA = United States Environmental Protection Agency

GRPH = gasoline-range petroleum hydrocarbons

MTCA = Model Toxics Control Act

NWTPH = Northwest Total Petroleum Hydrocarbon

ATTACHMENT A
Laboratory Analytical Results

TestAmerica Laboratories, Inc. #BRB0055

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

SEATTLE, WA 11720 NORTH CREEK PKWY N, SUITE 400
BOTHELL, WA 98011-8244
PH: (425) 420.9200 FAX: (425) 420.9210

February 15, 2008

Bert Hyde
Sound Environmental Strategies
2400 Airport Way South, Suite 200
Seattle, WA/USA 98134-2020

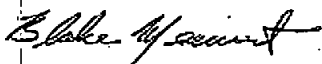
RE: Tesoro - Blaine #62154

Enclosed are the results of analyses for samples received by the laboratory on 02/05/08 17:20.
The following list is a summary of the Work Orders contained in this report, generated on 02/15/08
09:02.

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

<u>Work Order</u>	<u>Project</u>	<u>ProjectNumber</u>
BRB0055	Tesoro - Blaine #62154	0271-008-01

TestAmerica Seattle



Blake T. Meinert, 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.




Sound Environmental Strategies 2400 Airport Way South, Suite 200 Seattle, WA/USA 98134-2020	Project Name: Tesoro - Blaine #62154 Project Number: 0271-008-01 Project Manager: Bert Hyde	Report Created: 02/15/08 09:02
--	--	-----------------------------------

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW04-20080205	BRB0055-01	Water	02/05/08 14:26	02/05/08 17:20

TestAmerica Seattle



Blake T. Meinert, Project Manager

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THE LEADER IN ENVIRONMENTAL TESTING

Sound Environmental Strategies 2400 Airport Way South, Suite 200 Seattle, WA/USA 98134-2020	Project Name:	Tesoro - Blaine #62154	Report Created:
	Project Number:	0271-008-01	02/15/08 09:02
	Project Manager:	Bert Hyde	

Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B
 TestAmerica Seattle

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BRB0055-01 (MW04-20080205)		Water			Sampled: 02/05/08 14:26					
Gasoline Range Hydrocarbons	NWTPH-Gx/802 1B	ND	----	50.0	ug/l	1x	8B08013	02/08/08 10:38	02/09/08 03:35	B, A-01
Benzene	"	ND	----	0.500	"	"	"	"	"	"
Toluene	"	ND	----	0.500	"	"	"	"	"	"
Ethylbenzene	"	ND	----	0.500	"	"	"	"	"	"
Xylenes (total)	"	ND	----	1.00	"	"	"	"	"	"
Surrogate(s):	4-BFB (FID)		87.8%		58 - 144 %	"				"
	4-BFB (PID)		107%		68 - 140 %	"				"

TestAmerica Seattle



Blake T. Meinert, Project Manager

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Sound Environmental Strategies 2400 Airport Way South, Suite 200 Seattle, WA/USA 98134-2020	Project Name: Tesoro - Blaine #62154 Project Number: 0271-008-01 Project Manager: Bert Hyde	Report Created: 02/15/08 09:02
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Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Laboratory Quality Control Results
 TestAmerica Seattle

QC Batch: 8B08013 **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 (8B08013-BLK1) Extracted: 02/08/08 10:38

Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	61.5	---	50.0	ug/l	1x	--	--	--	--	--	--	02/08/08 14:27	B
Benzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Toluene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery: 85.4%</i>		<i>Limits: 58-144%</i>								<i>02/08/08 14:27</i>		
<i>4-BFB (PID)</i>		<i>109%</i>		<i>68-140%</i>								<i>"</i>		

LCS (8B08013-BS1) Extracted: 02/08/08 10:38

Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	867	---	50.0	ug/l	1x	--	1000	86.7%	(80-120)	--	--	02/08/08 13:54	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery: 90.1%</i>		<i>Limits: 58-144%</i>								<i>02/08/08 13:54</i>		

LCS (8B08013-BS2) Extracted: 02/08/08 10:38

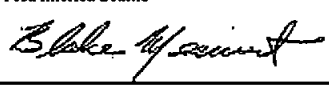
Benzene	NWTPH-Gx/ 8021B	26.6	---	0.500	ug/l	1x	--	30.0	88.7%	(80-120)	--	--	02/08/08 15:00	
Toluene	"	27.6	---	0.500	"	"	--	"	92.0%	"	--	--	"	
Ethylbenzene	"	27.5	---	0.500	"	"	--	"	91.6%	"	--	--	"	
Xylenes (total)	"	85.8	---	1.00	"	"	--	90.0	95.3%	"	--	--	"	
<i>Surrogate(s): 4-BFB (PID)</i>		<i>Recovery: 109%</i>		<i>Limits: 68-140%</i>								<i>02/08/08 15:00</i>		

Duplicate (8B08013-DUP1) QC Source: BRB0084-01 Extracted: 02/08/08 10:38

Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	51.9	---	50.0	ug/l	1x	52.7	--	--	--	1.57%	(25)	02/08/08 16:05	
Benzene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Toluene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Ethylbenzene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Xylenes (total)	"	ND	---	1.00	"	"	ND	--	--	--	NR	"	"	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery: 85.0%</i>		<i>Limits: 58-144%</i>								<i>02/08/08 16:05</i>		
<i>4-BFB (PID)</i>		<i>109%</i>		<i>68-140%</i>								<i>"</i>		

Duplicate (8B08013-DUP2) QC Source: BRB0084-02 Extracted: 02/08/08 10:38

Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	50.9	---	50.0	ug/l	1x	61.1	--	--	--	18.2%	(25)	02/08/08 17:11	
Benzene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Toluene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Ethylbenzene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Xylenes (total)	"	ND	---	1.00	"	"	ND	--	--	--	NR	"	"	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery: 91.1%</i>		<i>Limits: 58-144%</i>								<i>02/08/08 17:11</i>		
<i>4-BFB (PID)</i>		<i>110%</i>		<i>68-140%</i>								<i>"</i>		

TestAmerica Seattle

 Blake T. Meinert, Project Manager

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Sound Environmental Strategies 2400 Airport Way South, Suite 200 Seattle, WA/USA 98134-2020	Project Name: Tesoro - Blaine #62154 Project Number: 0271-008-01 Project Manager: Bert Hyde	Report Created: 02/15/08 09:02
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Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Laboratory Quality Control Results
 TestAmerica Seattle

QC Batch: 8B08013 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 (8B08013-MS1)		QC Source: BRB0084-01			Extracted: 02/08/08 10:38									
Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	1020	---	50.0	ug/l	1x	52.7	1000	97.1%	(75-131)	--	--	02/08/08 17:44	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery: 95.3%</i>		<i>Limits: 58-144%</i>										<i>02/08/08 17:44</i>
Matrix Spike (8B08013-MS2)		QC Source: BRB0084-02			Extracted: 02/08/08 10:38									
Benzene	NWTPH-Gx/ 8021B	32.1	---	0.500	ug/l	1x	ND	30.0	107%	(46-130)	--	--	02/08/08 18:17	
Toluene	"	29.9	---	0.500	"	"	ND	"	99.6%	(60-124)	--	--	"	
Ethylbenzene	"	30.0	---	0.500	"	"	ND	"	100%	(56-141)	--	--	"	
Xylenes (total)	"	92.5	---	1.00	"	"	ND	90.0	103%	(66-132)	--	--	"	
<i>Surrogate(s): 4-BFB (PID)</i>		<i>Recovery: 104%</i>		<i>Limits: 68-140%</i>										<i>02/08/08 18:17</i>

TestAmerica Seattle



Blake T. Meinert, Project Manager

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Sound Environmental Strategies

2400 Airport Way South, Suite 200
Seattle, WA/USA 98134-2020

Project Name: **Tesoro - Blaine #62154**
Project Number: 0271-008-01
Project Manager: Bert Hyde

Report Created:
02/15/08 09:02

Notes and Definitions

Report Specific Notes:

- A-01 - Analyte not detected in sample.
- B - Analyte was detected in the associated Method Blank.

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.

TestAmerica Seattle



Blake T. Meinert, Project Manager

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11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
 11922 E 1st Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
 9405 SW Nimbus Ave, Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
 20332 Empire Ave, Ste F1, Bend, OR 97701-5712 541-383-9310 FAX 382-7588
 2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: **BRB0055**

NCA CLIENT: Sound Environmental Strategies		INVOICE TO: Anne Wilkinson c/o Tesoro		TURNAROUND REQUEST In Business Days * Organic & Inorganic Analyses <input checked="" type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 <small>hrs</small> Petroleum Hydrocarbon Analyses <input checked="" type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 <small>hrs</small> OTHER Specify: _____ <small>* Turnaround Request may then standard may incur Peak Charge.</small>			
REPORT TO: Rob Hensberger		P.O. NUMBER:					
ADDRESS: 2900 Airport Way South, Suite 200 Seattle, WA 98134		PRESERVATIVE					
PHONE: 206.306.1900 FAX: 306.1907		PROJECT NAME: Tesoro - Blaine					
PROJECT NUMBER: 0271-008-01		HEI					
SAMPLED BY: L. Namba		REQUESTED ANALYSES					
		TPH-G					
		GTEX (8021)					
CLIENT SAMPLE IDENTIFICATION	SAMPLING DATE/TIME			MATRIX (W, S, O)	# OF CONT.	LOCATION / COMMENTS	NCA WO ID
1 MW 04-20080205	02/05/08 @ 1426	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	W	3	MU-04	
2							
3							
4							
5							
6							
7							
8							
9							
10							
RELEASED BY: Larry Namba	DATE: 02/05/08	RECEIVED BY: Francisco Lung, Jr	DATE: 2/5/08				
PRINT NAME: Larry Namba	FIRM: SES	TIME: 1720	PRINT NAME: Francisco Lung, Jr	FIRM: TAL-S	TIME: 1720		
RELEASED BY:	DATE:	RECEIVED BY:	DATE:				
PRINT NAME:	FIRM:	PRINT NAME:	FIRM:	TIME:			
ADDITIONAL REMARKS:						TEMP:	
COC REV 09/04						w/o	5.8°C
						PAGE	OF

01

TestAmerica Laboratories, Inc. #BRI0114

September 22, 2008

Bert Hyde
Sound Environmental Strategies
2400 Airport Way South, Suite 200
Seattle, WA/USA 98134-2020

RE: Tesoro - Blaine #62154

Enclosed are the results of analyses for samples received by the laboratory on 09/08/08 12:40.
The following list is a summary of the Work Orders contained in this report, generated on 09/22/08
11:56.

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

<u>Work Order</u>	<u>Project</u>	<u>ProjectNumber</u>
BRI0114	Tesoro - Blaine #62154	0271-008-02

TestAmerica Seattle

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Curtis D. Armstrong For Kate Haney, Project Manager



Sound Environmental Strategies 2400 Airport Way South, Suite 200 Seattle, WA/USA 98134-2020	Project Name: Tesoro - Blaine #62154 Project Number: 0271-008-02 Project Manager: Bert Hyde	Report Created: 09/22/08 11:56
--	--	-----------------------------------

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW04-20080905	BRI0114-01	Water	09/05/08 15:36	09/08/08 12:40
Trip Blank	BRI0114-02	Water	09/05/08 08:00	09/08/08 12:40

TestAmerica Seattle



Curtis D. Armstrong For Kate Haney, Project Manager

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Sound Environmental Strategies 2400 Airport Way South, Suite 200 Seattle, WA/USA 98134-2020	Project Name: Tesoro - Blaine #62154 Project Number: 0271-008-02 Project Manager: Bert Hyde	Report Created: 09/22/08 11:56
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Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B
 TestAmerica Seattle

Analyte	Method	Result	MDL*	MRL	Units	Dil	Batch	Prepared	Analyzed	Notes
BRI0114-01 (MW04-20080905)	Water		Sampled: 09/05/08 15:36							
Gasoline Range Hydrocarbons	NWTPH-Gx/802 1B	263	----	50.0	ug/l	1x	8109029	09/09/08 12:26	09/09/08 21:54	
Benzene	"	3.55	----	0.500	"	"	"	"	"	
Toluene	"	ND	----	0.500	"	"	"	"	"	
Ethylbenzene	"	ND	----	0.500	"	"	"	"	"	
Xylenes (total)	"	ND	----	1.00	"	"	"	"	"	
Surrogate(s): 4-BFB (FID)				88.0%		58 - 144 %	"			"
4-BFB (PID)				97.0%		68 - 140 %	"			"
BRI0114-02 (Trip Blank)	Water		Sampled: 09/05/08 08:00							
Gasoline Range Hydrocarbons	NWTPH-Gx/802 1B	ND	----	50.0	ug/l	1x	8109029	09/09/08 12:26	09/09/08 21:54	
Benzene	"	ND	----	0.500	"	"	"	"	"	
Toluene	"	ND	----	0.500	"	"	"	"	"	
Ethylbenzene	"	ND	----	0.500	"	"	"	"	"	
Xylenes (total)	"	ND	----	1.00	"	"	"	"	"	
Surrogate(s): 4-BFB (FID)				86.3%		58 - 144 %	"			"
4-BFB (PID)				95.9%		68 - 140 %	"			"

TestAmerica Seattle

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Curtis D. Armstrong For Kate Hancy, Project Manager



Sound Environmental Strategies 2400 Airport Way South, Suite 200 Seattle, WA/USA 98134-2020	Project Name: Tesoro - Blaine #62154 Project Number: 0271-008-02 Project Manager: Bert Hyde	Report Created: 09/22/08 11:56
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Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Laboratory Quality Control Results
 TestAmerica Seattle

QC Batch: 8109029 **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 (8109029-BLK1) Extracted: 09/09/08 12:26

Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	ND	---	50.0	ug/l	1x	--	--	--	--	--	--	09/09/08 14:20	
Benzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Toluene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Ethylbenzene	"	ND	---	0.500	"	"	--	--	--	--	--	--	"	
Xylenes (total)	"	ND	---	1.00	"	"	--	--	--	--	--	--	"	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery:</i>		<i>87.3%</i>		<i>Limits: 58-144%</i>		<i>"</i>				<i>09/09/08 14:20</i>		
<i>4-BFB (PID)</i>		<i>Recovery:</i>		<i>96.7%</i>		<i>Limits: 68-140%</i>		<i>"</i>				<i>"</i>		

LCS (8109029-BS1) Extracted: 09/09/08 12:26

Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	926	---	50.0	ug/l	1x	--	1000	92.6%	(80-120)	--	--	09/09/08 14:51	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery:</i>		<i>93.8%</i>		<i>Limits: 58-144%</i>		<i>"</i>				<i>09/09/08 14:51</i>		

LCS (8109029-BS2) Extracted: 09/09/08 12:26


Benzene	NWTPH-Gx/ 8021B	30.7	---	0.500	ug/l	1x	--	30.0	102%	(80-120)	--	--	09/09/08 15:21	
Toluene	"	30.7	---	0.500	"	"	--	"	102%	"	--	--	"	
Ethylbenzene	"	30.8	---	0.500	"	"	--	"	103%	"	--	--	"	
Xylenes (total)	"	91.7	---	1.00	"	"	--	90.0	102%	"	--	--	"	
<i>Surrogate(s): 4-BFB (PID)</i>		<i>Recovery:</i>		<i>98.9%</i>		<i>Limits: 68-140%</i>		<i>"</i>				<i>09/09/08 15:21</i>		

Duplicate (8109029-DUP1) QC Source: BRI0067-02 Extracted: 09/09/08 12:26

Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	187	---	50.0	ug/l	1x	192	--	--	--	2.94%	(25)	09/09/08 16:55	
Benzene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Toluene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Ethylbenzene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Xylenes (total)	"	ND	---	1.00	"	"	ND	--	--	--	NR	"	"	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery:</i>		<i>88.6%</i>		<i>Limits: 58-144%</i>		<i>"</i>				<i>09/09/08 16:55</i>		
<i>4-BFB (PID)</i>		<i>Recovery:</i>		<i>98.8%</i>		<i>Limits: 68-140%</i>		<i>"</i>				<i>"</i>		

Duplicate (8109029-DUP2) QC Source: BRI0067-03 Extracted: 09/09/08 12:26

Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	ND	---	50.0	ug/l	1x	54.2	--	--	--	11.7%	(25)	09/09/08 17:55	
Benzene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Toluene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Ethylbenzene	"	ND	---	0.500	"	"	ND	--	--	--	NR	"	"	
Xylenes (total)	"	ND	---	1.00	"	"	ND	--	--	--	NR	"	"	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery:</i>		<i>87.8%</i>		<i>Limits: 58-144%</i>		<i>"</i>				<i>09/09/08 17:55</i>		
<i>4-BFB (PID)</i>		<i>Recovery:</i>		<i>97.2%</i>		<i>Limits: 68-140%</i>		<i>"</i>				<i>"</i>		

TestAmerica Seattle

 Curtis D. Armstrong For Kate Haney, Project Manager

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THE LEADER IN ENVIRONMENTAL TESTING

Sound Environmental Strategies 2400 Airport Way South, Suite 200 Seattle, WA/USA 98134-2020	Project Name: Tesoro - Blaine #62154 Project Number: 0271-008-02 Project Manager: Bert Hyde	Report Created: 09/22/08 11:56
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Gasoline Hydrocarbons (Benzene to Naphthalene) and BTEX by NWTPH-G and EPA 8021B - Laboratory Quality Control Results
 TestAmerica Seattle

QC Batch: 8109029 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 (8109029-MS1)		QC Source: BRI0067-01			Extracted: 09/09/08 12:26									
Gasoline Range Hydrocarbons	NWTPH-Gx/ 8021B	2200	---	50.0	ug/l	1x	992	1000	121%	(75-131)	--	--	09/09/08 18:55	
<i>Surrogate(s): 4-BFB (FID)</i>		<i>Recovery: 113%</i>		<i>Limits: 58-144%</i>										<i>09/09/08 18:55</i>
Matrix Spike (8109029-MS2)		QC Source: BRI0114-01			Extracted: 09/09/08 12:26									
Benzene	NWTPH-Gx/ 8021B	40.6	---	0.500	ug/l	1x	3.55	30.0	124%	(46-130)	--	--	09/09/08 19:24	
Toluene	"	36.0	---	0.500	"	"	ND	"	120%	(60-124)	--	--	"	
Ethylbenzene	"	37.0	---	0.500	"	"	ND	"	123%	(56-141)	--	--	"	
Xylenes (total)	"	106	---	1.00	"	"	ND	90.0	118%	(66-132)	--	--	"	
<i>Surrogate(s): 4-BFB (PID)</i>		<i>Recovery: 98.0%</i>		<i>Limits: 68-140%</i>										<i>09/09/08 19:24</i>

TestAmerica Seattle



Curtis D. Armstrong For Kate Haney, Project Manager

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Sound Environmental Strategies

2400 Airport Way South, Suite 200
Seattle, WA/USA 98134-2020

Project Name: **Tesoro - Blaine #62154**

Project Number: 0271-008-02

Project Manager: Bert Hyde

Report Created:

09/22/08 11:56

Notes and Definitions

Report Specific Notes:

None

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.

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Curtis D. Armstrong For Kate Hancy, Project Manager



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THE LEADER IN ENVIRONMENTAL TESTING

11720 North Creek Pkwy N Suite 400, Bothell, WA 98011-8244 425-420-9200 FAX 420-9210
 11922 E. First Ave, Spokane, WA 99206-5302 509-924-9200 FAX 924-9290
 9405 SW Nimbus Ave, Beaverton, OR 97008-7145 503-906-9200 FAX 906-9210
 2000 W International Airport Rd Ste A10, Anchorage, AK 99502-1119 907-563-9200 FAX 563-9210

CHAIN OF CUSTODY REPORT

Work Order #: **BR1014**

CLIENT: Sound Environmental Strategies-Tesoro		INVOICE TO: Tesoro		TURNAROUND REQUEST In Business Days * Organic & Inorganic Analyses <input checked="" type="checkbox"/> 7 <input type="checkbox"/> 5 <input type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. Petroleum Hydrocarbon Analyses <input checked="" type="checkbox"/> 4 <input type="checkbox"/> 3 <input type="checkbox"/> 2 <input type="checkbox"/> 1 <input type="checkbox"/> <1 STD. <input type="checkbox"/> OTHER Specify: * Turnaround Requests less than standard may incur Rush Charges.											
REPORT TO: Rob Honsberger		ADDRESS: 2400 Airport Way South, Suite 200						ADDRESS: 46 Anne Wilkinson		ADDRESS: 3450 South 344 way, Suite 201		ADDRESS: Auburn, WA 98001			
PHONE: 206.422.3061 FAX: 206.306.1907		PROJECT NAME: Tesoro - Blaine # 62154		PRESERVATIVE		MATRIX (W, S, O)		# OF CONT.		LOCATION/ COMMENTS		TA WO ID			
PROJECT NUMBER: 0271-008-02		SAMPLED BY: L. Namba		REQUESTED ANALYSES		W		3		MW-04		-01			
CLIENT SAMPLE IDENTIFICATION		SAMPLING DATE/TIME		HCL HCL		W		1		Lab. Supplied		-02			
1 MW-04-20080905		09/05/08 @ 1536		✓ ✓											
2 FRP Blank		09/05/08 @ 0800		✓ ✓											
3															
4															
5															
6															
7															
8															
9															
10															
RELEASED BY: Larry Namba		FIRM: SES		DATE: 09/08/08		TIME: 1240		RECEIVED BY: Collette Weaver		FIRM: TAL-Seattle		DATE: 09-08-08		TIME: 1240	
RELEASED BY:		FIRM:		DATE:		TIME:		RECEIVED BY:		FIRM:		DATE:		TIME:	
ADDITIONAL REMARKS:												TEMP: 4.3c		PAGE W/P OF	

TAT: _____

Paperwork to PM - Date: _____ Time: _____

Non-Conformances?

Page Time & Initials: _____

Circle Y or N

(If Y, see other side)

TEST AMERICA SAMPLE RECEIPT CHECKLIST

Received By:
(applies to temp at receipt)

Logged-in By:

Unpacked/Labeled By:

Cooler ID: _____

Date: 09-08-08

Date: 09-08-08

Date: 09-08-08

Work Order No. BRI0114

Time: 1240

Time: 1518

Time: 1518

Client: Sound Environmental Strategies

Initials: CW

Initials: CW

Initials: CW

Project: _____

Container Type:

COC Seals:

Packing Material:

Cooler

Ship Container

Sign By

Bubble Bags

Styrofoam

Box

On Bottles

Date

Foam Packs

None/Other _____

None

None/Other _____

Refrigerant:

Received Via: Bill#

Gel Ice Pack _____

Fed Ex Client

Loose Ice _____

UPS TA Courier

None/Other _____

DHL Mid Valley

Senvoy TDP

GS Other _____

Cooler Temperature (IR): _____ °C Plastic Glass (Frozen filters, Tedlars and aqueous Metals exempt)
(circle one)

Temperature Blank? 4.3 °C or NA

Trip Blank? Y or N or NA

BP, OPLC, ARCO-Temperature monitoring every 15 minutes:

(initial/date/time): _____

Comments: _____

Sample Containers:

ID

ID

Intact? or N _____

Metals Preserved? Y or N or NA _____

Provided by TA? or N _____

Client QAPP Preserved? Y or N or NA _____

Correct Type? or N _____

Adequate Volume? or N _____

#Containers match COC? or N _____

(for tests requested)
Water VOAs: Headspace? Y or N or NA _____

IDs/time/date match COC? Y or N _____

Comments: _____

Hold Times in hold? or N _____

PROJECT MANAGEMENT

Is the Chain of Custody complete?

Y or N If N, circle the items that were incomplete

Comments, Problems _____

Total access set up?

Y or N

Has client been contacted regarding non-conformances?

Y or N

If Y, _____ / _____
Date Time

PM Initials: _____ Date: _____ Time: _____

NOTIFICATION OF DISCREPANCY

DATE: 09-08-08 TIME: 1519 PM: Kate Haney SC INITIALS: CW

Rush/Short Hold? Yes No

- Project Not Set Up in ELM New Client COC Received ON HOLD
 Analysis Requested on COC - Not Listed for Project in ELM

- PM To Add Analysis: _____
 Clarification of Analysis: _____
 Hold Time Expired: (Analysis) _____
 Turnaround Time Not Checked: _____
 Did Not Receive Sample(s) Listed on COC: _____
 Received Extra Sample(s) Not Listed on COC: _____

Sample Description(s) or Date/Time Sampled Do Not Match COC:

COC says Trip blank @ 0800 & the vqa says @ 1000,
logged in according to COC.

- Improper Preservative For method: _____
 Sample Received Broken: _____
 Insufficient Sample Volume: _____
 Sample preserved upon receipt: _____
 Temperature Outside recommended range ($4^{\circ}\text{C} \pm 2^{\circ}\text{C}$): _____
 Received on-ice within 4 hours of collection, temperature between ambient to 2°C acceptable.
 Other: _____

PROJECT MANAGER RESOLUTION:

(Date & Time when returned to SC)

Approval By:

Date:

Time: