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Gene N. Ortega
Territory Manager
Global Remediation – U.S. Retail

ExxonMobil
Refining & Supply

January 15, 2003

Ms. Eva Chu
Alameda County Health Agency
Division of Environmental Protection
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502

Alameda County
JAN 23 2003
Environmental Health

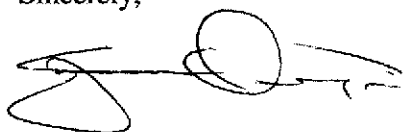
Subject: Former Exxon RAS #7-0210, 7840 Amador Valley Boulevard, Dublin, California

Dear Ms. Chu:

Attached for your review and comment is a copy of the *Report of Groundwater Monitoring, Fourth Quarter 2002* for the above-referenced site. The report, prepared by ETIC Engineering, Inc. of Pleasant Hill, California, details the results of the November 2002 sampling event.

If you have any questions or comments, please contact me at (925) 246-8747.

Sincerely,



Gene N. Ortega
Territory Manager

Attachment: ETIC Groundwater Monitoring Report dated January 2003

c: w/ attachment:
Mr. Joseph A. Aldridge - Valero Energy Corporation

c: w/o attachment:
Mr. Joseph Muehleck - ETIC Engineering, Inc.



Alameda County
JAN 23 2003
Environmental Health

Report of Groundwater Monitoring Fourth Quarter 2002

**Former Exxon Retail Site 7-0210
7840 Amador Valley Boulevard
Dublin, California**

Prepared for

ExxonMobil Refining and Supply Company
2300 Clayton Road, Suite 1250
Concord, California 94520

Prepared by

ETIC Engineering, Inc.
2285 Morello Avenue
Pleasant Hill, California 94523
(925) 602-4710

Ted Moise

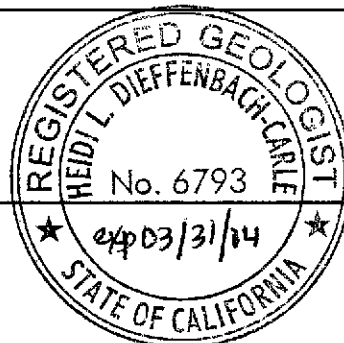
1/16/03

Ted Moise
Project Manager

Date

Heidi Dieffenbach-Carle

Heidi Dieffenbach-Carle, R.G. #6793
Senior Geologist



January 16, 2003

Date

January 2003

SITE CONTACTS

Station Number: Former Exxon Retail Site 7-0210

Station Address: 7840 Amador Valley Boulevard
Dublin, California

ExxonMobil Project Manager: Gene N. Ortega
ExxonMobil Refining and Supply Company
2300 Clayton Road, Suite 1250
Concord, California 94520
(925) 246-8747

Consultant to ExxonMobil: ETIC Engineering, Inc.
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Pleasant Hill, California 94523
(925) 602-4710

ETIC Project Manager: Ted Moise

Regulatory Oversight: Eva Chu
Alameda County Health Agency
Division of Environmental Protection
Department of Environmental Health
1131 Harbor Bay Parkway, 2nd Floor
Alameda, California 94502
(510) 567-6700

INTRODUCTION

At the request of ExxonMobil Refining and Supply Company, ETIC Engineering, Inc. has prepared this quarterly groundwater monitoring report for former Exxon Retail Site 7-0210. This report presents the results for the most recent groundwater monitoring conducted at the site and summarizes recent site activities. This report covers site activities from 30 July 2002, the date of the last monitoring event, until 5 November 2002, the date of the recent monitoring event. Groundwater monitoring results, well construction details, and a groundwater monitoring plan are provided in the attached figures and tables. Groundwater monitoring protocols, field data, and analytical results are provided in the attached appendixes.

GENERAL SITE INFORMATION

Site name:	Former Exxon Retail Site 7-0210
Site address:	7840 Amador Valley Boulevard, Dublin, California
Current property owner:	Valero Energy Corporation
Current site use:	Active Valero-branded station operated by Dublin Valero, Inc.
Current phase of project:	Groundwater monitoring
Tanks at site:	Three underground storage tanks (gasoline)
Number of wells:	3 (all onsite)

GROUNDWATER MONITORING SUMMARY

Gauging and sampling date:	5 November 2002
Wells gauged and sampled:	MW5-MW7
Wells gauged only:	None
Groundwater flow direction:	Southeast
Groundwater gradient:	0.003
Well screens submerged:	None
Well screens not submerged:	MW5-MW7
Liquid-phase hydrocarbons:	Not observed or detected
Laboratory:	TestAmerica, Inc., Nashville, Tennessee

Analyses performed:

- Total Petroleum Hydrocarbons as gasoline by EPA Method 8015B
- Total Petroleum Hydrocarbons as diesel by EPA Method 8015B
- Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8021B
- Methyl t-butyl ether by EPA Method 8021B
- Methyl t-butyl ether by EPA Method 8260B (confirmation samples)

ADDITIONAL ACTIVITIES PERFORMED AT SITE

No additional activities were performed at the site.

WORK PROPOSED FOR NEXT QUARTER

Groundwater will be monitored in accordance with the attached groundwater monitoring plan.

In accordance with the Work Plan for Offsite Subsurface Investigation submitted in April 2002, an access agreement with the owner of the neighboring property is being finalized.

Attachments:

Figure 1: Site Plan Showing Groundwater Elevations and Analytical Results

Table 1: Well Construction Details

Table 2: Groundwater Monitoring Data

Table 3: Groundwater Monitoring Plan

Appendix A: Field Protocols

Appendix B: Field Documents

Appendix C: Laboratory Analytical Reports



Groundwater
Flow Direction
Gradient = 0.003

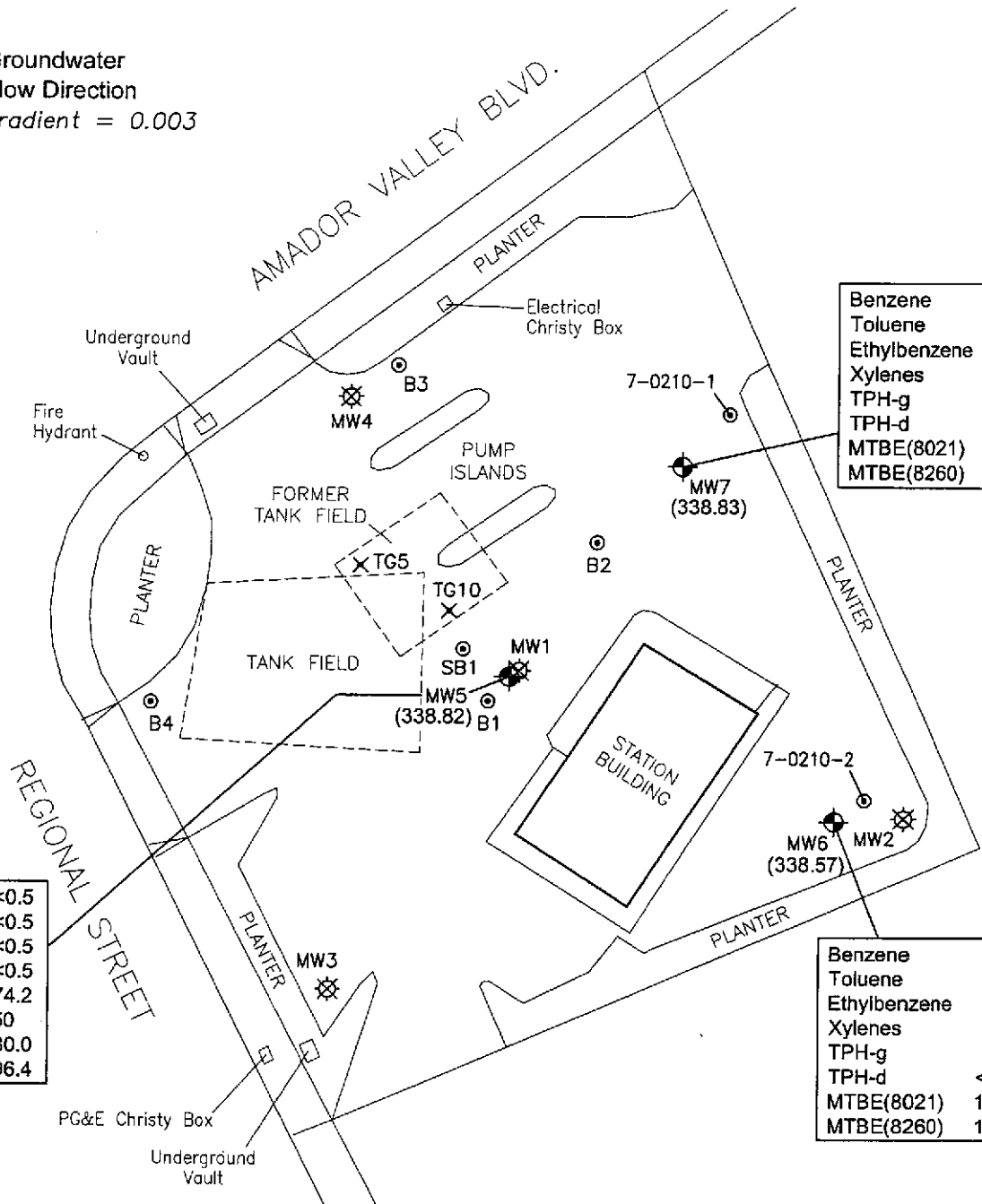
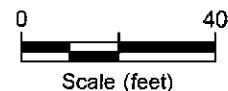
Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
Xylenes	<0.5
TPH-g	74.2
TPH-d	<50
MTBE(8021)	80.0
MTBE(8260)	96.4

Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
Xylenes	<0.5
TPH-g	<50
TPH-d	<50
MTBE(8021)	<0.5
MTBE(8260)	NA

Benzene	<0.5
Toluene	<0.5
Ethylbenzene	<0.5
Xylenes	<0.5
TPH-g	99.7
TPH-d	<50
MTBE(8021)	114
MTBE(8260)	118

LEGEND

- GROUNDWATER MONITORING WELL LOCATION
 - SOIL BORING / GROUNDWATER SAMPLING LOCATION
 - CONFIRMATION SOIL SAMPLE
 - DESTROYED GROUNDWATER MONITORING WELL
 - (338.83) GROUNDWATER ELEVATION (FEET)
 - TPH-g TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
 - TPH-d TOTAL PETROLEUM HYDROCARBONS AS DIESEL
 - MTBE METHYL T-BUTYL ETHER
 - NA NOT ANALYZED
- CONCENTRATIONS IN MICROGRAMS PER LITER (ug/L).



FILENAME: 402002.DWG 01/15/03



**SITE PLAN SHOWING GROUNDWATER ELEVATIONS
AND ANALYTICAL RESULTS**
FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BLVD., DUBLIN, CA.
5 NOVEMBER 2002

FIGURE:

1

TABLE 1 WELL CONSTRUCTION DETAILS, FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

Well Number		Well Installation Date	Elevation TOC (feet)	Casing Material	Total Depth (feet)	Well Depth (feet)	Borehole Diameter (inches)	Casing Diameter (inches)	Screened Interval (feet)	Slot Size (inches)	Filter Pack Interval (feet)	Filter Pack Material
MW1	a	04/14/92	96.32	PVC	26.5	24.75	10.25	4	11-24	0.010	10-25	--
MW2	a	05/13/92	95.91	PVC	26	25	10.25	4	10-25	0.010	9.5-26	--
MW3	a	05/14/92	97.95	PVC	28	27.75	10.25	4	12.5-27.5	0.010	11-28	--
MW4	a	05/14/92	96.69	PVC	26.5	25	10.25	4	12-25	0.010	11-26	--
MW5	b	11/15/00	352.95	PVC	25	25	8.25	2	10-25	0.020	7-25	#3 sand
MW6	b	11/14/00	352.69	PVC	27	25	8.25	2	10-25	0.020	8-27	#3 sand
MW7	b	11/14/00	351.87	PVC	26	25	8.25	2	10-25	0.020	7-25	#3 sand

a Well was destroyed April 1996.
 b Elevation is based on the Alameda Benchmark AM-STW. Elevation = 344.17 feet.
 PVC Polyvinyl chloride.
 TOC Top of casing.
 -- Information not available.

TABLE 2 GROUNDWATER MONITORING DATA, FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	LPH Thickness (feet)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl-benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	TPH-g ($\mu\text{g/L}$)	TPH-d ($\mu\text{g/L}$)	MTBE ($\mu\text{g/L}$)	Other Oxygenates and Additives ($\mu\text{g/L}$)
MW1	05/21/92	96.32	14.45	81.87	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW1	02/10/93	96.32	12.22	84.10	0.00	3.1	<0.5	1.8	0.6	2,600		NA	
MW1	05/20/93	96.32	10.74	85.58	0.00	1.9	<0.5	1.8	<1.0	1,000		NA	
MW1	06/23/93	96.32	11.74	84.58	0.00	1.0	<0.5	1.2	<0.5	1,300		NA	
MW1	08/23/93	96.32	12.72	83.60	0.00	<0.5	<0.5	<0.5	0.8	80		NA	
MW1	10/25/93	96.32	13.99	82.33	0.00	<0.5	<0.5	0.8	1.3	140		NA	
MW1	02/16/94	96.32	14.90	81.42	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW1	04/16/94	96.32	14.49	81.83	0.00	<0.5 ^b	<0.5	<0.5	<0.5	190		NA	
MW1	07/26/94	96.32	15.11	81.21	0.00	<0.5 ^b	<0.5	<0.5	<0.5	130		NA	
MW1	10/05/94	96.32	15.69	80.63	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW1	01/04/95	96.32	14.66	81.66	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW1	06/12/95	96.32	10.08	86.24	0.00	<0.5	<0.5	<0.5	<0.5	<50		230	
MW1		Well destroyed April 1996.											
MW2	05/21/92	95.91	14.30	81.61	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW2	02/10/93	95.91	12.34	83.57	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW2	05/20/93	95.91	10.73	85.18	0.00	<0.5	<0.5	<0.5	<1.0	320		NA	
MW2	06/23/93	95.91	11.74	84.17	0.00	<0.5	<0.5	<0.5	<0.5	130		NA	
MW2	08/23/93	95.91	12.60	83.31	0.00	<0.5	<0.5	<0.5	1.1	140		NA	
MW2	10/25/93	95.91	13.86	82.05	0.00	<0.5	<0.5	0.5	2.4	75		NA	
MW2	02/16/94	95.91	14.73	81.18	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW2	04/16/94	95.91	14.33	81.58	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW2	07/26/94	95.91	14.96	80.95	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW2	10/05/94	95.91	15.49	80.42	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW2	01/04/95	95.91	14.44	81.47	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW2	06/12/95	95.91	10.10	85.81	0.00	<0.5	<0.5	<0.5	<0.5	<50		59	

TABLE 2 GROUNDWATER MONITORING DATA, FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	LPH Thickness (feet)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Total Xylenes (µg/L)	TPH-g (µg/L)	TPH-d (µg/L)	MTBE (µg/L)	Other Oxygenates and Additives (µg/L)
MW2	Well destroyed April 1996.												
MW3	05/21/92	97.95	16.05	81.90	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW3	02/10/93	97.95	13.77	84.18	0.00	<0.5	<0.5	<0.5	0.7	<50		NA	
MW3	05/20/93	97.95	12.32	85.63	0.00	<0.5	<0.5	<0.5	<1.0	<50		NA	
MW3	06/23/93	97.95	13.34	84.61	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW3	08/23/93	97.95	14.30	83.65	0.00	2.3	1.2	1.4	4.1	<50		NA	
MW3	10/25/93	97.95	15.62	82.33	0.00	NS	NS	NS	NS	NS		NS	
MW3	02/16/94	97.95	16.48	81.47	0.00	NS	NS	NS	NS	NS		NS	
MW3	04/16/94	97.95	16.61	81.34	0.00	NS	NS	NS	NS	NS		NS	
MW3	07/26/94	97.95	16.72	81.23	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW3	10/05/94	97.95	17.33	80.62	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW3	01/04/95	97.95	16.29	81.66	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW3	06/12/95	97.95	11.67	86.28	0.00	<0.5	<0.5	<0.5	<0.5	<50		<2.5	
MW3	Well destroyed April 1996.												
MW4	05/21/92	96.69	14.59	82.10	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW4	02/10/93	96.69	12.30	84.39	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW4	05/20/93	96.69	10.75	85.94	0.00	1.4	1.0	<0.5	1.8	<50		NA	
MW4	06/23/93	96.69	11.78	84.91	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW4	08/23/93	96.69	12.82	83.87	0.00	<0.5	<0.5	<0.5	0.8	<50		NA	
MW4	10/25/93	96.69	14.10	82.59	0.00	NS	NS	NS	NS	NS		NS	
MW4	02/16/94	96.69	15.02	81.67	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW4	04/16/94	96.69	14.61	82.08	0.00	NS	NS	NS	NS	NS		NS	
MW4	07/26/94	96.69	15.23	81.46	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA	
MW4	10/05/94	96.69	15.85	80.84	0.00	<0.5	12	<0.5	<0.5	<50		NA	

TABLE 2 GROUNDWATER MONITORING DATA, FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	LPH Thickness (feet)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl-benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	TPH-g ($\mu\text{g/L}$)	TPH-d ($\mu\text{g/L}$)	MTBE ($\mu\text{g/L}$)	Other Oxygenates and Additives ($\mu\text{g/L}$)	
MW4	01/04/95	96.69	14.84	81.85	0.00	<0.5	<0.5	<0.5	<0.5	<50		NA		
MW4	06/12/95	96.69	10.07	86.62	0.00	<0.5	<0.5	<0.5	<0.5	<50		<2.5		
MW4			Well destroyed April 1996.											
MW5	06/15/00	STATION OPERATIONS TRANSFERRED TO VALERO ENERGY CORPORATION												
MW5	11/17/00	352.93	13.51	339.42	0.00	<0.5	<0.5	<0.5	2.46	240		1,500		
MW5	11/17/00	352.93										1,600 ^a		
MW5	02/02/01	352.93	13.81	339.12	0.00	<0.5	<0.5	<0.5	<0.5	110		1,400		
MW5	02/02/01	352.93										1,200 ^a		
MW5	05/09/01	352.93	12.20	340.73	0.00	<0.5	<0.5	<0.5	<0.5	<50		770 ^a	ND ^c	
MW5	09/12/01	352.93	13.84	339.09	0.00	<0.5	<0.5	<0.5	<0.5	100		760	NA	
MW5	09/12/01	352.93										800 ^a		
MW5	11/05/01	352.95	14.14	338.81	0.00	<0.5	<0.5	<0.5	0.61	70	86	510	NA	
MW5	11/05/01	352.95										420 ^a		
MW5	02/04/02	352.95	11.85	341.10	0.00	<0.5	<0.5	<0.5	<0.5	381	d	<50	630	NA
MW5	02/04/02	352.95										525 ^a		
MW5	04/26/02	352.95	11.75	341.20	0.00	<0.5	<0.5	<0.5	<0.5	322	d	<50	378	NA
MW5	04/26/02	352.95										312 ^a		
MW5	07/30/02	352.95	12.87	340.08	0.00	<0.5	<0.5	<0.5	<0.5	97.8	d	<50	126	NA
MW5	07/30/02	352.95										132 ^a		
MW5	11/05/02	352.95	14.13	338.82	0.00	<0.5	<0.5	<0.5	<0.5	74.2	d	<50	80.0	NA
MW5	11/05/02	352.95										96.4 ^a		
MW6	06/15/00	STATION OPERATIONS TRANSFERRED TO VALERO ENERGY CORPORATION												
MW6	11/17/00	352.66	13.47	339.19	0.00	<0.5	<0.5	<0.5	<0.5	<50		270		
MW6	11/17/00	352.66										260 ^a		

TABLE 2 GROUNDWATER MONITORING DATA, FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	LPH Thickness (feet)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl-benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	TPH-g ($\mu\text{g/L}$)	TPH-d ($\mu\text{g/L}$)	MTBE ($\mu\text{g/L}$)	Other Oxygenates and Additives ($\mu\text{g/L}$)	
MW6	02/02/01	352.66	13.79	338.87	0.00	<0.5	<0.5	<0.5	<0.5	<50		160		
MW6	02/02/01	352.66										130 ^a		
MW6	05/09/01	352.66	12.25	340.41	0.00	<0.5	<0.5	<0.5	<0.5	<50		760 ^a	ND ^c	
MW6	09/12/01	352.66	13.83	338.83	0.00	<0.5	<0.5	<0.5	<0.5	<50		680	NA	
MW6	09/12/01	352.66										740 ^a		
MW6	11/05/01	352.69	14.11	338.58	0.00	<0.5	<0.5	<0.5	<0.5	<50	<50	390	NA	
MW6	11/05/01	352.69										320 ^a		
MW6	02/27/02	352.69	11.77	340.92	0.00	<5.0	<5.0	8.00	<5.0	1,380	d	NA	1,310	ND ^c
MW6	02/27/02	352.69										1,410 ^a		
MW6	04/26/02	352.69	11.75	340.94	0.00	<0.5	<0.5	<0.5	<0.5	422	d	<50	482	NA
MW6	04/26/02	352.69										430 ^a		
MW6	07/30/02	352.69	12.88	339.81	0.00	<2.5	<2.5	<2.5	<2.5	144	d	<50	166	NA
MW6	07/30/02	352.69										185 ^a		
MW6	11/05/02	352.69	14.12	338.57	0.00	<0.5	<0.5	<0.5	<0.5	99.7	d	<50	114	NA
MW6	11/05/02	352.69										118^a		
MW7	06/15/00	STATION OPERATIONS TRANSFERRED TO VALERO ENERGY CORPORATION												
MW7	11/17/00	351.86	12.44	339.42	0.00	<0.5	<0.5	<0.5	<0.5	<50		<0.5		
MW7	02/02/01	351.86	12.74	339.12	0.00	<0.5	<0.5	<0.5	<0.5	<50		<0.5		
MW7	05/09/01	351.86	11.15	340.71	0.00	<0.5	<0.5	<0.5	<0.5	<50		<5 ^a	ND ^c	
MW7	09/12/01	351.86	12.74	339.12	0.00	<0.5	<0.5	<0.5	<0.5	<50		<0.5	NA	
MW7	11/05/01	351.87	13.07	338.80	0.00	<0.5	<0.5	<0.5	<0.5	<50	50	<0.5	NA	
MW7	02/04/02	351.87	10.79	341.08	0.00	<0.5	<0.5	<0.5	<0.5	<50	d	<50	5.80	NA
MW7	02/04/02	351.87										1.4 ^a		
MW7	04/26/02	351.87	10.65	341.22	0.00	<0.5	<0.5	<0.5	<0.5	<50	d	<50	1.6	NA
MW7	07/30/02	351.87	11.77	340.10	0.00	<0.5	<0.5	<0.5	<0.5	<50	d	<50	<0.5	NA

TABLE 2 GROUNDWATER MONITORING DATA, FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

Well Number	Date	Casing Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	LPH Thickness (feet)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl-benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	TPH-g ($\mu\text{g/L}$)	TPH-d ($\mu\text{g/L}$)	MTBE ($\mu\text{g/L}$)	Other Oxygenates and Additives ($\mu\text{g/L}$)	
MW7	11/05/02	351.87	13.04	338.83	0.00	<0.5	<0.5	<0.5	<0.5	<50	d	<50	<0.5	NA

a Analysis by EPA Method 8260.

b A peak eluting earlier than benzene, suspected to be MTBE.

c Other oxygenates and additives include diisopropyl ether, t-butyl alcohol, tert-amyl methyl ether, tert-butyl ethyl ether, 1,2-dibromoethane, and 1,2-dichloroethane.

d TPH-g results beginning February 2002 include MTBE.

LPH Liquid-phase hydrocarbons.

TPH-g Total Petroleum Hydrocarbons as gasoline.

TPH-d Total Petroleum Hydrocarbons as diesel.

MTBE Methyl tertiary butyl ether.

NA Not analyzed.

ND Not detected.

NS Not sampled.

$\mu\text{g/L}$ Micrograms per liter.

TABLE 3 GROUNDWATER MONITORING PLAN,
FORMER EXXON RS 7-0210, 7840 AMADOR VALLEY BOULEVARD, DUBLIN, CALIFORNIA

Well Number	Groundwater Gauging Frequency	Groundwater Sampling and Analysis Frequency		
		BTEX and TPH-g	TPH-d	MTBE
MW5	Q	Q	Q	Q
MW6	Q	Q	Q	Q
MW7	Q	Q	Q	Q

Q = Quarterly.

BTEX = Benzene, toluene, ethylbenzene, total xylenes.

TPH-g = Total Petroleum Hydrocarbons as gasoline.

TPH-d = Total Petroleum Hydrocarbons as diesel.

MTBE = Methyl tertiary butyl ether.

Appendix A
Field Protocols

PROTOCOLS FOR QUARTERLY GROUNDWATER MONITORING

GROUNDWATER GAUGING

Wells are opened prior to gauging to allow the groundwater level in the wells to equilibrate with atmospheric pressure. The depth to groundwater and depth to liquid-phase hydrocarbons, if present, are then measured to the nearest 0.01 feet using an electronic water level meter or optical interface probe. The measurements are made from a permanent reference point at the top of the well casing. If less than 1 foot of water is measured in a well, the water is bailed and, if the well does not recover, the well is considered "dry." Wells with a sheen or measurable liquid-phase hydrocarbons are generally not purged or sampled.

WELL PURGING

After the wells are gauged, each well is purged of approximately 3 well casing volumes of water to provide representative groundwater samples for analysis. Field parameters of pH, temperature, and electrical conductance are measured during purging to ensure that these parameters have stabilized before groundwater in a well is sampled. Groundwater in each well is purged using an inertial pump (WaTerra), an electric submersible pump, or a bailer. After the well is purged, the water level is checked to ensure that the well has recharged to at least 80 percent of its original water level.

GROUNDWATER SAMPLING

After purging, groundwater in each well is sampled using dedicated tubing and an inertial pump (WaTerra) or a factory-cleaned disposable bailer. Samples from extraction wells are typically collected from sample ports associated with the groundwater remediation system. Samples collected for volatile organic analysis are placed in Teflon septum-sealed 40-milliliter glass vials. Samples collected for diesel analysis are placed in 1-liter amber glass bottles. Each sample bottle is labeled with the site name, well number, date, sampler's initials, and preservative. The samples are placed in a cooler with ice for delivery to a state-certified laboratory. The information for each sample is entered on a chain-of-custody form prior to transport to the laboratory.

Appendix B

Field Documents



Engineering, Inc.

MONITORING WELL DATA FORM

Client: ExxonMobil

Date: 11/15/07

Project Number: UP0210.1

Station Number: 7-0210

Site Location:
7840 AMADOR VALLEY BLVD., DUBLIN, CA

Samplers: CM

MONITORING WELL NUMBER	DEPTH TO WATER (TOC) ft.	DEPTH TO PRODUCT (TOC)	APPARENT PRODUCT THICKNESS	AMOUNT OF PRODUCT REMOVED	MONITORING WELL INTEGRITY	DEPTH TO BOTTOM (TOC) ft.	WELL CASING DIAMETER in.
------------------------	--------------------------	------------------------	----------------------------	---------------------------	---------------------------	---------------------------	--------------------------

MM5	14.13					24.32	2"
MM6	14.12					24.45	2"
MM7	13.04					23.84	2"

GROUNDWATER PURGE AND SAMPLE

Project Name: Exxon 7-0210 Well No: MWS Date: 11/5/02
 Project No: UP0210.1 Personnel: C. Mitchell

GAUGING DATA

Water Level Measuring Method: WLM

Measuring Point Description: TOC

WELL PURGE VOLUME CALCULATION	Total Depth (feet)	Depth to Water (feet)	Water Column (feet)	Multiplier for Casing Diameter				Casing Volume (gal)	Total Purge Volume (gal)
				1	2	4	6		
	24.32	14.13	10.19	0.04	0.16	0.64	1.44	1.63	489

PURGING DATA

Purge Method: Waterra Pump

Time	16:40	16:42	16:44			
Volume Purge (gal)	2	4	6			
Temperature (C)	22.2°C	22.3°C	22.3°C			
pH	6.90	6.91	6.92			
Spec. Cond. (umhos)	1411 _{uS}	1407 _{uS}	1407 _{uS}			
Turbidity/Color	Silty	Silty	Silty			
Odor (Y/N)	N	N	N			
Dewatered (Y/N)	N	N	N			

Comments/Observations:

SAMPLING DATA

Time Sampled: 16:50 Approximate Depth to Water During Sampling: 16 (feet)

Comments:

Sample Number	Number of Containers	Container Type	Perservative	Volume Filled (mL or L)	Turbidity/Color	Analysis Method
<u>MWS</u>	<u>6</u>	<u>Voa</u>	<u>HCL</u>	<u>40 ml</u>		<u>TPH-g, BTEX, MTBE</u>
<u>MWS</u>	<u>2</u>	<u>Amber</u>	<u>-</u>	<u>1L</u>		<u>TPH-D</u>

Total Purge Volume: 6 (gallons) Disposal: ROMIC

Weather Conditions: OK

Condition of Well Box and Casing at Time of Sampling: Grout - 3.5" 1x Broken Tag

Well Head Conditions Requiring Correction: 2x OK

Problems Encountered During Purging and Sampling: None

Comments:

GROUNDWATER PURGE AND SAMPLE

Project Name: Exxon 7-0210 Well No: MW6 Date: 11/5/02
 Project No: UP0210.1 Personnel: C.M. Fehell

GAUGING DATA

Water Level Measuring Method: WLM

Measuring Point Description: TOC

WELL PURGE VOLUME CALCULATION	Total Depth (feet)	Depth to Water (feet)	Water Column (feet)	Multiplier for Casing Diameter				Casing Volume (gal)	Total Purge Volume (gal)
		24.45	14.12	10.33	1	2	4	6	1.65
				0.04	0.16	0.64	1.44		

PURGING DATA

Purge Method: Waterra Pump

Time	Volume Purge (gal)	Temperature (C)	pH	Spec. Cond. (umhos)	Turbidity/Color	Odor (Y/N)	Dewatered (Y/N)
15:49	2	22.2°C	7.04	1359µS	Silty	N	N
15:50	4	21.6°C	7.01	1377µS	Silty	N	N
15:51	6	21.4°C	7.00	1381µS	Silty	N	N

Comments/Observations:

SAMPLING DATA

Time Sampled: 15:55 Approximate Depth to Water During Sampling: 16 (feet)

Comments:

Sample Number	Number of Containers	Container Type	Perservative	Volume Filled (mL or L)	Turbidity/ Color	Analysis Method
MW6	6	Voa	HCL	40 ml		TPH-g, BTEX, MTBE
MW6	2	Amber	—	1L		TPHd

Total Purge Volume: 6 (gallons)

Disposal: ROMIC

Weather Conditions: OK

Condition of Well Box and Casing at Time of Sampling: OK

Well Head Conditions Requiring Correction: None

Problems Encountered During Purging and Sampling: None

Comments:

GROUNDWATER PURGE AND SAMPLE

Project Name: Exxon 7-0210 Well No: MW7 Date: 11/5/02
 Project No: UP0210.1 Personnel: C. Mitchell

GAUGING DATA

Water Level Measuring Method: WLM Measuring Point Description: TOC

WELL PURGE VOLUME CALCULATION	Total Depth (feet)	Depth to Water (feet)	Water Column (feet)	Multiplier for Casing Diameter				Casing Volume (gal)	Total Purge Volume (gal)
		23.84	13.04	10.80	1	2	4	6	1.72
				0.04	0.16	0.64	1.44		

PURGING DATA

Purge Method: Waterra Pump

Time	Volume Purge (gal)	Temperature (C)	pH	Spec. Cond. (umhos)	Turbidity/Color	Odor (Y/N)	Dewatered (Y/N)
16:14	2	21.9°C	6.94	1386µS	Silty	N	N
16:15	4	22.1°C	6.92	1383µS	Silty	N	N
16:16	6	22.0°C	6.89	1383µS	Silty	N	N

Comments/Observations:

SAMPLING DATA

Time Sampled: 16:20 Approximate Depth to Water During Sampling: 15 (feet)

Comments:

Sample Number	Number of Containers	Container Type	Perservative	Volume Filled (mL or L)	Turbidity/ Color	Analysis Method
MW7	6	Voa	HCL	40 ml	/	TPH-g, BTEX, MTBE
MW7	2	Amber	-	1l	/	TPH-d

Total Purge Volume: 6 (gallons) Disposal: ROMIC

Weather Conditions:

Condition of Well Box and Casing at Time of Sampling: 04

Well Head Conditions Requiring Correction: 04

Problems Encountered During Purging and Sampling: None

Comments: None

Appendix C

Laboratory Analytical Reports

Test America

INCORPORATED

11/22/02

ETIC 3865
TED MOISE
2285 MORELLO AVENUE
PLEASANT HILL, CA 94523

This report includes the analytical certificates of analysis for all samples listed below. These samples relate to your project EXXONMOBIL 7-0210. The Laboratory Project number is 309015.

An executed copy of the chain of custody, the project quality control data, and the sample receipt form are also included as an addendum to this report.

Sample Identification	Lab Number	Collection Date
MW5	02-A186279	11/ 5/02
MW6	02-A186280	11/ 5/02
MW7	02-A186281	11/ 5/02

These results relate only to the items tested.
This report shall not be reproduced except in full and with permission of the laboratory.

Report Approved By: Paul E. Lane, Jr.

Report Date: 11/20/02

Paul E. Lane, Jr., Lab Director
Michael H. Dunn, M.S., Technical Director
Johnny A. Mitchell, Dir. Technical Serv.
Eric S. Smith, Assistant Technical Director
Roxanne L. Connor, Technical Services

Gail A. Lage, Technical Serv.
Glenn L. Norton, Technical Serv.
Kelly S. Comstock, Technical Serv.
Pamela A. Langford, Technical Serv.

Laboratory Certification Number: 01168CA

ANALYTICAL REPORT

ETIC 3865
 TED MOISE
 2285 MORELLO AVENUE
 PLEASANT HILL, CA 94523

Lab Number: 02-A186279
 Sample ID: MW5
 Sample Type: Water
 Site ID: 7-0210

Project:
 Project Name: EXXONMOBIL 7-0210
 Sampler: CHRISTOPHER L. MITCHELL

Date Collected: 11/ 5/02
 Time Collected: 16:50
 Date Received: 11/12/02
 Time Received: 9:00
 Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	0.5	1.0	11/16/02	19:35	D. Yeager	8021B	2437
Ethylbenzene	ND	ug/L	0.5	1.0	11/16/02	19:35	D. Yeager	8021B	2437
Toluene	ND	ug/L	0.5	1.0	11/16/02	19:35	D. Yeager	8021B	2437
Xylenes (Total)	ND	ug/L	0.5	1.0	11/16/02	19:35	D. Yeager	8021B	2437
Methyl-t-butylether	80.0	ug/L	0.5	1.0	11/16/02	19:35	D. Yeager	8021B	2437
TPH (Gasoline Range)	74.2	ug/L	50.0	1.0	11/16/02	19:35	D. Yeager	8015B	2437
TPH (Diesel Range)	ND	ug/L	50.	1.0	11/19/02	23:12	D. Haywood	8015B/3510	5798
VOLATILE ORGANICS									
Methyl-t-butyl ether	96.4	ug/L	0.50	1.0	11/21/02	15:09	S. Udeze	8260B	7873

Silica Gel Cleanup performed for TPH-DRO analysis.

Sample Extraction Data

Parameter	Wt/Vol		Date	Time	Analyst	Method
	Extracted	Extract Vol				
EPH	1000 ml	1.00 ml	11/15/02		M. Cauthen	3510

Surrogate	% Recovery	Target Range
-----	-----	-----

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 02-A186279
Sample ID: MW5
Project:
Page 2

Surrogate -----	% Recovery -----	Target Range -----
TPH Hi Surr., o-Terphenyl	106.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	97.	69. - 132.
VOA Surr 1,2-DCA-d4	107.	73. - 133.
VOA Surr Toluene-d8	102.	80. - 121.
VOA Surr, 4-BFB	89.	80. - 128.
VOA Surr, DBFM	106.	81. - 121.

LABORATORY COMMENTS:

ND = Not detected at the report limit.

B = Analyte was detected in the method blank.

J = Estimated Value below Report Limit.

E = Estimated Value above the calibration limit of the instrument.

= Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

ANALYTICAL REPORT

ETIC 3865
 TED MOISE
 2285 MORELLO AVENUE
 PLEASANT HILL, CA 94523

Lab Number: 02-A186280
 Sample ID: MW6
 Sample Type: Water
 Site ID: 7-0210

Project:
 Project Name: EXXONMOBIL 7-0210
 Sampler: CHRISTOPHER L. MITCHELL

Date Collected: 11/ 5/02
 Time Collected: 15:55
 Date Received: 11/12/02
 Time Received: 9:00
 Page: 1

Analyte	Result	Units	Report	Dil	Analysis		Analyst	Method	Batch
			Limit		Factor	Date			
ORGANIC PARAMETERS									
Benzene	ND	ug/L	0.5	1.0	11/16/02	20:06	D. Yeager	8021B	2437
Ethylbenzene	ND	ug/L	0.5	1.0	11/16/02	20:06	D. Yeager	8021B	2437
Toluene	ND	ug/L	0.5	1.0	11/16/02	20:06	D. Yeager	8021B	2437
Xylenes (Total)	ND	ug/L	0.5	1.0	11/16/02	20:06	D. Yeager	8021B	2437
Methyl-t-butylether	114.	ug/L	0.5	1.0	11/16/02	20:06	D. Yeager	8021B	2437
TPH (Gasoline Range)	99.7	ug/L	50.0	1.0	11/16/02	20:06	D. Yeager	8015B	2437
TPH (Diesel Range)	ND	ug/L	50.	1.0	11/19/02	23:31	D. Haywood	8015B/3510	5798
VOLATILE ORGANICS									
Methyl-t-butyl ether	118.	ug/L	0.50	1.0	11/21/02	12:07	S. Udeze	8260B	7873

Silica Gel Cleanup performed for TPH-DRO analysis.

Sample Extraction Data

Parameter	Wt/Vol		Date	Time	Analyst	Method
	Extracted	Extract Vol				
EPH	1000 ml	1.00 ml	11/15/02		M. Cauthen	3510

Surrogate	Recovery	Target Range
-----	-----	-----

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 02-A186280
Sample ID: MW6
Project:
Page 2

Surrogate	% Recovery	Target Range
-----	-----	-----
TPH Hi Surr., o-Terphenyl	106.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	103.	69. - 132.
VOA Surr 1,2-DCA-d4	108.	73. - 133.
VOA Surr Toluene-d8	101.	80. - 121.
VOA Surr, 4-BFB	94.	80. - 128.
VOA Surr, DBFM	105.	81. - 121.

LABORATORY COMMENTS:

ND = Not detected at the report limit.
B = Analyte was detected in the method blank.
J = Estimated Value below Report Limit.
E = Estimated Value above the calibration limit of the instrument.
= Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

Test America

INCORPORATED

ANALYTICAL REPORT

ETIC 3865
 TED MOISE
 2285 MORELLO AVENUE
 PLEASANT HILL, CA 94523

Lab Number: 02-A186281
 Sample ID: MW7
 Sample Type: Water
 Site ID: 7-0210

Project:
 Project Name: EXXONMOBIL 7-0210
 Sampler: CHRISTOPHER L. MITCHELL

Date Collected: 11/ 5/02
 Time Collected: 16:20
 Date Received: 11/12/02
 Time Received: 9:00
 Page: 1

Analyte	Result	Units	Report Limit	Dil Factor	Analysis Date	Analysis Time	Analyst	Method	Batch
ORGANIC PARAMETERS									
Benzene	ND	ug/L	0.5	1.0	11/16/02	20:37	D.Yeager	8021B	2437
Ethylbenzene	ND	ug/L	0.5	1.0	11/16/02	20:37	D.Yeager	8021B	2437
Toluene	ND	ug/L	0.5	1.0	11/16/02	20:37	D.Yeager	8021B	2437
Xylenes (Total)	ND	ug/L	0.5	1.0	11/16/02	20:37	D.Yeager	8021B	2437
Methyl-t-butylether	ND	ug/L	0.5	1.0	11/16/02	20:37	D.Yeager	8021B	2437
TPH (Gasoline Range)	ND	ug/L	50.0	1.0	11/16/02	20:37	D.Yeager	8015B	2437
TPH (Diesel Range)	ND	ug/L	50.	1.0	11/19/02	23:51	D.Haywood	8015B/3510	5798

Silica Gel Cleanup performed for TPH-DRO analysis.

Sample Extraction Data

Parameter	Wt/Vol		Date	Time	Analyst	Method
	Extracted	Extract Vol				
EPH	1000 ml	1.00 ml	11/15/02		M. Cauthen	3510

Surrogate	% Recovery	Target Range
TPH Hi Surr., o-Terphenyl	115.	41. - 155.
BTEX/GRO Surr., a,a,a-TFT	102.	69. - 132.

Sample report continued . . .

ANALYTICAL REPORT

Laboratory Number: 02-A186281
Sample ID: MW7
Project:
Page 2

LABORATORY COMMENTS:

- ND = Not detected at the report limit.
- B = Analyte was detected in the method blank.
- J = Estimated Value below Report Limit.
- E = Estimated Value above the calibration limit of the instrument.
- # = Recovery outside Laboratory historical or method prescribed limits.

End of Sample Report.

PROJECT QUALITY CONTROL DATA

Project Number:

Page: 1

Laboratory Receipt Date: 11/13/02

Matrix Spike Recovery

Note: If Blank is referenced as the sample spiked, insufficient volume was received for MS/MSD analysis for that method and the method requirements for MS/MSD analysis could not be met.

Analyte	units	Orig. Val.	MS Val	Spike Conc	Recovery	Target Range	Q.C. Batch	Spike Sample
UST ANALYSIS								
Benzene	mg/l	< 0.0005	0.0505	0.0500	101	74. - 129.	2437	blank
Toluene	mg/l	< 0.0005	0.0498	0.0500	100	74. - 128.	2437	blank
Ethylbenzene	mg/l	< 0.0005	0.0490	0.0500	98	75. - 128.	2437	blank
Xylenes (Total)	mg/l	< 0.0005	0.0984	0.100	98	72. - 126.	2437	blank
Methyl-t-butylether	mg/l	< 0.0005	0.0513	0.0500	103	64. - 133.	2437	blank
TPH (Gasoline Range)	mg/l	< 0.0500	0.973	1.00	97	59. - 128.	2437	blank
TPH (Diesel Range)	mg/l	< 0.050	0.611	1.00	61	23. - 120.	5798	BLANK
BTEX/GRO Surr., a,a,a-TFT	% Recovery				110	69. - 132.	2437	

Matrix Spike Duplicate

Analyte	units	Orig. Val.	Duplicate	RPD	Limit	Q.C. Batch
UST PARAMETERS						
Benzene	mg/l	0.0505	0.0504	0.20	15.	2437
Toluene	mg/l	0.0498	0.0500	0.40	15.	2437
Ethylbenzene	mg/l	0.0490	0.0487	0.61	15.	2437
Xylenes (Total)	mg/l	0.0984	0.0982	0.20	19.	2437
Methyl-t-butylether	mg/l	0.0513	0.0521	1.55	23.	2437
TPH (Gasoline Range)	mg/l	0.973	0.920	5.60	22.	2437
TPH (Diesel Range)	mg/l	0.611	0.654	6.80	20.	5798
BTEX/GRO Surr., a,a,a-TFT	% Recovery		111.			2437
VOA Surr 1,2-DCA-d4	% Rec		105.			7873
VOA Surr Toluene-d8	% Rec		102.			7873
VOA Surr, 4-BFB	% Rec		93.			7873
VOA Surr, DBFM	% Rec		103.			7873

Project QC continued . . .

PROJECT QUALITY CONTROL DATA

Project Number:

Page: 2

Laboratory Receipt Date: 11/13/02

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
UST PARAMETERS						
Benzene	mg/l	0.100	0.0980	98	74 - 124	2437
Toluene	mg/l	0.100	0.102	102	74 - 121	2437
Ethylbenzene	mg/l	0.100	0.0950	95	75 - 123	2437
Xylenes (Total)	mg/l	0.200	0.192	96	72 - 120	2437
Methyl-t-butylether	mg/l	0.100	0.0885	88	64 - 128	2437
TPH (Gasoline Range)	mg/l	1.00	0.973	97	61 - 139	2437
TPH (Diesel Range)	mg/l	1.00	0.748	75	42 - 115	5798
BTEX/GRO Surr., a,a,a-TFT	% Recovery			118	69 - 132	2437

Laboratory Control Data

Analyte	units	Known Val.	Analyzed Val	% Recovery	Target Range	Q.C. Batch
VOA PARAMETERS						
Methyl-t-butyl ether	mg/l	0.0500	0.0486	97	66 - 137	7873
VOA Surr 1,2-DCA-d4	% Rec			103	73 - 133	7873
VOA Surr Toluene-d8	% Rec			103	80 - 121	7873
VOA Surr, 4-BFB	% Rec			91	80 - 128	7873
VOA Surr, DBFM	% Rec			104	81 - 121	7873

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
UST PARAMETERS					
Benzene	< 0.0005	mg/l	2437	11/16/02	21:41
Toluene	< 0.0005	mg/l	2437	11/16/02	21:41
Ethylbenzene	< 0.0005	mg/l	2437	11/16/02	21:41

Project QC continued . . .

PROJECT QUALITY CONTROL DATA

Project Number:

Page: 3

Laboratory Receipt Date: 11/13/02

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Analysis Date	Analysis Time
Xylenes (Total)	< 0.0005	mg/l	2437	11/16/02	21:41
Methyl-t-butylether	< 0.0005	mg/l	2437	11/16/02	21:41
TPH (Gasoline Range)	< 0.0500	mg/l	2437	11/16/02	21:41
TPH (Diesel Range)	< 0.050	mg/l	5798	11/19/02	15:47

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
UST PARAMETERS					
BTEX/GRO Surr., a,a,a-TFT	103.	‡ Recovery	2437	11/16/02	21:41

Blank Data

Analyte	Blank Value	Units	Q.C. Batch	Date Analyzed	Time Analyzed
VOA PARAMETERS					
Methyl-t-butyl ether	< 0.00014	mg/l	7873	11/21/02	11:38
VOA Surr 1,2-DCA-d4	105.	‡ Rec	7873	11/21/02	11:38
VOA Surr Toluene-d8	101.	‡ Rec	7873	11/21/02	11:38
VOA Surr, 4-BFB	89.	‡ Rec	7873	11/21/02	11:38
VOA Surr, DBFM	106.	‡ Rec	7873	11/21/02	11:38

= Value outside Laboratory historical or method prescribed QC limits.

End of Report for Project 309015

TESTAMERICA, INC.-NASHVILLE

COOLER RECEIPT FORM

Client: ETIC Engineering BC# 309015

Cooler Received On: 11/13/02 And Opened On: 11/13/02 By: Shawn Gracey

Shawn Gracey
(Signature)

1. Temperature of Cooler when opened 1.0 Degrees Celsius
2. Were custody seals on outside of cooler?.....YES NO N/A
 - a. If yes, how many, what kind and where: (FRONT/BACK/SIDE)
 - b. Were the seals intact, signed, and dated correctly?.....YES NO N/A
3. Were custody seals on containers and intact?..... NO YES N/A
4. Were custody papers inside cooler?..... YES NO N/A
5. Were custody papers properly filled out (ink, signed, etc)?..... YES NO N/A
6. Did you sign the custody papers in the appropriate place?..... YES NO N/A
7. What kind of packing material used? Bubblewrap Peanuts Vermiculite Other None
8. Was sufficient ice used (if appropriate)?..... YES NO N/A
9. Did all bottles arrive in good condition (unbroken)?..... YES NO N/A
10. Were all bottle labels complete (#, date, signed, pres, etc)?..... YES NO N/A
11. Did all bottle labels and tags agree with custody papers?..... YES NO N/A
12. Were correct bottles used for the analysis requested?..... YES NO N/A
13. a. Were VOA vials received?..... YES NO N/A
 - b. Was there any observable head space present in any VOA vial?..... NO YES N/A
14. Was sufficient amount of sample sent in each bottle?..... YES NO N/A
15. Were correct preservatives used?..... YES NO N/A
If not, record standard ID of preservative used here _____
16. Was residual chlorine present?.....NO YES N/A
17. Corrective action taken, if necessary:

See attached for resolution