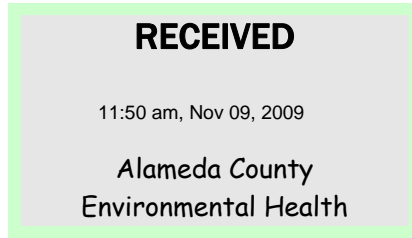


**ExxonMobil Environmental Services Company**  
4096 Piedmont Avenue #194  
Oakland, California 94611  
510 547 8196 Telephone  
510 547 8706 Facsimile

**Jennifer C. Sedlachek**  
Project Manager



**ExxonMobil**

November 5, 2009

Ms. Barbara Jakub  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

Subject: Former Mobil Station 04334, 2492 Castro Valley Boulevard, Castro Valley, California

Dear Ms. Jakub:

Attached for your review and comment is a copy of the *Report of Groundwater Monitoring, Fourth Quarter 2009* for the above-referenced site. The report, prepared by ETIC Engineering, Inc. of Pleasant Hill, California, details the results of the October 2009 sampling event.

Upon information and belief, I declare, under penalty of perjury, that the information contained in the attached report is true and correct.

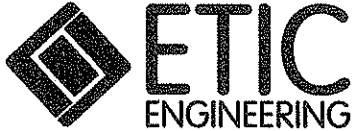
If you have any questions or comments, please contact me at 510.547.8196.

Sincerely,

Jennifer C. Sedlachek  
Project Manager

Attachment: ETIC Groundwater Monitoring Report

- c: w/ attachment:
  - Ms. Paula Floeck – Jiffy Lube International
  - Mr. Joseph D. Phillips – Jiffy Lube Remediation Coordinator
  - Mr. William Slautterback – Cal Lube Real Estate Limited Partnership
  - Mr. William Peterson – Owner of Castro Valley Lumber Company
  
- c: w/o attachment:
  - Mr. Bryan Campbell – ETIC Engineering, Inc.



**Report of Groundwater Monitoring  
Fourth Quarter 2009**

**Former Mobil Station 04334  
2492 Castro Valley Boulevard  
Castro Valley, California**

Prepared for

ExxonMobil Oil Corporation

Prepared by

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

A handwritten signature in black ink that reads "K. Erik Appel".

K. Erik Appel, P.G. #8092  
Senior Project Geologist



A handwritten date in black ink that reads "November 5, 2009".

Date

November 2009

## SITE CONTACTS

Site Name: Former Mobil Station 04334

Site Address: 2492 Castro Valley Boulevard  
Castro Valley, California

ExxonMobil Project Manager: Jennifer C. Sedlachek  
ExxonMobil Environmental Services Company  
4096 Piedmont Avenue #194  
Oakland, California 94611  
(510) 547-8196

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

ETIC Project Manager: K. Erik Appel

Regulatory Oversight: Barbara Jakub  
Alameda County Health Care Services Agency  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502  
(510) 567-6700

## INTRODUCTION

ETIC Engineering, Inc. (ETIC) has prepared this quarterly groundwater monitoring report for ExxonMobil Environmental Services Company on behalf of ExxonMobil Oil Corporation for the former Mobil Station 04334. 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 21 July 2009, the date of the previous monitoring event, to 5 October 2009, the date of the most 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

<b>Site name:</b>	Former Mobil Station 04334
<b>Site address:</b>	2492 Castro Valley Boulevard, Castro Valley, California
<b>Current property owner:</b>	Cal Lube Real Estate Limited Partnership
<b>Current site use:</b>	Jiffy Lube Oil Change facility
<b>Current phase of project:</b>	Groundwater monitoring
<b>Tanks at site:</b>	Four former underground storage tanks removed 1983
<b>Number of wells:</b>	5 (3 onsite, 2 offsite)

## GROUNDWATER MONITORING SUMMARY

<b>Gauging and sampling date:</b>	5 October 2009
<b>Wells gauged and sampled:</b>	MW1-MW5
<b>Wells gauged only:</b>	None
<b>Groundwater flow direction:</b>	North-northeast
<b>Groundwater gradient:</b>	0.027
<b>Well screens submerged:</b>	MW5
<b>Well screens not submerged:</b>	MW1, MW2, MW3, MW4
<b>Liquid-phase hydrocarbons:</b>	Not observed or detected
<b>Laboratory:</b>	Calscience Environmental Laboratories, Inc., Garden Grove, California

### Analyses performed:

- Total Petroleum Hydrocarbons as gasoline and as diesel by EPA Method 8015B (M)
- Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8021B
- Methyl tertiary butyl ether by EPA Method 8260B
- Ethyl tertiary butyl ether, tertiary amyl methyl ether, tertiary butyl alcohol, 1,2-dibromoethane, 1,2-dichloroethane, diisopropyl ether, and ethanol by EPA Method 8260B

## **ADDITIONAL ACTIVITIES PERFORMED**

None.

## **WORK PROPOSED FOR NEXT QUARTER**

The Alameda County Health Care Services Agency sent a letter dated 24 July 2009 recommending reducing groundwater monitoring from quarterly to semi-annually. Semi-annual groundwater monitoring will be conducted in the second and fourth quarters per the attached groundwater monitoring plan.

### **Attachments:**

Figure 1: Site Map Showing Groundwater Elevations and Contours

Figure 2: Site Map Showing Groundwater 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 and Chain-of-Custody Documentation

## **Figures**

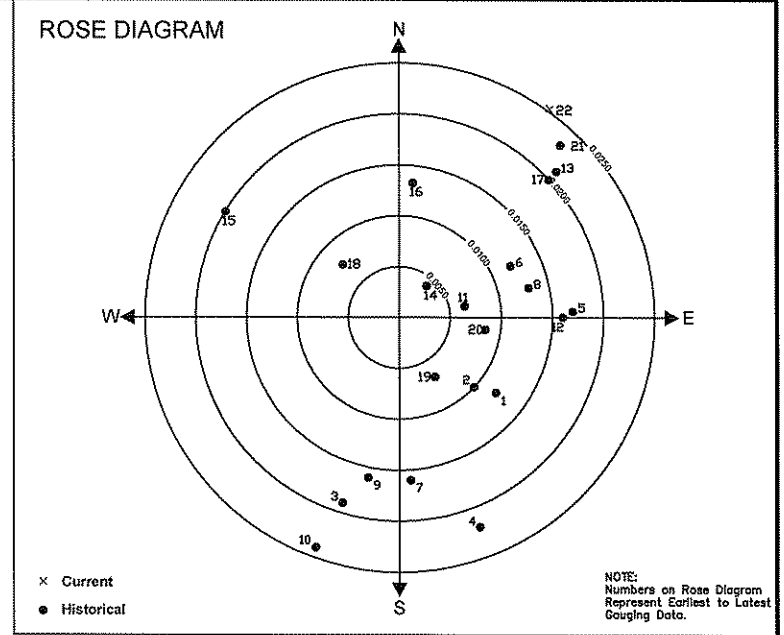
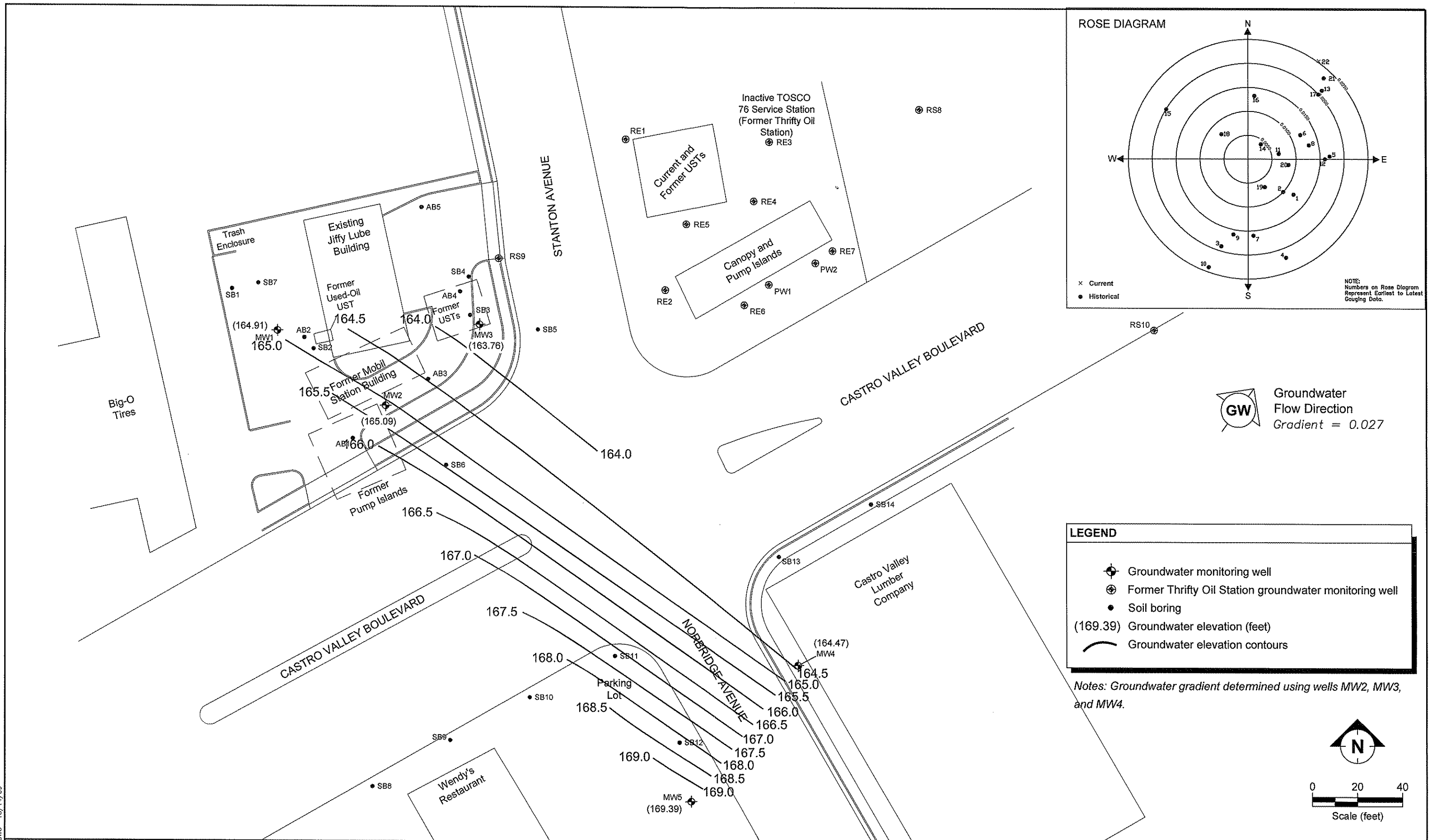
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SITE MAP SHOWING GROUNDWATER ELEVATIONS AND CONTOURS  
FORMER MOBIL STATION 04334  
2492 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA  
5 OCTOBER 2009

FIGURE:

1

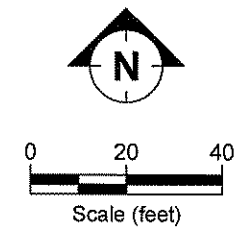


**GW** Groundwater Flow Direction  
Gradient = 0.027

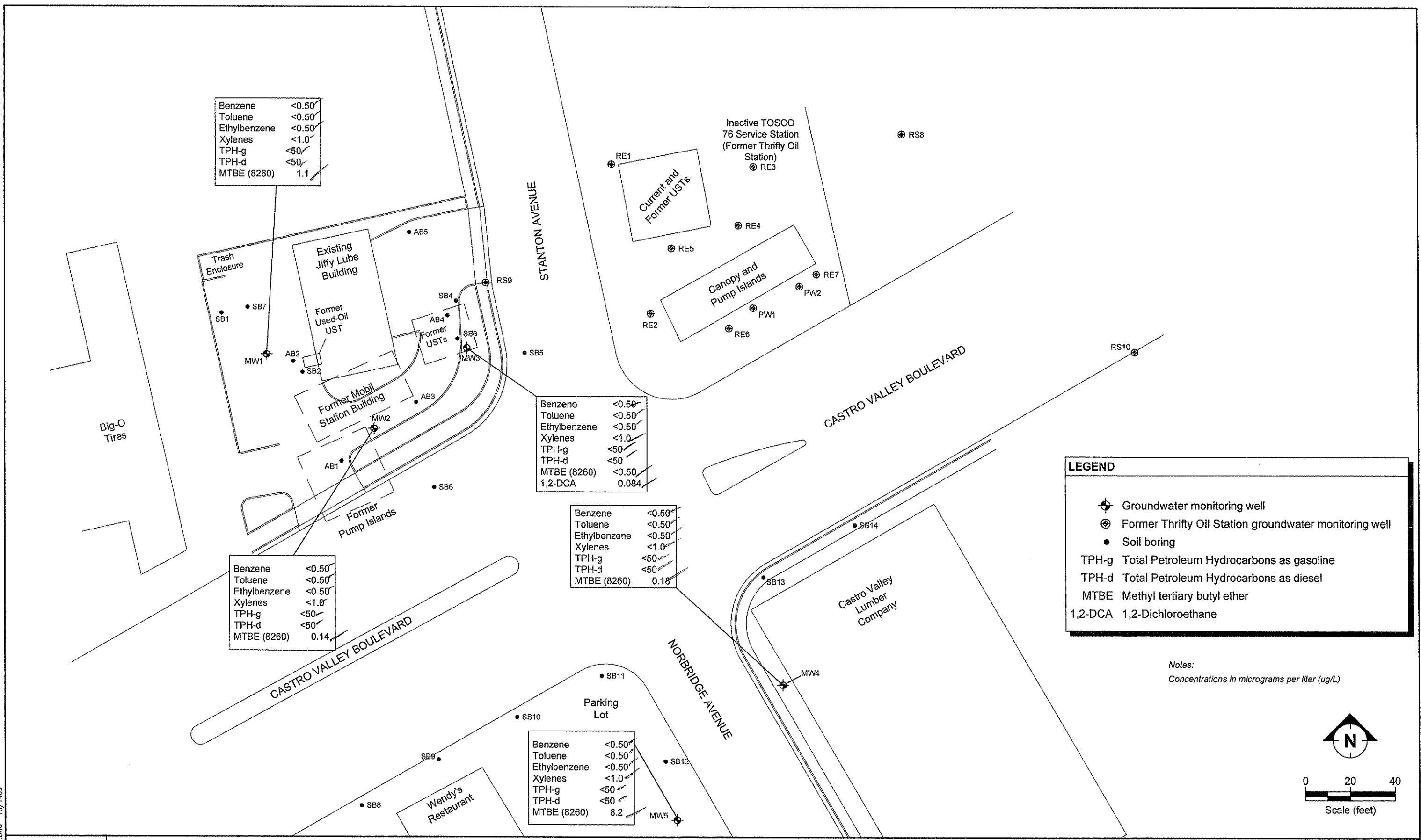
**LEGEND**

- Groundwater monitoring well
- Former Thrifty Oil Station groundwater monitoring well
- Soil boring
- (169.39) Groundwater elevation (feet)
- Groundwater elevation contours

Notes: Groundwater gradient determined using wells MW2, MW3, and MW4.



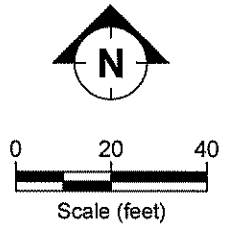
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**LEGEND**

- Groundwater monitoring well
- Former Thrifty Oil Station groundwater monitoring well
- Soil boring
- TPH-g Total Petroleum Hydrocarbons as gasoline
- TPH-d Total Petroleum Hydrocarbons as diesel
- MTBE Methyl tertiary butyl ether
- 1,2-DCA 1,2-Dichloroethane

Notes:  
Concentrations in micrograms per liter (ug/L).



SITE MAP SHOWING GROUNDWATER ANALYTICAL RESULTS  
 FORMER MOBIL STATION 04334  
 2492 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA  
 5 OCTOBER 2009



## **Tables**

**TABLE 1 WELL CONSTRUCTION DETAILS, FORMER MOBIL STATION 04334, 2492 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, 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 06/24/04	173.23	PVC	20	20	8.25	2	5 - 20	0.010	4.5 - 20	#2/12 Sand
MW2	a 06/25/04	173.63	PVC	20	20	8.25	2	5 - 20	0.010	4.5 - 20	#2/12 Sand
MW3	a 06/25/04	171.91	PVC	20	20	8.25	2	5 - 20	0.010	4.5 - 20	#2/12 Sand
MW4	a 06/24/04	170.48	PVC	15	14	8.25	2	4 - 14	0.010	3.5 - 15	#2/12 Sand
MW5	b 01/30/09	173.80	PVC	15	15	8.25	2	5 - 15	0.010	4.0 - 15	#2/12 Sand

Notes:

- a Well surveyed on 12 July 2004 by Morrow Surveying.
- b Well surveyed on 10 February 2009 by Morrow Surveying.
  
- PVC Polyvinyl chloride.
- TOC Top of casing.

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04334, 2492 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

Well ID	Date	Top of Casing Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Concentration (µg/L)							Other Oxygenates and Additives
					Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	MTBE	
MW1	a 08/13/04	173.23	7.32	165.91	<0.5	0.7	<0.5	1.0	<50	71	1.20 <sup>b</sup>	--
MW1	11/09/04	173.23	6.96	166.27	<0.5	0.9	<0.5	0.9	<50	63	1.50 <sup>b</sup>	--
MW1	02/16/05	173.23	6.10	167.13	<0.5	1.0	<0.5	1.5	<50	78	1.30 <sup>b</sup>	--
MW1	05/16/05	173.23	5.81	167.42	<0.5	<0.5	<0.5	<0.5	<50	<50	1.40 <sup>b</sup>	--
MW1	08/17/05	173.23	6.70	166.53	<0.5	<0.5	<0.5	<0.5	<50	<50	1.19 <sup>b</sup>	--
MW1	11/15/05	173.23	7.55	165.68	<0.5	<0.5	<0.5	<0.5	<50	<50	1.13 <sup>b</sup>	--
MW1	02/06/06	173.23	6.40	166.83	<0.5	<0.5	<0.5	<0.5	<50	160	<0.5 <sup>b</sup>	--
MW1	05/03/06	173.23	6.95	166.28	<1.00	<1.00	<1.00	<3.00	<50.0	78	<0.50 <sup>b</sup>	--
MW1	08/04/06	173.23	7.71	165.52	<0.50	<0.50	<0.50	<0.50	<50.0	167	<0.500 <sup>b</sup>	--
MW1	11/06/06	173.23	7.57	165.66	<0.50	<0.50	<0.50	<0.50	<50.0	<47.2	0.880 <sup>b</sup>	--
MW1	02/21/07	173.23	7.19	166.04	<0.50	<0.50	<0.50	<0.50	<50.0	<46.9	2.42 <sup>b</sup>	--
MW1	08/01/07	173.23	8.00	165.23	3.02	4.18	0.89	3.96	90.8	<47	1.54 <sup>b</sup>	--
MW1	10/25/07	173.23	7.90	165.33	<0.50	<0.50	<0.50	<0.50	<50.0	<47.2	1.63 <sup>b</sup>	--
MW1	01/31/08	173.23	6.60	166.63	<0.50	<0.50	<0.50	<0.50	<50	<50	1.8 <sup>b</sup>	--
MW1	05/01/08	173.23	7.80	165.43	<1.00	<1.00	<1.00	<3.00	<50.0	<47.2	1.67 <sup>b</sup>	--
MW1	07/31/08	173.23	8.15	165.08	<0.50	<0.50	<0.50	<0.50	<50	<47	1.7 <sup>b</sup>	--
MW1	11/07/08	173.23	8.11	165.12	<0.50	<0.50	<0.50	<0.50	<50	<47	1.4 <sup>b</sup>	--
MW1	01/29/09	173.23	7.75	165.48	<0.50	0.21 <sup>ef</sup>	<0.50	0.30 <sup>ef</sup>	<50	<50	1.6 <sup>b</sup>	--
MW1	04/15/09	173.23	7.55	165.68	<0.50	<0.50	<0.50	<1.0	<50	<50	1.6 <sup>b</sup>	19 <sup>g</sup> , 22 <sup>h,c</sup>
MW1	07/21/09	173.23	8.14	165.09	<0.50	<0.50	<0.50	<1.0	<50	<50	1.2 <sup>b</sup>	ND
<b>MW1</b>	<b>10/05/09</b>	<b>173.23</b>	<b>8.32</b>	<b>164.91</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>1.1<sup>b</sup></b>	<b>ND</b>
MW2	a 08/13/04	173.63	6.96	166.67	<0.5	0.8	<0.5	1.0	<50	57	<0.5 <sup>b</sup>	--
MW2	11/09/04	173.63	6.44	167.19	<0.5	1.1	<0.5	1.2	<50	<50	<0.5 <sup>b</sup>	--
MW2	02/16/05	173.63	5.21	168.42	<0.5	0.9	<0.5	1.4	<50	55	<0.5 <sup>b</sup>	--
MW2	05/16/05	173.63	5.86	167.77	<0.5	<0.5	<0.5	<0.5	<50	<50	<0.5 <sup>b</sup>	--
MW2	08/17/05	173.63	5.72	167.91	<0.5	<0.5	<0.5	<0.5	<50	<50	<0.5 <sup>b</sup>	--
MW2	11/15/05	173.63	7.65	165.98	<0.5	<0.5	<0.5	<0.5	<50	<50	<0.5 <sup>b</sup>	--
MW2	02/06/06	173.63	6.24	167.39	<0.5	<0.5	<0.5	<0.5	<50	<50	<0.5 <sup>b</sup>	--

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04334, 2492 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

Well ID	Date	Top of Casing Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Concentration (µg/L)							Other Oxygenates and Additives
					Benzene	Toluene	Ethyl- benzene	Total Xylenes	TPH-g	TPH-d	MTBE	
MW2	05/03/06	173.63	6.53	167.10	<1.00	<1.00	<1.00	<3.00	<50.0	<50	<0.50 <sup>b</sup>	--
MW2	08/04/06	173.63	7.65	165.98	<0.50	<0.50	<0.50	<0.50	<50.0	<47.2	<0.500 <sup>b</sup>	--
MW2	11/06/06	173.63	6.98	166.65	<0.50	<0.50	<0.50	<0.50	<50.0	<46.9	<0.500 <sup>b</sup>	--
MW2	02/21/07	173.63	6.36	167.27	<0.50	<0.50	<0.50	<0.50	<50.0	<46.9	1.70 <sup>b</sup>	--
MW2	05/01/07	173.63	7.51	166.12	<0.50	<0.50	<0.50	<0.50	<50.0	<46.9	<0.50 <sup>b</sup>	--
MW2	08/01/07	173.63	8.12	165.51	<0.50	<0.50	<0.50	<0.50	<50.0	<47	<0.500 <sup>b</sup>	--
MW2	10/25/07	173.63	7.79	165.84	<0.50	<0.50	<0.50	<0.50	<50.0	<47.2	<0.500 <sup>b</sup>	--
MW2	01/31/08	173.63	5.89	167.74	<0.50	<0.50	<0.50	<0.50	<50	<50	0.82 <sup>b</sup>	--
MW2	05/01/08	173.63	7.81	165.82	<1.00	<1.00	<1.00	<3.00	<50.0	<47.2	<0.500 <sup>b</sup>	--
MW2	07/31/08	173.63	8.30	165.33	<0.50	<0.50	<0.50	<0.50	<50	<47	<0.50 <sup>b</sup>	--
MW2	11/07/08	173.63	8.09	165.54	<0.50	<0.50	<0.50	<0.50	<50	<47	<0.50 <sup>b</sup>	--
MW2	01/29/09	173.63	7.65	165.98	<0.50	<0.50	<0.50	<1.0	<50	<50	<0.50 <sup>b</sup>	--
MW2	04/15/09	173.63	7.51	166.12	<0.50	<0.50	<0.50	<1.0	<50	<50	0.50 <sup>b,e</sup>	6.5 <sup>b,e</sup>
MW2	07/21/09	173.63	8.27	165.36	<0.50	<0.50	<0.50	<1.0	<50	<50	0.12 <sup>b,e</sup>	ND
<b>MW2</b>	<b>10/05/09</b>	<b>173.63</b>	<b>8.54</b>	<b>165.09</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>0.14<sup>b,e</sup></b>	<b>ND</b>
MW3	a 08/13/04	171.91	5.36	166.55	100	2.0	187	59.6	1,440	352	<0.5 <sup>b</sup>	--
MW3	11/09/04	171.91	4.80	167.11	188	3.6	242	20.0	1,690	461	<0.5 <sup>b</sup>	--
MW3	02/16/05	171.91	3.10	168.81	66.2	1.4	61.1	12.6	575	269	<0.5 <sup>b</sup>	--
MW3	05/16/05	171.91	3.86	168.05	74.2	1.4	61.0	9.0	592	92	<0.5 <sup>b</sup>	--
MW3	08/17/05	171.91	4.75	167.16	231 <sup>c</sup>	2.35	102	11.4	1,130	416	<0.5 <sup>b</sup>	--
MW3	11/15/05	171.91	6.56	165.35	57.4	0.95	62.4	10.5	452	193	<0.5 <sup>b</sup>	--
MW3	02/06/06	171.91	4.00	167.91	69	<5.0	64	10	830	165	<0.5 <sup>b</sup>	--
MW3	05/03/06	171.91	5.44	166.47	52.1	<1.00	37.0	4.81	605	140	<0.50 <sup>b</sup>	--
MW3	08/04/06	171.91	5.25	166.66	15.2	<0.50	5.34	1.25	262	108	<0.500 <sup>b</sup>	--
MW3	11/06/06	171.91	4.11	167.80	60.0	1.04	47.3	3.09	561	106	<0.500 <sup>b</sup>	--
MW3	02/21/07	171.91	4.94	166.97	35.1	<0.50	45.4	1.09	483	125	<0.500 <sup>b</sup>	--
MW3	05/01/07	171.91	5.86	166.05	32.5	1.63	28.7	1.53	539	120	<0.50 <sup>b</sup>	--
MW3	08/01/07	171.91	7.54	164.37	1.26	0.60	<0.50	<0.50	89.2	<47	<0.500 <sup>b</sup>	--

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04334, 2492 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

Well ID	Date	Top of Casing Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Concentration (µg/L)							Other Oxygenates and Additives
					Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	MTBE	
MW3	10/25/07	171.91	6.30	165.61	2.94	<0.50	<0.50	<0.50	50.4	<47.2	<0.50 <sup>b</sup>	--
MW3	01/31/08	171.91	3.75	168.16	10	<0.50	11	<0.50	120	51 <sup>d</sup>	<0.50 <sup>b</sup>	--
MW3	05/01/08	171.91	6.60	165.31	2.38	<1.00	<1.00	<3.00	<50.0	<47.2	<0.50 <sup>b</sup>	--
MW3	07/31/08	171.91	7.77	164.14	<0.50	<0.50	<0.50	<0.50	<50	<47	<0.50 <sup>b</sup>	--
MW3	11/07/08	171.91	6.34	165.57	3.6	<0.50	1.4	<0.50	<50	<47	<0.50 <sup>b</sup>	--
MW3	01/29/09	171.91	5.86	166.05	13	0.33 <sup>e</sup>	13	0.52 <sup>e,f</sup>	92	<50	<0.50 <sup>b</sup>	--
MW3	04/15/09	171.91	6.14	165.77	2.2	<0.50	3.2	<1.0	51	<50	<0.50 <sup>b</sup>	3.7 <sup>g,e</sup>
MW3	07/21/09	171.91	7.74	164.17	0.24 <sup>c</sup>	<0.50	<0.50	<1.0	<50	<50	<0.50 <sup>b</sup>	0.11 <sup>j,e</sup>
<b>MW3</b>	<b>10/05/09</b>	<b>171.91</b>	<b>8.15</b>	<b>163.76</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>&lt;0.50<sup>b</sup></b>	<b>0.084<sup>i,e</sup></b>
MW4	a 08/13/04	170.48	6.10	164.38	<0.5	0.8	<0.5	1.1	<50	72	2.80 <sup>b</sup>	--
MW4	11/09/04	170.48	5.54	164.94	<0.5	2.3	0.7	1.5	<50	<50	2.10 <sup>b</sup>	--
MW4	02/16/05	170.48	5.11	165.37	<0.5	1.1	<0.5	1.7	<50	<50	<0.5 <sup>b</sup>	--
MW4	05/16/05	170.48	5.44	165.04	<0.5	<0.5	<0.5	<0.5	<50	<50	<0.5 <sup>b</sup>	--
MW4	08/17/05	170.48	5.71	164.77	<0.5	<0.5	<0.5	<0.5	<50	<50	1.03 <sup>b</sup>	--
MW4	11/15/05	170.48	5.80	164.68	<0.5	<0.5	<0.5	<0.5	<50	<50	0.730 <sup>b</sup>	--
MW4	02/06/06	170.48	5.10	165.38	<0.5	<0.5	<0.5	<0.5	<50	85.2	<0.5 <sup>b</sup>	--
MW4	05/03/06	170.48	5.54	164.94	<1.00	<1.00	<1.00	<3.00	<50.0	<47	<0.50 <sup>b</sup>	--
MW4	08/04/06	170.48	5.75	164.73	<0.50	<0.50	<0.50	<0.50	<50.0	52.7	<0.500 <sup>b</sup>	--
MW4	11/06/06	170.48	5.95	164.53	<0.50	<0.50	<0.50	<0.50	<50.0	<47.2	<0.500 <sup>b</sup>	--
MW4	02/21/07	170.48	5.56	164.92	<0.50	<0.50	<0.50	<0.50	<50.0	<46.9	<0.500 <sup>b</sup>	--
MW4	05/01/07	170.48	5.66	164.82	<0.50	<0.50	<0.50	<0.50	<50.0	<46.9	<0.50 <sup>b</sup>	--
MW4	08/01/07	170.48	6.06	164.42	0.85	<0.50	<0.50	0.97	<50.0	<47	<0.870 <sup>b</sup>	--
MW4	10/25/07	170.48	5.34	165.14	<0.50	<0.50	<0.50	<0.50	<50.0	<47.2	<0.500 <sup>b</sup>	--
MW4	01/31/08	170.48	5.05	165.43	<0.50	<0.50	<0.50	<0.50	<50	<47	<0.50 <sup>b</sup>	--
MW4	05/01/08	170.48	5.86	164.62	<1.00	<1.00	<1.00	<3.00	<50.0	<47.2	<0.500 <sup>b</sup>	--
MW4	07/31/08	170.48	6.10	164.38	<0.50	<0.50	<0.50	<0.50	<50	<47	<0.50 <sup>b</sup>	--
MW4	11/07/08	170.48	5.65	164.83	<0.50	<0.50	<0.50	<0.50	<50	<47	<0.50 <sup>b</sup>	--
MW4	01/29/09	170.48	5.80	164.68	<0.50	0.19 <sup>e,f</sup>	<0.50	<1.0	<50	<50	<0.50 <sup>b</sup>	--
MW4	04/15/09	170.48	5.90	164.58	<0.50	<0.50	<0.50	<1.0	<50	<50	0.15 <sup>o,e</sup>	ND

TABLE 2 GROUNDWATER MONITORING DATA, FORMER MOBIL STATION 04334, 2492 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

Well ID	Date	Top of Casing Elevation (feet)	Depth to Water (feet)	Groundwater Elevation (feet)	Concentration (µg/L)							Other Oxygenates and Additives
					Benzene	Toluene	Ethyl-benzene	Total Xylenes	TPH-g	TPH-d	MTBE	
MW4	07/21/09	170.48	6.00	164.48	<0.50	<0.50	<0.50	<1.0	<50	<50	0.16 <sup>b,e</sup>	ND
<b>MW4</b>	<b>10/05/09</b>	<b>170.48</b>	<b>6.01</b>	<b>164.47</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>0.18<sup>b,e</sup></b>	<b>ND</b>
MW5	i 03/04/09	173.80	4.70	169.10	<0.50	<0.50	<0.50	<1.0	150	--	10 <sup>b</sup>	ND
MW5	04/15/09	173.80	5.17	168.63	<0.50	<0.50	<0.50	<1.0	<50	<50	9.3 <sup>b</sup>	24 <sup>h,e</sup>
MW5	07/21/09	173.80	5.05	168.75	<0.50	<0.50	<0.50	<1.0	<50	<50	7.0 <sup>b</sup>	ND
<b>MW5</b>	<b>10/05/09</b>	<b>173.80</b>	<b>4.41</b>	<b>169.39</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;1.0</b>	<b>&lt;50</b>	<b>&lt;50</b>	<b>8.2<sup>b</sup></b>	<b>ND</b>

Notes: Depth-to-water-level measurements in feet from top-of-casing.  
 Other Oxygenates and Additives include ethyl tertiary butyl ether, tertiary amyl methyl ether, tertiary butyl alcohol, 1,2-dibromoethane, 1,2-dichloroethane, diisopropyl ether, and ethanol which are individually identified only if detected above the laboratory reporting limit. Analyzed by EPA Method 8260B.

- a Top-of-casing elevation surveyed by Morrow Surveying on 12 July 2004.
  - b Analyzed by EPA Method 8260 or 8260B.
  - c Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to holding time requirements.
  - d Does not match typical pattern.
  - e Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
  - f Analyte presence was not confirmed by second column or GC/MS analysis.
  - g Tertiary butyl alcohol.
  - h Ethanol.
  - i Top-of-casing elevation surveyed by Morrow Surveying on 10 February 2009.
  - j 1,2-Dichloroethane.
- MTBE Methyl tertiary butyl ether.  
 TPH-d Total Petroleum Hydrocarbons as diesel.  
 TPH-g Total Petroleum Hydrocarbons as gasoline.  
 ND Not detected at or above laboratory reporting limits.
- µg/L Micrograms per liter.  
 -- Not sampled or not analyzed.

TABLE 3 GROUNDWATER MONITORING PLAN, FORMER MOBIL STATION 04334,  
2492 CASTRO VALLEY BOULEVARD, CASTRO VALLEY, CALIFORNIA

Well Number	Groundwater Gauging Frequency	Groundwater Sampling and Analysis Frequency	
		BTEX, TPH-g, and TPH-d	MTBE
MW1	SA	SA	SA
MW2	SA	SA	SA
MW3	SA	SA	SA
MW4	SA	SA	SA
MW5	SA	SA	SA

Notes:

- BTEX Benzene, toluene, ethylbenzene, and xylenes.
- MTBE Methyl tertiary butyl ether.
- SA Semi-annually (During the second and fourth quarters of each year).
- TPH-d Total Petroleum Hydrocarbons as diesel.
- TPH-g Total Petroleum Hydrocarbons as gasoline.

**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 from the well and, if the well does not recover, the well is considered “functionally 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**



MONITORING WELL DATA FORM

Client: **Former Exxon 04334**

Date: **10-05-09**

Project Number: **UP04334.1.6**

Station Number: **04334**

Site Location: **2492 Castro Valley Boulevard,  
Castro Valley, California**

Samplers: **TAMER**

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

MW1	8.32					19.89	2"
MW2	8.54					20.17	2"
MW3	8.15					19.89	2"
MW4	6.01					14.10	2"
MW5	4.41					15.10	2"

Project Name: Exxon 04334 Well No: *MWI* Date: *10-05-09*  
 Project No: UP04-334.1.6 Personnel: *T. Bialdek*

**GAUGING DATA**

Water Level Measuring Method: WLM / IP 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)
	19.89	- 8.32	= 11.57	X 1	1.85	= 5.55
				0.04 0.16 0.64 1.44		

**PURGING DATA**

Purge Method: WATERRA / BAILER / SUB Purge Rate: GPM

Time	1009	1012	1015		
Volume Purge (gal)	2	4	6		
Temperature (C)	21.6	22.5	22.3		
pH	7.03	7.02	7.10		
Spec. Cond. (umhos)	1091	1114	1110		
Turbidity/Color	<del>500</del> CLEAR	<del>500</del> CLEAR	<del>500</del> CLEAR		
Odor (Y/N)	N	N	N		
Casing Volumes	1	2	3		
Dewatered (Y/N)	N	N	N		

Comments/Observations:

**SAMPLING DATA**

Time Sampled: *1020* Approximate Depth to Water During Sampling: *9* (feet)

Comments:

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

Total Purge Volume: *6* (gallons) Disposal: SYSTEM

Weather Conditions: *ok* BOLTS  / N

Condition of Well Box and Casing at Time of Sampling: *ok* CAP & LOCK  / N

Well Head Conditions Requiring Correction: *none* GROUT  / N

Problems Encountered During Purging and Sampling: *none* WELL BOX.  / N

Comments: SECURED  / N

Project Name: Exxon 04334	Well No: MW2	Date: 10-05-09
Project No: UP04-334.1.6	Personnel: <u>TRINIDER</u>	

**GAUGING DATA**  
 Water Level Measuring Method: WLM / IP      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)
		20.17	- 8.54	= 11.63	X 1	2	4	6	1.86
				0.04	0.16	0.64	1.44		

**PURGING DATA**  
 Purge Method: WATERRA / BAILER / SUB      Purge Rate:      GPM

Time	1035	1038	1041			
Volume Purge (gal)	2	4	6			
Temperature (C)	21.4	21.1	20.9			
pH	7.09	7.07	7.10			
Spec Cond. (umhos)	1032	946	989			
Turbidity/Color	<u>504</u> <del>Color</del>	<u>504</u> <del>Color</del>	<u>504</u> <del>Color</del>			
Odor (Y/N)	N	N	N			
Casing Volumes	1	2	3			
Dewatered (Y/N)	N	N	N			

Comments/Observations:  
 \_\_\_\_\_  
 \_\_\_\_\_

**SAMPLING DATA**  
 Time Sampled: 1045      Approximate Depth to Water During Sampling: 9 (feet)  
 Comments:  
 \_\_\_\_\_

Sample Number	Number of Containers	Container Type	Preservative	Volume Filled (mL or L)	Turbidity/ Color	Analysis Method
MW2	6	Voa	HCL	40 ml	/	TPH-g, BTEX, MTBE
MW2	2	AMBERS	HCL	1L	/	TPH-D
					/	

Total Purge Volume: 6 (gallons)      Disposal:      SYSTEM

Weather Conditions: OK      BOLTS  / N

Condition of Well Box and Casing at Time of Sampling: OK      CAP & LOCK  / N

Well Head Conditions Requiring Correction: None      GROUT  / N

Problems Encountered During Purging and Sampling: None      WELL BOX.  / N

Comments:      SECURED  / N

Project Name: Exxon 04334	Well No: MW3	Date: 10-05-09
Project No: UP04-334.1.6	Personnel:	T. BINDER

**GAUGING DATA**

Water Level Measuring Method: WLM / IP      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)				
		19.89	-	8.15	=	11.74	X	1	2	4	6	1.87	=
							0.04	0.16	0.64	1.44			

**PURGING DATA**

Purge Method: WATERRA / BAILER / SUB      Purge Rate:      GPM

Time	1100	1102	1105			
Volume Purge (gal)	2.	4.	6.			
Temperature (C)	21.6	21.9	21.8			
pH	6.97	7.03	7.08			
Spec Cond. (umhos)	1161	1164	1167			
Turbidity/Color	<del>Slight</del> CLEAR	<del>Slight</del> CLEAR	<del>Slight</del> CLEAR			
Odor (Y/N)	N	N	N			
Casing Volumes	1	2	3			
Dewatered (Y/N)	N	N	N			

Comments/Observations:

**SAMPLING DATA**

Time Sampled: 1110      Approximate Depth to Water During Sampling: 9. (feet)

Comments:

Sample Number	Number of Containers	Container Type	Preservative	Volume Filled (mL or L)	Turbidity/ Color	Analysis Method
MW3	6	Voa	HCL	40 ml		TPH-g, BTEX, MTBE
MW3	2	AMBERS	HCL	1L		TPH-D

Total Purge Volume: 6. (gallons)      Disposal: SYSTEM

Weather Conditions: GR      BOLTS Y / N

Condition of Well Box and Casing at Time of Sampling: OK      CAP & LOCK Y / N

Well Head Conditions Requiring Correction: NONE      GROUT Y / N

Problems Encountered During Purging and Sampling: NONE      WELL BOX. Y / N

Comments:      SECURED Y / N

Project Name: Exxon 04334 Well No: MW4 Date: 10-25-09  
 Project No: UP04-334.1.6 Personnel: T. BINDER

**GAUGING DATA**

Water Level Measuring Method: WLM / IP 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)
		14.10	- 6.01	= 8.09	X 1 0.04	2 0.16	4 0.64	6 1.44	1.29

**PURGING DATA**

Purge Method: WATERRA / BAILER / SUB Purge Rate: GPM

Time	1222	1235	1248		
Volume Purge (gal)	1.50	3.00	4.50		
Temperature (C)	22.0	21.1	20.9		
pH	7.25	7.20	7.30		
Spec Cond. (umhos)	1085	1087	1074		
Turbidity/Color	<del>SIFT</del> BROWN	<del>SIFT</del> BROWN	<del>SIFT</del> BROWN		
Odor (Y/N)	N	N	N		
Casing Volumes	1	2	3		
Dewatered (Y/N)	N	N	N		

Comments/Observations:

**SAMPLING DATA**

Time Sampled: 1235 Approximate Depth to Water During Sampling: 7 (feet)

Comments:

Sample Number	Number of Containers	Container Type	Preservative	Volume Filled (mL or L)	Turbidity/ Color	Analysis Method
MW4	6	Voa	HCL	40 ml	/	TPH-g, BTEX, MTBE
MW4	2	AMBERS	HCL	1L	/	TPH-D
					/	

Total Purge Volume: 4.5 (gallons) Disposal: SYSTEM

Weather Conditions: OK BOLTS (Y) / N  
 Condition of Well Box and Casing at Time of Sampling: OK CAP & LOCK (Y) / N  
 Well Head Conditions Requiring Correction: NONE GROUT (Y) / N  
 Problems Encountered During Purging and Sampling: NONE WELL BOX (Y) / N  
 Comments: SECURED Y / N

Project Name: Exxon 04334 Well No: MW5 Date: 10-03-09  
 Project No: UP04-334.1.6 Personnel: TRINDER

**GAUGING DATA**

Water Level Measuring Method: WLM / IP 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)
	1510	= 4.41	= 10.69	X 1	2	4	6	1.71	= 5.13
				0.04	0.16	0.64	1.44		

**PURGING DATA**

Purge Method: WATERRA / BAILER / SUB Purge Rate: GPM

Time	11:35	11:38	11:41			
Volume Purge (gal)	2	4	6			
Temperature (C)	24.3	24.5	24.6			
pH	7.22	7.18	7.26			
Spec. Cond. (umhos)	1254	1288	1290			
Turbidity/Color	547 <del>BROWN</del>	547 <del>BROWN</del>	547 <del>BROWN</del>			
Odor (Y/N)	N	N	N			
Casing Volumes	1	2	3			
Dewatered (Y/N)	N	N	N			

Comments/Observations:

**SAMPLING DATA**

Time Sampled: 11:50 Approximate Depth to Water During Sampling: 5 (feet)

Comments:

Sample Number	Number of Containers	Container Type	Preservative	Volume Filled (mL or L)	Turbidity/ Color	Analysis Method
MW5	6	Voa	HCL	40 ml	/	TPH-g, BTEX, MTBE
MW5	2	AMBERS	HCL	1L	/	TPH-D
					/	

Total Purge Volume: 6 (gallons) Disposal: SYSTEM

Weather Conditions: ok BOLTS  / N

Condition of Well Box and Casing at Time of Sampling: ok CAP & LOCK  / N

Well Head Conditions Requiring Correction: none GROUT  / N

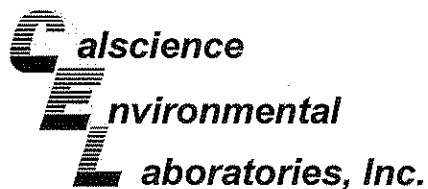
Problems Encountered During Purging and Sampling: none WELL BOX.  / N

Comments: SECURED  / N



## **Appendix C**

### **Laboratory Analytical Reports and Chain-of-Custody Documentation**



October 13, 2009

Erik Appel  
ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

Subject: **Calscience Work Order No.: 09-10-0348**  
Client Reference: **ExxonMobil 04334 / 2492 Castro Valley, CA**

Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 10/6/2009 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Systems Manual, applicable standard operating procedures, and other related documentation. The original report of subcontracted analysis, if any, is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

Note that the Chain-of-Custody Record and Sample Receipt Form are integral parts of this report.

If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,

A handwritten signature in cursive script that reads "Cecile deGuia".

Calscience Environmental  
Laboratories, Inc.  
Cecile deGuia  
Project Manager

## Analytical Report


 ETIC Engineering, Inc.  
 2285 Morello Avenue  
 Pleasant Hill, CA 94523-1850

 Date Received: 10/06/09  
 Work Order No: 09-10-0348  
 Preparation: EPA 3510C  
 Method: EPA 8015B (M)

Project: ExxonMobil 04334 / 2492 Castro Valley, CA

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW1	09-10-0348-1-G	10/05/09 10:20	Aqueous	GC 27	10/08/09	10/09/09 22:27	091008B15

Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

 -Results were evaluated to the MDL, concentrations  $\geq$  to the MDL but  $<$  RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Diesel	ND	50	47	1		ug/L
Surrogates:	REC (%)	Control Limits			Qual	
Decachlorobiphenyl	89	68-140				

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW2	09-10-0348-2-G	10/05/09 10:45	Aqueous	GC 27	10/08/09	10/09/09 22:45	091008B15

Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

 -Results were evaluated to the MDL, concentrations  $\geq$  to the MDL but  $<$  RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Diesel	ND	50	47	1		ug/L
Surrogates:	REC (%)	Control Limits			Qual	
Decachlorobiphenyl	85	68-140				

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW3	09-10-0348-3-G	10/05/09 11:10	Aqueous	GC 27	10/08/09	10/09/09 23:03	091008B15

Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

 -Results were evaluated to the MDL, concentrations  $\geq$  to the MDL but  $<$  RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Diesel	ND	50	47	1		ug/L
Surrogates:	REC (%)	Control Limits			Qual	
Decachlorobiphenyl	83	68-140				

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW4	09-10-0348-4-G	10/05/09 12:35	Aqueous	GC 27	10/08/09	10/09/09 23:22	091008B15

Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

 -Results were evaluated to the MDL, concentrations  $\geq$  to the MDL but  $<$  RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Diesel	ND	50	47	1		ug/L
Surrogates:	REC (%)	Control Limits			Qual	
Decachlorobiphenyl	103	68-140				

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

## Analytical Report



ETIC Engineering, Inc.  
 2285 Morello Avenue  
 Pleasant Hill, CA 94523-1850

Date Received: 10/06/09  
 Work Order No: 09-10-0348  
 Preparation: EPA 3510C  
 Method: EPA 8015B (M)

Project: ExxonMobil 04334 / 2492 Castro Valley, CA

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW5	09-10-0348-5-G	10/05/09 11:50	Aqueous	GC 27	10/08/09	10/09/09 23:40	091008B15

Comment(s): -The sample extract was subjected to Silica Gel treatment prior to analysis.

-Results were evaluated to the MDL, concentrations  $\geq$  to the MDL but  $<$  RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Diesel	ND	50	47	1		ug/L
Surrogates:	REC (%)	Control Limits			Qual	
Decachlorobiphenyl	84	68-140				

Method Blank	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-330-1,274	N/A	Aqueous	GC 27	10/08/09	10/09/09 21:32	091008B15

Comment(s): -Results were evaluated to the MDL, concentrations  $\geq$  to the MDL but  $<$  RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Diesel	ND	50	47	1		ug/L
Surrogates:	REC (%)	Control Limits			Qual	
Decachlorobiphenyl	81	68-140				

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

## Analytical Report


 ETIC Engineering, Inc.  
 2285 Morello Avenue  
 Pleasant Hill, CA 94523-1850

 Date Received: 10/06/09  
 Work Order No: 09-10-0348  
 Preparation: EPA 5030B  
 Method: EPA 8015B (M)

Project: ExxonMobil 04334 / 2492 Castro Valley, CA

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW1	09-10-0348-1-E	10/05/09 10:20	Aqueous	GC 25	10/08/09	10/08/09 23:30	091008B02

 Comment(s): -Results were evaluated to the MDL, concentrations  $\geq$  to the MDL but  $<$  RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Gasoline	ND	50	48	1		ug/L
Surrogates:	REC (%)	Control Limits			Qual	
1,4-Bromofluorobenzene	107	38-134				

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW2	09-10-0348-2-E	10/05/09 10:45	Aqueous	GC 25	10/08/09	10/09/09 00:03	091008B02

 Comment(s): -Results were evaluated to the MDL, concentrations  $\geq$  to the MDL but  $<$  RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Gasoline	ND	50	48	1		ug/L
Surrogates:	REC (%)	Control Limits			Qual	
1,4-Bromofluorobenzene	108	38-134				

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW3	09-10-0348-3-E	10/05/09 11:10	Aqueous	GC 25	10/08/09	10/09/09 00:37	091008B02

 Comment(s): -Results were evaluated to the MDL, concentrations  $\geq$  to the MDL but  $<$  RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Gasoline	ND	50	48	1		ug/L
Surrogates:	REC (%)	Control Limits			Qual	
1,4-Bromofluorobenzene	104	38-134				

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW4	09-10-0348-4-E	10/05/09 12:35	Aqueous	GC 25	10/08/09	10/09/09 01:11	091008B02

 Comment(s): -Results were evaluated to the MDL, concentrations  $\geq$  to the MDL but  $<$  RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Gasoline	ND	50	48	1		ug/L
Surrogates:	REC (%)	Control Limits			Qual	
1,4-Bromofluorobenzene	105	38-134				

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

## Analytical Report



ETIC Engineering, Inc.  
 2285 Morello Avenue  
 Pleasant Hill, CA 94523-1850

Date Received: 10/06/09  
 Work Order No: 09-10-0348  
 Preparation: EPA 5030B  
 Method: EPA 8015B (M)

Project: ExxonMobil 04334 / 2492 Castro Valley, CA

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW5	09-10-0348-5-E	10/05/09 11:50	Aqueous	GC-25	10/08/09	10/09/09 01:44	091008B02

Comment(s): -Results were evaluated to the MDL, concentrations  $\geq$  to the MDL but  $<$  RL, if found, are qualified with a "J" flag.

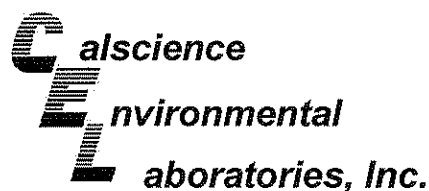
Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Gasoline	ND	50	48	1		ug/L
Surrogates:	<u>REC (%)</u>	<u>Control Limits</u>			<u>Qual</u>	
1,4-Bromofluorobenzene	108	38-134				

Method Blank	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
	099-12-436-3,879	N/A	Aqueous	GC-25	10/08/09	10/08/09 20:42	091008B02

Comment(s): -Results were evaluated to the MDL, concentrations  $\geq$  to the MDL but  $<$  RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Gasoline	ND	50	48	1		ug/L
Surrogates:	<u>REC (%)</u>	<u>Control Limits</u>			<u>Qual</u>	
1,4-Bromofluorobenzene	107	38-134				

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Analytical Report



ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

Date Received: 10/06/09  
Work Order No: 09-10-0348  
Preparation: EPA 5030B  
Method: EPA 8021B  
Units: ug/L

Project: ExxonMobil 04334 / 2492 Castro Valley, CA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW1	09-10-0348-1-D	10/05/09 10:20	Aqueous	GC 21	10/06/09	10/06/09 16:24	091006B01

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Benzene	ND	0.50	0.14	1		Ethylbenzene	ND	0.50	0.17	1	
Toluene	ND	0.50	0.17	1		Xylenes (total)	ND	1.0	0.26	1	
Surrogates:	REC (%)	Control			Qual						
		Limits									
1,4-Bromofluorobenzene	99	70-130									

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW2	09-10-0348-2-D	10/05/09 10:45	Aqueous	GC 21	10/06/09	10/06/09 16:57	091006B01

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Benzene	ND	0.50	0.14	1		Ethylbenzene	ND	0.50	0.17	1	
Toluene	ND	0.50	0.17	1		Xylenes (total)	ND	1.0	0.26	1	
Surrogates:	REC (%)	Control			Qual						
		Limits									
1,4-Bromofluorobenzene	100	70-130									

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW3	09-10-0348-3-D	10/05/09 11:10	Aqueous	GC 21	10/06/09	10/06/09 18:44	091006B01

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Benzene	ND	0.50	0.14	1		Ethylbenzene	ND	0.50	0.17	1	
Toluene	ND	0.50	0.17	1		Xylenes (total)	ND	1.0	0.26	1	
Surrogates:	REC (%)	Control			Qual						
		Limits									
1,4-Bromofluorobenzene	85	70-130									

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW4	09-10-0348-4-D	10/05/09 12:35	Aqueous	GC 21	10/06/09	10/06/09 19:17	091006B01

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Benzene	ND	0.50	0.14	1		Ethylbenzene	ND	0.50	0.17	1	
Toluene	ND	0.50	0.17	1		Xylenes (total)	ND	1.0	0.26	1	
Surrogates:	REC (%)	Control			Qual						
		Limits									
1,4-Bromofluorobenzene	97	70-130									

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

## Analytical Report



ETIC Engineering, Inc.  
 2285 Morello Avenue  
 Pleasant Hill, CA 94523-1850

Date Received: 10/06/09  
 Work Order No: 09-10-0348  
 Preparation: EPA 5030B  
 Method: EPA 8021B  
 Units: ug/L

Project: ExxonMobil 04334 / 2492 Castro Valley, CA

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW5	09-10-0348-5-D	10/05/09 11:50	Aqueous	GC 21	10/06/09	10/06/09 19:50	091006B01

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Benzene	ND	0.50	0.14	1		Ethylbenzene	ND	0.50	0.17	1	
Toluene	ND	0.50	0.17	1		Xylenes (total)	ND	1.0	0.26	1	
Surrogates:	REC (%)	Control Limits			Qual						
1,4-Bromofluorobenzene	95	70-130									

Method Blank	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-12-667-600	N/A	Aqueous	GC 21	10/06/09	10/06/09 12:24	091006B01

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
Benzene	ND	0.50	0.14	1		Ethylbenzene	ND	0.50	0.17	1	
Toluene	ND	0.50	0.17	1		Xylenes (total)	ND	1.0	0.26	1	
Surrogates:	REC (%)	Control Limits			Qual						
1,4-Bromofluorobenzene	98	70-130									

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Analytical Report



ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

Date Received: 10/06/09  
Work Order No: 09-10-0348  
Preparation: EPA 5030B  
Method: EPA 8260B  
Units: ug/L

Project: ExxonMobil 04334 / 2492 Castro Valley, CA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW1	09-10-0348-1-C	10/05/09 10:20	Aqueous	GC/MS BB	10/12/09	10/13/09 04:10	091012L02

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
1,2-Dibromoethane	ND	0.50	0.12	1		Diisopropyl Ether (DIPE)	ND	0.50	0.028	1	
1,2-Dichloroethane	ND	0.50	0.080	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	0.036	1	
Methyl-t-Butyl Ether (MTBE)	1.1	0.50	0.067	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	0.030	1	
Tert-Butyl Alcohol (TBA)	ND	10	2.1	1		Ethanol	ND	50	15	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>			<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>			<u>Qual</u>
1,2-Dichloroethane-d4	111	80-128				Dibromofluoromethane	104	80-127			
Toluene-d8	106	80-120				1,4-Bromofluorobenzene	88	68-120			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW2	09-10-0348-2-B	10/05/09 10:45	Aqueous	GC/MS BB	10/12/09	10/13/09 04:39	091012L02

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
1,2-Dibromoethane	ND	0.50	0.12	1		Diisopropyl Ether (DIPE)	ND	0.50	0.028	1	
1,2-Dichloroethane	ND	0.50	0.080	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	0.036	1	
Methyl-t-Butyl Ether (MTBE)	0.14	0.50	0.067	1	J	Tert-Amyl-Methyl Ether (TAME)	ND	0.50	0.030	1	
Tert-Butyl Alcohol (TBA)	ND	10	2.1	1		Ethanol	ND	50	15	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>			<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>			<u>Qual</u>
1,2-Dichloroethane-d4	113	80-128				Dibromofluoromethane	103	80-127			
Toluene-d8	107	80-120				1,4-Bromofluorobenzene	85	68-120			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW3	09-10-0348-3-B	10/05/09 11:10	Aqueous	GC/MS BB	10/12/09	10/13/09 05:07	091012L02

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
1,2-Dibromoethane	ND	0.50	0.12	1		Diisopropyl Ether (DIPE)	ND	0.50	0.028	1	
1,2-Dichloroethane	0.084	0.50	0.080	1	J	Ethyl-t-Butyl Ether (ETBE)	ND	0.50	0.036	1	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	0.067	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	0.030	1	
Tert-Butyl Alcohol (TBA)	ND	10	2.1	1		Ethanol	ND	50	15	1	
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>			<u>Qual</u>	<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>			<u>Qual</u>
1,2-Dichloroethane-d4	112	80-128				Dibromofluoromethane	104	80-127			
Toluene-d8	106	80-120				1,4-Bromofluorobenzene	86	68-120			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

## Analytical Report



ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

Date Received: 10/06/09  
Work Order No: 09-10-0348  
Preparation: EPA 5030B  
Method: EPA 8260B  
Units: ug/L

Project: ExxonMobil 04334 / 2492 Castro Valley, CA

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW4	09-10-0348-4-B	10/05/09 12:35	Aqueous	GC/MS BB	10/12/09	10/13/09 05:36	091012L02

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
1,2-Dibromoethane	ND	0.50	0.12	1		Diisopropyl Ether (DIPE)	ND	0.50	0.028	1	
1,2-Dichloroethane	ND	0.50	0.080	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	0.036	1	
Methyl-t-Butyl Ether (MTBE)	0.18	0.50	0.067	1	J	Tert-Amyl-Methyl Ether (TAME)	ND	0.50	0.030	1	
Tert-Butyl Alcohol (TBA)	ND	10	2.1	1		Ethanol	ND	50	15	1	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
1,2-Dichloroethane-d4	112	80-128				Dibromofluoromethane	105	80-127			
Toluene-d8	107	80-120				1,4-Bromofluorobenzene	86	68-120			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
MW5	09-10-0348-5-C	10/05/09 11:50	Aqueous	GC/MS BB	10/12/09	10/13/09 06:05	091012L02

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

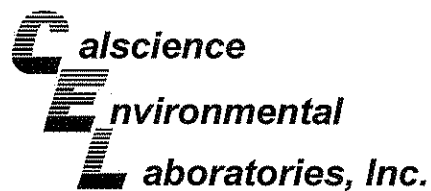
Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
1,2-Dibromoethane	ND	0.50	0.12	1		Diisopropyl Ether (DIPE)	ND	0.50	0.028	1	
1,2-Dichloroethane	ND	0.50	0.080	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	0.036	1	
Methyl-t-Butyl Ether (MTBE)	8.2	0.50	0.067	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	0.030	1	
Tert-Butyl Alcohol (TBA)	ND	10	2.1	1		Ethanol	ND	50	15	1	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
1,2-Dichloroethane-d4	112	80-128				Dibromofluoromethane	105	80-127			
Toluene-d8	106	80-120				1,4-Bromofluorobenzene	86	68-120			

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	099-10-025-1,255	N/A	Aqueous	GC/MS BB	10/12/09	10/12/09 23:22	091012L02

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Parameter	Result	RL	MDL	DF	Qual
1,2-Dibromoethane	ND	0.50	0.12	1		Diisopropyl Ether (DIPE)	ND	0.50	0.028	1	
1,2-Dichloroethane	ND	0.50	0.080	1		Ethyl-t-Butyl Ether (ETBE)	ND	0.50	0.036	1	
Methyl-t-Butyl Ether (MTBE)	ND	0.50	0.067	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	0.030	1	
Tert-Butyl Alcohol (TBA)	ND	10	2.1	1		Ethanol	ND	50	15	1	
Surrogates:	REC (%)	Control Limits			Qual	Surrogates:	REC (%)	Control Limits			Qual
1,2-Dichloroethane-d4	112	80-128				Dibromofluoromethane	102	80-127			
Toluene-d8	107	80-120				1,4-Bromofluorobenzene	87	68-120			

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



## Quality Control - Spike/Spike Duplicate



ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

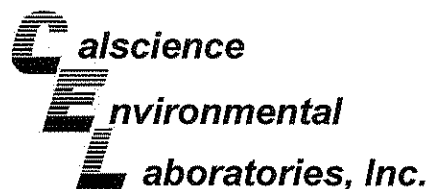
Date Received: 10/06/09  
Work Order No: 09-10-0348  
Preparation: EPA 5030B  
Method: EPA 8015B (M)

Project ExxonMobil 04334 / 2492 Castro Valley, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW1	Aqueous	GC 25	10/08/09	10/08/09	091008S02

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	81	83	68-122	3	0-18	

RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - Spike/Spike Duplicate



ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

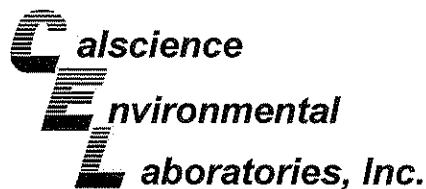
Date Received: 10/06/09  
Work Order No: 09-10-0348  
Preparation: EPA 5030B  
Method: EPA 8021B

Project ExxonMobil 04334 / 2492 Castro Valley, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
MW2	Aqueous	GC 21	10/06/09	10/06/09	091006S01

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	98	99	57-129	0	0-23	
Toluene	94	94	50-134	0	0-26	
Ethylbenzene	95	95	58-130	1	0-26	
p/m-Xylene	95	95	58-130	0	0-28	
o-Xylene	91	89	57-123	2	0-26	
Methyl-t-Butyl Ether (MTBE)	111	68	44-134	48	0-27	4

RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - Spike/Spike Duplicate



ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

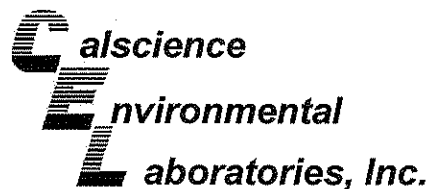
Date Received: 10/06/09  
Work Order No: 09-10-0348  
Preparation: EPA 5030B  
Method: EPA 8260B

Project ExxonMobil 04334 / 2492 Castro Valley, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
09-10-0702-3	Aqueous	GC/MS BB	10/12/09	10/13/09	091012S02

Parameter	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	101	100	76-124	1	0-20	
Carbon Tetrachloride	101	100	74-134	1	0-20	
Chlorobenzene	91	91	80-120	0	0-20	
1,2-Dibromoethane	85	87	80-120	2	0-20	
1,2-Dichlorobenzene	92	91	80-120	1	0-20	
1,1-Dichloroethene	81	79	73-127	2	0-20	
Ethylbenzene	87	88	78-126	0	0-20	
Toluene	99	98	80-120	2	0-20	
Trichloroethene	93	92	77-120	1	0-20	
Vinyl Chloride	107	106	72-126	1	0-20	
Methyl-t-Butyl Ether (MTBE)	93	93	67-121	1	0-49	
Tert-Butyl Alcohol (TBA)	99	103	36-162	4	0-30	
Diisopropyl Ether (DIPE)	93	91	60-138	1	0-45	
Ethyl-t-Butyl Ether (ETBE)	84	83	69-123	1	0-30	
Tert-Amyl-Methyl Ether (TAME)	90	90	65-120	0	0-20	
Ethanol	110	86	30-180	25	0-72	

RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - LCS/LCS Duplicate



ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

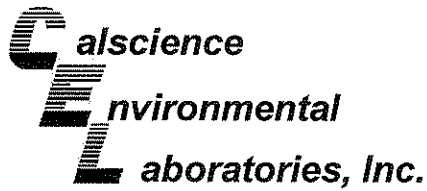
Date Received: N/A  
Work Order No: 09-10-0348  
Preparation: EPA 3510C  
Method: EPA 8015B (M)

Project: ExxonMobil 04334 / 2492 Castro Valley, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-330-1,274	Aqueous	GC 27	10/08/09	10/09/09	091008B15

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Diesel	111	111	75-117	0	0-13	

RPD - Relative Percent Difference, CL - Control Limit



## Quality Control - LCS/LCS Duplicate



ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

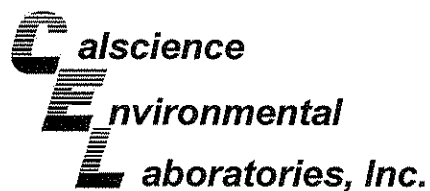
Date Received: N/A  
Work Order No: 09-10-0348  
Preparation: EPA 5030B  
Method: EPA 8015B (M)

Project: ExxonMobil 04334 / 2492 Castro Valley, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-436-3,879	Aqueous	GC 25	10/08/09	10/08/09	091008B02

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	94	95	78-120	1	0-10	

RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - LCS/LCS Duplicate



ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

Date Received: N/A  
Work Order No: 09-10-0348  
Preparation: EPA 5030B  
Method: EPA 8021B

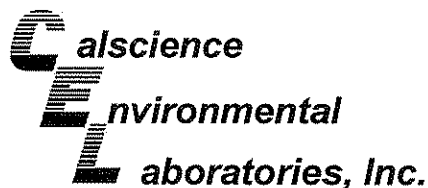
Project: ExxonMobil 04334 / 2492 Castro Valley, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-667-600	Aqueous	GC 21	10/06/09	10/06/09	091006B01

Parameter	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	103	104	70-118	1	0-9	
Toluene	99	100	66-114	1	0-9	
Ethylbenzene	100	100	72-114	0	0-9	
p/m-Xylene	102	102	74-116	0	0-9	
o-Xylene	97	97	72-114	0	0-9	
Methyl-t-Butyl Ether (MTBE)	97	101	41-137	4	0-13	

RPD - Relative Percent Difference , CL - Control Limit





## Quality Control - LCS/LCS Duplicate



ETIC Engineering, Inc.  
2285 Morello Avenue  
Pleasant Hill, CA 94523-1850

Date Received: N/A  
Work Order No: 09-10-0348  
Preparation: EPA 5030B  
Method: EPA 8260B

Project: ExxonMobil 04334 / 2492 Castro Valley, CA

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number		
099-10-025-1,255	Aqueous	GC/MS BB	10/12/09	10/12/09	091012L02		
Parameter	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	99	98	80-120	73-127	1	0-20	
Carbon Tetrachloride	102	101	74-134	64-144	1	0-20	
Chlorobenzene	92	90	80-120	73-127	3	0-20	
1,2-Dibromoethane	86	86	79-121	72-128	0	0-20	
1,2-Dichlorobenzene	91	91	80-120	73-127	1	0-20	
1,1-Dichloroethene	83	82	78-126	70-134	1	0-28	
Ethylbenzene	89	87	80-120	73-127	2	0-20	
Toluene	99	97	80-120	73-127	2	0-20	
Trichloroethene	93	92	79-127	71-135	1	0-20	
Vinyl Chloride	109	111	72-132	62-142	2	0-20	
Methyl-t-Butyl Ether (MTBE)	94	93	69-123	60-132	1	0-20	
Tert-Butyl Alcohol (TBA)	103	97	63-123	53-133	6	0-20	
Diisopropyl Ether (DIPE)	93	89	59-137	46-150	4	0-37	
Ethyl-t-Butyl Ether (ETBE)	85	82	69-123	60-132	3	0-20	
Tert-Amyl-Methyl Ether (TAME)	90	89	70-120	62-128	2	0-20	
Ethanol	91	89	28-160	6-182	2	0-57	

Total number of LCS compounds : 16

Total number of ME compounds : 0

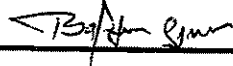
Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

RPD - Relative Percent Difference , CL - Control Limit

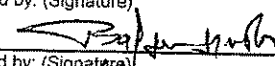
Work Order Number: 09-10-0348

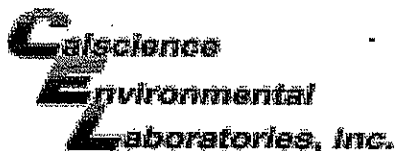
<u>Qualifier</u>	<u>Definition</u>
*	See applicable analysis comment.
1	Surrogate compound recovery was out of control due to a required sample dilution, therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification.
4	The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification.
5	The PDS/PDSD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported with no further corrective action required.
A	Result is the average of all dilutions, as defined by the method.
B	Analyte was present in the associated method blank.
C	Analyte presence was not confirmed on primary column.
E	Concentration exceeds the calibration range.
I	Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics.
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.  Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture.

LABORATORY CLIENT: <b>ExxonMobil c/o ETIC Engineering</b>		CLIENT PROJECT NAME/NUMBER: <b>04334, 2492 Castro Valley Blvd., Castro Valley, CA</b>	P.O. NO.: <b>4510815837</b>
ADDRESS: <b>2285 Morello Avenue</b>		PROJECT CONTACT: <b>Erik Appel, ETIC Engineering</b>	QUOTE NO.:
CITY: <b>Pleasant Hill, CA 94523</b>		Project Number: <b>TM04334.1.6</b>	
TEL: <b>925-602-4710 x21</b>	FAX: <b>925-602-4720</b>	E-MAIL: <b>see instructions</b>	SAMPLER(S) (SIGNATURE): 
TURNAROUND TIME <input type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HR <input type="checkbox"/> 48HR <input type="checkbox"/> 72 HR <input checked="" type="checkbox"/> 5 DAYS <input type="checkbox"/> 10 DAYS		<b>REQUESTED ANALYSIS</b>	
SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY) <input type="checkbox"/> RWQCB REPORTING <input type="checkbox"/> ARCHIVE SAMPLES UNTIL ____/____/____			
SPECIAL INSTRUCTIONS <b>edf file required, Global ID #T0600101278 email report to eappel@eticeng.com &amp; eticlreports@eticeng.com * Use Silica Gel Cleanup for TPH-d analysis</b>			

LAB USE ONLY				
1	0	0	3	48

LAB USE ONLY	SAMPLE ID	LOCATION/ DESCRIPTION	SAMPLING		Matrix	#Cont	TPH-g by EPA Method 8015B	BTEX by EPA Method 8021B (M)	TPH-d by EPA Method 8015B *	MTBE by EPA Method 8260B	MTBE, TBA, DIPE, ETBE, TAME, EDB, 1,2-DCA, and ethanol by EPA Method 8280B											
			DATE	TIME																		
1	MW1		10/05/09	1020	Water	8	X	X	X	X	X											
2	MW2			1045	Water	8	X	X	X	X	X											
3	MW3			1110	Water	8	X	X	X	X	X											
4	MW4			1235	Water	8	X	X	X	X	X											
5	MW5			1150	Water	8	X	X	X	X	X											

Relinquished by: (Signature) 	DATE	TIME	Received by: (Signature) <b>To O'Malley CEC</b>	Date:	Time:
Relinquished by: (Signature) <b>To O'Malley TO GSO</b>	10-25-09	1415	Received by: (Signature)	10/5/09	1440
Relinquished by: (Signature) <b>512765733</b>	10/5/09	1730	Received by: (Signature)	10/6/09	1030



WORK ORDER #: 09-10-0348

**SAMPLE RECEIPT FORM**

Cooler 1 of 1

CLIENT: ETFC

DATE: 10/6/09

**TEMPERATURE:** (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 4.4 °C - 0.2 °C (CF) = 4.2 °C  Blank  Sample

Sample(s) outside temperature criteria (PM/APM contacted by: \_\_\_\_\_).

Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

Received at ambient temperature, placed on ice for transport by Courier.

Ambient Temperature:  Air  Filter  Metals Only  PCBs Only

Initial: JP

**CUSTODY SEALS INTACT:**

Cooler  \_\_\_\_\_  No (Not Intact)  Not Present  N/A

Initial: JP

Sample  \_\_\_\_\_  No (Not Intact)  Not Present

Initial: WSE

**SAMPLE CONDITION:**

	Yes	No	N/A
Chain-Of-Custody (COC) document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
COC document(s) received complete.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Collection date/time, matrix, and/or # of containers logged in based on sample labels.			
<input type="checkbox"/> COC not relinquished. <input type="checkbox"/> No date relinquished. <input type="checkbox"/> No time relinquished.			
Sampler's name indicated on COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with COC.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Correct containers and volume for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analyses received within holding time.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper preservation noted on COC or sample container.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Unpreserved vials received for Volatiles analysis			
Volatile analysis container(s) free of headspace.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

**CONTAINER TYPE:**

Solid:  4ozCGJ  8ozCGJ  16ozCGJ  Sleeve  EnCores®  TerraCores®  \_\_\_\_\_

Water:  VOA  VOAh  VOAna<sub>2</sub>  125AGB  125AGBh  125AGBp  1AGB  1AGBna<sub>2</sub>  1AGBs

500AGB  500AGJ  500AGJs  250AGB  250CGB  250CGBs  1PB  500PB  500PBna

250PB  250PBn  125PB  125PBz<sub>na</sub>  100PJ  100PJna<sub>2</sub>  \_\_\_\_\_  \_\_\_\_\_  \_\_\_\_\_

Air:  Tedlar®  Summa® Other:  \_\_\_\_\_ Trip Blank Lot#: \_\_\_\_\_ Checked by: WSE

Container: C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelop Reviewed by: RN

Preservative: h: HCL n: HNO<sub>3</sub> na<sub>2</sub>: Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> Na: NaOH p: H<sub>3</sub>PO<sub>4</sub> s: H<sub>2</sub>SO<sub>4</sub> z<sub>na</sub>: ZnAc<sub>2</sub>+NaOH f: Field-filtered Scanned by: WSE