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9:00 am, Jul 20, 2010

Alameda County  
Environmental Health

**Aaron Costa**  
Project Manager  
Marketing Business Unit

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Alameda County Health Care Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

Re: Chevron Service Station No. 9-4800  
1700 Castro Street  
Oakland, CA

I have reviewed the attached report dated July 19, 2010.

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by Conestoga-Rovers & Associates, upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Sincerely,

A handwritten signature in black ink that reads "Aaron Costa".

Aaron Costa  
Project Manager

Attachment: Report



**CONESTOGA-ROVERS  
& ASSOCIATES**

5900 Hollis Street, Suite A  
Emeryville, California 94608  
Telephone: (510) 420-0700 Fax: (510) 420-9170  
<http://www.craworld.com>

July 19, 2010

Reference No. 060061

Mr. Mark Detterman  
Alameda County Environmental Health Services  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Re: First Semi-Annual 2010 Groundwater Monitoring and Sampling Report  
Chevron Service Station 9-4800  
1700 Castro Street  
Oakland, California  
Fuel Leak Case No. RO0000342

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Dear Mr. Mark Detterman:

Conestoga-Rovers & Associates (CRA) is submitting this *First Semi-Annual 2010 Groundwater Monitoring and Sampling Report* on behalf of Chevron Environmental Management Company (Chevron), for the site referenced above. On May 18, 2010, Blaine Tech Services, Inc. of San Jose, California (Blaine Tech) monitored and sampled the site wells. Groundwater monitoring data is being submitted in accordance with the reporting requirements of 23CCR2652d. Presented below are the site background, current monitoring and sampling results, intrinsic bioremediation evaluation, compound specific isotope analysis (CSIA), CRA's conclusions and recommendations, and anticipated future activities.

## **SITE BACKGROUND**

### ***Site Description***

The site is an active Chevron-branded service station located on the northeast corner of the intersection on Castro Street and 17th Street in Oakland, California (Figure 1). Surrounding properties are a mixture of commercial and residential. The current facility consists of a convenience store, five dispenser islands, and two gasoline underground storage tanks (USTs) (Figure 2). Currently there are four monitoring wells onsite and one monitoring well offsite. In December 2004, monitoring wells MW-5 and MW-6 were properly destroyed. To date, 12 soil borings have been advanced onsite. In 2004, four USTs, five dispenser islands, and a station building were removed and replaced with the current site improvements.

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### ***Site Geology***

Sediments in this region consist of alluvial fan deposits composed of clay, silt, poorly graded aeolian sand, and gravel. The total thickness of these deposits can be 500 feet. Generally unconfined conditions prevail in the water bearing formations of these deposits.<sup>1</sup> At the site, fill material has been encountered between 1 and 5 feet below grade (fbg). Beneath the fill, interbedded layers of silty sand, clayey sand, and sandy silt have been encountered to approximately 13 fbg. The unconfined shallow water-bearing zone consists of a fine sand observed between approximately 13 and 29 fbg and is underlain by a clay to the total depth explored of 31.5 fbg.

### ***Hydrogeology***

The site is located within the East Bay Plain, a northwest trending alluvial plain in a Franciscan Complex depression. Groundwater in this region has been identified as beneficial for agricultural, municipal, and industrial uses.<sup>2</sup> Groundwater occurs principally in alluvial deposits of Pleistocene to Holocene ages that overlie non-water bearing rocks of the Franciscan assemblage. Groundwater beneath the site has been monitored since June 1997. Historical depth to groundwater ranges from approximately 23 to 29 fbg and flows consistently toward the west.

## **RESULTS OF FIRST SEMI-ANNUAL 2010 MONITORING EVENT**

### ***Groundwater Monitoring***

Blaine Tech gauged and sampled wells MW-1 through MW-4 and MW-7 on May 18, 2010. Depth to groundwater ranged from 23.65 to 27.51 fbg and flowed toward the west at a gradient of 0.011. Blaine Tech's May 19, 2010 *Second Quarter 2010 Monitoring* report is included as Attachment A. Groundwater potentiometric and hydrocarbon concentration data for this event are presented on Figure 2. Lancaster Laboratories' June 1, 2010 *Analytical Results* report is included as Attachment B.

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<sup>1</sup> *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report, Alameda and Contra Costa Counties, California*; California Regional Water Quality Control Board - San Francisco Bay Region Groundwater Committee; June 1999.

<sup>2</sup> Table 2-2 Existing and Potential Beneficial Uses in Groundwater in Identified Basins; *Water Quality Control Plan (Basin Plan) for the San Francisco Bay Basin*; California Regional Water Quality Control Board- San Francisco Bay Region, January 18, 2007.



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Current hydrocarbon concentrations are presented and compared to environmental screening levels (ESLs) where groundwater is a potential source of drinking water<sup>3</sup> in Table A. Total petroleum hydrocarbons as diesel (TPHd) and gasoline (TPHg), benzene, toluene, ethylbenzene, xylenes (BTEX), and methyl tertiary butyl ether (MTBE) concentrations this quarter are within historical ranges and are consistent with seasonal fluctuations.

TABLE A: SUMMARY OF ENVIRONMENTAL SCREENING LEVELS							
	TPHd	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE
<i>Groundwater ESLs</i>	<b>100</b>	<b>100</b>	<b>1.0</b>	<b>40</b>	<b>30</b>	<b>20</b>	<b>5</b>
	<i>concentrations in micrograms per liter (µg/L)</i>						
MW-1	<b>110</b>	<50	<0.5	<0.5	<0.5	<0.5	<b>230</b>
MW-2	<b>1,100</b>	<b>580</b>	<0.5	<0.5	<0.5	<0.5	<b>22</b>
MW-3	<b>150</b>	63 J	<b>11</b>	<0.5	<0.5	1	<b>110</b>
MW-4	<b>340</b>	56 J	<0.5	<0.5	<0.5	<0.5	<b>70</b>
MW-7	<b>160</b>	76 J	<1	<1	<1	<1	<b>2,400</b>

#### *Concentration Trends*

TPHd, TPHg, benzene and MTBE concentrations continue to remain non-detect or decreasing from the previous sampling event and the historical maximum concentrations in all wells.

### INTRINSIC BIOREMEDIATION EVALUATION AND COMPOUND SPECIFIC ISOTOPE ANALYSIS

To assess the extent to which natural hydrocarbon biodegradation is occurring, Blaine Tech collected intrinsic bioremediation parameter data from all site wells on May 18, 2010. Groundwater was analyzed for dissolved oxygen (DO), oxidation reduction potential (ORP), nitrates, sulfates, dissolved total ferrous iron, and methane. Attachment B includes the DO and ORP data recorded on the Field Data Sheets and bioparameter analytical data is presented in Attachment B. A discussion of the bioparameter data, including graphs, is presented below. Intrinsic bioremediation evaluation graphs are included as Attachment C.

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3 *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, Prepared by California Regional Water Quality Control Board San Francisco Bay Region, Interim Final - November 2007, (Revised May 2008), Table F-1a-Groundwater Screening Levels-Current or Potential Drinking Water Resource.



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### DISCUSSION OF BIOPARAMETER DATA

To summarize typical parameter relationships, active biodegradation is indicated by inverse relationships between hydrocarbon concentrations and DO, ORP, nitrate and sulfate concentrations, and a direct relationship between hydrocarbon concentrations and ferrous iron and methane concentrations. Each of these parameters is discussed below.

#### *Dissolved Oxygen*

During aerobic biodegradation, DO concentrations are reduced as aerobic respiration occurs. DO is the most thermodynamically favored electron acceptor used in aerobic biodegradation of petroleum hydrocarbons. Active aerobic biodegradation of BTEX compounds requires at least 1 milligram per liter (mg/L) DO in groundwater. DO concentrations can be as high as 8 to 13 mg/L in oxygen-saturated groundwater that is free of hydrocarbons. Inverse

relationships between DO and hydrocarbon concentrations indicate the occurrence of aerobic degradation, provided that at least 1 to 2 mg/L of DO is present in groundwater. At the site, DO concentrations ranged from 0.39 to 0.70 mg/L. As shown in Figure A, DO concentrations vary inversely with respect to TPHd concentrations in all wells, and DO concentrations are directly correlating to MTBE concentrations. DO concentrations in all wells are below 1 mg/L and source area DO concentrations are even lower, suggesting that DO is being depleted.

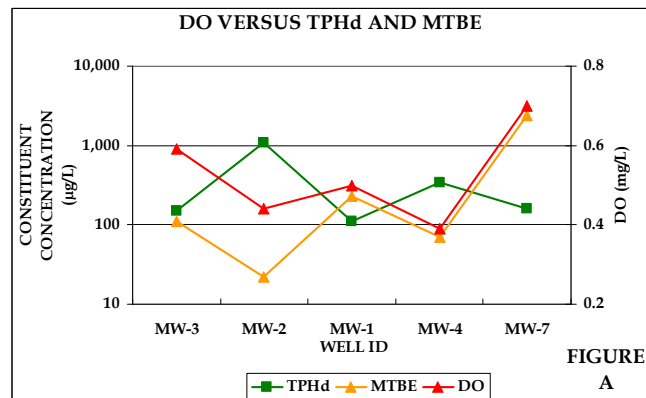


FIGURE  
A



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### *Oxidation-Reduction Potential*

The ORP of groundwater is a measure of electron activity and is an indicator of the relative tendency of a solute species to gain or lose electrons. The ORP of groundwater generally ranges from -400 millivolts (mV) to +800mV. Under oxidizing conditions the ORP of groundwater is positive, while under reducing conditions the ORP is usually negative. Reducing conditions (negative ORP) suggests that anaerobic biodegradation is occurring. As shown in Figure B, ORP concentrations vary

inversely with respect to TPHd concentrations in all wells, and ORP concentrations are directly proportional to MTBE concentrations. ORP ranges from -95 to +110 mV, indicating that aerobic biodegradation is occurring on the edges of the hydrocarbon plume and anaerobic biodegradation is occurring within the core of the hydrocarbon plume.

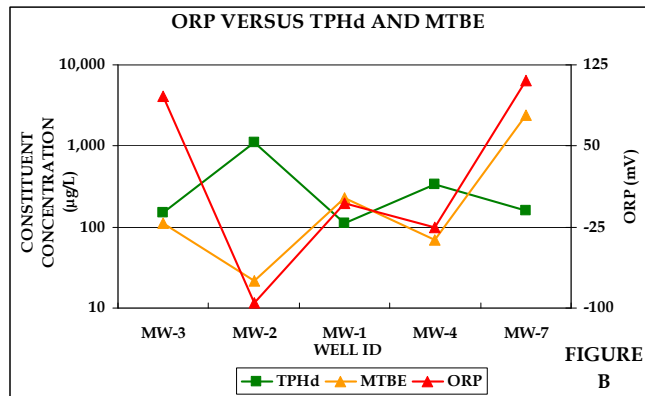


FIGURE  
B

### *Nitrate*

After DO has been depleted in groundwater, nitrate may be used as an electron acceptor for anaerobic biodegradation. In this denitrification process, nitrate is reduced to nitrite. If nitrate concentrations vary inversely with hydrocarbon concentrations and if nitrates are depleted in the core of the plume, anaerobic hydrocarbon biodegradation is probably occurring. At this site, nitrate was detected in all wells except MW-4, which was analyzed past the hold time.

Nitrate concentrations ranged from 260 µg/L in MW-2 to a maximum concentration of 5,800 µg/L in MW-1 (Figure C). Nitrate concentrations vary inversely with TPHd concentrations. The lower nitrate concentrations in respect to wells MW-2 and MW-4 indicate that anaerobic biodegradation of TPHd is occurring in the source area.

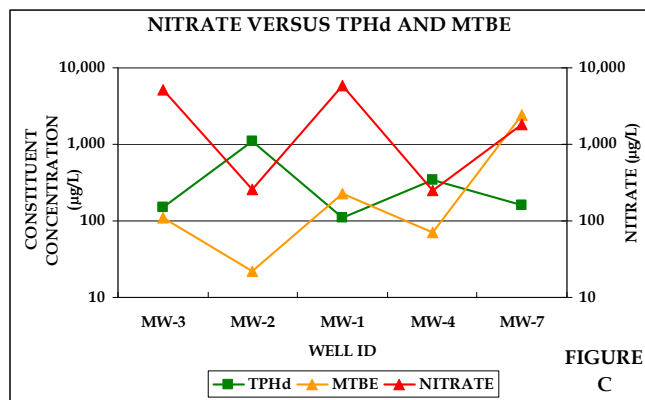


FIGURE  
C



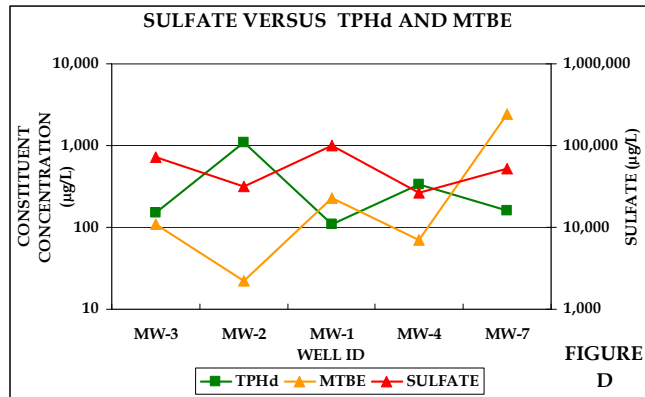
July 19, 2010

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### *Sulfate*

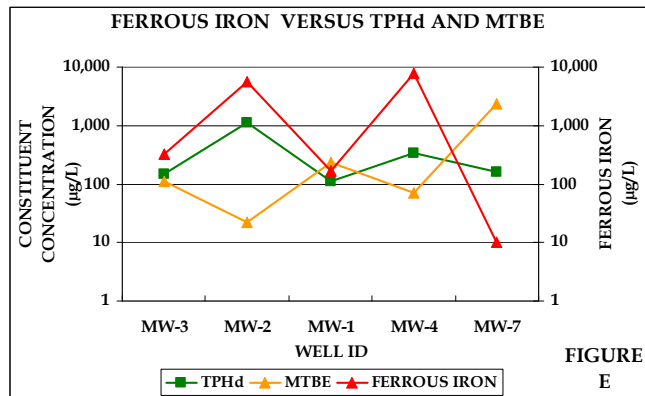
After DO and nitrate have been depleted in groundwater, sulfate may be used as an electron acceptor for anaerobic biodegradation. If sulfate concentrations vary inversely with hydrocarbon concentrations, anaerobic biodegradation of fuel hydrocarbons is probably occurring. At this site, sulfate concentrations range from 26,500 µg/L in MW-4 to 101,000 µg/L in MW-1. As shown on Figure D, sulfate concentrations vary inversely with TPHd concentrations which suggests that anaerobic biodegradation is occurring at the site.



**FIGURE  
D**

### *Ferrous Iron*

In some cases ferric iron is used as an electron acceptor during anaerobic biodegradation of petroleum hydrocarbons. In this process, ferric iron is reduced to ferrous iron, which may be soluble in water. As shown on Figure E, ferrous iron concentrations are directly proportional to the hydrocarbon concentrations which suggest that anaerobic biodegradation is occurring in the source area.



**FIGURE  
E**



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### *Methane*

Since methane is not present in fuels, it can be used as an indicator of biodegradation. Methane is produced only under strong reducing conditions by methanogens. Methanogens are one of the most common classes of naturally occurring microorganisms. Methanogens are anaerobic organisms that can utilize either acetate or hydrogen, which are common products of fermentative bacteria.

Methanogenic microorganisms become metabolically active if electron acceptors stronger than carbon dioxide have been depleted and hydrogen and/or acetate are being produced and are available. If carbon dioxide is being used as an electron acceptor methane concentrations will be directly proportional to biodegradation across the dissolved hydrocarbon plume. At this site, we see a direct relationship between elevated concentrations of methane and TPHd; therefore anaerobic biodegradation is occurring in the source area.

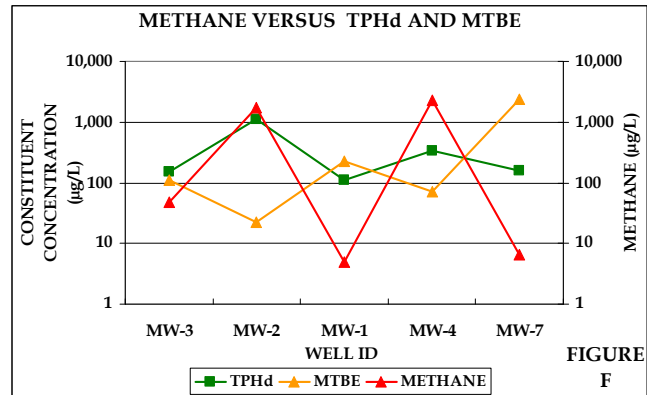


FIGURE  
F

### *Summary of Intrinsic Bioremediation Evaluation*

In summary, it is evident from the nitrate, sulfate, ferrous iron, and methane data that anaerobic hydrocarbon biodegradation is occurring in the dissolved hydrocarbon source area. ORP data suggests that the edges of the hydrocarbon plume are degrading aerobically. Figures A through F are included as Attachment C.

### COMPOUND SPECIFIC ISOTOPE ANALYSIS EVALUATION

CSIA was conducted to improve our understanding of the contribution of MTBE biodegradation to natural attenuation at the site. Enrichment in the heavy isotope ( $^{13}\text{C}$ ) occurs as a result of biodegradation. Carbon isotope values ( $\delta^{13}\text{C}$ ) increase (become more positive) with enrichment in the heavy isotopes. Physical processes, such as dilution and dispersion, do not result in significant isotopic enrichment. To evaluate the contribution of biodegradation to MTBE natural attenuation, Blaine Tech collected grab-groundwater samples for CSIA from wells MW-1 through MW-4 and MW-7 on May 18, 2010. CSIA laboratory analytical data is included as Attachment D.





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Table B includes MTBE and TBA concentrations, TBA/MTBE ratios, and MTBE and TBA CSIA data.

TABLE B: MTBE AND TBA CONCENTRATION AND CSIA DATA					
Well	MTBE (µg/L)	TBA (µg/L)	TBA/MTBE RATIO	MTBE δ <sup>13</sup> C (‰)	TBA δ <sup>13</sup> C (‰)
MW-1	230	9	0.039	-32.5	BQL
MW-2	22	6	0.273	-29.1	BQL
MW-3	110	470	4.273	-18.8	-29.1
MW-4	70	33	0.471	-27.6	-27.0
MW-7	2,400	4	0.002	-33.9	BQL

1. BQL = below quantification limit
2. ‰ = parts per mil

In MW-3, the TBA/MTBE ratio is greater than 1, indicating MTBE biodegradation and transformation to TBA. The δ<sup>13</sup>C enrichment observed in MW-3 is significant and suggests anaerobic biodegradation of MTBE in this well, consistent with the higher TBA concentration. The δ<sup>13</sup>C enrichment in MW-2 and MW-4 is 3 to 4 ‰ higher, as compared to MW-1 and MW-7. This suggests that MTBE biodegradation is occurring in MW-2 and MW-4.

The carbon isotope fractionation observed in MW-2, MW-3, and MW-4 suggests MTBE biodegradation is occurring in these wells. Therefore, biodegradation is contributing to MTBE natural attenuation along the plume's edges.

## CONCLUSIONS AND RECOMMENDATIONS

The first semi-annual 2010 sampling event results indicate:

- TPHd, TPHg, benzene and MTBE concentrations continue to remain non-detect or decreasing from the previous sampling event and the historical maximum concentrations in all wells.
- Nitrate, sulfate, ferrous iron, and methane data suggest that anaerobic hydrocarbon biodegradation is occurring in the dissolved hydrocarbon source area.
- ORP data suggests that the edges of the hydrocarbon plume are degrading aerobically.
- Based on CSIA data, biodegradation is contributing to MTBE natural attenuation along the plume's edges.



**CONESTOGA-ROVERS  
& ASSOCIATES**

July 19, 2010

Reference No. 060061

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**ANTICIPATED FUTURE ACTIVITIES**

***Semi-Annual Groundwater Sampling***

Blaine Tech will gauge and sample the site wells during the fourth quarter. CRA will prepare and submit the sampling results within 60 days of the sampling date.

We appreciate the opportunity to work with you on this project. Please contact Mr. Nathan Lee at (510) 420-3333, if you have any questions or comments regarding this report.

Sincerely,

CONESTOGA-ROVERS & ASSOCIATES

Ian Hull

Brandon S. Wilken, P.G. #7564

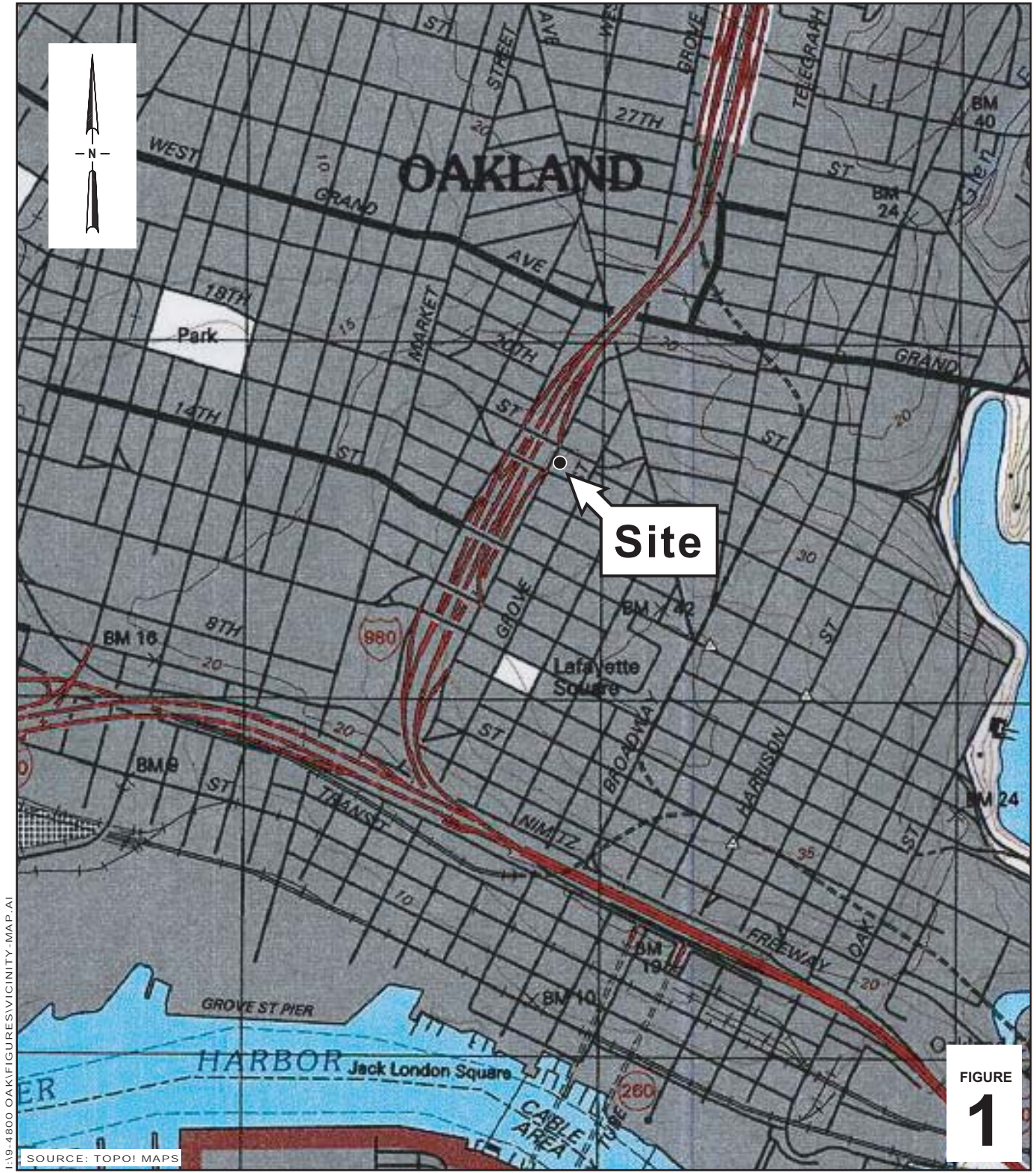


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Figure 1	Vicinity Map
Figure 2	Groundwater Elevation and Hydrocarbon Concentration Map
Table 1	Groundwater Monitoring and Sampling Data
Attachment A	Blaine Tech's May 19, 2010 <i>Second Quarter 2010 Monitoring Report</i>
Attachment B	Lancaster Laboratories' June 1, 2010 <i>Analytical Results Report</i>
Attachment C	Bioparameter Data
Attachment D	Compound Specific Isotope Analysis Laboratory Analytical Data

c.c.: Mr. Aaron Costa, Chevron

## FIGURES



I:\9-4800\_OAKFIGURES\VICINITY-MAP.A1

SOURCE: TOPOI MAPS

FIGURE 1

0 1/8 1/4 1/2 1  
SCALE : 1" = 1/4 MILE

**Chevron Service Station 9-4800**  
1700 Castro Street  
Oakland, California



**CONESTOGA-ROVERS  
& ASSOCIATES**

**Vicinity Map**

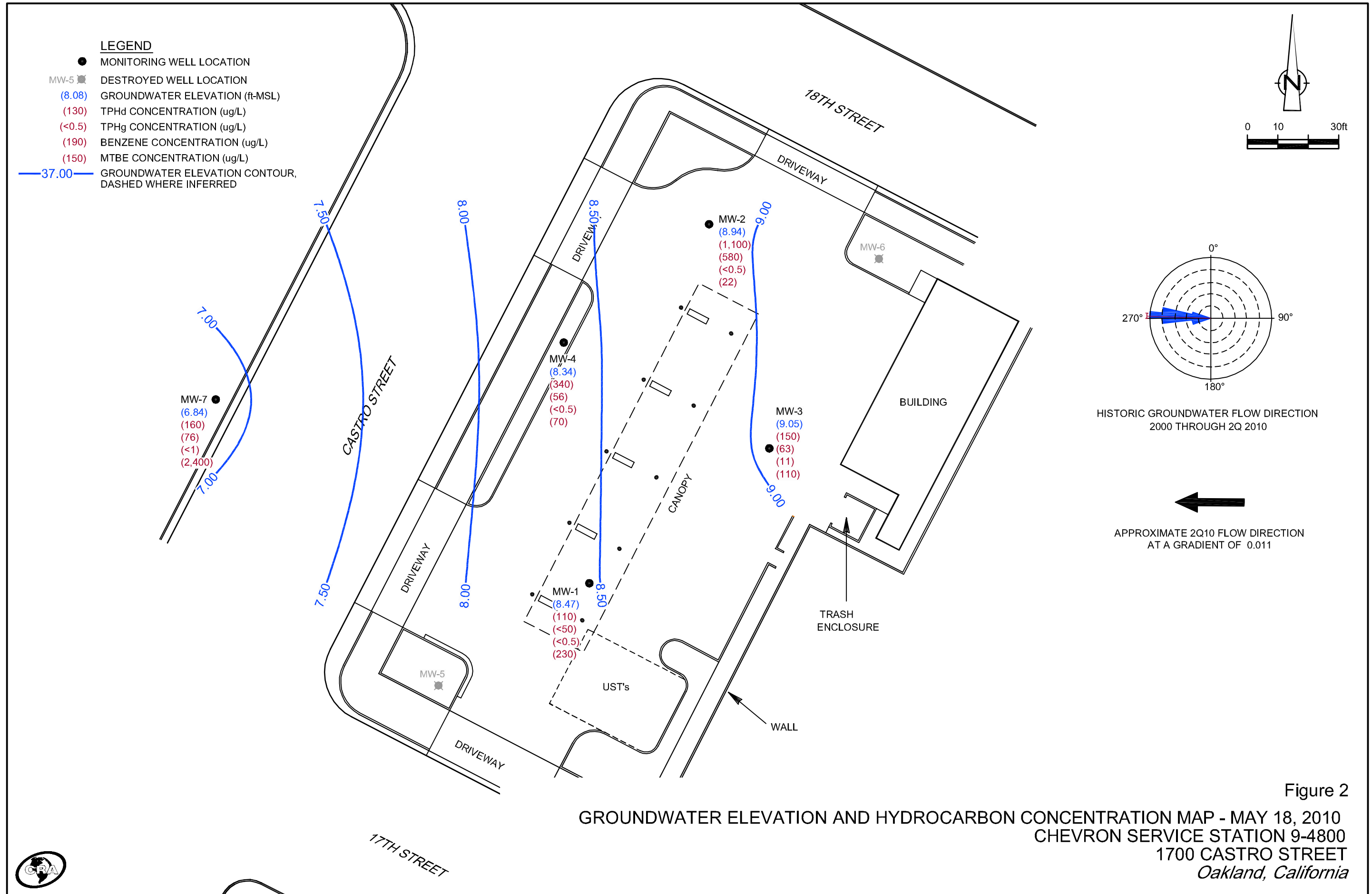


Figure 2  
 GROUNDWATER ELEVATION AND HYDROCARBON CONCENTRATION MAP - MAY 18, 2010  
 CHEVRON SERVICE STATION 9-4800  
 1700 CASTRO STREET  
 Oakland, California



## TABLE

**TABLE 1**  
**GROUNDWATER MONITORING AND SAMPLING DATA**  
**CHEVRON SERVICE STATION 9-4800**  
**1700 CASTRO STREET, OAKLAND, CALIFORNIA**

Location	Date	TOC*	DTW	GWE	HYDROCARBONS		PRIMARY VOCS						ADDITIONAL VOCS						
					TPH-DRO	TPH-GRO	B	T	E	X	MTBE by VOC	MTBE by SW8240	MTBE by SW8260	ETHANOL	TBA	DIPE	ETBE	TAME	
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-1	06/04/1997	30.75	25.82	4.39	71 <sup>1</sup>	890	100	110	29	150	<10	-	-	-	-	-	-	-	-
MW-1	09/16/1997	30.75	25.90	4.85	75 <sup>1</sup>	1600	210	210	60	250	<10	-	-	-	-	-	-	-	-
MW-1	12/17/1997	30.75	25.87	4.88	65 <sup>1</sup>	940	120	100	41	160	<25	-	-	-	-	-	-	-	-
MW-1	03/18/1998	30.75	24.85	5.90	77 <sup>1</sup>	530	91	39	22	65	6.8	-	-	-	-	-	-	-	-
MW-1	06/28/1998	30.75	24.83	5.92	140 <sup>1</sup>	1100	220	140	37	120	-	14	-	-	-	-	-	-	-
MW-1	09/07/1998	30.75	25.19	5.56	280 <sup>1</sup>	1700	530	86	84	240	49	-	-	-	-	-	-	-	-
MW-1	12/09/1998	30.75	25.65	5.10	240 <sup>1</sup>	1700	240	130	100	270	32	-	-	-	-	-	-	-	-
MW-1	03/11/1999	30.75	25.45	5.30	98 <sup>1</sup>	353	53.9	28.6	20.5	56.1	14.1	-	-	-	-	-	-	-	-
MW-1	06/17/1999	30.75	25.36	5.39	217 <sup>1</sup>	810	270	150	95	340	15	-	-	-	-	-	-	-	-
MW-1	09/29/1999	30.75	25.62	5.13	153 <sup>1</sup>	659	76	49.7	35.1	118	12.6	-	-	-	-	-	-	-	-
MW-1	12/14/1999	30.75	25.68	5.07	188 <sup>1,2</sup>	2760	287	199	139	502	<12.5	-	-	-	-	-	-	-	-
MW-1	03/09/2000 <sup>3</sup>	30.75	25.21	5.54	166 <sup>1</sup>	1590	238	94.9	72.2	247	22.3	-	-	-	-	-	-	-	-
MW-1	06/10/2000	30.75	25.02	5.73	-	1460	242	47.8	83.8	151	97.3	-	-	-	-	-	-	-	-
MW-1	09/30/2000	30.75	25.45	5.30	240 <sup>7</sup>	650 <sup>6</sup>	130	49	69	190	21	-	-	-	-	-	-	-	-
MW-1	12/22/2000	30.75	25.70	5.05	200 <sup>9</sup>	640 <sup>6</sup>	110	33	58	160	68	-	-	-	-	-	-	-	-
MW-1	03/01/2001	30.75	25.50	5.25	211 <sup>7</sup>	1500 <sup>6</sup>	210	67.9	109	320	87.3	-	-	-	-	-	-	-	-
MW-1	05/04/2001	30.75	25.34	5.41	130 <sup>7</sup>	991	127	32.6	73.0	137	95.4	-	-	-	-	-	-	-	-
MW-1	09/05/2001	30.75	25.59	5.16	SAMPLED SEMI-ANNUALLY														
MW-1	12/21/2001	30.75	25.58	5.17	210	2000	220	16	110	400	34	-	-	-	-	-	-	-	-
MW-1	03/15/2002	30.75	25.15	5.60	SAMPLED SEMI-ANNUALLY														
MW-1	06/15/2002	30.75	25.26	5.49	140	350	54	0.61	12	40	130	-	-	-	-	-	-	-	-
MW-1	09/06/2002	30.75	25.49	5.26	SAMPLED SEMI-ANNUALLY														
MW-1	12/06/2002	30.75	25.63	5.12	2900	900	71	2.1	39	150	34	-	-	-	-	-	-	-	-
MW-1	03/03/2003	30.75	25.29	5.46	SAMPLED SEMI-ANNUALLY														
MW-1	06/17/2003 <sup>14</sup>	30.75	25.11	5.64	180	290	34	0.6	23	90	-	-	92	-	-	-	-	-	-
MW-1	09/16/2003	30.75	25.38	5.37	SAMPLED SEMI-ANNUALLY														
MW-1	12/31/2003 <sup>14</sup>	30.75	25.55	5.20	150	1500	97	6	70	230	-	-	86	<50	-	-	-	-	-

**TABLE 1**  
**GROUNDWATER MONITORING AND SAMPLING DATA**  
**CHEVRON SERVICE STATION 9-4800**  
**1700 CASTRO STREET, OAKLAND, CALIFORNIA**

Location	Date	TOC*	DTW	GWE	HYDROCARBONS		PRIMARY VOCS						ADDITIONAL VOCS						
					TPH-DRO	TPH-GRO	B	T	E	X	MTBE by VOC	MTBE by SW8240	MTBE by SW8260	ETHANOL	TBA	DIPE	ETBE	TAME	
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-1	03/26/2004	30.75	25.01	5.74	SAMPLED SEMI-ANNUALLY														
MW-1	08/17/2004 <sup>14</sup>	30.75	26.16	4.59	860	500	44	5	12	54	-	-	76	<50	-	-	-	-	
MW-1	11/16/2004 <sup>14</sup>	34.01	26.16	7.85	<26	570	33	<0.5	14	53	-	-	48	<50	-	-	-	-	
MW-1	02/18/2005	34.01	25.76	8.25	SAMPLED SEMI-ANNUALLY														
MW-1	05/06/2005 <sup>14</sup>	34.01	25.39	8.62	110	170	13	<0.5	4	18	-	-	220	<50	-	-	-	-	
MW-1	08/05/2005	34.01	25.70	8.31	SAMPLED SEMI-ANNUALLY														
MW-1	11/07/2005 <sup>14</sup>	34.01	26.02	7.99	260 <sup>20</sup>	180	7	<0.5	3	24	-	-	260	<50	-	-	-	-	
MW-1	02/06/2006	34.01	25.68	8.33	SAMPLED SEMI-ANNUALLY														
MW-1	05/08/2006 <sup>14</sup>	34.01	24.98	9.03	730	270	23	<0.7	1	18	590	-	-	<50	-	-	-	-	
MW-1	08/08/2006	34.01	25.52	8.49	SAMPLED SEMI-ANNUALLY														
MW-1	11/08/2006 <sup>14</sup>	34.01	25.90	8.11	380	<50	0.6	<0.5	<0.5	2	140	-	-	<50	-	-	-	-	
MW-1	02/06/2007	34.01	25.98	8.03	SAMPLED SEMI-ANNUALLY														
MW-1	05/01/2007 <sup>14</sup>	34.01	25.78	8.23	750	58	0.8	<0.5	<0.5	1	-	-	280	<50	-	-	-	-	
MW-1	07/31/2007	34.01	26.00	8.01	SAMPLED SEMI-ANNUALLY														
MW-1	11/08/2007 <sup>14</sup>	34.01	26.16	7.85	330	<50	<0.5	<0.5	<0.5	0.9	-	-	270	<50	-	-	-	-	
MW-1	02/04/2008	34.01	25.97	8.04	SAMPLED SEMI-ANNUALLY														
MW-1	05/01/2008 <sup>14</sup>	34.01	25.95	8.06	86	<50	<0.5	<0.5	<0.5	<0.5	-	-	470	<50	-	-	-	-	
MW-1	08/01/2008	34.01	26.04	7.97	SAMPLED SEMI-ANNUALLY														
MW-1	11/13/2008 <sup>14</sup>	34.01	26.13	7.88	<50	170	1	<0.5	<0.5	2	-	-	190	<50	-	-	-	-	
MW-1	02/23/2009	34.01	25.94	8.07	SAMPLED SEMI-ANNUALLY														
MW-1	05/20/2009	34.01	25.63	8.38	88 J	<50	0.6 J	<0.5	<0.5	2	-	-	190	<50	-	-	-	-	
MW-1	08/25/2009	34.01	25.80	8.21	SAMPLED SEMI-ANNUALLY														
MW-1	11/18/2009	34.01	25.93	8.08	150	<50	<0.5	<0.5	0.6 J	<0.5	-	-	310	<50	-	-	-	-	
<b>MW-1</b>	<b>05/18/2010</b>	<b>34.01</b>	<b>25.54</b>	<b>8.47</b>	<b>110</b>	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>-</b>	<b>-</b>	<b>230</b>	<b>&lt;50</b>	<b>9</b>	<b>-</b>	<b>-</b>	<b>-</b>	
MW-2	06/04/1997	30.00	24.87	5.13	4000 <sup>1</sup>	13000	790	30	420	1700	4000	-	-	-	-	-	-	-	
MW-2	09/16/1997	30.00	24.94	5.06	2200 <sup>1</sup>	4000	360	9.7	210	460	1500	-	-	-	-	-	-	-	



**TABLE 1**  
**GROUNDWATER MONITORING AND SAMPLING DATA**  
**CHEVRON SERVICE STATION 9-4800**  
**1700 CASTRO STREET, OAKLAND, CALIFORNIA**

Location	Date	TOC*	DTW	GWE	HYDROCARBONS		PRIMARY VOCS						ADDITIONAL VOCS							
					TPH-DRO	TPH-GRO	B	T	E	X	MTBE by VOC	MTBE by SW8240	MTBE by SW8260	ETHANOL	TBA	DIPE	ETBE	TAME		
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	
MW-2	12/17/1997	30.00	24.82	5.18	2100 <sup>1</sup>	4100	380	<10	200	460	2100	-	-	-	-	-	-	-	-	
MW-2	03/18/1998	30.00	23.57	6.43	3700 <sup>1</sup>	8400	1800	<50	350	630	13000	-	-	-	-	-	-	-	-	
MW-2	06/28/1998 <sup>4</sup>	30.00	23.79	6.21	4400 <sup>1</sup>	9300	740	340	710	2300	-	3800	-	-	-	-	-	-	-	
MW-2	09/07/1998	30.00	24.22	5.78	3100 <sup>1</sup>	9900	1000	150	640	1800	4500 / 4100 <sup>5</sup>	-	-	-	-	-	-	-	-	
MW-2	12/09/1998	30.00	24.69	5.31	1900 <sup>1</sup>	8500	860	74	610	960	2600 / 2600 <sup>5</sup>	-	-	-	-	-	-	-	-	
MW-2	03/11/1999	30.00	24.21	5.79	2700 <sup>1</sup>	12500	1520	42.2	645	2250	5050 / 3400 <sup>5</sup>	-	-	-	-	-	-	-	-	
MW-2	06/17/1999	30.00	24.31	5.69	7150 <sup>1</sup>	27000	2200	260	1500	5900	4700	-	-	-	-	-	-	-	-	
MW-2	09/29/1999	30.00	24.55	5.45	3030 <sup>1</sup>	6910	582	11.1	491	1170	1970	-	-	-	-	-	-	-	-	
MW-2	12/14/1999	30.00	24.61	5.39	615 <sup>1,2</sup>	4230	282	12.3	284	690	631	-	-	-	-	-	-	-	-	
MW-2	03/09/2000 <sup>3</sup>	30.00	23.92	6.08	3300 <sup>1</sup>	15300	1110	39.4	1040	3030	2470	-	-	-	-	-	-	-	-	
MW-2	06/10/2000	30.00	23.87	6.13	-	7360	560	40.7	627	1280	1260	-	-	-	-	-	-	-	-	
MW-2	09/30/2000	30.00	24.33	5.67	1800 <sup>7</sup>	3600 <sup>6</sup>	280	<10	420	430	290	-	-	-	-	-	-	-	-	
MW-2	12/22/2000	30.00	24.61	5.39	870 <sup>9</sup>	1500 <sup>6</sup>	100	<1.3	160	59	380	-	-	-	-	-	-	-	-	
MW-2	03/01/2001	30.00	24.21	5.79	1320 <sup>7</sup>	2340 <sup>6</sup>	171	<5.00	238	157	864	-	-	-	-	-	-	-	-	
MW-2	05/04/2001	30.00	24.17	5.83	3100 <sup>7</sup>	11900	199	33.9	1420	290	3890	-	-	-	-	-	-	-	-	
MW-2	09/05/2001	30.00	24.55	5.45	2200	3300	170	1.7	310	110	1100	-	-	-	-	-	-	-	-	
MW-2	12/21/2001	30.00	24.40	5.60	980	1100	58	0.72	120	14	450	-	-	-	-	-	-	-	-	
MW-2	03/15/2002	30.00	23.95	6.05	2200	5000	250	9.1	470	430	1800	-	-	-	-	-	-	-	-	
MW-2	06/15/2002	30.00	24.16	5.84	3700	5200	240	5.2	540	210	2200	-	-	-	-	-	-	-	-	
MW-2	09/06/2002	30.00	24.41	5.59	2200	2100	84	1.4	250	30	1000	-	-	-	-	-	-	-	-	
MW-2	12/06/2002	30.00	24.56	5.44	730	780	21	<0.50	58	3.4	480	-	-	-	-	-	-	-	-	
MW-2	03/03/2003	30.00	24.21	5.79	3500	4800	220	1.9	650	46	4400	-	-	-	-	-	-	-	-	
MW-2	06/17/2003 <sup>14</sup>	30.00	23.93	6.07	4100	4700	140	4	370	84	-	-	2700	-	-	-	-	-	-	
MW-2	09/16/2003 <sup>14</sup>	30.00	24.31	5.69	1800 <sup>15</sup>	1300	38	<1	110	3	-	-	1300	<130	-	-	-	-	-	
MW-2	12/31/2003 <sup>14</sup>	30.00	24.36	5.64	330	990	11	<0.5	23	3	-	-	440	<50	-	-	-	-	-	
MW-2	03/26/2004	30.00	23.75	6.25	SAMPLED SEMI-ANNUALLY															
MW-2	08/17/2004 <sup>14</sup>	30.00	24.47	5.53	400	300	9	<0.5	18	1	-	-	340	<50	-	-	-	-	-	

**TABLE 1**  
**GROUNDWATER MONITORING AND SAMPLING DATA**  
**CHEVRON SERVICE STATION 9-4800**  
**1700 CASTRO STREET, OAKLAND, CALIFORNIA**

Location	Date	TOC*	DTW	GWE	HYDROCARBONS		PRIMARY VOCS						ADDITIONAL VOCS						
					TPH-DRO	TPH-GRO	B	T	E	X	MTBE by VOC	MTBE by SW8240	MTBE by SW8260	ETHANOL	TBA	DIPE	ETBE	TAME	
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-2	11/16/2004 <sup>14</sup>	32.59	24.45	8.14	4300	10000	91	7	830	1300	-	-	1100	<100	-	-	-	-	
MW-2	02/18/2005	32.59	23.92	8.67	SAMPLED SEMI-ANNUALLY														
MW-2	05/06/2005 <sup>14</sup>	32.59	23.53	9.06	1300	4900	62	4	290	320	-	-	400	<50	-	-	-	-	
MW-2	08/05/2005	32.59	23.98	8.61	SAMPLED SEMI-ANNUALLY														
MW-2	11/07/2005 <sup>14</sup>	32.59	24.32	8.27	300 <sup>20</sup>	800	2	<0.5	<0.5	<0.5	-	-	66	<50	-	-	-	-	
MW-2	02/06/2006	32.59	23.83	8.76	SAMPLED SEMI-ANNUALLY														
MW-2	05/08/2006 <sup>14</sup>	32.59	23.10	9.49	2100	6100	32	4	430	460	360	-	-	<50	-	-	-	-	
MW-2	08/08/2006	32.59	23.80	8.79	SAMPLED SEMI-ANNUALLY														
MW-2	11/08/2006 <sup>14</sup>	32.59	24.27	8.32	770	120	12	<0.5	0.7	8	840	-	-	<50	-	-	-	-	
MW-2	02/06/2007	32.59	24.29	8.30	SAMPLED SEMI-ANNUALLY														
MW-2	05/01/2007 <sup>14</sup>	32.59	24.05	8.54	160	850	<0.5	<0.5	16	36	-	-	100	<50	-	-	-	-	
MW-2	07/31/2007	32.59	24.31	8.28	SAMPLED SEMI-ANNUALLY														
MW-2	11/08/2007 <sup>14</sup>	32.59	24.47	8.12	800	180	<0.5	<0.5	<0.5	<0.5	-	-	37	<50	-	-	-	-	
MW-2	02/04/2008	32.59	24.21	8.38	SAMPLED SEMI-ANNUALLY														
MW-2	05/01/2008 <sup>14</sup>	32.59	24.25	8.34	500	430	<0.5	<0.5	<0.5	5	-	-	120	<50	-	-	-	-	
MW-2	08/01/2008	32.59	24.33	8.26	SAMPLED SEMI-ANNUALLY														
MW-2	11/13/2008 <sup>14</sup>	32.59	24.42	8.17	2600	2500	3	1	190	83	-	-	240	<50	-	-	-	-	
MW-2	02/23/2009	32.59	24.21	8.38	SAMPLED SEMI-ANNUALLY														
MW-2	05/20/2009	32.59	23.65	8.94	2800 J	4000	4	1	42	55	-	-	160	<50	-	-	-	-	
MW-2	08/25/2009	32.59	24.00	8.59	SAMPLED SEMI-ANNUALLY														
MW-2	11/18/2009	32.59	24.51	8.08	2800	5400	4	1 J	69	34	-	-	79	<100	-	-	-	-	
<b>MW-2</b>	<b>05/18/2010</b>	<b>32.59</b>	<b>23.65</b>	<b>8.94</b>	<b>1100</b>	<b>580</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	-	-	<b>22</b>	<b>&lt;50</b>	<b>6</b>	-	-	-	
MW-3	06/04/1997	31.32	26.05	5.27	<50	190	26	20	1.5	16	8.2	-	-	-	-	-	-	-	
MW-3	09/16/1997	31.32	26.15	5.17	<50	270	58	53	6.1	30	21	-	-	-	-	-	-	-	
MW-3	12/17/1997	31.32	26.10	5.22	<50	290	50	54	8.1	37	21	-	-	-	-	-	-	-	
MW-3	03/18/1998	31.32	24.90	6.42	<50	390	140	33	4.6	30	94	-	-	-	-	-	-	-	

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**CHEVRON SERVICE STATION 9-4800**  
**1700 CASTRO STREET, OAKLAND, CALIFORNIA**

Location	Date	TOC*	DTW	GWE	HYDROCARBONS		PRIMARY VOCS						ADDITIONAL VOCS						
					TPH-DRO	TPH-GRO	B	T	E	X	MTBE by VOC	MTBE by SW8240	MTBE by SW8260	ETHANOL	TBA	DIPE	ETBE	TAME	
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-3	06/28/1998	31.32	24.93	6.39	<50	290	90	11	1.6	13	-	150	-	-	-	-	-	-	-
MW-3	09/07/1998	31.32	25.35	5.97	<50	170	46	20	4.3	19	120	-	-	-	-	-	-	-	-
MW-3	12/09/1998	31.32	25.91	5.41	55 <sup>1</sup>	660	120	93	22	72	150	-	-	-	-	-	-	-	-
MW-3	03/11/1999	31.32	25.47	5.85	<50	653	136	69.5	13.7	63.8	144	-	-	-	-	-	-	-	-
MW-3	06/17/1999	31.32	25.42	5.90	103 <sup>1</sup>	530	190	110	24	88	210	-	-	-	-	-	-	-	-
MW-3	09/29/1999	31.32	25.71	5.61	232 <sup>1</sup>	433	97.8	61.4	16.9	56.6	156	-	-	-	-	-	-	-	-
MW-3	12/14/1999	31.32	25.77	5.55	<50 <sup>2</sup>	8650	1040	795	212	800	995	-	-	-	-	-	-	-	-
MW-3	03/09/2000 <sup>3</sup>	31.32	25.18	6.14	74.6 <sup>1</sup>	1170	304	103	25.2	114	539	-	-	-	-	-	-	-	-
MW-3	06/10/2000	31.32	25.03	6.29	-	359	63.8	27.8	10.5	35.4	393	-	-	-	-	-	-	-	-
MW-3	09/30/2000	31.32	25.53	5.79	100 <sup>8</sup>	220 <sup>6</sup>	42	33	12	38	67	-	-	-	-	-	-	-	-
MW-3	12/22/2000	31.32	25.80	5.52	110 <sup>9</sup>	370 <sup>6</sup>	96	48	18	58	180	-	-	-	-	-	-	-	-
MW-3	03/01/2001	31.32	25.57	5.75	144 <sup>7</sup>	912 <sup>6</sup>	218	89.0	36.0	110	310	-	-	-	-	-	-	-	-
MW-3	05/04/2001	31.32	25.36	5.96	<50	1260	146	79.6	38.2	101	1070	-	-	-	-	-	-	-	-
MW-3	09/05/2001	31.32	25.71	5.61	SAMPLED SEMI-ANNUALLY														
MW-3	12/21/2001	31.32	25.65	5.67	180	850	160	11	32	84	300	-	-	-	-	-	-	-	-
MW-3	03/15/2002	31.32	25.17	6.15	SAMPLED SEMI-ANNUALLY														
MW-3	06/15/2002	31.32	25.31	6.01	<50	550	110	3.0	23	58	590	-	-	-	-	-	-	-	-
MW-3	09/06/2002	31.32	25.58	5.74	SAMPLED SEMI-ANNUALLY														
MW-3	12/06/2002	31.32	25.76	5.56	160	350	60	1.3	11	32	530	-	-	-	-	-	-	-	-
MW-3	03/03/2003	31.32	25.40	5.92	SAMPLED SEMI-ANNUALLY														
MW-3	06/17/2003 <sup>14</sup>	31.32	25.13	6.19	130	560	90	2	19	57	-	-	590	-	-	-	-	-	-
MW-3	09/16/2003	31.32	25.47	5.85	SAMPLED SEMI-ANNUALLY														
MW-3	12/31/2003 <sup>14</sup>	31.32	25.65	5.67	120	840	140	24	25	87	-	-	670	66	-	-	-	-	-
MW-3	03/26/2004	31.32	24.99	6.33	SAMPLED SEMI-ANNUALLY														
MW-3	08/17/2004 <sup>14</sup>	31.32	25.86	5.46	110	630	84	18	11	35	-	-	410	<50	-	-	-	-	-
MW-3	11/16/2004 <sup>14</sup>	34.16	25.90	8.26	92	740	100	4	21	45	-	-	460	<50	-	-	-	-	-
MW-3	02/18/2005	34.16	25.37	8.79	SAMPLED SEMI-ANNUALLY														

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**CHEVRON SERVICE STATION 9-4800**  
**1700 CASTRO STREET, OAKLAND, CALIFORNIA**

Location	Date	TOC*	DTW	GWE	HYDROCARBONS		PRIMARY VOCS						ADDITIONAL VOCS						
					TPH-DRO	TPH-GRO	B	T	E	X	MTBE by VOC	MTBE by SW8240	MTBE by SW8260	ETHANOL	TBA	DIPE	ETBE	TAME	
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-3	05/06/2005 <sup>14</sup>	34.16	24.98	9.18	83	290	43	<1	6	11	-	-	740	<100	-	-	-	-	-
MW-3	08/05/2005	34.16	25.35	8.81	SAMPLED SEMI-ANNUALLY														
MW-3	11/07/2005 <sup>14</sup>	34.16	25.69	8.47	66	220	29	0.7	3	26	-	-	440	<50	-	-	-	-	-
MW-3	02/06/2006	34.16	25.28	8.88	SAMPLED SEMI-ANNUALLY														
MW-3	05/08/2006 <sup>14</sup>	34.16	24.49	9.67	310	560	70	<1	3	24	3300	-	-	<100	-	-	-	-	-
MW-3	08/08/2006	34.16	25.16	9.00	SAMPLED SEMI-ANNUALLY														
MW-3	11/08/2006 <sup>14</sup>	34.16	25.59	8.57	210	510	<0.5	<0.5	<0.5	<0.5	73	-	-	<50	-	-	-	-	-
MW-3	02/06/2007	34.16	25.68	8.48	SAMPLED SEMI-ANNUALLY														
MW-3	05/01/2007 <sup>14</sup>	34.16	25.46	8.70	84	260	36	<0.5	0.8	18	-	-	1200	<50	-	-	-	-	-
MW-3	07/31/2007	34.16	25.70	8.46	SAMPLED SEMI-ANNUALLY														
MW-3	11/08/2007 <sup>14</sup>	34.16	25.87	8.29	260	270	32	0.9	3	29	-	-	440	<50	-	-	-	-	-
MW-3	02/04/2008	34.16	25.68	8.48	SAMPLED SEMI-ANNUALLY														
MW-3	05/01/2008 <sup>14</sup>	34.16	25.66	8.50	82	240	30	<0.5	<0.5	20	-	-	690	<50	-	-	-	-	-
MW-3	08/01/2008	34.16	25.76	8.40	SAMPLED SEMI-ANNUALLY														
MW-3	11/13/2008 <sup>14</sup>	34.16	25.80	8.36	<50	720	22	<0.5	<0.5	7	-	-	790	<50	-	-	-	-	-
MW-3	02/23/2009	34.16	25.72	8.44	SAMPLED SEMI-ANNUALLY														
MW-3	05/20/2009	34.16	25.30	8.86	210	460	42	<0.5	1	20	-	-	450	<50	-	-	-	-	-
MW-3	08/25/2009	34.16	25.56	8.60	SAMPLED SEMI-ANNUALLY														
MW-3	11/18/2009	34.16	25.71	8.45	240	280	25	<0.5	<0.5	9	-	-	170	<50	-	-	-	-	-
<b>MW-3</b>	<b>05/18/2010</b>	<b>34.16</b>	<b>25.11</b>	<b>9.05</b>	<b>150</b>	<b>63 J</b>	<b>11</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>1</b>	<b>-</b>	<b>-</b>	<b>110</b>	<b>&lt;50</b>	<b>470</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
MW-4	04/08/1999	30.13	-	-	-	130	3.1	<0.5	<0.5	7.7	4700 / 5400	-	-	<25000	<5000	<100	<100	<100	
MW-4	06/17/1999	30.13	24.94	5.19	3780 <sup>1</sup>	590	58	<5.0	<5.0	160	6200	-	-	-	-	-	-	-	
MW-4	09/29/1999	30.13	25.17	4.96	1130 <sup>1</sup>	692	10.7	<2.5	5.51	236	7840	-	-	-	-	-	-	-	
MW-4	12/14/1999	30.13	25.22	4.91	571 <sup>1,2</sup>	625	<10	3.83	<10	94.6	4470	-	-	-	-	-	-	-	
MW-4	03/09/2000 <sup>3</sup>	30.13	24.68	5.45	600 <sup>1</sup>	402	3.76	1.18	<0.5	71.4	3140	-	-	-	-	-	-	-	
MW-4	06/10/2000	30.13	24.60	5.53	-	<1000	13.2	<10.0	<10.0	97.8	3080	-	-	-	-	-	-	-	

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**CHEVRON SERVICE STATION 9-4800**  
**1700 CASTRO STREET, OAKLAND, CALIFORNIA**

Location	Date	TOC*	DTW	GWE	HYDROCARBONS		PRIMARY VOCS						ADDITIONAL VOCS						
					TPH-DRO	TPH-GRO	B	T	E	X	MTBE by VOC	MTBE by SW8240	MTBE by SW8260	ETHANOL	TBA	DIPE	ETBE	TAME	
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-4	09/30/2000	30.13	25.04	5.09	1400 <sup>7</sup>	280 <sup>6</sup>	21	0.67	6.3	60	3300	-	-	-	-	-	-	-	-
MW-4	12/22/2000	30.13	25.23	4.90	740 <sup>9</sup>	240 <sup>6</sup>	2.2	<0.50	1.3	25	2200	-	-	-	-	-	-	-	-
MW-4	03/01/2001	30.13	24.98	5.15	661 <sup>7</sup>	193	2.31	<0.500	1.34	12.1	1220	-	-	-	-	-	-	-	-
MW-4	05/04/2001	30.13	24.88	5.25	1100 <sup>7</sup>	722	12.0	<5.00	17.1	89.4	2390	-	-	-	-	-	-	-	-
MW-4	09/05/2001	30.13	25.17	4.96	2500	1400	23	2.2	19	260	2300	-	-	-	-	-	-	-	-
MW-4	12/21/2001	30.13	25.07	5.06	1100	310	2.9	<0.50	2.6	32	860	-	-	-	-	-	-	-	-
MW-4	03/15/2002	30.13	24.69	5.44	3100	520	5.0	<0.50	15	6.8	2700	-	-	-	-	-	-	-	-
MW-4	06/15/2002	30.13	24.84	5.29	2400	950	16	3.6	41	100	2200	-	2400 <sup>12</sup>	-	840	<2.0	<2.0	110	
MW-4	09/06/2002	30.13	25.06	5.07	2600	640	9.6	0.52	9.8	28	1700	-	-	-	-	-	-	-	
MW-4	12/06/2002	30.13	25.20	4.93	1400	280	3.6	<0.50	1.7	<1.5	730	-	-	-	-	-	-	-	
MW-4	03/03/2003	30.13	24.85	5.28	1500	280	2.7	<0.50	7.3	2.3	910	-	-	-	-	-	-	-	
MW-4	06/17/2003 <sup>14</sup>	30.13	24.69	5.44	2000	660	8	1	38	16	-	-	1100	-	520	<0.5	<0.5	110	
MW-4	09/16/2003 <sup>14</sup>	30.13	24.98	5.15	2100 <sup>16</sup>	480	6	<1	11	3	-	-	710	<100	-	-	-	-	
MW-4	12/31/2003 <sup>14</sup>	30.13	25.06	5.07	1400	220	3	<0.5	2	<0.5	-	-	390	<50	-	-	-	-	
MW-4	03/26/2004	30.13	24.53	5.60	SAMPLED SEMI-ANNUALLY														
MW-4	08/17/2004 <sup>14</sup>	30.13	25.45	4.68	2100	470	12	1	28	4	-	-	370	<50	66	<0.5	<0.5	50	
MW-4	11/16/2004 <sup>14</sup>	33.07	25.44	7.63	960	270	7	<0.5	7	6	-	-	270	<50	-	-	-	-	
MW-4	02/18/2005	33.07	25.00	8.07	SAMPLED SEMI-ANNUALLY														
MW-4	05/06/2005 <sup>14</sup>	33.07	24.69	8.38	350	86	0.7	<0.5	<0.5	<0.5	-	-	110	<50	21	<0.5	<0.5	8	
MW-4	08/05/2005	33.07	25.02	8.05	SAMPLED SEMI-ANNUALLY														
MW-4	11/07/2005 <sup>14</sup>	33.07	25.33	7.74	150	54	0.6	<0.5	<0.5	<0.5	-	-	59	<50	-	-	-	-	
MW-4	02/06/2006	33.07	24.94	8.13	SAMPLED SEMI-ANNUALLY														
MW-4	05/08/2006 <sup>14</sup>	33.07	24.27	8.80	200	66	0.5	<0.5	<0.5	<0.5	92	-	-	<50	-	-	-	-	
MW-4	08/08/2006	33.07	25.16	7.91	SAMPLED SEMI-ANNUALLY														
MW-4	11/08/2006 <sup>14</sup>	33.07	25.23	7.84	400	55	<0.5	<0.5	<0.5	<0.5	40	-	-	<50	-	-	-	-	
MW-4	02/06/2007	33.07	25.28	7.79	SAMPLED SEMI-ANNUALLY														
MW-4	05/01/2007 <sup>14</sup>	33.07	25.08	7.99	150	67	<0.5	<0.5	<0.5	<0.5	-	-	76	<50	10	<0.5	<0.5	6	

**TABLE 1**  
**GROUNDWATER MONITORING AND SAMPLING DATA**  
**CHEVRON SERVICE STATION 9-4800**  
**1700 CASTRO STREET, OAKLAND, CALIFORNIA**

Location	Date	TOC*	DTW	GWE	HYDROCARBONS		PRIMARY VOCS						ADDITIONAL VOCS						
					TPH-DRO	TPH-GRO	B	T	E	X	MTBE by VOC	MTBE by SW8240	MTBE by SW8260	ETHANOL	TBA	DIPE	ETBE	TAME	
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-4	07/31/2007	33.07	25.27	7.80	SAMPLED SEMI-ANNUALLY														
MW-4	11/08/2007 <sup>14</sup>	33.07	25.42	7.65	850	<50	<0.5	<0.5	<0.5	<0.5	-	-	44	<50	-	-	-	-	-
MW-4	02/04/2008	33.07	25.23	7.84	SAMPLED SEMI-ANNUALLY														
MW-4	05/01/2008 <sup>14</sup>	33.07	25.21	7.86	110	<50	<0.5	<0.5	<0.5	<0.5	-	-	67	<50	12	<0.5	<0.5	<0.5	4
MW-4	08/01/2008	33.07	25.28	7.79	SAMPLED SEMI-ANNUALLY														
MW-4	11/13/2008 <sup>14</sup>	33.07	25.43	7.64	330	64	<0.5	<0.5	<0.5	1	-	-	220	<50	-	-	-	-	-
MW-4	02/23/2009	33.07	25.06	8.01	SAMPLED SEMI-ANNUALLY														
MW-4	05/20/2009	33.07	24.73	8.34	560	130	<0.5	<0.5	<0.5	<0.5	-	-	190	<50	58	<0.5	<0.5	<0.5	6
MW-4	08/25/2009	33.07	24.97	8.10	SAMPLED SEMI-ANNUALLY														
MW-4	11/18/2009	33.07	25.27	7.80	860	120	<0.5	<0.5	<0.5	<0.5	-	-	150	<50	-	-	-	-	-
<b>MW-4</b>	<b>05/18/2010</b>	<b>33.07</b>	<b>24.73</b>	<b>8.34</b>	<b>340</b>	<b>56 J</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	-	-	<b>70</b>	<b>&lt;50</b>	<b>33</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>4</b>
MW-7	05/04/2001 <sup>11</sup>	31.90	27.87	4.03	<50	<50.0	<0.500	<5.00	<5.00	<5.00	567	-	470 <sup>12</sup>	<500	57	<2.0	<2.0	<2.0	11
MW-7	09/05/2001	31.90	28.04	3.86	<50	<50	<0.50	<0.50	<0.50	<1.5	1400	-	1300 <sup>12</sup>	<500	<100	<2.0	<2.0	<2.0	32
MW-7	12/21/2001	31.90	28.86	3.04	210	<50	<0.50	<0.50	<0.50	<1.5	620	-	670 <sup>12</sup>	<500	<100	<2.0	<2.0	<2.0	15
MW-7	03/15/2002	31.90	27.72	4.18	<50	<50	<0.50	<0.50	<0.50	<1.5	350 / 320	-	350 <sup>12</sup>	<500	<100	<2.0	<2.0	<2.0	8
MW-7	06/15/2002	31.90	27.84	4.06	<50	<50	<0.50	<0.50	<0.50	<1.5	850	-	960 <sup>12</sup>	-	<100	<2.0	<2.0	<2.0	18
MW-7	09/06/2002	31.90	27.97	3.93	<50	59	<0.50	<0.50	<0.50	<1.5	1900	-	-	-	-	-	-	-	-
MW-7	12/06/2002	31.90	28.03	3.87	<50	68	<0.50	<0.50	<0.50	<1.5	2200	-	-	-	-	-	-	-	-
MW-7	03/03/2003	31.90	27.69	4.21	<50	<50	<0.50	<0.50	<0.50	<1.5	1300	-	-	-	-	-	-	-	-
MW-7	06/17/2003 <sup>14</sup>	31.90	27.76	4.14	<50	79	<0.5	<0.5	<0.5	<0.5	-	-	2500	-	37	<0.5	<0.5	<0.5	53
MW-7	09/16/2003 <sup>14</sup>	31.90	27.83	4.07	<50 <sup>17</sup>	110	<5	<5	<5	<5	-	-	4400	<500	-	-	-	-	-
MW-7	12/31/2003 <sup>14</sup>	31.90	27.86	4.04	<50	76	<2.0	<2.0	<2.0	<2.0	-	-	3000	<200	-	-	-	-	-
MW-7	03/26/2004 <sup>14</sup>	31.90	27.65	4.25	<50	61	<1	<1	<1	<1	-	-	2000	-	-	-	-	-	-
MW-7	08/17/2004 <sup>14</sup>	31.90	27.88	4.02	2200	130	<5	<5	<5	<5	-	-	8000	<500	<50	<5	<5	<5	140
MW-7	11/16/2004 <sup>14</sup>	34.35	27.87	6.48	<50	200	<3	<3	<3	<3	-	-	7300	<250	-	-	-	-	-
MW-7	02/18/2005 <sup>14</sup>	34.35	27.60	6.75	64	86	<10	<10	<10	<10	-	-	5700	<1000	-	-	-	-	-

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**1700 CASTRO STREET, OAKLAND, CALIFORNIA**

Location	Date	TOC*	DTW	GWE	HYDROCARBONS		PRIMARY VOCS						ADDITIONAL VOCS						
					TPH-DRO	TPH-GRO	B	T	E	X	MTBE by VOC	MTBE by SW8240	MTBE by SW8260	ETHANOL	TBA	DIPE	ETBE	TAME	
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-7	05/06/2005 <sup>14</sup>	34.35	27.43	6.92	60	160	<5	<5	<5	<5	-	-	8400	<500	<50	<5	<5	<5	140
MW-7	08/05/2005 <sup>14</sup>	34.35	27.65	6.70	81 <sup>18</sup>	500	<5	<5	<5	<5	-	-	20000 <sup>19</sup>	<500	-	-	-	-	-
MW-7	11/07/2005 <sup>14</sup>	34.35	27.79	6.56	68	300	<10	<10	<10	<10	-	-	24000	<1000	-	-	-	-	-
MW-7	02/06/2006 <sup>14</sup>	34.35	27.54	6.81	72 <sup>21</sup>	300	<0.5	<0.5	<0.5	<0.5	14000	-	-	<50	-	-	-	-	-
MW-7	05/08/2006 <sup>14</sup>	34.35	27.15	7.20	94	80	<2.0	<2.0	3	7	6500	-	-	<200	-	-	-	-	-
MW-7	08/08/2006 <sup>14</sup>	34.35	27.53	6.82	150	520	<10	<10	<10	<10	17000	-	-	<1000	-	-	-	-	-
MW-7	11/08/2006 <sup>14</sup>	34.35	27.75	6.60	440	900	<5	<5	<5	<5	41000	-	-	<500	-	-	-	-	-
MW-7	02/06/2007 <sup>14</sup>	34.35	27.76	6.59	200	590	<5	<5	<5	<5	-	-	31000	<500	-	-	-	-	-
MW-7	05/01/2007 <sup>14</sup>	34.35	27.65	6.70	190	380	<3	<3	<3	<3	-	-	14000	<250	<10	<3	<3	<3	260
MW-7	07/31/2007 <sup>14</sup>	34.35	27.75	6.60	270	570	<3	<3	<3	<3	-	-	15000	<250	-	-	-	-	-
MW-7	11/08/2007 <sup>14</sup>	34.35	27.83	6.52	150	520	<5	<5	<5	<5	-	-	25000	<500	-	-	-	-	-
MW-7	02/04/2008 <sup>14</sup>	34.35	27.69	6.66	87	540	<1	<1	<1	<1	-	-	17000	<100	-	-	-	-	-
MW-7	05/01/2008 <sup>14</sup>	34.35	27.72	6.63	<50	230	<5	<5	<5	<5	-	-	10000	<500	<20	<5	<5	<5	170
MW-7	08/01/2008 <sup>14</sup>	34.35	27.84	6.51	<50	330	<3	<3	<3	<3	-	-	12000	<250	-	-	-	-	-
MW-7	11/13/2008 <sup>14</sup>	34.35	28.01	6.34	64	390	<10	<10	<10	<10	-	-	16000	<1000	-	-	-	-	-
MW-7	02/23/2009 <sup>14</sup>	34.35	27.65	6.70	100	270	<3	<3	<3	<3	-	-	11000	<250	-	-	-	-	-
MW-7	05/20/2009	34.35	27.55	6.80	48 J	210	<1	<1	<1	<1	-	-	6300	<100	31	<1	<1	<1	120
MW-7	08/25/2009	34.35	27.70	6.65	<100 U	160	<3	<3	<3	<3	-	-	5700	<250	-	-	-	-	-
MW-7	11/18/2009	34.35	27.77	6.58	250	100	<1	<1	<1	<1	-	-	2800	<130	-	-	-	-	-
<b>MW-7</b>	<b>05/18/2010</b>	<b>34.35</b>	<b>27.51</b>	<b>6.84</b>	<b>160</b>	<b>76 J</b>	<b>&lt;1</b>	<b>&lt;1</b>	<b>&lt;1</b>	<b>&lt;1</b>	<b>-</b>	<b>-</b>	<b>2400</b>	<b>&lt;100</b>	<b>&lt;4</b>	<b>&lt;1</b>	<b>&lt;1</b>	<b>2</b>	<b>52</b>
QA	12/21/2001	-	-	-	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5	-	-	-	-	-	-	-	-
QA	03/15/2002	-	-	-	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5	-	-	-	-	-	-	-	-
QA	06/15/2002	-	-	-	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5	-	-	-	-	-	-	-	-
QA	09/06/2002	-	-	-	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5	-	-	-	-	-	-	-	-
QA	12/06/2002	-	-	-	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5	-	-	-	-	-	-	-	-
QA	06/17/2003 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-

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CHEVRON SERVICE STATION 9-4800  
1700 CASTRO STREET, OAKLAND, CALIFORNIA**

Location	Date	TOC*	DTW	GWE	HYDROCARBONS		PRIMARY VOCS						ADDITIONAL VOCS						
					TPH-DRO	TPH-GRO	B	T	E	X	MTBE by VOC	MTBE by SW8240	MTBE by SW8260	ETHANOL	TBA	DIPE	ETBE	TAME	
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
QA	09/16/2003 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	12/31/2003 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	03/26/2004 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	08/17/2004 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	11/16/2004 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	02/18/2005 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	05/06/2005 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	08/05/2005 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	11/07/2005 <sup>14</sup>	-	-	-	-	<50	0.6	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	02/06/2006 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	-	-
QA	05/08/2006 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	-	-
QA	08/08/2006 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	-	-
QA	11/08/2006 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	-	-	-	-	-
QA	02/06/2007 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	05/01/2007 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	07/31/2007 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	11/08/2007 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	02/04/2008 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	05/01/2008 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	08/01/2008 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	11/13/2008 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	02/23/2009 <sup>14</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	05/20/2009	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	08/25/2009	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
QA	11/18/2009	-	-	-	-	<50	<0.5	0.5 J	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	-
<b>QA</b>	<b>05/18/2010</b>	-	-	-	-	<b>&lt;50</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	-	-	<b>&lt;0.5</b>	-	-	-	-	-	-



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Location	Date	TOC*	DTW	GWE	HYDROCARBONS		PRIMARY VOCS						ADDITIONAL VOCS						
					TPH-DRO	TPH-GRO	B	T	E	X	MTBE by VOC	MTBE by SW8240	MTBE by SW8260	ETHANOL	TBA	DIPE	ETBE	TAME	
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-5	04/08/1999	30.93	-	-	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.0 / <2.5	-	-	<500	<100	<2.0	<2.0	<2.0	
MW-5	06/17/1999	30.93	26.00	4.93	53.8 <sup>1</sup>	<50	<0.5	<0.5	<0.5	<0.5	<2.5	-	-	-	-	-	-	-	
MW-5	09/29/1999	30.93	26.20	4.73	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	-	-	-	-	-	-	-	
MW-5	12/14/1999	30.93	26.32	4.61	<50 <sup>2</sup>	<50	<0.5	<0.5	<0.5	<0.5	0.598	-	-	-	-	-	-	-	
MW-5	03/09/2000 <sup>3</sup>	30.93	25.93	5.00	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	-	-	-	-	-	-	-	
MW-5	06/10/2000	30.93	25.72	5.21	-	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	-	-	-	-	-	-	-	
MW-5	09/30/2000	30.93	26.14	4.79	130 <sup>8</sup>	<50	<0.50	<0.50	<0.50	<0.50	<2.5	-	-	-	-	-	-	-	
MW-5	12/22/2000	30.93	26.33	4.60	250 <sup>8</sup>	<50	<0.50	<0.50	<0.50	<0.50	9.1	-	-	-	-	-	-	-	
MW-5	03/01/2001	30.93	26.16	4.77	77.4 <sup>7</sup>	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	-	-	-	-	-	-	-	
MW-5	05/04/2001	30.93	26.04	4.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
MW-5	09/05/2001	30.93	26.21	4.72	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
MW-5	12/21/2001	30.93	26.20	4.73	110	<50	<0.50	<0.50	<0.50	<1.5	<2.5	-	-	-	-	-	-	-	
MW-5	03/15/2002	30.93	25.87	5.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
MW-5	06/15/2002	30.93	25.98	4.95	<50	<50	<0.50	<0.50	<0.50	<1.5	<2.5	-	-	-	-	-	-	-	
MW-5	09/06/2002	30.93	26.18	4.75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
MW-5	12/06/2002	30.93	26.32	4.61	<50	<50	<0.50	<0.50	<0.50	<1.5	<2.5	-	-	-	-	-	-	-	
MW-5	03/03/2003	30.93	25.99	4.94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
MW-5	06/17/2003 <sup>14</sup>	30.93	25.87	5.06	<50	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	-	-	-	-	
MW-5	09/16/2003	30.93	26.09	4.84	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
MW-5	12/31/2003 <sup>14</sup>	30.93	26.21	4.72	<50	<50	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	<50	-	-	-	-	
MW-5	03/26/2004	30.93	25.74	5.19	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
MW-5	08/17/2004	30.93	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
MW-6	04/08/1999	30.58	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	5.6 / 4.5	-	-	<500	<100	<2.0	<2.0	<2.0	
MW-6	06/17/1999	30.58	24.59	5.99	<50	<50	<0.5	<0.5	<0.5	<0.5	<2.5	-	-	-	-	-	-	-	
MW-6	09/29/1999	30.58	24.77	5.81	<50	<50	<0.5	<0.5	<0.5	<0.5	4.46	-	-	-	-	-	-	-	
MW-6	12/14/1999	30.58	24.84	5.74	<50 <sup>2</sup>	<50	<0.5	<0.5	<0.5	<0.5	4.13	-	-	-	-	-	-	-	

**TABLE 1  
GROUNDWATER MONITORING AND SAMPLING DATA  
CHEVRON SERVICE STATION 9-4800  
1700 CASTRO STREET, OAKLAND, CALIFORNIA**

Location	Date	TOC*	DTW	GWE	HYDROCARBONS		PRIMARY VOCS						ADDITIONAL VOCS						
					TPH-DRO	TPH-GRO	B	T	E	X	MTBE by VOC	MTBE by SW8240	MTBE by SW8260	ETHANOL	TBA	DIPE	ETBE	TAME	
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
MW-6	03/09/2000 <sup>3</sup>	30.58	24.09	6.49	<50	<50	<0.5	<0.5	<0.5	<0.5	2.82	-	-	-	-	-	-	-	-
MW-6	06/10/2000	30.58	24.00	6.58	-	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	-	-	-	-	-	-	-	-
MW-6	09/30/2000	30.58	24.58	6.00	110 <sup>8</sup>	<50	<0.50	<0.50	<0.50	<0.50	7.3	-	-	-	-	-	-	-	-
MW-6	12/22/2000	30.58	24.83	5.75	100 <sup>8</sup>	<50	<0.50	<0.50	<0.50	<0.50	4.5	-	-	-	-	-	-	-	-
MW-6	03/01/2001	30.58	24.51	6.07	141 <sup>7</sup>	<50.0	<0.500	<0.500	<0.500	<0.500	7.52	-	-	-	-	-	-	-	-
MW-6	05/04/2001	30.58	24.32	6.26	<50	<50.0	<0.500	<5.00	<5.00	<5.00	2.74	-	-	-	-	-	-	-	-
MW-6	09/05/2001	30.58	24.59	5.99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-6	12/21/2001	30.58	24.65	5.93	200	<50	<0.50	<0.50	<0.50	<1.5	8.5	-	-	-	-	-	-	-	-
MW-6	03/15/2002	30.58	24.14	6.44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-6	06/15/2002	30.58	24.33	6.25	<50	<50	<0.50	<0.50	<0.50	<1.5	4.3	-	-	-	-	-	-	-	-
MW-6	09/06/2002	30.58	24.60	5.98	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-6	12/06/2002	30.58	24.79	5.79	64	<50	<0.50	<0.50	<0.50	<1.5	5.0	-	-	-	-	-	-	-	-
MW-6	03/03/2003	30.58	24.44	6.14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-6	06/17/2003 <sup>14</sup>	30.58	24.11	6.47	<50	<50	<0.5	<0.5	<0.5	<0.5	-	-	13	-	-	-	-	-	-
MW-6	09/16/2003	30.58	24.52	6.06	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-6	12/31/2003 <sup>14</sup>	30.58	24.58	6.00	<50	<50	<0.5	<0.5	<0.5	0.5	-	-	14	<50	-	-	-	-	-
MW-6	03/26/2004	30.58	23.89	6.69	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW-6	08/17/2004	30.58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trip Blank	06/04/1997	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5	-	-	-	-	-	-	-	-
Trip Blank	09/16/1997	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5	-	-	-	-	-	-	-	-
Trip Blank	12/17/1997	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5	-	-	-	-	-	-	-	-
Trip Blank	03/18/1998	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5	-	-	-	-	-	-	-	-
Trip Blank	06/28/1998	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	-	<2.5	-	-	-	-	-	-	-
Trip Blank	09/07/1998	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5	-	-	-	-	-	-	-	-
Trip Blank	12/09/1998	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5	-	-	-	-	-	-	-	-
Trip Blank	03/11/1999	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<5.0	-	-	-	-	-	-	-	-

**TABLE 1  
GROUNDWATER MONITORING AND SAMPLING DATA  
CHEVRON SERVICE STATION 9-4800  
1700 CASTRO STREET, OAKLAND, CALIFORNIA**

Location	Date	TOC*	DTW	GWE	HYDROCARBONS		PRIMARY VOCs						ADDITIONAL VOCs						
					TPH-DRO	TPH-GRO	B	T	E	X	MTBE by VOC	MTBE by SW8240	MTBE by SW8260	ETHANOL	TBA	DIPE	ETBE	TAME	
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Trip Blank	06/17/1999	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5	-	-	-	-	-	-	-	-
Trip Blank	12/14/1999	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5	-	-	-	-	-	-	-	-
Trip Blank	03/09/2000 <sup>3</sup>	-	-	-	-	<50	<0.5	<0.5	<0.5	<0.5	<2.5	-	-	-	-	-	-	-	-
Trip Blank	06/10/2000	-	-	-	-	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	-	-	-	-	-	-	-	-
Trip Blank	09/30/2000	-	-	-	-	<50	<0.50	<0.50	<0.50	<0.50	<2.5	-	-	-	-	-	-	-	-
Trip Blank	12/22/2000 <sup>10</sup>	-	-	-	-	<50	<0.50	<0.50	<0.50	<0.50	<2.5	-	-	-	-	-	-	-	-
Trip Blank	03/01/2001	-	-	-	-	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	-	-	-	-	-	-	-	-
Trip Blank	05/04/2001	-	-	-	-	<50.0	<0.500	<5.00	<5.00	<5.00	<0.500	-	-	-	-	-	-	-	-
Trip Blank	09/05/2001	-	-	-	-	<50	<0.50	<0.50	<0.50	<1.5	<2.5	-	-	-	-	-	-	-	-

**EXPLANATIONS:**

TOC = Top of casing

DTW = Depth to water

GWE = Groundwater elevation

LNAPLT = Light non-aqueous phase liquid thickness

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

BTEX = Benzene, toluene, ethylbenzene, xylene

MTBE = Methyl tertiary butyl ether

TBA = Tertiary butyl alcohol

DIPE = Di-isopropyl ether

ETBE = Ethyl tertiary butyl ether

TAME = Tertiary amyl methyl ether

Ft = Feet

Ft-amsl = Feet above mean sea level

Gal = Gallons

µg/L = Micro grams per liter

-- = Not available/not applicable

**TABLE 1  
GROUNDWATER MONITORING AND SAMPLING DATA  
CHEVRON SERVICE STATION 9-4800  
1700 CASTRO STREET, OAKLAND, CALIFORNIA**

Location	Date	TOC*	DTW	GWE	HYDROCARBONS		PRIMARY VOCS						ADDITIONAL VOCS						
					TPH-DRO	TPH-GRO	B	T	E	X	MTBE by VOC	MTBE by SW8240	MTBE by SW8260	ETHANOL	TBA	DIPE	ETBE	TAME	
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

<x = Not detected above laboratory method detection limits

U = Compound not detected

J = Estimated value

QA = Quality assurance

\* The following wells: MW-1, MW-2, MW-3, MW-4, and MW-7, were resurveyed by Morrow Surveying on September 13, 2004. TOC elevation was surveyed on April 11, 2001, by Virgil Chavez Land Surveying. The benchmark for the survey was the top of curb at the south end of the return at the southeast corner of Castro Street and 18th Street. (Benchmark Elevation = 29.65 feet above msl).

- 1 Chromatogram pattern indicates an unidentified hydrocarbon.
- 2 Sample was extracted outside EPA recommended holding time.
- 3 TPH-G, BTEX and MTBE was analyzed outside EPA recommended holding time.
- 4 EPA Method 8240.
- 5 Confirmation run.
- 6 Laboratory report indicates gasoline C6-C12.
- 7 Laboratory report indicates unidentified hydrocarbons C9-C24.
- 8 Laboratory report indicates unidentified hydrocarbons >C16.
- 9 Laboratory report indicates unidentified hydrocarbons C9-C40.
- 10 Laboratory report indicates this sample was analyzed outside of the EPA recommended holding time.
- 11 Well development performed.
- 12 MTBE by EPA Method 8260.
- 14 BTEX and MTBE by EPA Method 8260.
- 15 Laboratory report indicates the surrogate data for the method blank is outside QC limits. Results from the re-extraction are within the limits. The hold time had expired prior to re-extraction so all results are reported from the original extract. The TPH-D result from the re-extraction is 910 ppb.
- 16 Laboratory report indicates the surrogate data for the method blank is outside QC limits. Results from the re-extraction are within the limits. The hold time had expired prior to re-extraction so all results are reported from the original extract. The TPH-D result from the re-extraction is 1,700 ppb.
- 17 Laboratory report indicates the surrogate data for the method blank is outside QC limits. Results from the re-extraction are within the limits. The hold time had expired prior to re-extraction so all results are reported from the original extract. Similar results were obtained in both extracts.
- 18 Laboratory report indicates the observed sample pattern is not typical of #2 fuel/diesel. It elutes in the DRO range later than #2 fuel.

**TABLE 1**  
**GROUNDWATER MONITORING AND SAMPLING DATA**  
**CHEVRON SERVICE STATION 9-4800**  
**1700 CASTRO STREET, OAKLAND, CALIFORNIA**

Location	Date	TOC*	DTW	GWE	HYDROCARBONS		PRIMARY VOCs						ADDITIONAL VOCs						
					TPH-DRO	TPH-GRO	B	T	E	X	MTBE by VOC	MTBE by SW8240	MTBE by SW8260	ETHANOL	TBA	DIPE	ETBE	TAME	
	Units	ft	ft	ft	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L

- 19 Analytical result confirmed.
- 20 Laboratory report indicates the observed sample pattern includes #2 fuel/diesel and an additional pattern which elutes later in the DRO range.
- 21 Laboratory report indicates the observed sample pattern is not typical of #2 fuel/diesel. The reported result is due to individual peak(s) eluting in the DRO range.

ATTACHMENT A

BLAINE TECH'S MAY 19, 2010 *SECOND QUARTER 2010 MONITORING REPORT*



May 19, 2010

Chevron Environmental Management Company  
Aaron Costa  
6111 Bollinger Canyon Rd.  
San Ramon, CA 94583

Second Quarter 2010 Monitoring at  
Chevron Service Station 94800  
1700 Casrto St.  
Oakland, CA

Monitoring performed on May 18, 2010

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**Blaine Tech Services, Inc. Groundwater Monitoring Event 100518-FS2**

This submission covers the routine monitoring of groundwater wells conducted on May 18, 2010 at this location. Five monitoring wells were measured for depth to groundwater (DTW). Five monitoring wells were sampled. All sampling activities were performed in accordance with local, state and federal guidelines.

Water levels measurements were collected using an electronic slope indicator. All sampled wells were purged of three case volumes, depending on well recovery, or until water temperature, pH and conductivity stabilized. Purging was accomplished using electric submersible pumps, positive air-displacement pumps or stainless steel, Teflon or disposable bailers. Subsequent sample collection and sample handling was performed in accordance with EPA protocols using disposable bailers. Alternately, where applicable, wells were sampled utilizing no-purge methodology. All reused equipment was decontaminated in an integrated stainless steel sink with de-ionized water supplied Hotsy pressure washer and Liquinox or equivalent.

First Quarter Groundwater Monitoring at Chevron 94800, 1700 Casrto St., Oakland, CA

SAN JOSE

SACRAMENTO

LOS ANGELES

SAN DIEGO

1680 ROGERS AVENUE

SAN JOSE, CA 95112-1105

(408) 573-0555

FAX (408) 573-7771

LIC. 746684

[www.blainetech.com](http://www.blainetech.com)

Samples were delivered under chain-of-custody to Lancaster Laboratories of Lancaster, Pennsylvania, for analysis. Monitoring well purgewater and equipment rinsate water was collected and transported under bill-of-lading to IWM facilities of San Jose, California.

Enclosed documentation from this event includes copies of the Well Gauging Sheet, Well Monitoring Data Sheets, and Chain-of-Custody.

Blaine Tech Services, Inc.'s activities at this site consisted of objective data and sample collection only. No interpretation of analytical results, defining of hydrogeologic conditions or formulation of recommendations was performed.

Please call if you have any questions.

Sincerely,



Dustin Becker  
Blaine Tech Services, Inc.  
Senior Project Manager

attachments: SOP  
Well Gauging Sheet  
Individual Well Monitoring Data Sheets  
Chain of Custody  
Wellhead Inspection Form  
Bill of Lading  
Calibration Log

cc: CRA  
Attn: Nathan Lee  
5900 Hollis St. Suite A  
Emeryville, CA 94608

First Quarter Groundwater Monitoring at Chevron 94800, 1700 Casrto St., Oakland, CA

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# BLAINE TECH SERVICES, INC. METHODS AND PROCEDURES FOR THE ROUTINE MONITORING OF GROUNDWATER WELLS AT CHEVRON SITES

Blaine Tech Services, Inc. performs environmental sampling and documentation as an independent third party. We specialize in groundwater monitoring assignments and intentionally limit the scope of our services to those centered on the generation of objective information.

To avoid conflicts of interest, Blaine Tech Services, Inc. personnel do not evaluate or interpret the information we collect. As a state licensed contractor (C-57 well drilling –water – 746684) performing strictly technical services, we do not make any professional recommendations and perform no consulting of any kind.

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## SAMPLING PROCEDURES OVERVIEW

### SAFETY

All groundwater monitoring assignments performed for Chevron comply with Chevron's safety guidelines, 29 CFR 1910.120 and SB-198 Injury and Illness Prevention Program (IIPP). All Field Technicians receive the full 40-hour 29CFR 1910.120 OSHA SARA HAZWOPER course, medical clearance and on-the-job training prior to commencing any work on any Chevron site.

### INSPECTION AND GAUGING

Wells are inspected prior to evacuation and sampling. The condition of the wellhead is checked and noted according to a wellhead inspection checklist.

Standard measurements include the depth to water (DTW) and the total well depth (TD) obtained with industry standard electronic water level indicators that are graduated in increments of hundredths of a foot.

The water in each well is inspected for the presence of immiscibles. When free product is suspected, its presence is confirmed using an electronic interface probe (e.g. GeoTech). No samples are collected from a well containing over two-hundredths of a foot (0.02') of product.

### EVACUATION

Depth to water measurements are collected by our personnel prior to purging and minimum purge volumes are calculated anew for each well based on the height of the water column and the diameter of the well. Expected purge volumes are never less than three case volumes and are set at no less than four case volumes in some jurisdictions.

Well purging devices are selected on the basis of the well diameter and the total volume to be

evacuated. In most cases the well will be purged using an electric submersible pump (i.e. Grundfos) suspended near (but not touching) the bottom of the well.

## PARAMETER STABILIZATION

Well purging completion standards include minimum purge volumes, but additionally require stabilization of specific groundwater parameters prior to sample collection. Typical groundwater parameters used to measure stability are electrical conductivity, pH, and temperature. Instrument readings are obtained at regular intervals during the evacuation process (no less than once per case volume).

Stabilization standards for routine quarterly monitoring of fuel sites include the following: Temperature is considered to have stabilized when successive readings do not fluctuate more than +/- 1 degree Celsius. Electrical conductivity is considered stable when successive readings are within 10%. pH is considered to be stable when successive readings remain constant or vary no more than 0.2 of a pH unit.

## DEWATERED WELLS

Normal evacuation removes no less than three case volumes of water from the well. However, less water may be removed in cases where the well dewateres and does not immediately recharge.

## MEASURING RECHARGE

Upon completion of well purging, a depth to water measurement is collected and notated to ensure that the well has recharged to within 80% of its static, pre-purge level prior to sampling.

Wells that do not immediately show 80% recharge or dewatered wells will be allowed approximately 2 hours to recharge prior to sampling or will be sampled at site departure. All wells requiring off-site traffic control in the public right-of-way, the 80% recharge rule may be disregarded in the interests of Health and Safety. The sample may be collected as soon as there is sufficient water. The water level at time of sampling will be noted.

## PURGEWATER CONTAINMENT

All non-hazardous purgewater evacuated from each groundwater monitoring well is captured and contained in on-board storage tanks on the Sampling Vehicle and/or special water hauling trailers. Effluent from the decontamination of reusable apparatus (sounders, electric pumps and hoses etc.), consisting of groundwater combined with deionized water and non-phosphate soap, is also captured and pumped into effluent tanks.

Non-hazardous purgewater is transported under standard Bill of Lading documentation to a Blaine Tech Services, Inc. facility before being transported to a Chevron approved disposal facility.

## SAMPLE COLLECTION DEVICES

All samples are collected using disposable bailers.

## SAMPLE CONTAINERS

Sample material is decanted directly from the sampling bailer into sample containers provided by the laboratory that will analyze the samples. The transfer of sample material from the bailer to the sample container conforms to specifications contained in the USEPA T.E.G.D. The type of sample container, material of construction, method of closure and filling requirements are specific to the intended analysis. Chemicals needed to preserve the sample material are commonly placed inside the sample containers by the laboratory or glassware vendor prior to delivery of the bottle to our personnel. The laboratory sets the number of replicate containers.

## TRIP BLANKS

Trip Blanks, if requested, are taken to the site and kept inside the sample cooler for the duration of the event. They are turned over to the laboratory for analysis with the samples from that site.

## DUPLICATES

Duplicates, if requested, may be collected at a site. The Duplicate sample is collected, typically from the well containing the most measurable contaminants. The Duplicate sample is labeled the same as the original.

## SAMPLE STORAGE

All sample containers are promptly placed in food grade ice chests for storage in the field and transport (direct or via our facility) to the designated analytical laboratory. These ice chests contain quantities of restaurant grade ice as a refrigerant material. The samples are maintained in either an ice chest or a refrigerator until relinquished into the custody of the laboratory or laboratory courier.

## DOCUMENTATION CONVENTIONS

A label must be affixed to all sample containers. In most cases these labels are generated by our office personnel and are partially preprinted. Labels can also be hand written by our field personnel. The site is identified with the store number and site address, as is the particular groundwater well from which the sample is drawn (e.g. MW-1, MW-2, S-1 etc.). The time and date of sample collection along with the initials of the person who collects the sample are handwritten onto the label.

Chain of Custody records are created using client specific preprinted forms following USEPA specifications.

Bill of Lading records are contemporaneous records created in the field at the site where the non-hazardous purgewater is generated. Field Technicians use preprinted Bill of Lading forms.

## DECONTAMINATION

All equipment is brought to the site in clean and serviceable condition and is cleaned after use in each well and before subsequent use in any other well. Equipment is decontaminated before leaving the site.

The primary decontamination device is a commercial steam cleaner. The steam cleaner is de-tuned to function as a hot pressure washer that is then operated with high quality deionized water that is produced at our facility and stored onboard our sampling vehicle. Cleaning is facilitated by the use of proprietary fixtures and devices included in the patented workstation (U.S. Patent 5,535,775) that is incorporated in each sampling vehicle. The steam cleaner is used to decon reels, pumps and bailers.

Any sensitive equipment or parts (i.e. Dissolved Oxygen sensor membrane, water level indicator, etc.) that cannot be washed using the high pressure water, will be sprayed with a non-phosphate soap and deionized water solution and rinsed with deionized water.

## DISSOLVED OXYGEN READINGS

Dissolved Oxygen readings are taken pre- and/or post-purge using YSI meters (e.g. YSI Model 550) or HACH field test kits.

The YSI meters are able to collect accurate in-situ readings. The probe allows downhole measurements to be taken from wells with diameters as small as two inches. The probe and reel is decontaminated between wells as described above. The meter is calibrated between wells as per the instructions in the operating manual. The probe is lowered into the water column and the reading is allowed to stabilize prior to collection.

## OXYIDATON REDUCTION POTENTIAL READINGS

All readings are obtained with either Corning or Myron-L meters (e.g. Corning ORP-65 or a Myron-L Ultrameter GP). The meter is cleaned between wells as described above. The meter is calibrated at the start of each day according to the instruction manual.

## FERROUS IRON MEASUREMENTS

All field measurements are collected at time of sampling with a HACH test kit.

# WELL GAUGING DATA

Project # 100518-FS2 Date 5-18-10 Client CHEVRON

Site 1700 CASTRO ST. OAKLAND CA

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes
MW-1	1340	2					<del>30</del> 25.54	<del>30</del> 25.54	TOC	
MW-2	1320	2					23.65	30.00	↓	
MW-3	1330	2	ODOR				25.11	30.15		
MW-4	1405	2					24.73	28.78		
MW-7	1349	2					27.51	30.92		

## CHEVRON WELL MONITORING DATA SHEET

Project #: 100518 - FS2	Station #: 9-4800
Sampler: FS	Date: 5-18-10
Weather: SUNNY	Ambient Air Temperature: 68°F
Well I.D.: MW-1	Well Diameter: <u>2</u> 3 4 6 8
Total Well Depth: 30.54	Depth to Water: 25.54
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 26.54	

Purge Method: Disposable Bailer      Waterra      Disposable Bailer  
 Bailer      Peristaltic      Extraction Port  
 Positive Air Displacement      Extraction Pump      Dedicated Tubing  
 Electric Submersible      Other \_\_\_\_\_      Other: \_\_\_\_\_

0.8 (Gals.) X 3 = 2.4 Gals.  
 I Case Volume      Specified Volumes      Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F)	pH	Cond. (mS or $\mu$ S)	Turbidity (NTUs)	Gals. Removed	Observations
1458	67.9	6.5	1088	290	0.8	
1501	67.8	6.6	1075	619	1.6	
1504	67.2	6.5	1052	487	2.4	

Did well dewater? Yes NO Gallons actually evacuated: 2.4

Sampling Date: 5-18-10      Sampling Time: 1515      Depth to Water: 26.50

Sample I.D.: MW-1      Laboratory: Lancaster Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE OXYS Other SEE C.O.C.

Duplicate I.D.:      Analyzed for: TPH-G BTEX MTBE OXYS Other: \_\_\_\_\_

D.O. (if req'd):      Pre-purge: 0.50 mg/L      Post-purge: ~~0.65~~ mg/L

O.R.P. (if req'd):      Pre-purge: -3 mV      Post-purge: ~~51~~ mV

# CHEVRON WELL MONITORING DATA SHEET

Project #: 100518 - FS2	Station #: 9-4800
Sampler: FS	Date: 5-18-10
Weather: OVERCAST	Ambient Air Temperature: 68°F
Well I.D.: MW-2	Well Diameter: (2) 3 4 6 8
Total Well Depth: 30.00	Depth to Water: 23.65
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 24.92	

Purge Method:  Bailer  Disposable Bailer  Positive Air Displacement  Electric Submersible

Water:  Waterra  Peristaltic  Extraction Pump  Other \_\_\_\_\_

Sampling Method:  Bailer  Disposable Bailer  Extraction Port  Dedicated Tubing  Other \_\_\_\_\_

1.1 (Gals.) X 3 = 3.3 Gals.  
 I Case Volume      Specified Volumes      Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F)	pH	Cond. (mS or μS)	Turbidity (NTUs)	Gals. Removed	Observations
1630	67.3	6.7	884	48	1.1	
1632	66.9	6.7	885	54	2.2	
1634	66.8	6.7	867	78	3.3	

Did well dewater? Yes  No  Gallons actually evacuated: 3.3

Sampling Date: 5-18-10      Sampling Time: 1640      Depth to Water: 23.95

Sample I.D.: MW-2      Laboratory: (Lancaster) Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE OXYS (Other) SEE C.O.C.

Duplicate I.D.:      Analyzed for: TPH-G BTEX MTBE OXYS Other:

D.O. (if req'd):	Pre-purge:	0.44 mg/L	Post-purge:	mg/L
	O.R.P. (if req'd):	Pre-purge:	-95 mV	Post-purge:

# CHEVRON WELL MONITORING DATA SHEET

Project #: 100518 - FS2	Station #: 9-4800
Sampler: FS	Date: 5-18-10
Weather: SUNNY	Ambient Air Temperature: 68°F
Well I.D.: MW-3	Well Diameter: (2) 3 4 6 8
Total Well Depth: 30.15	Depth to Water: 25.11
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 26.11	

Purge Method: Disposable Bailer      Waterra      Peristaltic      Extraction Pump      Other \_\_\_\_\_

Sampling Method: Bailer      Disposable Bailer      Extraction Port      Dedicated Tubing      Other: \_\_\_\_\_

0.9 (Gals.) X 3 = 2.7 Gals.

I Case Volume      Specified Volumes      Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F)	pH	Cond. (mS or $\mu$ S)	Turbidity (NTUs)	Gals. Removed	Observations
1603	67.1	6.6	1119	96	0.9	
1605	67.0	6.6	1121	123	1.8	
1607	67.1	6.7	1108	70	2.7	

Did well dewater?    Yes    No    Gallons actually evacuated: 2.7

Sampling Date: 5-18-10    Sampling Time: 1615    Depth to Water: 25.20

Sample I.D.: MW-    Laboratory: Lancaster    Other \_\_\_\_\_

Analyzed for: TPH-G    BTEX    MTBE    OXYS    Other    SEE C.O.C.

Duplicate I.D.:    Analyzed for: TPH-G    BTEX    MTBE    OXYS    Other:

D.O. (if req'd):    Pre-purge: 0.59 mg/L    Post-purge: \_\_\_\_\_ mg/L

O.R.P. (if req'd):    Pre-purge: 96 mV    Post-purge:  mV



## CHEVRON WELL MONITORING DATA SHEET

Project #: 100518 - FS2	Station #: 9-4800
Sampler: FS	Date: 5-18-10
Weather: SUNNY	Ambient Air Temperature: 70°F
Well I.D.: MW-4	Well Diameter: (2) 3 4 6 8
Total Well Depth: 28.78	Depth to Water: 24.73
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 25.54	

Purge Method:

- Bailer  
 Disposable Bailer  
 Positive Air Displacement  
 Electric Submersible  
 Waterra  
 Peristaltic  
 Extraction Pump  
 Other \_\_\_\_\_

Sampling Method:

- Bailer  
 Disposable Bailer  
 Extraction Port  
 Dedicated Tubing  
 Other: \_\_\_\_\_

0.7 (Gals.) X	3	= 2.1 Gals.
1 Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F)	pH	Cond. (mS or (μS))	Turbidity (NTUs)	Gals. Removed	Observations
1420	67.3	6.5	816	125	0.7	
1423	67.5	6.5	910	368	1.4	
1426	67.4	6.5	970	191	2.1	

Did well dewater? Yes  No  Gallons actually evacuated: 2.1

Sampling Date: 5-18-10 Sampling Time: 1430 Depth to Water: 25.50

Sample I.D.: MW-4 Laboratory: (Lancaster) Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE OXYS (Other) SEE C.O.C.

Duplicate I.D.: Analyzed for: TPH-G BTEX MTBE OXYS Other:

D.O. (if req'd): Pre-purge: 0.39 mg/L Post-purge: ~~6.47~~ mg/L

O.R.P. (if req'd): Pre-purge: -25 mV Post-purge: ~~75~~ mV

## CHEVRON WELL MONITORING DATA SHEET

Project #: 100518 - FS2	Station #: 9-4800
Sampler: FS	Date: 5-18-10
Weather: SUNNY	Ambient Air Temperature: 65°F
Well I.D.: MW-7	Well Diameter: (2) 3 4 6 8
Total Well Depth: 30.02	Depth to Water: 27.51
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 28.01	

Purge Method:

- Bailer  
 Disposable Bailer  
 Positive Air Displacement  
 Electric Submersible
- Waterra  
 Peristaltic  
 Extraction Pump  
 Other \_\_\_\_\_

Sampling Method:

- Bailer  
 Disposable Bailer  
 Extraction Port  
 Dedicated Tubing  
 Other: \_\_\_\_\_

0.5 (Gals.) X	3	= 1.5 Gals.
I Case Volume	Specified Volumes	Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1532	66.9	7.0	1054	321	0.5	
1534	67.1	6.6	1026	137	1	
1536	67.0	6.6	1025	356	1.5	

Did well dewater? Yes  No  Gallons actually evacuated: 1.5

Sampling Date: 5-18-10 Sampling Time: 1545 Depth to Water: 27.95

Sample I.D.: MW-7 Laboratory: (Lancaster) Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE OXYS (Other) SEE C.O.C.

Duplicate I.D.: Analyzed for: TPH-G BTEX MTBE OXYS Other:

D.O. (if req'd): Pre-purge: 0.70 mg/L Post-purge: ~~0.70~~ mg/L

O.R.P. (if req'd): Pre-purge: 110 mV Post-purge: ~~110~~ mV

**CHAIN OF CUSTODY FORM**

**Chevron Environmental Management Company ■ 6111 Bollinger Canyon Rd. ■ San Ramon, CA 94583 COC ( of 1**

Chevron Site Number: 94800  
 Chevron Site Global ID: T0600102076  
 Chevron Site Address: 1700 Casrto St., Oakland, CA  
 Chevron PM: AARON COSTA  
 Chevron PM Phone No.: (925)543-2961  
 Retail and Terminal Business Unit (RTBU) Job  
 Construction/Retail Job

Chevron Consultant: CRA  
 Address: 5900 Hollis St. Suite A Emeryville, CA  
 Consultant Contact: Nathan Lee  
 Consultant Phone No. 510-420-3333  
 Consultant Project No. 100518-F51  
 Sampling Company: Blaine Tech Services  
 Sampled By (Print): F. SPIWONGKONG  
 Sampler Signature: [Signature]

ANALYSES REQUIRED											
H	H								H	N	H
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
EPA 8260B/GC/MS	TPH-G	BTEX	MIBEX	OXYGENATES	HYOC	DRO	ORO	HC SCREEN	EPA 310.1 ALKALINITY	EPA 413.1 OIL & GREASE	EPA 418.1 TRPH
EPA 8015B	GRO	DRO	ORO	HC SCREEN	EPA 310.1 ALKALINITY	EPA 413.1 OIL & GREASE	EPA 418.1 TRPH	EPA 413.1 OIL & GREASE	EPA 310.1 ALKALINITY	EPA 413.1 OIL & GREASE	EPA 418.1 TRPH
EPA 8021B	BTEX	MTBE									
EPA 6010	Ca, Fe, K, Mg, Mn, Na										
EPA 6010/7000	TITLE 22 METALS	TLC	STLC								
EPA 150.1	PH										
SM2510B	SPECIFIC CONDUCTIVITY										
EPA 8260	ETHANOL										
EPA 8015	TPH-D										

Preservation Codes  
 H = HCL T = Thiosulfate  
 N = HNO<sub>3</sub> B = NaOH  
 S = H<sub>2</sub>SO<sub>4</sub> O = Other

Charge Code: NWRTB-0094800-0-OML  
 NWRTB 00SITE NUMBER-0- WBS  
 (WBS ELEMENTS:  
 SITE ASSESSMENT: A1L REMEDIATION IMPLEMENTATION: R5L  
 SITE MONITORING: OML OPERATION MAINTENANCE & MONITORING: M1L  
**THIS IS A LEGAL DOCUMENT. ALL FIELDS MUST BE FILLED OUT CORRECTLY AND COMPLETELY.**

**Lancaster Laboratories**  
 Other Lab  
 Temp. Blank Check Time Temp.  
1300 0.0°  
1500 0.1°  
1645 0.0°  
 Lancaster, PA  
 Lab Contact: Jill Parker  
 2425 New Holland Pike, Lancaster, PA 17601  
 Phone No: (717)656-2300

Special Instructions  
 Must meet lowest detection limits possible for 8260 Compounds

SAMPLE ID				Sample Time	# of Containers	Container Type	ANALYSES REQUIRED												Notes/Comments							
Field Point Name	Matrix	Top Depth	Date (yyymmdd)				EPA 8260B/GC/MS	TPH-G	BTEX	MIBEX	OXYGENATES	HYOC	DRO	ORO	HC SCREEN	EPA 310.1 ALKALINITY	EPA 413.1 OIL & GREASE	EPA 418.1 TRPH		EPA 8260	ETHANOL	EPA 8015	TPH-D			
MW-1	W		100518	1515	13	VOAS AMBER	X	X								X	X	X								
MW-2	↓			1640	13		X	X								X	X	X								
MW-3	↓			1615	13		X	X								X	X	X								
MW-4	↓			1430	13		X	X								X	X	X								
MW-7	↓			1545	13		X	X								X	X	X								
QA	T			1300	2		X	X								X	X	X								

5 OXYGENATES 8260  
 5 OXYGENATES 8260

Relinquished By [Signature] Company BTS Date/Time: 5-18-10/1700  
 Relinquished To [Signature] Company LLI Date/Time: 5/18/10 1700  
 Relinquished By [Signature] Company [Signature] Date/Time: [Signature]  
 Relinquished To [Signature] Company LLI Date/Time: Shaw 0850

Turnaround Time: SHORT HOLD  
 Standard  24 Hours  48 hours  72 Hours  Other   
 Sample Integrity: (Check by lab on arrival)  
 Intact:  On Ice:  Temp: 14-20  
 COC #

WELLHEAD INSPECTION CHECKLIST

Client CHEVRON Date J-18-16

Site Address 1700 CASTRO ST. OAKLAND, CA

Job Number 100518-F52 Technician R

Well ID	Well Inspected - No Corrective Action Required	WELL IS SECURABLE BY DESIGN (12" or less)	WELL IS CLEARLY MARKED WITH THE WORDS "MONITORING WELL" (12" or less)	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)	Repair Order Submitted
MW-1	✓	✓								
MW-2			✓					✓		
MW-3	✓	✓	✓	✓						
MW-4	✓	✓	✓	✓						
MW-7	✓	✓	✓	✓						

NOTES: MW-2, NO TAG 1/3 TABS BROKEN NO BOLTS  
~~MW-2 NO TAG NO BOLTS~~

CHEVRON-NORTHERN CALIFORNIA TYPE **A** BILL OF LADING

SOURCE RECORD **BILL OF LADING**

FOR NON-HAZARDOUS PURGEWATER RECOVERED FROM GROUNDWATER WELLS AT CHEVRON FACILITIES IN THE STATE OF CALIFORNIA. THE NON-HAZARDOUS PURGE- WATER WHICH HAS BEEN RECOVERED FROM GROUND- WATER WELLS IS COLLECTED BY THE CONTRACTOR, MADE UP INTO LOADS OF APPROPRIATE SIZE AND HAULED BY IWM TO THEIR FACILITY IN SAN JOSE, CALIFORNIA.

The contractor performing this work is BLAINE TECH SERVICES, INC. (BTS), 1680 Rogers Ave. San Jose CA (408)573-0555). Blaine Tech Services, Inc. is authorized by CHEVRON PRODUCTS COMPANY (CHEVRON) to recover, collect, apportion into loads, and haul the Non-Hazardous Well Purgewater that is drawn from wells at the CHEVRON facility indicated below and to deliver that purgewater to BTS. Transport routing of the Non-Hazardous Well Purgewater may be direct from one Chevron facility to BTS; from one Chevron facility to BTS via another Chevron facility; or any combination thereof. The Non-Hazardous Well Purgewater is and remains the property of CHEVRON.

This Source Record **BILL OF LADING** was initiated to cover the recovery of Non-Hazardous Well Purgewater from wells at the Chevron facility described below:

9-4800                      AALON COSTA  
 CHEVRON #                      Chevron Engineer  
1700 CASTRO ST.              OAKLAND      CA  
 street number              street name              city              state

WELL I.D.	GALS.	WELL I.D.	GALS.
Mw-1	2.4	/	/
Mw-2	3.3	/	/
Mw-3	2.7	/	/
Mw-4	2.1	/	/
Mw-7	1.5	/	/
/	/	/	/
/	/	/	/
/	/	/	/
/	/	/	/
/	/	/	/
added equip.		any other	
rinse water /	8	adjustments /	
<b>TOTAL GALS.</b>		loaded onto	
<b>RECOVERED</b>	20	BTS vehicle #	87
BTS event #	time	date	
100518-FS2	1700	5/18/10	
signature			
*****			
<b>REC'D AT</b>	time	date	
BLAINE TECH SERVICES		5/18/10	
unloaded by			
signature			



ATTACHMENT B

LANCASTER LABORATORIES' JUNE 1, 2010 *ANALYTICAL RESULTS* REPORT

## ANALYTICAL RESULTS

Prepared by:

Lancaster Laboratories  
2425 New Holland Pike  
Lancaster, PA 17605-2425

Prepared for:

Chevron  
6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

June 01, 2010

Project: 94800

Submittal Date: 05/19/2010  
Group Number: 1195178  
PO Number: 0015061031  
Release Number: COSTA  
State of Sample Origin: CA

<u>Client Sample Description</u>	<u>Lancaster Labs (LLI) #</u>
MW-1-W-100518 NA Water	5984028
MW-2-W-100518 NA Water	5984029
MW-3-W-100518 NA Water	5984030
MW-4-W-100518 NA Water	5984031
MW-7-W-100518 NA Water	5984032
QA-T-100518 NA Water	5984033

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC      CRA

COPY TO

Attn: Nathan Lee

ELECTRONIC      Chevron c/o CRA

COPY TO

Attn: Report Contact

ELECTRONIC      CRA

COPY TO

Attn: Ian Hull



Questions? Contact your Client Services Representative  
Jill M Parker at (717) 656-2300 Ext. 1241

Respectfully Submitted,



**Robin C. Runkle**  
**Senior Specialist**

**Sample Description: MW-1-W-100518 NA Water**  
**Facility #94800 BTST**  
**1700 Castro St-Oakland T0600102076 MW-1**

**LLI Sample # WW 5984028**  
**LLI Group # 1195178**  
**Account # 10991**

**Project Name: 94800**

Collected: 05/18/2010 15:15 by FS

Chevron

6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

Submitted: 05/19/2010 08:50

Reported: 06/01/2010 16:25

Discard: 07/02/2010

CASM1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>						
10943	Benzene	71-43-2	N.D.	0.5	1	1
10943	t-Butyl alcohol	75-65-0	9	2	5	1
10943	Ethanol	64-17-5	N.D.	50	250	1
10943	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	230	0.5	1	1
10943	Toluene	108-88-3	N.D.	0.5	1	1
10943	Xylene (Total)	1330-20-7	N.D.	0.5	1	1
<b>GC Volatiles SW-846 8015B</b>						
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	100	1
<b>GC Extractable TPH SW-846 8015B</b>						
06609	TPH-DRO CA C10-C28	n.a.	110	32	100	1
<b>GC Miscellaneous SW-846 8015B modified</b>						
07105	Methane	74-82-8	N.D.	5.0	15	1
<b>Wet Chemistry EPA 300.0</b>						
00368	Nitrate Nitrogen	14797-55-8	5,800	250	500	5
00228	Sulfate	14808-79-8	101,000	3,000	10,000	10
<b>SM20 3500 Fe B modified</b>						
08344	Ferrous Iron	n.a.	170	10	100	1

### General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	Z101453AA	05/26/2010 01:11	Florida A Cimino	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z101453AA	05/26/2010 01:11	Florida A Cimino	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10141A20A	05/21/2010 18:29	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	10141A20A	05/21/2010 18:29	Marie D John	1
06609	TPH-DRO CA C10-C28	SW-846 8015B	1	101420002A	05/25/2010 21:07	Melissa McDermott	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	101440037A	05/26/2010 18:03	Elizabeth J Marin	1

\*=This limit was used in the evaluation of the final result



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description:** MW-1-W-100518 NA Water  
Facility #94800 BTST  
1700 Castro St-Oakland T0600102076 MW-1

LLI Sample # WW 5984028  
LLI Group # 1195178  
Account # 10991

**Project Name:** 94800

Collected: 05/18/2010 15:15 by FS

Chevron

6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

Submitted: 05/19/2010 08:50

Reported: 06/01/2010 16:25

Discard: 07/02/2010

CASM1

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution Factor
					Date	Time		
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	1	101420002A	05/23/2010	10:50	Timothy J Attenberger	1
00368	Nitrate Nitrogen	EPA 300.0	1	10140196601B	05/20/2010	16:43	Ashley M Adams	5
00228	Sulfate	EPA 300.0	1	10140196601B	05/25/2010	13:48	Ashley M Adams	10
08344	Ferrous Iron	SM20 3500 Fe B modified	1	10139834402A	05/19/2010	22:45	Daniel S Smith	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** MW-2-W-100518 NA Water  
 Facility #94800 BTST  
 1700 Castro St-Oakland T0600102076 MW-2

LLI Sample # WW 5984029  
 LLI Group # 1195178  
 Account # 10991

**Project Name:** 94800

Collected: 05/18/2010 16:40 by FS

Chevron

6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

Submitted: 05/19/2010 08:50

Reported: 06/01/2010 16:25

Discard: 07/02/2010

CASM2

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>						
10943	Benzene	71-43-2	N.D.	0.5	1	1
10943	t-Butyl alcohol	75-65-0	6	2	5	1
10943	Ethanol	64-17-5	N.D.	50	250	1
10943	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	22	0.5	1	1
10943	Toluene	108-88-3	N.D.	0.5	1	1
10943	Xylene (Total)	1330-20-7	N.D.	0.5	1	1
<b>GC Volatiles SW-846 8015B</b>						
01728	TPH-GRO N. CA water C6-C12	n.a.	580	50	100	1
<b>GC Extractable TPH SW-846 8015B</b>						
06609	TPH-DRO CA C10-C28	n.a.	1,100	32	100	1
<b>GC Miscellaneous SW-846 8015B modified</b>						
07105	Methane	74-82-8	1,700	50	150	10
<b>Wet Chemistry EPA 300.0</b>						
00368	Nitrate Nitrogen	14797-55-8	260 J	250	500	5
00228	Sulfate	14808-79-8	31,200	1,500	5,000	5
<b>SM20 3500 Fe B modified</b>						
08344	Ferrous Iron	n.a.	5,700	250	2,500	25

### General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	Z101453AA	05/26/2010 01:33	Florida A Cimino	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z101453AA	05/26/2010 01:33	Florida A Cimino	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10141A20A	05/21/2010 18:51	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	10141A20A	05/21/2010 18:51	Marie D John	1
06609	TPH-DRO CA C10-C28	SW-846 8015B	1	101420002A	05/26/2010 02:10	Melissa McDermott	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	101440037A	05/26/2010 16:57	Elizabeth J Marin	10

\*=This limit was used in the evaluation of the final result



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description:** MW-2-W-100518 NA Water  
Facility #94800 BTST  
1700 Castro St-Oakland T0600102076 MW-2

LLI Sample # WW 5984029  
LLI Group # 1195178  
Account # 10991

**Project Name:** 94800

Collected: 05/18/2010 16:40 by FS

Chevron

6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

Submitted: 05/19/2010 08:50

Reported: 06/01/2010 16:25

Discard: 07/02/2010

CASM2

## Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	1	101420002A	05/23/2010 10:50	Timothy J Attenberger	1
00368	Nitrate Nitrogen	EPA 300.0	1	10140196601B	05/20/2010 16:59	Ashley M Adams	5
00228	Sulfate	EPA 300.0	1	10140196601B	05/20/2010 16:59	Ashley M Adams	5
08344	Ferrous Iron	SM20 3500 Fe B modified	1	10139834402A	05/19/2010 22:45	Daniel S Smith	25

\*=This limit was used in the evaluation of the final result

**Sample Description:** MW-3-W-100518 NA Water  
 Facility #94800 BTST  
 1700 Castro St-Oakland T0600102076 MW-3

LLI Sample # WW 5984030  
 LLI Group # 1195178  
 Account # 10991

**Project Name:** 94800

Collected: 05/18/2010 16:15 by FS

Chevron

6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

Submitted: 05/19/2010 08:50

Reported: 06/01/2010 16:25

Discard: 07/02/2010

CASM3

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>						
10943	Benzene	71-43-2	11	0.5	1	1
10943	t-Butyl alcohol	75-65-0	470	2	5	1
10943	Ethanol	64-17-5	N.D.	50	250	1
10943	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	110	0.5	1	1
10943	Toluene	108-88-3	N.D.	0.5	1	1
10943	Xylene (Total)	1330-20-7	1	0.5	1	1
<b>GC Volatiles SW-846 8015B</b>						
01728	TPH-GRO N. CA water C6-C12	n.a.	63	J 50	100	1
<b>GC Extractable TPH SW-846 8015B</b>						
06609	TPH-DRO CA C10-C28	n.a.	150	32	100	1
<b>GC Miscellaneous SW-846 8015B modified</b>						
07105	Methane	74-82-8	48	5.0	15	1
<b>Wet Chemistry EPA 300.0</b>						
00368	Nitrate Nitrogen	14797-55-8	5,100	250	500	5
00228	Sulfate	14808-79-8	73,200	1,500	5,000	5
<b>SM20 3500 Fe B modified</b>						
08344	Ferrous Iron	n.a.	330	10	100	1

### General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	Z101453AA	05/26/2010 01:55	Florida A Cimino	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z101453AA	05/26/2010 01:55	Florida A Cimino	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10141A20A	05/21/2010 19:13	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	10141A20A	05/21/2010 19:13	Marie D John	1
06609	TPH-DRO CA C10-C28	SW-846 8015B	1	101420002A	05/26/2010 02:30	Melissa McDermott	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	101440037A	05/26/2010 00:16	Elizabeth J Marin	1

\*=This limit was used in the evaluation of the final result

**Sample Description:** MW-3-W-100518 NA Water  
 Facility #94800 BTST  
 1700 Castro St-Oakland T0600102076 MW-3

LLI Sample # WW 5984030  
 LLI Group # 1195178  
 Account # 10991

**Project Name:** 94800

Collected: 05/18/2010 16:15 by FS

Chevron

6001 Bollinger Canyon Rd L4310  
 San Ramon CA 94583

Submitted: 05/19/2010 08:50

Reported: 06/01/2010 16:25

Discard: 07/02/2010

CASM3

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution Factor
					Date	Time		
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	1	101420002A	05/23/2010	10:50	Timothy J Attenberger	1
00368	Nitrate Nitrogen	EPA 300.0	1	10140196602B	05/20/2010	17:15	Ashley M Adams	5
00228	Sulfate	EPA 300.0	1	10140196602B	05/20/2010	17:15	Ashley M Adams	5
08344	Ferrous Iron	SM20 3500 Fe B modified	1	10139834402A	05/19/2010	22:45	Daniel S Smith	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

**Sample Description:** MW-4-W-100518 NA Water  
 Facility #94800 BTST  
 1700 Castro St-Oakland T0600102076 MW-4

**LLI Sample #** WW 5984031  
**LLI Group #** 1195178  
**Account #** 10991

**Project Name:** 94800

Collected: 05/18/2010 14:30 by FS

Chevron

6001 Bollinger Canyon Rd L4310  
 San Ramon CA 94583

Submitted: 05/19/2010 08:50

Reported: 06/01/2010 16:25

Discard: 07/02/2010

CASM4

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>						
10943	t-Amyl methyl ether	994-05-8	4	0.5	1	1
10943	Benzene	71-43-2	N.D.	0.5	1	1
10943	t-Butyl alcohol	75-65-0	33	2	5	1
10943	Ethanol	64-17-5	N.D.	50	250	1
10943	Ethyl t-butyl ether	637-92-3	N.D.	0.5	1	1
10943	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10943	di-Isopropyl ether	108-20-3	N.D.	0.5	1	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	70	0.5	1	1
10943	Toluene	108-88-3	N.D.	0.5	1	1
10943	Xylene (Total)	1330-20-7	N.D.	0.5	1	1
<b>GC Volatiles SW-846 8015B</b>						
01728	TPH-GRO N. CA water C6-C12	n.a.	56	J 50	100	1
<b>GC Extractable TPH SW-846 8015B</b>						
06609	TPH-DRO CA C10-C28	n.a.	340	32	100	1
<b>GC Miscellaneous SW-846 8015B modified</b>						
07105	Methane	74-82-8	2,300	50	150	10
<b>Wet Chemistry EPA 300.0</b>						
00368	Nitrate Nitrogen	14797-55-8	N.D.	250	500	5
The holding time was not met. The client was notified and approved proceeding with the analysis.						
00228	Sulfate	14808-79-8	26,500	1,500	5,000	5
<b>SM20 3500 Fe B modified</b>						
08344	Ferrous Iron	n.a.	7,900	250	2,500	25

### General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	Z101443AA	05/25/2010 06:40	Florida A Cimino	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z101443AA	05/25/2010 06:40	Florida A Cimino	1

\*=This limit was used in the evaluation of the final result



**Sample Description: MW-4-W-100518 NA Water**  
**Facility #94800 BTST**  
**1700 Castro St-Oakland T0600102076 MW-4**

**LLI Sample # WW 5984031**  
**LLI Group # 1195178**  
**Account # 10991**

**Project Name: 94800**

Collected: 05/18/2010 14:30 by FS

Chevron

6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

Submitted: 05/19/2010 08:50

Reported: 06/01/2010 16:25

Discard: 07/02/2010

CASM4

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution Factor
					Date	Time		
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10141A20A	05/21/2010	19:35	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	10141A20A	05/21/2010	19:35	Marie D John	1
06609	TPH-DRO CA C10-C28	SW-846 8015B	1	101420002A	05/25/2010	21:27	Melissa McDermott	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	101440037A	05/26/2010	17:13	Elizabeth J Marin	10
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	1	101420002A	05/23/2010	10:50	Timothy J Attenberger	1
00368	Nitrate Nitrogen	EPA 300.0	1	10140196602B	05/20/2010	17:32	Ashley M Adams	5
00228	Sulfate	EPA 300.0	1	10140196602B	05/20/2010	17:32	Ashley M Adams	5
08344	Ferrous Iron	SM20 3500 Fe B modified	1	10139834402A	05/19/2010	22:45	Daniel S Smith	25



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-7-W-100518 NA Water  
Facility #94800 BTST  
1700 Castro St-Oakland T0600102076 MW-7

LLI Sample # WW 5984032  
LLI Group # 1195178  
Account # 10991

Project Name: 94800

Collected: 05/18/2010 15:45 by FS

Chevron

6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

Submitted: 05/19/2010 08:50

Reported: 06/01/2010 16:25

Discard: 07/02/2010

CASM7

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>						
10943	t-Amyl methyl ether	994-05-8	52	ug/l	ug/l	2
10943	Benzene	71-43-2	N.D.	1	2	2
10943	t-Butyl alcohol	75-65-0	N.D.	4	10	2
10943	Ethanol	64-17-5	N.D.	100	500	2
10943	Ethyl t-butyl ether	637-92-3	2	1	2	2
10943	Ethylbenzene	100-41-4	N.D.	1	2	2
10943	di-Isopropyl ether	108-20-3	N.D.	1	2	2
10943	Methyl Tertiary Butyl Ether	1634-04-4	2,400	10	20	20
10943	Toluene	108-88-3	N.D.	1	2	2
10943	Xylene (Total)	1330-20-7	N.D.	1	2	2
<b>GC Volatiles SW-846 8015B</b>						
01728	TPH-GRO N. CA water C6-C12	n.a.	76 J	ug/l	ug/l	1
<b>GC Extractable TPH SW-846 8015B</b>						
06609	TPH-DRO CA C10-C28	n.a.	160	ug/l	ug/l	1
<b>GC Miscellaneous SW-846 8015B modified</b>						
07105	Methane	74-82-8	6.5 J	ug/l	ug/l	1
<b>Wet Chemistry EPA 300.0</b>						
00368	Nitrate Nitrogen	14797-55-8	1,800	ug/l	ug/l	5
00228	Sulfate	14808-79-8	51,500	ug/l	ug/l	5
<b>SM20 3500 Fe B modified</b>						
08344	Ferrous Iron	n.a.	N.D.	ug/l	ug/l	1

### General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	Z101443AA	05/25/2010 07:02	Florida A Cimino	2
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	Z101443AA	05/25/2010 07:24	Florida A Cimino	20
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z101443AA	05/25/2010 07:02	Florida A Cimino	2
01163	GC/MS VOA Water Prep	SW-846 5030B	2	Z101443AA	05/25/2010 07:24	Florida A Cimino	20

\*=This limit was used in the evaluation of the final result

**Sample Description: MW-7-W-100518 NA Water**  
**Facility #94800 BTST**  
**1700 Castro St-Oakland T0600102076 MW-7**

**LLI Sample # WW 5984032**  
**LLI Group # 1195178**  
**Account # 10991**

**Project Name: 94800**

Collected: 05/18/2010 15:45 by FS

Chevron

6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

Submitted: 05/19/2010 08:50

Reported: 06/01/2010 16:25

Discard: 07/02/2010

CASM7

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis		Analyst	Dilution Factor
					Date	Time		
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10141A20A	05/21/2010	19:56	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	10141A20A	05/21/2010	19:56	Marie D John	1
06609	TPH-DRO CA C10-C28	SW-846 8015B	1	101420002A	05/25/2010	21:48	Melissa McDermott	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	101440037A	05/26/2010	00:54	Elizabeth J Marin	1
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	1	101420002A	05/23/2010	10:50	Timothy J Attenberger	1
00368	Nitrate Nitrogen	EPA 300.0	1	10140196602B	05/20/2010	17:48	Ashley M Adams	5
00228	Sulfate	EPA 300.0	1	10140196602B	05/20/2010	17:48	Ashley M Adams	5
08344	Ferrous Iron	SM20 3500 Fe B modified	1	10139834402A	05/19/2010	22:45	Daniel S Smith	1

**Sample Description: QA-T-100518 NA Water**  
**Facility #94800 BTST**  
**1700 Castro St-Oakland T0600102076 QA**

**LLI Sample # WW 5984033**  
**LLI Group # 1195178**  
**Account # 10991**

**Project Name: 94800**

Collected: 05/18/2010 13:00

Chevron

Submitted: 05/19/2010 08:50

6001 Bollinger Canyon Rd L4310

Reported: 06/01/2010 16:25

San Ramon CA 94583

Discard: 07/02/2010

CASQA

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>						
10943	Benzene	71-43-2	N.D.	0.5	1	1
10943	Ethylbenzene	100-41-4	N.D.	0.5	1	1
10943	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1	1
10943	Toluene	108-88-3	N.D.	0.5	1	1
10943	Xylene (Total)	1330-20-7	N.D.	0.5	1	1
<b>GC Volatiles SW-846 8015B</b>						
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	100	1

### General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10943	BTEX/MTBE 8260 Water	SW-846 8260B	1	Z101522AA	06/01/2010 12:50	Ginelle L Feister	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	Z101522AA	06/01/2010 12:50	Ginelle L Feister	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10141A20A	05/21/2010 16:41	Marie D John	1
01146	GC VOA Water Prep	SW-846 5030B	1	10141A20A	05/21/2010 16:41	Marie D John	1

## Quality Control Summary

 Client Name: Chevron  
 Reported: 06/01/10 at 04:25 PM

Group Number: 1195178

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

### Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: Z101443AA									
Sample number(s): 5984031-5984032									
t-Amyl methyl ether	N.D.	0.5	1	ug/l	96	99	77-120	3	30
Benzene	N.D.	0.5	1	ug/l	94	95	79-120	1	30
t-Butyl alcohol	N.D.	2.	5	ug/l	91	92	73-120	1	30
Ethanol	N.D.	50.	250	ug/l	96	101	40-158	5	30
Ethyl t-butyl ether	N.D.	0.5	1	ug/l	95	96	76-120	2	30
Ethylbenzene	N.D.	0.5	1	ug/l	96	97	79-120	1	30
di-Isopropyl ether	N.D.	0.5	1	ug/l	94	96	71-124	2	30
Methyl Tertiary Butyl Ether	N.D.	0.5	1	ug/l	95	97	76-120	2	30
Toluene	N.D.	0.5	1	ug/l	96	96	79-120	1	30
Xylene (Total)	N.D.	0.5	1	ug/l	97	98	80-120	2	30
Batch number: Z101453AA									
Sample number(s): 5984028-5984030									
Benzene	N.D.	0.5	1	ug/l	95		79-120		
t-Butyl alcohol	N.D.	2.	5	ug/l	93		73-120		
Ethanol	N.D.	50.	250	ug/l	94		40-158		
Ethylbenzene	N.D.	0.5	1	ug/l	97		79-120		
Methyl Tertiary Butyl Ether	N.D.	0.5	1	ug/l	95		76-120		
Toluene	N.D.	0.5	1	ug/l	97		79-120		
Xylene (Total)	N.D.	0.5	1	ug/l	98		80-120		
Batch number: Z101522AA									
Sample number(s): 5984033									
Benzene	N.D.	0.5	1	ug/l	92		79-120		
Ethylbenzene	N.D.	0.5	1	ug/l	96		79-120		
Methyl Tertiary Butyl Ether	N.D.	0.5	1	ug/l	93		76-120		
Toluene	N.D.	0.5	1	ug/l	95		79-120		
Xylene (Total)	N.D.	0.5	1	ug/l	97		80-120		
Batch number: 10141A20A									
Sample number(s): 5984028-5984033									
TPH-GRO N. CA water C6-C12	N.D.	50.	100	ug/l	109	100	75-135	9	30
Batch number: 101420002A									
Sample number(s): 5984028-5984032									
TPH-DRO CA C10-C28	N.D.	32.	100	ug/l	88	85	56-122	3	20
Batch number: 101440037A									
Sample number(s): 5984028-5984032									
Methane	N.D.	5.0	15	ug/l	87		80-120		
Batch number: 10140196601B									
Sample number(s): 5984028-5984029									
Nitrate Nitrogen	N.D.	50.	100	ug/l	101		90-110		
Sulfate	N.D.	300.	1,000	ug/l	99		89-110		
Batch number: 10140196602B									
Sample number(s): 5984030-5984032									
Nitrate Nitrogen	N.D.	50.	100	ug/l	100		90-110		
Sulfate	N.D.	300.	1,000	ug/l	99		89-110		
Batch number: 10139834402A									
Sample number(s): 5984028-5984032									
Ferrous Iron	N.D.	10.	100	ug/l	99		92-105		

\*- Outside of specification

\*\*-This limit was used in the evaluation of the final result for the blank

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

## Quality Control Summary

Client Name: Chevron

Group Number: 1195178

Reported: 06/01/10 at 04:25 PM

### Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL**</u>	<u>Blank LOQ</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
----------------------	---------------------	--------------------	------------------	---------------------	-----------------	------------------	------------------------	------------	----------------

### Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS %REC</u>	<u>MSD %REC</u>	<u>MS/MSD Limits</u>	<u>RPD</u>	<u>RPD MAX</u>	<u>BKG Conc</u>	<u>DUP Conc</u>	<u>DUP RPD</u>	<u>Dup RPD Max</u>
Batch number: Z101443AA	Sample number(s): 5984031-5984032 UNSPK: P986102								
t-Amyl methyl ether	102		75-122						
Benzene	102		80-126						
t-Butyl alcohol	93		67-119						
Ethanol	99		37-164						
Ethyl t-butyl ether	100		74-122						
Ethylbenzene	107		71-134						
di-Isopropyl ether	99		70-129						
Methyl Tertiary Butyl Ether	97		72-126						
Toluene	104		80-125						
Xylene (Total)	106		79-125						
Batch number: Z101453AA	Sample number(s): 5984028-5984030 UNSPK: P984005								
Benzene	100	100	80-126	0	30				
t-Butyl alcohol	91	91	67-119	0	30				
Ethanol	98	97	37-164	1	30				
Ethylbenzene	102	103	71-134	1	30				
Methyl Tertiary Butyl Ether	99	98	72-126	1	30				
Toluene	102	103	80-125	1	30				
Xylene (Total)	103	103	79-125	0	30				
Batch number: Z101522AA	Sample number(s): 5984033 UNSPK: P992158								
Benzene	101	101	80-126	1	30				
Ethylbenzene	101	103	71-134	2	30				
Methyl Tertiary Butyl Ether	94	98	72-126	3	30				
Toluene	102	103	80-125	1	30				
Xylene (Total)	103	105	79-125	1	30				
Batch number: 10141A20A	Sample number(s): 5984028-5984033 UNSPK: P983788								
TPH-GRO N. CA water C6-C12	100		63-154						
Batch number: 101440037A	Sample number(s): 5984028-5984032 UNSPK: P984779								
Methane	-1667	-1833	35-157	8	20				
	(2)	(2)							
Batch number: 10140196601B	Sample number(s): 5984028-5984029 UNSPK: P984335 BKG: P984335								
Nitrate Nitrogen	117*		90-110			13,100	13,100	0	20
Sulfate	100		90-110			9,000	8,200	9 (1)	20
Batch number: 10140196602B	Sample number(s): 5984030-5984032 UNSPK: P984997 BKG: P984997								
Nitrate Nitrogen	121*		90-110			N.D.	N.D.	0 (1)	20
Sulfate	117*		90-110			69,500	69,100	1	20
Batch number: 10139834402A	Sample number(s): 5984028-5984032 UNSPK: 5984029 BKG: 5984029								

\*- Outside of specification

\*\*-This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

## Quality Control Summary

 Client Name: Chevron  
 Reported: 06/01/10 at 04:25 PM

Group Number: 1195178

### Sample Matrix Quality Control

 Unspiked (UNSPK) = the sample used in conjunction with the matrix spike  
 Background (BKG) = the sample used in conjunction with the duplicate

<u>Analysis Name</u>	<u>MS</u> <u>%REC</u>	<u>MSD</u> <u>%REC</u>	<u>MS/MSD</u> <u>Limits</u>	<u>RPD</u>	<u>RPD</u> <u>MAX</u>	<u>BKG</u> <u>Conc</u>	<u>DUP</u> <u>Conc</u>	<u>DUP</u> <u>RPD</u>	<u>Dup RPD</u> <u>Max</u>
Ferrous Iron	99	98	73-120	1	6	5,700	5,700	0 (1)	5

### Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: UST VOCs by 8260B - Water

Batch number: Z101443AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5984031	100	97	100	98
5984032	99	97	101	99
Blank	100	97	101	99
LCS	99	99	100	98
LCSD	100	99	101	100
MS	100	99	101	112
Limits:	80-116	77-113	80-113	78-113

Analysis Name: UST VOCs by 8260B - Water

Batch number: Z101453AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5984028	99	97	101	98
5984029	99	97	101	99
5984030	99	97	101	98
Blank	98	96	101	98
LCS	100	99	101	98
MS	99	98	101	98
MSD	99	98	101	99
Limits:	80-116	77-113	80-113	78-113

Analysis Name: UST VOCs by 8260B - Water

Batch number: Z101522AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
5984033	99	98	100	97
Blank	98	97	99	97
LCS	98	97	99	97
MS	98	99	99	97
MSD	99	100	100	98
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TPH-GRO N. CA water C6-C12

Batch number: 10141A20A

Trifluorotoluene-F

\*- Outside of specification

\*\*-This limit was used in the evaluation of the final result for the blank

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

## Quality Control Summary

Client Name: Chevron  
Reported: 06/01/10 at 04:25 PM

Group Number: 1195178

### Surrogate Quality Control

5984028	94
5984029	94
5984030	91
5984031	92
5984032	94
5984033	90
Blank	92
LCS	115
LCSD	115
MS	109

---

Limits: 63-135

Analysis Name: TPH-DRO CA C10-C28  
Batch number: 101420002A  
Orthoterphenyl

5984028	84
5984029	91
5984030	82
5984031	84
5984032	75
Blank	87
LCS	106
LCSD	105

---

Limits: 59-131

Analysis Name: Volatile Headspace Hydrocarbon  
Batch number: 101440037A  
Propene

5984028	47
5984029	91
5984030	47
5984031	86
5984032	46
Blank	87
LCS	87
MS	68
MSD	57

---

Limits: 42-131

\*- Outside of specification

\*\* - This limit was used in the evaluation of the final result for the blank

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.



Account # 10991 Group # 1195178

CHAIN OF CUSTODY FORM

Sample # 5984028-33

Chevron Environmental Management Company - 6111 Bollinger Canyon Rd. - San Ramon, CA 94583

COC 1 of 1

Chevron Site Number: 94800  
 Chevron Site Global ID: T0600102076  
 Chevron Site Address: 1700 Casrto St., Oakland, CA  
 Chevron PM: AARON COSTA  
 Chevron PM Phone No.: (925)543-2961  
 Retail and Terminal Business Unit (RTBU) Job  
 Construction/Retail Job

Chevron Consultant: CRA  
 Address: 5900 Hollis St. Suite A Emeryville, CA  
 CA Consultant Contact: Nathan Lee  
 Consultant Phone No. 510-420-3333  
 Consultant Project No. 100518-F51  
 Sampling Company: Blaine Tech Services  
 Sampled By (Print): F. SPIWONGSANG  
 Sampler Signature: [Signature]

ANALYSES REQUIRED

# H  H  H  H  H  H  H  H  H  H  H

EPA 8260B/GCMS TPH/G  BTEX  MTBE  OXYGENATES  HVOC   EPA 8015B GRO  DRO  ORO  HC SCREEN   EPA 8021B BTEX  MTBE   EPA 6010 Ca, Fe, K, Mg, Mn, Na  EPA 6010/7000 TITL 22 METALS  TLIC  STLC  EPA 150.1 PH  EPA 310.1 ALKALINITY  SM2510B SPECIFIC CONDUCTIVITY  EPA 418.1 TRPH  EPA 413.1 OIL & GREASE  EPA 8260 ETHANOL  EPA 8015 TPH-D

NITRATES & SULFATES (300.0) METHANE (8015M) TBA  
 ISEBANS 180M (SM 12 FE 350)

Preservation Codes  
 H = HCL T = Thiosulfate  
 N = HNO<sub>3</sub> B = NaOH  
 S = H<sub>2</sub>SO<sub>4</sub> O = Other

Special Instructions  
 Must meet lowest detection limits possible for 8260 Compounds

Charge Code: **NWRTB-0094800-0-OML**  
 NWRTB 00SITE NUMBER-0-WBS  
**(WBS ELEMENTS:**  
 SITE ASSESSMENT: **A1L** REMEDIATION IMPLEMENTATION: **R5L**  
 SITE MONITORING: **OML** OPERATION MAINTENANCE & MONITORING: **M1L**  
 THIS IS A LEGAL DOCUMENT. ALL FIELDS MUST BE FILLED OUT CORRECTLY AND COMPLETELY.

**Lancaster Laboratories**  
 Lancaster, PA  
 Lab Contact: Jill Parker  
 2425 New Holland Pike,  
 Lancaster, PA 17601  
 Phone No:  
 (717)656-2300

Other Lab	Temp. Blank Check Time	Temp.
	<u>1300</u>	<u>0.0</u>
	<u>1500</u>	<u>0.0</u>
	<u>1645</u>	<u>0.0</u>

SAMPLE ID				Sample Time	# of Containers	Container Type	ANALYSES REQUIRED											Notes/Comments																																	
Field Point Name	Matrix	Top Depth	Date (yymmdd)				EPA 8260B/GCMS	TPH/G	BTEX	MTBE	OXYGENATES	HVOC	EPA 8015B	GRO	DRO	ORO	HC SCREEN		EPA 8021B	BTEX	MTBE	EPA 6010	Ca, Fe, K, Mg, Mn, Na	EPA 6010/7000	TITL	22 METALS	TLIC	STLC	EPA 150.1	PH	SM2510B	SPECIFIC CONDUCTIVITY	EPA 418.1	TRPH	EPA 413.1	OIL & GREASE	EPA 8260	ETHANOL	EPA 8015	TPH-D											
MW-1	W		100518	1515	13	VOAS AMBERS	X	X																																											
MW-2	↓		↓	1640	13	↓	X	X																																											
MW-3	↓		↓	1615	13	↓	X	X																																											
MW-4	↓		↓	1430	13	↓	X	X																																											
MW-7	↓		↓	1545	13	↓	X	X																																											
QA	T		↓	1300	2	↓	X	X																																											

Relinquished By: [Signature] Company: BTS Date/Time: 5-10-17 1700  
 Relinquished To: [Signature] Company: LLI Date/Time: 5/18/17 1700  
 Relinquished By: [Signature] Company: [Blank] Date/Time: [Blank]  
 Relinquished To: [Signature] Company: LLI Date/Time: 5/18/17 0850

Turnaround Time: Standard  24 Hours  48 hours  72 Hours  Other  SHORT & OLD  
 Sample Integrity: (Check by lab on arrival) NITRATE/FERROUS IRON  
 Intact:  On Ice:  Temp: 14-20  
 COC #

## Lancaster Laboratories Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>N.D.</b>	none detected	<b>BMQL</b>	Below Minimum Quantitation Level
<b>TNTC</b>	Too Numerous To Count	<b>MPN</b>	Most Probable Number
<b>IU</b>	International Units	<b>CP Units</b>	cobalt-chloroplatinate units
<b>umhos/cm</b>	micromhos/cm	<b>NTU</b>	nephelometric turbidity units
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>Cal</b>	(diet) calories	<b>lb.</b>	pound(s)
<b>meq</b>	milliequivalents	<b>kg</b>	kilogram(s)
<b>g</b>	gram(s)	<b>mg</b>	milligram(s)
<b>ug</b>	microgram(s)	<b>l</b>	liter(s)
<b>ml</b>	milliliter(s)	<b>ul</b>	microliter(s)
<b>m3</b>	cubic meter(s)	<b>fib &gt;5 um/ml</b>	fibers greater than 5 microns in length per ml
<b>&lt;</b>	less than – The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
<b>&gt;</b>	greater than		
<b>ppm</b>	parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.		

U.S. EPA data qualifiers:

### Organic Qualifiers

<b>A</b>	TIC is a possible aldol-condensation product
<b>B</b>	Analyte was also detected in the blank
<b>C</b>	Pesticide result confirmed by GC/MS
<b>D</b>	Compound quantitated on a diluted sample
<b>E</b>	Concentration exceeds the calibration range of the instrument
<b>J</b>	Estimated value
<b>N</b>	Presumptive evidence of a compound (TICs only)
<b>P</b>	Concentration difference between primary and confirmation columns >25%
<b>U</b>	Compound was not detected
<b>X,Y,Z</b>	Defined in case narrative

### Inorganic Qualifiers

<b>B</b>	Value is <CRDL, but ≥IDL
<b>E</b>	Estimated due to interference
<b>M</b>	Duplicate injection precision not met
<b>N</b>	Spike amount not within control limits
<b>S</b>	Method of standard additions (MSA) used for calculation
<b>U</b>	Compound was not detected
<b>W</b>	Post digestion spike out of control limits
<b>*</b>	Duplicate analysis not within control limits
<b>+</b>	Correlation coefficient for MSA <0.995

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

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ATTACHMENT C

BIOPARAMETER DATA

## ATTACHMENT C

**BIOPARAMETER DATA**  
**CHEVRON SERVICE STATION 9-4800**  
**1700 CASTRO STREET, OAKLAND, CALIFORNIA**

<i>Well ID</i>	<i>Date</i>	<i>TPHd (µg/L)</i>	<i>MTBE (µg/L)</i>	<i>DO pre-purge (mg/L)</i>	<i>ORP pre-purge (mV)</i>	<i>Nitrate (µg/L)</i>	<i>Sulfate (µg/L)</i>	<i>Dissolved Total Ferrous Iron (µg/L)</i>	<i>Methane (µg/L)</i>
MW-3	5/18/2010	150	110	0.59	96	5,100	73,200	330	48
MW-2	5/18/2010	1,100	22	0.44	-95	260	31,200	5,700	1,700
MW-1	5/18/2010	110	230	0.50	-3	5,800	101,000	170	< 5.0
MW-4	5/18/2010	340	70	0.39	-25	< 250 a	26,500	7,900	2,300
MW-7	5/18/2010	160	2,400	0.70	110	1,800	51,500	< 10	6.5 J
<i>Ideal Relationship With Hydrocarbon Concentrations</i>				Inverse	Inverse	Inverse	Inverse	Direct	Direct
<i>Observed Relationship With TPHd Concentrations</i>				Inverse	Inverse	Inverse	Inverse	Direct	Direct
<i>Observed Relationship With MTBE Concentrations</i>				Direct	Direct	Direct	Direct	Inverse	Inverse
<i>Sufficient DO or ORP for Intrinsic Aerobic Bioremediation In the Source Area</i>				No	No				

**EXPLANATIONS:**

TPHg = Total petroleum hydrocarbons as gasoline as presented in Table 1

MTBE= Methyl Tertiary Butyl Ether as presented in Table 1

Total TPHg + MTBE = Sum of TPHg and MTBE concentrations

DO = Dissolved oxygen (measured in the field)

ORP = Oxidation reduction potential (measured in the field)

Nitrate and Sulfate by EPA Method 300.0

Dissolved total ferrous iron by SM20 3500 Fe B modified

Methane by EPA Method 8015B Modified

µg/L = micrograms per liter

mg/L = milligrams per liter

mV= millivolt

a= Laboratory hold time not met

&lt;x = Below laboratory method detection limit x

J= Estimated value

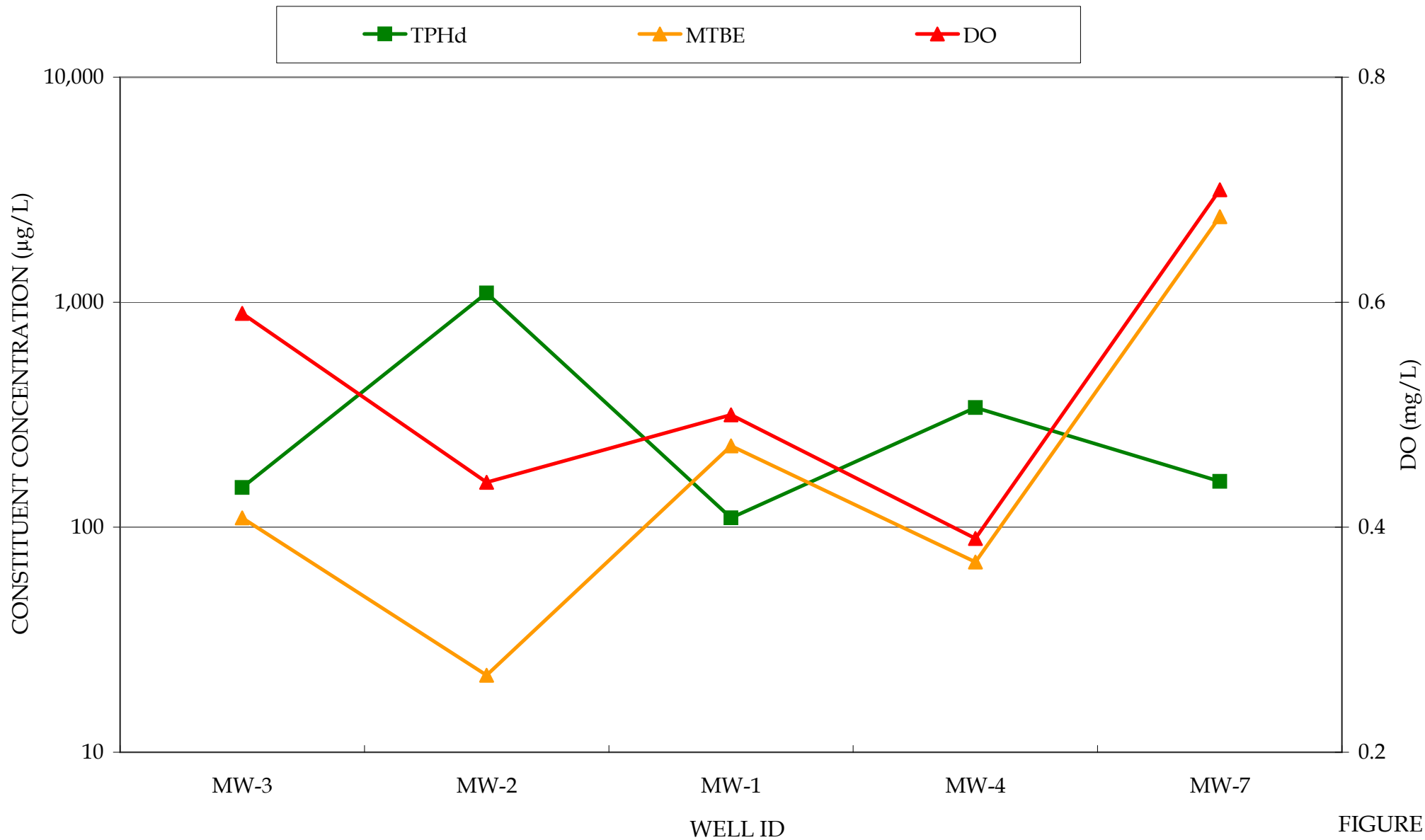


FIGURE  
A

CHEVRON SERVICE STATION 9-4800  
1700 CASTRO STREET  
OAKLAND, CALIFORNIA



DISSOLVED OXYGEN (DO) VERSUS TOTAL  
PETROLEUM HYDROCARBONS AS DIESEL  
(TPHd) AND METHYL TERTIARY BUTYL  
ETHER (MTBE)

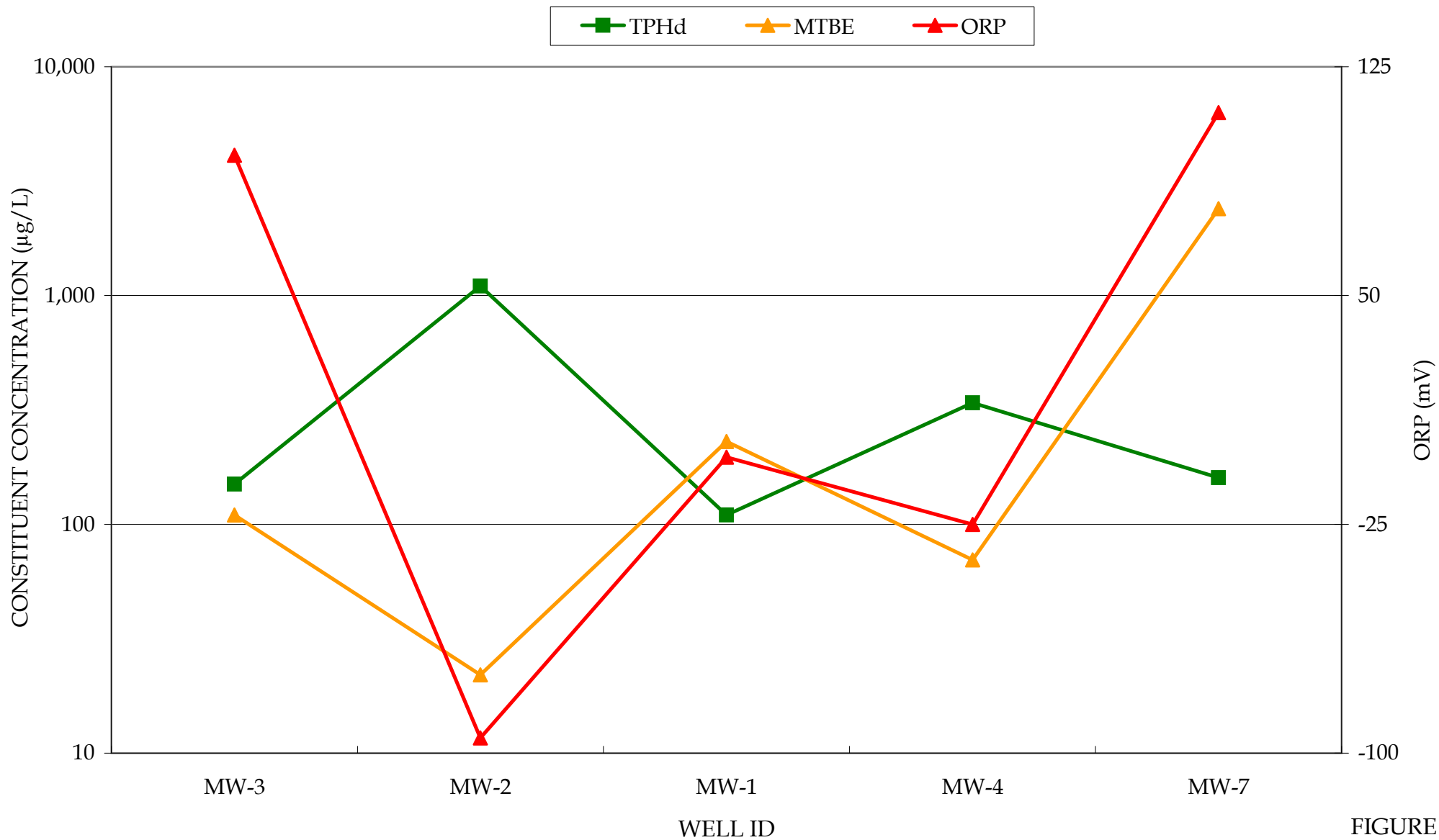


FIGURE  
B

CHEVRON SERVICE STATION 9-4800  
1700 CASTRO STREET  
OAKLAND, CALIFORNIA



**CONESTOGA-ROVERS**  
& ASSOCIATES

OXYGEN REDUCTION POTENTIAL (ORP) VERSUS TOTAL  
PETROLEUM HYDROCARBONS AS DIESEL (TPHd) AND  
METHYL TERTIARY BUTYL ETHER (MTBE)

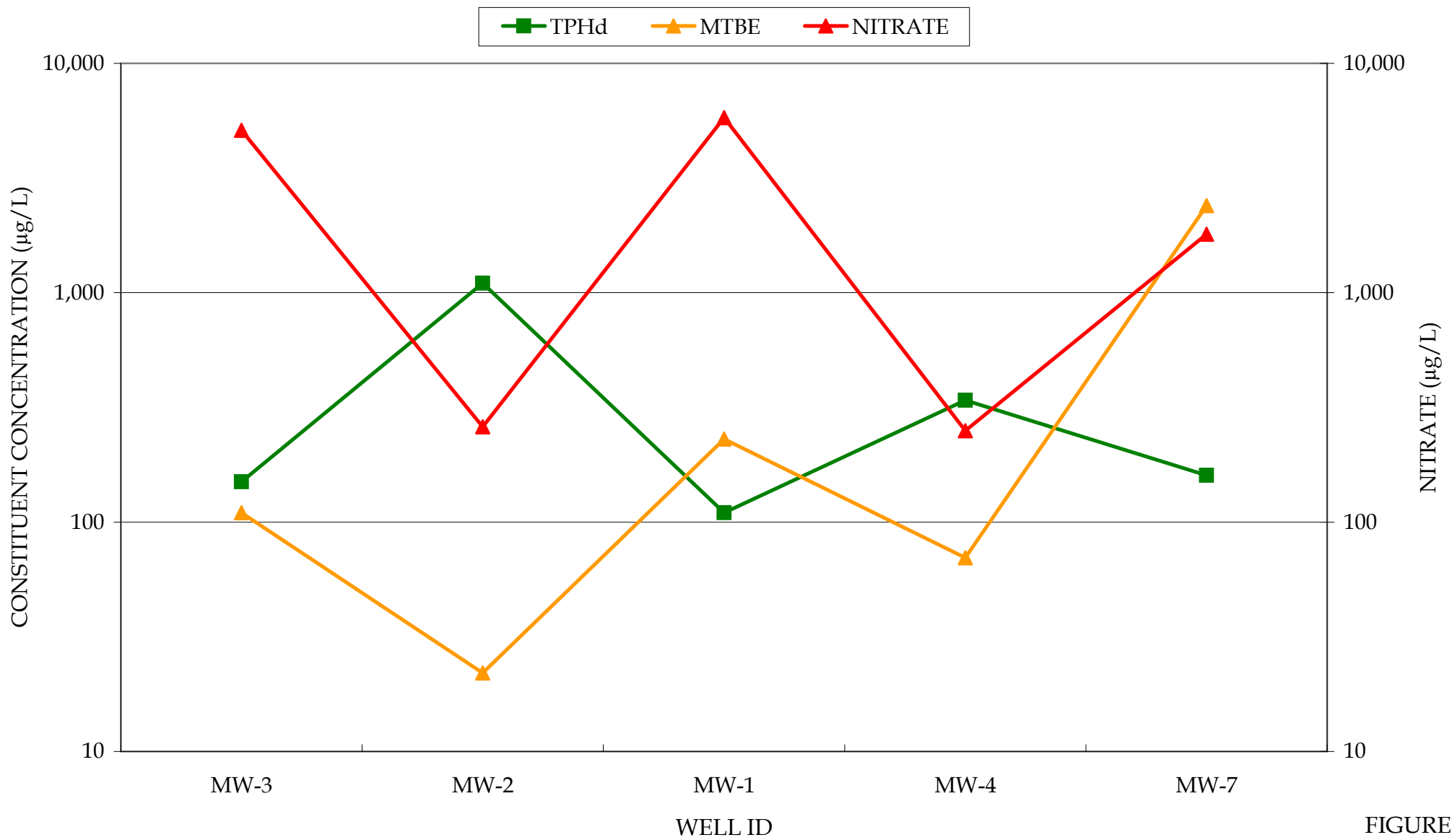


FIGURE  
C

CHEVRON SERVICE STATION 9-4800  
1700 CASTRO STREET  
OAKLAND, CALIFORNIA



**CONESTOGA-ROVERS  
& ASSOCIATES**

NITRATE VERSUS TOTAL PETROLEUM  
HYDROCARBONS AS DIESEL (TPHd) AND METHYL  
TERTIARY BUTYL ETHER (MTBE)

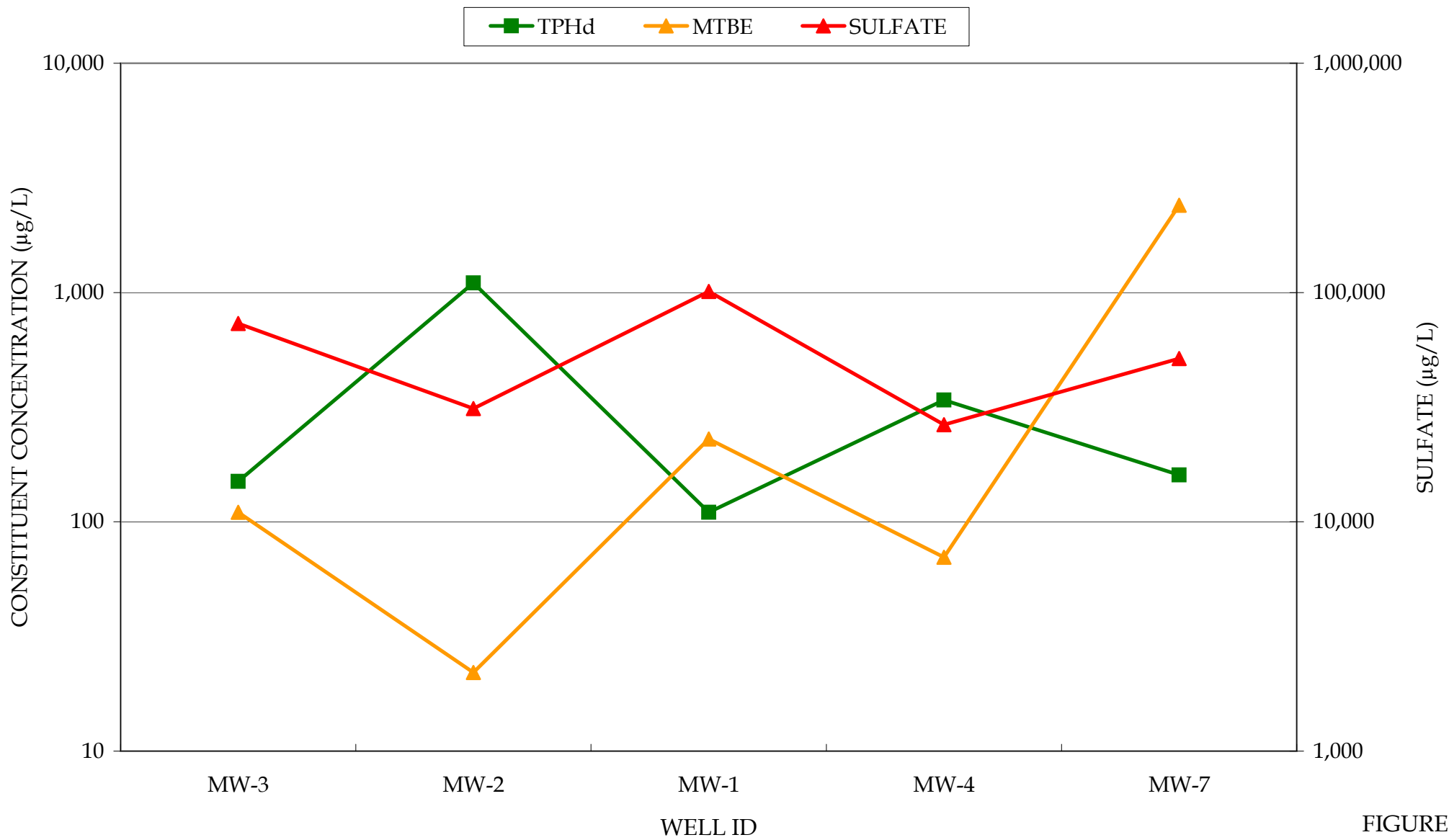


FIGURE  
D

CHEVRON SERVICE STATION 9-4800  
1700 CASTRO STREET  
OAKLAND, CALIFORNIA



**CONESTOGA-ROVERS**  
& ASSOCIATES

SULFATE VERSUS TOTAL PETROLEUM  
HYDROCARBONS AS DIESEL (TPHd) AND METHYL  
TERTIARY BUTYL ETHER (MTBE)



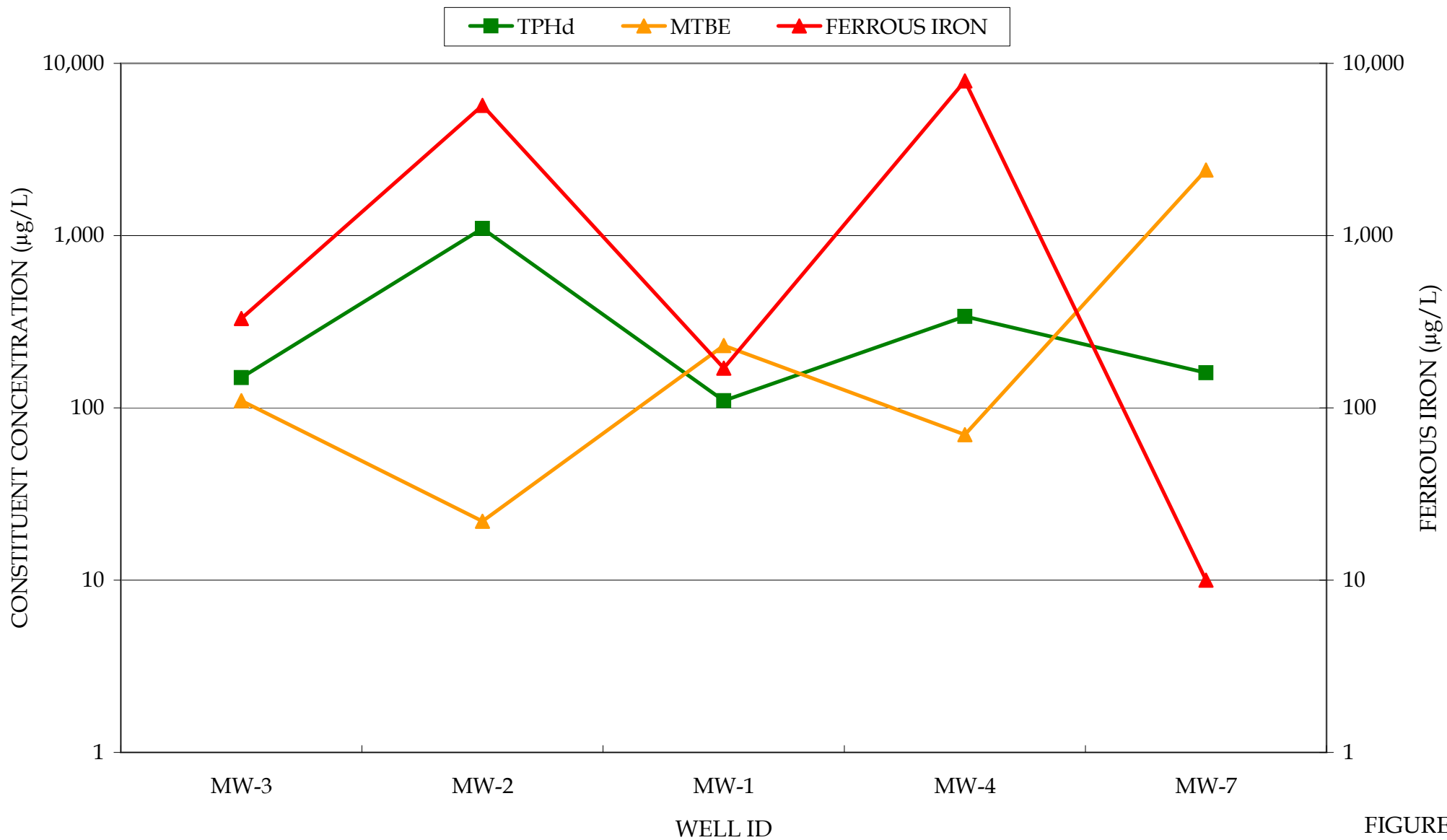


FIGURE  
E

CHEVRON SERVICE STATION 9-4800  
1700 CASTRO STREET  
OAKLAND, CALIFORNIA



**CONESTOGA-ROVERS  
& ASSOCIATES**

FERROUS IRON VERSUS TOTAL PETROLEUM  
HYDROCARBONS AS DIESEL (TPHd) AND METHYL  
TERTIARY BUTYL ETHER (MTBE)

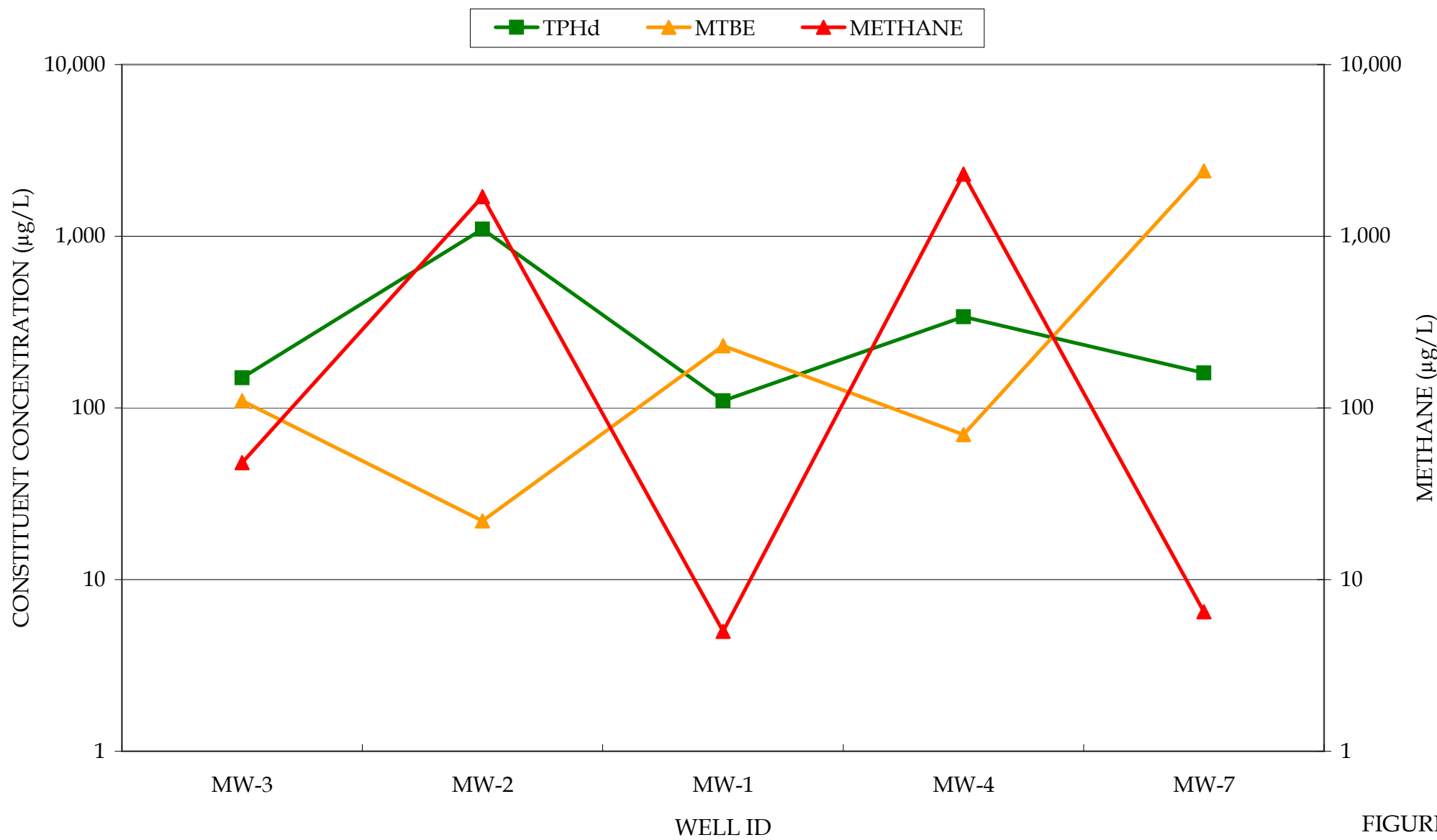


FIGURE  
F

CHEVRON SERVICE STATION 9-4800  
1700 CASTRO STREET  
OAKLAND, CALIFORNIA



**CONESTOGA-ROVERS**  
& ASSOCIATES

METHANE VERSUS TOTAL PETROLEUM  
HYDROCARBONS AS DIESEL (TPHd) AND METHYL  
TERTIARY BUTYL ETHER (MTBE)

ATTACHMENT D

COMPOUND SPECIFIC ISOTOPE ANALYSIS LABORATORY ANALYTICAL DATA



# The University of Oklahoma®

CONOCOPHILLIPS SCHOOL OF GEOLOGY AND GEOPHYSICS

**Client** Chevron & CRA  
**Project name #** 9-4800/060061  
**OU Project Ref. #** 440  
**Number/Type of Samples** 5/water  
**Analysis Required** C CSIA, MTBE, TBA  
**Date Received** 5/20/2010  
**Date Analysis Completed** 6/4/2010

## Notes

"corrected  $\delta^{13}C$ ": the correction [X] accounts for the method bias, based on the external standard runs, see QAQC data below.

"corrected  $\delta^{13}C$ " should be used to compare data from different sampling events  
na/nd—peak not acquired (above quantitation limit, if so the sample was rerun with higher dilution  
higher dilution x) or compound not detected

bql—signal below quantitation limit

## Replicate runs

Run #	Sample ID	dilution x	TBA $\delta^{13}C$ ‰	MtBE $\delta^{13}C$ ‰
6518	MW-1	51	na/nd	-31.9
6525	MW-2	13	na/nd	-28.5
6532	MW-2	3	na/nd	-28.6
6522	MW-3	28	-28.3	-18.3
6527	MW-3	17	-28.2	-18.2
6523	MW-4	25	na/nd	-27.1
6528	MW-4	8	na/nd	-27.0
6534	MW-4	1	-26.1	na/nd
6517	MW-7	463	na/nd	-33.4
6531	MW-7	357	na/nd	-33.2

## QAQC, standards

Run #	Sample ID	TBA $\delta^{13}C$ ‰	MtBE $\delta^{13}C$ ‰
6511	standard	na/nd	-29.6
6519	standard	-24.8	-29.4
6520	standard	-24.4	-29.1
6521	standard	-24.3	-29.1
6524	standard	-24.1	-29.1
6530	standard	-24.2	-28.9
6533	standard	-24.3	-29.3
	average $\delta^{13}C$	-24.4	-29.2
	max stdev n=2	0.5	0.5
	off-line $\delta^{13}C$ of Std compound	-25.2	-29.8
	correction [x]	-0.9	-0.6





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Averages	Corrected $\delta^{13}\text{C}$ ‰	
	Sample ID	Corrected $\delta^{13}\text{C}$ ‰
	TBA $\delta^{13}\text{C}$ ‰	MtBE $\delta^{13}\text{C}$ ‰
	MW-1	bql -32.5
	MW-2	bql -29.1
	MW-3	-29.1 -18.8
	MW-4	-27.0 -27.6
	MW-7	bql -33.9

## QAQC – precision

Sample ID	Dev of replicate $\delta^{13}\text{C}$	
MW-2		0.1
MW-3	0.1	0.1
MW-4		0.1
MW-7		0.1

