

**RECEIVED**

By dehloptoxic at 1:52 pm, Feb 28, 2007

C A M B R I A

November 7, 2005

Mr. Barney Chan  
Alameda County Health Care Services  
Department of Environmental Health  
1153 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577

Re: **Interim Corrective Action Overpurge Results**  
Wells MW-2, MW-4 and MW-7, October 13, 2005  
Former Chevron Service Station No. 9-1851  
451 Hegenberger Road.  
Oakland, California



Dear Mr. Chan:

Cambria Environmental Technology, Inc. (Cambria) has been requested by Chevron Environmental Management Company (Chevron) to conduct periodic overpurging of groundwater at the site referenced above. Overpurge events were approved as part of Delta Environmental Consultants, Inc. (Delta) *Interim Corrective Action Plan*, dated August 1, 2000. A total of 13 overpurge events have taken place since May 2001. Site vicinity map and site plan are presented as Figures 1 and 2, respectively.

Presented below are the results of the overpurge event conducted on October 13, 2005. Fieldwork included collecting depth to water measurements for all wells and collecting pre- and post-purge groundwater samples from the purged wells (MW-2, MW-4, MW-7) for chemical analysis of dissolved petroleum hydrocarbons.

Groundwater elevations were calculated for monitoring wells MW-1 through MW-7 using depth to groundwater measurements. Groundwater elevations and depth to water data are presented in Table 1. Measurements recorded on October 13, 2005 were used to create the pre- and post-purge groundwater elevation contour maps shown as Figures 3 and 4, respectively.

## **SCOPE OF WORK AND RESULTS**

The purging of monitoring wells MW-2, MW-4 and MW-7 occurred over approximately 8 hours and included the extraction of approximately 300 gallons. Groundwater samples were collected from each well before and after the overpurge event.

**Cambria  
Environmental  
Technology, Inc.**

5900 Hollis Street  
Suite A  
Emeryville, CA 94608  
Tel (510) 420-0700  
Fax (510) 420-9170

**Laboratory Analysis:** Selected groundwater samples were analyzed for:

- Total Petroleum Hydrocarbons as gasoline (TPHg) by modified EPA Method 8015;
- TPH as diesel (TPHd) by modified EPA Method 8015;
- TPH as motor oil (TPHmo) by modified EPA Method 8015;
- BTEX and MTBE by EPA Method 8260B.



**Volume of Impacted Groundwater Removed:** A volume of approximately 300 gallons of groundwater was extracted from monitoring wells MW-2, MW-4 and MW-7 during this overpurge event. Based on average concentrations of TPHg and MTBE in samples collected from MW-2, MW-4 and MW-7, an estimated 0.000005 gallons of TPHg and 0.000039 gallons of MTBE were extracted during this event. A cumulative approximate volume of 0.002002 gallons of TPHg and 0.008991 gallons of MTBE have been extracted from the site over the course of these 13 overpurge events. Groundwater extraction data are shown in Table 2.

## **CLOSING**

A total of thirteen overpurge events have been completed at this site over the past four years. With the cumulative removal of approximately 5,988 gallons of hydrocarbon impacted groundwater, a minimal calculated volume of hydrocarbons have been extracted using this method. Dissolved hydrocarbon concentrations have shown decreasing trends at the site. However, Cambria believes this is more likely due to natural attenuation of hydrocarbons in the subsurface. Therefore, based on the most current groundwater monitoring report and historical overpurge results, Cambria feels that continuation of this process is an ineffective method of accelerating remediation and requests approval to cease overpurge activities. Cambria will continue monitoring natural attenuation of hydrocarbons in groundwater beneath the site and, depending on future trends, will evaluate the need for additional active remediation.

Please contact Laura Genin at (510) 420-3367 or lgenin@cambria-env.com with any questions or comments.

Sincerely,  
**Cambria Environmental Technology, Inc.**

*Laura Genin*

Laura Genin  
Senior Staff Geologist

*Robert Foss*

Robert Foss, P.G. #7445  
Associate Geologist

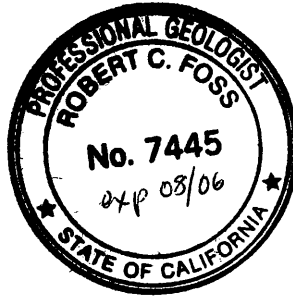


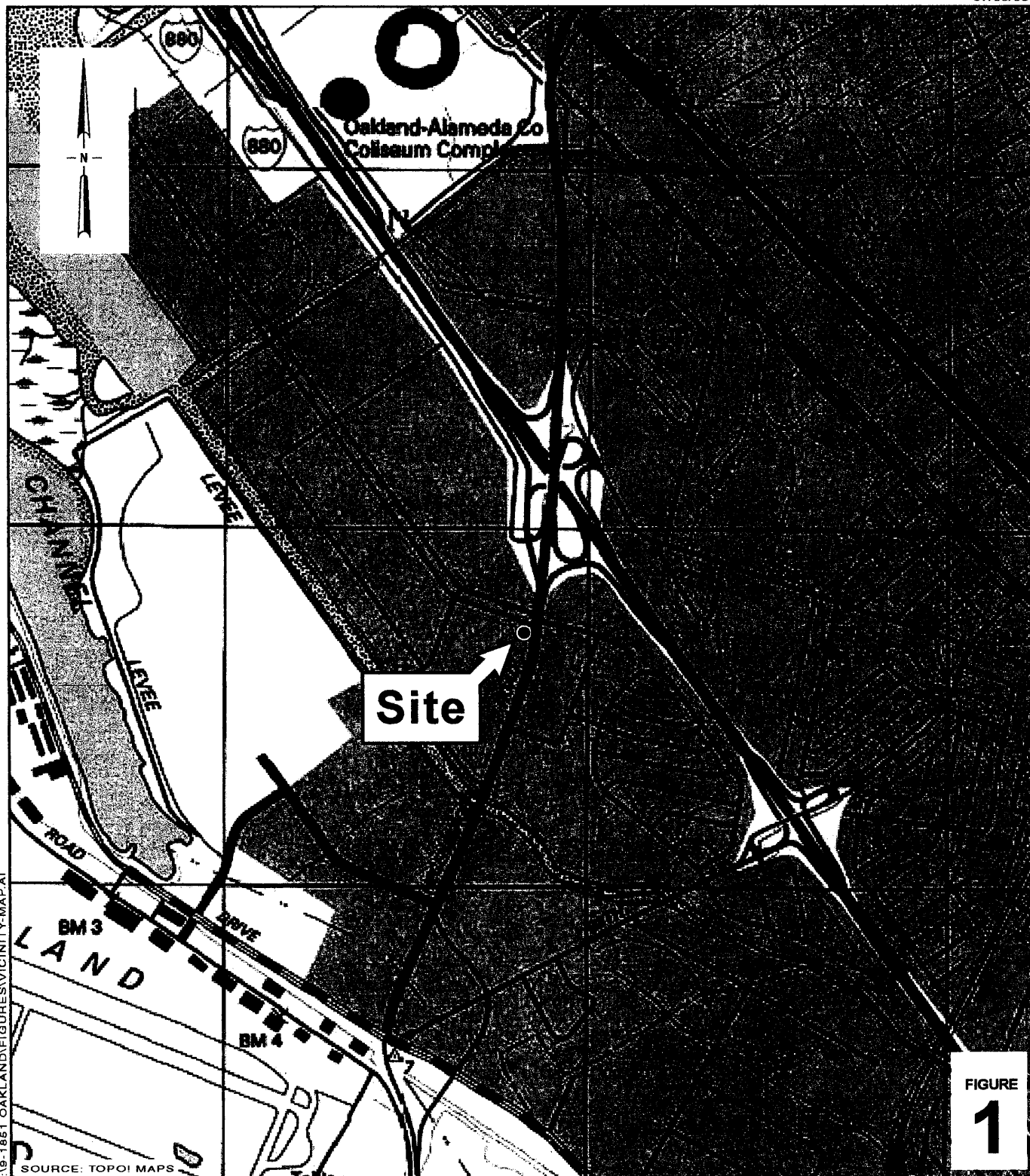
Figure:           1 – Vicinity Map  
                      2 – Site Map  
                      3 – Groundwater Elevation Contour Map (pre-purge)  
                      4 – Groundwater Elevation Contour Map (post-purge)

Tables:           1 – Groundwater Elevation Data  
                      2 – Groundwater Extraction Data  
                      3 – Groundwater Analytic Results

Attachment:      A – Laboratory Analytic Results

Cc:                Chevron Strata Database  
                      Mr. Ben Shimek, Petroleum Sales Inc., 31 Industrial Way, Greenbrae, CA 94904

## FIGURES



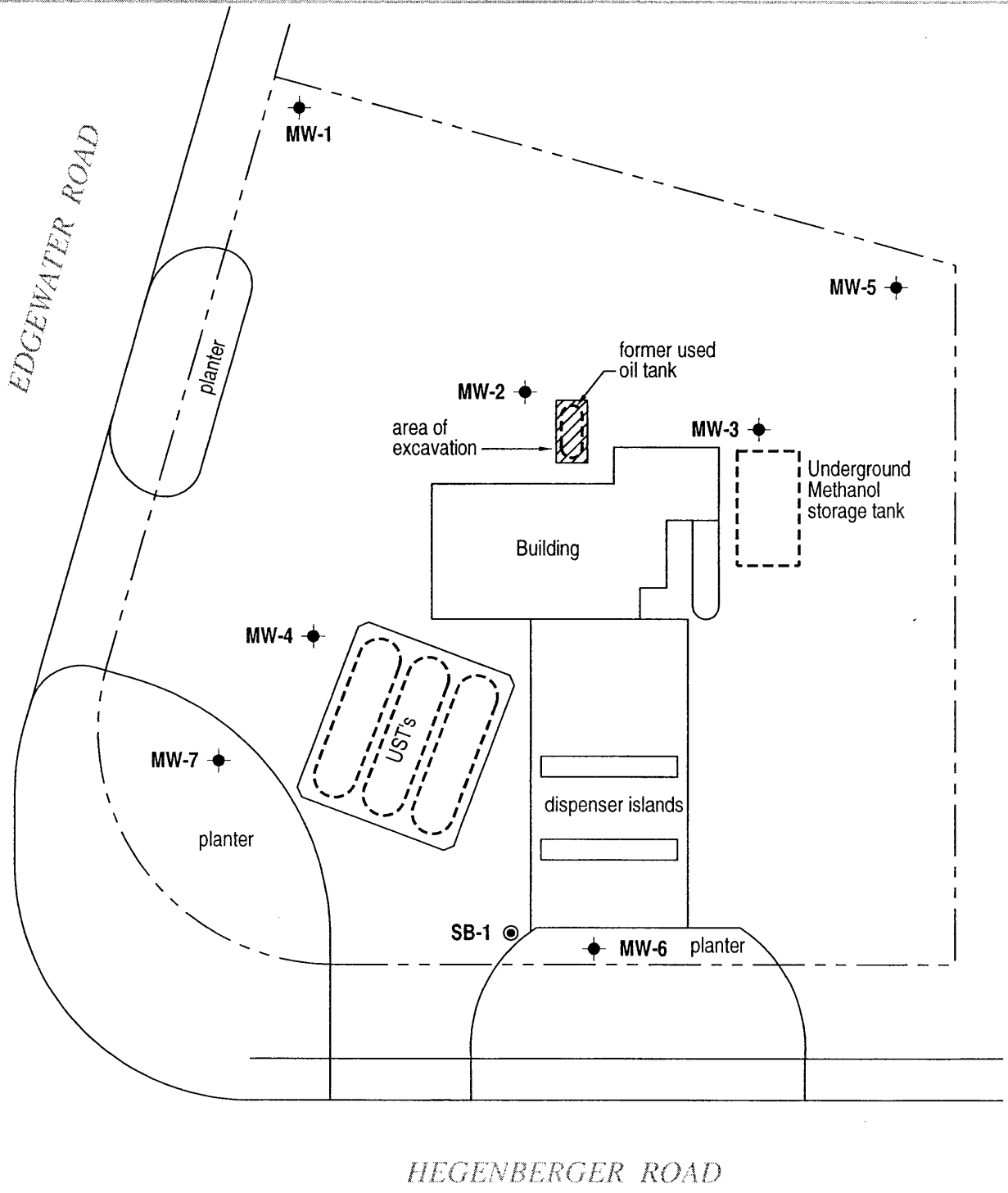
0 1/8 1/4 1/2 1  
SCALE : 1" = 1/4 MILE

**Chevron Service Station 9-1851**  
451 Hegenberger Road  
Oakland, California



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**Vicinity Map**



EXPLANATION	
MW-1	Monitoring well location
SB-1	Soil boring location

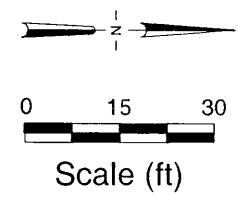


FIGURE  
**2**

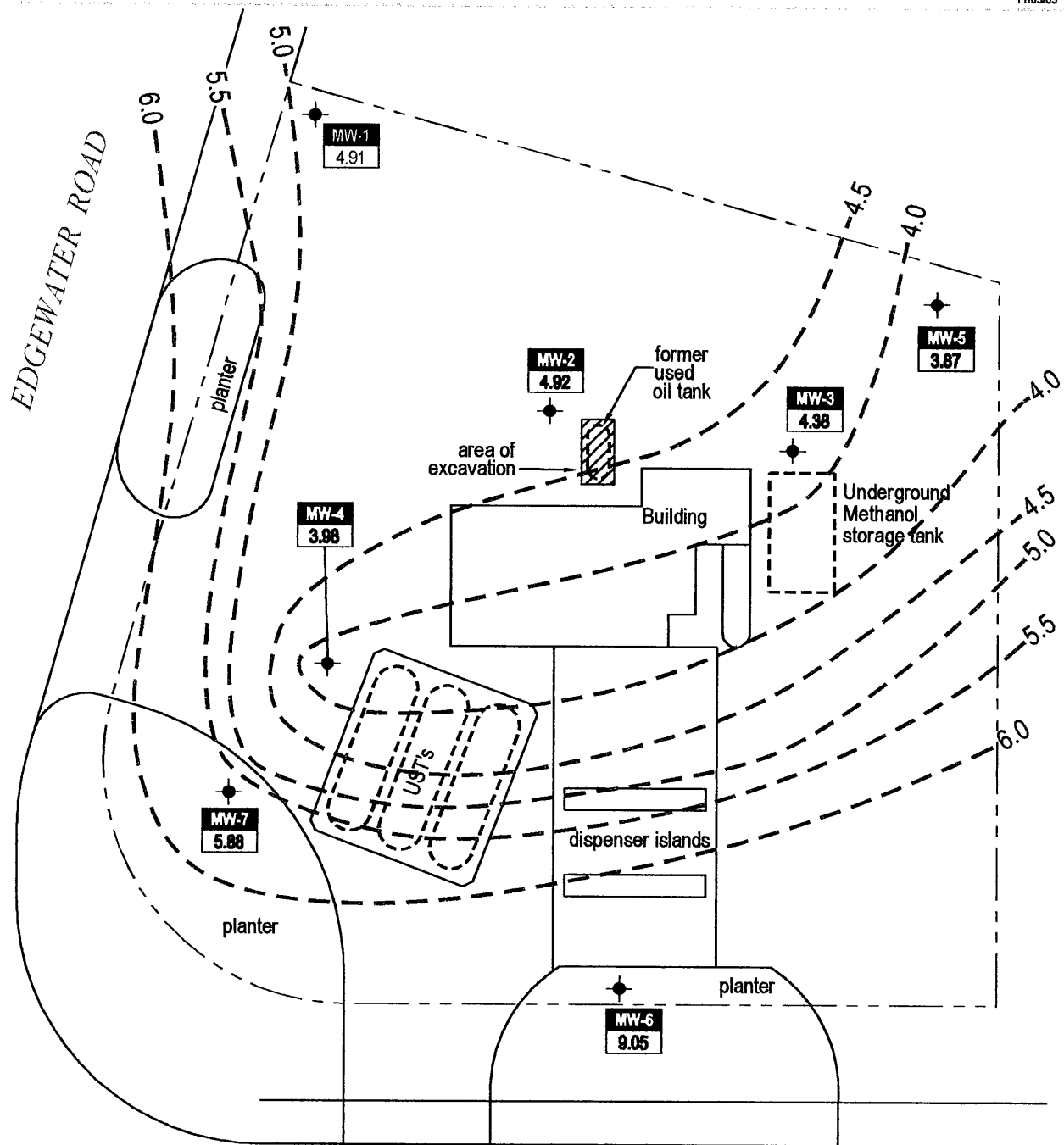
19-185 OAKLAND REGIONAL PLANNING

**Chevron Service Station 9-1851**  
 451 Hegenberger Road  
 Oakland, California



C A M B R I A

**Site Plan**

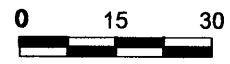
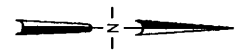


119-1851 OAKLAND/FIGURES-1851-PREGW1105.DWG

**EXPLANATION**

- MW-1 Monitoring well location
- 4.5 Groundwater elevation contour, in feet above mean sea level (msl), dashed where inferred
- Well designation
- Groundwater elevation (msl)

HEGENBERGER ROAD



Scale (ft)

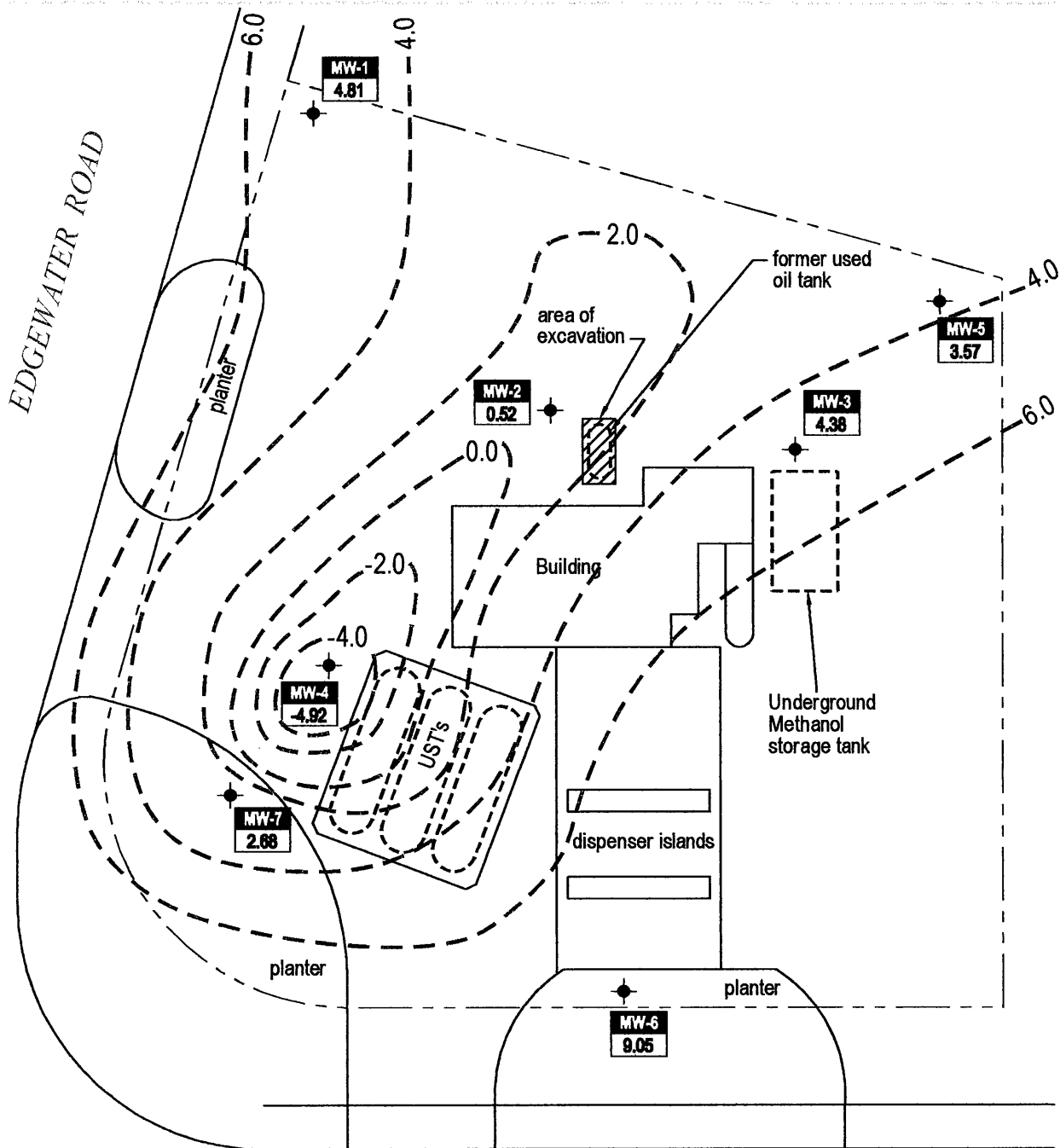
FIGURE 3

**Chevron Service Station 9-1851**  
 451 Hegenberger Road  
 Oakland, California



C A M B R I A

**Groundwater Elevation Contour Map**  
**Pre-Purge**  
 October 13, 2005



**EXPLANATION**

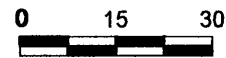
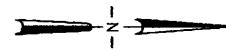
MW-1 Monitoring well location

5 Groundwater elevation contour, in feet above mean sea level (msl), dashed where inferred

Well designation

Groundwater elevation (msl)

HEGENBERGER ROAD



Scale (ft)

FIGURE

4

118-1851 OAKLAND\GURES\9-1851-PR\GWI105.DWG

**Chevron Service Station 9-1851**  
 451 Hegenberger Road  
 Oakland, California



C A M B R I A

**Groundwater Elevation Contour Map**  
**Post-Purge**

October 13, 2005



## **TABLES**

# CAMBRIA

**Table 1. Groundwater Elevation Data - Chevron Station 9-1851, 451 Hegenberger Road, Oakland CA**

	Date	Time	Top of Casing Elevation (ft.)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	Change in Groundwater Elevation
<b><u>Pre Purge</u></b>						
MW-1	4/7/2005	0845	8.61	3.70	4.91	--
MW-2	4/7/2005	0840	9.52	4.60	4.92	--
MW-3	4/7/2005	0855	9.08	4.70	4.38	--
MW-4	4/7/2005	0930	9.48	5.50	3.98	--
MW-5	4/7/2005	0822	8.77	4.90	3.87	--
MW-6	4/7/2005	0905	11.45	2.40	9.05	--
MW-7	4/7/2005	0920	10.58	4.70	5.88	--
<b><u>Post Purge</u></b>						
MW-1	4/7/2005	1530	8.61	3.80	4.81	0.10
MW-2	4/7/2005	1510	9.52	9.00	0.52	4.40
MW-3	4/7/2005	1130	9.08	4.70	4.38	0.00
MW-4	4/7/2005	1300	9.48	14.40	-4.92	8.90
MW-5	4/7/2005	1540	8.77	5.20	3.57	0.30
MW-6	4/7/2005	1550	11.45	2.40	9.05	0.00
MW-7	4/7/2005	1600	10.58	7.90	2.68	3.20

**Table 2. Groundwater Extraction Data - Chevron Station 9-1851, 451 Hegenberger Road, Oakland CA**

Date	Extracted Groundwater Per Event (Gallons)	Cumulative Extracted Groundwater Volume (Gallons)	Extracted TPHg Volume Per Event* (Gallons)	Extracted MTBE Volume Per Event** (Gallons)	Cumulative Extracted TPHg Volume (Gallons)	Cumulative Extracted MTBE Volume (Gallons)
5/3/2001	200	200	0.000085	0.000700	0.000085	0.000700
6/6/2001	508	708	0.000177	0.001450	0.000261	0.002150
8/30/2001	400	1,108	0.000241	0.000824	0.000502	0.002974
1/15/2002	450	1,558	0.000187	0.000707	0.000689	0.003681
3/5/2002	700	2,258	0.000298	0.001012	0.000987	0.004693
6/18/2002	700	2,958	0.000260	0.001133	0.001247	0.005826
8/8/2002	750	3,708	0.000132	0.000813	0.001378	0.006639
10/31/2002	630	4,338	0.000236	0.000736	0.001614	0.007376
5/20/2003	600	4,938	0.000159	0.000399	0.001773	0.007775
1/5/2004	500	5,438	0.000172	0.000828	0.001945	0.008603
8/5/2004	200	5,638	0.000045	0.000314	0.001990	0.008916
4/7/2005	50	5,688	0.000006	0.000036	0.001996	0.008952
8/13/2005	300	5,988	0.000005	0.000039	0.002002	0.008991

**Abbreviations/Notes:**

TPHg = Total Petroleum Hydrocarbons as Gasoline

MTBE = Methyl Tertiary Butyl Ether

\* VTPH = VGW [TPH] ρTPH/1x10<sup>6</sup>

Where:

VTPH = Volume of TPH as gasoline in gallons

VGW = Volume of Groundwater in gallons

[TPH] = Average TPH as gasoline concentrations in micrograms per liter (ug/L)

ρTPH = density of TPH as gasoline = 0.74 kilograms per liter (kg/L).

1x10<sup>6</sup> = Conversion factor from ug to g.

\*\* VMTBE = VGW [MTBE] ρMTBE/1x10<sup>6</sup>

Where:

VMTBE = Volume of MTBE in gallons

VGW = Volume of Groundwater in gallons

[MTBE] = Average MTBE concentrations in micrograms per liter (ug/L)

ρMTBE = density of MTBE = 0.74 kilograms per liter (kg/L).

1x10<sup>6</sup> = Conversion factor from ug to g.

# CAMBRIA

**Table 3. Groundwater Analytical Results - Chevron Station 9-1851, 451 Hegenberger Road, Oakland CA**

Sample	Sample	TPHg	MTBE	TPHd	B	T	E	X
ID	Date	Concentrations reported in micrograms per Liter - ug/l = Parts Per Billion						
MW-4-pre	5/3/2001	491	2,020*/4,270	NA	<2.5	<2.5	<2.5	<2.5
MW-4-post	5/3/2001	370	3,330*/4,250	NA	<2.5	<2.5	<2.5	<2.5
MW-7-pre	5/3/2001	191	1,070*/1,190	NA	<0.5	<0.5	<0.5	<0.5
MW-7-post	5/3/2001	201	472*/647	NA	0.619	<0.5	1.65	0.961
Average	5/3/2001	313	2589.25	NA	1.09	0.75	1.10	0.93
MW-4-pre	6/11/2001	520	4,000*/3,700	NA	<5.0	<5.0	<5.0	<5.0
MW-4-post	6/11/2001	<500	5,900*/3,500	NA	<5.0	<5.0	<5.0	<5.0
MW-7-pre	6/11/2001	130	730*/690	NA	<5.0	<5.0	<5.0	<5.0
MW-7-post	6/11/2001	130	590*/560	NA	<5.0	<5.0	<5.0	<5.0
Average	6/11/2001	257.5	2112.5	NA	2.5	2.5	2.5	2.5
MW-4-pre	8/30/2001	720	3,000	NA	<1.0	<1.0	<1.0	<1.0
MW-4-post	8/30/2001	590	2,600	NA	<1.0	<1.0	<1.0	<1.0
MW-7-pre	8/30/2001	140	400	NA	<1.0	<1.0	<1.0	<1.0
MW-7-post	8/30/2001	330	97	NA	<1.0	<1.0	<1.0	<1.0
Average	8/30/2001	445	1,524	NA	0.5	0.5	0.5	0.5
MW-4-pre	1/15/2002	640	2,800	NA	<1.0	<1.0	<1.0	<1.0
MW-4-post	1/15/2002	290	1,100	NA	<0.5	<0.5	<0.5	<0.5
MW-7-pre	1/15/2002	89	290	NA	<0.5	<0.5	<0.5	<0.5
MW-7-post	1/15/2002	210	460	NA	<0.5	<0.5	<0.5	<0.5
Average	1/15/2002	307	1,163	NA	0.31	0.31	0.31	0.31
MW-4-pre	3/5/2002	420	2,200	NA	<1.0	<1.0	<1.0	<1.0
MW-4-post	3/5/2002	160	1,200	NA	<3.0	<3.0	<3.0	<3.0
MW-7-pre	3/5/2002	140	440	NA	<0.5	<0.5	<0.5	<0.5
MW-7-post	3/5/2002	540	440	NA	<0.5	<0.5	<0.5	<0.5
Average	3/5/2002	315	1,070	NA	0.625	0.625	0.625	0.625

**Table 3. Groundwater Analytical Results - Chevron Station 9-1851, 451 Hegenberger Road, Oakland CA**

Sample	Sample	TPHg	MTBE	TPHd	B	T	E	X
ID	Date	Concentrations reported in micrograms per Liter - ug/l = Parts Per Billion						
MW-4-pre	6/18/2002	530	2,900	NA	<0.5	<0.5	<0.5	<0.5
MW-4-post	6/18/2002	180	1,200	NA	<0.5	<0.5	<0.5	<0.5
MW-7-pre	6/18/2002	120	290	NA	<0.5	<0.5	<0.5	<0.5
MW-7-post	6/18/2002	270	400	NA	<0.5	<0.5	<0.5	<0.5
Average	6/18/2002	275	1,198	NA	0.25	0.25	0.25	0.25
MW-4-pre	8/8/2002	370	2,400	NA	<0.5	<0.5	<0.5	<0.5
MW-4-post	8/8/2002	<50	220	NA	<0.5	<0.5	<0.5	<0.5
MW-7-pre	8/8/2002	74	190	NA	<0.5	<0.5	<0.5	<0.5
MW-7-post	8/8/2002	50	400	NA	<0.5	<0.5	<0.5	<0.5
Average	8/8/2002	130	803	NA	0.25	0.25	0.25	0.25
MW-4-pre	10/31/2002	490	2,200	NA	<0.5	<0.5	<0.5	<0.5
MW-4-post	10/31/2002	330	770	NA	0.9	1	2	13
MW-7-pre	10/31/2002	89	230	NA	<0.5	<0.5	<0.5	<0.5
MW-7-post	10/31/2002	200	260	NA	<0.5	<0.5	<0.5	<0.5
Average	10/31/2002	277	865	NA	0.41	0.44	0.69	3.44
MW-4-pre	5/20/2003	340	1,400	NA	<0.5	0.5	<0.5	<0.5
MW-4-post	5/20/2003	140	190	NA	<0.5	8	2	13
MW-7-pre	5/20/2003	93	170	NA	<0.5	<0.5	<0.5	<0.5
MW-7-post	5/20/2003	210	210	NA	2	22	4	27
Average	5/20/2003	196	493	NA	0.69	7.69	1.63	10.13
MW-3-pre	1/5/2004	290	1,500	NA	<1.0	<1.0	<1.0	<1.0
MW-3-post	1/5/2004	260	1,300	NA	<1.0	<1.0	<1.0	<1.0
MW-4-pre	1/5/2004	330	1,500	NA	<1.0	<1.0	<1.0	<1.0
MW-4-post	1/5/2004	140	600	NA	<0.5	<0.5	<0.5	<0.5
Average	1/5/2004	255	1,225	NA	0.44	0.44	0.44	0.44

**Table 3. Groundwater Analytical Results - Chevron Station 9-1851, 451 Hegenberger Road, Oakland CA**

Sample ID	Sample Date	TPHg	MTBE	TPHd	B	T	E	X
Concentrations reported in micrograms per Liter - ug/l = Parts Per Billion								
MW-3-pre	8/5/2004	250	1,700	NA	2	<1.0	<1.0	<1.0
MW-3-post	8/5/2004	88	590	NA	<0.5	<0.5	<0.5	<0.5
MW-4-pre	8/5/2004	300	2,000	NA	<1.0	<1.0	<1.0	<1.0
MW-4-post	8/5/2004	<50	350	NA	<0.5	<0.5	<0.5	<0.5
<b>Average</b>	8/5/2004	165.75	1,160	NA	0.75	0.38	0.38	0.38
MW-2-pre	4/7/2005	<50	2	3,500	<0.5	<0.5	<0.5	<0.5
MW-2-post	4/7/2005	<50	34	2,900	<0.5	<0.5	<0.5	<0.5
MW-3-pre	4/7/2005	<50	86	300	<0.5	<0.5	<0.5	<0.5
MW-3-post	4/7/2005	100	420	240	<0.5	<0.5	<0.5	<0.5
MW-4-pre	4/7/2005	240	1,900	NA	<3	<3	<3	<3
MW-4-post	4/7/2005	130	730	NA	<1	<1	<1	<1
<b>Average</b>	4/7/2005	91	529	1,735	0.50	0.50	0.50	0.50
<b>MW-2-pre</b>	<b>10/13/2005</b>	<b>&lt;50</b>	<b>14</b>	<b>2,800</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
<b>MW-2-post</b>	<b>10/13/2005</b>	<b>&lt;50</b>	<b>6</b>	<b>5,400</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
<b>MW-4-pre</b>	<b>10/13/2005</b>	<b>81</b>	<b>390</b>	<b>420</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
<b>MW-4-post</b>	<b>10/13/2005</b>	<b>&lt;50</b>	<b>100</b>	<b>220</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
<b>MW-7-pre</b>	<b>10/13/2005</b>	<b>&lt;50</b>	<b>34</b>	<b>200</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
<b>MW-7-post</b>	<b>10/13/2005</b>	<b>&lt;50</b>	<b>32</b>	<b>190</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
<b>Average</b>	<b>10/13/2005</b>	<b>13.5</b>	<b>96</b>	<b>1,538</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>

**Abbreviations/Notes:**

Total petroleum hydrocarbons as gasoline (TPHg) by EPA Method 8015M

Benzene, toluene, ethylbenzene and xylenes (BTEX) by EPA Method 8260B

Methyl tertiary butyl ether (MTBE) by EPA Method 8260B, \* = by EPA method 8021

<x = Not detected above method detection limit

NA = Not analyzed

Averages were calculated using 1/2 of the detection limit if hydrocarbons were not detected above method reporting limits.

**APPENDIX A**  
**LABORATORY ANALYTICAL RESULTS**

## ANALYTICAL RESULTS

Prepared for:

ChevronTexaco  
6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

925-842-8582

Prepared by:

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

The sample group for this submittal is 963426. Samples arrived at the laboratory on Saturday, October 15, 2005. The PO# for this group is 99011184 and the release number is INGLIS.

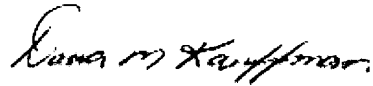
<u>Client Description</u>		<u>Lancaster Labs Number</u>
MW-2-PRE-W-051013	Grab Water	4625908
MW-2-POST-W-051013	Grab Water	4625909
MW-4-PRE-W-051013	Grab Water	4625910
MW-4-POST-W-051013	Grab Water	4625911
MW-7-PRE-W-051013	Grab Water	4625912
MW-7-POST-W-051013	Grab Water	4625913

1 COPY TO Cambria Environmental  
ELECTRONIC ChevronTexaco  
COPY TOAttn: Bob Foss  
Attn: Laura Genin



Questions? Contact your Client Services Representative  
Angela M Miller at (717) 656-2300

Respectfully Submitted,



Dana M. Kauffman  
Manager



# Analysis Report

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

Page 1 of 2

Lancaster Laboratories Sample No. WW 4625908

MW-2-PRE-W-051013 Grab Water  
 Facility# 91851 CETR  
 451 Hegenberger-Oakland T0600102238 MW-2-PRE  
 Collected: 10/13/2005 08:40 by BD Account Number: 10880

Submitted: 10/15/2005 09:55 ChevronTexaco  
 Reported: 10/27/2005 at 14:43 6001 Bollinger Canyon Rd L4310  
 Discard: 11/27/2005 San Ramon CA 94583

2PRE-

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.	n.a.	N.D.	50.	ug/l	1
02202	TPH-DRO CALUFT(Water) w/Si Gel The observed sample pattern includes #2 fuel/diesel and an additional pattern which elutes later in the DRO range.	n.a.	2,800.	140.	ug/l	5
02500	TPH Fuels by GC (Waters)					
02501	Total TPH	n.a.	2,800.	400.	ug/l	10
02508	TPH Motor Oil C16-C36 TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons. The chlorobenzene surrogate recoveries for the blank, LCS, and LCSD associated with this sample are above QC limits. Since there were no hydrocarbons detected in the blank and the LCS/LCSD spike recoveries are within limits, the data is accepted.	n.a.	2,800.	400.	ug/l	10
06054	BTEX+MTBE by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	14.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116  
 Trip blank vials were not received by the laboratory for this sample group.

## Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	N. CA LUFT Gasoline Method	1	10/20/2005 10:08	K. Robert Caulfeild-James	1
02202	TPH-DRO CALUFT(Water) w/Si Gel	CALUFT-DRO/8015B, Modified	1	10/19/2005 14:08	Tracy A Cole	5
02500	TPH Fuels by GC (Waters)	SW-846 8015B, modified	1	10/19/2005 11:16	Matthew E Barton	10
06054	BTEX+MTBE by 8260B	SW-846 8260B	1	10/19/2005 22:32	Dawn M Harle	1





# Analysis Report

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Lancaster Laboratories Sample No. WW 4625909

MW-2-POST-W-051013 Grab Water  
 Facility# 91851 CETR  
 451 Hegenberger-Oakland T0600102238 MW-2-POST  
 Collected: 10/13/2005 14:30 by BD Account Number: 10880

Submitted: 10/15/2005 09:55 ChevronTexaco  
 Reported: 10/27/2005 at 14:43 6001 Bollinger Canyon Rd L4310  
 Discard: 11/27/2005 San Ramon CA 94583

2POST

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.	n.a.	N.D.	50.	ug/l	1
02202	TPH-DRO CALUFT(Water) w/Si Gel The observed sample pattern includes #2 fuel/diesel and an additional pattern which elutes later in the DRO range.	n.a.	5,400.	280.	ug/l	10
02500	TPH Fuels by GC (Waters)					
02501	Total TPH	n.a.	5,300.	800.	ug/l	20
02508	TPH Motor Oil C16-C36 TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons. The chlorobenzene surrogate recoveries for the blank, LCS, and LCSD associated with this sample are above QC limits. Since there were no hydrocarbons detected in the blank and the LCS/LCSD spike recoveries are within limits, the data is accepted.	n.a.	5,300.	800.	ug/l	20
06054	BTEX+MTBE by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	6.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116  
 Trip blank vials were not received by the laboratory for this sample group.

## Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	N. CA LUFT Gasoline Method	1	10/20/2005 10:37	K. Robert Caulfeild-James	1
02202	TPH-DRO CALUFT(Water) w/Si Gel	CALUFT-DRO/8015B, Modified	1	10/19/2005 14:30	Tracy A Cole	10
02500	TPH Fuels by GC (Waters)	SW-846 8015B, modified	1	10/19/2005 11:41	Matthew E Barton	20
06054	BTEX+MTBE by 8260B	SW-846 8260B	1	10/19/2005 23:43	Dawn M Harle	1

Lancaster Laboratories Sample No. WW 4625909

MW-2-POST-W-051013 Grab Water  
 Facility# 91851 CETR  
 451 Hegenberger-Oakland T0600102238 MW-2-POST  
 Collected: 10/13/2005 14:30 by BD Account Number: 10880

Submitted: 10/15/2005 09:55  
 Reported: 10/27/2005 at 14:43  
 Discard: 11/27/2005

ChevronTexaco  
 6001 Bollinger Canyon Rd L4310  
 San Ramon CA 94583

2POST

01146	GC VOA Water Prep	SW-846 5030B	1	10/20/2005 10:37	K. Robert Caulfeild- James	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	10/19/2005 23:43	Dawn M Harle	n.a.
02135	Extraction - DRO Water Special	TPH by CA LUFT	1	10/17/2005 17:00	Olivia I Santiago	1
07003	Extraction - DRO (Waters)	SW-846 3510C	1	10/17/2005 17:00	Olivia I Santiago	1





**Lancaster Laboratories Sample No. WW 4625911**
**MW-4-POST-W-051013 Grab Water**  
**Facility# 91851 CETR**  
**451 Hegenberger-Oakland T0600102238 MW-4-POST**  
 Collected: 10/13/2005 14:50 by BD Account Number: 10880

 Submitted: 10/15/2005 09:55 ChevronTexaco  
 Reported: 10/27/2005 at 14:43 6001 Bollinger Canyon Rd L4310  
 Discard: 11/27/2005 San Ramon CA 94583

4POST

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.	n.a.	N.D.	50.	ug/l	1
02202	TPH-DRO CALUFT(Water) w/Si Gel The o-terphenyl surrogate recovery is below QC limits. The data is reported since there was no sample available for a reextraction. The observed sample pattern includes #2 fuel/diesel and an additional pattern which elutes earlier and later in the DRO range.	n.a.	220.	50.	ug/l	1
02500	TPH Fuels by GC (Waters)					
02501	Total TPH	n.a.	120.	40.	ug/l	1
02508	TPH Motor Oil C16-C36 TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons. The surrogate recoveries are below QC limits. The data is reported since there was no sample available for a reextraction. The chlorobenzene surrogate recoveries for the blank, LCS, and LCSD associated with this sample are above QC limits. Since there were no hydrocarbons detected in the blank and the LCS/LCSD spike recoveries are within limits, the data is accepted.	n.a.	120.	40.	ug/l	1
06054	BTEX+MTBE by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	100.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

 State of California Lab Certification No. 2116  
 Trip blank vials were not received by the laboratory for this sample group.

### Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
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# Analysis Report

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Lancaster Laboratories Sample No. **WW 4625912**

MW-7-PRE-W-051013

Grab Water

Facility# 91851

CETR

451 Hegenberger-Oakland T0600102238 MW-7-PRE

Collected: 10/13/2005 12:10 by BD

Account Number: 10880

Submitted: 10/15/2005 09:55

Reported: 10/27/2005 at 14:44

Discard: 11/27/2005

ChevronTexaco

6001 Bollinger Canyon Rd L4310

San Ramon CA 94583

7PRE-

01146	GC VOA Water Prep	SW-846 5030B	1	10/20/2005 12:04	K. Robert Caulfeild-James	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	10/20/2005 01:18	Dawn M Harle	n.a.
02135	Extraction - DRO Water Special	TPH by CA LUFT	1	10/17/2005 17:00	Olivia I Santiago	1
07003	Extraction - DRO (Waters)	SW-846 3510C	1	10/17/2005 17:00	Olivia I Santiago	1

Lancaster Laboratories Sample No. WW 4625913

MW-7-POST-W-051013 Grab Water  
 Facility# 91851 CETR  
 451 Hegenberger-Oakland T0600102238 MW-7-POST  
 Collected: 10/13/2005 15:40 by BD Account Number: 10880

Submitted: 10/15/2005 09:55 ChevronTexaco  
 Reported: 10/27/2005 at 14:44 6001 Bollinger Canyon Rd L4310  
 Discard: 11/27/2005 San Ramon CA 94583

7POST

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Units	Dilution Factor
01728	TPH-GRO - Waters The reported concentration of TPH-GRO does not include MTBE or other gasoline constituents eluting prior to the C6 (n-hexane) TPH-GRO range start time.	n.a.	N.D.	50.	ug/l	1
02202	TPH-DRO CALUFT(Water) w/Si Gel The observed sample pattern includes #2 fuel/diesel and an additional pattern which elutes earlier and later in the DRO range.	n.a.	190.	50.	ug/l	1
02500	TPH Fuels by GC (Waters)					
02501	Total TPH	n.a.	93.	40.	ug/l	1
02508	TPH Motor Oil C16-C36 TPH quantitation is based on peak area comparison of the sample pattern to that of a hydrocarbon component mix calibration in a range that includes C8 (n-octane) through C40 (n-tetracontane) normal hydrocarbons. The chlorobenzene surrogate recoveries for the blank, LCS, and LCSD associated with this sample are above QC limits. Since there were no hydrocarbons detected in the blank and the LCS/LCSD spike recoveries are within limits, the data is accepted.	n.a.	93.	40.	ug/l	1
06054	BTEX+MTBE by 8260B					
02010	Methyl Tertiary Butyl Ether	1634-04-4	32.	0.5	ug/l	1
05401	Benzene	71-43-2	N.D.	0.5	ug/l	1
05407	Toluene	108-88-3	N.D.	0.5	ug/l	1
05415	Ethylbenzene	100-41-4	N.D.	0.5	ug/l	1
06310	Xylene (Total)	1330-20-7	N.D.	0.5	ug/l	1

State of California Lab Certification No. 2116  
 Trip blank vials were not received by the laboratory for this sample group.

## Laboratory Chronicle

CAT No.	Analysis Name	Method	Trial#	Analysis Date and Time	Analyst	Dilution Factor
01728	TPH-GRO - Waters	N. CA LUFT Gasoline Method	1	10/20/2005 12:33	K. Robert Caulfeild-James	1
02202	TPH-DRO CALUFT(Water) w/Si Gel	CALUFT-DRO/8015B, Modified	1	10/19/2005 03:58	Tracy A Cole	1
02500	TPH Fuels by GC (Waters)	SW-846 8015B, modified	1	10/18/2005 18:22	Matthew E Barton	1
06054	BTEX+MTBE by 8260B	SW-846 8260B	1	10/20/2005 01:42	Dawn M Harle	1



## Quality Control Summary

 Client Name: ChevronTexaco  
 Reported: 10/27/05 at 02:44 PM

Group Number: 963426

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>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: 052900017A TPH-DRO CALUFT(Water) w/Si Gel	N.D.	50.	ug/l	99	100	49-120	1	20
Batch number: 052900018A Total TPH TPH Motor Oil C16-C36	N.D.	40.	ug/l	100	101	57-115	1	20
Batch number: 05292A16B TPH-GRO - Waters	N.D.	50.	ug/l	89	109	70-130	20	30
Batch number: Z052924AA Methyl Tertiary Butyl Ether Benzene Toluene Ethylbenzene Xylene (Total)	N.D.	0.5	ug/l	105		77-127		
	N.D.	0.5	ug/l	99		85-117		
	N.D.	0.5	ug/l	102		85-115		
	N.D.	0.5	ug/l	103		82-119		
	N.D.	0.5	ug/l	102		83-113		

### Sample Matrix Quality Control

<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: 05292A16B TPH-GRO - Waters	119		63-154						
Batch number: Z052924AA Methyl Tertiary Butyl Ether Benzene Toluene Ethylbenzene Xylene (Total)	126	118	69-134	4	30				
	110	107	83-128	2	30				
	109	109	83-127	0	30				
	112	110	82-129	2	30				
	110	108	82-130	2	30				

### Surrogate Quality Control

 Analysis Name: TPH-DRO CALUFT(Water) w/Si Gel  
 Batch number: 052900017A  
 Orthoterphenyl

4625908      103

\*- Outside of specification

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

## Quality Control Summary

Client Name: ChevronTexaco  
Reported: 10/27/05 at 02:44 PM

Group Number: 963426

### Surrogate Quality Control

4625909 109  
4625910 206\*  
4625911 0\*  
4625912 101  
4625913 96  
Blank 98  
LCS 111  
LCSD 110

Limits: 59-131

Analysis Name: TPH Fuels by GC (Waters)

Batch number: 052900018A

	Chlorobenzene	Orthoterphenyl
4625908	105	96
4625909	114	111
4625910	210*	205*
4625911	4*	0*
4625912	97	101
4625913	93	98
Blank	308*	101
LCS	318*	109
LCSD	303*	107

Limits: 14-141 37-146

Analysis Name: TPH-GRO - Waters

Batch number: 05292A16B

	Trifluorotoluene-F
4625908	92
4625909	93
4625910	91
4625911	91
4625912	92
4625913	94
Blank	92
LCS	95
LCSD	93
MS	96

Limits: 63-135

Analysis Name: BTEX+MTBE by 8260B

Batch number: Z052924AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
4625908	101	100	107	101
4625909	102	100	106	102
4625910	102	101	106	100
4625911	102	100	107	101
4625912	103	102	104	100
4625913	103	102	104	100
Blank	102	103	105	99
LCS	102	103	105	101
MS	103	101	106	102
MSD	103	101	106	103

\*- Outside of specification

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

## Quality Control Summary

Client Name: ChevronTexaco  
Reported: 10/27/05 at 02:44 PM

Group Number: 963426

### Surrogate Quality Control

---

Limits:      80-116                                      77-113                                      80-113                                      78-113

\*- Outside of specification

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



# Chevron California Region Analysis Request/Chain of Custody



For Lancaster Laboratories use only  
 Acct #: 10880 Sample #: 4625908-913 SCR#: 240226  
963426

101405-05

Facility #: FORMER CHEVRON 9-1851  
 Site Address: 451 HEGENBERGER ROAD, OAKLAND  
 Chevron PM: Mark Ingus Lead Consultant: CAMBIA  
 Consultant/Office: CAMBIA/EMERYVILLE  
 Consultant Prj. Mgr.: ROBERT FEYS / LAURA GRANIN  
 Consultant Phone #: 510-420-3348 Fax #: 510-420-9170  
 Sampler: BILL DEBOER  
 Service Order #: \_\_\_\_\_  Non SAR:

Field Point Name	Matrix	Repeat Sample	Top Depth	Year Month Day	Time Collected	New Field Pt.	Grab	Composite	Total Number of Containers	BTEX + MTBE 8260	TPH 8015 MOD GRO	TPH 8015 MOD DRO Silica Gel Cleanup	8260 full scan	Oxygenates	Lead 7420	TPH Mo - 8015
MW-2-PRE	W			2005 10 13	840		X	7	X	X	X					X
MW-2-POST					1430			7								
MW-4-PRE					850			7								
MW-4-POST					1450			7								
MW-7-PRE					1210			7								
MW-7-POST					1540			7								

### Analyses Requested

#### Preservation Codes

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

- J value reporting needed
- Must meet lowest detection limits possible for 8260 compounds
- 8021 MTBE Confirmation
  - Confirm highest hit by 8260
  - Confirm all hits by 8260
  - Run \_\_\_ oxy's on highest hit
  - Run \_\_\_ oxy's on all hits

**Comments / Remarks**  
 PLEASE E-MAIL  
 RESULTS TO  
 BDEBOER@CAMBIA-  
 ENV.COM

**Turnaround Time Requested (TAT) (please circle)**

STD. TAT	72 hour	48 hour
24 hour	4 day	5 day

**Data Package Options (please circle if required)**

QC Summary      Type I - Full  
 Type VI (Raw Data)       Coelt Deliverable not needed  
 WIP (RWQCB)  
 Disk

Relinquished by: <u>Wally [Signature]</u>	Date: <u>10/17/05</u>	Time: <u>1115</u>	Received by: <u>[Signature]</u>	Date: <u>10/14/05</u>	Time: <u>1115</u>
Relinquished by: <u>[Signature]</u>	Date: <u>10/17/05</u>	Time: <u>1530</u>	Received by: <u>FedEx</u>	Date: <u>10/17/05</u>	Time: <u></u>
Relinquished by: _____	Date: _____	Time: _____	Received by: _____	Date: _____	Time: _____
Relinquished by Commercial Carrier: UPS <u>FedEx</u> Other _____	Temperature Upon Receipt: <u>216, 25° C</u>		Received by: <u>[Signature]</u>	Date: <u>10/19/05</u>	Time: <u>0955</u>
			Custody Seals Intact? <u>Yes</u> No		

# 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>meq</b>	milliequivalents	<b>lb.</b>	pound(s)
<b>g</b>	gram(s)	<b>kg</b>	kilogram(s)
<b>ug</b>	microgram(s)	<b>mg</b>	milligram(s)
<b>ml</b>	milliliter(s)	<b>l</b>	liter(s)
<b>m3</b>	cubic meter(s)	<b>ul</b>	microliter(s)
<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>J</b>	estimated value – The result is $\geq$ the Method Detection Limit (MDL) and $<$ the Limit of Quantitation (LOQ).		
<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. All other results are reported on an as-received basis.		

## U.S. EPA CLP Data Qualifiers:

Organic Qualifiers		Inorganic Qualifiers	
<b>A</b>	TIC is a possible aldol-condensation product	<b>B</b>	Value is $<$ CRDL, but $\geq$ IDL
<b>B</b>	Analyte was also detected in the blank	<b>E</b>	Estimated due to interference
<b>C</b>	Pesticide result confirmed by GC/MS	<b>M</b>	Duplicate injection precision not met
<b>D</b>	Compound quantitated on a diluted sample	<b>N</b>	Spike sample not within control limits
<b>E</b>	Concentration exceeds the calibration range of the instrument	<b>S</b>	Method of standard additions (MSA) used for calculation
<b>N</b>	Presumptive evidence of a compound (TICs only)	<b>U</b>	Compound was not detected
<b>P</b>	Concentration difference between primary and confirmation columns $>$ 25%	<b>W</b>	Post digestion spike out of control limits
<b>U</b>	Compound was not detected	<b>*</b>	Duplicate analysis not within control limits
<b>X,Y,Z</b>	Defined in case narrative	<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.

Measurement uncertainty values, as applicable, are available upon request.

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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