CONESTOGA-ROVERS & ASSOCIATES

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TRANSMITTAL

DATE: February 26, 2010

REFERENCE NO.: 240414

PROJECT NAME: 540 Hegenberger Road, Oakland

TO: Jerry Wickham
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

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9:06 am, Mar 04, 2010
Alameda County
Environmental Health

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QUANTITY	DESCRIPTION
1	Closure Request

- ☐ As Requested
- ☐ For Your Use
- ☒ For Review and Comment
- ☐
- ☐

COMMENTS:
If you have any questions regarding the content of this document, please contact Peter Schaefer at (510) 420-3319.

Copy to: Denis Brown, Shell Oil Products US, 20945 S. Wilmington Avenue, Carson, CA 90810
SF Data Room (electronic copy)

Completed by: Peter Schaefer Signed: Peter Schaefer

Filing: **Correspondence File**

Denis L. Brown
Shell Oil Products US
HSE – Environmental Services
20945 S. Wilmington Ave.
Carson, CA 90810-1039
Tel (707) 865 0251
Fax (707) 865 2542
Email denis.l.brown@shell.com

Jerry Wickham
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: Shell-branded Service Station
540 Hegenberger Road
Oakland, California
SAP Code 135694
Incident No. 98995752
ACEH Case No. RO0000223

Dear Mr. Wickham:

The attached document is provided for your review and comment. Upon information and belief, I declare, under penalty of perjury, that the information contained in the attached document is true and correct.

If you have any questions or concerns, please call me at (707) 865-0251.

Sincerely,

Denis L. Brown
Project Manager

CLOSURE REQUEST

SHELL-BRANDED SERVICE STATION
540 HEGENBERGER ROAD
OAKLAND, CALIFORNIA

SAP CODE	135694
INCIDENT NO.	98995752
AGENCY NO.	RO0000223

Prepared by:
Conestoga-Rovers & Associates

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FEBRUARY 26, 2010
REF. NO. 240414 (6)
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1.0 INTRODUCTION

Conestoga-Rovers & Associates (CRA) prepared this request on behalf of Equilon Enterprises LLC dba Shell Oil Products US (Shell).

The subject site is an active Shell-branded service station located on the southeast corner of the Hegenberger Road and Edes Avenue intersection in a commercial area of Oakland, California (Figure 1). The site layout (Figure 2) includes one station building, two dispenser islands, four underground storage tanks (USTs), and a car wash.

A summary of previous work performed at the site is contained in Appendix A. Historical soil analytical data are presented in Tables 1 and 2 and historical groundwater data are presented in Appendix B.

2.0 LOW-RISK CASE CRITERIA

Site data demonstrate that the site conditions meet the low-risk groundwater case criteria outlined in the San Francisco Bay Regional Water Quality Control Board's (RWQCB's) January 5, 1996 *Regional Board Supplemental Instructions to State Water Board December 8, 1995, Interim Guidance on Required Cleanup at Low-Risk Fuel Sites.* These criteria are addressed below.

Note that the RWQCB Groundwater Committee's June 1999 *East Bay Plain Groundwater Basin Beneficial Use Evaluation Report for Alameda and Contra Costa Counties, CA,* states that the City of Oakland (among other cities) "does not have plans to develop local groundwater resources for drinking water purposes, because of existing or potential saltwater intrusion, contamination, or poor or limited quantity". Although groundwater in this area cannot be precluded from being a potential future source of drinking water, it is not currently a source of drinking water, and given the shallow depth, it is unlikely that the first water-bearing zone would be used as a source of drinking water. Thus, RWQCB non-drinking water environmental screening levels (ESLs)[1] are appropriate screening levels for this site.

---

1 *Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater,* California Regional Water Quality Control Board, Interim Final - November 2007 [Revised May 2008]

2.1 THE LEAK HAS BEEN STOPPED AND ONGOING SOURCES HAVE BEEN REMOVED OR REMEDIATED

A piping leak was repaired in 1996, and facility upgrades and dispenser modifications were completed in February of 1998 and July of 2004. During the 2004 facility upgrades, approximately 50 tons of soil were generated for disposal. As of January 1, 2003, methyl tertiary-butyl ether (MTBE) was no longer included in the formulation of Shell gasoline. Hydrocarbon, MTBE, and tertiary-butyl alcohol (TBA) concentrations in groundwater have decreased significantly, and are adequately defined, indicating that there is no ongoing source.

Beginning in July 1999, Cambria Environmental Technology, Inc. (Cambria) conducted weekly groundwater extraction (GWE) events from selected site wells using a vacuum truck. Between June 2000 and September 2001, Cambria added extraction and treatment of soil vapors in addition to dissolved-phase hydrocarbons (dual-phase vacuum extraction). Cambria discontinued interim remediation efforts in February 2003. Interim GWE removed approximately 83,063 gallons of groundwater containing an estimated 1.68 pounds of TPHg, 0.088 pounds of benzene, and 13.0 pounds of MTBE. Soil vapor extraction removed an estimated 19.3 pounds of TPHg, 0.107 pounds of benzene, and 0.720 pounds of MTBE.

In March 2003, Cambia installed a fixed GWE system, and started the system in April 2003. Due to diminishing hydrocarbon recovery, Cambria shut down the GWE system in November 2005. The GWE system removed approximately 361,511 gallons of groundwater containing an estimated 4.75 pounds of TPHg, 0.062 pounds of benzene, and 18.4 pounds of MTBE.

Figures 3 through 5 show that the GWE system was effective in reducing concentrations of TPHg and MTBE, that following GWE shut down there was limited rebound in TPHg and MTBE concentrations, and that TPHg and MTBE concentrations have continued to decline since the GWE system was shut down, indicating that GWE was effective in remediating dissolved TPHg and MTBE in groundwater.

2.2 THE SITE HAS BEEN ADEQUATELY CHARACTERIZED

The five groundwater monitoring wells (MW-1 though MW-5) and four UST backfill wells (BW-A through BW-D) are adequate to monitor groundwater conditions at the site. Between December 2001 and March 2007, Cambria coordinated groundwater monitoring with the ARCO service station located to the north across Edes Avenue.

ARCO suspended monitoring the seven wells associated with their service station (MW-1, MW-3 through MW-7, and RW-1) in March 2007 pending closure of the environmental case at their site.

Data from monitoring wells MW-2, MW-4, and MW-5 and UST backfill well BW-D adequately define shallow groundwater impacts to below ESLs on site (Figure 2 and Appendix B). Historical groundwater monitoring well sample analyses in March 1999 detected up to 693,000 micrograms per liter (µg/l) MTBE (MW-1), but following GWE, current MTBE concentrations in groundwater are over three orders of magnitude lower. This trend indicates that the source of MTBE has been eliminated by remediation. Removal of the source and decreasing trends in wells indicate that it is unlikely that deeper groundwater is currently impacted at concentrations above ESLs.

Analyses of vadose zone (<6 feet below grade [fbg]) soil samples have shown that all petroleum hydrocarbon and MTBE detections exceeding non-drinking water ESLs for shallow soils are limited to the area of the dispensers. Soil samples from MW-1, MW-2, MW-5, SB-F, and SB-G adequately define the horizontal extent of soil impacts to below non-drinking water ESLs for shallow soils.

2.3 THE DISSOLVED HYDROCARBON PLUME IS NOT MIGRATING

Constituents of concern (COCs) are not detected above ESLs in any of the wells with the exception of TPHg in on-site well MW-3. Long term trends show all COC concentrations are decreasing, indicating that the plume is shrinking.

2.4 MINIMAL GROUNDWATER IMPACT CURRENTLY EXISTS, FEW CONTAMINANTS ARE FOUND AT LEVELS ABOVE ESTABLISHED MCLS OR OTHER APPLICABLE WATER-QUALITY OBJECTIVES

As stated above, drinking water ESLs do not apply at this site. Maximum groundwater concentrations from samples collected during the third quarter of 2009 are compared with non-drinking water ESLs in the following table.

TABLE A		
COCs	*Current Maximum Concentrations in Site Groundwater (9/09) Units in µg/l*	*ESLs Where Groundwater is not a source of drinking water (Table B) Units in µg/l*
TPHg	**250**	210
Benzene	24	46
Toluene	<2.0	130
Ethylbenzene	<2.0	43
Xylenes	<2.0	100
MTBE	170	1,800
TBA	7,700	18,000

During the third quarter of 2009 all groundwater detections were below non-drinking water ESLs with the exception of TPHg in MW-3. The ESL document states that "TPH ESLs must be used in conjunction with ESLs for related chemicals", in this case benzene, toluene, ethylbenzene, and xylenes (BTEX), MTBE, and TBA. The impacts remaining in MW-3 are limited and adequately defined in the down-gradient direction. As shown in Figure 3, TPHg and benzene in well MW-3 are declining. Figure 4 shows MTBE in well MW-3 declining after some rebound following shut down of the GWE system and TBA in well MW-3 generally declining since its initial peak in 2007. Figure 5 shows downward trends for TPHg, MTBE, and TBA in well MW-1. Current groundwater concentrations of BTEX, MTBE, and TBA are below non-drinking water ESLs and, based on long-term trends, are all projected to reach drinking water ESLs by 2029, a reasonable time frame.

2.5 NO WATER WELLS, DEEPER DRINKING WATER AQUIFERS, SURFACE WATER, OR OTHER SENSITIVE RECEPTORS ARE LIKELY TO BE IMPACTED

Cambria's February 15, 2001 *Offsite Well Installation Report* provided a survey of wells and sensitive receptors within ½-mile of the site. No domestic or municipal water wells were identified within a ½-mile radius of the site. The closest surface water body is a storm drain canal leading to Elmhurst Creek located 175 feet northwest of the site. TPHg, BTEX, and MTBE were not detected in water samples collected from the canal between September 2001 and March 2003. Current concentrations of COCs in wells MW-2 and BW-D, which are located closest to the canal, are compared with freshwater surface water ESLs in the following table.

TABLE B		
COCs	*Current Maximum Concentrations in Wells MW-2 and BW-D (9/09) Units in µg/l*	*ESLs for Freshwater Surface Water Bodies (Table F) Units in µg/l*
TPHg	<50	100
Benzene	<0.50	1.0
Toluene	<1.0	40
Ethylbenzene	<1.0	30
Xylenes	<1.0	20
MTBE	2.9	5.0
TBA	<10	12

Current data from wells MW-2 and BW-D indicate that it is unlikely that the canal or Elmhurst Creek would be significantly impacted by COCs from the site.

2.6 THE SITE PRESENTS NO SIGNIFICANT RISK TO HUMAN HEALTH OR THE ENVIRONMENT

No formal risk assessment has been performed for the site. A discussion of potential risks associated with COCs in groundwater, soil vapor, and soil is presented below.

2.6.1 GROUNDWATER

All groundwater concentrations are below the ESLs where groundwater is not a current or potential drinking water source with the exception of TPHg in MW-3. As stated above, the ESL document states that "TPH ESLs must be used in conjunction with ESLs for related chemicals", in this case BTEX, MTBE, and TBA, which are all below non-drinking water ESLs.

Groundwater concentrations from wells MW-2 and BW-D, which are located the nearest to the canal leading to Elmhurst Creek, provide adequate definition to below freshwater surface water ESLs in the direction of the canal and creek (Table B, above). These data suggest that groundwater concentrations do not pose a significant risk to human health or the environment.

2.6.2 SOIL VAPOR

Risk of soil vapor intrusion due to impacted groundwater can be evaluated by comparing groundwater concentrations with available ESLs. As shown in the following

table, current groundwater concentrations meet the most stringent residential standards and do not present a risk for soil vapor intrusion.

TABLE C		
COCs	*Current Maximum Groundwater Concentrations (9/09)* *Units in µg/l*	*Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion Concerns- Residential Land Use (Table E-1)* *Units in µg/l*
Benzene	24	540
Toluene	<2.0	380,000
Ethylbenzene	<2.0	170,000
Xylenes	<2.0	160,000
MTBE	7,700	24,000

Soil in the vicinity of the dispensers has contained detections above ESLs. Since the air-exchange from customers entering and exiting the station building during all business hours would not allow for significant buildup of vapors from subsurface migration, inhalation risk from vapor intrusion is considered to be low. It is anticipated that the site will remain a service station. This station is part of a service station sale with contract provisions for long term use of the Shell Brand and specific restrictions on site development to commercial uses excluding child day care, elder care, or other similar sensitive uses.

2.6.3 SOIL

As shown in the following table, TPHg, total petroleum hydrocarbons as diesel (TPHd), BTEX, and MTBE exceeded the commercial land use ESL for shallow soils. As stated above, the ESL guidance "TPH ESLs must be used in conjunction with ESLs for related chemicals", in this case BTEX and MTBE. Vadose zone samples D-1 at 1 fbg (1996), D-1, D-2, and D-6 at 2 fbg (1998), and D-6 at 5 fbg (1998) are not considered because these areas were subsequently re-excavated and do not represent residual soil concentrations.

TABLE D		
COCs	*Vadose Zone Soil Sample Maximum Concentrations Units in mg/kg*	*ESLs for Shallow Soils Where Groundwater is Not a Source of Drinking Water, Commercial Land Use (Table B) Units in mg/kg*
TPHg	**1,400** (P-5-5')	180
TPHd	**1,200** (D-2-5' and P-2-5')	180

TABLE D		
COCs	*Vadose Zone Soil Sample Maximum Concentrations Units in mg/kg*	*ESLs for Shallow Soils Where Groundwater is Not a Source of Drinking Water, Commercial Land Use (Table B) Units in mg/kg*
Benzene	**4.7** (SB-D-5.5')	0.27
Toluene	**35** (SB-D-5.5')	9.3
Ethylbenzene	**14** (D-2-5')	4.7
Xylenes	**55** (SB-D-5.5')	11
MTBE	**240** (SB-D-5.5')	8.4

Vadose zone soil impacted at levels above the ESLs is limited to the area of the dispensers. The most recent soil data is from April 2004 and there are is no indication of an ongoing source, so it is likely that soil concentrations have degraded over time. The site is paved, so the only direct exposures would likely occur during construction at the station. Any worker doing trenching or excavating at a current or former gasoline station would be properly trained, prepared for encountering potentially-impacted soil, and would wear personal protective equipment, as necessary. Therefore, the residual impacted soils do not appear to pose a significant threat to construction workers that may occasionally come in contact with the potentially-impacted soils on site, and any work at this site would require contractors to have appropriate health and safety training to perform the work.

3.0 CLOSURE REQUEST

The site is likely to remain in use as a gasoline station. This station is part of a service station sale with contract provisions for long term use of the Shell Brand and specific restrictions on site development to commercial uses excluding child day care, elder care, or other similar sensitive uses. Given the COC concentrations in site soil and groundwater compared to the ESLs presented above, and given the decreasing concentration trends, CRA concludes that the residual petroleum and fuel oxygenate impacts at this site pose very little or no risk to human health or the environment.

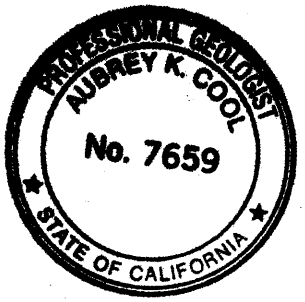
This site meets the RWQCB criteria for a low-risk fuel site and groundwater data indicate the plume is shrinking and COC concentrations will reach ESLs in a reasonable time frame. Therefore, on behalf of Shell, we respectfully request closure of this case. CRA requests that Alameda County Environmental Health suspend the groundwater

monitoring program during the closure review. We will implement this change during the first quarter of 2010, unless we are otherwise directed. No further groundwater sampling events are scheduled, and CRA will not submit additional groundwater monitoring reports.

All of Which is Respectfully Submitted,
CONESTOGA-ROVERS & ASSOCIATES

Peter Schaefer, CHG, CEG

Aubrey K. Cool, PG



FIGURES

11/05/08

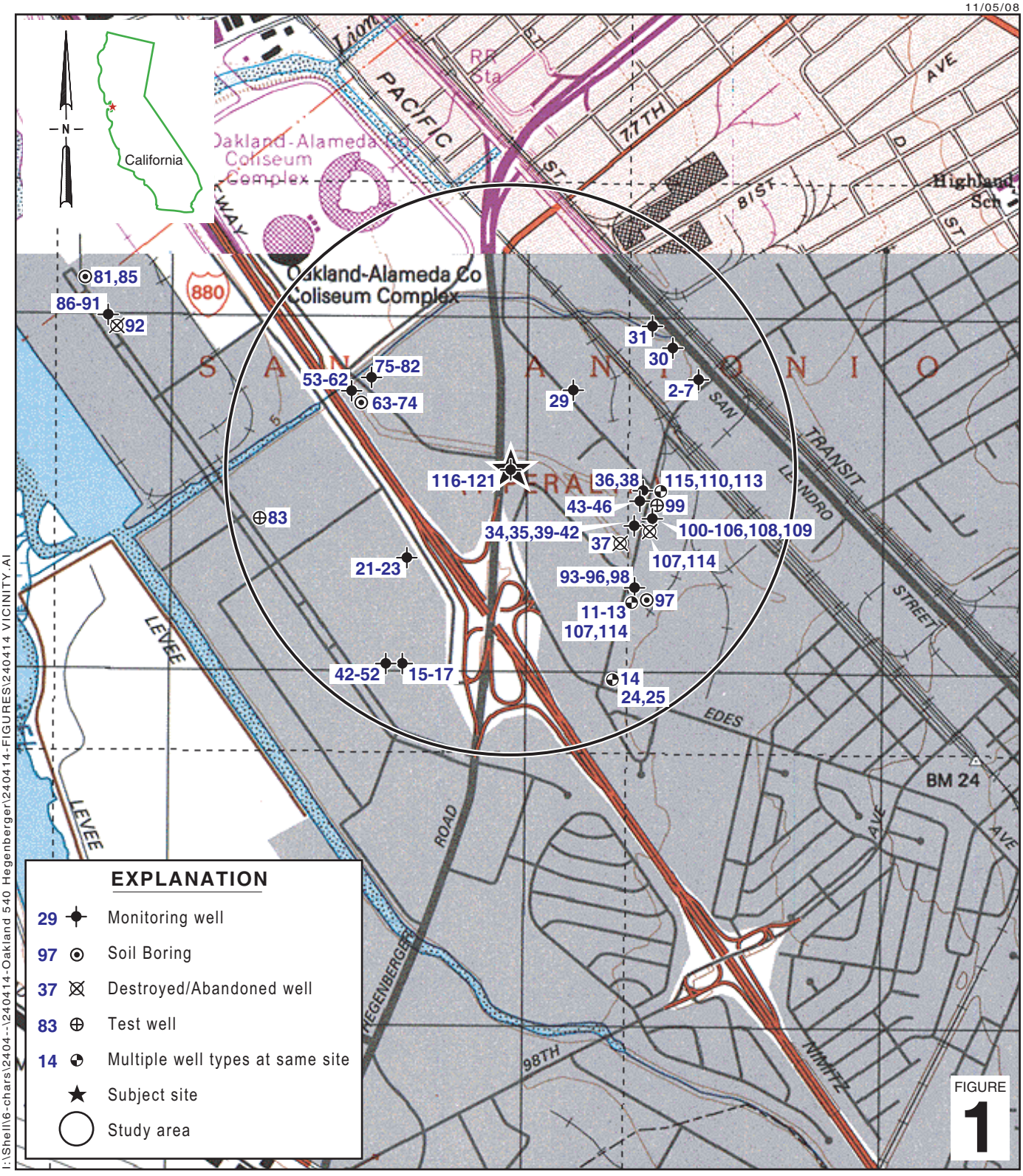


FIGURE 1

0 1/8 1/4 1/2 1

SCALE 1:1/4 MILES

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Shell-branded Service Station
540 Hegenberger Road
Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

Vicinity Map

02/12/10

Groundwater Contour and Chemical Concentration Map

September 23, 2009

EXPLANATION

MW-2	Monitoring well location (Shell)
BW-A	Tank backfill well location (Shell)
MW-1	Groundwater extraction well location (Shell)
MW-1	Monitoring well location (ARCO)
RW-1	Recovery well location (ARCO)
MW-2	Destroyed well location (ARCO)
D-1-5'	Soil sample location (04/04)
C-1	Canal sampling location (2001)
SB-E	Soil boring location (08/00)
SB-D	Soil boring location (07/98)
SB-1	Soil boring location (03/98)
D-1	Soil sample location (01/98)
D-1	Soil sample location (08/96)
INF	GWE system sample location
	Electrical line (E)
	Telecommunication line (T)
	Storm drain line (STM)
	Sanitary sewer line (SAN)
	Water line (W)
FH	Fire hydrant
XX.XX	Groundwater elevation contour, in feet above msl, dashed where inferred.

Well
ELEV
Benzene
MTBE

- Well designation
- Groundwater elevation, in feet above msl
- Benzene and MTBE concentrations are in micrograms per liter

Notes:
ND = Not detected
NDa = Elevated reporting limit; see laboratory report for details
*** =** Data not used in contouring

HEGENBERGER ROAD
COLISEUM WAY
Canal
C-1
FH
Median
Median
MW-3
2.73
24
37
PG&E
Planter
SB-1
SB-5
SB-2
2.50
2.25
BW-D
3.79*
ND
1.1
BW-A
2.00
SD-2
SB-E
MW-2
1.96
ND
2.9
Shell Station
540 Hegenberger
P-4-5'
P-5-5'
P-6-5'
D-1
D-4-5'
D-2
D-5-5'
D-6-5'
Dispensers
2.50
BW-C
USTs
Building
SB-D
2.25
BW-B
SB-4
Dispensers
SB-3
D-3-5'
D-2-5'
D-1-5'
D-6
P-3-5'
P-2-5'
P-1-5'
Remediation piping
2.00
MW-1
1.98
NDa
170
2.00
MW-5
1.99
ND
25
SS Cleanout
Car Wash
2.00
Remediation Compound
INF
EFF
Storage
Planter
SB-G
Jack in the Box Restaurant
Planter
12" SS
EDES AVENUE
MW-4
2.22
ND
23
ENTERPRISE WAY
Days Inn
Laborers' International Union
SD-1
Planter
Driveway
Sidewalk
Driveway
MW-7
Canopy
Dispenser Islands
USTs
Driveway
Former W/O UST
MW-1
Sidewalk
Planter
AM/PM Mini-Mart
ARCO Station #4494
566 Hegenberger
MW-2
(Destroyed 12/92)
RW-1
MW-3
MW-4
Trash
MW-6
MW-5
Burger King Restaurant

0 20 40 80
Scale (ft)

FIGURE
2

Shell-branded Service Station
540 Hegenberger Road
Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

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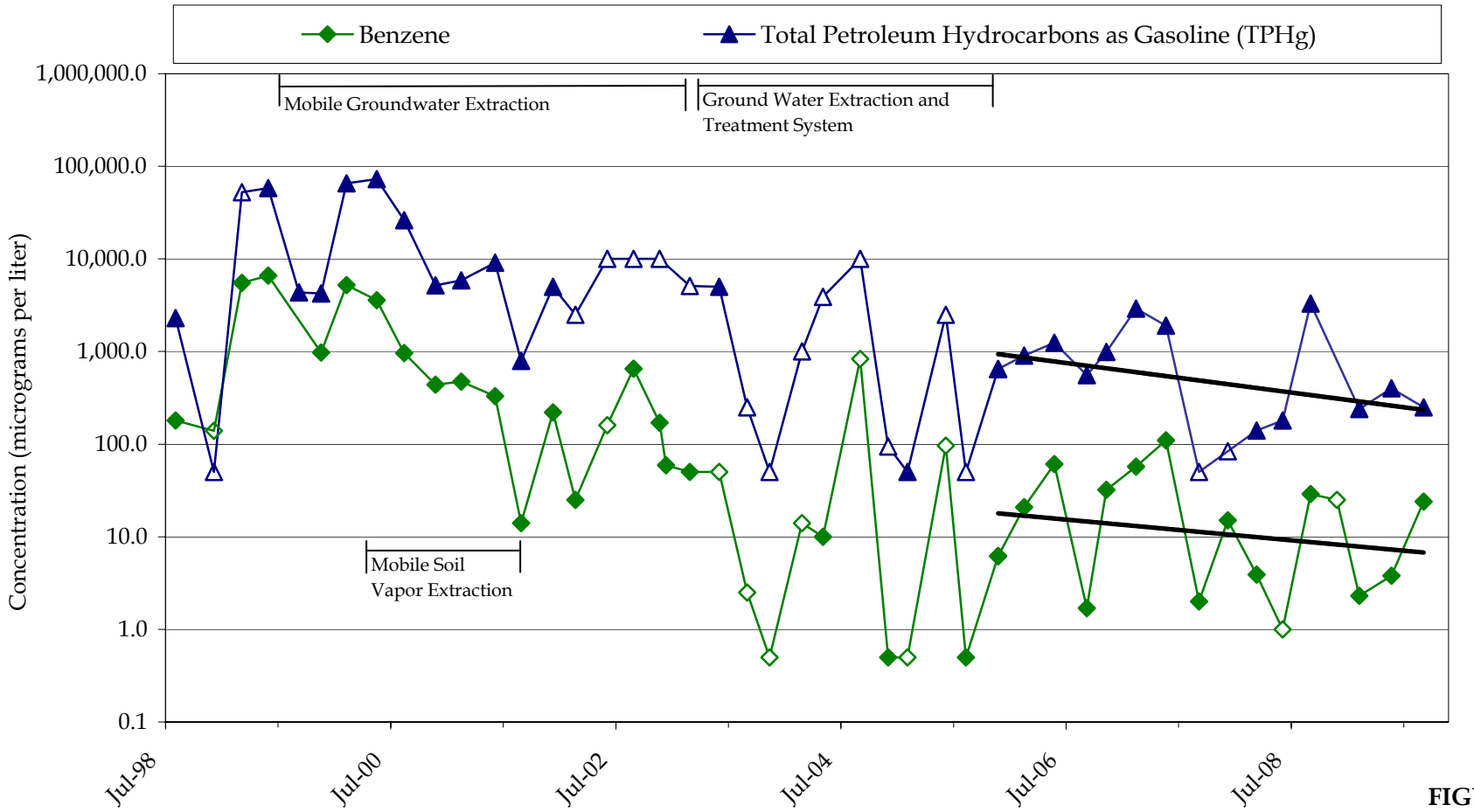


Note: Transparent data points were not detected. The laboratory reporting limits were plotted.

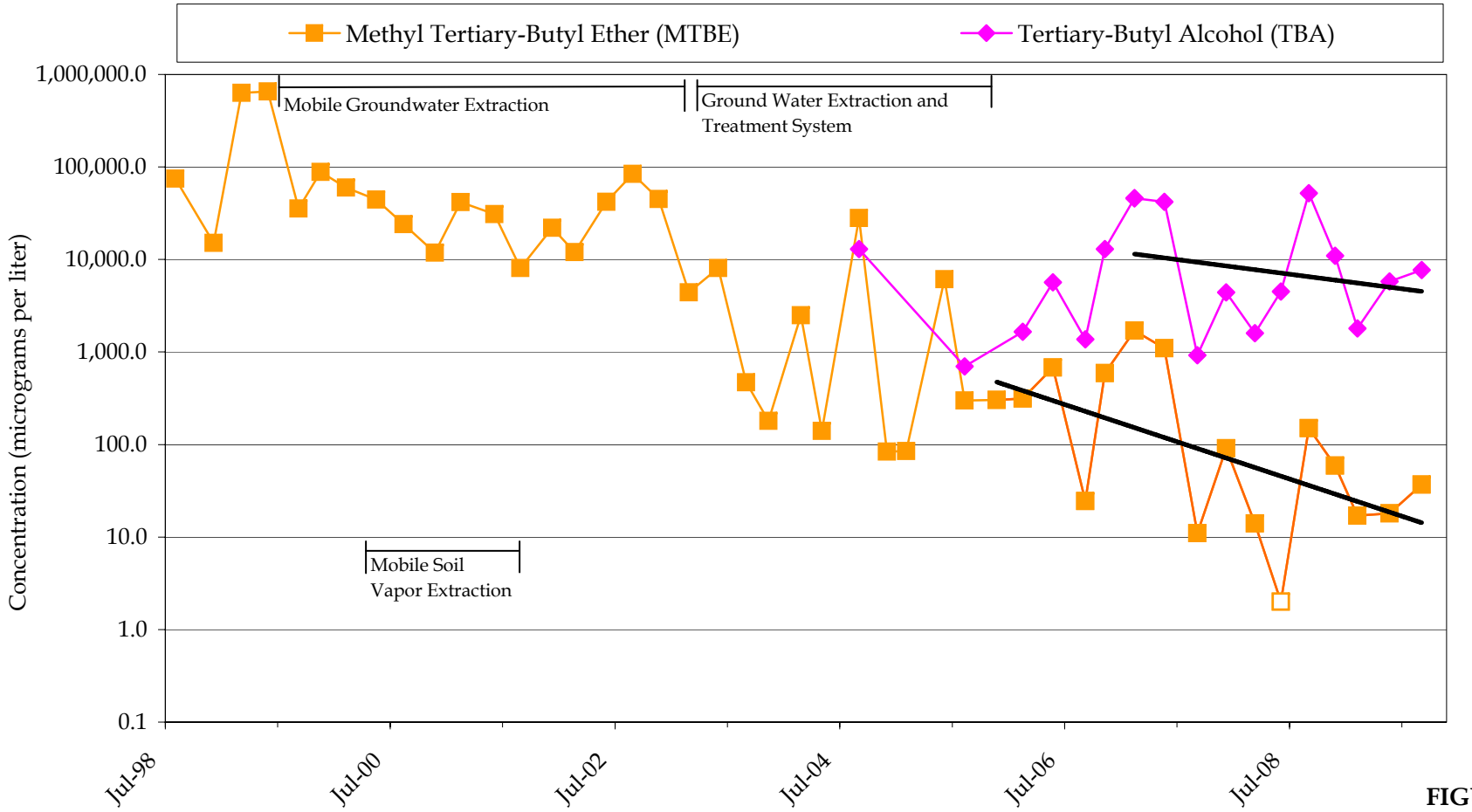
FIGURE

3

Shell-branded Service Station
540 Hegenberger Road
Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

MW-3: TPHg and Benzene Concentrations versus Time



Note: Transparent data points were not detected. The laboratory reporting limits were plotted.

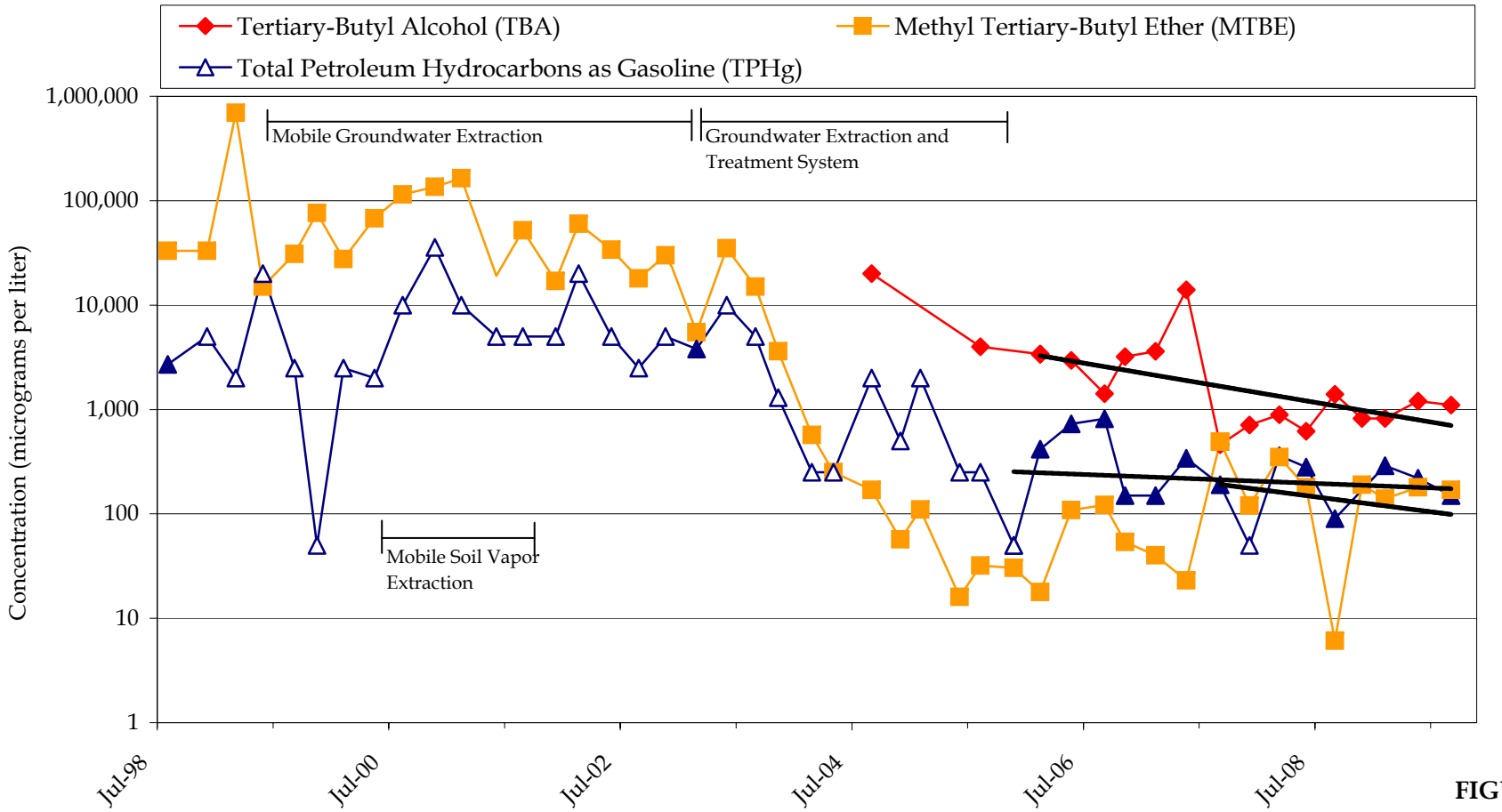
FIGURE

4

Shell-branded Service Station
540 Hegenberger Road
Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

MW-3: MTBE and TBA
Concentrations versus Time



Note: Transparent data points were not detected. The laboratory reporting limits were plotted.

FIGURE

5

MW-1: TPHg, MTBE, and TBA Concentrations versus Time

Shell-branded Service Station
540 Hegenberger Road
Oakland, California

CONESTOGA-ROVERS & ASSOCIATES

TABLES

TABLE 1

HISTORICAL SOIL ANALYTICAL DATA - TPHg, TPHd, BTEX AND MTBE
SHELL-BRANDED SERVICE STATION
540 HEGENBERGER ROAD, OAKLAND, CALIFORNIA

Sample ID	*Date*	*Depth (fbg)*	*TPHg*	*TPHd*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Total Xylenes*	*MTBE*
D-1	8/8/1996	Unk	**3,400**	---	**17**	**280**	**84**	**450**	**720**
D-1	1/30/1998	2	**340**	**280**	**3.7**	**11**	**5.4**	**33**	**190**
D-2	1/30/1998	2	89	92	**0.65**	3.9	0.50	3.0	**150**
D-6	1/30/1998	2	**340**	**1,500**	**0.29**	0.44	1.3	2.7	4.1
D-6	1/30/1998	5	4.2	**240**	<0.0050	0.014	0.0085	0.040	0.33
SB-1	3/6/1998	8	2.4	---	0.094	0.12	<0.0050	<0.0050	0.40
SB-2	3/6/1998	7.5	**160**	---	**1.5**	**12**	**2.8**	**17**	**55**
SB-3	3/6/1998	5	37	---	0.058	0.24	0.90	5.0	5.8
SB-4	3/6/1998	7.5	<1.0	---	0.0057	0.029	<0.0050	0.014	0.34
SB-5	3/6/1998	6	**3,400**	---	**39**	**200**	**52**	**300**	**170**
SB-A-5.0'	7/14/1998	5	82	---	**2.1**	2.4	0.34	1.4	**10**
SB-A-9.5'	7/14/1998	9.5	<2.5	---	0.060	<0.012	0.013	0.027	**15**
SB-B-5.0'	7/15/1998	5	<1.0	---	<0.0050	<0.0050	<0.0050	<0.0050	1.2
SB-C-9.5'	7/14/1998		<1.0	---	<0.0050	0.0056	<0.0050	<0.0050	0.33
SB-D-5.5'	7/14/1998	5.5	**460**	---	**4.7**	**35**	**8.5**	**55**	**240**
SB-D-10.5'	7/14/1998	10.5	<1.0	---	<0.0050	<0.0050	<0.0050	<0.0050	0.44
SB-E-5.5	8/29/2000	5.5	<1.00	<5.00[a]	<0.00500	<0.00500	<0.00500	<0.00500	0.441/0.481[b]
SB-E-10.5	8/29/2000	10.5	<1.00	<5.00[a]	<0.00500	<0.00500	<0.00500	<0.00500	0.248/0.0971[b]
SB-E-15.5	8/29/2000	15.5	<5.00	<5.00[a]	<0.0250	<0.0250	<0.0250	<0.0250	1.83/1.86[b]
SB-E-20.5	8/29/2000	20.5	<1.00	<5.00[a]	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500
SB-E-25.5	8/29/2000	25.5	<1.00	<5.00[a]	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500

TABLE 1

HISTORICAL SOIL ANALYTICAL DATA - TPHg, TPHd, BTEX AND MTBE
SHELL-BRANDED SERVICE STATION
540 HEGENBERGER ROAD, OAKLAND, CALIFORNIA

Sample ID	*Date*	*Depth (fbg)*	*TPHg*	*TPHd*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Total Xylenes*	*MTBE*
SB-F-5.5	8/29/2000	5.5	<1.00	<5.00[a]	<0.00500	<0.00500	<0.00500	<0.00500	0.0727[c]
SB-F-10.5	8/29/2000	10.5	<1.00	<5.00[a]	<0.00500	<0.00500	<0.00500	<0.00500	0.0551/<0.00500[b]
SG-G-5.5	8/29/2000	5.5	2.19	<5.00[a]	<0.00500	<0.00500	0.132	0.258	0.141/0.0505[b]
SG-G-10.5	8/29/2000	10.5	**468**	108[a,d]	<0.250	1.88	**7.05**	**26.9**	<2.50
MW-4-5.5	9/5/2000	5.5	<1.00	31.7[a]	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500
MW-4-10.5	9/5/2000	10.5	<1.00	<5.00[a]	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500
MW-4-15.5	9/5/2000	15.5	<1.00	<5.00[a]	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500
MW-4-19.0	9/5/2000	19	<1.00	<5.00[a]	<0.00500	<0.00500	<0.00500	<0.00500	<0.0500
MW-5-5.5	6/7/2002	5.5	<1.0	---	<0.005	<0.005	<0.005	<0.005	<0.5
MW-5-9.0	6/7/2002	9	<1.0	---	<0.005	<0.005	<0.005	<0.005	<0.5
MW-5-14.0	6/7/2002	14	<5.0	---	<0.025	<0.025	<0.025	<0.050	**13**
MW-5-19.0	6/7/2002	19	<1.0	---	<0.005	<0.005	<0.005	<0.010	5.5
D-1-5'	4/22/2004	5	**1,000**	---	**3.7**	<2.5	**12**	<2.5	**18**
D-2-5'	4/22/2004	5	**1,300**	**1,200**[e]	**4.3**	<0.50	**14**	2.6	**23**
D-3-5'	4/22/2004	5	6.6	---	0.15	0.031	0.063	0.047	0.66
D-4-5'	4/22/2004	5	<50	---	**1.0**	<0.50	2.0	<0.50	**33**
D-5-5'	4/22/2004	5	<50	---	**0.59**	3.4	0.67	3.3	**43**
D-6-5'	4/22/2004	5	59	---	<0.50	<0.50	<0.50	0.6	**9.8**
P-1-5'	4/22/2004	5	<50	---	<0.50	<0.50	1.3	0.65	7.4
P-2-5'	4/22/2004	5	**240**	**1,200**[e]	**2.8**	<0.50	1.3	1.2	**13**
P-3-5'	4/22/2004	5	**240**	---	<1.3	<1.3	2.2	<1.3	<1.3
P-4-5'	4/22/2004	5	<50	---	<0.50	<0.50	<0.50	<0.50	7.3

TABLE 1

HISTORICAL SOIL ANALYTICAL DATA - TPHg, TPHd, BTEX AND MTBE
SHELL-BRANDED SERVICE STATION
540 HEGENBERGER ROAD, OAKLAND, CALIFORNIA

Sample ID	*Date*	*Depth (fbg)*	*TPHg*	*TPHd*	*Benzene*	*Toluene*	*Ethyl-benzene*	*Total Xylenes*	*MTBE*
P-5-5'	4/22/2004	5	**1,400**	---	<2.5	<2.5	3.1	2.5	3.4
P-6-5'	4/22/2004	5	**180**	---	<0.50	<0.50	1.3	<0.50	6.0
Shallow Soil (≤10 fbg) ESL[f]:			100	100	0.27	9.3	4.7	11	8.4
Deep Soil (>10 fbg) ESL[f]:			180	180	2.0	9.3	4.7	11	8.4

Notes:

All results in milligrams per kilograms (mg/kg) unless otherwise indicated.
fbg = Feet below grade
TPHg = Total petroleum hydrocarbons as gasoline analyzed by EPA Method 8260B; before June 7, 2002, analyzed by EPA Method 8015.
TPHd = Total petroleum hydrocarbons as diesel, analyzed by EPA Method 8015
BTEX = Benzene, toluene, ethylbenzene, and xylenes, analyzed by EPA Method 8260B; before June 7, 2002, analyzed by EPA Method 8020
MTBE = Methyl tertiary-butyl ether analyzed by EPA Method 8260B; before June7, 2002, analyzed by EPA Method 8020 unless otherwise noted
Unk = Unknown
<x = Not detected at reporting limit x
--- = Not analyzed
Results in **bold** equal or exceed applicable ESL

a = Analyzed with silica gel clean-up
b = Analyzed by EPA Method 8260B
c = MTBE not confirmed due to lab error.
d = Results in the diesel organics are elevated due to overlap from higher boiling point hydrocarbons
e = Reported hydrocarbon does not match lab's diesel standard.
f = San Francisco Bay Regional Water Quality Control Board commercial/industrial ESL for soil where groundwater is not a source of drinking water (Tables B and D of *Screening for Environmental Concerns at Sites With Contaminated Soil and Groundwater*, California Regional Water Quality Control Board, Interim Final - November 2007 [Revised May 2008]).

TABLE 2

HISTORICAL SOIL ANALYTICAL DATA - PHYSICAL PARAMETERS
SHELL-BRANDED SERVICE STATION
540 HEGENBERGER ROAD, OAKLAND, CALIFORNIA

Sample ID	*Date*	*Depth (fbg)*	*Soil Type*	*Porosity (%)*	*Organic Carbon (%)*	*Moisture Content (%)*	*Dry Bulk Density (g/cc)*
SB-3	3/6/1998	5	silty clay	31.3	0.62	17	1.83
SB-3	3/6/1998	7.5	silty clay	33.8	0.77	---	1.76
SB-4	3/6/1998	7.5	very fine- fine grained silty sand	48.9	0.77	30	1.33
SB-4	3/6/1998	12	very fine- medium grained silty sand	43.0	0.67	---	1.50
SB-D-5.0'	7/14/1998	5	brown clayey silt	42.2	0.79	22	1.49
SB-D-10.0'	7/14/1998	10	brown clayey silt	44.3	0.48	---	1.49
SBP-F-6.0	8/29/2000	6	clayey silt	36.7[a]	842[b]	16.76	1.52
SBP-G-6.0	8/29/2000	6	silty sand	50.6[a]	13,263[b]	25.31	1.35
MW-4P-11.0	9/5/2000	11	silty sand	---	3,105[b]	22.70	1.36

Notes:

fbg = Feet below grade
g/cc = Grams per cubic centimeter
Porosity, fraction organic carbon, moisture content, and dry bulk density analyzed by API Method RP-40 unless otherwise noted
--- = Not analyzed

a = Analyzed by EPA Method 160.3
b = Analyzed by EPA Method 415.1

APPENDIX A

SITE HISTORY

SITE HISTORY

1996 Piping Repair: On August 8, 1996, Cambria Environmental Technology, Inc. (Cambria) collected one soil sample beneath the piping at Dispenser 1. This sample contained 3,400 milligrams per kilogram (mg/kg) total petroleum hydrocarbons as gasoline (TPHg), 17 mg/kg benzene, and 720 mg/kg methyl tertiary-butyl ether (MTBE). Cambria's November 8, 1996 *Soil and Air Sampling Report* presents details of this investigation.

1998 Station Upgrade: In January and February 1998, Paradiso Mechanical of San Leandro, California (Paradiso) added secondary containment beneath the existing dispensers and submersible turbine pumps. Cambria collected soil samples beneath the dispensers. Soil samples contained up to 340 mg/kg TPHg and 3.7 mg/kg benzene. Cambria's March 23, 1998 *Dispenser Soil Sampling Report* presents details of this investigation.

1998 Soil Borings: On March 6, 1998, Cambria drilled five on-site soil borings (SB-1 through SB-5) up to 20 feet below grade (fbg). Soil samples contained up to 3,400 mg/kg TPHg, 39 mg/kg benzene, and 170 mg/kg MTBE (all in boring SB-5 at 6 fbg). Boring SB-5 also contained the maximum grab groundwater concentrations, which were 200,000 micrograms per liter (µg/l) TPHg, 11,000 µg/l benzene, and 1,300,000 µg/l MTBE. Cambria's April 15, 1998 *Subsurface Investigation Report* presents details of this investigation.

1998 Groundwater Monitoring Well Installation: On July 14 and 15, 1998, Cambria installed three groundwater monitoring wells and drilled one soil boring at the site (MW-1 through MW-3 and SB-D). Soil samples contained up to 460 mg/kg TPHg, 4.7 mg/kg benzene, and 240 mg/kg MTBE (all in boring SB-D at a depth of 5.5 fbg). Cambria's November 9, 1998 *Well Installation Report* presents details of this investigation.

1999-2003 Interim Remediation Efforts: Beginning July 1999, Cambria conducted weekly groundwater extraction (GWE) events from selected site wells using a vacuum truck. Between June of 2000 and September 2001, Cambria added extraction and treatment of soil vapors in addition to dissolved-phase hydrocarbons (dual-phase vacuum extraction). Cambria discontinued interim remediation efforts in February 2003. Interim GWE removed 83,063 gallons of groundwater containing an estimated 1.68 pounds of TPHg, 0.088 pounds of benzene, and 13.0 pounds of MTBE. Soil vapor extraction removed an estimated 19.3 pounds of TPHg, 0.107 pounds of benzene, and 0.720 pounds of MTBE.

2000 Off-Site Soil Borings and Well Installation: In August and September 2000, Cambria drilled three soil borings (SB-E, SB-F, and SB-G) and installed one groundwater monitoring well (MW-4). Soil samples contained up to 468 mg/kg TPHg, 108 mg/kg

total petroleum hydrocarbons as diesel (TPHd), 1.88 mg/kg toluene, 7.05 mg/kg ethylbenzene, 26.9 mg/kg xylenes, and 1.86 mg/kg MTBE. Grab groundwater samples contained up to 51,100 µg/l TPHg, 5,780 µg/l TPHd, 2,080 µg/l benzene, 2,390 µg/l toluene, 2,980 µg/l ethylbenzene, 14,100 µg/l xylenes, and 76,400 µg/l MTBE. Cambria's February 15, 2001 *Offsite Subsurface Investigation Report* presents details of this investigation.

2002 Well Installation: In June 2002, Cambria installed one groundwater monitoring well (MW-5). TPHg and benzene, toluene, ethylbenzene and xylenes (BTEX) were not detected in soil samples from the well boring. Up to 13 mg/kg MTBE (MW-5-14.0) was detected in soil samples. Cambria's August 14, 2002 *Well Installation Report* presents details of this investigation.

2003-2005 GWE System: In March 2003, Cambia installed a GWE system, and operated the system between April 2003 and November 2005. The GWE system removed 361,511 gallons of groundwater containing an estimated 4.75 pounds of TPHg, 0.062 pounds of benzene, and 18.4 pounds of MTBE.

2004 Fuel System Upgrade and Soil Disposal: In June and July 2004, Paradiso upgraded fuel dispensers, piping, under-dispenser containment, and underground storage tank (UST) fuel fill-port sumps. Cambria collected soil samples from beneath the dispensers and piping at 5 fbg. Soil samples contained up to 1,400 mg/kg TPHg, 1,200 mg/kg TPHd, 4.3 mg/kg benzene, 3.4 mg/kg toluene, 14 mg/kg ethylbenzene, 3.3 mg/kg xylenes, and 43 mg/kg MTBE. The laboratory noted that the hydrocarbons reported as diesel were in the early diesel range and did not match the laboratory's diesel standard. The facility upgrade activities generated approximately 50 tons of soil for disposal. Cambria's June 28, 2004 *Dispenser and Piping Upgrade Sampling Report* presents details of this investigation.

Groundwater Monitoring: Groundwater was monitored quarterly between August 1998 and September 2009, and is now monitored semiannually during the first and third quarters. Groundwater monitoring was coordinated with the ARCO service station to the north between December 2001 and March 2007. Depth to groundwater generally ranges from 4 to 10 fbg and historical groundwater flow direction has varied from north to east. In the most recent groundwater monitoring event (September 23, 2009), monitoring wells contained up to 250 µg/l TPHg, 24 µg/l benzene, 170 µg/l MTBE, and 7,700 µg/l tertiary-butyl alcohol.

APPENDIX B

HISTORICAL GROUNDWATER DATA

BLAINE
TECH SERVICES

GROUNDWATER SAMPLING SPECIALISTS
SINCE 1985

October 7, 2009

Denis Brown
Shell Oil Products US
20945 South Wilmington Avenue
Carson, CA 90810

Third Quarter 2009 Groundwater Monitoring at
Shell-branded Service Station
540 Hegenberger Road
Oakland, CA

Monitoring performed on September 23, 2009

Groundwater Monitoring Report **090923-FS-1**

This report covers the routine monitoring of groundwater wells at this Shell-branded facility. In accordance with standard procedures that conform to Regional Water Quality Control Board requirements, routine field data collection includes depth to water, total well depth, thickness of any separate immiscible layer, water column volume, calculated purge volume (if applicable), elapsed evacuation time (if applicable), total volume of water removed (if applicable), and standard water parameter instrument readings. Sample material is collected, contained, stored, and transported to the laboratory in conformance with EPA standards. Purgewater (if applicable) is, likewise, collected and transported to the Martinez Refining Company.

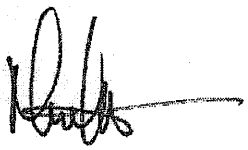
Basic field information is presented alongside analytical values excerpted from the laboratory report in the cumulative table of **WELL CONCENTRATIONS**. The full analytical report for the most recent samples and the field data sheets are attached to this report.

At a minimum, Blaine Tech Services, Inc. field personnel are certified on completion of a forty-hour Hazardous Materials and Emergency Response training course per 29 CFR 1910.120. Field personnel are also enrolled in annual eight-hour refresher courses.

Blaine Tech Services, Inc. conducts sampling and documentation assignments of this type as an independent third party. Our activities at this site consisted of objective data and sample collection only. No interpretation of analytical results, defining of hydrological conditions or formulation of recommendations was performed.

Please call if you have any questions.

Yours truly,



Mike Ninokata
Project Manager

MN/np

attachments: Cumulative Table of WELL CONCENTRATIONS
Certified Analytical Report
Field Data Sheets

cc: Anni Kreml
Conestoga-Rovers & Associates
5900 Hollis Street, Suite A
Emeryville, CA 94608

WELL CONCENTRATIONS
Shell-branded Service Station
540 Hegenberger Road
Oakland, CA

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-1 (a)	08/26/1998	2,700	28	55	59	39	33,000	NA	NA	NA	NA	NA	NA	10.54	7.91	2.63	1.8
MW-1 (b)	08/26/1998	<1,000	22	<10	<10	<10	17,000	NA	NA	NA	NA	NA	NA	10.54	7.91	2.63	2.2
MW-1	12/28/1998	<5,000	<50.0	<50.0	<50.0	<50.0	153,000	33,000	NA	NA	NA	NA	NA	10.54	8.75	1.79	1.9
MW-1	03/29/1999	<2,000	<20.0	<20.0	<20.0	<20.0	693,000	NA	NA	NA	NA	NA	NA	10.54	8.32	2.22	2.0
MW-1	06/22/1999	20,000	<200	<200	<200	<200	150,000	NA	NA	NA	NA	NA	NA	10.54	9.05	1.49	1.7
MW-1	09/30/1999	<2,500	<25.0	<25.0	<25.0	<25.0	30,900	NA	NA	NA	NA	NA	NA	10.54	8.35	2.19	2.6
MW-1	11/19/1999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.54	9.58	0.96	NA
MW-1	11/24/1999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.54	9.65	0.89	NA
MW-1	12/02/1999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.54	9.55	0.99	NA
MW-1	12/10/1999	<50.0	29.7	<20.0	<20.0	<20.0	76,300	NA	NA	NA	NA	NA	NA	10.54	8.86	1.68	1.2
MW-1	03/02/2000	<2,500	<25.0	<25.0	<25.0	<25.0	27,600	NA	NA	NA	NA	NA	NA	10.54	8.83	1.71	3.2
MW-1	06/08/2000	<2,000	<20.0	<20.0	<20.0	<20.0	59,000	67,600	NA	NA	NA	NA	NA	10.54	7.78	2.76	1.9
MW-1	09/05/2000	<10,000	411	<100	<100	<100	71,100	115,000 e	NA	NA	NA	NA	NA	10.54	7.84	2.70	NA
MW-1	12/15/2000	35,600	1,310	<50.0	<50.0	<50.0	136,000	f	NA	NA	NA	NA	NA	10.54	7.65	2.89	NA
MW-1	03/09/2001	<10,000	1,390	<100	<100	<100	89,600	164,000	NA	NA	NA	NA	NA	10.54	6.44	4.10	NA
MW-1	06/27/2001	<5,000	<50	<50	<50	<50	NA	19,000	NA	NA	NA	NA	NA	10.54	8.46	2.08	NA
MW-1	09/19/2001	<5,000	<50	<50	<50	<50	NA	52,000	NA	NA	NA	NA	NA	10.54	8.10	2.44	NA
MW-1	12/31/2001	<5,000	<25	<25	<25	<25	NA	17,000	NA	NA	NA	NA	NA	10.54	7.31	3.23	NA
MW-1	03/14/2002	<20,000	<200	<200	<200	<200	NA	60,000	NA	NA	NA	NA	NA	10.54	7.68	2.86	NA
MW-1	06/25/2002	<5,000	<50	<50	<50	<50	NA	34,000	NA	NA	NA	NA	NA	10.54	8.40	2.14	NA
MW-1	09/19/2002	<2,500	<25	<25	<25	<25	NA	18,000	NA	NA	NA	NA	NA	10.52	8.58	1.94	NA
MW-1	12/12/2002	<5,000	<50	<50	<50	<50	NA	30,000	NA	NA	NA	NA	NA	10.52	8.41	2.11	NA
MW-1	01/02/2003	NA	<0.50	<0.50	<0.50	<1.0	NA	NA	NA	NA	NA	NA	NA	10.52	7.45	3.07	NA
MW-1	03/20/2003 g	3,800	<25	<25	<25	<25	5,500	NA	NA	NA	NA	NA	NA	10.52	8.21	2.31	NA
MW-1	06/23/2003	<10,000	<100	<100	<100	<200	NA	35,000	NA	NA	NA	NA	NA	10.52	9.02	1.50	NA
MW-1	09/22/2003	<5,000	<50	<50	<50	<100	NA	15,000	NA	NA	NA	NA	NA	10.52	15.74	-5.22	NA
MW-1	12/03/2003	<1,300	<13	<13	<13	<25	NA	3,600	NA	NA	NA	NA	NA	10.52	18.35 h	NA	NA
MW-1	03/18/2004	<250	<2.5	<2.5	<2.5	<5.0	NA	570	NA	NA	NA	NA	NA	10.52	7.32	3.20	NA
MW-1	05/25/2004	<250	<2.5	<2.5	<2.5	<5.0	NA	250	NA	NA	NA	NA	NA	10.52	6.80	3.72	NA

WELL CONCENTRATIONS
Shell-branded Service Station
540 Hegenberger Road
Oakland, CA

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-1	09/22/2004	<2,000	<20	<20	<20	<40	NA	170	<80	<80	<80	20,000	<2,000	10.52	6.55	3.97	NA
MW-1	12/22/2004	<500	<5.0	<5.0	<5.0	<10	NA	57	NA	NA	NA	NA	NA	10.52	6.44	4.08	NA
MW-1	02/23/2005	<2,000	<20	<20	<20	<40	NA	110	NA	NA	NA	NA	NA	10.52	5.79	4.73	NA
MW-1	06/27/2005	<250	<2.5	<2.5	<2.5	<5.0	NA	16	NA	NA	NA	NA	NA	10.52	6.43	4.09	NA
MW-1	08/31/2005	<250	<2.5	<2.5	<2.5	<5.0	NA	32	<10	<10	<10	4,000	<250	9.27	6.38	2.89	NA
MW-1	12/14/2005	<50.0	<0.500	2.03	<0.500	<0.500	NA	30.4	NA	NA	NA	NA	NA	9.27	6.46	2.81	NA
MW-1	03/08/2006	417	1.87	<0.500	<0.500	0.830	NA	17.8	NA	NA	NA	3,380	NA	9.27	6.21	3.06	NA
MW-1	06/14/2006	728	282	1.61	4.16	9.82	NA	109	NA	NA	NA	2,950	NA	9.27	6.86	2.41	NA
MW-1	09/27/2006	817	<0.500	<0.500	<0.500	<0.500	NA	122	<0.500	<0.500	<0.500	1,420	<50.0	9.27	7.70	1.57	NA
MW-1	11/30/2006	150	<0.50	<0.50	<0.50	<1.0	NA	54	NA	NA	NA	3,200	NA	9.27	7.59	1.68	NA
MW-1	03/06/2007	150 k	<0.50 k	<1.0 k	<0.50 k	<1.0 k	NA	40 k	NA	NA	NA	3,600 k	NA	9.27	6.38	2.89	NA
MW-1	06/11/2007	340	<5.0	<10	<10	<10	NA	23	NA	NA	NA	14,000	NA	9.27	7.88	1.39	NA
MW-1	09/26/2007	190 m,n	<2.5	<5.0	<5.0	<5.0	NA	490	<10	<10	<10	460	<500	9.27	7.03	2.24	NA
MW-1	12/28/2007	<50 m	<0.50	<1.0	<1.0	<1.0	NA	120	NA	NA	NA	710	NA	9.27	7.40	1.87	NA
MW-1	03/31/2008	360	<0.50	<1.0	<1.0	<1.0	NA	350	NA	NA	NA	890	NA	9.27	7.41	1.86	NA
MW-1	06/23/2008	280	<2.5	<5.0	<5.0	<5.0	NA	180	NA	NA	NA	620	NA	9.27	6.80	2.47	NA
MW-1	09/22/2008	90	<0.50	<1.0	<1.0	<1.0	NA	6.1	<2.0	<2.0	<2.0	1,400	<100	9.27	7.18	2.09	NA
MW-1	12/16/2008	NA	<0.50	<1.0	<1.0	<1.0	NA	190	NA	NA	NA	820	NA	9.27	7.17	2.10	NA
MW-1	02/27/2009	290	<0.50	<1.0	<1.0	<1.0	NA	140	NA	NA	NA	820	NA	9.27	5.82	3.45	NA
MW-1	06/11/2009	220	<1.0	<2.0	<2.0	<2.0	NA	180	NA	NA	NA	1,200	NA	9.27	7.90	1.37	NA
MW-1	**09/23/2009**	**150**	**<1.0**	**<2.0**	**<2.0**	**<2.0**	**NA**	**170**	**<4.0**	**<4.0**	**<4.0**	**1,100**	**<200**	**9.27**	**7.29**	**1.98**	**NA**
MW-2 (a)	08/26/1998	<250	3.2	<2.5	<2.5	<2.5	4,000	NA	NA	NA	NA	NA	NA	9.21	7.18	2.03	2.4
MW-2 (b)	08/26/1998	<250	3.1	<2.5	<2.5	<2.5	4,800	NA	NA	NA	NA	NA	NA	9.21	7.18	2.03	2.7
MW-2 (D)(b)	08/26/1998	<250	4.8	<2.5	<2.5	6.0	3,300	NA	NA	NA	NA	NA	NA	9.21	7.18	2.03	2.7
MW-2	12/28/1998	<50.0	<0.500	<0.500	<0.500	<0.500	28.8	NA	NA	NA	NA	NA	NA	9.21	7.34	1.87	2.1
MW-2	03/29/1999	235	<0.500	<0.500	<0.500	3.4	101	NA	NA	NA	NA	NA	NA	9.21	6.85	2.36	2.0
MW-2	06/22/1999	<50	<0.50	<0.50	<0.50	<0.50	<2.5	NA	NA	NA	NA	NA	NA	9.21	7.10	2.11	1.9
MW-2	09/30/1999	<50.0	<0.500	<0.500	<0.500	<0.500	1,700	NA	NA	NA	NA	NA	NA	9.21	8.06	1.15	1.0

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Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-2	12/10/1999	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	NA	NA	NA	NA	NA	9.21	8.61	0.60	1.4
MW-2	03/02/2000	<500	11.5	<5.00	<5.00	<5.00	5,280	NA	NA	NA	NA	NA	NA	9.21	6.33	2.88	0.4
MW-2	06/08/2000	<50.0	0.670	<0.500	<0.500	<0.500	3,160	NA	NA	NA	NA	NA	NA	9.21	6.87	2.34	1.6
MW-2	09/05/2000	<1,000	<10.0	<10.0	<10.0	<10.0	9,600	NA	NA	NA	NA	NA	NA	9.21	6.79	2.42	NA
MW-2	12/15/2000	<200	<2.00	<2.00	<2.00	<2.00	6,320	NA	NA	NA	NA	NA	NA	9.21	6.76	2.45	NA
MW-2	03/09/2001	<500	<5.00	<5.00	<5.00	<5.00	17,200	NA	NA	NA	NA	NA	NA	9.21	6.28	2.93	NA
MW-2	06/27/2001	<100	1.4	<1.0	<1.0	<2.0	NA	470	NA	NA	NA	NA	NA	9.21	7.12	2.09	NA
MW-2	09/19/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	330	NA	NA	NA	NA	NA	9.21	7.17	2.04	NA
MW-2	12/31/2001	<100	<1.0	<1.0	<1.0	<1.0	NA	420	NA	NA	NA	NA	NA	9.21	6.24	2.97	NA
MW-2	03/14/2002	<250	4.5	3.3	<2.5	<2.5	NA	1,600	NA	NA	NA	NA	NA	9.21	6.72	2.49	NA
MW-2	06/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	110	NA	NA	NA	NA	NA	9.21	7.23	1.98	NA
MW-2	09/19/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	90	NA	NA	NA	NA	NA	9.19	7.48	1.71	NA
MW-2	12/12/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	170	NA	NA	NA	NA	NA	9.19	7.33	1.86	NA
MW-2	03/20/2003 g	56	<0.50	<0.50	<0.50	<0.50	58	NA	NA	NA	NA	NA	NA	9.19	7.65	1.54	NA
MW-2	06/23/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	44	NA	NA	NA	NA	NA	9.19	8.72	0.47	NA
MW-2	09/22/2003	<250	<2.5	<2.5	<2.5	<5.0	NA	37	NA	NA	NA	NA	NA	9.19	8.84	0.35	NA
MW-2	12/03/2003	<250	<2.5	<2.5	<2.5	<5.0	NA	99	NA	NA	NA	NA	NA	9.19	8.95	0.24	NA
MW-2	03/18/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	24	NA	NA	NA	NA	NA	9.19	7.19	2.00	NA
MW-2	05/25/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	53	NA	NA	NA	NA	NA	9.19	8.40	0.79	NA
MW-2	09/22/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	24	<2.0	<2.0	<2.0	100	<50	9.19	7.08	2.11	NA
MW-2	12/22/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	39	NA	NA	NA	NA	NA	9.19	7.09	2.10	NA
MW-2	02/23/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	38	NA	NA	NA	NA	NA	9.19	6.50	2.69	NA
MW-2	06/27/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	28	NA	NA	NA	NA	NA	9.19	7.17	2.02	NA
MW-2	08/31/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	5.5	<2.0	<2.0	<2.0	19	<50	9.19	7.21	1.98	NA
MW-2	12/14/2005	<50.0	<0.500	2.16	<0.500	<0.500	NA	5.33	NA	NA	NA	NA	NA	9.19	7.13	2.06	NA
MW-2	03/08/2006	<50.0	<0.500	<0.500	<0.500	0.560	NA	18.8	NA	NA	NA	<10.0	NA	9.19	6.02	3.17	NA
MW-2	06/14/2006	<50.0	<0.500	0.680	<0.500	<0.500	NA	2.17	NA	NA	NA	<10.0	NA	9.19	7.19	2.00	NA
MW-2	09/27/2006	276	<0.500	<0.500	<0.500	<0.500	NA	5.29	<0.500	<0.500	<0.500	30	<50.0	9.19	7.45	1.74	NA
MW-2	11/30/2006	<50	<0.50	<0.50	<0.50	<1.0	NA	<0.50	NA	NA	NA	<5.0	NA	9.19	7.30	1.89	NA
MW-2	03/06/2007	<50 k	<0.50 k	<1.0 k	<0.50 k	<1.0 k	NA	0.87 k	NA	NA	NA	<5.0 k	NA	9.19	6.70	2.49	NA

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Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-2	06/11/2007	<50	<0.50	<1.0	<1.0	<1.0	NA	<1.0	NA	NA	NA	<10	NA	9.19	7.14	2.05	NA
MW-2	09/26/2007	<50 m	<0.50	<1.0	<1.0	<1.0	NA	2.1	<2.0	<2.0	<2.0	<10	<100	9.19	7.34	1.85	NA
MW-2	12/28/2007	<50 m	<0.50	<1.0	<1.0	<1.0	NA	0.57 l	NA	NA	NA	<10	NA	9.19	6.79	2.40	NA
MW-2	03/31/2008	<50	<0.50	<1.0	<1.0	<1.0	NA	1.4	NA	NA	NA	<10	NA	9.19	7.09	2.10	NA
MW-2	06/23/2008	<50	<0.50	<1.0	<1.0	<1.0	NA	1.5	NA	NA	NA	<10	NA	9.19	7.00	2.19	NA
MW-2	09/22/2008	<50	<0.50	<1.0	<1.0	<1.0	NA	<1.0	<2.0	<2.0	<2.0	<10	<100	9.19	7.28	1.91	NA
MW-2	12/16/2008	NA	<0.50	<1.0	<1.0	<1.0	NA	2.6	NA	NA	NA	<10	NA	9.19	7.22	1.97	NA
MW-2	02/27/2009	<50	<0.50	<1.0	<1.0	<1.0	NA	<1.0	NA	NA	NA	<10	NA	9.19	6.00	3.19	NA
MW-2	06/11/2009	<50	<0.50	<1.0	<1.0	<1.0	NA	1.2	NA	NA	NA	<10	NA	9.19	7.28	1.91	NA
MW-2	**09/23/2009**	**<50**	**<0.50**	**<1.0**	**<1.0**	**<1.0**	**NA**	**2.9**	**<2.0**	**<2.0**	**<2.0**	**<10**	**<100**	**9.19**	**7.23**	**1.96**	**NA**
MW-3 (a)	08/26/1998	2,300	180	330	<0.50	420	44,000	NA	NA	NA	NA	NA	NA	9.45	6.52	2.93	1.8
MW-3 (b)	08/26/1998	<50	<0.50	<0.50	<0.50	<0.50	52,000	75,000	NA	NA	NA	NA	NA	9.45	6.52	2.93	2.3
MW-3	12/28/1998	<5,00	139	<50.0	<50.0	<50.0	15,100	NA	NA	NA	NA	NA	NA	9.45	6.73	2.72	1.7
MW-3	03/29/1999	52,500	5,500	6,900	1,360	6,250	508,000	630,000 c	NA	NA	NA	NA	NA	9.45	6.21	3.24	2.1
MW-3	06/22/1999	58,000	6,600	9,850	1,640	6,950	677,000	653,000	NA	NA	NA	NA	NA	9.45	7.00	2.45	1.3
MW-3	09/30/1999	4,360	121	122	36.1	647	33,700	35,600	NA	NA	NA	NA	NA	9.45	6.84	2.61	0.6
MW-3	11/19/1999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.45	7.93	1.52	NA
MW-3	11/24/1999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.45	8.25	1.20	NA
MW-3	12/02/1999	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.45	7.55	1.90	NA
MW-3	12/10/1999	4,220	973	26.3	273	584	88,200	NA	NA	NA	NA	NA	NA	9.45	7.28	2.17	2.5
MW-3	03/02/2000	65,300	5,210	10,300	2,650	15,100	56,800	59,800 e	NA	NA	NA	NA	NA	9.45	5.87	3.58	d
MW-3	06/08/2000	72,700	3,570	10,200	2,100	13,400	44,400	NA	NA	NA	NA	NA	NA	9.45	5.32	4.13	1.1
MW-3	09/05/2000	26,100	959	2,910	1,090	5,640	24,000	NA	NA	NA	NA	NA	NA	9.45	5.60	3.85	NA
MW-3	12/15/2000	5,190	438	8.39	483	530	19,100	11,800 f	NA	NA	NA	NA	NA	9.45	6.27	3.18	NA
MW-3	03/09/2001	5,880	472	42.2	392	1,290	41,800	NA	NA	NA	NA	NA	NA	9.45	5.71	3.74	NA
MW-3	06/27/2001	9,100	330	79	140	1,600	NA	31,000	NA	NA	NA	NA	NA	9.45	6.88	2.57	NA
MW-3	09/19/2001	790	14	18	17	67	NA	8,100	NA	NA	NA	NA	NA	9.45	6.70	2.75	NA
MW-3	12/31/2001	<5,000	220	<50	86	<50	NA	22,000	NA	NA	NA	NA	NA	9.45	5.92	3.53	NA
MW-3	03/14/2002	<2,500	<25	<25	<25	<25	NA	12,000	NA	NA	NA	NA	NA	9.45	6.25	3.20	NA

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MW-3	06/25/2002	<10,000	160	<100	<100	<100	NA	42,000	NA	NA	NA	NA	NA	9.45	6.65	2.80	NA
MW-3	09/19/2002	<10,000	650	<100	280	360	NA	84,000	NA	NA	NA	NA	NA	9.45	6.51	2.94	NA
MW-3	12/12/2002	<10,000	170	<100	<100	<100	NA	45,000	NA	NA	NA	NA	NA	9.45	6.97	2.48	NA
MW-3	01/02/2003	NA	59	<5.0	5.3	<10	NA	NA	NA	NA	NA	NA	NA	9.45	5.90	3.55	NA
MW-3	03/20/2003 g	5,100	<50	<50	<50	<50	4,400	NA	NA	NA	NA	NA	NA	9.45	6.87	2.58	NA
MW-3	06/23/2003	<5,000	<50	<50	<50	<100	NA	8,100	NA	NA	NA	NA	NA	9.45	13.80	-4.35	NA
MW-3	09/22/2003	<250	<2.5	4.6	<2.5	<5.0	NA	470	NA	NA	NA	NA	NA	9.45	6.31	3.14	NA
MW-3	12/03/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	180	NA	NA	NA	NA	NA	9.45	14.77 h	NA	NA
MW-3	03/18/2004	<1,000	14	<10	<10	<20	NA	2,500	NA	NA	NA	NA	NA	9.45	6.07	3.38	NA
MW-3	05/25/2004	3,900	<10	66	23	470	NA	140	NA	NA	NA	NA	NA	9.45	14.63	-5.18	NA
MW-3	09/22/2004	<10,000	830	<100	290	450	NA	28,000	<400	<400	<400	13,000	<10,000	9.45	4.86	4.59	NA
MW-3	12/22/2004	94	<0.50	<0.50	<0.50	<1.0	NA	84	NA	NA	NA	NA	NA	9.45	6.93	2.52	NA
MW-3	02/23/2005	<50 i	<0.50	<0.50	<0.50	<1.0	NA	85	NA	NA	NA	NA	NA	9.45	5.68	3.77	NA
MW-3	06/27/2005	<2,500	96	<25	29	<50	NA	6,100	NA	NA	NA	NA	NA	9.45	4.80	4.65	NA
MW-3	08/31/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	300	<2.0	<2.0	<2.0	700	<50	8.33	5.07	3.26	NA
MW-3	12/14/2005	647	6.16	2.37	1.88	<0.500	NA	303 j	NA	NA	NA	NA	NA	8.33	5.65	2.68	NA
MW-3	03/08/2006	901	20.8	<0.500	5.55	0.980	NA	313	NA	NA	NA	1,660	NA	8.33	5.57	2.76	NA
MW-3	06/14/2006	1,240	61.0	<0.500	11.0	0.730	NA	680	NA	NA	NA	5,660	NA	8.33	5.68	2.65	NA
MW-3	09/27/2006	555	1.70	<0.500	<0.500	<0.500	NA	24.5	<0.500	<0.500	<0.500	1,370	<50.0	8.33	6.11	2.22	NA
MW-3	11/30/2006	990	32	<2.5	8.2	<5.0	NA	590	NA	NA	NA	13,000	NA	8.33	6.09	2.24	NA
MW-3	03/06/2007	2,900 k	57 k	<10 k	16 k	<10 k	NA	1,700 k	NA	NA	NA	46,000	NA	8.33	4.20	4.13	NA
MW-3	06/11/2007	1,900	110	<50	28 l	<50	NA	1,100	NA	NA	NA	42,000	NA	8.33	5.19	3.14	NA
MW-3	09/26/2007	<50 m	2.0	<1.0	0.38 l	<1.0	NA	11	<2.0	<2.0	<2.0	920	<100	8.33	5.54	2.79	NA
MW-3	12/28/2007	84 m	15	<1.0	0.52 l	<1.0	NA	91	NA	NA	NA	4,400	NA	8.33	4.68	3.65	NA
MW-3	03/31/2008	140	3.9	<1.0	<1.0	<1.0	NA	14	NA	NA	NA	1,600	NA	8.33	5.06	3.27	NA
MW-3	06/23/2008	180	<1.0	<2.0	<2.0	<2.0	NA	<2.0	NA	NA	NA	4,500	NA	8.33	5.00	3.33	NA
MW-3	09/22/2008	3,300	29	<10	<10	<10	NA	150	<20	<20	<20	52,000	<1,000	8.33	5.66	2.67	NA
MW-3	12/16/2008	NA	<25	<50	<50	<50	NA	59	NA	NA	NA	11,000	NA	8.33	5.50	2.83	NA
MW-3	02/27/2009	240	2.3	<2.0	<2.0	<2.0	NA	17	NA	NA	NA	1,800	NA	8.33	4.08	4.25	NA
MW-3	06/11/2009	400	3.8	<5.0	<5.0	<5.0	NA	18	NA	NA	NA	5,800	NA	8.33	5.30	3.03	NA

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MW-3	**09/23/2009**	**250**	**24**	**<2.0**	**<2.0**	**<2.0**	**NA**	**37**	**<4.0**	**<4.0**	**<4.0**	**7,700**	**<200**	**8.33**	**5.60**	**2.73**	**NA**
MW-4	09/25/2000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.88	7.64	2.24	NA
MW-4	12/15/2000	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50	NA	NA	NA	NA	NA	NA	9.88	7.55	2.33	NA
MW-4	03/09/2001	<50.0	<0.500	0.730	<0.500	0.529	3.16	NA	NA	NA	NA	NA	NA	9.88	7.04	2.84	NA
MW-4	06/27/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	9.88	7.76	2.12	NA
MW-4	09/19/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	9.88	7.69	2.19	NA
MW-4	12/31/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	9.88	7.08	2.80	NA
MW-4	03/14/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	9.88	7.57	2.31	NA
MW-4	06/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	9.88	8.50	1.38	NA
MW-4	09/19/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	9.88	8.22	1.66	NA
MW-4	12/12/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	9.88	8.08	1.80	NA
MW-4	03/20/2003 g	<50	<0.50	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA	NA	NA	9.88	7.92	1.96	NA
MW-4	06/23/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	<5.0	NA	NA	NA	NA	NA	9.88	8.18	1.70	NA
MW-4	09/22/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	16	NA	NA	NA	NA	NA	9.88	8.28	1.60	NA
MW-4	12/03/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	15	NA	NA	NA	NA	NA	9.88	8.44	1.44	NA
MW-4	03/18/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	15	NA	NA	NA	NA	NA	9.88	7.52	2.36	NA
MW-4	05/25/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	20	NA	NA	NA	NA	NA	9.88	8.30	1.58	NA
MW-4	09/22/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	20	<2.0	<2.0	<2.0	<5.0	<50	9.88	7.72	2.16	NA
MW-4	12/22/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	20	NA	NA	NA	NA	NA	9.88	7.32	2.56	NA
MW-4	02/23/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	18	NA	NA	NA	NA	NA	9.88	6.95	2.93	NA
MW-4	06/27/2005	55	<0.50	<0.50	<0.50	<1.0	NA	14	NA	NA	NA	NA	NA	9.88	7.48	2.40	NA
MW-4	08/31/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	15	<2.0	<2.0	<2.0	11	<50	9.88	7.53	2.35	NA
MW-4	12/14/2005	<50.0	<0.500	2.04	<0.500	<0.500	NA	10.1	NA	NA	NA	NA	NA	9.88	7.54	2.34	NA
MW-4	03/08/2006	<50.0	<0.500	<0.500	<0.500	<0.500	NA	5.73	NA	NA	NA	NA	NA	9.88	6.19	3.69	NA
MW-4	06/14/2006	<50.0	<0.500	0.590	<0.500	<0.500	NA	14.0	NA	NA	NA	NA	NA	9.88	7.63	2.25	NA
MW-4	09/27/2006	426	<0.500	<0.500	<0.500	<0.500	NA	16.5	<0.500	<0.500	<0.500	<10.0	<50.0	9.88	7.87	2.01	NA
MW-4	11/30/2006	<50	<0.50	<0.50	<0.50	<1.0	NA	16	NA	NA	NA	NA	NA	9.88	7.81	2.07	NA
MW-4	03/06/2007	<50 k	<0.50 k	<1.0 k	<0.50 k	<1.0 k	NA	17 k	NA	NA	NA	NA	NA	9.88	7.10	2.78	NA
MW-4	06/11/2007	<50	<0.50	<1.0	<1.0	<1.0	NA	22	NA	NA	NA	NA	NA	9.88	7.68	2.20	NA

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Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
MW-4	09/26/2007	<50 m	<0.50	<1.0	<1.0	<1.0	NA	17	<2.0	<2.0	<2.0	<10	<100	9.88	7.80	2.08	NA
MW-4	12/28/2007	59 m	<0.50	<1.0	<1.0	<1.0	NA	20	NA	NA	NA	NA	NA	9.88	7.19	2.69	NA
MW-4	03/31/2008	<50	<0.50	<1.0	<1.0	<1.0	NA	15	NA	NA	NA	NA	NA	9.88	6.46	3.42	NA
MW-4	06/23/2008	<50	<0.50	<1.0	<1.0	<1.0	NA	18	NA	NA	NA	NA	NA	9.88	7.34	2.54	NA
MW-4	09/22/2008	<50	<0.50	<1.0	<1.0	<1.0	NA	20	<2.0	<2.0	<2.0	<10	<100	9.88	7.68	2.20	NA
MW-4	12/16/2008	NA	<0.50	<1.0	<1.0	<1.0	NA	19	NA	NA	NA	NA	NA	9.88	7.55	2.33	NA
MW-4	02/27/2009	65	<0.50	<1.0	<1.0	<1.0	NA	27	NA	NA	NA	NA	NA	9.88	6.73	3.15	NA
MW-4	06/11/2009	<50	<0.50	<1.0	<1.0	<1.0	NA	25	NA	NA	NA	NA	NA	9.88	7.68	2.20	NA
MW-4	**09/23/2009**	**<50**	**<0.50**	**<1.0**	**<1.0**	**<1.0**	**NA**	**23**	**<2.0**	**<2.0**	**<2.0**	**<10**	**<100**	**9.88**	**7.66**	**2.22**	**NA**
MW-5	06/18/2002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.36	NA	NA
MW-5	06/25/2002	<10,000	<100	<100	<100	<100	NA	60,000	NA	NA	NA	NA	NA	NA	8.30	NA	NA
MW-5	09/19/2002	<2,000	<20	<20	<20	<20	NA	7,200	NA	NA	NA	NA	NA	10.03	8.44	1.59	NA
MW-5	12/12/2002	<5,000	<50	<50	<50	<50	NA	33,000	NA	NA	NA	NA	NA	10.03	8.49	1.54	NA
MW-5	03/20/2003 g	12,000	<50	<50	<50	<50	15,000	NA	NA	NA	NA	NA	NA	10.03	8.23	1.80	NA
MW-5	06/23/2003	<1,000	<10	<10	<10	<20	NA	1,700	NA	NA	NA	NA	NA	10.03	16.70	-6.67	NA
MW-5	09/22/2003	<2,500	<25	<25	<25	<50	NA	4,400	NA	NA	NA	NA	NA	10.03	16.70	-6.67	NA
MW-5	12/03/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	70	NA	NA	NA	NA	NA	10.03	16.79	-6.76	NA
MW-5	03/18/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	43	NA	NA	NA	NA	NA	10.03	16.78	-6.75	NA
MW-5	05/25/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	30	NA	NA	NA	NA	NA	10.03	13.02	-2.99	NA
MW-5	09/22/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	20	<2.0	<2.0	<2.0	83	<50	10.03	5.91	4.12	NA
MW-5	12/22/2004	<50	<0.50	<0.50	<0.50	<1.0	NA	67	NA	NA	NA	NA	NA	10.03	5.72	4.31	NA
MW-5	02/23/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	120	NA	NA	NA	NA	NA	10.03	4.41	5.62	NA
MW-5	06/27/2005	56	<0.50	<0.50	<0.50	<1.0	NA	46	NA	NA	NA	NA	NA	10.03	5.98	4.05	NA
MW-5	08/31/2005	<1,000	<10	<10	<10	<20	NA	69	<40	<40	<40	2,400	<1,000	9.03	6.60	2.43	NA
MW-5	12/14/2005	302	<0.500	2.02	<0.500	<0.500	NA	34.0	NA	NA	NA	NA	NA	9.03	5.00	4.03	NA
MW-5	03/08/2006	<50.0	<0.500	<0.500	<0.500	<0.500	NA	34.6	NA	NA	NA	677	NA	9.03	4.18	4.85	NA
MW-5	06/14/2006	<50.0	<0.500	<0.500	<0.500	<0.500	NA	30.4	NA	NA	NA	4,380	NA	9.03	6.10	2.93	NA
MW-5	09/27/2006	528	<0.500	<0.500	<0.500	<0.500	NA	28.6	<0.500	<0.500	<0.500	384	<50.0	9.03	6.94	2.09	NA
MW-5	11/30/2006	<50	<0.50	<0.50	<0.50	<1.0	NA	7.3	NA	NA	NA	380	NA	9.03	6.70	2.33	NA

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MW-5	03/06/2007	76 k	<0.50 k	<1.0 k	<0.50 k	<1.0 k	NA	20 k	NA	NA	NA	1,200 k	NA	9.03	4.65	4.38	NA
MW-5	06/11/2007	<50	0.35 l	0.30 l	0.47 l	3.79 l	NA	21	NA	NA	NA	38	NA	9.03	6.28	2.75	NA
MW-5	09/26/2007	<50 m	<0.50	<1.0	<1.0	<1.0	NA	27	<2.0	<2.0	<2.0	2,400	<100	9.03	7.71	1.32	NA
MW-5	12/28/2007	<50 m	<0.50	<1.0	<1.0	<1.0	NA	6.5	NA	NA	NA	190	NA	9.03	5.86	3.17	NA
MW-5	03/31/2008	60	<0.50	<1.0	<1.0	<1.0	NA	15	NA	NA	NA	910	NA	9.03	6.29	2.74	NA
MW-5	06/23/2008	<50	<0.50	<1.0	<1.0	<1.0	NA	1.7	NA	NA	NA	200	NA	9.03	6.45	2.58	NA
MW-5	09/22/2008	160	<0.50	<1.0	<1.0	<1.0	NA	14	<2.0	<2.0	<2.0	3,000	<100	9.03	6.99	2.04	NA
MW-5	12/16/2008	NA	<0.50	<1.0	<1.0	<1.0	NA	4.4	NA	NA	NA	880	NA	9.03	6.34	2.69	NA
MW-5	02/27/2009	<50	<0.50	<1.0	<1.0	<1.0	NA	4.7	NA	NA	NA	69	NA	9.03	4.35	4.68	NA
MW-5	06/11/2009	<50	<0.50	<1.0	<1.0	<1.0	NA	4.9	NA	NA	NA	20	NA	9.03	6.70	2.33	NA
MW-5	**09/23/2009**	**<50**	**<0.50**	**<1.0**	**<1.0**	**<1.0**	**NA**	**25**	**<2.0**	**<2.0**	**<2.0**	**1,300**	**<100**	**9.03**	**7.04**	**1.99**	**NA**
C-1	09/19/2001	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	NA	1.44	NA	NA
C-1	03/29/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	NA	2.59	NA	NA
C-1	06/25/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	NA	3.72	NA	NA
C-1	09/19/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	NA	3.08	NA	NA
C-1	12/12/2002	<50	<0.50	<0.50	<0.50	<0.50	NA	<5.0	NA	NA	NA	NA	NA	NA	0.64	NA	NA
C-1	03/20/2003 g	<50	<0.50	<0.50	<0.50	<0.50	<5.0	NA	NA	NA	NA	NA	NA	NA	4.61	NA	NA
SD-1	09/19/2001	Unable to sample		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	03/29/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	06/25/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	09/19/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	12/12/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-1	03/20/2003	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	09/19/2001	Unable to sample		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	03/29/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	06/25/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	09/19/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)
SD-2	12/12/2002	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SD-2	03/20/2003	Dry	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BW-A	06/22/1999	318	<0.50	<0.50	0.590	1.48	4,470	NA	NA	NA	NA	NA	NA	NA	4.71	NA	1.1
BW-A	06/25/2002	<500	<5.0	<5.0	<5.0	18	NA	3,100	NA	NA	NA	NA	NA	NA	5.14	NA	NA
BW-A	09/19/2002	<200	<2.0	<2.0	<2.0	<2.0	NA	<20	NA	NA	NA	NA	NA	NA	7.19	NA	NA
BW-A	12/12/2002	<500	<5.0	<5.0	<5.0	<5.0	NA	2,900	NA	NA	NA	NA	NA	NA	6.40	NA	NA
BW-A	03/20/2003 g	<2,500	<25	<25	<25	<25	<250	NA	NA	NA	NA	NA	NA	NA	5.36	NA	NA
BW-A	06/23/2003	<1,000	<10	<10	<10	<20	NA	<100	NA	NA	NA	NA	NA	NA	10.27	NA	NA
BW-A	09/22/2005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.63	NA	NA	NA
BW-B	06/22/1999	<250	<2.5	<2.5	<2.5	<2.5	8,600	NA	NA	NA	NA	NA	NA	NA	5.90	NA	1.2
BW-B	06/27/2001	<5,000	<50	<50	<50	<50	NA	40,000	NA	NA	NA	NA	NA	NA	5.83	NA	NA
BW-B	12/31/2001	<2,000	<20	<20	<20	<20	NA	9,200	NA	NA	NA	NA	NA	NA	4.19	NA	NA
BW-B	03/14/2002	<2,000	<20	<20	<20	<20	NA	9,400	NA	NA	NA	NA	NA	NA	5.24	NA	NA
BW-B	06/25/2002	<2,000	<20	<20	<20	<20	NA	6,600	NA	NA	NA	NA	NA	NA	6.19	NA	NA
BW-B	09/19/2002	<500	<5.0	<5.0	<5.0	<5.0	NA	<50	NA	NA	NA	NA	NA	NA	8.46	NA	NA
BW-B	12/12/2002	<500	<5.0	<5.0	<5.0	<5.0	NA	1,700	NA	NA	NA	NA	NA	NA	7.46	NA	NA
BW-B	03/20/2003 g	170	<1.0	<1.0	<1.0	<1.0	190	NA	NA	NA	NA	NA	NA	NA	6.23	NA	NA
BW-B	06/23/2003	<50	<0.50	<0.50	<0.50	<1.0	NA	43	NA	NA	NA	NA	NA	NA	9.95	NA	NA
BW-B	09/22/2005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8.32	NA	NA	NA
BW-C	06/22/1999	<50	<0.50	<0.50	<0.50	0.98	11,000	NA	NA	NA	NA	NA	NA	NA	5.91	NA	1.6
BW-C	06/25/2002	<5,000	<50	<50	<50	<50	NA	20,000	NA	NA	NA	NA	NA	NA	6.49	NA	NA
BW-C	09/19/2002	<1,000	<10	<10	<10	<10	NA	400	NA	NA	NA	NA	NA	NA	8.52	NA	NA
BW-C	12/12/2002	<2,000	<20	<20	<20	<20	NA	8,000	NA	NA	NA	NA	NA	NA	7.57	NA	NA
BW-C	03/20/2003 g	270	<1.0	<1.0	<1.0	<1.0	250	NA	NA	NA	NA	NA	NA	NA	6.48	NA	NA
BW-C	06/23/2003	<1,000	<10	<10	<10	<20	NA	170	NA	NA	NA	NA	NA	NA	11.48	NA	NA
BW-C	09/22/2005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.81	NA	NA	NA

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BW-D	06/22/1999	<50.0	<0.500	<0.500	<0.500	<0.500	2,190	NA	NA	NA	NA	NA	NA	NA	4.78	NA	1.4
BW-D	06/25/2002	Well inaccessible		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
BW-D	07/02/2002	<1,000	23	<10	<10	<10	NA	<100	NA	NA	NA	NA	NA	NA	6.36	NA	NA
BW-D	09/19/2002	<250	<2.5	<2.5	<2.5	<2.5	NA	<25	NA	NA	NA	NA	NA	NA	7.25	NA	NA
BW-D	12/12/2002	<5,000	<50	<50	<50	<50	NA	16,000	NA	NA	NA	NA	NA	NA	6.21	NA	NA
BW-D	03/20/2003 g	71	<0.50	<0.50	<0.50	<0.50	55	NA	NA	NA	NA	NA	NA	NA	5.23	NA	NA
BW-D	06/23/2003	<1,000	<10	<10	<10	<20	NA	<100	NA	NA	NA	NA	NA	NA	10.25	NA	NA
BW-D	09/22/2003	<100	<1.0	<1.0	<1.0	<2.0	NA	120	NA	NA	NA	NA	NA	NA	10.18	NA	NA
BW-D	12/03/2003	<1,300	110	<13	<13	29	NA	560	NA	NA	NA	NA	NA	NA	10.20	NA	NA
BW-D	03/18/2004	<50	0.67	<0.50	<0.50	<1.0	NA	12	NA	NA	NA	NA	NA	NA	3.42	NA	NA
BW-D	05/25/2004	<50	1.4	0.96	<0.50	<1.0	NA	1.7	NA	NA	NA	NA	NA	NA	8.83	NA	NA
BW-D	09/22/2004	<100	6.9	<1.0	2.1	4.2	NA	210	NA	NA	NA	NA	NA	NA	2.75	NA	NA
BW-D	12/22/2004	61	2.1	2.9	<0.50	3.6	NA	5.4	NA	NA	NA	NA	NA	NA	3.67	NA	NA
BW-D	02/23/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	1.2	NA	NA	NA	NA	NA	NA	2.88	NA	NA
BW-D	06/27/2005	53	<0.50	<0.50	<0.50	<1.0	NA	1.8	NA	NA	NA	NA	NA	NA	3.70	NA	NA
BW-D	08/31/2005	<50	<0.50	<0.50	<0.50	<1.0	NA	1.4	NA	NA	NA	NA	NA	8.61	3.82	4.79	NA
BW-D	12/14/2005	<50.0	<0.500	2.78	<0.500	<0.500	NA	2.26	NA	NA	NA	NA	NA	8.61	3.59	5.02	NA
BW-D	03/08/2006	<50.0	<0.500	<0.500	<0.500	<0.500	NA	2.23	NA	NA	NA	NA	NA	8.61	3.61	5.00	NA
BW-D	06/14/2006	<50.0	<0.500	<0.500	<0.500	<0.500	NA	18.1	NA	NA	NA	NA	NA	8.61	3.86	4.75	NA
BW-D	09/27/2006	410	<0.500	<0.500	<0.500	<0.500	NA	2.90	<0.500	<0.500	<0.500	78	<50.0	8.61	4.32	4.29	NA
BW-D	11/30/2006	<50	<0.50	<0.50	<0.50	<1.0	NA	1.3	NA	NA	NA	NA	NA	8.61	4.00	4.61	NA
BW-D	03/06/2007	<50 k	<0.50 k	<1.0 k	<0.50 k	<1.0 k	NA	1.4 k	NA	NA	NA	NA	NA	8.61	3.44	5.17	NA
BW-D	06/11/2007	<50	<0.50	<1.0	<1.0	<1.0	NA	0.95 l	NA	NA	NA	NA	NA	8.61	4.14	4.47	NA
BW-D	09/26/2007	<50 m	<0.50	<1.0	<1.0	<1.0	NA	1.1	NA	NA	NA	NA	NA	8.61	4.22	4.39	NA
BW-D	12/28/2007	<50 m	<0.50	<1.0	<1.0	<1.0	NA	1.4	NA	NA	NA	NA	NA	8.61	3.55	5.06	NA
BW-D	03/31/2008	<50	<0.50	<1.0	<1.0	<1.0	NA	2.3	NA	NA	NA	NA	NA	8.61	4.20	4.41	NA
BW-D	06/23/2008	<50	<0.50	<1.0	<1.0	<1.0	NA	1.1	NA	NA	NA	NA	NA	8.61	4.01	4.60	NA
BW-D	09/22/2008	<50	<0.50	<1.0	<1.0	<1.0	NA	<1.0	NA	NA	NA	<10	NA	8.61	4.21	4.40	NA
BW-D	12/16/2008	<50	<0.50	<1.0	<1.0	<1.0	NA	1.3	NA	NA	NA	NA	NA	8.61	3.69	4.92	NA
BW-D	02/27/2009	<50	<0.50	<1.0	<1.0	<1.0	NA	<1.0	NA	NA	NA	NA	NA	8.61	3.14	5.47	NA

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BW-D	06/11/2009	<50	<0.50	<1.0	<1.0	<1.0	NA	1.5	NA	NA	NA	NA	NA	8.61	4.52	4.09	NA
BW-D	**09/23/2009**	**<50**	**<0.50**	**<1.0**	**<1.0**	**<1.0**	**NA**	**1.1**	**NA**	**NA**	**NA**	**NA**	**NA**	**8.61**	**4.82**	**3.79**	**NA**

Abbreviations:

TPPH = Total petroleum hydrocarbons as gasoline by EPA Method 8260B; prior to June 27, 2001, analyzed by EPA Method 8015.

BTEX = Benzene, toluene, ethylbenzene, xylenes by EPA Method 8260B; prior to June 27, 2001, analyzed by EPA Method 8020.

MTBE = Methyl tertiary butyl ether

DIPE = Di-isopropyl ether, analyzed by EPA Method 8260B

ETBE = Ethyl tertiary butyl ether, analyzed by EPA Method 8260B

TAME = Tertiary amyl methyl ether, analyzed by EPA Method 8260B

TBA = Tertiary butyl alcohol, analyzed by EPA Method 8260B

TOC = Top of Casing Elevation

GW = Groundwater

DO = Dissolved Oxygen

ppm = Parts per million

ug/L = Parts per billion

MSL = Mean sea level

ft. = Feet

<n = Below detection limit

(D) = Duplicate sample

NA = Not applicable

WELL CONCENTRATIONS
Shell-branded Service Station
540 Hegenberger Road
Oakland, CA

Well ID	Date	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE 8020 (ug/L)	MTBE 8260 (ug/L)	DIPE (ug/L)	ETBE (ug/L)	TAME (ug/L)	TBA (ug/L)	Ethanol (ug/L)	TOC (MSL)	Depth to Water (ft.)	GW Elevation (MSL)	DO Reading (ppm)

Notes:

a = Pre-purge

b = Post purge

c = Lab confirmed MTBE by mistake. MTBE value at MW-1 should have been confirmed instead.

d = DO reading not taken.

e = Sample was analyzed outside of the EPA recommended holding time.

f = The second highest MTBE hit was mistakenly confirmed. MTBE for MW-1 should have been confirmed.

g = On March 20, 2003, all analyses run by EPA Method 8015/8020.

h = Depth to top of pump; pump prevented depth to water measurement.

i = The concentration reported reflects individual or discrete unidentified peaks not matching a typical fuel pattern.

j = Concentration estimated. Analyte exceeded calibration range. Reanalysis not performed due to holding time requirements.

k = 1,1-Dichloroethene, a calibration check compound (CCC), was outside the 20%D method acceptance criteria in the CCV.

l = Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.

m = Analyzed by EPA Method 8015B (M).

n = The sample chromatographic pattern for TPH does not match the chromatographic pattern of the specified standard. Quantitation of the unknown hydrocarbon(s) in the sample was based upon the specified standard.

Ethanol analyzed by EPA Method 8260B.

Site surveyed September 21, 2000 by Virgil Chavez Land Surveying of Vallejo, CA.

C-1 is a canal sample location.

SD-1 and SD-2 are storm drains.

Wells MW-1 through MW-5 surveyed January 24 and June 19, 2002 by Virgil Chavez Land Surveying of Vallejo, CA.

Wells MW-1, MW-3, MW-5, and BW-D surveyed on September 22, 2005 by Virgil Chavez Land Surveying of Vallejo, CA.

Unmonitored backfilled wells BW-A, BW-B, and BW-C surveyed on September 22, 2005 by Virgil Chavez Land Surveying of Vallejo, CA.

Table 3. Groundwater Chemical Analytical Data - Shell-branded Service Station Incident # 98995752, 540 Hegenberger Road, Oakland, California

Sample ID	Date	TPHg	TPHd	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE by EPA 8020M	MTBE by EPA 8260B
		← (Concentrations in µg/L) →							
SB-E-W1	8/29/00	<5000	**353**	<50.0	<50.0	<50.0	<50.0	**13700**	**17900**
SB-F-W1	8/29/00	<50.0	**64.6**	<0.500	<0.500	<0.500	<0.500	**68.3**	**85.3**
SB-G-W1	8/29/00	**51100**	**5780**	**2080**	**2390**	**2980**	**14100**	**58400**	**76400**

Abbreviations and Notes:

TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
TPHd = Total petroleum hydrpcarbons as diesel by modified EPA Method 8015 with silica gel clean-up
Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8020
MTBE = Methyl tertiary butyl ether by EPA method 8020 and 8260B
µg/L = Micrograms per liter
<**n** = Below detection limit of **n** µg/L

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Table 2. Ground Water Analytical Data - Shell Service Station, WIC# 204-5508-5900, 540 Hegenberger Road, Oakland, California

Sample ID	Date Sampled	TPHg	TPHd	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	TDS
		←			µg/L			→	mg/L
SB-1	3/6/98	<50	<50	<0.50	<0.50	<0.50	<0.50	<2.5	420
SB-2	3/6/98	3,400	---	190	880	81	460	9,400	---
SB-3	3/6/98	410	---	14	48	10	61	210	---
SB-4	3/6/98	<50	<50	<0.50	<0.50	<0.50	<0.50	<2.5	---
SB-5	3/6/98	200,000	---	11,000	36,000	3,200	19,000	1,300,000	---

Notes and Abbreviations:
µg/L = Micrograms per liter
mg/L = Milligrams per liter
TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
TPHd = Total petroleum hydrocarbons as diesel by modified EPA Method 8015
MTBE = Methyl tert-butyl ether by EPA Method 8020.
TDS = Total dissolved solids by EPA Method 160.2
<n = Below detection limit of n µg/L
Benzene, toluene, ethylbenzene, and xylenes by EPA Method 8020
--- = Not analyzed