

C A M B R I A

August 14, 1998

Larry Seto
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

ENVIRONMENTAL
PROTECTION

AUG 25 PM 11:02

Re: **Second Quarter 1998 Monitoring Report**
Former Shell Service Station
1230 14th Street
Oakland, California
WIC# 204-4878-1300
Cambria Project# 24-314-298



Dear Mr. Seto:

On behalf of Equilon Enterprises LLC, Cambria Environmental Technology, Inc. (Cambria) is submitting this ground water monitoring report in accordance with the reporting requirements of 23 CCR 2652d.

SECOND QUARTER 1998 ACTIVITIES

Ground Water Monitoring: Blaine Tech Services, Inc. (Blaine) of San Jose, California gauged, measured dissolved oxygen (DO) concentrations, and sampled selected site wells. Cambria calculated ground water elevations and compiled the analytical data (Table 1) and prepared a ground water elevation contour map (Figure 1). The Blaine report is included as Attachment A. Oxygen releasing compounds (ORCs) were replaced in wells MW-1, VW/MW-2, and VW/MW-4 during the first quarter 1998. Sampling of those wells has been suspended until DO concentrations return to pre-ORC levels.

ANTICIPATED FUTURE 1998 ACTIVITIES

Sampling Frequency Reduction: Sampling of wells MW-1, VW/MW-2, and VW/MW-4 will be suspended until DO concentrations return to pre-ORC levels. The remaining wells (MW-2, MW-3, and MW-4) have not contained detectable concentrations of petroleum hydrocarbons since sampling began in March 1996. Therefore, as we recommended in the first quarter 1998 monitoring report, sampling at this site will be reduced to semiannually in the second and fourth quarters.

Oakland, CA
Sonoma, CA
Portland, OR
Seattle, WA

**Cambria
Environmental
Technology, Inc.**

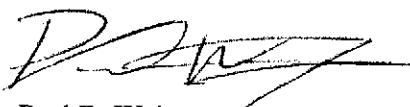
1144 65th Street
Suite B
Oakland, CA 94608
Tel (510) 420-0700
Fax (510) 420-9170

Ground Water Monitoring: In accordance with the sampling frequency reduction, the next monitoring event is scheduled for fourth quarter 1998. At that time, Blaine will gauge, measure DO concentrations, and sample selected site wells. Cambria will tabulate the data and prepare a monitoring report.

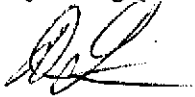
CLOSING

We appreciate the opportunity to work with you on this project. Please call Paul Waite at (510) 420-3309 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.



Paul D. Waite
Project Engineer



Diane M. Lundquist, P.E.
Principal Engineer



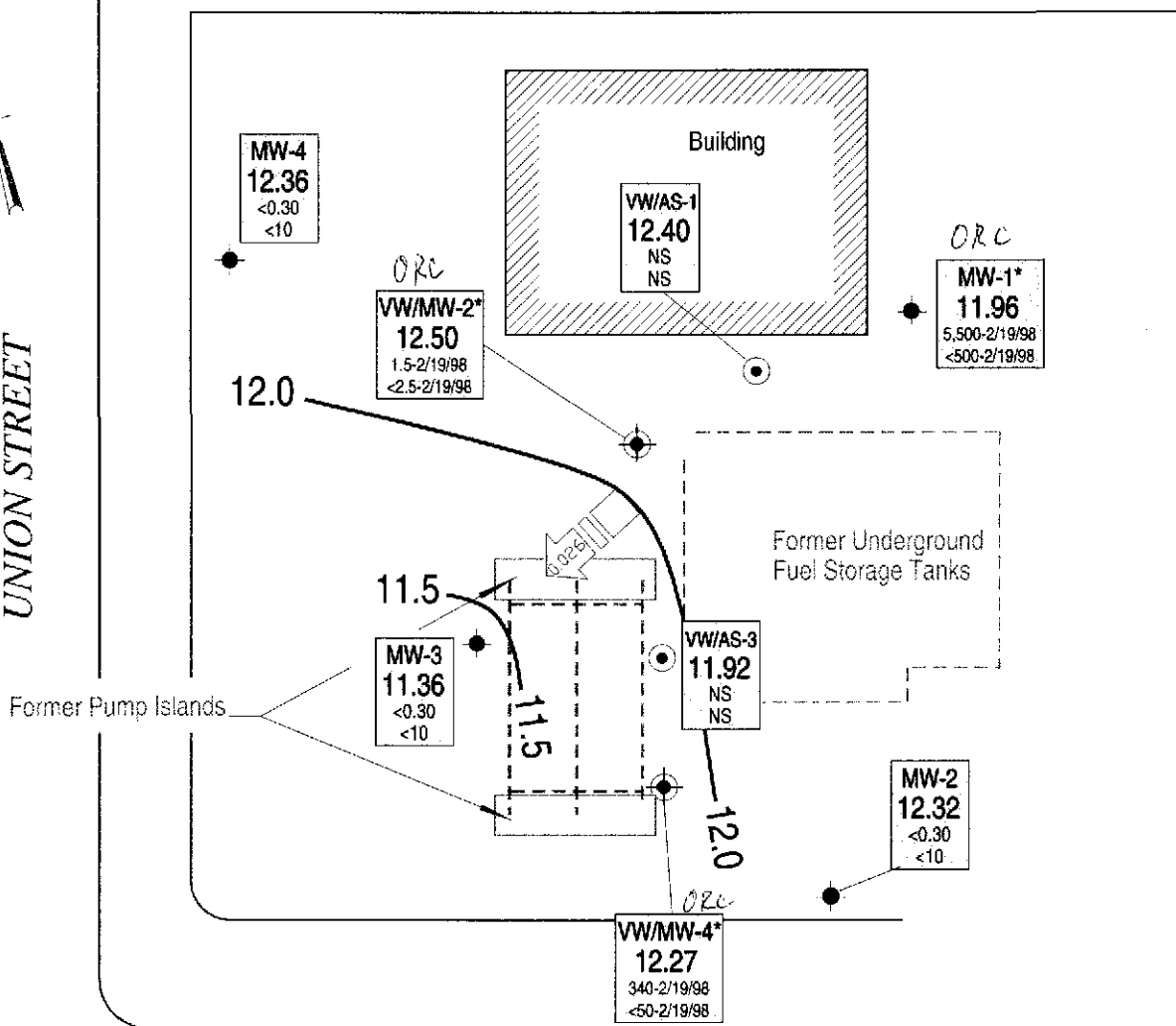
Attachment: A - Blaine Ground Water Monitoring Report

cc: Karen Petryna, Equiva Services LLC, 108 Cutting Boulevard, Richmond, California 94804

G:\OAK1230\QMs\2Q98QM.WPD



UNION STREET

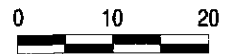


EXPLANATION

- MW-2 Ground Water Monitoring Well
 - ⊙ VW/AS-3 Combination Air Sparge/Soil Vapor Extraction Wells
 - ⊕ VW/MW-4 Combination Soil Vapor Extraction Well/Monitoring Well
 - Ground Water Contour
 - ▭→ Ground Water Flow Direction/Gradient (ft/ft)
 - NS Not Sampled
 - * Not Contoured, ORCs in well
1. Ground water elevation, ft above mean sea level (msl)
 2. Benzene and MTBE concentrations are in parts per billion (ppb)
 3. Date is most recent sampling unless otherwise indicated

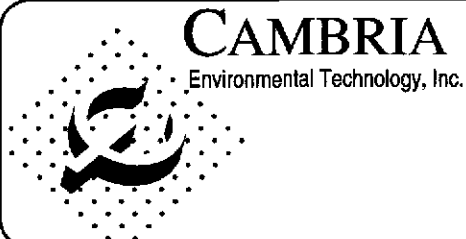
MW-1
ELEV.
Benz. - Date
MTBE - Date

14TH STREET



Scale (ft)

Base Map by Tank Protect Engineering



Former Shell Service Station
1230 14th Street
Oakland, California

Ground Water Elevation
Contours
June 8, 1998

FIGURE

1

Table 1. Ground Water Elevation and Analytical Data - Former Shell Service Station WIC # 204-5508-3103 - 1230 14th Street, Oakland, California

Well ID (Qtrs Sampled)	Date	GW Depth (ft)	GW Elev. (ft)	GW Flow Direction	GW Gradient(ft/ft)	TPHg	MTBE	(Concentrations in µg/L)				POG	DO (mg/L)
								Benzene	Toluene	Ethylbenzene	Xylenes		
MW-1 (Gauge only - ORC) TOC=18.58	03/25/96	9.53	9.05	---	---	37,000	<500	7,400	1,500	720	3,300	<5,000	---
	06/21/96	10.72	7.86	NE	---	35,000	890	9,900	460	340	3,500	<5,000	---
	09/26/96	12.88	5.70	W	---	19,000	<250	8,200	510	780	790	3,800	---
	12/19/96	12.59	5.99	N	---	27,000	<100	120	1,200	1,400	2,800	9,000	---
	12/19/96 ^{dup}	12.59	5.99	N	---	32,000	830	12,000	1,300	1,600	3,100	8,800	---
	03/25/97	11.10	7.48	NE	0.03	39,000	730	13,000	1,600	840	3,100	<5,000	1.2
	06/26/97 ^a	12.42	6.16	NE	0.007	---	---	---	---	---	---	---	---
	09/26/97 ^a	13.31	5.27	NE	0.005	---	---	---	---	---	---	---	0.8
	12/05/97	12.65	5.93	NE	0.005	---	---	---	---	---	---	---	0.3
	02/19/98	6.46	12.12	SW	0.025	16,000	<500	5,500	450	500	800	<5,000	2.4
	06/08/98	6.62	11.96	SW	0.026	---	---	---	---	---	---	---	1.2
MW-2 (All) TOC=17.90	03/25/96	8.19	9.71	---	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
	06/21/96	9.94	7.96	NE	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
	09/26/96	12.15	5.75	NW	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
	12/19/96	11.70	6.20	N	---	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---	---
	03/25/97	9.25	8.65	NE	0.03	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	1.8
	06/26/97	11.36	6.54	NE	0.007	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	2.4
	09/26/97	12.56	5.34	NE	0.005	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	1.1
	09/26/97 ^{dup}	12.56	5.34	NE	0.005	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	1.1
	12/05/97	11.15	6.75	NE	0.005	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	0.7
	02/19/98	5.61	12.29	SW	0.025	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	2.7
	06/08/98	5.58	12.32	SW	0.026	<50	<10	<0.30	<0.30	<0.30	<0.60	<5,000	3.2
MW-3 (All) TOC= 18.18	03/25/96	8.47	9.71	---	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
	06/21/96	10.40	7.78	NE	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
	09/26/96	12.45	5.73	N	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
	12/19/96	12.14	6.02	N	---	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---	---
	03/25/97	9.54	8.64	NE	0.03	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	2.2
	06/26/97	11.66	6.52	NE	0.007	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	3.6
	09/26/97	12.85	5.33	NE	0.005	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	1.1
	12/05/97	11.44	6.74	NE	0.005	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	0.6
	02/19/98	6.78	11.40	SW	0.025	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	3.6
	06/08/98	6.82	11.36	SW	0.026	<50	<10	<0.30	<0.30	<0.30	<0.60	<5,000	3.8
	06/08/98 ^{dup}	6.82	11.36	SW	0.026	<50	<10	<0.30	<0.30	<0.30	<0.60	---	3.8

Table 1. Ground Water Elevation and Analytical Data - Former Shell Service Station WIC # 204-5508-3103 - 1230 14th Street, Oakland, California

Well ID (Qtrs Sampled)	Date	GW Depth (ft)	GW Elev. (ft)	GW Flow Direction	GW Gradient(ft/ft)	TPHg ←	MTBE	Benzene (Concentrations in µg/L)	Toluene	Ethylbenzene	Xylenes	POG →	DO (mg/L)
MW-4	03/25/96	9.20	8.81	---	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
(All)	06/21/96	10.25	7.76	NE	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
TOC= 18.01	09/26/96	12.29	5.72	NE	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	---
	12/19/96	12.47	5.54	N	---	<50	<2.5	<0.5	<0.5	<0.5	<0.5	---	---
	03/25/97	9.44	8.57	NE	0.03	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---	1.8
	06/26/97	11.57	6.44	NE	0.007	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	6.2
	06/26/97 ^{dup}	11.57	6.44	NE	0.007	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	6.2
	09/26/97	12.75	5.26	NE	0.005	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	2.1
	12/05/97	11.37	6.64	NE	0.005	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	1.0
	12/05/97 ^{dup}	11.37	6.64	NE	0.005	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	1.0
	02/19/98	5.59	12.42	SW	0.025	<50	<2.5	<0.50	<0.50	<0.50	<0.50	<5,000	6.5
	06/08/98	5.65	12.36	SW	0.026	<50	<10	<0.30	<0.30	<0.30	<0.60	6,700	2.6
VW/MW-2	03/25/96	9.04	9.26	---	---	13,000	<250	900	920	180	1,500	---	---
(Gauge only - ORC)	06/21/96	10.48	7.82	NE	---	27,000	700	4,100	1,100	1,400	3,200	---	---
TOC= 18.30	09/26/96	12.52	5.78	NE	---	27,000	<500	5,300	1,900	980	2,200	---	---
	09/26/96 ^{dup}	12.52	5.78	NE	---	29,000	<250	5,800	2,200	1,100	2,500	---	---
	12/19/96	12.42	5.88	N	---	50,000	590	6,200	5,100	1,700	5,600	---	---
	03/25/97	9.83	8.47	NE	0.03	210	14	5.6	<0.50	0.52	<0.50	---	2.0
	03/25/97 ^{dup}	9.83	8.47	NE	0.03	250	4.7	1.7	0.58	0.51	<0.50	---	2.0
	06/26/97 ^a	12.43	5.87	NE	0.007	---	---	---	---	---	---	---	---
	09/26/97 ^a	12.98	5.32	NE	0.005	---	---	---	---	---	---	---	0.9
	12/05/97	12.20	6.10	NE	0.005	---	---	---	---	---	---	---	0.4
	02/19/98	5.83	12.47	SW	0.025	<50	<2.5	1.5	<0.50	<0.50	0.71	<5,000	3.6
	06/08/98	5.80	12.50	SW	0.026	---	---	---	---	---	---	---	1.0
VW/MW-4	03/25/96	8.45	9.69	---	---	83,000	<250	6,500	7,000	2,000	11,000	---	---
(Gauge only - ORC)	03/25/96 ^{dup}	8.45	9.69	---	---	84,000	<250	6,400	7,000	2,100	12,000	---	---
TOC= 18.14	06/21/96	10.38	7.76	NE	---	110,000	1,700	14,000	15,000	3,700	17,000	---	---
	06/21/96 ^{dup}	10.38	7.76	NE	---	100,000	<1,000	12,000	12,000	2,900	13,000	---	---
	09/26/96	12.43	5.71	NE	---	52,000	<500	13,000	2,700	2,100	3,200	---	---
	12/19/96	11.87	6.27	N	---	75,000	<1,250	15,000	6,600	3,000	7,600	---	---
	03/25/97	9.60	8.54	NE	0.03	56,000	580	4,700	1,500	2,500	6,300	---	2.4
	06/26/97 ^a	12.36	5.78	NE	0.007	---	---	---	---	---	---	---	---
	09/26/97 ^a	12.82	5.32	NE	0.005	---	---	---	---	---	---	---	0.4

Table 1. Ground Water Elevation and Analytical Data - Former Shell Service Station WIC # 204-5508-3103 - 1230 14th Street, Oakland, California

Well ID (Qtrs Sampled)	Date	GW Depth (ft)	GW Elev. (ft)	GW Flow Direction	GW Gradient(ft/ft)	TPHg	MTBE	Benzene Toluene Ethylbenzene Xylenes (Concentrations in µg/L)				POG	DO (mg/L)
								←	→	→	→		
	12/05/97	12.15	5.99	NE	0.005	---	---	---	---	---	---	---	0.3
	02/19/98	5.85	12.29	SW	0.025	4,100	<50	320	40	44	520	<5,000	1.8
	02/19/98 ^{dup}	5.85	12.29	SW	0.025	4,300	<50	340	44	47	540	<5,000	1.8
	06/08/98	5.87	12.27	SW	0.026	---	---	---	---	---	---	---	1.8
VW/AS-1 (Gauge only) TOC= 18.60	03/25/96	8.98	9.62	---	---	---	---	---	---	---	---	---	---
	06/21/96	10.95	7.65	NE	---	---	---	---	---	---	---	---	---
	09/26/96	12.98	5.62	N	---	---	---	---	---	---	---	---	---
	12/19/96	12.67	5.93	N	---	---	---	---	---	---	---	---	---
	03/25/97	10.12	8.48	NE	0.03	---	---	---	---	---	---	---	---
	06/26/97	12.34	6.26	NE	0.007	---	---	---	---	---	---	---	---
	09/26/97	13.40	5.20	NE	0.005	---	---	---	---	---	---	---	---
	12/05/97	11.96	6.64	NE	0.005	---	---	---	---	---	---	---	5.2 ^c
	02/19/98	6.22	12.38	SW	0.025	---	---	---	---	---	---	---	1.3
	06/08/98	6.20	12.40	SW	0.026	---	---	---	---	---	---	---	1.0
VW/AS-3 (Gauge only) TOC= 18.17	03/25/96	8.50	9.67	---	---	---	---	---	---	---	---	---	---
	06/21/96	10.42	7.75	NE	---	---	---	---	---	---	---	---	---
	09/26/96	12.49	5.68	NE	---	---	---	---	---	---	---	---	---
	12/19/96	12.28	5.89	N	---	---	---	---	---	---	---	---	---
	03/25/97	9.61	8.56	NE	0.03	---	---	---	---	---	---	---	---
	06/26/97	11.80	6.37	NE	0.007	---	---	---	---	---	---	---	---
	09/26/97	12.89	5.28	NE	0.005	---	---	---	---	---	---	---	---
	12/05/97	11.38	6.79	NE	0.005	---	---	---	---	---	---	---	1.8 ^c
	02/19/98	6.24	11.93	SW	0.025	---	---	---	---	---	---	---	1.3
	06/08/98	6.25	11.92	SW	0.026	---	---	---	---	---	---	---	1.2
MCLs						NE	NE	1	150	700	1,750	NE	

Table 1. Ground Water Elevation and Analytical Data - Former Shell Service Station WIC # 204-5508-3103 - 1230 14th Street, Oakland, California

Well ID (Qtrs Sampled)	Date	GW Depth (ft)	GW Elev. (ft)	GW Flow Direction	GW Gradient(ft/ft)	TPHg ←	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	POG →	DO (mg/L)
(Concentrations in µg/L)													

Abbreviations:

GW = Ground water
 ft = Feet
 µg/L = Micrograms per liter
 mg/L = Milligrams per liter
 TOC = Top of casing elevation
 TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
 MTBE = Methyl tert-butyl ether by EPA Method 8020
 POG = Petroleum oil and grease by SMWW 5520 B&F
 DO = Dissolved oxygen
 dup = Duplicate sample
 MCLs = California primary maximum contaminant levels for drinking water (22 CCR 64444)
 NE = MCLs not established

Notes:

a = Oxygen releasing compounds installed in wells were removed prior to gauging.
 b = DO reading not taken due to small diameter of well.
 c = Used pin bailer to capture water and take DO readings up-hole on December 12, 1997.
 --- = Not analyzed/Not available
 <n = Below detection limits of n µg/L

 Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8020.

ATTACHMENT A

Blaine Ground Water Monitoring Report

BLAINE
TECH SERVICES INC.



1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
(408) 573-7771 FAX
(408) 573-0555 PHONE

June 30, 1998

Shell Oil Company
P.O. Box 8080
Martinez, CA 94553

Attn: Alex Perez

Shell WIC #204-5508-3103
1230 14th Street
Oakland, California

2nd Quarter 1998

Groundwater Monitoring Report 980608-M-2

Blaine Tech Services, Inc. performs environmental monitoring and documentation as an independent third party. Copies of our Monitoring Report along with the laboratory's Certified Analytical Report are forwarded to the consultant overseeing work at this site. Submission of the assembled documents to interested regulatory agencies will be made by the designated consultant.

Groundwater monitoring at this site was performed in accordance with Standard Operating Procedures provided to the interested regulatory agencies. If you have any questions about the work performed at this site please call me at (408) 573-0555 ext. 201.

Yours truly,



Francis Thie

attachments: Table of Well Gauging Data
Chain of Custody
Field Data Sheets
Certified Analytical Report

cc: Cambria Environmental Technology, Inc.
1144 65th Street, Suite C
Oakland, CA 95476
Attn: Maureen Feineman

(Any professional evaluations or recommendations will be made by the consultant under separate cover.)

TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLE LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLE LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	06/08/98	TOC	-	NONE	-	-	6.62	21.30
MW-2	06/08/98	TOC	-	NONE	-	-	5.58	22.11
MW-3*	06/08/98	TOC	-	NONE	-	-	6.82	21.70
MW-4	06/08/98	TOC	-	NONE	-	-	5.65	21.04
VW/JMW-2	06/08/98	TOC	-	NONE	-	-	5.80	21.31
VW/JMW-4	06/08/98	TOC	-	NONE	-	-	5.87	19.35
VW/AS-1	06/08/98	TOC	-	NONE	-	-	6.20	19.20
VW/AS-3	06/08/98	TOC	-	NONE	-	-	6.25	19.80

* sample DUP was a duplicate sample taken from well MW-3.



Site Address: 1230 14th St., Oakland, CA

WIC#: 204-5508-3103

Shell Engineer: Alex Perez
 Phone No.: (510) 675-6168
 Fax #: 675-6172

Consultant Name & Address:
 Blaine Tech Services, Inc.
 1680 Rogers Ave., San Jose, CA 95112

Consultant Contact: Fran Thie
 Phone No.: (408) 573-0555
 Fax #: 573-7771

Comments: 980608-MZ

Sampled by:
 Printed Name: M. Wetmore

Analysis Required 9806548

LAB: SEQR-CA

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
G.W. Monitoring <input checked="" type="checkbox"/> 4461		24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/> 4441		48 hours <input type="checkbox"/>
Soil Classfy/Disposal <input type="checkbox"/> 4442		15 days <input checked="" type="checkbox"/> (Normal)
Water Classfy/Disposal <input type="checkbox"/> 4443		Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/> 4452		
Water Rem. or Sys. O & M <input type="checkbox"/> 4453		
Other <input type="checkbox"/>		

NOTE: Notify Lab as soon as possible of 24/48 hr. TAT.

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020 + MTBE	Total Oil & Grease	Asbestos	Container Size	Preparation Used	Composite Y/N
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UST AGENCY: _____

	Sample ID	Date	Sludge	Soil	Water	Air	No. of conds.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020 + MTBE	Total Oil & Grease	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS	
01	MW-2 "	6/8	1320		X		44						X	X							
12	MW-3 "	"	1355		X		44						X	X							
13	MW-4 "	"	1410		X		44						X	X							
14	EB -	"	1325		"		43						X								
15	DUP -	"			"		43						X								

Relinquished By (signature): <u>M. Wetmore</u>	Printed Name: <u>M. Wetmore</u>	Date: <u>6-9-98</u> Time: <u>9:54</u>	Received (signature): <u>Jeff Bonville</u>	Printed Name: <u>Jeff Bonville</u>	Date: <u>6-9-98</u> Time: <u>9:54</u>
Relinquished By (signature): <u>Jeff Bonville</u>	Printed Name: <u>Jeff Bonville</u>	Date: <u>6-9-98</u> Time: _____	Received (signature): _____	Printed Name: _____	Date: _____ Time: _____
Relinquished By (signature): _____	Printed Name: _____	Date: _____ Time: _____	Received (signature): <u>CC BRANCO</u>	Printed Name: <u>CC BRANCO</u>	Date: <u>6-9-98</u> Time: <u>11:10</u>

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS



Sequoia Analytical

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FAX (707) 792-0342

Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112
Attention: Fran Thie

Project: Shell 1230 14th St.

Enclosed are the results from samples received at Sequoia Analytical on June 9, 1998.
The requested analyses are listed below:

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
9806548 -01	LIQUID, MW-2	06/08/98	TRPH (SM 5520 B&F)
9806548 -01	LIQUID, MW-2	06/08/98	Purgeable TPH/BTEX/MTBE
9806548 -02	LIQUID, MW-3	06/08/98	TRPH (SM 5520 B&F)
9806548 -02	LIQUID, MW-3	06/08/98	Purgeable TPH/BTEX/MTBE
9806548 -03	LIQUID, MW-4	06/08/98	TRPH (SM 5520 B&F)
9806548 -03	LIQUID, MW-4	06/08/98	Purgeable TPH/BTEX/MTBE
9806548 -04	LIQUID, EB	06/08/98	Purgeable TPH/BTEX/MTBE
9806548 -05	LIQUID, Dup	06/08/98	Purgeable TPH/BTEX/MTBE

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL


Peggy Penner
Project Manager





Sequoia Analytical

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Blaine Tech Services
680 Rogers Avenue
San Jose, CA 95112

Client Proj. ID: Shell 1230 14th St.
Lab Proj. ID: 9806548

Sampled: 06/08/98
Received: 06/09/98
Analyzed: see below

Attention: Fran Thie

Reported: 06/25/98

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9806548-01 Sample Desc: LIQUID, MW-2				
TRPH (SM 5520 B&F)	mg/L	06/17/98	5.0	N.D.
Lab No: 9806548-02 Sample Desc: LIQUID, MW-3				
TRPH (SM 5520 B&F)	mg/L	06/17/98	5.0	N.D.
Lab No: 9806548-03 Sample Desc: LIQUID, MW-4				
TRPH (SM 5520 B&F)	mg/L	06/17/98	5.0	6.7

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1210


Peggy Penner
Project Manager





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Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112

Client Proj. ID: Shell 1230 14th St.
Sample Descript: MW-2
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9806548-01

Sampled: 06/08/98
Received: 06/09/98
Extracted: 06/18/98
Analyzed: 06/18/98
Reported: 06/25/98

Attention: Fran Thie

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	10	N.D.
Benzene	0.30	N.D.
Toluene	0.30	N.D.
Ethyl Benzene	0.30	N.D.
Xylenes (Total)	0.60	N.D.
Chromatogram Pattern:		
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	105

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1197


Peggy Penner
Project Manager

Page:

2





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Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112

Attention: Fran Thie

Client Proj. ID: Shell 1230 14th St.
Sample Descript: MW-3
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9806548-02

Sampled: 06/08/98
Received: 06/09/98
Extracted: 06/18/98
Analyzed: 06/18/98
Reported: 06/25/98

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	10	N.D.
Benzene	0.30	N.D.
Toluene	0.30	N.D.
Ethyl Benzene	0.30	N.D.
Xylenes (Total)	0.60	N.D.
Chromatogram Pattern:		
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	104

Analyses reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1197


Peggy Penner
Project Manager





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Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell 1230 14th St. Sample Descript: MW-4 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9806548-03	Sampled: 06/08/98 Received: 06/09/98 Extracted: 06/18/98 Analyzed: 06/18/98 Reported: 06/25/98
Attention: Fran Thie		

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	10	N.D.
Benzene	0.30	N.D.
Toluene	0.30	N.D.
Ethyl Benzene	0.30	N.D.
Xylenes (Total)	0.60	N.D.
Chromatogram Pattern:		
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	103

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1197

Peggy Penner
Project Manager





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Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112

Client Proj. ID: Shell 1230 14th St.
Sample Descript: EB
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9806548-04

Sampled: 06/08/98
Received: 06/09/98
Extracted: 06/18/98
Analyzed: 06/18/98
Reported: 06/25/98

Attention: Fran Thie

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	10	N.D.
Benzene	0.30	N.D.
Toluene	0.30	N.D.
Ethyl Benzene	0.30	N.D.
Xylenes (Total)	0.60	N.D.
Chromatogram Pattern:		
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	108

analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1197


Peggy Penner
Project Manager





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Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112 Attention: Fran Thie	Client Proj. ID: Shell 1230 14th St. Sample Descript: Dup Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9806548-05	Sampled: 06/08/98 Received: 06/09/98 Extracted: 06/18/98 Analyzed: 06/18/98 Reported: 06/25/98
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Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	10	N.D.
Benzene	0.30	N.D.
Toluene	0.30	N.D.
Ethyl Benzene	0.30	N.D.
Xylenes (Total)	0.60	N.D.
Chromatogram Pattern:		
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	106

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL - ELAP #1197


Peggy Penner
Project Manager





**Sequoia
Analytical**

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Blaine Tech Services, Inc.
1680 Rogers Ave.
San Jose, CA 95112
Attention: Fran Thie

Client Project ID: Shell 1230 14th St.
Matrix: Liquid

Work Order #: 9806548 -01-03

Reported: Jun 26, 1998

QUALITY CONTROL DATA REPORT

Analyte: Total Recoverable
Petroleum Hydrocarbons

QC Batch#: SP0615985520EXB
Analy. Method: SM 5520BF
Prep. Method: SM 5520BF

Analyst: H. Olanan
BS/BSD #: BLK061598
Sample Conc.: N.D.
Prepared Date: 6/15/98
Analyzed Date: 6/17/98
Instrument I.D.#: MANUAL
Conc. Spiked: 10 mg/L

Result: 9.2
BS % Recovery: 92

Dup. Result: 9.2
BSD % Recov.: 92

RPD: 0.0
RPD Limit: 0-30

LCS #: BLK061698

Prepared Date: 6/16/98
Analyzed Date: 6/17/98
Instrument I.D.#: MANUAL
Conc. Spiked: 10 mg/L

LCS Result: 9.8
LCS % Recov.: 98

MS/MSD 60-140
LCS 70-130
Control Limits

Please Note:

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

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Blaine Tech Services, Inc.
1680 Rogers Ave.
San Jose, CA 95112
Attention: Fran Thie

Client Project ID: Shell 1230 14th St.
Matrix: Liquid

Work Order #: 9806548-01-05

Reported: Jun 26, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	HF18G61W	HF18G61W	HF18G61W	HF18G61W	HF18G61W
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 8015	EPA 8015	EPA 8015	EPA 8015	EPA 8015
Analyst:	R. McRae	R. McRae	R. McRae	R. McRae	R. McRae
MS/MSD #:	V8060540	V8060540	V8060540	V8060540	V8060540
Sample Conc.:	N.D.	0.041	N.D.	0.024	11
Prepared Date:	6/18/98	6/18/98	6/18/98	6/18/98	6/18/98
Analyzed Date:	6/18/98	6/18/98	6/18/98	6/18/98	6/18/98
Instrument I.D.#:	-	-	-	-	-
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	220 µg/L
Result:	20	19	19	58	243
MS % Recovery:	98	93	96	97	105
Dup. Result:	21	20	21	63	257
MSD % Recov.:	105	100	103	105	112
RPD:	4.9	5.1	10	8.3	5.6
RPD Limit:	0-25	0-25	0-25	0-25	0-30

LCS #:

Prepared Date:
Analyzed Date:
Instrument I.D.#:
Conc. Spiked:

LCS Result:
LCS % Recov.:

MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

SEQUOIA ANALYTICAL
Elap # 1855

Peggy Penner
Project Manager

Please Note:

The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

** MS=Matrix Spike, MSD=MS Duplicate, RPD=Relative % Difference

9806548.BLA <2>





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Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112
Attention: Fran Thie

Client Proj. ID: Shell 1230 14th St.

Received: 06/09/98

Lab Proj. ID: 9806548

Reported: 06/25/98

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 10 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

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