



20415

May 15, 1997

Barney Chan  
Alameda County Department of Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Re: **First Quarter 1997 Monitoring Report**  
Shell Service Station  
4411 Foothill Boulevard  
Oakland, California  
WIC #204-5508-3400  
Cambria Project #240-314-106

Dear Mr. Chan:

On behalf of Shell Oil Products Company, Cambria Environmental Technology, Inc. (Cambria) is submitting this quarterly monitoring report for the site referenced above in accordance with the requirements specified in California Administrative Code Title 23 Waters, Division 3, Chapter 16, Article 5, Section 2652.d.

### **First Quarter 1997 Activities**

Blaine Tech Services, Inc. (Blaine) of San Jose, California measured ground water depths and collected ground water samples from the site wells (Figure 1). The Blaine report describing these activities and the analytic report for the ground water samples are included as Attachment A.

Cambria calculated ground water elevations and compiled the analytic data (Table 1) and prepared a ground water elevation contour map (Figure 1).

### **Anticipated Second Quarter 1997 Activities**

As discussed in our *RBCA Work Plan*, dated December 16, 1996, we will continue to investigate potential hydrocarbon receptors in the area of this site. We will present the results to you shortly.

Blaine will measure ground water depths and collect ground water samples from the site wells. Cambria will compile the results and submit a report summarizing activities at the site.

CAMBRIA  
ENVIRONMENTAL  
TECHNOLOGY, INC.  
1144 65TH STREET,  
SUITE B  
OAKLAND,  
CA 94608  
PH: (510) 420-0700  
FAX: (510) 420-9170

20 JUN - 5 PM 4:03  
ENVIRONMENTAL  
TECHNOLOGY, INC.

Barney Chan  
May 15, 1997

CAMBRIA

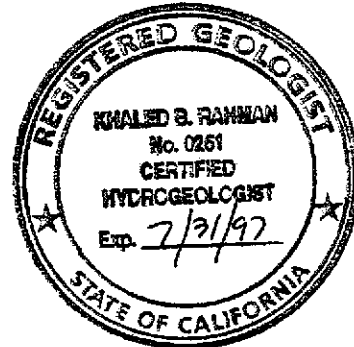
**Closing**

We appreciate the opportunity to work with you on this project. Please call if you have any questions or comments.

Sincerely,  
Cambria Environmental Technology, Inc.



Khaled B. Rahman, R.G., C.H.G.  
Senior Geologist



Attachments:        A - Blaine Tech Ground Water Monitoring Report

cc: A. E. (Alex) Perez, Shell Oil Products Company, P.O. Box 4023, Concord, California 94524

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**Table 1. Ground Water Elevation and Analytic Data - Shell Service Station #204-5508-3400, 4411 Foothill Boulevard, Oakland, California**

Well ID and Elevation (ft-msl)	Date	Depth to Water (feet)	Ground Water Elevation (ft-msl)	TPHg (8015) (ppb)	Benzene (8020) (ppb)	Toluene (8020) (ppb)	Ethylbenzene (8020) (ppb)	Xylenes (8020) (ppb)	TPHd (8015) (ppb)	TPHmo (8015) (ppb)	MTBE (8020) (ppb)	Notes
S-1 38.31	12/18/92	9.06	---	41,000	3,100	1,100	1,200	8,700	---	9,400	---	a
	05/26/93	---	---	39,000	1,300	4,700	1,500	7,800	6,000	370	---	
	05/28/93	12.13	26.18	---	---	---	---	---	---	---	---	
	06/03/93	8.89	29.42	---	---	---	---	---	---	---	---	
	06/08/93	8.80	29.51	---	---	---	---	---	---	---	---	
	09/21/93	10.40	27.91	34,000	480	5,000	3,800	18,000	5,900	ND	---	
	12/14/93	9.66	28.65	25,000	1,100	5,000	2,200	11,000	13,000	ND	---	
	03/17/94	8.20	30.11	57,000	1,300	5,400	2,100	11,000	1,600	2,300	---	
	06/16/94	9.41	28.90	57,000	1,600	6,000	2,000	13,000	3,000	210	---	
	09/22/94	11.13	27.18	39,000	1,300	2,100	1,500	7,100	ND	ND	---	
	12/15/94	7.15	31.16	30,000	1,100	4,700	1,600	10,000	3,100	ND	---	b
	03/30/95	6.09	32.22	30,000	1,400	4,000	1,500	11,000	3,100	ND	---	b, c
	06/20/95	7.30	31.01	28,000	1,100	2,300	1,100	8,300	2,100	NC	---	
	09/20/95	10.02	28.29	40,000	840	3,600	1,300	8,600	2,600	NC	---	
	12/06/95	11.64	26.67	38,000	920	3,200	1,500	9,400	6,400	ND	---	b
	03/21/96	6.87	31.44	48,000	700	4,200	1,100	8,600	---	---	---	
	09/06/96	10.50	27.81	41,000	830	2,600	2,100	12,000	4,100	<1,000	<250	
12/19/96	8.24	30.07	40,000	540	3,100	1,900	9,800	2,500	<500	920		
03/17/97	7.26	31.05	42,000	610	2,700	1,700	11,000	4,700	<1,000	3,500		
S-2 38.79	05/28/93	9.51	29.28	---	---	---	---	---	---	---	---	
	06/03/93	9.51	29.28	---	---	---	---	---	---	---	---	
	06/08/93	9.57	29.22	---	---	---	---	---	---	---	---	
	06/29/93	---	---	1,300	290	35	38	130	---	---	---	
	09/21/93	10.54	28.25	3,300	870	24	190	120	---	---	---	
	12/14/93	9.76	29.03	1,300	400	16	36	27	---	---	---	
	03/17/94	9.92	28.87	4,500	610	27	92	110	---	---	---	
	03/17/94	9.92	28.87	4,000	610	26	93	120	---	---	---	duplicate
	06/16/94	10.11	28.68	2,800	690	45	97	140	---	---	---	
	09/22/94	10.51	28.28	4,000	630	94	64	230	---	---	---	
	12/15/94	9.12	29.67	1,600	450	300	67	130	---	---	---	
	03/30/95	7.86	30.93	8,200	2,800	190	240	700	---	---	---	c
	06/20/95	9.51	29.28	9,600	2,600	160	170	500	---	---	---	
09/20/95	10.06	28.73	4,200	920	45	98	140	---	NC	---		
12/06/95	10.52	28.27	ND	790	67	64	130	---	---	---	d	

Table 1. Ground Water Elevation and Analytic Data - Shell Service Station #204-5508-3400, 4411 Foothill Boulevard, Oakland, California

Well ID and Elevation (ft-msl)	Date	Depth to Water (feet)	Ground Water Elevation (ft-msl)	TPHg (8015) (ppb)	Benzene (8020) (ppb)	Toluene (8020) (ppb)	Ethylbenzene (8020) (ppb)	Xylenes (8020) (ppb)	TPHd (8015) (ppb)	TPHmo (8015) (ppb)	MTBE (8020) (ppb)	Notes
	03/21/96	8.60	30.19	3,700	850	45	96	170	---	---	---	
	09/06/96	10.50	28.29	2,400	500	33	39	84	---	---	490	
	12/19/96	9.40	29.39	1,200	330	15	24	31	---	---	430	
	03/17/97	9.62	28.97	4,100	780	42	110	120	---	---	2,200	
S-3	05/28/93	8.45	28.88	---	---	---	---	---	---	---	---	
37.33	06/03/93	8.36	28.97	---	---	---	---	---	---	---	---	
	06/08/93	8.41	28.92	---	---	---	---	---	---	---	---	
	06/29/93	---	---	29,000	1,500	1,800	950	6,200	---	---	---	
	09/21/93	10.08	27.25	15,000	900	2,200	2,600	11,000	---	---	---	
	12/94/93	8.80	28.53	20,000	1,100	2,400	1,800	8,500	---	---	---	
	03/17/94	8.34	28.99	14,000	580	190	750	1,700	---	---	---	
	06/16/94	9.12	28.21	20,000	700	690	1,400	4,100	---	---	---	
	06/16/94	---	---	19,000	680	560	1,300	3,700	---	---	---	duplicate
	09/22/94	10.27	27.06	24,000	630	1,100	1,400	5,700	---	---	---	
	09/22/94	---	---	25,000	720	1,100	1,500	6,100	---	---	---	duplicate
	12/15/94	7.81	29.52	18,000	520	800	1,100	4,200	---	---	---	
	12/15/94	---	---	23,000	1,000	1,900	2,000	8,600	---	---	---	duplicate
	03/30/95	7.06	30.27	8,800	360	730	700	3,700	---	---	---	c
	03/30/95	---	---	7,600	330	570	600	2,600	---	---	---	e, duplicate
	06/20/95	8.15	29.18	9,600	510	170	960	1,700	---	---	---	
	06/20/95	---	---	9,800	500	170	950	1,700	---	---	---	duplicate
	09/20/95	9.32	28.01	21,000	400	560	1,300	4,600	---	---	---	
	12/06/95	10.53	26.80	24,000	630	1,400	1,400	6,000	---	---	---	
	12/06/95	---	---	22,000	630	1,200	1,400	5,500	---	---	---	duplicate
	03/21/96	7.32	30.01	9,100	290	110	490	1,600	---	---	---	
	03/21/96	---	---	11,000	310	250	540	2,100	---	---	---	duplicate
	09/06/96	10.10	27.23	15,000	440	300	1,100	3,000	---	---	500	e
	09/06/96	---	---	11,000	490	170	820	1,500	---	---	700	e, duplicate
	12/19/96	8.36	28.97	12,000	600	380	850	2,500	---	---	380	
	12/19/96	8.36	28.97	12,000	590	380	830	2,500	---	---	540	duplicate
	03/17/97	8.57	28.76	12,000	520	140	740	1,400	---	---	320	
	03/17/97	8.57	28.76	9,600	500	100	680	1,100	---	---	<250	duplicate

**Table 1. Ground Water Elevation and Analytic Data - Shell Service Station #204-5508-3400, 4411 Foothill Boulevard, Oakland, California**

Well ID and Elevation (ft-msl)	Date	Depth to Water (feet)	Ground Water Elevation (ft-msl)	TPHg (8015) (ppb)	Benzene (8020) (ppb)	Toluene (8020) (ppb)	Ethylbenzene (8020) (ppb)	Xylenes (8020) (ppb)	TPHd (8015) (ppb)	TPHmo (8015) (ppb)	MTBE (8020) (ppb)	Notes
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**Abbreviations:**

- ft-msl = Feet above mean sea level
- NA = Information not available.
- TPHg = Total petroleum hydrocarbons as gasoline
- TPHd = Total petroleum hydrocarbons as diesel
- TPHmo = Total petroleum hydrocarbons as motor oil
- ppb = Parts per billion
- = Not measured and/or analyzed
- ND = Not detected
- NC = Not calculated, TPHmo included with TPHd analysis.
- 8015 = Modified EPA Method 8015
- 8020 = EPA Method 8020
- 8260 = EPA Method 8260

**Notes:**

- a. Phenolic and naphthalene compounds detected in Sample S-1 by EPA Method 8270
- b. Laboratory noted that concentrations appears to be a lighter hydrocarbon than diesel.
- c. National Environmental Testing, Inc. (NET), analyzed within hold time but further dilutions v required and analyzed out of hold time. NET suggests that these should be considered minimum concentrations.
- d. Sample result is ND at a laboratory reporting limit of 5,000 ppb.
- e. MTBE not detected on EPA Method 8260 confirmation analysis, therefore, MTBE may not be in ground water.

CAMBRIA

**ATTACHMENT A**

Blaine Tech Ground Water Monitoring Report

**BLAINE**  
TECH SERVICES INC.

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



April 11, 1997

Shell Oil Company  
P.O. Box 5278  
Concord, CA 94520-9998

Attn: Alex Perez

Shell WIC #204-5508-3400  
4411 Foothill Blvd.  
Oakland, California

1st Quarter 1997

## Quarterly Groundwater Monitoring Report 970317-X-1

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Blaine Tech Services, Inc. performs environmental sampling and documentation as an independent third party. Copies of our Sampling 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 94608  
Attn: Josh Bergstrom

(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 IMMISCIBLES LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
S-1	3/17/97	TOB	ODOR	--	--	--	7.26	24.44
S-2	3/17/97	TOB	--	--	--	--	9.82	22.36
S-3 *	3/17/97	TOB	--	--	--	--	8.57	20.45

\* Sample DUP was a duplicate sample taken from well S-3.



**SHELL OIL COMPANY**  
RETAIL ENVIRONMENTAL ENGINEERING - WEST

**CHAIN OF CUSTODY RECORD**

Serial No: 970317x1

Date:

Page 1 of 1

Silo Address: 4411 Foothill Blvd., Oakland, CA

WIC#: 204-5508-3400

Shell Engineer: R. Jeff Granberry  
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:

Sampled by: *K. Weddingsfeld*

Printed Name: *Ken Weddingsfeld*

**Analysis Required**

LAB: SEQUOIA

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
G.W. Monitoring <input checked="" type="checkbox"/>	4441	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	4441	48 hours <input type="checkbox"/>
Soil Classfy/Disposal <input type="checkbox"/>	4442	16 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 hrs. LAT.

UST AGENCY: \_\_\_\_\_

Sample ID	Date	Sludge	Soil	Water	Air	No. of conls.	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 <i>MTGE</i>	<i>Motor oil</i>	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
S-1	1			X		5	X					X	X						
S-2	2			X		W						X							
S-3	3			X		W						X							
Dug	4			X		W						X							
EB	5			X		W						X							

*9703A76*

E 10 B 09

Relinquished By (signature): <i>[Signature]</i>	Printed Name: <i>Ken Weddingsfeld</i>	Date: <i>3/18/97</i>	Time: <i>1:05</i>	Received (signature): <i>[Signature]</i>	Printed Name: <i>Fletcher</i>	Date: <i>3/18/97</i>	Time: <i>1:05</i>
Relinquished By (signature): <i>[Signature]</i>	Printed Name:	Date: <i>3/18/97</i>	Time:	Received (signature):	Printed Name:	Date:	Time:
Relinquished By (signature):	Printed Name:	Date:	Time:	Received (signature): <i>Mara Grislis</i>	Printed Name: <i>Mara Grislis</i>	Date: <i>3/18/97</i>	Time: <i>15:07</i>

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



# Sequoia Analytical

680 Chesapeake Drive  
404 N. Wiget Lane  
819 Striker Avenue, Suite 8

Redwood City, CA 94063  
Walnut Creek, CA 94598  
Sacramento, CA 95834

(415) 364-9600  
(510) 988-9600  
(916) 921-9600

FAX (415) 364-9233  
FAX (510) 988-9673  
FAX (916) 921-0100

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

Project: Shell Oakland/970317X1

Enclosed are the results from samples received at Sequoia Analytical on March 18, 1997.  
The requested analyses are listed below:

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
9703A76 -01	LIQUID, S-1	03/17/97	TPGBMW Purgeable TPH/BTEX
9703A76 -01	LIQUID, S-1	03/17/97	TPHD_W Extractable TPH
9703A76 -01	LIQUID, S-1	03/17/97	TPHMOW Fuel Fingerprint/Mo
9703A76 -02	LIQUID, S-2	03/17/97	TPGBMW Purgeable TPH/BTEX
9703A76 -03	LIQUID, S-3	03/17/97	TPGBMW Purgeable TPH/BTEX
9703A76 -04	LIQUID, Dup	03/17/97	TPGBMW Purgeable TPH/BTEX
9703A76 -05	LIQUID, EB	03/17/97	TPGBMW Purgeable TPH/BTEX

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





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970317X1 Sample Descript: S-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9703A76-01	Sampled: 03/17/97 Received: 03/18/97 Analyzed: 03/21/97 Reported: 03/31/97
--	--	---

QC Batch Number: GC032197BTEX18A  
Instrument ID: GCHP18

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	5000	42000
Methyl t-Butyl Ether	250	3500
Benzene	50	610
Toluene	50	2700
Ethyl Benzene	50	1700
Xylenes (Total)	50	11000
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	117

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Renner  
Project Manager





Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112

Client Proj. ID: Shell Oakland/970317X1  
Sample Descript: S-1  
Matrix: LIQUID  
Analysis Method: EPA 8015 Mod  
Lab Number: 9703A76-01

Sampled: 03/17/97  
Received: 03/18/97  
Extracted: 03/26/97  
Analyzed: 03/27/97  
Reported: 03/31/97

QC Batch Number: GC0326970HBPEXA  
Instrument ID: GCHP4A

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern:	100	4700 C9-C24
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50                      150	95

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

**SEQUOIA ANALYTICAL** - ELAP #1210

  
Peggy Penner  
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970317X1 Sample Descript: S-1 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9703A76-01	Sampled: 03/17/97 Received: 03/18/97 Extracted: 03/26/97 Analyzed: 03/27/97 Reported: 03/31/97
Attention: Fran Thie		

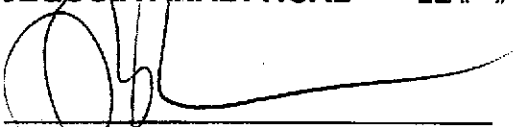
GC Batch Number: GC0326970HBPEXA  
Instrument ID: GCHP4A

**Fuel Fingerprint : Motor Oil**

Analyte	Detection Limit ug/L	Sample Results ug/L
Extractable HC as Motor Oil Chromatogram Pattern:	1000	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
n-Pentacosane (C25)	50 150	95

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

**SEQUOIA ANALYTICAL - ELAP #1210**



Peggy Penner  
Project Manager





Blaine Tech Services  
1680 Rogers Avenue  
San Jose, CA 95112

Client Proj. ID: Shell Oakland/970317X1  
Sample Descript: S-2  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9703A76-02

Sampled: 03/17/97  
Received: 03/18/97  
Analyzed: 03/24/97  
Reported: 03/31/97

QC Batch Number: GC032497BTEX06A  
Instrument ID: GCHP06

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	1250	4100
Methyl t-Butyl Ether	62	2200
Benzene	12	780
Toluene	12	42
Ethyl Benzene	12	110
Xylenes (Total)	12	120
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	90

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

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Peggy Perner  
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970317X1 Sample Descript: S-3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9703A76-03	Sampled: 03/17/97 Received: 03/18/97  Analyzed: 03/21/97 Reported: 03/31/97
--	--	---

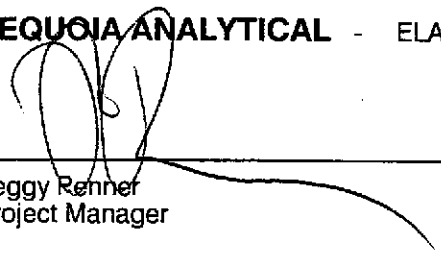
QC Batch Number: GC032197BTEX18A  
Instrument ID: GCHP18

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2000	12000
Methyl t-Butyl Ether	100	320
Benzene	20	520
Toluene	20	140
Ethyl Benzene	20	740
Xylenes (Total)	20	1400
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	128

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

**SEQUOIA ANALYTICAL** - ELAP #1210

  
Peggy Renner  
Project Manager







Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970317X1 Sample Descript: Dup Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9703A76-04	Sampled: 03/17/97 Received: 03/18/97  Analyzed: 03/24/97 Reported: 03/31/97
Attention: Fran Thie		

QC Batch Number: GC032497BTEX06A  
Instrument ID: GCHP06

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	5000	9600
Methyl t-Butyl Ether	250	N.D.
Benzene	50	500
Toluene	50	100
Ethyl Benzene	50	680
Xylenes (Total)	50	1100
Chromatogram Pattern:		C6-C12
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	81

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

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Peggy Permer  
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970317X1 Sample Descript: EB Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9703A76-05	Sampled: 03/17/97 Received: 03/18/97 Analyzed: 03/24/97 Reported: 03/31/97
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QC Batch Number: GC032497BTEX06A  
Instrument ID: GCHP06

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	75

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

**SEQUOIA ANALYTICAL - ELAP #1210**

  
Peggy Penner  
Project Manager





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

Client Proj. ID: Shell Oakland/970317X1  
Lab Proj. ID: 9703A76

Received: 03/18/97  
Reported: 03/31/97

### LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 17 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

**SEQUOIA ANALYTICAL**

  
Peggy Penner  
Project Manager





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

Client Project ID: Shell Oakland/ 97031X1  
Matrix: Liquid

Work Order #: 9703A76 -01, -03

Reported: Apr 9, 1997

### QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC032197BTEX18A	GC032197BTEX18A	GC032197BTEX18A	GC032197BTEX18A	GC032197BTEX18A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	R. Geckler	R. Geckler	R. Geckler	R. Geckler	R. Geckler
MS/MSD #:	9703A4405	9703A4405	9703A4405	9703A4405	9703A4405
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	3/21/97	3/21/97	3/21/97	3/21/97	3/21/97
Analyzed Date:	3/21/97	3/21/97	3/21/97	3/21/97	3/21/97
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	8.7	9.3	9.6	28	61
MS % Recovery:	87	93	96	93	102
Dup. Result:	8.2	8.8	9.0	27	58
MSD % Recov.:	82	88	90	90	97
RPD:	5.9	5.5	6.5	3.6	5.0
RPD Limit:	0-50	0-50	0-50	0-50	0-50

LCS #:	BLK032197	BLK032197	BLK032197	BLK032197	BLK032197
Prepared Date:	3/21/97	3/21/97	3/21/97	3/21/97	3/21/97
Analyzed Date:	3/21/97	3/21/97	3/21/97	3/21/97	3/21/97
Instrument I.D.#:	GCHP18	GCHP18	GCHP18	GCHP18	GCHP18
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	9.0	9.6	10	30	62
LCS % Recov.:	90	96	100	100	103

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					

**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 Fenner  
Project Manager

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

9703A76.BLA <1>





<b>Blaine Tech Services, Inc.</b> 1680 Rogers Avenue San Jose, CA 95112 Attention: Fran Thie	<b>Client Project ID:</b> Shell Oakland/ 97031X1 <b>Matrix:</b> Liquid  <b>Work Order #:</b> 9703A76 -02, -04, -05	<b>Reported:</b> Apr 9, 1997
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**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
<b>QC Batch#:</b>	GC032497BTEX06A	GC032497BTEX06A	GC032497BTEX06A	GC032497BTEX06A	GC032497BTEX06A
<b>Analy. Method:</b>	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
<b>Prep. Method:</b>	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
<b>Analyst:</b>	R. Geckler	R. Geckler	R. Geckler	R. Geckler	R. Geckler
<b>MS/MSD #:</b>	970385104	970385104	970385104	970385104	970385104
<b>Sample Conc.:</b>	N.D.	N.D.	N.D.	N.D.	N.D.
<b>Prepared Date:</b>	3/24/97	3/24/97	3/24/97	3/24/97	3/24/97
<b>Analyzed Date:</b>	3/24/97	3/24/97	3/24/97	3/24/97	3/24/97
<b>Instrument I.D.#:</b>	GCHP06	GCHP06	GCHP06	GCHP06	GCHP06
<b>Conc. Spiked:</b>	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
<b>Result:</b>	9.1	9.7	10	30	97
<b>MS % Recovery:</b>	91	97	100	100	145
<b>Dup. Result:</b>	8.8	9.2	9.8	29	81
<b>MSD % Recov.:</b>	88	92	98	97	135
<b>RPD:</b>	3.4	5.3	2.0	3.4	7.1
<b>RPD Limit:</b>	0-50	0-50	0-50	0-50	0-50

LCS #:	BLK032497A	BLK032497A	BLK032497A	BLK032497A	BLK032497A
<b>Prepared Date:</b>	3/24/97	3/24/97	3/24/97	3/24/97	3/24/97
<b>Analyzed Date:</b>	3/24/97	3/24/97	3/24/97	3/24/97	3/24/97
<b>Instrument I.D.#:</b>	GCHP06	GCHP06	GCHP06	GCHP06	GCHP06
<b>Conc. Spiked:</b>	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
<b>LCS Result:</b>	9.1	9.6	10	30	78
<b>LCS % Recov.:</b>	91	96	100	100	130

<b>MS/MSD</b>	60-140	60-140	60-140	60-140	60-140
<b>LCS</b>	70-130	70-130	70-130	70-130	70-130
<b>Control Limits</b>					

**SEQUOIA ANALYTICAL**  
  
Peggy Renner  
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.





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

Client Project ID: Shell Oakland/ 97031X1  
Matrix: Liquid

Work Order #: 9703A76 -01

Reported: Apr 9, 1997

**QUALITY CONTROL DATA REPORT**

**Analyte:** Diesel  
**QC Batch#:** GC0326970HBPEXA  
**Analy. Method:** EPA 8015M  
**Prep. Method:** EPA 3510

**Analyst:** B. Sullivan  
**MS/MSD #:** 9703A4702  
**Sample Conc.:** N.D.  
**Prepared Date:** 3/26/97  
**Analyzed Date:** 3/26/97  
**Instrument I.D.#:** GCHP4A  
**Conc. Spiked:** 1000 µg/L

**Result:** 980  
**MS % Recovery:** 98

**Dup. Result:** 870  
**MSD % Recov.:** 87

**RPD:** 11.9  
**RPD Limit:** 0-50

**LCS #:** BLK032697s  
**Prepared Date:** 3/26/97  
**Analyzed Date:** 3/26/97  
**Instrument I.D.#:** GCHP4A  
**Conc. Spiked:** 1000 µg/L

**LCS Result:** 930  
**LCS % Recov.:** 93

**MS/MSD**  
**LCS** 60-140  
**Control Limits** 50-150

**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

9703A76.BLA <3>

**SEQUOIA ANALYTICAL**

Peggy Penner  
Project Manager

