CAMBRIA

May 15, 1997

Jennifer Eberle
Alameda County Department
of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Re: **First Quarter 1997 Monitoring Report**
Former Shell Service Station
1230 14th Street
Oakland, California
WIC # 204-4878-1300
Cambria Project #24-314-106

Dear Ms. Eberle:

On behalf of Shell Oil Products Company, Cambria Environmental Technology, Inc. (Cambria) is submitting this monitoring report to satisfy the quarterly reporting requirements prescribed by 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 water samples from the site wells (Figure 1). The Blaine report, describing these sampling activities and presenting the analytic results, is 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 we agreed in our January 1997 meeting, we will install oxygen releasing compounds (ORC's) in wells MW-1, VW/MW-2, and VW/MW-4 to enhance naturally occurring hydrocarbon biodegradation. We will monitor dissolved oxygen (DO) concentrations in all wells prior to installing ORC's. Once the DO concentrations in the ORC wells decrease to pre-ORC concentrations, we will sample the wells, and if required install additional ORC's in the wells. Cambria will also submit a workplan detailing further investigation at this site.

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

CAMBRIA

Blaine will measure ground water elevations and collect ground water samples from selected site wells. Cambria will submit a report summarizing the activities for the upcoming quarter.

CLOSING

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

Sincerely,
Cambria Environmental Technology, Inc.

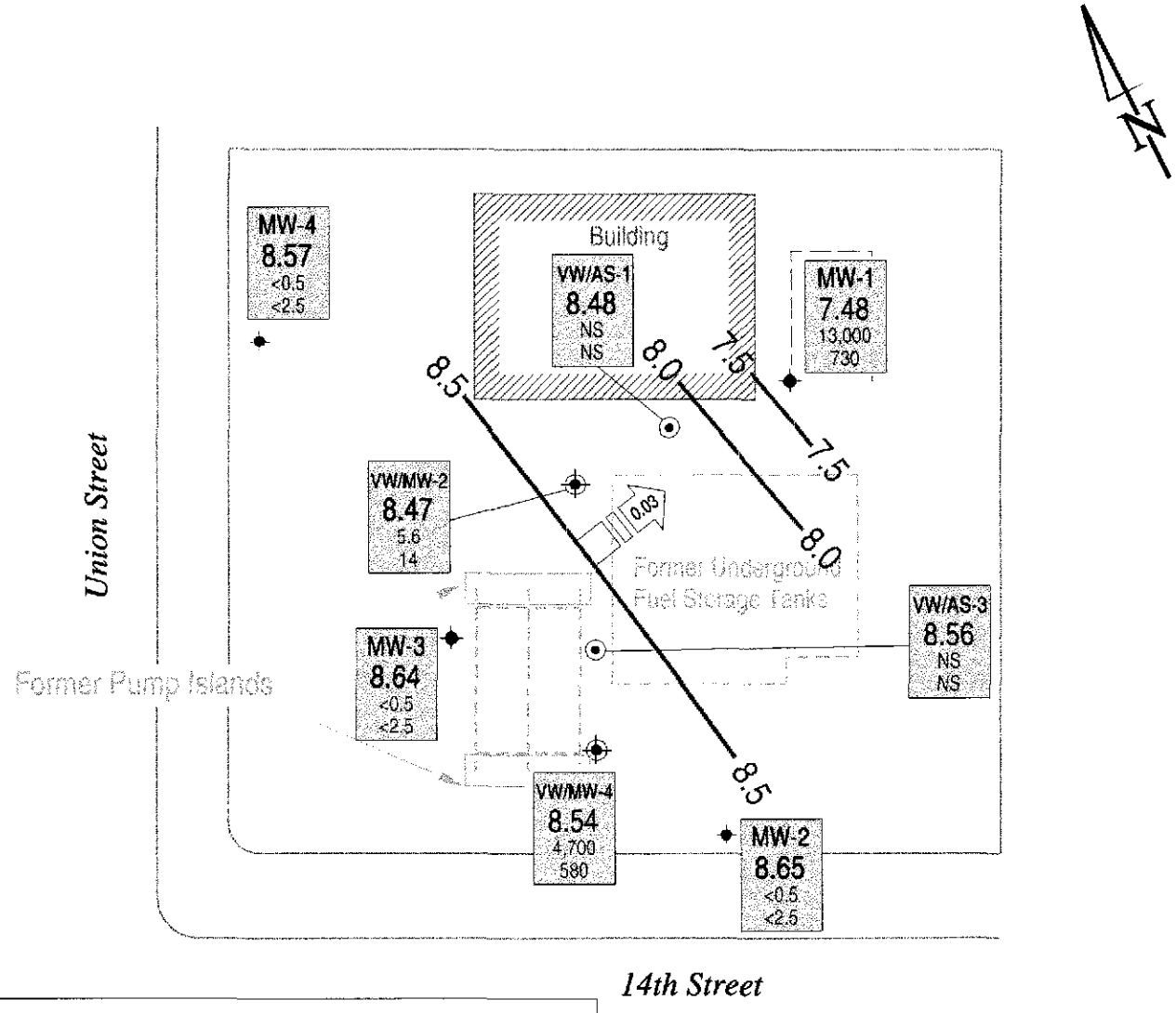
REGISTERED GEOLOGIST
N. SCOTT MacLEOD
No. 5747
STATE OF CALIFORNIA

N. Scott MacLeod, R.G.
Principal Geologist

Attachments: A - Blaine Quarterly Ground Water Monitoring Report

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

F:\PROJECT\SHELL\OAK1230\1Q97QM.WPD



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

ELEV.
Benz - Date
MTBE - Date

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

0 20
Scale (ft)

Base Map by Tank Protect Engineering

CAMBRIA
Environmental Technology, Inc.

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

F:/PROJECT/SHELL/OAK1230/FIGURES/1QM97-MP.DWG

Ground Water Elevation Contours

March 25, 1997

FIGURE
1

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

Well ID (Quarters Sampled)	Date	GW Depth (ft)	GW Elev. (ft)	GW Flow Direction	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	POG	DO (mg/L)	Notes
					concentrations in µg/L								
MW-1	03/25/96	9.53	9.05	---	37,000	<500	7,400	1,500	720	3,300	<5,000		
(All)	06/21/96	10.72	7.86	NE	35,000	890	9,900	460	340	3,500	<5,000		
TOC=18.58	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	12.59	5.99	N	32,000	830	12,000	1,300	1,600	3,100	8,800		duplicate
	03/25/97	**11.10**	**7.48**	**NE**	**39,000**	**730**	**13,000**	**1,600**	**840**	**3,100**	**<5,000**	**1.2**	
MW-2	03/25/96	8.19	9.71	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---		
(All)	06/21/96	9.94	7.96	NE	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---		
TOC=17.90	9/26/96	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**	**<50**	**<2.5**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**---**	**1.8**	
MW-3	03/25/96	8.47	9.71	---	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---		
(All)	06/21/96	10.40	7.78	NE	<50	<2.5	<0.50	<0.50	<0.50	<0.50	---		
TOC= 18.18	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**	**<50**	**<2.5**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**---**	**2.2**	
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**	**<50**	**<2.5**	**<0.50**	**<0.50**	**<0.50**	**<0.50**	**---**	**1.8**	
VW/MW-2	03/25/96	9.04	9.26	---	13,000	<250	900	920	180	1,500	---		
(All)	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	12.52	5.78	NE	29,000	<250	5,800	2,200	1,100	2,500	---		duplicate
	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**	**210**	**14**	**5.6**	**<0.50**	**0.52**	**<0.50**	**---**	**2.0**	
	03/25/97	**9.83**	**8.47**	**NE**	**250**	**4.7**	**1.7**	**0.58**	**0.51**	**<0.50**	**---**	**2.0**	**duplicate**

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

Well ID (Quarters Sampled)	Date	GW Depth (ft)	GW Elev. (ft)	GW Flow Direction	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	POG	DO (mg/L)	Notes
					----------concentrations in µg/L----------								
VW/MW-4	03/25/96	8.45	9.69	---	83,000	<250	6,500	7,000	2,000	11,000	---		
(All)	03/25/96	8.45	9.69	---	84,000	<250	6,400	7,000	2,100	12,000	---		duplicate
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	10.38	7.76	NE	100,000	<1,000	12,000	12,000	2,900	13,000	---		duplicate
	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**	**56,000**	**580**	**4,700**	**1,500**	**2,500**	**6,300**	**---**	**2.4**	
VW/AS-1	03/25/96	8.98	9.62	---	---	---	---	---	---	---	---		
(Gauge only)	06/21/96	10.95	7.65	NE	---	---	---	---	---	---	---		
TOC= 18.60	09/26/96	12.98	5.62	N	---	---	---	---	---	---	---		
	12/19/96	12.67	5.93	N	---	---	---	---	---	---	---		
	03/25/97	**10.12**	**8.48**	**NE**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	
VW/AS-3	03/25/96	8.50	9.67	---	---	---	---	---	---	---	---		
(Gauge only)	06/21/96	10.42	7.75	NE	---	---	---	---	---	---	---		
TOC= 18.17	09/26/96	12.49	5.68	NE	---	---	---	---	---	---	---		
	12/19/96	12.28	5.89	N	---	---	---	---	---	---	---		
	03/25/97	**9.61**	**8.56**	**NE**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	**---**	

Abbreviations:

GW = Ground water
TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8015
TOC = Top of casing elevation
ft = Feet
MTBE = Methyl tert-Butyl Ether by EPA Method 8020
POG = Petroleum Oil and Grease modified by standard method SM 5520 B&F
DO = Dissolved Oxygen
µg/L = Micrograms per liter (parts per billion)
mg/L = Milligrams per liter

ATTACHMENT A

Blaine Quarterly Ground Water Monitoring Report

BLAINE
TECH SERVICES inc.

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

April 16, 1997

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

Attn: Alex Perez

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

1st Quarter 1997

Quarterly Groundwater Monitoring Report 970325-G-1

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, CA 95476
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)
MW-1	3/25/97	TOC	--	NONE	--	--	11.10	21.12
MW-2	3/25/97	TOC	--	NONE	--	--	9.25	21.94
MW-3	3/25/97	TOC	--	NONE	--	--	9.54	21.70
MW-4	3/25/97	TOC	--	NONE	--	--	9.44	21.08
VW/MW-2*	3/25/97	TOC	--	NONE	--	--	9.83	22.10
VW/MW-4	3/25/97	TOC	--	NONE	--	--	9.60	19.52
VW/AS-1	3/25/97	TOC	--	NONE	--	--	10.12	19.14
VW/AS-3	3/25/97	TOC	--	NONE	--	--	9.61	19.61

* Sample DUP was a duplicate sample taken from well VW/MW-2.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 970325-61

Date: 3-25
Page 1 of 1

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

WIC#: 204-5508-3103

Shell Engineer: R. Jeff Granberry | Phone No.: (510) 675-6166 Fax #:

Consultant Name & Address: Blaine Tech Services, Inc. 985 Timothy Dr., San Jose, CA 95133

Consultant Contact: Fran Thie | Phone No.: (408) 995-5535 Fax #:

Comments:

Sampled by:

Printed Name: GRANT MOHR

LAB: SEQ

CHECK ONE (1) BOX ONLY		CT/DT
G.W. Monitoring	XX ☐	4461
Site Investigation	☐	4441
Soil Classify/Disposal	☐	4442
Water Classify/Disposal	☐	4443
Soil/Air Rem. or Sys. O & M	☐	4452
Water Rem. or Sys. O & M	☐	4453
Other	☐	

TURN AROUND TIME: 24 hours ☐ | 48 hours ☐ | 15 days ☐ (Normal) | Other ☐ ____

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

UST AGENCY:

Analysis Required: 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 | OIL & GREASE | Asbestos | Container Size | Preparation Used | Composite Y/N

	Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
1	MW-1	3/25			X		5	9703 F23	
2	MW-2				X		3		
3	MW-3				X		3		
4	MW-4				X		3		
5	VW/MW-2				X		3		
6	VW/MW-4				X		3		
7	EB				X		3		
8	DUP				X		3		

ER 26 10 30

	Printed Name	Date/Time	Received (signature)	Printed Name	Date/Time
Relinquished By (signature):	GRANT MOHR	Date: 3/26/97 Time: 0930		JOHN HOWE	Date: 3/26/97 Time: 0930
Relinquished By (signature):	JOHN HOWE	Date: 3/26/97 Time: 1030			Date: Time:
Relinquished By (signature):		Date: Time:	M. SAKAI	M. SAKAI	Date: 3-26-97 Time: 1050

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

Rev. 12/12/93 — Shell Oil Chain of Custody

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

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

Project: Shell Oakland/970325-G1

Enclosed are the results from samples received at Sequoia Analytical on March 26, 1997. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9703F23 -01	LIQUID, MW-1	03/25/97	TPGBMW Purgeable TPH/BTEX
9703F23 -01	LIQUID, MW-1	03/25/97	TRPH (SM 5520 B&F)
9703F23 -02	LIQUID, MW-2	03/25/97	TPGBMW Purgeable TPH/BTEX
9703F23 -03	LIQUID, MW-3	03/25/97	TPGBMW Purgeable TPH/BTEX
9703F23 -04	LIQUID, MW-4	03/25/97	TPGBMW Purgeable TPH/BTEX
9703F23 -05	LIQUID, VW/MW-2	03/25/97	TPGBMW Purgeable TPH/BTEX
9703F23 -06	LIQUID, VW/MW-4	03/25/97	TPGBMW Purgeable TPH/BTEX
9703F23 -07	LIQUID, EB	03/25/97	TPGBMW Purgeable TPH/BTEX
9703F23 -08	LIQUID, DUP	03/25/97	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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112

Attention: Fran Thie

Client Proj. ID: Shell Oakland/970325-G1

Lab Proj. ID: 9703F23

Sampled: 03/25/97
Received: 03/26/97
Analyzed: see below

Reported: 04/11/97

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9703F23-01				
Sample Desc : **LIQUID,MW-1**				
TRPH (SM 5520 B&F)	mg/L	04/01/97	5.0	N.D.

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services	Client Proj. ID: Shell Oakland/970325-G1	Sampled: 03/25/97
1680 Rogers Avenue	Sample Descript: MW-1	Received: 03/26/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/08/97
Attention: Fran Thie	Lab Number: 9703F23-01	Reported: 04/11/97

QC Batch Number: GC040897BTEX03A
Instrument ID: GCHP3

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**10000**	**39000**
Methyl t-Butyl Ether	**500**	**730**
Benzene	**100**	**13000**
Toluene	**100**	**1600**
Ethyl Benzene	**100**	**840**
Xylenes (Total)	**100**	**3100**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	89

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services	Client Proj. ID: Shell Oakland/970325-G1	Sampled: 03/25/97
1680 Rogers Avenue	Sample Descript: MW-2	Received: 03/26/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/02/97
Attention: Fran Thie	Lab Number: 9703F23-02	Reported: 04/11/97

QC Batch Number: GC040297BTEX21A
Instrument ID: GCHP21

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:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	110

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services	Client Proj. ID: Shell Oakland/970325-G1	Sampled: 03/25/97
1680 Rogers Avenue	Sample Descript: MW-3	Received: 03/26/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/02/97
Attention: Fran Thie	Lab Number: 9703F23-03	Reported: 04/11/97

QC Batch Number: GC040297BTEX21A
Instrument ID: GCHP21

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:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	107

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (415) 364-9600, FAX (415) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services	Client Proj. ID: Shell Oakland/970325-G1	Sampled: 03/25/97
1680 Rogers Avenue	Sample Descript: MW-4	Received: 03/26/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/02/97
Attention: Fran Thie	Lab Number: 9703F23-04	Reported: 04/11/97

QC Batch Number: GC040297BTEX21A
Instrument ID: GCHP21

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:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	97

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

Blaine Tech Services	Client Proj. ID: Shell Oakland/970325-G1	Sampled: 03/25/97
1680 Rogers Avenue	Sample Descript: VW/MW-2	Received: 03/26/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/02/97
Attention: Fran Thie	Lab Number: 9703F23-05	Reported: 04/11/97

QC Batch Number: GC040297BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**50**	**210**
Methyl t-Butyl Ether	**2.5**	**14**
Benzene	**0.50**	**5.6**
Toluene	0.50	N.D.
Ethyl Benzene	**0.50**	**0.52**
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	118

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	Client Proj. ID: Shell Oakland/970325-G1	Sampled: 03/25/97
1680 Rogers Avenue	Sample Descript: VW/MW-4	Received: 03/26/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/02/97
Attention: Fran Thie	Lab Number: 9703F23-06	Reported: 04/11/97

QC Batch Number: GC040297BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**10000**	**56000**
Methyl t-Butyl Ether	**500**	**580**
Benzene	**100**	**4700**
Toluene	**100**	**1500**
Ethyl Benzene	**100**	**2500**
Xylenes (Total)	**100**	**6300**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	102

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	Client Proj. ID: Shell Oakland/970325-G1	Sampled: 03/25/97
1680 Rogers Avenue	Sample Descript: EB	Received: 03/26/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/02/97
Attention: Fran Thie	Lab Number: 9703F23-07	Reported: 04/11/97

QC Batch Number: GC040297BTEX21A
Instrument ID: GCHP21

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:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	104

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	Client Proj. ID: Shell Oakland/970325-G1	Sampled: 03/25/97
1680 Rogers Avenue	Sample Descript: DUP	Received: 03/26/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/03/97
Attention: Fran Thie	Lab Number: 9703F23-08	Reported: 04/11/97

QC Batch Number: GC040397BTEX02A
Instrument ID: GCHP2

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**50**	**250**
Methyl t-Butyl Ether	**2.5**	**4.7**
Benzene	**0.50**	**1.7**
Toluene	**0.50**	**0.58**
Ethyl Benzene	**0.50**	**0.51**
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	130

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 Attention: Fran Thie	Client Proj. ID: Shell Oakland/970325-G1 Lab Proj. ID: 9703F23	Received: 03/26/97 Reported: 04/11/97

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 16 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

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Blaine Tech Services, Inc.	Client Project ID:	Shell Oakland/970325-G1	
1680 Rogers Avenue	Matrix:	Liquid	
San Jose, CA 95112			
Attention: Fran Thie	Work Order #:	9703F23 -01	Reported: Apr 14, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Total Recoverable Petroleum Hydrocarbons
QC Batch#:	OP0331971664EXA
Analy. Method:	SM 5520BF
Prep. Method:	EPA 3510

Analyst:	J. Aquino
MS/MSD #:	BLK033197
Sample Conc.:	N.D.
Prepared Date:	3/31/97
Analyzed Date:	4/1/97
Instrument I.D.#:	Manual
Conc. Spiked:	10 mg/L
Result:	7.2
MS % Recovery:	72
Dup. Result:	8.5
MSD % Recov.:	85
RPD:	17
RPD Limit:	0-50

LCS #:	
Prepared Date:	
Analyzed Date:	
Instrument I.D.#:	
Conc. Spiked:	
LCS Result:	
LCS % Recov.:	

MS/MSD LCS Control Limits	70-110

SEQUOIA ANALYTICAL

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

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Blaine Tech Services, Inc.	Client Project ID:	Shell Oakland/970325-G1	
1680 Rogers Avenue	Matrix:	Liquid	
San Jose, CA 95112			
Attention: Fran Thie	Work Order #:	9703F23-01	Reported: Apr 14, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC040897BTEX03A	GC040897BTEX03A	GC040897BTEX03A	GC040897BTEX03A	GC040897BTEX03A
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:	D. Jirsa	D. Jirsa	D. Jirsa	D. Jirsa	D. Jirsa
MS/MSD #:	9703E5404	9703E5404	9703E5404	9703E5404	9703E5404
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/8/97	4/8/97	4/8/97	4/8/97	4/8/97
Analyzed Date:	4/8/97	4/8/97	4/8/97	4/8/97	4/8/97
Instrument I.D.#:	GCHP03	GCHP03	GCHP03	GCHP03	GCHP03
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	4.4	4.3	4.6	11	26
MS % Recovery:	44	43	46	37	43
Dup. Result:	9.3	9.3	9.2	26	58
MSD % Recov.:	93	93	92	87	97
RPD:	72	74	67	81	76
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK040897	BLK040897	BLK040897	BLK040897	BLK040897
Prepared Date:	4/8/97	4/8/97	4/8/97	4/8/97	4/8/97
Analyzed Date:	4/8/97	4/8/97	4/8/97	4/8/97	4/8/97
Instrument I.D.#:	GCHP03	GCHP03	GCHP03	GCHP03	GCHP03
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	9.2	9.1	9.1	25	57
LCS % Recov.:	92	91	91	83	95
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

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Blaine Tech Services, Inc.	Client Project ID:	Shell Oakland/970325-G1	
1680 Rogers Avenue	Matrix:	Liquid	
San Jose, CA 95112			
Attention: Fran Thie	Work Order #:	9703F23-02-07	Reported: Apr 14, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC040297BTEX21A	GC040297BTEX21A	GC040297BTEX21A	GC040297BTEX21A	GC040297BTEX21A
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:	D. Jirsa	D. Jirsa	D. Jirsa	D. Jirsa	D. Jirsa
MS/MSD #:	9703E5402	9703E5402	9703E5402	9703E5402	9703E5402
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/2/97	4/2/97	4/2/97	4/2/97	4/2/97
Analyzed Date:	4/2/97	4/2/97	4/2/97	4/2/97	4/2/97
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	10	11	11	32	64
MS % Recovery:	100	110	110	107	107
Dup. Result:	10	10	10	31	63
MSD % Recov.:	100	100	100	103	105
RPD:	0.0	9.5	9.5	3.2	1.6
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK040297	BLK040297	BLK040297	BLK040297	BLK040297
Prepared Date:	4/2/97	4/2/97	4/2/97	4/2/97	4/2/97
Analyzed Date:	4/2/97	4/2/97	4/2/97	4/2/97	4/2/97
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	10	10	10	31	61
LCS % Recov.:	100	100	100	103	102

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

Peggy Penner
Project Manager

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

Client Project ID: Shell Oakland/970325-G1
Matrix: Liquid
Work Order #: 9703F23-08

Reported: Apr 14, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC040397BTEX02A	GC040397BTEX02A	GC040397BTEX02A	GC040397BTEX02A	GC040397BTEX02A
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:	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab
MS/MSD #:	9703F1401	9703F1401	9703F1401	9703F1401	9703F1401
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/3/97	4/3/97	4/3/97	4/3/97	4/3/97
Analyzed Date:	4/3/97	4/3/97	4/3/97	4/3/97	4/3/97
Instrument I.D.#:	GCHP02	GCHP02	GCHP02	GCHP02	GCHP02
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	9.2	9.0	9.1	29	61
MS % Recovery:	92	90	91	97	102
Dup. Result:	9.0	8.8	9.1	28	59
MSD % Recov.:	90	88	91	93	98
RPD:	2.2	2.2	0.0	3.5	3.3
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK040397	BLK040397	BLK040397	BLK040397	BLK040397
Prepared Date:	4/3/97	4/3/97	4/3/97	4/3/97	4/3/97
Analyzed Date:	4/3/97	4/3/97	4/3/97	4/3/97	4/3/97
Instrument I.D.#:	GCHP02	GCHP02	GCHP02	GCHP02	GCHP02
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	8.1	8.0	8.1	26	53
LCS % Recov.:	81	80	81	87	88
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

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