



ST10 113

December 18, 1997

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

Re: Third Quarter 1997 Monitoring Report

Shell Service Station
4411 Foothill Boulevard
Oakland, California
WIC #204-5508-3400
Cambria Project #240-314-397

Dear Mr. Chan:

On behalf of Shell Oil Products Company (Shell), Cambria Environmental Technology, Inc. (Cambria) is submitting this 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.

Third 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 Fourth Quarter 1997 Activities

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.

Ms. Gina Kathuria of Cambria has contacted you about the survey of potential hydrocarbon receptors in the area of this site. We will continue to work with you on this matter during the fourth quarter of 1997.

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

Barney Chan
December 18, 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, PO Box 8080, Martinez, California 94553

F:\PROJECTS\SHELL\OAK441\Q\3Q97.WPD

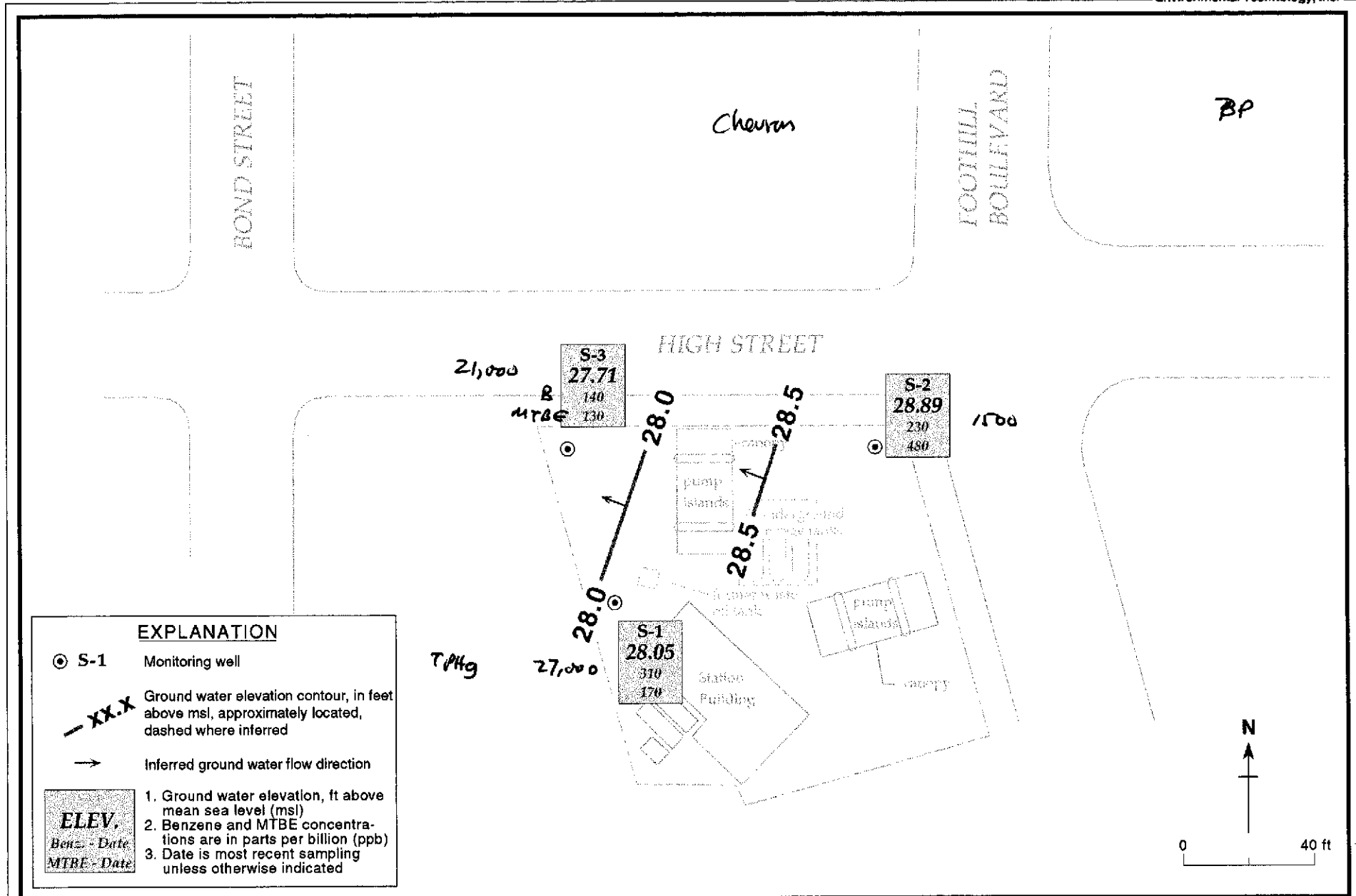


Figure 1. Ground Water Elevation Contours - September 17, 1997 - Shell Service Station WIC# 204-5508-3400 - 4411 Foothill Boulevard, Oakland, California

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	12/18/92	9.06	---	41,000	3,100	1,100	1,200	8,700	---	9,400	---	a
38.31	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	
	06/11/97	10.69	27.62	28,000	540	960	1,300	5,300	4,000	<1,000	220	
	06/11/97	10.69	27.62	30,000	580	1,000	1,400	5,400	3,900	<1,000	<125	duplicate
	09/17/97	10.26	28.05	27,000	310	1,200	1,900	9,000	4,400	<1,000	170	
	09/17/97	10.26	28.05	27,000	270	1,200	1,900	9,000	4,400	<1,000	170	duplicate
S-2	05/28/93	9.51	29.28	---	---	---	---	---	---	---	---	
38.79	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	---	---	---	

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
	03/17/94	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
	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	9.82	28.97	4,100	780	42	110	120	---	---	2,200	
	06/11/97	10.18	28.61	760	120	<5.0	7.0	7.6	---	---	900	
	09/17/97	9.90	28.89	1,500	230	8.6	40	27	---	---	480	
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

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
	03/30/95	---	---	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
	06/11/97	9.26	28.07	9,600	510	94	740	1,100	---	---	410	
	09/17/97	9.62	27.71	21,000	140	560	1,800	7,200	---	---	130	

Abbreviations:

ft-msl = Feet above mean sea level
 MTBE = Methyl tert-butyl ether
 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
 8060 = EPA Method 8260

Notes:

a = Phenolic and naphthalene compounds detected in Sample S-1 by EPA Method 8270
 b = Laboratory noted that concentration appears to be a lighter hydrocarbon than diesel.
 c = National Environmental Testing, Inc. (NET), analyzed within hold time but further dilutions were 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.

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

October 15, 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

3rd Quarter 1997

Groundwater Monitoring Report 970917-A-2

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 *	09/17/97	TOB	--	--	--	--	10.26	24.42
S-2	09/17/97	TOB	--	--	--	--	9.90	22.37
S-3	09/17/97	TOB	ODOR	--	--	--	9.62	20.45

* Sample DUP was a duplicate sample taken from well S-1.



SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No: 970917-A2

Date: _____
Page 1 of 1

Site Address: 4411 Foothill Blvd., Oakland, CA

WIC#: 204-5508-3400 9709B79

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:

Sampled by: Steve Allan

Printed Name: SKA

Analysis Required

LAB: Saguia

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 hrs. TAT.

UST AGENCY: WSP

Sample ID	Date	Sludge	Soil	Water	Air	No. of Confs.	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	Metal <u>0.1</u>	MTSE	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION & COMMENTS	
1 - S1	9/18/97			W		5	X	X	X				X	X							
2 - S2						3	X		X					X							
3 - S3						3	X		X					X							
4 - DUP						5	X	X	X				X	X							
5 - SB	▽			▽		5	X	X	X				X	X							

Released By (signature): <u>[Signature]</u>	Printed Name: <u>Steve Allan</u>	Date: <u>9/18/97</u>	Time: <u>10:30</u>	Received (signature): <u>[Signature]</u>	Printed Name: <u>PENAFOR</u>	Date: <u>9/18/97</u>	Time: <u>10:30</u>
Released By (signature): <u>[Signature]</u>	Printed Name: <u>PENAFOR</u>	Date: _____	Time: _____	Received (signature): _____	Printed Name: _____	Date: _____	Time: _____
Released By (signature): _____	Printed Name: _____	Date: _____	Time: _____	Received (signature): <u>[Signature]</u>	Printed Name: <u>ABAL</u>	Date: <u>9/18/97</u>	Time: <u>12:22</u>

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

(650) 364-9600
(510) 988-9600
(916) 921-9600

FAX (650) 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/970917-A2

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

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
9709B79 -01	LIQUID, S1	09/17/97	TPHD_W Extractable TPH
9709B79 -01	LIQUID, S1	09/17/97	TPHMOW Fuel Fingerprint/Mo
9709B79 -01	LIQUID, S1	09/17/97	TPGM2W Purgeable TPH/BTEX
9709B79 -02	LIQUID, S2	09/17/97	TPGM2W Purgeable TPH/BTEX
9709B79 -03	LIQUID, S3	09/17/97	TPGM2W Purgeable TPH/BTEX
9709B79 -04	LIQUID, DUP	09/17/97	TPHD_W Extractable TPH
9709B79 -04	LIQUID, DUP	09/17/97	TPHMOW Fuel Fingerprint/Mo
9709B79 -04	LIQUID, DUP	09/17/97	TPGM2W Purgeable TPH/BTEX
9709B79 -05	LIQUID, EB	09/17/97	TPHD_W Extractable TPH
9709B79 -05	LIQUID, EB	09/17/97	TPHMOW Fuel Fingerprint/Mo
9709B79 -05	LIQUID, EB	09/17/97	TPGM2W 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/970917-A2 Sample Descript: S1 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9709B79-01	Sampled: 09/17/97 Received: 09/18/97 Extracted: 09/25/97 Analyzed: 09/30/97 Reported: 10/02/97
--	--	--

QC Batch Number: GC0925970HBPEXZ
Instrument ID: GCHP5B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern:	100	4400 C9-C24
Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	96

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/970917-A2 Sample Descript: S1 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9709B79-01	Sampled: 09/17/97 Received: 09/18/97 Extracted: 09/25/97 Analyzed: 09/30/97 Reported: 10/02/97
--	--	--

QC Batch Number: GC0925970HBPEXZ
Instrument ID: GCHP5B

Fuel Fingerprint : Motor Oil

Analyte	Detection Limit ug/L	Sample Results ug/L
Extractable HC as Motor Oil Chromatogram Pattern:	1000	N.D.
Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	96

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/970917-A2 Sample Descript: S1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9709B79-01	Sampled: 09/17/97 Received: 09/18/97 Analyzed: 09/30/97 Reported: 10/02/97
Attention: Fran Thie		

QC Batch Number: GC093097BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2500	27000
Methyl t-Butyl Ether	125	170
Benzene	25	310
Toluene	25	1200
Ethyl Benzene	25	1900
Xylenes (Total)	25	9000
Chromatogram Pattern:		C6-C12
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70	130

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

Attention: Fran Thie

Client Proj. ID: Shell Oakland/970917-A2
Sample Descript: S2
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9709B79-02

Sampled: 09/17/97
Received: 09/18/97
Analyzed: 09/30/97
Reported: 10/02/97

QC Batch Number: GC093097BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	250	1500
Methyl t-Butyl Ether	12	480
Benzene	2.5	230
Toluene	2.5	8.6
Ethyl Benzene	2.5	40
Xylenes (Total)	2.5	27
Chromatogram Pattern:		C6-C12
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	112

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/970917-A2 Sample Descript: S3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9709B79-03	Sampled: 09/17/97 Received: 09/18/97 Analyzed: 09/30/97 Reported: 10/02/97
--	--	---

QC Batch Number: GC093097BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2000	21000
Methyl t-Butyl Ether	25	130
Benzene	20	140
Toluene	20	560
Ethyl Benzene	20	1800
Xylenes (Total)	20	7200
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70	130
		114

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/970917-A2 Sample Descript: DUP Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9709B79-04	Sampled: 09/17/97 Received: 09/18/97 Extracted: 09/23/97 Analyzed: 09/30/97 Reported: 10/02/97
Attention: Fran Thie		

QC Batch Number: GC0923970HBPEXZ
Instrument ID: GCHP5B

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern:	100	4400 C9-C24
Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	89

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/970917-A2
Sample Descript: DUP
Matrix: LIQUID
Analysis Method: EPA 8015 Mod
Lab Number: 9709B79-04

Sampled: 09/17/97
Received: 09/18/97
Extracted: 09/23/97
Analyzed: 09/30/97
Reported: 10/02/97

Attention: Fran Thie

GC Batch Number: GC0923970HBPEXZ
Instrument ID: GCHP5B

Fuel Fingerprint : Motor Oil

Analyte	Detection Limit ug/L	Sample Results ug/L
Extractable HC as Motor Oil Chromatogram Pattern:	1000	N.D.
Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	89

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/970917-A2 Sample Descript: DUP Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9709B79-04	Sampled: 09/17/97 Received: 09/18/97 Analyzed: 09/30/97 Reported: 10/02/97
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QC Batch Number: GC093097BTEX02A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2500	27000
Methyl t-Butyl Ether	125	170
Benzene	25	270
Toluene	25	1200
Ethyl Benzene	25	1900
Xylenes (Total)	25	9000
Chromatogram Pattern:		C6-C12
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 #1210


Peggy Penner
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112 Attention: Fran Thie	Client Proj. ID: Shell Oakland/970917-A2 Sample Descript: EB Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9709B79-05	Sampled: 09/17/97 Received: 09/18/97 Extracted: 09/23/97 Analyzed: 09/26/97 Reported: 10/02/97
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QC Batch Number: GC0923970HBPEXZ
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern:	50	N.D.
Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	101

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/970917-A2 Sample Descript: EB Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9709B79-05	Sampled: 09/17/97 Received: 09/18/97 Extracted: 09/23/97 Analyzed: 09/26/97 Reported: 10/02/97
Attention: Fran Thie		

QC Batch Number: GC0923970HBPEXZ
Instrument ID: GCHP4A

Fuel Fingerprint : Motor Oil

Analyte	Detection Limit ug/L	Sample Results ug/L
Extractable HC as Motor Oil Chromatogram Pattern:	500	N.D.
Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	101

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/970917-A2
Sample Descript: EB
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9709B79-05

Sampled: 09/17/97
Received: 09/18/97
Analyzed: 09/30/97
Reported: 10/02/97

QC Batch Number: GC093097BTEX02A
Instrument ID: GCHP02

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	77

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

Client Project ID: Shell Oakland / 970917-A2
Matrix: Liquid

Work Order #: 9709B79 -01-05

Reported: Oct 3, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC093097BTEX02A	GC093097BTEX02A	GC093097BTEX02A	GC093097BTEX02A	GC093097BTEX02A
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 #:	9709B8001	9709B8001	9709B8001	9709B8001	9709B8001
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	9/30/97	9/30/97	9/30/97	9/30/97	9/30/97
Analyzed Date:	9/30/97	9/30/97	9/30/97	9/30/97	9/30/97
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	9.6	9.4	9.6	29	64
MS % Recovery:	96	94	96	97	107
Dup. Result:	9.3	9.0	9.3	28	61
MSD % Recov.:	93	90	93	93	102
RPD:	3.2	4.3	3.2	3.5	4.8
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK093097	BLK093097	BLK093097	BLK093097	BLK093097
Prepared Date:	9/30/97	9/30/97	9/30/97	9/30/97	9/30/97
Analyzed Date:	9/30/97	9/30/97	9/30/97	9/30/97	9/30/97
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	9.6	9.4	9.6	29	63
LCS % Recov.:	96	94	96	97	105

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

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

9709B79.BLA <1>





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

Client Project ID: Shell Oakland / 970917-A2
Matrix: Liquid

Work Order #: 9709B79-01

Reported: Oct 3, 1997

QUALITY CONTROL DATA REPORT

Analyte: Diesel

QC Batch#: GC0925970HBPEXZ

Analy. Method: EPA 8015M

Prep. Method: EPA 3520

Analyst: G. Fish

MS/MSD #: 9709D3702

Sample Conc.: 1900

Prepared Date: 9/25/97

Analyzed Date: 9/28/97

Instrument I.D.#: GCHP4

Conc. Spiked: 1000 µg/L

Result: 2800

MS % Recovery: 90

Dup. Result: 3100

MSD % Recov.: 120

RPD: 10

RPD Limit: 0-50

LCS #: BLK092597

Prepared Date: 9/25/97

Analyzed Date: 9/28/97

Instrument I.D.#: GCHP4

Conc. Spiked: 1000 µg/L

LCS Result: 740

LCS % Recov.: 74

MS/MSD 50-150

LCS 60-140

Control Limits

SEQUOIA ANALYTICAL

Reggy Fenner
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

9709B79.BLA <2>





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

Client Project ID: Shell Oakland / 970917-A2
Matrix: Liquid

Work Order #: 9709B79-04-05

Reported: Oct 3, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Diesel
QC Batch#:	GC0923970HBPEXZ
Analy. Method:	EPA 8015M
Prep. Method:	EPA 3520

Analyst: G. Fish
MS/MSD #: 9709B6202
Sample Conc.: N.D.
Prepared Date: 9/23/97
Analyzed Date: 9/26/97
Instrument I.D.#: GCHP4
Conc. Spiked: 1000 µg/L

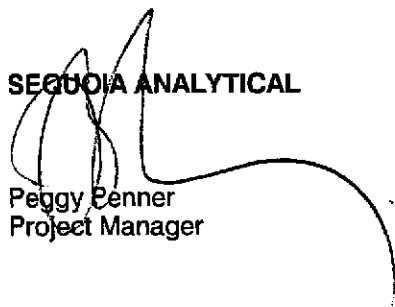
Result: 830
MS % Recovery: 83

Dup. Result: 780
MSD % Recov.: 78

RPD: 6.2
RPD Limit: 0-50

LCS #: BLK092397
Prepared Date: 9/23/97
Analyzed Date: 9/25/97
Instrument I.D.#: GCHP4
Conc. Spiked: 1000 µg/L
LCS Result: 740
LCS % Recov.: 74

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

SEQUOIA ANALYTICAL

Peggy Fenner
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

9709B79.BLA <3>





**Sequoia
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Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112 Attention: Fran Thie	Client Proj. ID: Shell Oakland/970917-A2 Lab Proj. ID: 9709B79	Received: 09/18/97 Reported: 10/02/97
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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.).

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 ANALYTICAL
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[Handwritten Signature]

 Peggy Penner
 Project Manager

