



113

ENVIRONMENTAL
PROTECTION

98 JUN -4 PM 1:59

May 29, 1998

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

Re: **First Quarter 1998 Monitoring Report**
Shell Service Station
4411 Foothill Boulevard
Oakland, California
WIC #204-5508-3400
Cambria Project #24-314-198

• D.O & ORP are consistent w/
nat bioremediation occurring.
however TPHs still high 25+29 mg/L
in MW S1+S3 plus huge MTBE (4800)
in S2 (new release?)
↳ may need to define MTBE

Dear Mr. Chan:

On behalf of Shell Oil Products Company, 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.

First Quarter 1998 Activities

Ground Water Monitoring: Blaine Tech Services, Inc. (Blaine) of San Jose, California measured ground water depths and collected ground water samples from the site wells (Figure 1). In response to a January 14, 1998 Alameda County Department of Environmental Health letter, the samples were analyzed for dissolved oxygen (DO) oxidation-reduction potential (ORP), nitrate, sulfate, ferrous iron, and the highest methyl tert-butyl ether (MTBE) detection by EPA Method 8020 was confirmed by EPA Method 8260, in addition to the existing analytes. The Blaine report, describing these activities and the presenting analytical report for the ground water samples, is included as Attachment A. Cambria calculated ground water elevations and compiled the analytical data (Tables 1 and 2) and prepared a ground water elevation contour map (Figure 1).

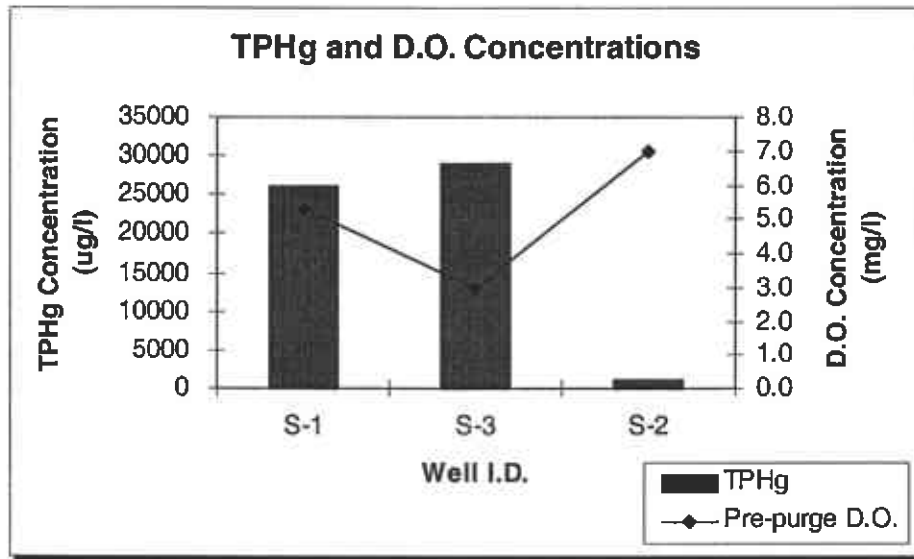
Anticipated Second Quarter 1998 Activities

Ground Water Monitoring: 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

Discussion

As mentioned above, the ground water samples were analyzed for the bioattenuation parameters DO, ORP, nitrate, sulfate, and ferrous iron. These analyses will be performed again during the second quarter 1998 sampling event so that trends can be evaluated. In general, the expected relationships between hydrocarbon and bioparameter concentrations are as follows: active biodegradation is indicated by *inverse* relationships between hydrocarbon concentrations and DO, nitrate, and sulfate concentrations, and *direct* relationships between hydrocarbon concentrations and alkalinity and ferrous iron concentrations. Below is a comparison of total petroleum hydrocarbon as gasoline (TPHg) concentrations and pre-purge DO concentrations detected in the wells arranged from the upgradient well S-1 through the downgradient well S-2.



During aerobic biodegradation, DO levels are reduced as aerobic respiration occurs. DO is the most thermodynamically favored electron acceptor used in aerobic biodegradation of petroleum hydrocarbons. Active aerobic biodegradation of benzene, toluene, ethylbenzene, and xlyenes (BTEX) requires at least 1 milligram per liter (mg/L) DO in ground water. DO concentrations can be as high as 8 to 13 mg/L in oxygen-saturated ground water that is free of hydrocarbons. As shown above, the general inverse relationships between DO and hydrocarbon concentrations indicate the occurrence of aerobic degradation, provided that at least 1 to 2 mg/L of DO is present in ground water.

Upon reviewing the second quarter ground water sampling results, we will further evaluate biodegradation at the site.

Barney Chan
May 29, 1998

CAMBRIA

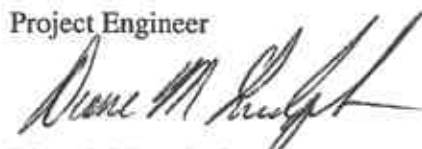
Closing

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.



Paul D. Waite
Project Engineer



Diane M. Lundquist, P.E.
Principal Engineer



Attachment: A - Blaine Ground Water Monitoring Report

cc: A. E. (Alex) Perez, Shell Oil Products Company, PO Box 8080, Martinez, California 94553

G:\OAK441\QM\IQ98.WPD

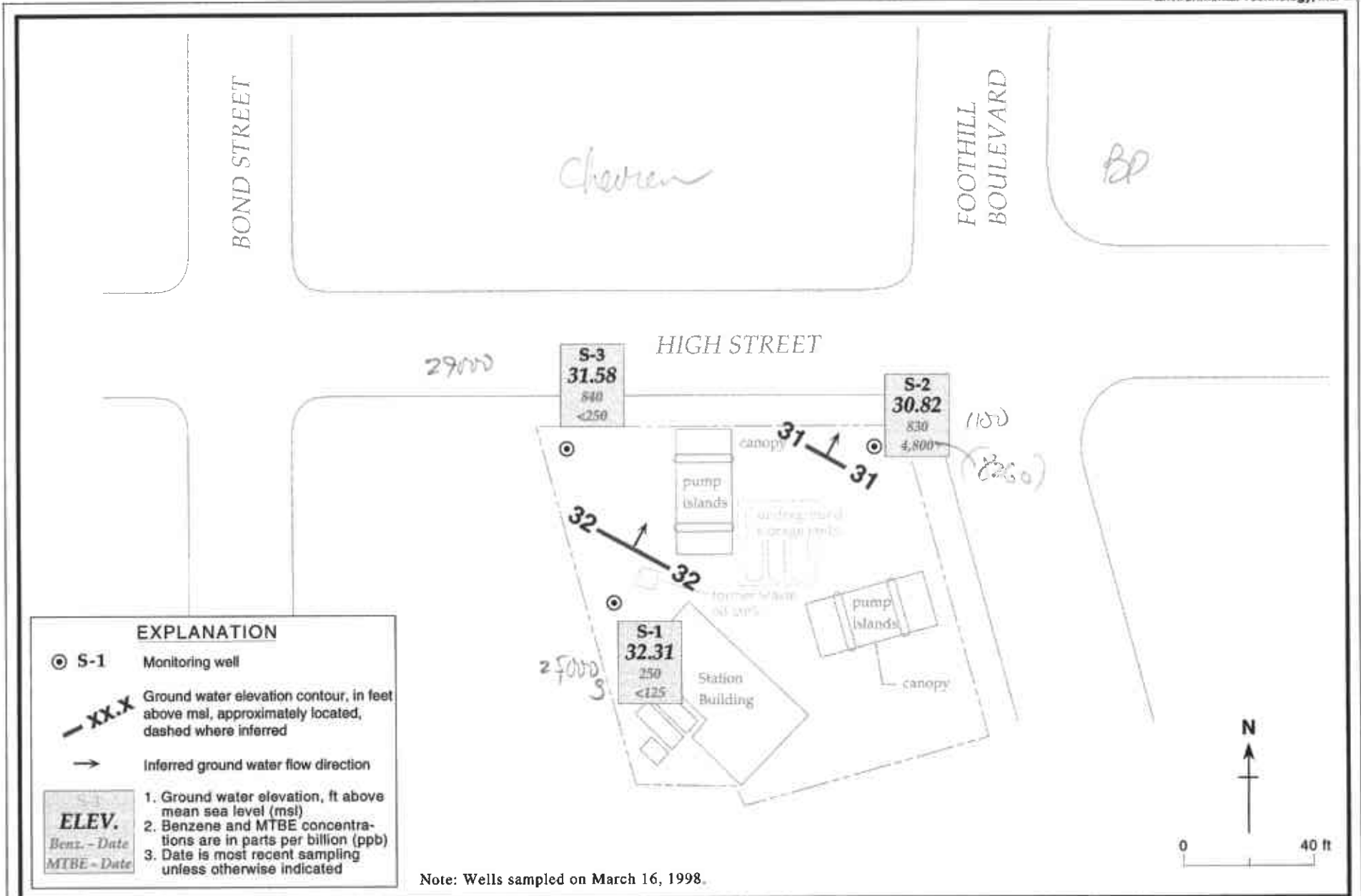


Figure 1. Ground Water Elevation Contours - March 12, 1998 - Shell Service Station - WIC #204-5508-3400, 4411 Foothill Boulevard, Oakland, California

CAMBRIA

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

Well ID and Elevation (ft-msl)	Date	Depth to Water (feet)	Ground Water Elevation (ft-msl)	(Concentrations in µg/L)								Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	TPHd	TPHmo	MTBE	
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	
	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	
12/11/97	6.96	31.35	21,000	350	820	1,500	6,500	3,400	<1,000	<125		
03/16/98	6.00	32.31	25,000	250	820	670	5,000	2,500	510	<125		
03/16/98	6.00	32.31	26,000	250	840	720	5,100	---	---	<125	duplicate	
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	---	---	---	---	---	---	---	---	

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

Well ID and Elevation (ft-msl)	Date	Depth to Water (feet)	Ground Water Elevation (ft-msl)	← Concentrations in µg/L →					TPHd	TPHmo	MTBE	Notes
				TPHg	Benzene	Toluene	Ethylbenzene	Xylenes				
	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	<5,000	790	67	64	130	---	---	---	
	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	
	12/11/97	8.27	30.52	1,300	240	15	33	57	---	---	280	
	03/16/98	7.97	30.82	1,100	830	48	<10	<10	---	---	4700(4,800)	
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

Table 1. Ground Water Elevation and Analytical Data - Shell Service Station WIC #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	Benzene	Toluene	Ethylbenzene	Xylenes	TPHd	TPHmo	MTBE	Notes
(Concentrations in µg/L)												
	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	---	---	---	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	
	09/06/96	---	---	11,000	490	170	820	1,500	---	---	700	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	
	12/11/97	7.34	29.99	24,000	530	970	1,600	6,900	---	---	950	
	12/11/97	7.34	29.99	29,000	520	1,000	1,600	7,300	---	---	970	duplicate
	03/16/98	5.75	31.58	29,000	840	810	1,700	6,000	---	---	<250	

Table 1. Ground Water Elevation and Analytical Data - Shell Service Station WIC #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	Benzene	Toluene	Ethylbenzene	Xylenes	TPHd	TPHmo	MTBE	Notes
				←————— (Concentrations in µg/L) —————→								

Abbreviations:

ft-msl = Feet above mean sea level
 µg/L = Micrograms per liter
 TPHg = Total petroleum hydrocarbons as gasoline by modified EPA Method 8015
 MTBE = Methyl tert-butyl ether by EPA Method 8020. Result in parentheses indicates MTBE by EPA Method 8260
 TPHd = Total petroleum hydrocarbons as diesel by modified EPA Method 8015
 TPHmo = Total petroleum hydrocarbons as motor oil by modified EPA Method 8015
 ND = Not detected
 NC = Not calculated; TPHmo included with TPHd analysis

Notes:

a = Phenolic and naphthalene compounds detected in well 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

<n = Below detection limits of n µg/L
 --- = Not measured and/or analyzed
 Benzene, toluene, ethylbenzene, and total xylenes by EPA Method 8020

**Table 2. Ground Water Analytical Data - Bioattenuation Parameters - Shell Service Station WIC# 204-5508-3400,
4411 Foothill Boulevard, Oakland, California**

Well ID	Date	Depth to Water (feet)	Ferrous Iron	(Concentrations in mg/L)		DO	ORP (millivolts)	Notes
				Nitrate as Nitrate	Sulfate			
S-1	03/16/98	6.00	1.9	<1.0	<1.0	5.3 / 3.7	158 / 155	
S-2	03/16/98	7.97	1.7	<1.0	17	7.0 / 4.3	147 / 149	
S-3	03/16/98	5.75	3.8	<1.0	12	3.0 / 3.4	153 / 142	

Abbreviations and Notes:

mg/L = Milligrams per liter

<n = Below detection limit of n mg/L

Ferrous iron by modified EPA Method 200.7

Nitrate as nitrate and sulfate by EPA Method 300.0

DO = Dissolved oxygen (pre-purge / post-purge)

ORP = Oxidation reduction potential (pre-purge / post-purge)

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

April 21, 1998

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

Attn: Alex Perez

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

1st Quarter 1998

Groundwater Monitoring Report 980312-J-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: Maureen Feinemen

(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*	03/12/98	TOB	--	--	--	--	6.00	24.39
S-2	03/12/98	TOB	--	--	--	--	7.97	22.01
S-3	03/12/98	TOB	--	--	--	--	5.75	20.00

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



SHELL OIL PRODUCTS COMPANY CHAIN OF CUSTODY RECORD

WIC OR FACILITY ID: 204-5508-3400 Date: 03/16/98

Results to:
 Consult. Page 0 / of ... 0 / 1
 Shell

Site Address: 4411 Foothill Blvd Lab: SEQR-CA

Consultant/Contact: BTS

Address: 1680 Remond, SJ, CA

Phone: 408-573-0555

Shell Engineer: A. Perez

TURN AROUND TIME Select one only
 24 hrs. 48 hrs. 15 days (Normal) Other

Waste Protocol Number: _____ Start Time (military): 09:44

Analysis Required

CLASS TYPE/DETAIL TYPE Select one only
 Site Invest (4441) Wtr Rem/Sys (4453)
 Soil Clas/Disp (4442) G.W. Monitor (4461)
 Wtr Clas/Disp (4443) Other
 Soil/Air Rem/Sys (4452)

SAMPLE MATRIX Select one only
 Water NAPL Sludge Sediment
 Soil Vapor Bedrock Other

Sampled by:	UST Agency:	Field Sample ID	Sample Time (military)	Composite?	Acid pres.	Cnt. Sz. (40ml)	Cnt. Sz. - Other	Total No. Containers	TPH-P/MBTEX (8015/8021)	TPH-P/BTEX (8015/8021)	MBTEX (8021)	BTEX (8021)	TPH-P (8015m)	TPH-E (8015m)	TPH-xx (8015m)	TRPH (418.1)	MBTEX (8260)	VOCs (8260) (specify)	SVOCs (8270) (specify)	Lead (specify)	Test for Disposal	Other (specify)	LAB USE ONLY		
																							Lab Tracking No.:	Sample Condition/Comments	
<u>S. Smith</u>		<u>Broke Diesel Bottle in Transport</u>	<u>S-1 11:00</u>					<u>06</u>																<u>9803083</u>	<u>01</u>
			<u>S-2 09:44</u>					<u>06</u>																	<u>02</u>
			<u>S-3 10:30</u>					<u>06</u>																	<u>03</u>
			<u>ER 09:50</u>					<u>05</u>																	<u>04</u>
			<u>DUP</u>					<u>04</u>																	<u>05</u>

Comments: TEST FOR NITRATE, SULFATE, FCIR - OUS IRON CONFIRM MTBE BY 8260

Lab Tracking No.: 9803083

Sample Condition/Comments: 01, 02, 03, 04, 05

Cooler Temperature: _____

Material Description: _____

Relinquished By (signature): <u>[Signature]</u>	Printed Name: <u>S. Smith</u>	Date: <u>3/17</u>	Received By (signature): <u>[Signature]</u>	Printed Name: <u>Nick Castro</u>	Date: <u>3/17</u>
Relinquished By (signature): <u>[Signature]</u>	Printed Name: <u>Nick Castro</u>	Date: <u>3/17/98</u>	Received By (signature): <u>[Signature]</u>	Printed Name: <u>[Signature]</u>	Date: <u>3/17/98</u>
Relinquished By (signature): <u>[Signature]</u>	Printed Name: _____	Date: _____	Received By (signature): <u>[Signature]</u>	Printed Name: <u>Chris Cole</u>	Date: <u>3/17/98</u>

62143



Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8
1455 McDowell Blvd. North, Ste. D

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954

(650) 364-9600 FAX (650) 364-9233
(510) 988-9600 FAX (510) 988-9673
(916) 921-9600 FAX (916) 921-0100
(707) 792-1865 FAX (707) 792-0342

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

Project: Shell 4411 Foothill Blvd

Enclosed are the results from samples received at Sequoia Analytical on March 17, 1998.
The requested analyses are listed below:

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
9803D83 -01	LIQUID, S-1	03/16/98	TPHD_W Extractable TPH
9803D83 -01	LIQUID, S-1	03/16/98	TPHMOW Fuel Fingerprint/Mo
9803D83 -01	LIQUID, S-1	03/16/98	Ferrous Iron
9803D83 -01	LIQUID, S-1	03/16/98	Nitrate as Nitrate
9803D83 -01	LIQUID, S-1	03/16/98	Sulfate
9803D83 -01	LIQUID, S-1	03/16/98	Purgeable TPH/BTEX/MTBE
9803D83 -02	LIQUID, S-2	03/16/98	Ferrous Iron
9803D83 -02	LIQUID, S-2	03/16/98	Nitrate as Nitrate
9803D83 -02	LIQUID, S-2	03/16/98	Sulfate
9803D83 -02	LIQUID, S-2	03/16/98	Purgeable TPH/BTEX/MTBE
9803D83 -02	LIQUID, S-2	03/16/98	MTBE by 8260
9803D83 -03	LIQUID, S-3	03/16/98	Ferrous Iron
9803D83 -03	LIQUID, S-3	03/16/98	Nitrate as Nitrate
9803D83 -03	LIQUID, S-3	03/16/98	Sulfate

SEQUOIA ANALYTICAL





Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8
1455 McDowell Blvd. North, Ste. D

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954

(650) 364-9600
(510) 988-9600
(916) 921-9600
(707) 792-1865

FAX (650) 364-9233
FAX (510) 988-9673
FAX (916) 921-0100
FAX (707) 792-0342

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
9803D83 -03	LIQUID, S-3	03/16/98	Purgeable TPH/BTEX/MTBE
9803D83 -04	LIQUID, EB	03/16/98	TPHD_W Extractable TPH
9803D83 -04	LIQUID, EB	03/16/98	Purgeable TPH/BTEX/MTBE
9803D83 -05	LIQUID, DUP	03/16/98	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





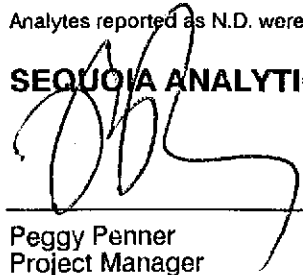
Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell 4411 Foothill Blvd Lab Proj. ID: 9803D83	Sampled: 03/16/98 Received: 03/17/98 Analyzed: see below Reported: 04/09/98
Attention: Fran Thie		

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9803D83-01 Sample Desc: LIQUID,S-1				
Ferrous Iron	mg/L	03/25/98	0.010	1.9
Nitrate as Nitrate	mg/L	03/23/98	1.0	N.D.
Sulfate	mg/L	04/04/98	1.0	N.D.
Lab No: 9803D83-02 Sample Desc: LIQUID,S-2				
Ferrous Iron	mg/L	03/25/98	0.010	1.7
Nitrate as Nitrate	mg/L	03/23/98	1.0	N.D.
Sulfate	mg/L	04/08/98	1.0	17
Lab No: 9803D83-03 Sample Desc: LIQUID,S-3				
Ferrous Iron	mg/L	03/25/98	0.010	3.8
Nitrate as Nitrate	mg/L	03/23/98	1.0	N.D.
Sulfate	mg/L	04/04/98	1.0	12

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 4411 Foothill Blvd Sample Descript: S-1 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9803D83-01	Sampled: 03/16/98 Received: 03/17/98 Extracted: 03/23/98 Analyzed: 03/26/98 Reported: 04/09/98
--	--	--

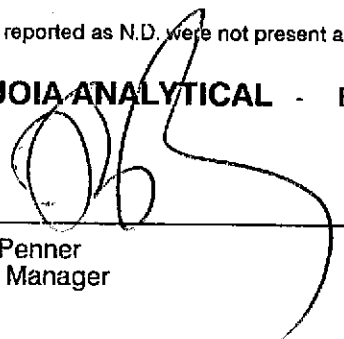
QC Batch Number: GC0323980HBPEXZ
Instrument ID: GCHP4A

Total Extractable Petroleum Hydrocarbons (TEPH)

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern:	50	2500 C9-C24
Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	105

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 4411 Foothill Blvd Sample Descript: S-1 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9803D83-01	Sampled: 03/16/98 Received: 03/17/98 Extracted: 03/23/98 Analyzed: 03/26/98 Reported: 04/09/98
--	--	--

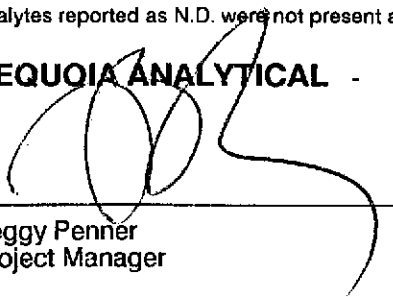
QC Batch Number: GC0323980HBPEXZ
Instrument ID: GCHP4A

Fuel Fingerprint : Motor Oil

Analyte	Detection Limit ug/L	Sample Results ug/L
Extractable HC as Motor Oil Chromatogram Pattern:	500	510 C16-C36
Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	105

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 4411 Foothill Blvd Sample Descript: S-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9803D83-01	Sampled: 03/16/98 Received: 03/17/98 Analyzed: 03/27/97 Reported: 04/09/98
--	--	---

QC Batch Number: GC032798BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2500	25000
Methyl t-Butyl Ether	125	N.D.
Benzene	25	250
Toluene	25	820
Ethyl Benzene	25	670
Xylenes (Total)	25	5000
Chromatogram Pattern:		C6-C12
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	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 4411 Foothill Blvd
Sample Descript: S-2
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9803D83-02

Sampled: 03/16/98
Received: 03/17/98
Analyzed: 03/26/98
Reported: 04/09/98

QC Batch Number: GC032698BTEX17A
Instrument ID: GCHP17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	1000	1100
Methyl t-Butyl Ether	50	4700
Benzene	10	830
Toluene	10	48
Ethyl Benzene	10	N.D.
Xylenes (Total)	10	N.D.
Chromatogram Pattern:		C6-C12
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	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

Attention: Fran Thie

Client Proj. ID: Shell 4411 Foothill Blvd
Sample Descript: S-2
Matrix: LIQUID
Analysis Method: EPA 8260
Lab Number: 9803D83-02

Sampled: 03/16/98
Received: 03/17/98
Analyzed: 04/02/98
Reported: 04/09/98

QC Batch Number: MS040298MTBEH6A
Instrument ID: H6

Methyl t-Butyl Ether (MTBE)

Analyte	Detection Limit ug/L	Sample Results ug/L
Methyl t-Butyl Ether	100	4800
Surrogates	Control Limits %	% Recovery
1,2-Dichloroethane-d4	76	114
		90

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 4411 Foothill Blvd Sample Descript: S-3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9803D83-03	Sampled: 03/16/98 Received: 03/17/98 Analyzed: 03/27/97 Reported: 04/09/98
--	--	---

QC Batch Number: GC032798BTEX17A
Instrument ID: GCHP-17

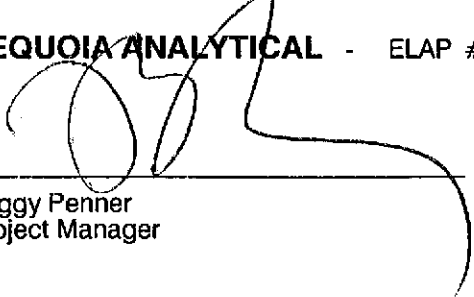
Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	5000	29000
Methyl t-Butyl Ether	250	N.D.
Benzene	50	840
Toluene	50	810
Ethyl Benzene	50	1700
Xylenes (Total)	50	6000
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	98

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 4411 Foothill Blvd Sample Descript: EB Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9803D83-04	Sampled: 03/16/98 Received: 03/17/98 Extracted: 03/23/98 Analyzed: 03/26/98 Reported: 04/09/98
Attention: Fran Thie		

QC Batch Number: GC0323980HBPEXZ
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	78

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

SEQUOIA ANALYTICAL - ELAP #1210


Peggy Perfner
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell 4411 Foothill Blvd Sample Descript: EB Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9803D83-04	Sampled: 03/16/98 Received: 03/17/98 Analyzed: 03/26/98 Reported: 04/09/98
Attention: Fran Thie		

QC Batch Number: GC032698BTEX02A
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	79

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 4411 Foothill Blvd Sample Descript: DUP Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9803D83-05	Sampled: 03/16/98 Received: 03/17/98 Analyzed: 03/27/97 Reported: 04/09/98
--	--	---

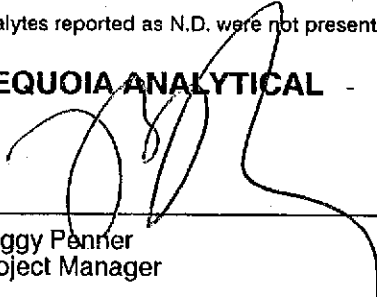
QC Batch Number: GC032798BTEX17A
Instrument ID: GCHP-17

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	2500	26000
Methyl t-Butyl Ether	125	N.D.
Benzene	25	250
Toluene	25	840
Ethyl Benzene	25	720
Xylenes (Total)	25	5100
Chromatogram Pattern:		C6-C12
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	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, Inc. 1680 Rogers Ave. San Jose, CA 95112 Attention: Fran Thie	Client Project ID: Shell 4411 Foothill Blvd. Matrix: Liquid	Work Order #: 9803D83 -01-03	Reported: Apr 16, 1998
--	--	------------------------------	------------------------

QUALITY CONTROL DATA REPORT

Analyte:	Beryllium	Cadmium	Chromium	Nickel
QC Batch#:	ME0324986010MDB	ME0324986010MDB	ME0324986010MDB	ME0324986010MDB
Analy. Method:	EPA 6010	EPA 6010	EPA 6010	EPA 6010
Prep. Method:	EPA 3010	EPA 3010	EPA 3010	EPA 3010

Analyst:	C. Medefesser	C. Medefesser	C. Medefesser	C. Medefesser
MS/MSD #:	9803E5201	9803E5201	9803E5201	9803E5201
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	3/24/98	3/24/98	3/24/98	3/24/98
Analyzed Date:	3/25/98	3/25/98	3/25/98	3/25/98
Instrument I.D.#:	MTJA5	MTJA5	MTJA5	MTJA5
Conc. Spiked:	0.10 mg/L	0.10 mg/L	0.10 mg/L	0.10 mg/L
Result:	0.11	0.11	0.11	0.12
MS % Recovery:	110	110	110	120
Dup. Result:	0.099	0.099	0.10	0.11
MSD % Recov.:	99	99	100	110
RPD:	11	11	9.5	8.7
RPD Limit:	0-20	0-20	0-20	0-20

LCS #:	BLK032498	BLK032498	BLK032498	BLK032498
Prepared Date:	3/24/98	3/24/98	3/24/98	3/24/98
Analyzed Date:	3/24/98	3/24/98	3/24/98	3/24/98
Instrument I.D.#:	MTJA5	MTJA5	MTJA5	MTJA5
Conc. Spiked:	0.10 mg/L	0.10 mg/L	0.10 mg/L	0.10 mg/L
LCS Result:	0.10	0.10	0.10	0.11
LCS % Recov.:	100	100	100	110

MS/MSD	80-120	80-120	80-120	80-120
LCS	80-120	80-120	80-120	80-120
Control Limits				

SEQUOIA ANALYTICAL

Reggy 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

9803D83.BLA <1>





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

Client Project ID: Shell 4411 Foothill Blvd.
Matrix: Liquid

Work Order #: 9803D83-01-03

Reported: Apr 16, 1998

QUALITY CONTROL DATA REPORT

Analyte: Nitrate

QC Batch#: IN0324983000ACA
Analy. Method: EPA 300.0
Prep. Method: N.A.

Analyst: P. Sandrock
MS/MSD #: 9803C0401
Sample Conc.: 54
Prepared Date: 3/24/98
Analyzed Date: 3/24/98
Instrument I.D.#: INIC1
Conc. Spiked: 100 mg/L

Result: 98
MS % Recovery: 98

Dup. Result: 97
MSD % Recov.: 97

RPD: 1.0
RPD Limit: 0-20

LCS #: LCS032498

Prepared Date: 3/24/98
Analyzed Date: 3/24/98
Instrument I.D.#: INIC1
Conc. Spiked: 10 mg/L

LCS Result: 9.4
LCS % Recov.: 94

MS/MSD 75-125
LCS 80-120
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

9803D83.BLA <2>





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

Client Project ID: Shell 4411 Foothill Blvd.
Matrix: Liquid

Work Order #: 9803D83-01, 03, 05

Reported: Apr 16, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC032798BTEX17A	GC032798BTEX17A	GC032798BTEX17A	GC032798BTEX17A	GC032798BTEX17A
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:	C. DeMartini	C. DeMartini	C. DeMartini	C. DeMartini	C. DeMartini
MS/MSD #:	9803C1002	9803C1002	9803C1002	9803C1002	9803C1002
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	3/27/98	3/27/98	3/27/98	3/27/98	3/27/98
Analyzed Date:	3/27/98	3/27/98	3/27/98	3/27/98	3/27/98
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	11	11	11	37	56
MS % Recovery:	113	111	110	123	93
Dup. Result:	11	10	10	33	51
MSD % Recov.:	112	100	100	110	85
RPD:	0.0	9.5	9.5	11	9.3
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK032798	BLK032798	BLK032798	BLK032798	BLK032798
Prepared Date:	3/27/98	3/27/98	3/27/98	3/27/98	3/27/98
Analyzed Date:	3/27/98	3/27/98	3/27/98	3/27/98	3/27/98
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	11	10	11	31	50
LCS % Recov.:	110	100	110	103	83

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

Reggy 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

9803D83.BLA <3>





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

Client Project ID: Shell 4411 Foothill Blvd.
Matrix: Liquid

Work Order #: 9803D83-02

Reported: Apr 16, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC032698BTEX17A	GC032698BTEX17A	GC032698BTEX17A	GC032698BTEX17A	GC032698BTEX17A
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:	C. DeMartini	C. DeMartini	C. DeMartini	C. DeMartini	C. DeMartini
MS/MSD #:	9803C4406	9803C4406	9803C4406	9803C4406	9803C4406
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	3/26/98	3/26/98	3/26/98	3/26/98	3/26/98
Analyzed Date:	3/26/98	3/26/98	3/26/98	3/26/98	3/26/98
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	11	11	10	33	51
MS % Recovery:	110	110	100	110	85
Dup. Result:	12	11	10	33	51
MSD % Recov.:	120	110	100	110	85
RPD:	8.7	0.0	0.0	0.0	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK032698	BLK032698	BLK032698	BLK032698	BLK032698
Prepared Date:	3/26/98	3/26/98	3/26/98	3/26/98	3/26/98
Analyzed Date:	3/26/98	3/26/98	3/26/98	3/26/98	3/26/98
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	11	10	10	31	51
LCS % Recov.:	110	100	100	103	85

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.

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

9803D83.BLA <4>

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager





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

Client Project ID: Shell 4411 Foothill Blvd.
Matrix: Liquid

Work Order #: 9803D83-04

Reported: Apr 16, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC032698BTEX02A	GC032698BTEX02A	GC032698BTEX02A	GC032698BTEX02A	GC032698BTEX02A
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:	C. DeMartini	C. DeMartini	C. DeMartini	C. DeMartini	C. DeMartini
MS/MSD #:	9803C4406	9803C4406	9803C4406	9803C4406	9803C4406
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	3/26/98	3/26/98	3/26/98	3/26/98	3/26/98
Analyzed Date:	3/26/98	3/26/98	3/26/98	3/26/98	3/26/98
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:	8.1	9.3	11	33	61
MS % Recovery:	81	93	110	110	102
Dup. Result:	8.2	9.3	11	33	61
MSD % Recov.:	82	93	110	110	102
RPD:	1.2	0.0	0.0	0.0	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25

LCS #:	BLK032698	BLK032698	BLK032698	BLK032698	BLK032698
Prepared Date:	3/26/98	3/26/98	3/26/98	3/26/98	3/26/98
Analyzed Date:	3/26/98	3/26/98	3/26/98	3/26/98	3/26/98
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:	8.1	9.2	11	33	61
LCS % Recov.:	81	92	110	110	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

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

9803D83.BLA <5>





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

Client Project ID: Shell 4411 Foothill Blvd.
Matrix: Liquid

Work Order #: 9803D83-01, 04

Reported: Apr 16, 1998

QUALITY CONTROL DATA REPORT

Analyte: Diesel

QC Batch#: GC0323980HBPEXZ

Analy. Method: EPA 8015M

Prep. Method: EPA 3520

Analyst: A. Porter

MS/MSD #: 9803A6105

Sample Conc.: 140

Prepared Date: 3/23/98

Analyzed Date: 3/25/98

Instrument I.D.#: GCHP4

Conc. Spiked: 1000 µg/L

Result: 770

MS % Recovery: 63

Dup. Result: 740

MSD % Recov.: 60

RPD: 4.0

RPD Limit: 0-50

LCS #: BLK032398

Prepared Date: 3/23/98

Analyzed Date: 3/25/98

Instrument I.D.#: GCHP4

Conc. Spiked: 1000 µg/L

LCS Result: 630

LCS % Recov.: 63

MS/MSD 50-150

LCS 60-140

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

9803D83.BLA <6>





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

Client Project ID: Shell 4411 Foothill Blvd.
Matrix: Liquid

Work Order #: 9803D83-02

Reported: Apr 16, 1998

QUALITY CONTROL DATA REPORT

Analyte: MTBE

QC Batch#: MS040298MTBEH6A
Analy. Method: EPA 8260
Prep. Method: N.A.

Analyst: M. Williams
MS/MSD #: 980401604
Sample Conc.: 2.3
Prepared Date: 4/2/98
Analyzed Date: 4/2/98
Instrument I.D.#: H6
Conc. Spiked: 50 µg/L

Result: 55
MS % Recovery: 105

Dup. Result: 53
MSD % Recov.: 101

RPD: 3.7
RPD Limit: 0-25

LCS #: LCS040298

Prepared Date: 4/2/98
Analyzed Date: 4/2/98
Instrument I.D.#: H6
Conc. Spiked: 50 µg/L

LCS Result: 52
LCS % Recov.: 104

MS/MSD 60-140
LCS 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

9803D83.BLA <7>





**Sequoia
Analytical**

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8
1455 McDowell Blvd. North, Ste. D

Redwood City, CA 94063
Walnut Creek, CA 94598
Sacramento, CA 95834
Petaluma, CA 94954


(650) 364-9600
(510) 988-9600
(916) 921-9600
(707) 792-1865

FAX (650) 364-9233
FAX (510) 988-9673
FAX (916) 921-0100
FAX (707) 792-0342

Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112 Attention: Fran Thie	Client Proj. ID: Shell 4411 Foothill Blvd Lab Proj. ID: 9803D83	Received: 03/17/98 Reported: 04/09/98
--	--	--

LABORATORY NARRATIVE

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

