CAMBRIA

6/25/98

ENVIRONMENTAL PROTECTION

98 JUL -1 PM 3:24

June 25, 1998

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

Re: **Second Quarter 1998 Monitoring Report**
Shell Service Station
4255 MacArthur Boulevard
Oakland, California
WIC #204-5510-0600
Cambria Project #24-314-298

Dear Mr. Chan:

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

SECOND QUARTER 1998 ACTIVITIES

Ground Water Monitoring: Blaine Tech Services, Inc. (Blaine) of San Jose, California checked for separate-phase hydrocarbons (SPH), gauged, and sampled the site wells (Figure 1). Blaine removed SPH from the passive skimmer device in well MW-2 (Table 1). The quantities removed are presented in the table below. Cambria calculated ground water elevations (Table 2), compiled the analytical data (Table 3), and prepared a ground water elevation contour map (Figure 1). The Blaine report, describing these activities and presenting the laboratory report, is included as Attachment A.

Separate-Phase Hydrocarbon Removal Summary	
This Quarter (lbs)	Cumulative Removal (lbs)
0.02	20.37

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

Corrective Action Plan (CAP): Cambria submitted a CAP to the Alameda County Department of Environmental Health (ACDEH) dated April 15, 1998. On June 11, 1998, Cambria and Shell met with the ACDEH to discuss the CAP. As agreed upon during the meeting, Cambria will perform a Tier II risk analysis for the site.

ANTICIPATED THIRD QUARTER 1998 ACTIVITIES

Ground Water Monitoring: Blaine will measure and remove detected SPH, gauge, and sample the site wells. Cambria will tabulate the data and prepare a monitoring report.

Risk Analysis: Cambria will present the results of the Tier II risk analysis during the upcoming quarter.

CLOSING

We appreciate the opportunity to work with you on this project. Please call Brian Busch at (510) 420-3312 if you have any questions or comments.

Sincerely,
Cambria Environmental Technology, Inc.

Brian Busch
Project Environmental Scientist

Diane M. Lundquist, P.E.
Principal Engineer

REGISTERED PROFESSIONAL ENGINEER
DIANE M. LUNDQUIST
NO. C46725
CIVIL
STATE OF CALIFORNIA

Attachment: A - Blaine Ground Water Monitoring Report

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

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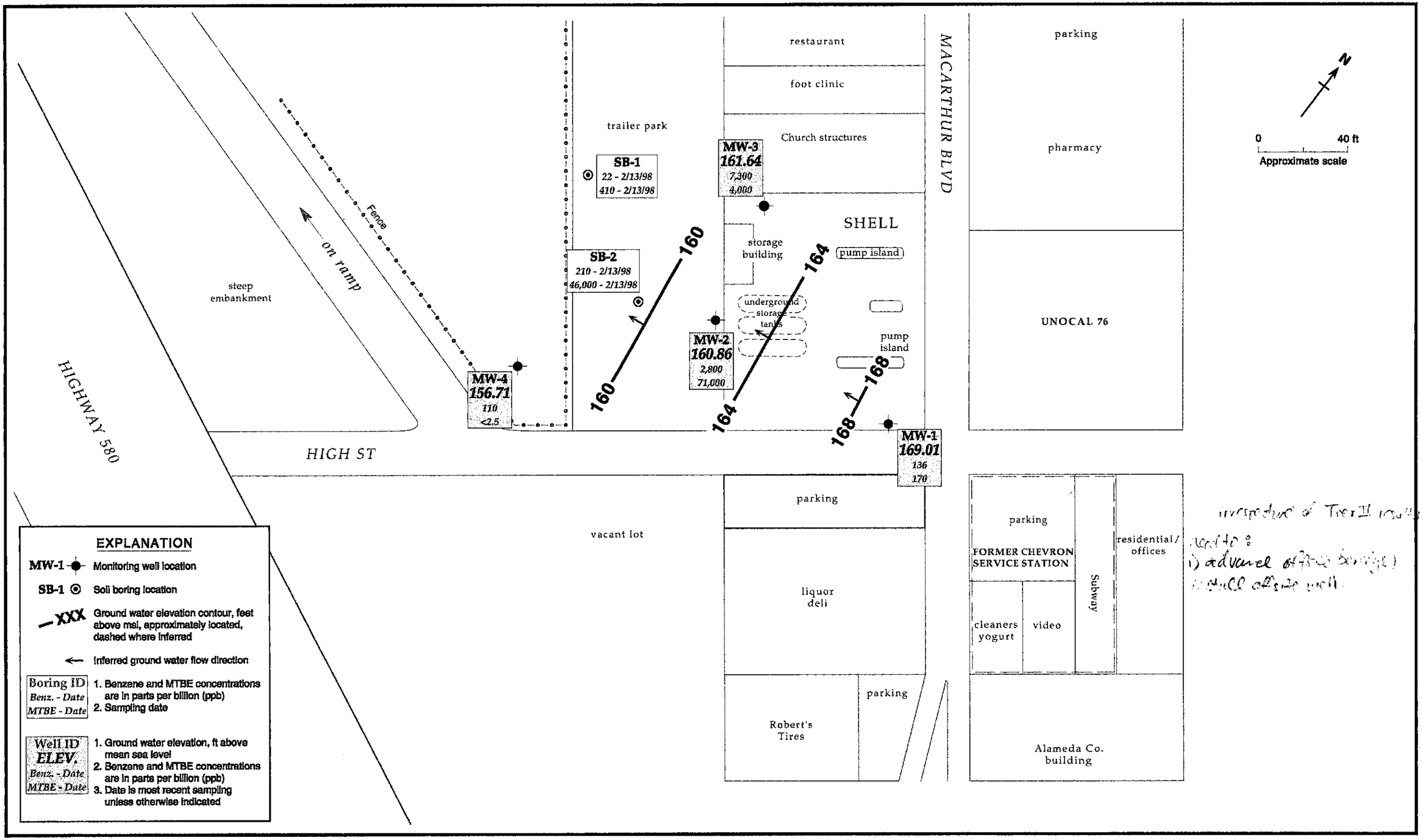

Figure 1. Ground Water Elevation Contours - April 13, 1998 - Shell Service Station, WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California

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06/15/98

Table 1. **Separate-Phase Hydrocarbon Removal** - Shell Service Station
WIC #204-5510-0600, 4255 MacArthur Blvd., Oakland, California

Well ID	Date	SPH Thickness (ft)	SPH Removed (lbs)	Cumulative SPH Removed (lbs)
MW-2	11/17/93	0.0	0.0	0.0
	01/20/94	0.0	0.0	0.0
	04/25/94	0.0	0.0	0.0
	07/07/94	0.0	0.0	0.0
	01/13/95	0.0	0.0	0.0
	04/12/95	0.0	0.0	0.0
	08/10/95	0.52	5.98[a]	5.98
	10/18/95	0.13	0.0	5.98
	01/17/96	0.17	1.74	7.72
	04/25/96	0.03	0.65	8.37
	07/17/96	0.48	2.11	10.48
	10/01/96	0.28	0.81	11.29
	01/22/97	0.11	0.48	11.77
	04/08/97	0.20	0.97	12.74
	07/08/97	0.19	0.97	13.71
	10/08/97	0.05	0.81	14.52
	01/08/98	0.08	1.29	15.81
	04/13/98	**0.00**	**0.02**	**15.83**
MW-3	11/17/93	0.0	0.0	0.0
	01/20/94	0.0	0.0	0.0
	04/25/94	0.0	0.0	0.0
	07/07/94	0.0	0.0	0.0
	01/13/95	---	0.02	0.02
	04/12/95	---	0.02	0.04
	08/10/95	0.06	0.69[a]	0.73
	10/18/95	0.05	0.0	0.73
	01/17/96	0.24	2.62	3.35
	04/25/96	0.02	0.33	3.68
	07/17/96	0.03	0.70	4.38
	04/08/97	0.03	0.16	4.54
	07/08/97	0.0	0.0	4.54
	10/08/97	0.0	0.0	4.54
	01/08/98	0.0	0.0	4.54
TOTAL HYDROCARBONS REMOVED				**20.37**

Notes and Abbreviations:

SPH = Separate-phase hydrocarbons
ft = Feet
lbs = Pounds
--- = Not measured
a = SPH in 10" boring and 4" well estimated by following factor: 1 ft of SPH = 11.5 lbs of SPH
Weight of SPH converted from volume using the relation: 1 liter gasoline = 1.61 pounds

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Table 2. **Ground Water Elevations** - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Blvd., Oakland, California

Well ID	Date Gauged	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft below TOC)	SPH Thickness (ft)	Ground Water Elevation[a] (ft above msl)
MW-1	11/17/93	175.79	8.59	---	167.20
	01/20/94		8.22	---	167.57
	04/25/94		7.63	---	168.16
	07/07/94		8.31	---	167.48
	10/27/94		8.84	---	166.95
	11/17/94		7.60	---	168.19
	11/28/94		7.56	---	168.23
	01/13/95		7.11	---	168.68
	04/12/95		7.08	---	168.71
	07/25/95		7.73	---	168.06
	10/18/95		8.42	---	167.37
	01/17/96		7.83	---	167.96
	04/25/96		7.35	---	168.44
	07/17/96		7.70	---	168.09
	10/01/96		8.07	---	167.72
	01/22/97		7.21	---	168.58
	04/08/97		7.75	---	168.04
	07/08/97		8.01	---	167.78
	10/08/97		8.10	---	167.69
	01/08/98[b]		7.14	---	168.65
	04/13/98		**6.78**	**---**	**169.01**
MW-2	11/17/93	170.91	12.31	---	158.60
	01/20/94		11.48	---	159.43
	04/25/94		10.84	---	160.07
	07/07/94		11.89	---	159.02
	10/27/94		12.89	---	158.02
	11/17/94		9.11	---	161.80
	11/28/94		9.22	---	161.69
	01/13/95		8.10	---	162.81
	04/12/95		10.12	---	160.79
	07/25/95		11.53	0.52	159.80
	10/18/95		14.02	0.13	156.99
	01/17/96		10.27	0.17	160.78
	04/25/96		11.68	0.03	159.25
	07/17/96		12.78	0.48	158.81
	10/01/96		14.21	0.28	156.70
	01/22/97		10.92	0.11	160.08
	04/08/97		14.12	0.20	156.95
	07/08/97		14.98	0.19	156.08
	10/08/97		12.97	0.05	157.98
	01/08/98		12.54	0.08	158.43
	04/13/98		**10.05**	**---**	**160.86**

Table 2. **Ground Water Elevations** - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Blvd., Oakland, California (continued)

Well ID	Date Gauged	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft below TOC)	SPH Thickness (ft)	Ground Water Elevation[a] (ft above msl)
MW-3	11/17/93	174.61	15.40	---	159.21
	01/20/94		14.61	---	160.00
	04/25/94		13.12	---	161.49
	07/07/94		14.54	0.02	160.07
	10/27/94		15.62	0.05	159.03
	11/17/94		13.83	---	160.78
	11/28/94		14.02	---	160.59
	01/13/95		12.13	---	162.48
	04/12/95		12.96	---	161.65
	07/25/95		14.28	0.06	160.38
	10/18/95		15.88	0.05	158.77
	01/17/96		13.86	0.24	160.94
	04/25/96		13.82	0.02	160.81
	07/17/96		16.11	0.03	158.52
	10/01/96		16.56	---	158.05
	01/22/97		13.07	---	161.54
	04/08/97		17.09	0.03	157.54
	07/08/97		15.85	---	158.76
	10/08/97		16.22	---	158.39
	01/08/98		13.80	---	160.81
	04/13/98		**12.97**	**---**	**161.64**
MW-4	11/17/94	164.06	6.62	---	157.44
	11/28/94		6.11	---	157.95
	01/13/95		6.05	---	158.01
	04/12/95		6.31	---	157.75
	07/25/95		7.36	---	156.70
	10/18/95		8.54	---	155.52
	01/17/96		8.48	---	155.58
	04/25/96		7.40	---	156.66
	07/17/96		7.75	---	156.31
	10/01/96		8.82	---	155.24
	01/22/97		7.51	---	156.55
	04/08/97		7.18	---	156.88
	07/08/97		9.00	---	155.06
	10/08/97		8.97	---	155.09
	01/08/98		7.90	---	156.16
	04/13/98		**7.35**	**---**	**156.71**

Table 2. **Ground Water Elevations** - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Blvd., Oakland, California (continued)

Notes and Abbreviations:

a = When separate-phase hydrocarbons are present, ground water elevation is corrected using the relation: Corrected ground water elevation = TOC elevation - depth to water + (0.8 x SPH thickness)
b = Well MW-1 sampled on January 9, 1998
--- = SPH not present
msl = Mean sea level
TOC = Top of casing
SPH = Separate-phase hydrocarbons

Table 3. **Ground Water Analytical Results for Petroleum Hydrocarbons** - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	B	T	E	X
			← (Concentrations in µg/L) →					
MW-1	11/17/93	8.59	410	---	21	11	7.9	47
	01/20/94	8.22	1,200	---	180	19	48	47
	04/25/94	7.63	3,100	---	610	<10	130	27
	07/07/94	8.31	2,400	---	1,000	10	250	20
	10/27/94	8.84	2,200	---	500	3.1	72	1.8
	01/13/95	7.11	570	---	75	2.5	6.7	11
	04/12/95	7.08	1,800	---	480	<5.0	79	<5.0
	07/25/95	7.73	120	---	15	1.1	2.1	2.9
	07/25/95[dup]	7.73	300	---	88	2.4	11	6.5
	10/18/95	8.42	130	---	9.5	0.8	1.3	1.7
	10/18/95[dup]	8.42	120	---	11	0.8	1.4	1.8
	01/17/96	7.83	250	---	22	0.9	1.6	2.3
	04/25/96	7.35	<50	500[b]	4.6	<0.5	<0.5	0.60
	07/17/96	7.70	<250	540	15	<2.5	<2.5	<2.5
	10/01/96	8.07	1,200	1,900	500	12	57	82
	01/22/97	7.21	640	1,200	170	4.3	33	33
	04/08/97	7.75	<200	950	34	<2.0	3.3	4.3
	04/08/97[dup]	7.75	<200	740	66	<2.0	6.4	8.0
	07/08/97	8.01	190	560	49	1.2	5.8	8.6
	10/08/97	8.10	<100	620	7.0	<1.0	<1.0	<1.0
	01/09/98[c]	7.14	970	1,200	390	12	48	71
	04/13/98	**6.78**	**<50**	**170**	**136**	**<0.50**	**1.5**	**1.8**
MW-2	11/17/93	12.31	31,000	---	9,400	4,600	1,000	3,900
	01/20/94	11.48	40,000	---	6,900	5,600	780	4,100
	01/20/94[dup]	11.48	41,000	---	7,200	6,200	900	4,800
	04/25/94	10.84	60,000	---	9,300	6,100	1,400	6,200
	07/07/94	11.89	280,000[a]	---	40,000	26,000	8,100	32,000
	07/07/94[dup]	11.89	53,000	---	13,000	6,600	2,000	8,400
	10/27/94	12.89	130,000	---	14,000	12,000	2,400	13,000
	10/27/94[dup]	12.89	390,000	---	8,800	7,000	1,700	11,000
	01/13/95	8.10	75,000	---	5,900	12,000	3,100	17,000
	04/12/95	10.12	100,000	---	8,500	11,000	2,400	12,000

Table 3. **Ground Water Analytical Results for Petroleum Hydrocarbons** - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California (continued)

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	B	T	E	X
			← (Concentrations in µg/L) →					
	04/12/95[dup]	10.12	80,000	---	4,200	9,300	2,500	12,000
	08/10/95[SPH]	11.53	---	---	---	---	---	---
	10/18/95[SPH]	14.02	---	---	---	---	---	---
	01/17/96[SPH]	10.27	---	---	---	---	---	---
	04/25/96[SPH]	11.68	---	---	---	---	---	---
	07/17/96[SPH]	12.78	---	---	---	---	---	---
	10/01/96[SPH]	14.21	---	---	---	---	---	---
	01/22/97[SPH]	10.92	---	---	---	---	---	---
	04/08/97[SPH]	14.12	---	---	---	---	---	---
	07/08/97[SPH]	14.98	---	---	---	---	---	---
	10/08/98[SPH]	12.97	---	---	---	---	---	---
	01/08/98[SPH]	12.54	---	---	---	---	---	---
	04/13/98	**10.05**	**180,000**	**71,000**	**2,800**	**5,200**	**2,400**	**13,000**
MW-3	11/17/93	15.40	18,000	---	5,400	660	720	2,200
	01/20/94	14.61	55,000	---	13,000	2,600	2,200	6,500
	04/25/94	13.12	96,000	---	11,000	1,600	3,100	9,900
	04/25/94[dup]	13.12	78,000	---	12,000	1,900	2,600	7,300
	07/07/94[SPH]	14.54	---	---	---	---	---	---
	10/27/94[SPH]	15.62	---	---	---	---	---	---
	01/13/95	12.13	180,000	---	3,200	2,700	1,700	5,200
	01/13/95[dup]	12.13	23,000	---	4,000	690	960	3,000
	04/12/95	12.96	56,000	---	8,700	1,500	2,100	6,300
	08/10/95[SPH]	14.28	---	---	---	---	---	---
	10/18/95[SPH]	15.88	---	---	---	---	---	---
	01/17/96[SPH]	13.86	---	---	---	---	---	---
	04/25/96[SPH]	13.82	---	---	---	---	---	---
	07/17/96[SPH]	16.11	---	---	---	---	---	---
	10/01/96	16.56	46,000	3,200	7,300	530	1,700	3,900
	10/01/96[dup]	16.56	47,000	2,900	7,100	530	1,700	4,000
	01/22/97	13.07	82,000	1,100	5,200	1,300	2,800	8,900
	01/22/97[dup]	13.07	61,000	2,700	8,400	1,100	2,300	7,000
	04/08/97[SPH]	17.09	---	---	---	---	---	---
	07/08/97	15.85	56,000	2,800	8,800	580	2,000	4,900

Table 3. **Ground Water Analytical Results for Petroleum Hydrocarbons** - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California (continued)

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	B	T	E	X
			← (Concentrations in µg/L) →					
	10/08/97	16.22	48,000	5,100	8,000	590	1,700	3,400
	01/08/98	13.80	47,000	6,300	9,400	810	2,300	4,700
	01/08/98[dup]	13.80	48,000	5,800	8,100	750	2,000	4,100
	04/13/98	**12.97**	**32,000**	**4,000**	**6,800**	**540**	**1,400**	**3,400**
	04/13/98[dup]	**12.97**	**36,000**	**4,000**	**7,300**	**660**	**1,600**	**3,700**
MW-4	11/28/94	6.11	2,900	---	200	17	76	260
	01/13/95	6.05	1,900	---	130	5.6	13	40
	04/14/95	6.31	680	---	150	<2.0	10	13
	07/25/95	7.36	340	---	100	0.8	8.8	3.0
	10/18/95	8.54	150	---	31	<0.5	3.5	0.8
	01/17/96	8.48	290	---	14	<0.5	1.8	0.8
	04/25/96	7.40	<500	1,700	65	<5	<5	<5
	04/25/96[dup]	7.40	<500	1,500	66	<5	8.7	<5
	07/17/96	7.75	<500	1,500	84	<5.0	6.5	<5.0
	07/17/96[dup]	7.75	<500	1,700 (2,100)	54	<5.0	<5.0	<5.0
	10/01/96	8.82	<500	3,000	1.9	<5.0	<5.0	<5.0
	01/22/97	7.51	580	1,200	130	<2.5	18	5.2
	04/08/97	7.18	770	1,500	200	7.0	26	55
	07/08/97	9.00	570	1,200	78	<5.0	14	11
	07/08/97[dup]	9.00	640	1,600	81	<5.0	16	19
	10/08/97	8.97	<500	1,400	40	<5.0	7.4	5.4
	10/08/97[dup]	8.97	<500	1,400	36	<5.0	5.9	<5.0
	01/08/98	7.90	<1,000	2,000	55	<10	13	<10
	04/13/98	**7.35**	**350**	**<2.5**	**110**	**2.4**	**20**	**26**
Trip Blank	01/20/94		<50	---	<0.5	<0.5	<0.5	<0.5
	04/25/94		<50	---	<0.5	<0.5	<0.5	<0.5
	07/07/94		<50	---	<0.5	<0.5	<0.5	<0.5
	10/27/94		<50	---	<0.5	<0.5	<0.5	<0.5
	01/13/95		<50	---	<0.5	<0.5	<0.5	<0.5
	04/12/95		<50	---	<0.5	<0.5	<0.5	0.89
	07/25/95		<50	---	<0.5	<0.5	<0.5	<0.5
	10/18/95		<50	---	<0.5	<0.5	<0.5	<0.5

Table 3. **Ground Water Analytical Results for Petroleum Hydrocarbons** - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California (continued)

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	B	T	E	X
			← (Concentrations in µg/L) →					
MCLs			NE	NE	1	150	700	1,750

Abbreviations:

TPH-G = 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
B = Benzene by EPA Method 8020
T = Toluene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
X = Total xylenes by EPA Method 8020
SPH = Separate-phase hydrocarbons present; well not sampled
--- = Not analyzed/Not available
<n = Below detection limits of n µg/L
dup = Duplicate sample
ft = Feet
µg/L = Micrograms per liter
MCLs = California primary maximum contaminant levels for drinking water (22 CCR 64444)
NE = MCLs not established

Notes:

a = Ground water surface had a sheen when sampled
b = MTBE value is estimated by Sequoia Analytical of Redwood City, California
c = Well MW-1 gauged on January 8, 1998

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

May 11, 1998

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

Attn: Alex Perez

Shell WIC #204-5510-0600
4255 MacArthur Blvd.
Oakland, California

2nd Quarter 1998

Groundwater Monitoring Report 980413-L-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 Feineman

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

TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST 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	04/13/98	TOC	–	NONE	–	–	6.78	23.24
MW-2	04/13/98	TOC	ODOR/SHEEN	–	0.00	10.0	10.05	19.61
MW-3*	04/13/98	TOC	ODOR/SHEEN	NONE	–	–	12.97	21.80
MW-4	04/13/98	TOC	ODOR	NONE	–	–	7.35	30.40

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

SHELL OIL PRODUCTS COMPANY CHAIN OF CUSTODY RECORD

WIC OR FACILITY ID: 204-5510-0600

Date: 04/13/98

Results to: (•) Consult. ( ) Shell

Page 01 of 01

Site Address: 4255 MACARTHUR BLVD. OAKLAND CA

Consultant/Contact: BTS

Address: 1680 ROGERS AVE. SJ, CA

Phone: 408 573 0555

Shell Engineer: A. PEREZ

Lab: SEQR-CA

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

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)

Waste Profile Number:

Start Time (military): 15:00

Sampled by: L. GILCHRIST

UST Agency:

SAMPLE MATRIX — Select one only:
(•) Water ( ) NAPL ( ) Sludge ( ) Sediment
( ) Soil ( ) Vapor ( ) Bedrock ( ) Other

Analysis Required

	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)
X	1	MW-1	15:30		*	*		03	*													
X	2	MW-2	17:10		*	*		03	*													
X	3	MW-3	16:35		*	*		03	*													
X	4	MW-4	16:02		*	*		03	*													
X	5	EB	15:49		*	*		03	*													
X	6	DUP	:		*	*		03	*													

Comments:

LAB USE ONLY

Lab Tracking No.: AP 14151

Sample Condition/Comments

Cooler Temperature: 9

Material Description

Relinquished By (signature):	Printed Name:	Date:	Received By (signature):	Printed Name:	Date:
	LAD GILCHRIST	Time:		LANCE A. DAVIDSON	4.14.98 Time: 9:50
Relinquished By (signature):	Printed Name:	Date: 4.14.98	Received By (signature):	Printed Name:	Date: Time:
	LANCE A DAVIDSON	Time:			
Relinquished By (signature):	Printed Name:	Date:	Received By (signature):	Printed Name:	Date:
		Time:			Time:

62143

FORM BY IMTRAN

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

SHELL CHAIN OF CUSTODY REVISED 12/97

Sequoia Analytical

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

Project: Shell 4255 MacArthur Blvd.

Enclosed are the results from samples received at Sequoia Analytical on April 14, 1998. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9804893 -01	LIQUID, MW-1	04/13/98	TPPH/BTEX/MTBE (Concord)
9804893 -02	LIQUID, MW-2	04/13/98	TPPH/BTEX/MTBE (Concord)
9804893 -03	LIQUID, MW-3	04/13/98	TPPH/BTEX/MTBE (Concord)
9804893 -04	LIQUID, MW-4	04/13/98	TPPH/BTEX/MTBE (Concord)
9804893 -05	LIQUID, EB	04/13/98	TPPH/BTEX/MTBE (Concord)
9804893 -06	LIQUID, DUP	04/13/98	TPPH/BTEX/MTBE (Concord)

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

for

Peggy Penner
Project Manager

Sequoia Analytical

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Blaine Tech Services
1680 Rogers Avenue
San Jose, CA 95112

Attention: Fran Thie

Client Proj. ID: Shell 4255 MacArthur Blvd.
Sample Descript: MW-1
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9804893-01

Sampled: 04/13/98
Received: 04/14/98

Analyzed: 04/22/98
Reported: 04/29/98

QC Batch Number: GC042298BTEX09A
Instrument ID: GCHP9

Total Purgeable 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**	**170**
Benzene	**0.50**	**136**
Toluene	0.50	N.D.
Ethyl Benzene	**0.50**	**1.5**
Xylenes (Total)	**0.50**	**1.8**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	103

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

SEQUOIA ANALYTICAL - ELAP #1271

Peggy Penner
Project Manager

Sequoia Analytical

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Blaine Tech Services	Client Proj. ID: Shell 4255 MacArthur Blvd.	Sampled: 04/13/98
1680 Rogers Avenue	Sample Descript: MW-2	Received: 04/14/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/21/98
Attention: Fran Thie	Lab Number: 9804893-02	Reported: 04/29/98

QC Batch Number: GC042198BTEX02A
Instrument ID: GCHP2

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit 130	Sample Results 130
TPPH as Gas	**50000**	**180000**
Methyl t-Butyl Ether	**2500**	**71000**
Benzene	**500**	**2800**
Toluene	**500**	**5200**
Ethyl Benzene	**500**	**2400**
Xylenes (Total)	**500**	**13000**
Chromatogram Pattern:		**C6-C12**

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 #1271

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 4255 MacArthur Blvd.
Sample Descript: MW-3
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9804893-03

Sampled: 04/13/98
Received: 04/14/98

Analyzed: 04/21/98
Reported: 04/29/98

QC Batch Number: GC042198BTEX02A
Instrument ID: GCHP2

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**5000**	**32000**
Methyl t-Butyl Ether	**250**	**4000**
Benzene	**50**	**6800**
Toluene	**50**	**540**
Ethyl Benzene	**50**	**1400**
Xylenes (Total)	**50**	**3400**
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 #1271

Peggy Penner
Project Manager

Sequoia Analytical

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Blaine Tech Services	Client Proj. ID: Shell 4255 MacArthur Blvd.	Sampled: 04/13/98
1680 Rogers Avenue	Sample Descript: MW-4	Received: 04/14/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/21/98
Attention: Fran Thie	Lab Number: 9804893-04	Reported: 04/29/98

QC Batch Number: GC042198BTEX02A
Instrument ID: GCHP2

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**50**	**350**
Methyl t-Butyl Ether	2.5	N.D.
Benzene	**0.50**	**110**
Toluene	**0.50**	**2.4**
Ethyl Benzene	**0.50**	**20**
Xylenes (Total)	**0.50**	**26**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	120

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

SEQUOIA ANALYTICAL - ELAP #1271

Peggy Penner
Project Manager

Sequoia Analytical

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Blaine Tech Services	Client Proj. ID: Shell 4255 MacArthur Blvd.	Sampled: 04/13/98
1680 Rogers Avenue	Sample Descript: EB	Received: 04/14/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/21/98
Attention: Fran Thie	Lab Number: 9804893-05	Reported: 04/29/98

QC Batch Number: GC042198BTEX02A
Instrument ID: GCHP2

Total Purgeable 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	108

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

SEQUOIA ANALYTICAL - ELAP #1271

Peggy Penner
Project Manager

Sequoia Analytical

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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

Blaine Tech Services	Client Proj. ID: Shell 4255 MacArthur Blvd.	Sampled: 04/13/98
1680 Rogers Avenue	Sample Descript: DUP	Received: 04/14/98
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 04/22/98
Attention: Fran Thie	Lab Number: 9804893-06	Reported: 04/29/98

QC Batch Number: GC042298BTEX09A
Instrument ID: GCHP9

Total Purgeable Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**20000**	**36000**
Methyl t-Butyl Ether	**1000**	**4000**
Benzene	**200**	**7300**
Toluene	**200**	**660**
Ethyl Benzene	**200**	**1600**
Xylenes (Total)	**200**	**3700**
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 #1271

Peggy Penner
Project Manager

Sequoia Analytical

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

Client Project ID: Shell 4255 MacArthur Blvd.
Matrix: Liquid
Work Order #: 9804893 -01, 06
Reported: May 6, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC042298802005A	GC042298802005A	GC042298802005A	GC042298802005A	GC042298802005A
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:	K. Nill	K. Nill	K. Nill	K. Nill	K. Nill
MS/MSD #:	8041167	8041167	8041167	8041167	8041167
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/22/98	4/22/98	4/22/98	4/22/98	4/22/98
Analyzed Date:	4/22/98	4/22/98	4/22/98	4/22/98	4/22/98
Instrument I.D.#:	HP5	HP5	HP5	HP5	HP5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	340 µg/L
Result:	22	23	23	72	370
MS % Recovery:	110	115	115	120	109
Dup. Result:	22	22	22	67	340
MSD % Recov.:	110	110	110	112	100
RPD:	0.0	4.4	4.4	7.2	8.5
RPD Limit:	0-20	0-20	0-20	0-20	0-50
LCS #:	LCS042298	LCS042298	LCS042298	LCS042298	LCS042298
Prepared Date:	4/22/98	4/22/98	4/22/98	4/22/98	4/22/98
Analyzed Date:	4/22/98	4/22/98	4/22/98	4/22/98	4/22/98
Instrument I.D.#:	HP5	HP5	HP5	HP5	HP5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	340 µg/L
LCS Result:	22	22	22	66	340
LCS % Recov.:	110	110	110	110	100
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
Elap #1271

Steven Hackett For
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

Sequoia Analytical

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

Client Project ID: Shell 4255 MacArthur Blvd.
Matrix: Liquid
Work Order #: 9804893-02-05

Reported: May 6, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC042198802002A	GC042198802002A	GC042198802002A	GC042198802002A	GC042198802002A
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:	K. Nill	K. Nill	K. Nill	K. Nill	K. Nill
MS/MSD #:	8041213	8041213	8041213	8041213	8041213
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	4/21/98	4/21/98	4/21/98	4/21/98	4/21/98
Analyzed Date:	4/21/98	4/21/98	4/21/98	4/21/98	4/21/98
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	360 µg/L
Result:	21	19	15	53	340
MS % Recovery:	105	95	75	88	94
Dup. Result:	18	15	8.5	40	360
MSD % Recov.:	90	75	43	67	100
RPD:	15.4	23.5	55.3	28	5.7
RPD Limit:	0-20	0-20	0-20	0-20	0-50
LCS #:	LCS042198	LCS042198	LCS042198	LCS042198	LCS042198
Prepared Date:	4/21/98	4/21/98	4/21/98	4/21/98	4/21/98
Analyzed Date:	4/21/98	4/21/98	4/21/98	4/21/98	4/21/98
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	360 µg/L
LCS Result:	17	18	20	58	330
LCS % Recov.:	85	90	100	97	92
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
Elap #1271

Steven Hobbs for
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
1680 Rogers Avenue
San Jose, CA 95112
Attention: Fran Thie

Client Proj. ID: Shell 4255 MacArthur Blvd.
Lab Proj. ID: 9804893

Received: 04/14/98
Reported: 04/29/98

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 9 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