CAMBRIA

ENVIRONMENTAL PROTECTION
96 OCT 24 AM 8:26

October 17, 1996

Madulla Logan
Alameda Health Care Services
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Re: **Third Quarter 1996**
Shell Service Station
WIC #204-5510-0600
4255 MacArthur Blvd.
Oakland, California

Dear Ms. Logan:

On behalf of Shell Oil Products Company, Cambria Environmental Technology is submitting this status report to satisfy the quarterly reporting requirements prescribed by California Administrative Code Title 23 Waters, Division 3, Chapter 16, Article 5, Section 2652.d.

Activities This Quarter:

SEPARATE-PHASE HYDROCARBON REMOVAL SUMMARY	
Separate-Phase Hydrocarbons Removed This Quarter (lbs)	*Cumulative Hydrocarbons Removed (lbs)*
2.81	14.86

- Blaine Tech Services, Inc. (BTS) of San Jose, California, removed separate phase hydrocarbons from passive skimmer devices in wells MW-2 and MW-3 (Table 1). The quantities removed are presented in the table above.

- BTS measured ground water depths and collected ground water samples from the site wells (Figures 1). The BTS report describing these activities and the analytic report for the ground water samples are included as Attachment A.

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

- Cambria Environmental Technology, Inc. (Cambria) calculated ground water elevations (Table 2), compiled the analytic data (Table 3), and prepared a ground water elevation contour map (Figure 1).

Anticipated Activities Next Quarter:

Cambria will submit a report presenting a summary of activities for the upcoming quarter.

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

Sincerely,
Cambria Environmental Technology, Inc.

N. Scott MacLeod, R.G.
Principal Geologist

Attachments: A - Ground Water Monitoring Report and Analytic Report

cc: R. Jeff Granberry, Shell Oil Products Company, P.O. Box 4023, Concord, CA 94524

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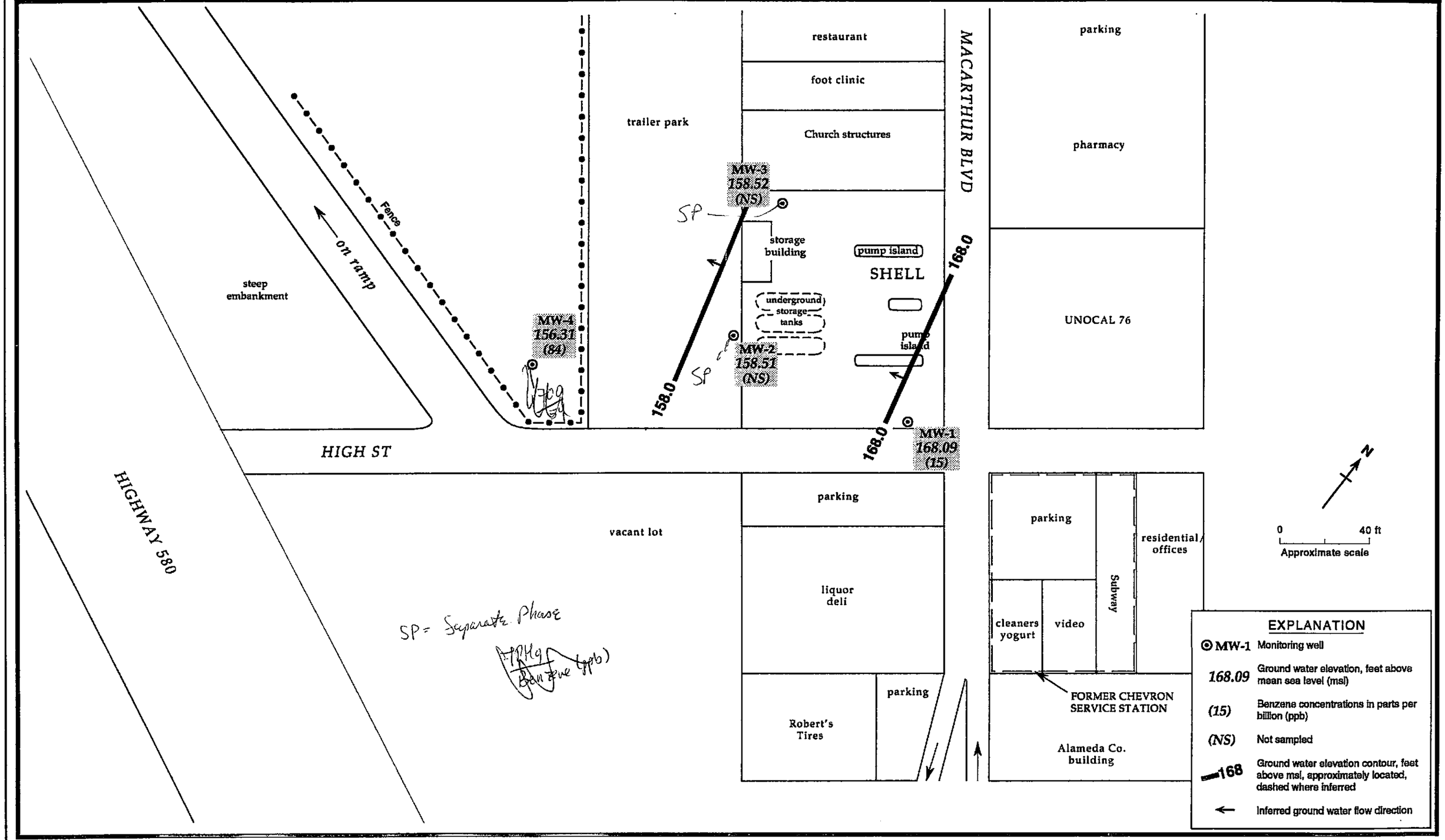

Figure 1. Montoring Well Locations, Ground Water Elevation Contours, and Benzene Concentrations in Ground Water - July 17, 1996 - Shell Service Station WIC #204-5510-0600, 4255 MacArthur Boulevard, Oakland, California

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

Well ID	Date	Separate-Phase Hydrocarbon Thickness (Ft)	Mass of Separate-Phase Hydrocarbons Removed (lbs)[a]	Cumulative Mass of Hydrocarbons 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	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**
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	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**
TOTAL HYDROCARBONS REMOVED				**14.86**

Notes:

--- = not measured

a = Mass of SPH in 10" boring and 4" well estimated by following factor: 1 ft of SPH = 11.5 lbs of SPH.

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

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Separate-phase Hydrocarbons (ft)	Ground Water Elevation (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**
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[a]
	10/18/95		14.02	0.13	156.99[a]
	01/17/96		10.27	0.17	160.78[a]
	04/25/96		11.68	0.03	159.25[a]
	07/17/96		**12.78**	**0.48**	**158.81[a]**
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[a]
	10/27/94		15.62	0.05	159.03[a]
	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

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

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Separate-phase Hydrocarbons (ft)	Ground Water Elevation (ft above msl)
	07/25/95		14.28	0.06	160.38[a]
	10/18/95		15.88	0.05	158.77[a]
	01/17/96		13.86	0.24	160.94[a]
	04/25/96		13.82	0.02	160.81[a]
	07/17/96		**16.11**	**0.03**	**158.52[a]**
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**

Notes:

a = When separate-phase hydrocarbons are present, ground water elevation corrected by adding 80% of the separate-phase hydrocarbon thickness measured in the well

--- = Data not available

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

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	MTBE	B	E	T	X
			← parts per billion (µg/L) →					
MW-1	11/17/93	8.59	410	---	21	7.9	11	47
	01/20/94	8.22	1,200	---	180	48	19	47
	04/25/94	7.63	3,100	---	610	130	<10	27
	07/07/94	8.31	2,400	---	1,000	250	10	20
	10/27/94	8.84	2,200	---	500	72	3.1	1.8
	01/13/95	7.11	570	---	75	6.7	2.5	11
	04/12/95	7.08	1,800	---	480	79	<5.0	<5.0
	07/25/95	7.73	120	---	15	2.1	1.1	2.9
	07/25/95[dup]	7.73	300	---	88	11	2.4	6.5
	10/18/95	8.42	130	---	9.5	1.3	0.8	1.7
	10/18/95[dup]	8.42	120	---	11	1.4	0.8	1.8
	01/17/96	7.83	250	---	22	1.6	0.9	2.3
	04/25/95	7.35	<50	500[c]	4.6	<0.5	<0.5	0.60
	07/17/96	**7.70**	**<250**	**540**	**15**	**<2.5**	**<2.5**	**<2.5**
MW-2	11/17/93	12.31	31,000	---	9,400	1,000	4,600	3,900
	01/20/94	11.48	40,000	---	6,900	780	5,600	4,100
	01/20/94[dup]	11.48	41,000	---	7,200	900	6,200	4,800
	04/25/94	10.84	60,000	---	9,300	1,400	6,100	6,200
	07/07/94	11.89	280,000[a]	---	40,000	8,100	26,000	32,000
	07/07/94[dup]	11.89	53,000	---	13,000	2,000	6,600	8,400
	10/27/94	12.89	130,000	---	14,000	2,400	12,000	13,000
	10/27/94[dup]	12.89	390,000	---	8,800	1,700	7,000	11,000
	01/13/95	8.10	75,000	---	5,900	3,100	12,000	17,000
	04/12/95	10.12	100,000	---	8,500	2,400	11,000	12,000
	04/12/95[dup]	10.12	80,000	---	4,200	2,500	9,300	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**	**—**	**—**	**—**	**—**	**—**	**—**

Table 3. Analytic Results for Ground Water, 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	E	T	X
			← parts per billion (µg/L) →					
MW-3	11/17/93	15.40	18,000	---	5,400	720	660	2,200
	01/20/94	14.61	55,000	---	13,000	2,200	2,600	6,500
	04/25/94	13.12	96,000	---	11,000	3,100	1,600	9,900
	04/25/94[dup]	13.12	78,000	---	12,000	2,600	1,900	7,300
	07/07/94[SPH]	14.54	---	---	---	---	---	---
	10/27/94[SPH]	15.62	---	---	---	---	---	---
	01/13/95	12.13	180,000	---	3,200	1,700	2,700	5,200
	01/13/95[dup]	12.13	23,000	---	4,000	960	690	3,000
	04/12/95	12.96	56,000	---	8,700	2,100	1,500	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**	**---**	**---**	**---**	**---**	**---**	**---**
MW-4	11/28/94	6.11	2,900	---	200	76	17	260
	01/13/95	6.05	1,900	---	130	13	5.6	40
	04/14/95	6.31	680	---	150	10	<2.0	13
	07/25/95	7.36	340	---	100	8.8	0.8	3.0
	10/18/95	8.54	150	---	31	3.5	<0.5	0.8
	01/17/96	8.48	290	---	14	1.8	<0.5	0.8
	04/25/96	7.40	<500	1,700	65	<5	<5	<5
	04/25/96[dup]	7.40	<500	1,500	66	8.7	<5	<5
	07/17/96	**7.75**	**<500**	**1,500**	**84**	**6.5**	**<5.0**	**<5.0**
	07/17/96[dup]	**7.75**	**<500**	**1,700**	**54**	**<5.0**	**<5.0**	**<5.0***
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

Table 3. Analytic Results for Ground Water, 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	E	T	X
			← parts per billion (µg/L) →					
	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
DTSC MCLs			NE		1	680	100[b]	1,750

Abbreviations:

TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015
MTBE = Methyl-t-butyl-ether by EPA Method 8020
B = Benzene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
T = Toluene by EPA Method 8020
X = Xylenes by EPA Method 8020
POG = Non-polar Petroleum oil and grease by APHA Method 5520 B/F
SPH = Separate-phase hydrocarbons present, well not sampled
NE = Not established
DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water
--- = Not analyzed
<n = Not detected at detection limits of n ppb
dup = Duplicate sample

Notes:

a = Ground water surface had a sheen when sampled.
b = DTSC recommended action level; MCL not established
c = MTBE value is estimated by Sequoia Analytical of Redwood City, California
* = MTBE confirmed by EPA Method 8260

ATTACHMENT A

GROUND WATER MONITORING REPORT AND ANALYTIC REPORT

BLAINE
TECH SERVICES INC.

985 TIMOTHY DRIVE
SAN JOSE, CA 95133
(408) 995-5535
FAX (408) 293-8773

August 8, 1996

Shell Oil Company
P.O. Box 4023
Concord, CA 94524

Attn: R. Jeff Granberry

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

3rd Quarter 1996

Quarterly Groundwater Monitoring Report 960717-K-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) 995-5535 ext. 201.

Yours truly,

Francis Thie

attachments: Table of Well Gauging Data
Chain of Custody
Field Data Sheets
Certified Analytical Report

cc: Weiss Associates
5500 Shellmound Street
Emeryville, CA 94608-2411
Attn: Grady Glasser

(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	7/17/96	TOC	--	NONE	--	--	7.70	23.34
MW-2	7/17/96	TOC	FREE PRODUCT	12.30	0.48	1200	12.78	--
MW-3	7/17/96	TOC	FREE PRODUCT	16.08	0.03	400	16.11	--
MW-4 *	7/17/96	TOC	--	NONE	--	--	7.75	30.24

* Sample DUP was a duplicate sample taken from well MW-4.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 96079-162

Date: 7/17/96
Page 1 of 1

Site Address: 4255 MacArthur Blvd., Oakland

WIC#: 204-5510-0600

Shell Engineer: R. Jeff Granberry — Phone No.: (510) 675-6168 Fax #: 675-6160

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

Consultant Contact: Jim Keller — Phone No.: (408) 995-5535 Fax #: 293-8773

Comments:

Sampled by: KEB

Printed Name: Keith Brown

LAB: Severn

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	MTBE	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
A-C MW1	7/17			W		3						X	X					Carbon Highest - MTBE	
MW4	↓			↓		↓						X	X					Not by 8260	
DUP	↓			↓		↓						X	X						

9607B19

CHECK ONE (1) BOX ONLY — CT/DT

- Quarterly Monitoring XX — 6441
- Site Investigation — 6441
- Soil Closure/Disposal — 6442
- Water Closure/Disposal — 6443
- Soil/Air Rem. or Sys. O & M — 6462
- Water Rem. or Sys. O & M — 6463
- Other

TURN AROUND TIME

- 24 hours
- 48 hours
- 10 days XX (Normal)
- Other

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

Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
K Brown	Keith Brown	7-18-96	9:30		John Howe	7-18-96	0930
	John Howe	7/18/96	1107				
					P. Hufano	7/18/96	1107

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

Rev 04/94 of Custody

Sequoia Analytical

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

Blaine Technical Services
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Project: Shell Oakland 960717-K2

Enclosed are the results from samples received at Sequoia Analytical on July 18, 1996. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9607B19 -01	LIQUID, MW-1	07/17/96	TPGBMW Purgeable TPH/BTEX
9607B19 -02	LIQUID, MW-4	07/17/96	TPGBMW Purgeable TPH/BTEX
9607B19 -03	LIQUID, Dup	07/17/96	CMTBMW Methyl t-Butyl Ethe
9607B19 -03	LIQUID, Dup	07/17/96	TPGBMW Purgeable TPH/BTEX

Please contact me if you have any questions. In the meantime, thank you for the opportunity to work with you on this project.

Very truly yours,

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

Sequoia Analytical

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

Blaine Technical Services	Client Proj. ID: Shell Oakland 960717-K2	Sampled: 07/17/96
985 Timothy Drive	Sample Descript: MW-1	Received: 07/18/96
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/25/96
Attention: Jim Keller	Lab Number: 9607B19-01	Reported: 08/02/96

QC Batch Number: GC072596BTEX21A
Instrument ID: GCHP21

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	250	N.D.
Methyl t-Butyl Ether	**12**	**540**
Benzene	**2.5**	**15**
Toluene	2.5	N.D.
Ethyl Benzene	2.5	N.D.
Xylenes (Total)	2.5	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	101

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Fenner
Project Manager

Sequoia Analytical

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

Blaine Technical Services	Client Proj. ID: Shell Oakland 960717-K2	Sampled: 07/17/96
985 Timothy Drive	Sample Descript: MW-4	Received: 07/18/96
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/24/96
Attention: Jim Keller	Lab Number: 9607B19-02	Reported: 08/02/96

QC Batch Number: GC072496BTEX03A
Instrument ID: GCHP03

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	N.D.
Methyl t-Butyl Ether	**25**	**1500**
Benzene	**5.0**	**84**
Toluene	5.0	N.D.
Ethyl Benzene	**5.0**	**6.5**
Xylenes (Total)	5.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	91

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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

Blaine Technical Services	Client Proj. ID: Shell Oakland 960717-K2	Sampled: 07/17/96
985 Timothy Drive	Sample Descript: Dup	Received: 07/18/96
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: EPA 8260	Analyzed: 07/31/96
Attention: Jim Keller	Lab Number: 9607B19-03	Reported: 08/02/96

Methyl t-Butyl Ether (MTBE)

Analyte	Detection Limit ug/L	Sample Results ug/L
Methyl t-Butyl Ether	100	2100

Surrogates	Control Limits %		% Recovery
1,2-Dichloroethane-d4	76	114	103
Toluene-d8	88	110	106
4-Bromofluorobenzene	86	115	105

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

SEQUOIA ANALYTICAL - ELAP #1271

Peggy Penner
Project Manager

Sequoia Analytical

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

Blaine Technical Services	Client Proj. ID: Shell Oakland 960717-K2	Sampled: 07/17/96
985 Timothy Drive	Sample Descript: Dup	Received: 07/18/96
San Jose, CA 95133	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/24/96
Attention: Jim Keller	Lab Number: 9607B19-03	Reported: 08/02/96

QC Batch Number: GC072496BTEX03A
Instrument ID: GCHP03

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	N.D.
Methyl t-Butyl Ether	**25**	**1700**
Benzene	**5.0**	**54**
Toluene	5.0	N.D.
Ethyl Benzene	5.0	N.D.
Xylenes (Total)	5.0	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	86

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager

Sequoia Analytical

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

Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: Shell, Oakland / 960717-K2
Matrix: Liquid
Work Order #: 9607B19 -01

Reported: Aug 5, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC072596BTEX21A	GC072596BTEX21A	GC072596BTEX21A	GC072596BTEX21A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	R. Vincent	R. Vincent	R. Vincent	R. Vincent
MS/MSD #:	960797602	960797602	960797602	960797602
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/25/96	7/25/96	7/25/96	7/25/96
Analyzed Date:	7/25/96	7/25/96	7/25/96	7/25/96
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	11	10	11	32
MS % Recovery:	110	100	110	107
Dup. Result:	11	10	11	32
MSD % Recov.:	110	100	110	107
RPD:	0.0	0.0	0.0	0.0
RPD Limit:	0-25	0-25	0-25	0-25
LCS #:	BLK072596	BLK072596	BLK072596	BLK072596
Prepared Date:	7/25/96	7/25/96	7/25/96	7/25/96
Analyzed Date:	7/25/96	7/25/96	7/25/96	7/25/96
Instrument I.D.#:	GCHP21	GCHP21	GCHP21	GCHP21
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	11	11	11	33
LCS % Recov.:	110	110	110	110
MS/MSD Control Limits	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130

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

Sequoia Analytical

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Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: Shell, Oakland / 960717-K2
Matrix: Liquid
Work Order #: 9607B19-02-03

Reported: Aug 5, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC072496BTEX03A	GC072496BTEX03A	GC072496BTEX03A	GC072496BTEX03A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	B. Sullivan	B. Sullivan	B. Sullivan	B. Sullivan
MS/MSD #:	960788401	960788401	960788401	960788401
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/24/96	7/24/96	7/24/96	7/24/96
Analyzed Date:	7/24/96	7/24/96	7/24/96	7/24/96
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.8	9.8	9.7	29
MS % Recovery:	98	98	97	96
Dup. Result:	9.7	9.6	9.6	29
MSD % Recov.:	97	96	96	96
RPD:	1.0	2.1	1.0	0.0
RPD Limit:	0-25	0-25	0-25	0-25
LCS #:	BLK072496	BLK072496	BLK072496	BLK072496
Prepared Date:	7/24/96	7/24/96	7/24/96	7/24/96
Analyzed Date:	7/24/96	7/24/96	7/24/96	7/24/96
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	9.7	9.6	9.6	29
LCS % Recov.:	97	96	96	96
MS/MSD Control Limits	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL

Reggy Penner
Project Manager

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

Sequoia Analytical

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

Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: Shell, Oakland / 960717-K2
Matrix: Liquid
Work Order #: 9607B19-03

Reported: Aug 5, 1996

QUALITY CONTROL DATA REPORT

Analyte:	1,1-Dichloroethene	Trichloroethene	Benzene	Toluene	Chloro-benzene
QC Batch#:	MS0731968260S2A	MS0731968260S2A	MS0731968260S2A	MS0731968260S2A	MS0731968260S2A
Analy. Method:	EPA 8260	EPA 8260	EPA 8260	EPA 8260	EPA 8260
Prep. Method:	N/A	N/A	N/A	N/A	N/A
Analyst:	S. Le	S. Le	S. Le	S. Le	S. Le
MS/MSD #:	6072085	6072085	6072085	6072085	6072085
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/31/96	7/31/96	7/31/96	7/31/96	7/31/96
Analyzed Date:	7/31/96	7/31/96	7/31/96	7/31/96	7/31/96
Instrument I.D.#:	GCMS2	GCMS2	GCMS2	GCMS2	GCMS2
Conc. Spiked:	50 µg/L	50 µg/L	50 µg/L	50 µg/L	50 µg/L
Result:	46	49	46	43	49
MS % Recovery:	93	84	93	86	98
Dup. Result:	52	55	53	49	57
MSD % Recov.:	104	97	108	98	114
RPD:	12	12	13	13	14
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	LCS073196	LCS073196	LCS073196	LCS073196	LCS073196
Prepared Date:	7/31/96	7/31/96	7/31/96	7/31/96	7/31/96
Analyzed Date:	7/31/96	7/31/96	7/31/96	7/31/96	7/31/96
Instrument I.D.#:	GCMS2	GCMS2	GCMS2	GCMS2	GCMS2
Conc. Spiked:	50 µg/L	50 µg/L	50 µg/L	50 µg/L	50 µg/L
LCS Result:	47	46	48	44	51
LCS % Recov.:	94	92	96	88	102
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	65-135	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL
Elap # 1271

Peggy Renner
Project Manager

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

WELL GAUGING DATA

Project # 960717-K2 Date 7/17/96 Client Shell

Site 4255 MacArthur Blvd, Oakland

Well I.D.	Well Size (in.)	Sheen/ Odor	Depth to Immiscible Liquid (feet)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to Water (feet)	Depth to Well Bottom (feet)	Survey Point: TOB or TOC
MW1	4					720	2334	TOC
MW2	4	FP	Emptied Skimmer 1230	0.48	1200ml	1278	—	↓
MW3	4	FP	Skimmer Emptied 1609	003	400ml	1611	—	
MW4	2					775	3024	

SHELL WELL MONITORING DATA SHEET

Project #: 760717K2	WIC #: 204-5510-0600
Sampler: KCG	Date: 7/17
Well I.D.: MW1	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: 23.34	Depth to Water: 7.70
Depth to Free Product: —	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius² * 0.163

Purge Method: Bailer / Middleburg / Electric Submersible / Extraction Pump / Other: _____

Sampling Method: Bailer — DEDBTS / Extraction Port / Other: _____

10.1 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 30.3 Gals. (Calculated Volume)

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1503	68.9	6.70	2100	320	11.0	
1505	68.4	6.8	1500	242	21.0	
1508	68.8	6.8	1400	92.4	31.0	
			Well Does Down			

Did well dewater? Yes (No)	Gallons actually evacuated: 31.0
Sampling Time: 1515	Sampling Date: 7/17
Sample I.D.: MW1	Laboratory: (Sequoia) Crosby
Analyzed for: (TPH-G) (BTEX) (MTBE) TPH-D	Other:
Equipment Blank I.D.: @ Time	Duplicate I.D.:
Analyzed for: TPH-G BTEX MTBE TPH-D	Other:
D.O. (if req'd): Pre-purge: ___ mg/L	Post-purge: ___ mg/L

SHELL WELL MONITORING DATA SHEET

Project #: 760717-102	WIC #: 204-5510-0600
Sampler: LCB	Date: 7/17
Well I.D.: MW2	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: ←	Depth to Water: 12.78
Depth to Free Product: 12.30	Thickness of Free Product (feet): 0.48
Referenced to: PVC Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius² * 0.163

Purge Method: Bailer / Middleburg / Electric Submersible / Extraction Pump / Other: _____

Sampling Method: Bailer / Extraction Port / Other: _____

_____ (1 Case Volume (Gals.)) X _____ (Specified Volumes) = _____ Gals. (Calculated Volume)

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
			Emptied Skimmer			
			FP Bailed - 12.30m / Removed			
			Dark	FP		

Did well dewater? Yes No — Gallons actually evacuated:

Sampling Time: — Sampling Date:

Sample I.D.: — Laboratory: Sequoia Crosby

Analyzed for: TPH-G BTEX MTBE TPH-D — Other:

Equipment Blank I.D.: @ Time — Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D — Other:

D.O. (if req'd): Pre-purge: ___ mg/L — Post-purge: ___ mg/L

SHELL WELL MONITORING DATA SHEET

Project #: 96017-162	WIC #: 204-5510-0600
Sampler: KCB	Date: 7/17
Well I.D.: MW3	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth: —	Depth to Water: 16.11
Depth to Free Product: 16.08	Thickness of Free Product (feet): 0.03
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius² * 0.163

Purge Method: Bailer / Middleburg / Electric Submersible / Extraction Pump / Other: _____

Sampling Method: Bailer / Extraction Port / Other: _____

_____ X _____ = _____ Gals.
1 Case Volume (Gals.) Specified Volumes Calculated Volume

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
		Emptied Skimmer				
		Bailed FP -		FP very dark		
			400u1	Removed		

Did well dewater? Yes No		Gallons actually evacuated:	
Sampling Time:		Sampling Date:	
Sample I.D.:		Laboratory: Sequoia Crosby	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
Equipment Blank I.D.:	@ Time	Duplicate I.D.:	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
D.O. (if req'd):	Pre-purge: mg/L	Post-purge:	mg/L

SHELL WELL MONITORING DATA SHEET

Project #: 960717-K2	WIC #: 204-550-0600
Sampler: KEB	Date: 7/17
Well I.D.: MW4	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth: 30.24	Depth to Water: 7.75
Depth to Free Product: —	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH

Well Diameter	Multiplier	Well Diameter	Multiplier
2"	0.16	5"	1.02
3"	0.37	6"	1.47
4"	0.65	Other	radius² * 0.163

Purge Method: (Bailer) Middleburg Electric Submersible Extraction Pump Other: ___

Sampling Method: (Bailer) Extraction Port Other: ___ DEO-BTS

3.6 (1 Case Volume (Gals.)) x 3 (Specified Volumes) = 10.8 (Calculated Volume) Gals.

Time	Temp (°F)	pH	Cond.	Turbidity	Gals. Removed	Observations
1530	66.8	6.7	1100	>100	4.0	
1536	67.0	6.8	1000	>100	8.0	
1542	67.2	6.7	1000	>100	11.0	

Did well dewater? Yes (No) Gallons actually evacuated: 11.0

Sampling Time: 1550 Sampling Date: 7/17

Sample I.D.: MW4 Laboratory: (Sequoia) Crosby

Analyzed for: (TPH-G) (BTEX) (MTBE) TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.: DUP

Analyzed for: (TPH-G) (BTEX) (MTBE) TPH-D Other:

D.O. (if req'd): Pre-purge: ___ mg/L Post-purge: ___ mg/L

WELL HEAD INSPECTION CHECKLIST AND REPAIR ORDER

Client Shell Site # 204-5510-0600 Inspection date: 7/17

Site address 4255 Macarthur Blvd Inspected by: KCB

Oakland BTS Event # 980717-KC

1. Lid on the box? Yes No	5. Water standing in the well box?	7. Can cap be pulled loose?
2. Lid whole?	5a. Standing above well top?	8. Can cap seal out water?
3. Lid secure?	5b. Standing below well top?	9. Padlock present?
4. Lid seal intact?	5c. Water even with top of well cap?	10. Padlock found locked?
	6. Well cap/plug present?	11. Padlock functional?

☐ Check box if *no deficiences* were found. Note below deficiencies you were able to correct.

Well I.D.	Deficiency	Corrective Action Taken
MW1	5a	Removed H2O

Note below all deficiences that could not be corrected and *still need to be corrected.*

Well I.D.	Persisting Deficiency	BTS Office assigns or defers Correction to:	Date assigned	Date corrected

Office review and assignments made by _____ date _____

Sequoia Analytical

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

Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Jim Keller

Client Project ID: Shell, Oakland / 961001-A1
Matrix: Liquid
Work Order #: 9610137-04

Reported: Oct 15, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC100896BTEX01A	GC100896BTEX01A	GC100896BTEX01A	GC100896BTEX01A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	Y. Arteaga	Y. Arteaga	Y. Arteaga	Y. Arteaga
MS/MSD #:	961020801	961020801	961020801	961020801
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/8/96	10/8/96	10/8/96	10/8/96
Analyzed Date:	10/8/96	10/8/96	10/8/96	10/8/96
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	11	10	10	30
MS % Recovery:	110	100	100	100
Dup. Result:	11	10	10	30
MSD % Recov.:	110	100	100	100
RPD:	0.0	0.0	0.0	0.0
RPD Limit:	0-25	0-25	0-25	0-25

LCS #:	BLK100896	BLK100896	BLK100896	BLK100896
Prepared Date:	10/8/96	10/8/96	10/8/96	10/8/96
Analyzed Date:	10/8/96	10/8/96	10/8/96	10/8/96
Instrument I.D.#:	GCHP1	GCHP1	GCHP1	GCHP1
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	11	10	10	30
LCS % Recov.:	110	100	100	100

MS/MSD	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130
Control Limits				

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager

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