



CAMBRIA

ENVIRONMENTAL
PROTECTION
97 SEP 16 AM 9:48

Std 295
★ case

September 8, 1997

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

Re: **Second Quarter 1997 Monitoring Report**
Former Shell Service Station
1230 14th Street
Oakland, California
WIC # 204-4878-1300
Cambria Project #24-314-297

Dear Ms. Eberle:

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

SECOND QUARTER 1997 ACTIVITIES

Ground Water Monitoring: Blaine Tech Services, Inc. (Blaine) of San Jose, California measured ground water depths and collected water samples from selected site wells (Figure 1). The Blaine report, describing these sampling activities and presenting the analytic results, is included as Attachment A. Cambria calculated ground water elevations and compiled the analytic data (Table 1), and prepared a ground water elevation contour map (Figure 1).

Oxygen Releasing Compound (ORC) Installation: Blaine installed ORCs in wells MW-1, VW/MW-2, and VW/MW-4 on March 25, 1997. Sampling of these wells has been suspended until dissolved oxygen (DO) concentrations return to pre-ORC levels. At that time, Blaine will sample the wells, and if required install additional ORCs.

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

Jennifer Eberle
September 8, 1997

CAMBRIA

ANTICIPATED THIRD QUARTER 1997 ACTIVITIES

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

Ground Water Investigation: During a May 20, 1997 telephone conversation with Paul Waite of Cambria, you discussed evaluating further ground water investigation at this site based on monitoring results. Please review the results of the second quarter sampling and contact us to discuss this matter further.

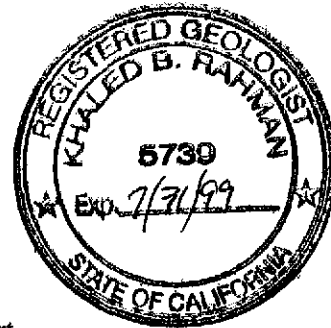
CLOSING

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

Sincerely,
Cambria Environmental Technology, Inc.



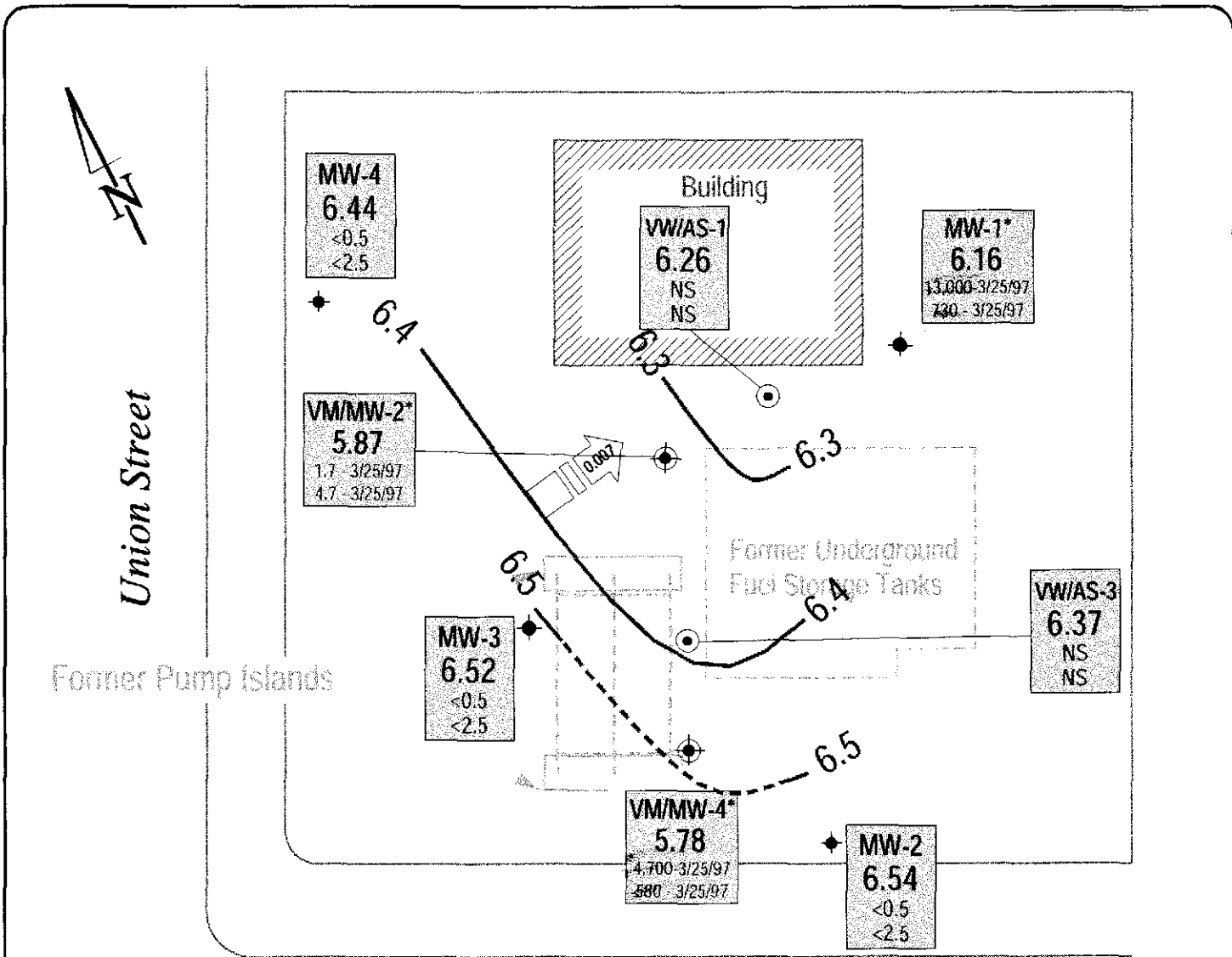
Khaled B. Rahman, R.G., C.H.G.
Senior Geologist



Attachments: A - Blaine Quarterly Ground Water Monitoring Report

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

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EXPLANATION

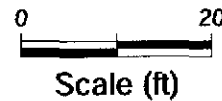
- ◆ MW-2 Ground Water Monitoring Well
- ⊙ VWIAS-3 Combination Air Sparge/Soil Vapor Extraction Wells
- ⊕ VM/MW-4 Combination Soil Vapor Extraction Well/Monitoring Well
- Ground Water Contour
- ◇ Ground Water Flow Direction/Gradient (ft/ft)
- NS Not Sampled
- * Not Contoured, ORCs removed prior to gauging

ELEV.

Benz. Date
MTBE Date

1. Ground water elevation, ft above mean sea level (msl)
2. Benzene and MTBE concentrations are in parts per billion (ppb)
3. Date is most recent sampling unless otherwise indicated

14th Street



Base Map by Tank Protect Engineering


 <p>CAMBRIA Environmental Technology, Inc.</p>	<p>Former Shell Service Station WIC # 204-5508-3103 1230 14th Street Oakland, California</p> <p><small>F:\PROJECT\SHELL\OAK1230\FIGURES\20M87-MP.DWG</small></p>	<p>Ground Water Elevation Contours</p> <p>June 26, 1997</p>	<p>FIGURE 1</p>
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Table 1. Ground Water Elevation and Analytic Data - Shell Service Station WIC # 204-5508-3103 - 1230 14th Street, Oakland, California

Well ID (Quarters Sampled)	Date	GW Depth (ft)	GW Elev. (ft)	GW Flow Direction	TPHg	MTBE	concentrations in µg/L					POG	DO (mg/L)	Notes
							Benzene	Toluene	Ethylbenzene	Xylenes				
	12/19/96	12.42	5.88	N	50,000	590	6,200	5,100	1,700	5,600	--			
	03/25/97	9.83	8.47	NE	210	14	5.6	<0.50	0.52	<0.50	--	2.0		
	03/25/97	9.83	8.47	NE	250	4.7	1.7	0.58	* 0.51	<0.50	--	2.0	duplicate	
	06/26/97	12.43	5.87	NE	---	---	---	---	---	---	---	---	a	
VW/MW-4 (Sampling Suspended) TOC= 18.14	03/25/96	8.45	9.69	--	83,000	<250	6,500	7,000	2,000	11,000	--			
	03/25/96	8.45	9.69	--	84,000	<250	6,400	7,000	2,100	12,000	--		duplicate	
	06/21/96	10.38	7.76	NE	110,000	1,700	14,000	15,000	3,700	17,000	--			
	06/21/96	10.38	7.76	NE	100,000	<1,000	12,000	12,000	2,900	13,000	--		duplicate	
	09/26/96	12.43	5.71	NE	52,000	<500	13,000	2,700	2,100	3,200	--			
	12/19/96	11.87	6.27	N	75,000	<1,250	15,000	6,600	3,000	7,600	--			
	03/25/97	9.60	8.54	NE	56,000	580	4,700	1,500	2,500	6,300	--	2.4		
	06/26/97	12.36	5.78	NE	---	---	---	---	---	---	---	---	a	
VW/AS-1 (Gauge only) TOC= 18.60	03/25/96	8.98	9.62	--	--	--	--	--	--	--	--			
	06/21/96	10.95	7.65	NE	--	--	--	--	--	--	--			
	09/26/96	12.98	5.62	N	--	--	--	--	--	--	--			
	12/19/96	12.67	5.93	N	--	--	--	--	--	--	--			
	03/25/97	10.12	8.48	NE	--	--	--	--	--	--	--	---		
	06/26/97	12.34	6.26	NE	---	---	---	---	---	---	---	---		
VW/AS-3 (Gauge only) TOC= 18.17	03/25/96	8.50	9.67	--	--	--	--	--	--	--	--			
	06/21/96	10.42	7.75	NE	--	--	--	--	--	--	--			
	09/26/96	12.49	5.68	NE	--	--	--	--	--	--	--			
	12/19/96	12.28	5.89	N	--	--	--	--	--	--	--			
	03/25/97	9.61	8.56	NE	--	--	--	--	--	--	--	---		
	06/26/97	11.80	6.37	NE	---	---	---	---	---	---	---	---		

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

Well ID (Quarters Sampled)	Date	GW Depth (ft)	GW Elev. (ft)	GW Flow Direction	TPHg	MTBE	Benzene	Toluene	Ethylbenzene	Xylenes	POG	DO (mg/L)	Notes
					←———— concentrations in µg/L —————→								

Abbreviations:

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

Notes:

a = Oxygen releasing compounds (ORCs) installed in wells were removed prior to gauging.

ATTACHMENT A

Blaine Quarterly Ground Water Monitoring Report



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

July 18, 1997

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

Attn: Alex Perez

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

2nd Quarter 1997

Quarterly Groundwater Monitoring Report 970626-F-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, CA 95476
Attn: Josh Bergstrom

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

TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	06/26/97	TOC	--	NONE	--	--	12.42	21.12
MW-2	06/26/97	TOC	--	NONE	--	--	11.36	21.90
MW-3	06/26/97	TOC	--	NONE	--	--	11.66	21.71
MW-4*	06/26/97	TOC	--	NONE	--	--	11.57	21.07
VW/MW-2	06/26/97	TOC	--	NONE	--	--	12.43	22.07
VW/MW-4	06/26/97	TOC	--	NONE	--	--	12.36	19.53
VW/AS-1	06/26/97	TOC	--	NONE	--	--	12.34	19.10
VW/AS-3	06/26/97	TOC	--	NONE	--	--	11.80	19.64

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



SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No: 970626-F2

Date: 6/26/97

Page 1 of 1

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

WIC#: 204-5508-3103

Shell Engineer: Alex Perez Phone No.: (510) 675-6168
Fax #: 675-6172

Consultant Name & Address: Blaine Tech Services, Inc.
1680 Rogers Ave., San Jose, CA 95112

Consultant Contact: Fran Thie Phone No.: (408) 573-0555
Fax #: 573-7771

Comments:

Sampled by: TC

Printed Name: Tim Graf

Analysis Required

LAB: SEQUOIA

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
G.W. Monitoring <input checked="" type="checkbox"/>	4461	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	4441	48 hours <input type="checkbox"/>
Soil Classify/Disposal <input type="checkbox"/>	4442	16 days <input type="checkbox"/> (Normal)
Water Classify/Disposal <input type="checkbox"/>	4443	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/>	4452	NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.
Water Rem. or Sys. O & M <input type="checkbox"/>	4453	
Other <input type="checkbox"/>		

UST AGENCY:

Sample ID	Date	Sludge	Soil	Water	Air	No. of conds.	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	TOG	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION COMMENTS	
<u>MW-2</u>	<u>6/26</u>			<u>W</u>		<u>5</u>						<u>X</u>	<u>X</u>	<u>X</u>							
<u>MW-3</u>						<u>5</u>						<u>X</u>	<u>X</u>	<u>X</u>							
<u>MW-4</u>						<u>5</u>						<u>X</u>	<u>X</u>	<u>X</u>							
<u>EB</u>						<u>5</u>						<u>X</u>	<u>X</u>	<u>X</u>							
<u>DWP</u>	<u>6/26</u>			<u>W</u>		<u>5</u>						<u>X</u>	<u>X</u>	<u>X</u>							

Relinquished By (signature): <u>[Signature]</u>	Printed Name: <u>Tim Graf</u>	Date: <u>6/26/97</u> Time: <u>12:45</u>	Received (signature): <u>[Signature]</u>	Printed Name: <u>F. Hecher</u>	Date: <u>6/27/97</u> Time: <u>12:45</u>
Relinquished By (signature): <u>[Signature]</u>	Printed Name:	Date: <u>6/27/97</u> Time:	Received (signature):	Printed Name:	Date: Time:
Relinquished By (signature):	Printed Name:	Date: Time:	Received (signature): <u>[Signature]</u>	Printed Name: <u>R. Herling</u>	Date: <u>6/27/97</u> Time: <u>12:45</u>

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

9706F13

1
2
3
4
5

23



Sequoia Analytical

680 Chesapeake Drive
404 N. Wiget Lane
819 Striker Avenue, Suite 8

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

(415) 364-9600
(510) 988-9600
(916) 921-9600

FAX (415) 364-9233
FAX (510) 988-9673
FAX (916) 921-0100

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

Project: Shell Oakland/970626-F2

Enclosed are the results from samples received at Sequoia Analytical on June 27, 1997.
The requested analyses are listed below:

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
9706F73 -01	LIQUID, MW2	06/26/97	TRPH (SM 5520 B&F)
9706F73 -01	LIQUID, MW2.	06/26/97	TPGBMW Purgeable TPH/BTEX
9706F73 -02	LIQUID, MW3	06/26/97	TRPH (SM 5520 B&F)
9706F73 -02	LIQUID, MW3	06/26/97	TPGBMW Purgeable TPH/BTEX
9706F73 -03	LIQUID, MW4	06/26/97	TRPH (SM 5520 B&F)
9706F73 -03	LIQUID, MW4	06/26/97	TPGBMW Purgeable TPH/BTEX
9706F73 -04	LIQUID, EB	06/26/97	TRPH (SM 5520 B&F)
9706F73 -04	LIQUID, EB	06/26/97	TPGBMW Purgeable TPH/BTEX
9706F73 -05	LIQUID, Dup	06/26/97	TRPH (SM 5520 B&F)
9706F73 -05	LIQUID, Dup	06/26/97	TPGBMW Purgeable TPH/BTEX

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

Very truly yours,

SEQUOIA ANALYTICAL


Peggy Penner
Project Manager





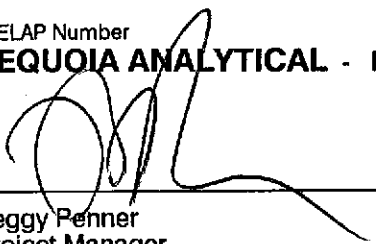
Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970626-F2 Lab Proj. ID: 9706F73	Sampled: 06/26/97 Received: 06/27/97 Analyzed: see below Reported: 07/14/97
Attention: Fran Thie		

LABORATORY ANALYSIS

Analyte	Units	Date Analyzed	Detection Limit	Sample Results
Lab No: 9706F73-01 Sample Desc: LIQUID,MW2				
#1624 TRPH (SM 5520 B&F)	mg/L	07/08/97	5.0	N.D.
Lab No: 9706F73-02 Sample Desc: LIQUID,MW3				
#1624 TRPH (SM 5520 B&F)	mg/L	07/08/97	5.0	N.D.
Lab No: 9706F73-03 Sample Desc: LIQUID,MW4				
#1624 TRPH (SM 5520 B&F)	mg/L	07/09/97	5.0	N.D.
Lab No: 9706F73-04 Sample Desc: LIQUID,EB				
#1624 TRPH (SM 5520 B&F)	mg/L	07/09/97	5.0	N.D.
Lab No: 9706F73-05 Sample Desc: LIQUID,Dup				
#1624 TRPH (SM 5520 B&F)	mg/L	07/09/97	5.0	N.D.

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

ELAP Number
SEQUOIA ANALYTICAL - ELAP #1210


Peggy Penner
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970626-F2 Sample Descript: MW2 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9706F73-01	Sampled: 06/26/97 Received: 06/27/97 Analyzed: 07/08/97 Reported: 07/14/97
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QC Batch Number: GC070897BTEX18A
Instrument ID: GCHP18

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	80

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

SEQUOIA ANALYTICAL - ELAP #1210


Peggy Penner
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970626-F2 Sample Descript: MW3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9706F73-02	Sampled: 06/26/97 Received: 06/27/97 Analyzed: 07/08/97 Reported: 07/14/97
Attention: Fran Thie		

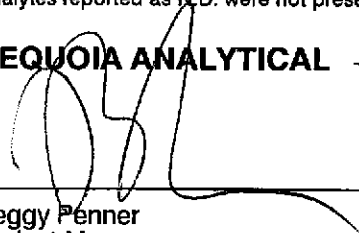
QC Batch Number: GC070897BTEX18A
Instrument ID: GCHP18

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	80

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

SEQUOIA ANALYTICAL - ELAP #1210


Peggy Penner
Project Manager





Blaine Tech Services 1680 Rogers Avenue San Jose, CA 95112	Client Proj. ID: Shell Oakland/970626-F2 Sample Descript: MW4 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9706F73-03	Sampled: 06/26/97 Received: 06/27/97 Analyzed: 07/08/97 Reported: 07/14/97
--	---	---

QC Batch Number: GC070897BTEX18A
Instrument ID: GCHP18

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	80

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

SEQUOIA ANALYTICAL - ELAP #1210

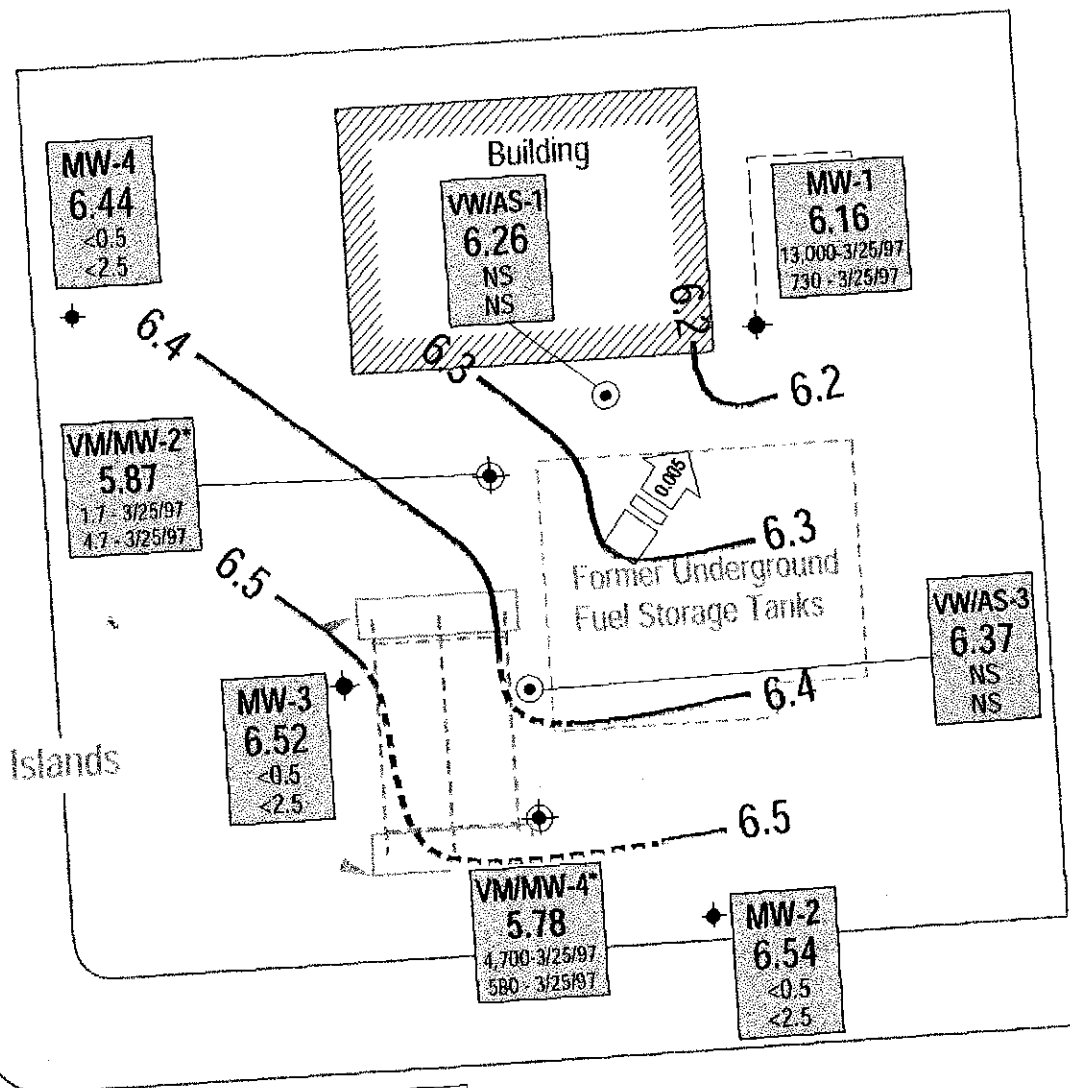

Peggy Penner
Project Manager





Union Street

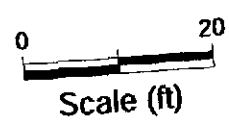
Former Pump Islands



14th Street

EXPLANATION

- ◆ MW-2 Ground Water Monitoring Well
 - ⊙ VWAS-3 Combination Air Sparge/Soil Vapor Extraction Wells
 - ⊕ VM/MW-4 Combination Soil Vapor Extraction Well/Monitoring Well
 - Ground Water Contour
 - Ground Water Flow Direction/Gradient (ft/ft)
 - NS Not Sampled
 - Anomalous Ground Water Elevation. Not Contoured
1. Ground water elevation, ft above mean sea level (msl)
 2. Benzene and MTBE concentrations are in parts per billion (ppb)
 3. Date is most recent sampling unless otherwise indicated



Base Map by Tank Protect Engineering



CAMBRIA
Environmental Technology, Inc.

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

Ground Water Elevation
 Contours
 June 26, 1997

FIGURE
1

F:\PROJECTS\HELLJOAK\1230\FIGURES\20M97.MP.DWG