

ENVIRONMENTAL
PROTECTION
86 NOV 32 AM 10:47

November 29, 1996

Mr. R. Jeff Granberry
Shell Oil Products Company
P.O. Box 4023
Concord, California 94524

RE: Quarterly Monitoring Report - Fourth Quarter 1996
Former Shell Service Station
461 8th Street
Oakland, California
WIC #204-5508-6205

Dear Mr. Granberry:

This Quarterly Monitoring Report describes the recently completed activities associated with ground water monitoring and sampling at the referenced site (Plate 1). This report was prepared to meet quarterly reporting guidelines issued by the Regional Water Quality Control Board, San Francisco Bay Region and Alameda County Health Care Services Agency (ACHCSA).

Quarterly Monitoring & Sampling Summary

Ground water monitoring and sampling for the **fourth quarter of 1996** are summarized below:

- Blaine Tech Services, Inc. (Blaine) of San Jose, California measured ground water levels in the Wells S-4 through S-6 and S-8 through S-10 and collected ground water samples from Wells S-4, S-6, S-8, S-9, and S-10 on **October 2, 1996**. The samples were transported to Sequoia Analytical of Redwood City, California for chemical analysis.
- Enviros, Inc. (Enviros) evaluated water-level measurement data and prepared a ground water contour map (Plate 2). Ground water flow direction appears range from southeasterly to southwesterly with an approximate hydraulic gradient of 0.018.
- TPPH concentrations in ground water samples collected from the wells ranged from ND to 57,000 ppb. Benzene concentrations ranged from ND to 11,000 ppb. A benzene concentration map was prepared and is presented on Plate 2.
- Hydrocarbon absorbent booms have been installed in Well S-5 to collect separate phase (SP) hydrocarbons.

Quarterly Sampling

Monitoring Wells S-4, S-6, S-8, S-9, and S-10 were sampled and analyzed for Total Purgeable Petroleum Hydrocarbons quantitated as gasoline (TPPH) according to EPA Method 8015 (Modified) and benzene, toluene, ethylbenzene, xylenes (BTEX), and methyl-tertiary-butyl-ether (MTBE) according to EPA Method 8020. Additionally, a duplicate sample and an equipment blank were prepared and analyzed for quality control purposes. The duplicate sample from Well S-8 was also analyzed for MTBE by EPA Method 8260.

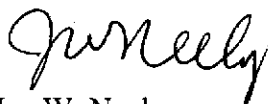
SP hydrocarbon removal data are summarized in Table 1. Field monitoring data and chemical analytical data are summarized in Table 2. Blaine's Quarterly Ground Water Monitoring Report is presented in Appendix A.

As requested in an ACHCSA letter dated November 4, 1996, quarterly pumpouts of Wells S-5 and S-6 will be instituted. The frequency of well sampling and reporting will be reduced to semi-annual to be performed during the first and third quarters. Any significant changes observed in free product levels will be brought to the attention of ACHCSA immediately.

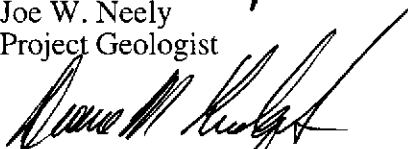
If you have any questions regarding the contents of this document, please call.

Sincerely,

Enviros, Inc.



Joe W. Neely
Project Geologist



Diane M. Lundquist, P.E.
Senior Engineer
C46725



Attachments

Table 1. Separate Phase Hydrocarbon Recovery

Table 2. Well Concentrations

Plate 1. Vicinity Map

Plate 2. Ground Water Contour/Benzene Concentration Map

Appendix A

Blaine Tech Services Inc. - Quarterly Ground Water Monitoring Report

cc: Ms. Jennifer Eberle, Alameda County Health Care Services Agency
Mr. Rory Campbell, Hanson, Bridgett, Marcus, Vlahos & Rudy
Mr. Sheldon E. Crandall

TABLE 1

SEPARATE PHASE HYDROCARBON RECOVERY
Shell Oil Products Company
461 8th Street
Oakland, California
WIC# 204-5508-6205

Well No.	Mont. Date	Product Thickness (feet)	Volume Removed (gal)	Recovery To Date (gal)
S-5	13-May-93	0.27	0	0
	22-Jul-93	0.25	200	200
	20-Oct-93	0.23	200	400
	25-Jan-94	0.18	150	550
	25-Apr-94	0.35	36	586
	26-May-94	0.35	130	716
	16-Jun-94	0.32	50	766
	21-Jul-94	0.47	50	816
	25-Aug-94	0.44	80	896
	22-Sep-94	0.15	45	941
	24-Oct-94	0.56	40	981
	29-Nov-94	1.13	85	1066
	22-Dec-94	0.99	0	1066
	3-Jan-95	1.21	40	1106
	22-Feb-95	0.60	60	1166
	31-Mar-95	0.02	40	1206
	20-Apr-95	0.33	60	1266
	26-May-95	0.28	50	1316
	30-Jun-95*	0.02	60	1376
	4-Oct-95	0	0	1376
	3-Jan-96	0.83	0	1376
	11-Apr-96	0.67	0	1376
	11-Jul-96	0.90	0	1376
	2-Oct-96	0.64	0	1376

Notes:

1. "Volume Removed" and "Recovery to Date" refer to a mixture of separate phase hydrocarbon and ground water.
2. * = Product removal by pumping discontinued after 30-Jun-95. and product recovery boom subsequently installed in well.
3. Product recovery boom not replaced to date.

TABLE 2

WELL CONCENTRATIONS
Shell Oil Products Company
461 8th Street
Oakland, California
WIC# 204-5508-6205

Sample Date	Measured GW Depth (ft)	Corrected GW Elev (ft)	SP (ft)	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	Comments
S-4		Top casing elevation (ft):		93.51						
26-Oct-88	NA	NA	NA	130	3.8	13	4.0	30	NA	
14-Feb-89	12.82	80.69	0.00	<50	0.5	<1	<1	3.0	NA	
01-May-89	16.48	77.03	0.00	NA	NA	NA	NA	NA	NA	Dry Well
27-Jul-89	15.84	77.67	0.00	NA	NA	NA	NA	NA	NA	Dry Well
05-Oct-89	15.98	77.53	0.00	NA	NA	NA	NA	NA	NA	Dry Well
09-Jan-90	15.86	77.65	0.00	NA	NA	NA	NA	NA	NA	Dry Well
30-Apr-90	14.48	79.03	0.00	<50	<0.5	<0.5	<0.5	<1	NA	
31-Jul-90	NA	NA	NA	NA	NA	NA	NA	NA	NA	Dry Well
30-Oct-90	NA	NA	NA	NA	NA	NA	NA	NA	NA	Dry Well
06-May-91	15.23	78.28	0.00	NA	NA	NA	NA	NA	NA	Dry Well
27-Jun-91	13.54	79.97	0.00	<50	<0.5	<0.5	<0.5	<0.5	NA	
24-Sep-91	15.85	77.66	0.00	NA	NA	NA	NA	NA	NA	Dry Well
07-Nov-91	15.60	77.91	0.00	NA	NA	NA	NA	NA	NA	Dry Well
13-Feb-92	14.27	79.24	0.00	<50	<0.5	<0.5	<0.5	3	NA	
11-May-92	NA	NA	NA	NA	NA	NA	NA	NA	NA	Dry Well
03-Dec-92	NA	NA	NA	NA	NA	NA	NA	NA	NA	Well Inaccessible
13-May-93	14.81	78.70	0.00	NA	NA	NA	NA	NA	NA	Well Inaccessible
22-Jul-93	14.42	79.09	0.00	NA	NA	NA	NA	NA	NA	Well Inaccessible
20-Oct-93	NA	NA	NA	NA	NA	NA	NA	NA	NA	Well Inaccessible
25-Jan-94	14.60	78.91	0.00	NA	NA	NA	NA	NA	NA	Well Inaccessible
25-Apr-94	14.39	79.12	0.00	NA	NA	NA	NA	NA	NA	Well Inaccessible
21-Jul-94	22.29	71.22	0.00	<50	<0.5	<0.5	<0.5	<0.5	NA	
24-Oct-94	22.72	70.79	0.00	<500	<0.3	<0.3	<0.3	<0.6	NA	
		New top of box elevation (ft):		25.77						
22-Dec-94	22.25	3.52	0.00	<50	<0.5	<0.5	<0.5	<0.5	NA	
20-Apr-95	21.16	4.61	0.00	<50	<0.5	<0.5	<0.5	<0.5	NA	

TABLE 2

WELL CONCENTRATIONS
Shell Oil Products Company
461 8th Street
Oakland, California
WIC# 204-5508-6205

Sample Date	Measured GW Depth (ft)	Corrected GW Elev (ft)	SP (ft)	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	Comments
04-Oct-95	22.25	3.52	0.00	<50	1.2	0.7	<0.5	<0.5	NA	
03-Jan-96	23.28	2.49	0.00	<50	0.6	<0.5	<0.5	1.7	NA	
11-Apr-96	21.58	4.19	0.00	<50	<0.5	<0.5	<0.5	<0.5	<2.5	
11-Jul-96	21.60	4.17	0.00	<50	<0.50	<0.50	<0.50	<0.50	<2.5	
02-Oct-96	22.46	3.31	0.00	<50	<0.50	<0.50	<0.50	<0.50	2.6	

S-5	Top casing elevation (ft):			99.36							
16-Apr-87	NA	NA	NA	130000	15000	16000	NA	14000	NA	Ethylbenzene and xylenes combined	
26-Oct-88	NA	NA	NA	110000	20000	25000	2300	10000	NA		
14-Feb-89	19.87	79.49	0.00	94000	16000	21000	1800	10000	NA		
01-May-89	21.23	78.13	0.00	120000	29000	35000	3100	15000	NA		
27-Jul-89	20.41	78.95	0.00	110000	20000	29000	2400	14000	NA		
05-Oct-89	20.43	78.94	0.01	NA	NA	NA	NA	NA	NA		
09-Jan-90	21.16	78.21	0.01	NA	NA	NA	NA	NA	NA		
30-Apr-90	20.96	78.40	0.00	100000	13000	22000	2100	11000	NA		
31-Jul-90	20.88	78.48	0.00	53000	8300	14000	1200	7400	NA		
30-Oct-90	21.96	77.42	0.03	NA	NA	NA	NA	NA	NA		
06-May-91	23.00	76.46	0.13	NA	NA	NA	NA	NA	NA		
27-Jun-91	20.53	78.85	0.03	NA	NA	NA	NA	NA	NA		
24-Sep-91	21.40	78.01	0.06	NA	NA	NA	NA	NA	NA		
07-Nov-91	21.33	78.23	0.25	NA	NA	NA	NA	NA	NA		
13-Feb-92	22.52	77.09	0.31	NA	NA	NA	NA	NA	NA		
11-May-92	22.46	77.36	0.58	NA	NA	NA	NA	NA	NA		
03-Dec-92	NA	NA	NA	NA	NA	NA	NA	NA	NA	Well Inaccessible	
13-May-93	22.22	77.36	0.27	NA	NA	NA	NA	NA	NA		
22-Jul-93	21.68	77.88	0.25	NA	NA	NA	NA	NA	NA		
20-Oct-93	20.51	79.03	0.23	NA	NA	NA	NA	NA	NA		

TABLE 2

WELL CONCENTRATIONS
Shell Oil Products Company
461 8th Street
Oakland, California
WIC# 204-5508-6205

Sample Date	Measured GW Depth (ft)	Corrected GW Elev (ft)	SP (ft)	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	Comments
25-Jan-94	21.93	77.57	0.18	NA	NA	NA	NA	NA	NA	
25-Apr-94	21.97	77.67	0.35	NA	NA	NA	NA	NA	NA	
26-May-94	20.84	78.80	0.35	NA	NA	NA	NA	NA	NA	
10-Jun-94	21.01	78.61	0.32	NA	NA	NA	NA	NA	NA	
21-Jul-94	22.18	77.56	0.47	NA	NA	NA	NA	NA	NA	
25-Aug-94	22.01	77.70	0.44	NA	NA	NA	NA	NA	NA	
22-Sep-94	22.00	77.48	0.15	NA	NA	NA	NA	NA	NA	
24-Oct-94	22.28	77.53	0.56	NA	NA	NA	NA	NA	NA	
New top of box elevation (ft): 22.94										
22-Dec-94	22.88	0.85	0.99	NA	NA	NA	NA	NA	NA	
20-Apr-95	21.66	1.54	0.33	NA	NA	NA	NA	NA	NA	
04-Oct-95	22.18	0.76	0.00	NA	NA	NA	NA	NA	NA	
03-Jan-96	22.80	0.80	0.83	NA	NA	NA	NA	NA	NA	
11-Apr-96	21.15	2.33	0.67	NA	NA	NA	NA	NA	NA	
11-Jul-96	22.62	1.04	0.90	NA	NA	NA	NA	NA	NA	
02-Oct-96	23.07	0.38	0.64	NA	NA	NA	NA	NA	NA	

S-6	Top casing elevation (ft):	100.58								
16-Apr-87	NA	NA	0.00	81000	16000	9000	NA	6400	NA	Ethylbenzene and xylenes combined
26-Oct-88	NA	NA	0.00	110000	29000	18000	2500	8200	NA	
14-Feb-89	20.87	79.71	0.00	54000	18000	4500	1400	4000	NA	
01-May-89	20.49	80.09	0.00	93000	43000	9900	3000	8000	NA	
27-Jul-89	21.01	79.57	0.00	52000	20000	3200	1700	5500	NA	
05-Oct-89	21.24	79.34	0.00	55000	20000	2900	1600	5500	NA	
09-Jan-90	22.62	77.96	SHEEN	76000	35000	9100	2300	8600	NA	
30-Apr-90	22.10	78.48	0.00	39000	13000	2300	900	2800	NA	
31-Jul-90	22.00	78.58	0.00	48000	20000	4600	1500	4900	NA	

TABLE 2

WELL CONCENTRATIONS
Shell Oil Products Company
461 8th Street
Oakland, California
WIC# 204-5508-6205

Sample Date	Measured GW Depth (ft)	Corrected GW Elev (ft)	SP (ft)	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	Comments
30-Oct-90	22.14	78.44	0.00	27000	7400	900	600	1400	NA	
06-May-91	22.40	78.18	0.00	35000	3900	2700	2300	3500	NA	
27-Jun-91	21.21	79.37	0.00	51000	19000	5600	1700	6300	NA	
24-Sep-91	22.26	78.32	0.00	42000	14000	4300	1200	4000	NA	
07-Nov-91	22.35	78.23	0.00	39000	11000	2000	800	2300	NA	
13-Feb-92	22.28	78.30	0.00	64000	21000	6200	1600	5100	NA	
11-May-92	22.10	78.48	0.00	57000	22000	7600	2200	7700	NA	
03-Dec-92	22.14	78.44	0.00	110000	26000	9400	2100	8700	NA	
13-May-93	22.16	78.42	0.00	58000	21000	6800	2500	9800	NA	
22-Jul-93	21.64	78.94	0.00	70000	31000	14000	3000	13000	NA	
20-Oct-93	21.62	78.96	0.00	48000	28000	9800	3200	12000	NA	
25-Jan-94	21.80	78.78	0.00	70000	23000	7500	2500	8000	NA	
25-Apr-94	21.68	78.90	0.00	61000	16000	4000	1800	5100	NA	
21-Jul-94	21.78	78.80	0.00	44000	8200	3600	1400	3900	NA	
24-Oct-94	22.06	78.52	0.00	2936	1184	440.6	163.4	648.4	NA	
		New top of box elevation (ft): 22.08								
22-Dec-94	21.91	0.17	0.00	32000	7000	2900	790	2400	NA	
20-Apr-95	21.38	0.70	0.00	56000	15000	3800	1900	4900	NA	
04-Oct-95	21.80	0.28	0.00	49000	8400	4700	1800	4800	NA	
03-Jan-96	21.70	0.38	0.00	52000	9100	7100	1800	5800	NA	
11-Apr-96	21.62	0.46	0.00	59000	11000	7100	2100	6400	<500	
11-Jul-96	21.65	0.43	0.00	72000	18000	6600	2500	8400	<1000	
02-Oct-96	21.80	0.28	0.00	57000	11000	6500	1500	5100	<500	
S-6 (DUP)										
21-Jul-94	NA	NA	NA	32000	7800	3400	1300	3700	NA	
24-Oct-94	NA	NA	NA	2968	770.8	325.3	144.1	622	NA	

TABLE 2

WELL CONCENTRATIONS
Shell Oil Products Company
461 8th Street
Oakland, California
WIC# 204-5508-6205

Sample Date	Measured GW Depth (ft)	Corrected GW Elev (ft)	SP (ft)	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	Comments
22-Dec-94	NA	NA	NA	32000	8000	3800	1100	3400	NA	
20-Apr-95	NA	NA	NA	49000	13000	3500	1800	4700	NA	
04-Oct-95	NA	NA	NA	41000	8400	4100	1400	4400	NA	
11-Apr-96	NA	NA	NA	59000	11000	6800	1900	6400	<500	
S-8				Top of box elevation (ft):		27.21				
22-Dec-94	24.87	2.34	0.00	600	120	32	5.2	34	NA	
20-Apr-95	23.90	3.31	0.00	460	180	23	5.2	21	NA	
04-Oct-95	24.48	2.73	0.00	830	210	38	11	42	NA	
03-Jan-96	24.62	2.59	0.00	350	61	12	2.5	12	NA	
11-Apr-96	24.32	2.89	0.00	570	140	37	12	47	<6.2	
11-Jul-96	24.10	3.11	0.00	980	98	32	9.1	160	<12	
02-Oct-96	25.38	1.83	0.00	280	62	13	3.3	25	15	
S-8 (DUP)										
03-Jan-96	NA	NA	NA	340	54	12	2.4	12	NA	
02-Oct-96	NA	NA	NA	490	110	24	7.0	45	22	MTBE by 8260: <2.0 ppb
S-9				Top of box elevation (ft):		26.06				
22-Dec-94	24.37	1.69	0.00	2600	400	150	42	310	NA	
20-Apr-95	23.49	2.57	0.00	1900	400	130	51	200	NA	
04-Oct-95	24.01	2.05	0.00	3200	590	260	68	280	NA	
03-Jan-96	NA	NA	NA	NA	NA	NA	NA	NA	NA	Well Inaccessible
11-Apr-96	23.61	2.45	0.00	2100	440	1500	42	210	<25	
11-Jul-96	23.78	2.28	0.00	5200	940	450	120	520	<50	
02-Oct-96	24.31	1.75	0.00	3000	680	220	56	270	<62	

TABLE 2

WELL CONCENTRATIONS
Shell Oil Products Company
461 8th Street
Oakland, California
WIC# 204-5508-6205

Sample Date	Measured GW Depth (ft)	Corrected GW Elev (ft)	SP (ft)	TPPH (ug/L)	B (ug/L)	T (ug/L)	E (ug/L)	X (ug/L)	MTBE (ug/L)	Comments
S-9 (DUP) 11-Jul-96	NA	NA	NA	4800	890	430	110	500	<50	
S-10		Top of box elevation (ft):		28.04						
22-Dec-94	25.84	2.20	0.00	420	27	8.0	18	45	NA	
20-Apr-95	24.92	3.12	0.00	820	49	3.7	97	52	NA	
04-Oct-95	25.47	2.57	0.00	240	6.5	1.1	16	12	NA	
03-Jan-96	25.60	2.44	0.00	1100	27	4.9	110	70	NA	
11-Apr-96	25.27	2.77	0.00	530	19	1.6	82	52	<5.0	
11-Jul-96	25.46	2.58	0.00	570	16	3.2	53	53	<2.5	
02-Oct-96	25.81	2.23	0.00	270	8.2	0.77	24	23	3.3	

Abbreviations:

NA = Not analyzed or not available

SP = Separate Phase hydrocarbon

<x = Not detected at detection limit of x

(DUP) = Duplicate sample

TPPH = Total Purgeable Petroleum Hydrocarbons carbon range C6 to C12 by EPA Method 8015 (Modified)

(previously reported as Total Petroleum Hydrocarbons as Gasoline)

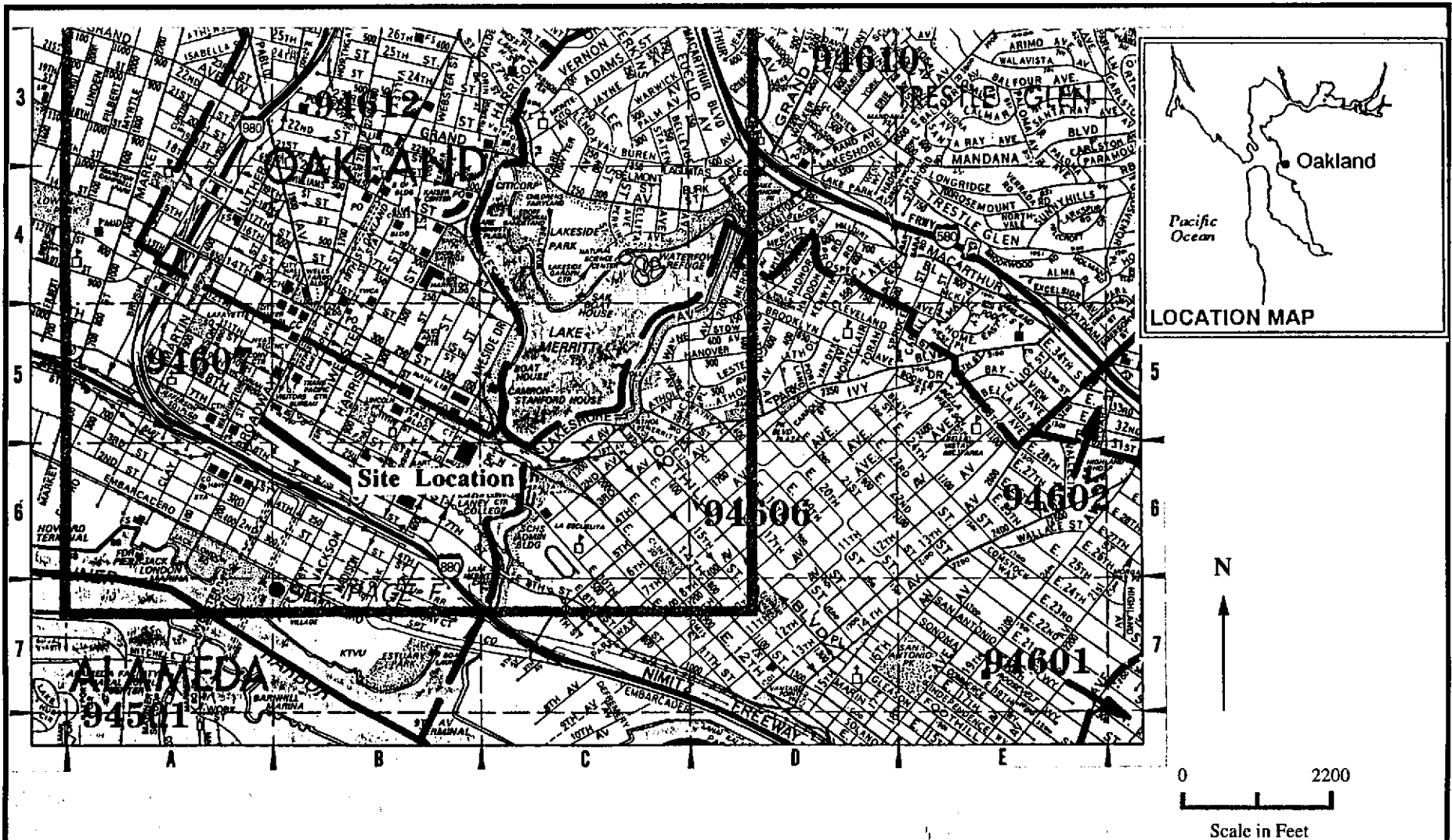
BTEX = benzene, toluene, ethylbenzene, and xylenes by EPA Method 8020

MTBE = methyl-tertiary-butyl ether by EPA Method 8020

Notes:

0.8 used for hydrocarbon specific gravity

The MTBE result did not confirm by EPA method 8260, therefore, all MTBE results at this site should be considered suspect.



Base Map: 1993 Thomas Guide

Plate 1

VICINITY MAP
 Former Shell Service Station
 461 Eighth Street
 Oakland, California

enviros[®]

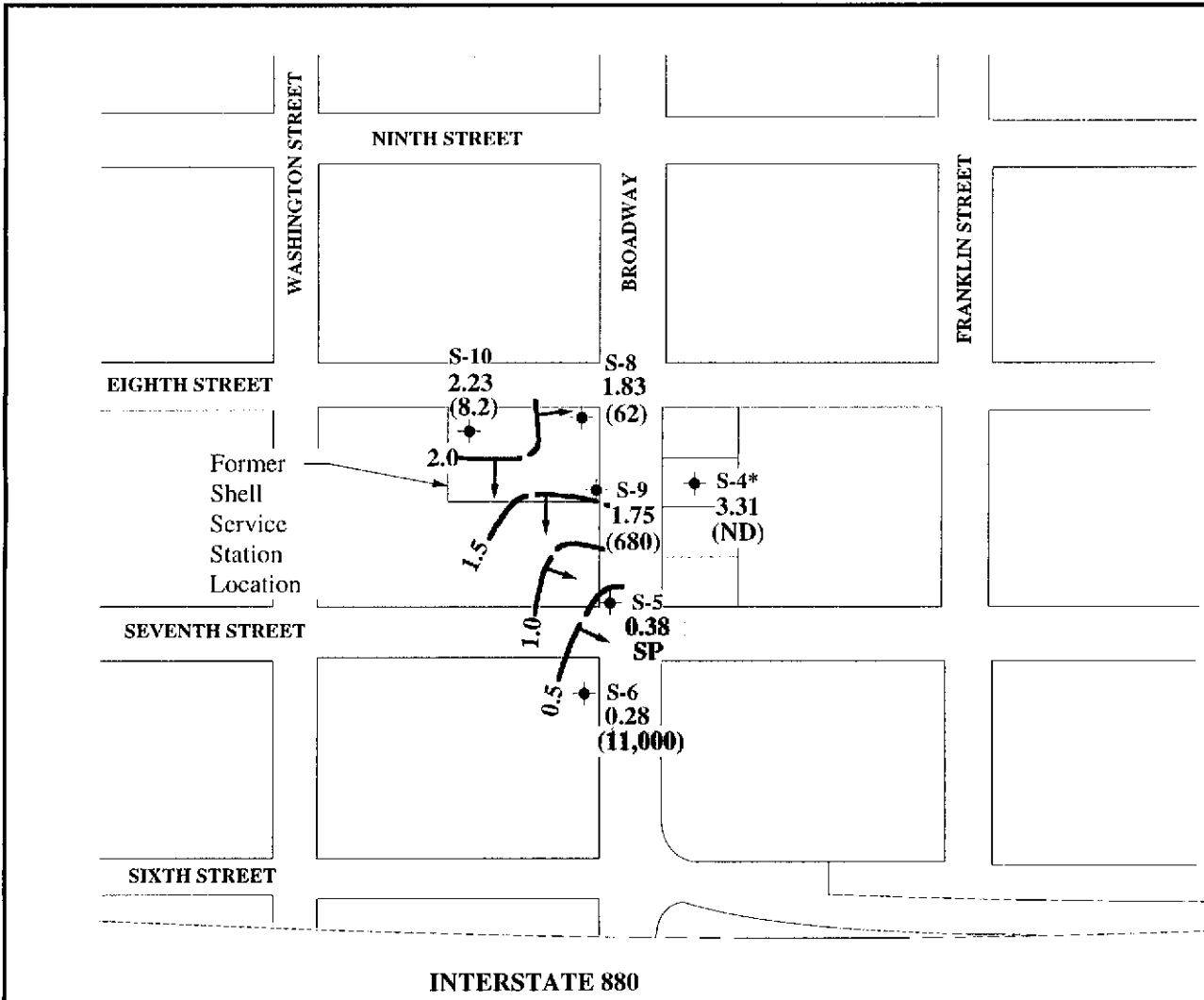
E494216.03

Drawn By: JWN

Date: 10/3/94

Approved By: *neh*

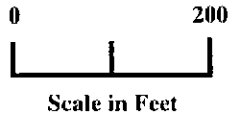
Date: 11-29-96



EXPLANATION

- ◆ Ground water monitoring well
- Ground water elevation contour in feet referenced to mean sea level (MSL). Arrows indicate approximate ground water flow direction.
- 0.43 Ground water elevation in feet MSL
- (18,000) Benzene Concentration in ppb
ND = Not Detected
- SP Separate Phase hydrocarbon

Notes: Quarterly monitoring performed on 2-Oct-96
Approximate Hydraulic Gradient = 0.018.
* Well S-4 not used in ground water contouring



Note: Base Map taken from GeoStrategies Inc. Report dated 10-4-93.

PLATE
2

GROUND WATER CONTOUR/BENZENE CONCENTRATION MAP
Former Shell Service Station
461 Eighth Street
Oakland, California

enviros[®]
96216

Drawn By: JWN Date: 22-Oct-96

Approved By: neh Date: 11-29-96

Appendix A

**Blaine Tech Services Inc.
Quarterly Ground Water Monitoring Report**

BLAINE TECH SERVICES INC.

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

October 23, 1996

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

Attn: R. Jeff Granberry

RECEIVED
OCT 28 1996

Shell WIC #204-5508-6200
461 8th Street
Oakland, California

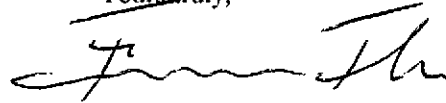
4th Quarter 1996

Quarterly Groundwater Monitoring Report 961002-T-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: Enviro, Inc.
P.O. Box 259
Sonoma, CA 95476-0259
Attn: Joe Neely

(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 (gal.)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
S-4	10/2/96	TOB	ODOR	NONE	--	--	22.46	28.98
S-5	10/2/96	TOB	FREE PRODUCT	22.43	0.64	--	23.07	--
S-6	10/2/96	TOB	ODOR	NONE	--	--	21.80	36.75
S-8 *	10/2/96	TOB	ODOR	NONE	--	--	25.38	29.10
S-9	10/2/96	TOB	ODOR	NONE	--	--	24.31	30.08
S-10	10/2/96	TOB	ODOR	NONE	--	--	25.81	36.76

* Sample DUP was a duplicate sample taken from well S-8.



SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No: 961002-F2

Date: 10/2/26

Page 1 of 1

Silo Address: 461 8th Street, Oakland, CA

WIC#: 204-5508-6200

Shell Engineer: R. Jeff Granberry Phone No.: (510) 675-6169
Lynn Walker Fax #: 675-6160

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

Consultant Contact: Fran Thie Phone No.: (408) 99505535 Fax #: 293-8773

Comments:

Sampled by: m. f. toll

Printed Name: Mike Toll

Analysis Required

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 6020	MTBE	Asbestos	Container Size	Preparation Used	Composite Y/N
					X	X				
					X	X				
					X	X				
					X	X				
					X	X				
					X	X				
					X	X				
					X	X				

LAB: SEC

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"/>	4461	48 hours <input type="checkbox"/>
Soil Classify/Disposal <input type="checkbox"/>	4462	16 days <input checked="" type="checkbox"/> (Normal)
Water Classify/Disposal <input type="checkbox"/>	4463	Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/>	4452	
Water Rem. or Sys. O & M <input type="checkbox"/>	4453	
Other <input type="checkbox"/>		

NOTE: Notify lab as soon as possible of 24/48 hrs. LAT.

UST AGENCY:

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
54	10/2			X		3		Confirm highest
55	10/2			X		3		MTBE hit by
56	10/2			X		3		8260
58	10/2			X		3		
59	10/2			X		3		
510	10/2			X		3		
EB	10/2			X		3		
DUP	10/2			X		3		

Relinquished By (signature): <u>m. f. toll</u>	Printed Name: <u>Mike Toll</u>	Date: <u>10/2/26</u>	Time: <u>1:25</u>	Received (signature): <u>[Signature]</u>	Printed Name: <u>[Name]</u>	Date: <u>10/2/26</u>	Time: <u>1:25</u>
Relinquished By (signature):	Printed Name:	Date:	Time:	Received (signature):	Printed Name:	Date:	Time:
Relinquished By (signature):	Printed Name:	Date:	Time:	Received (signature):	Printed Name:	Date:	Time:

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



Sequoia Analytical

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

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

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

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

Blaine Technical Services
985 Timothy Drive
San Jose, CA 95133
Attention: Fran Thie

Project: Shell Oakland/961002-T2

Enclosed are the results from samples received at Sequoia Analytical on October 3, 1996.
The requested analyses are listed below:

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
9610236 -01	LIQUID, S4	10/02/96	TPGBMW Purgeable TPH/BTEX
9610236 -02	LIQUID, S6	10/02/96	TPGBMW Purgeable TPH/BTEX
9610236 -03	LIQUID, S8	10/02/96	TPGBMW Purgeable TPH/BTEX
9610236 -04	LIQUID, S9	10/02/96	TPGBMW Purgeable TPH/BTEX
9610236 -05	LIQUID, S10	10/02/96	TPGBMW Purgeable TPH/BTEX
9610236 -06	LIQUID, EB	10/02/96	TPGBMW Purgeable TPH/BTEX
9610236 -07	LIQUID, DUP	10/02/96	MTBEMW Methyl t-Butyl Ethe
9610236 -07	LIQUID, DUP	10/02/96	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





Blaine Technical Services 985 Timothy Drive San Jose, CA 95133	Client Proj. ID: Shell Oakland/961002-T2 Sample Descript: S4 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9610236-01	Sampled: 10/02/96 Received: 10/03/96 Analyzed: 10/08/96 Reported: 10/16/96
Attention: Fran Thie		

QC Batch Number: GC100896BTEX02A
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	2.6
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	101

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

SEQUOIA ANALYTICAL - ELAP #1210


Peggy Penner
Project Manager





Blaine Technical Services 985 Timothy Drive San Jose, CA 95133	Client Proj. ID: Shell Oakland/961002-T2 Sample Descript: S6 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9610236-02	Sampled: 10/02/96 Received: 10/03/96 Analyzed: 10/10/96 Reported: 10/16/96
Attention: Fran Thie		

QC Batch Number: GC101096BTEX20A
 Instrument ID: GCHP20

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10000	57000
Methyl t-Butyl Ether	500	N.D.
Benzene	100	11000
Toluene	100	6500
Ethyl Benzene	100	1500
Xylenes (Total)	100	5100
Chromatogram Pattern:		C6-C12
Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	90

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

SEQUOIA ANALYTICAL - ELAP #1210


 Peggy Penner
 Project Manager





Blaine Technical Services 985 Timothy Drive San Jose, CA 95133 Attention: Fran Thie	Client Proj. ID: Shell Oakland/961002-T2 Sample Descript: S8 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9610236-03	Sampled: 10/02/96 Received: 10/03/96 Analyzed: 10/09/96 Reported: 10/16/96
--	--	---

QC Batch Number: GC100996BTEX03A
Instrument ID: GCHP03

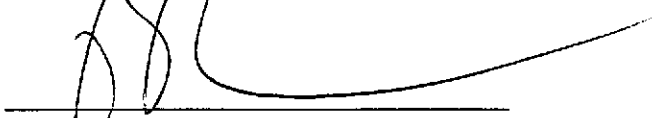
Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	100	280
Methyl t-Butyl Ether	5.0	15
Benzene	1.0	62
Toluene	1.0	13
Ethyl Benzene	1.0	3.3
Xylenes (Total)	1.0	25
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	88

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

SEQUOIA ANALYTICAL - ELAP #1210



Peggy Fenner
Project Manager





Blaine Technical Services 985 Timothy Drive San Jose, CA 95133	Client Proj. ID: Shell Oakland/961002-T2 Sample Descript: S9 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9610236-04	Sampled: 10/02/96 Received: 10/03/96 Analyzed: 10/10/96 Reported: 10/16/96
Attention: Fran Thie		

QC Batch Number: GC101096BTEX20A
Instrument ID: GCHP20


Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	1250	3000
Methyl t-Butyl Ether	62	N.D.
Benzene	12	680
Toluene	12	220
Ethyl Benzene	12	56
Xylenes (Total)	12	270
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	78

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

SEQUOIA ANALYTICAL - ELAP #1210


Peggy Penner
Project Manager





Blaine Technical Services 985 Timothy Drive San Jose, CA 95133	Client Proj. ID: Shell Oakland/961002-T2 Sample Descript: S10 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9610236-05	Sampled: 10/02/96 Received: 10/03/96 Analyzed: 10/09/96 Reported: 10/23/96
Attention: Fran Thie		

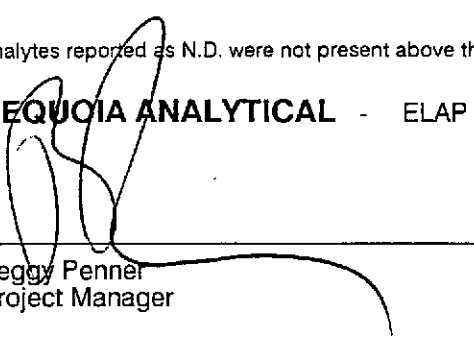
QC Batch Number: GC100996BTEX03A
Instrument ID: GCHP03

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	270
Methyl t-Butyl Ether	2.5	3.3
Benzene	0.50	8.2
Toluene	0.50	0.77
Ethyl Benzene	0.50	24
Xylenes (Total)	0.50	23
Chromatogram Pattern:		C6-C12
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 Technical Services 985 Timothy Drive San Jose, CA 95133	Client Proj. ID: Shell Oakland/961002-T2 Sample Descript: EB Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9610236-06	Sampled: 10/02/96 Received: 10/03/96 Analyzed: 10/08/96 Reported: 10/16/96
Attention: Fran Thie		

QC Batch Number: GC100896BTEX02A
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	111

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

SEQUOIA ANALYTICAL - ELAP #1210

Peggy Penner
Project Manager





Blaine Technical Services 985 Timothy Drive San Jose, CA 95133	Client Proj. ID: Shell Oakland/961002-T2 Sample Descript: DUP Matrix: LIQUID Analysis Method: EPA 8260 Lab Number: 9610236-07	Sampled: 10/02/96 Received: 10/03/96 Analyzed: 10/14/96 Reported: 10/16/96
--	---	---

QC Batch Number: MS1011968260F3A
Instrument ID: F3

Methyl t-Butyl Ether (MTBE)

Analyte	Detection Limit ug/L	Sample Results ug/L
Methyl t-Butyl Ether	2.0	N.D.
Surrogates	Control Limits %	% Recovery
1,2-Dichloroethane-d4	76 114	101

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

SEQUOIA ANALYTICAL - ELAP #1210


Peggy Penner
Project Manager





Blaine Technical Services 985 Timothy Drive San Jose, CA 95133	Client Proj. ID: Shell Oakland/961002-T2 Sample Descript: DUP Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9610236-07	Sampled: 10/02/96 Received: 10/03/96 Analyzed: 10/09/96 Reported: 10/16/96
Attention: Fran Thie		

QC Batch Number: GC100996BTEX03A
Instrument ID: GCHP03

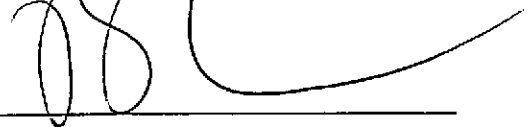
Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	100	490
Methyl t-Butyl Ether	5.0	22
Benzene	1.0	110
Toluene	1.0	24
Ethyl Benzene	1.0	7.0
Xylenes (Total)	1.0	45
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	87

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

SEQUOIA ANALYTICAL - ELAP #1210



Peggy Penner
Project Manager





Blaine Technical Services
985 Timothy Drive
San Jose, CA 95133
Attention: Fran Thie

Client Proj. ID: Shell Oakland/961002-T2

Received: 10/03/96

Lab Proj. ID: 9610236

Reported: 10/16/96

LABORATORY NARRATIVE

Please note: The MTBE result did not confirm by EPA method 8260 therefore, all MTBE results at this site should be considered suspect.

SEQUOIA ANALYTICAL

Peggy Penner
Project Manager





Blaine Tech Services, Inc.
 985 Timothy Drive
 San Jose, CA 95133
 Attention: Fran Thie

Client Project ID: Shell, Oakland / 961002-T2
 Matrix: Liquid

Work Order #: 9610236 -01, 06

Reported: Oct 18, 1996

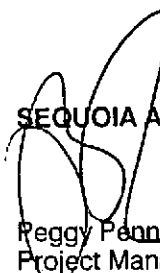
QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC100896BTEX02A	GC100896BTEX02A	GC100896BTEX02A	GC100896BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	R. Burton	R. Burton	R. Burton	R. Burton
MS/MSD #:	9609H4605	9609H4605	9609H4605	9609H4605
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.#:	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	11	9.9	9.5	27
MS % Recovery:	110	99	95	90
Dup. Result:	10	8.8	8.4	23
MSD % Recov.:	100	88	84	77
RPD:	9.5	12	12	16
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.#:	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	12	10	10	28
LCS % Recov.:	120	100	100	93

MS/MSD	60-140	60-140	60-140	60-140
LCS	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

9610236.BLA <1>





Blaine Tech Services, Inc. Client Project ID: Shell, Oakland / 961002-T2
 985 Timothy Drive Matrix: Liquid
 San Jose, CA 95133 Work Order #: 9610236-02, 04
 Attention: Fran Thie Reported: Oct 18, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC101096BTEX20A	GC101096BTEX20A	GC101096BTEX20A	GC101096BTEX20A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	G. Fish	G. Fish	G. Fish	G. Fish
MS/MSD #:	961003604	961003604	961003604	961003604
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/10/96	10/10/96	10/10/96	10/10/96
Analyzed Date:	10/10/96	10/10/96	10/10/96	10/10/96
Instrument I.D.#:	GCHP20	GCHP20	GCHP20	GCHP20
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	12	9.4	8.9	27
MS % Recovery:	120	94	89	90
Dup. Result:	11	9.2	8.7	27
MSD % Recov.:	110	92	87	90
RPD:	8.7	2.2	2.3	0.0
RPD Limit:	0-25	0-25	0-25	0-25

LCS #:	BLK101096	BLK101096	BLK101096	BLK101096
Prepared Date:	10/10/96	10/10/96	10/10/96	10/10/96
Analyzed Date:	10/10/96	10/10/96	10/10/96	10/10/96
Instrument I.D.#:	GCHP20	GCHP20	GCHP20	GCHP20
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	11	9.6	8.9	28
LCS % Recov.:	110	96	89	93

MS/MSD	60-140	60-140	60-140	60-140
LCS	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

9610236.BLA <2>





Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Fran Thie

Client Project ID: Shell, Oakland / 961002-T2
Matrix: Liquid

Work Order #: 9610236-03, 05, 07

Reported: Oct 18, 1996

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC100996BTEX03A	GC100996BTEX03A	GC100996BTEX03A	GC100996BTEX03A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	G. Fish	G. Fish	G. Fish	G. Fish
MS/MSD #:	961003609	961003609	961003609	961003609
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/9/96	10/9/96	10/9/96	10/9/96
Analyzed Date:	10/9/96	10/9/96	10/9/96	10/9/96
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	11	9.1	8.6	27
MS % Recovery:	120	91	86	90
Dup. Result:	11	9.1	8.8	27
MSD % Recov.:	110	91	88	90
RPD:	0.0	0.0	2.3	0.0
RPD Limit:	0-25	0-25	0-25	0-25

LCS #:	BLK100996	BLK100996	BLK100996	BLK100996
Prepared Date:	10/9/96	10/9/96	10/9/96	10/9/96
Analyzed Date:	10/9/96	10/9/96	10/9/96	10/9/96
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
LCS Result:	11	9.3	8.8	27
LCS % Recov.:	110	93	88	90

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

SEQUOIA ANALYTICAL

Reggy Renner
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

9610236.BLA <3>





Blaine Tech Services, Inc.
985 Timothy Drive
San Jose, CA 95133
Attention: Fran Thie

Client Project ID: Shell, Oakland / 961002-T2
Matrix: Liquid
Work Order #: 9610236-07

Reported: Oct 18, 1996

0

QUALITY CONTROL DATA REPORT

Analyte: MTBE
QC Batch#: MS1011968260F3
Analy. Method: EPA 8260
Prep. Method: N/A

Analyst: M. Williams
MS/MSD #: 961067101
Sample Conc.: N.D.
Prepared Date: -
Analyzed Date: 10/11/96
Instrument I.D.#: F3
Conc. Spiked: 50 µg/L

Result: 47
MS % Recovery: 94

Dup. Result: 47
MSD % Recov.: 94

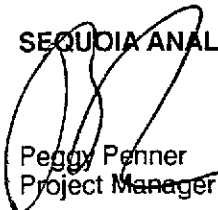
RPD: 0.0
RPD Limit: 0-25

LCS #: VDB101496
Prepared Date: 10/14/96
Analyzed Date: 10/14/96
Instrument I.D.#: MS-F3
Conc. Spiked: 50 µg/L

LCS Result: 50
LCS % Recov.: 100

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

9610236.BLA <4>

