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enviros®

August 30, 1997

Mr. Alex Perez
Shell Oil Products Company
P.O. Box 4023
Concord, California 94524

RE: **Semi-Annual Monitoring Report - Third Quarter 1997**
Former Shell Service Station
461 8th Street
Oakland, California 94607
WIC #204-5508-6205

Dear Mr. Perez:

This Semi-Annual 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 reporting guidelines issued by the Regional Water Quality Control Board, San Francisco Bay Region and the Alameda County Health Care Services Agency.

Semi-Annual Monitoring & Sampling Summary

Ground water monitoring and sampling for the third quarter of 1997 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, and S-8 through S-10 on July 21, 1997. The samples were transported to Sequoia Analytical of Redwood City, California for chemical analysis.

- Approximately 75 gallons of water and separate phase pruct were purged from Well S-5.

- Enviros, Inc. evaluated water-level measurement data and prepared a ground water contour map (Plate 2). The ground water flow direction appears to be southerly at an approximate hydraulic gradient of 0.007.

- TPPH concentrations in ground water samples collected from the wells ranged from ND to 61,000 ppb, benzene concentrations ranged from ND to 15,000 ppb, and MTBE concentrations ranged from ND to 1,900 ppb. Well S-5 contained 0.05 feet of separate phase (SP) hydrocarbons. A benzene concentration map was prepared and is presented on Plate 2.

Enviros, Inc. 270 Perkins Street P.O. Box 259 Sonoma, California 95476-0259 Tel 707 / 935-4850 Fax 707 / 935-6649

Semi-Annual Sampling

Monitoring Wells S-4, S-6, and S-8 through 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.

SP hydrocarbon recovery 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.

Remediation is being performed by quarterly pump-outs of Wells S-5 and S-6.

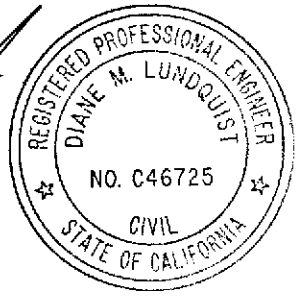
If you have any questions regarding the contents of this document, please call.

Sincerely,

Enviros, Inc.

Matthew E. Donohue
Project Engineer

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	0.00	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
	22-Jan-97	0.16	0	1376
	21-Jul-97	0.05	75	1451

Notes:
1. "Volume Removed" and "Recovery to Date" refer to a mixture of separate phase hydrocarbon and ground water.
2. Product recovery booms were installed from 3Q95 to 4Q96.

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	3.0	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	
22-Jan-97	20.06	5.71	0.00	<50	0.73	<0.50	<0.50	0.63	<2.5	
21-Jul-97	22.10	3.67	0.00	<50	<0.50	<0.50	<0.50	<0.50	<2.5	
S-5		**Top casing elevation (ft):**		**99.36**						
16-Apr-87	NA	NA	NA	130000	15000	16000	NA	14000	NA	Ethylbenzene and xylenes
26-Oct-88	NA	NA	NA	110000	20000	25000	2300	10000	NA	combined
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	

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-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	
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	
22-Jan-97	20.83	2.24	0.16	NA	NA	NA	NA	NA	NA	
21-Jul-97	21.16	1.82	0.05	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
26-Oct-88	NA	NA	0.00	110000	29000	18000	2500	8200	NA	combined
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	

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
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	
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	

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-Jan-97	19.95	2.13	0.00	67000	15000	5000	1800	5400	<1000	
21-Jul-97	20.61	1.47	0.00	61000	15000	2100	1100	3500	1900	
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	
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	
22-Jan-97	NA	NA	NA	63000	15000	4800	1800	5200	<1000	
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	
22-Jan-97	23.91	3.30	0.00	400	90	13	4.9	25	12	
21-Jul-97	23.62	3.59	0.00	2900	380	110	26	260	85	
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 [1]	MTBE by 8260: <2.0 ppb
21-Jul-97	NA	NA	NA	3200	420	120	32	300	130	

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		**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	
22-Jan-97	23.08	2.98	0.00	1500	230	71	36	130	<12	
21-Jul-97	22.83	3.23	0.00	3400	590	57	19	210	96	
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	
22-Jan-97	24.74	3.30	0.00	160	4.8	0.73	16	11	<2.5	
21-Jul-97	24.50	3.54	0.00	530	5.7	0.70	29	69	<2.5	

Abbreviations:

NA = Not analyzed or not available

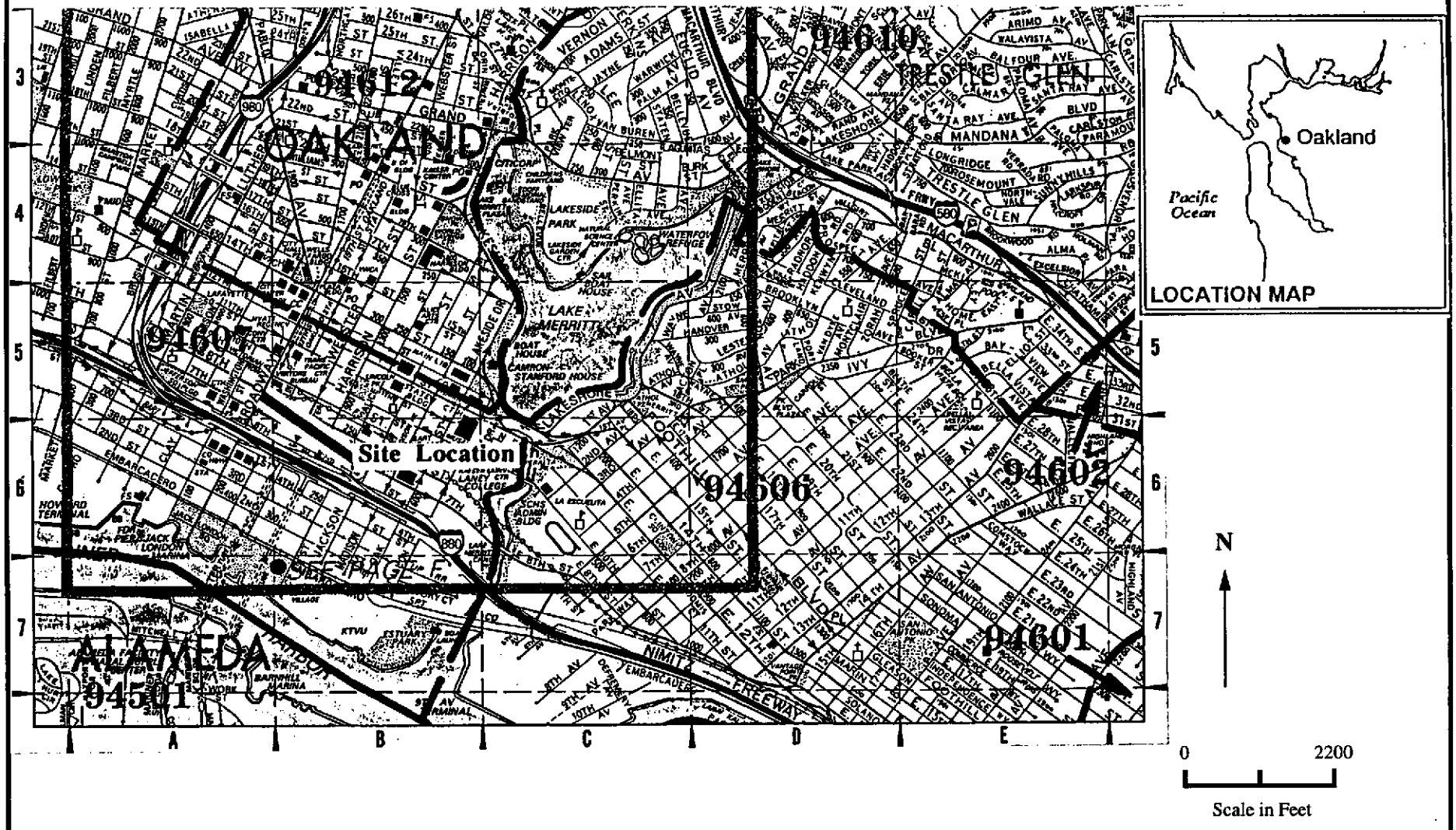
TABLE 2

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

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



Base Map: 1993 Thomas Guide

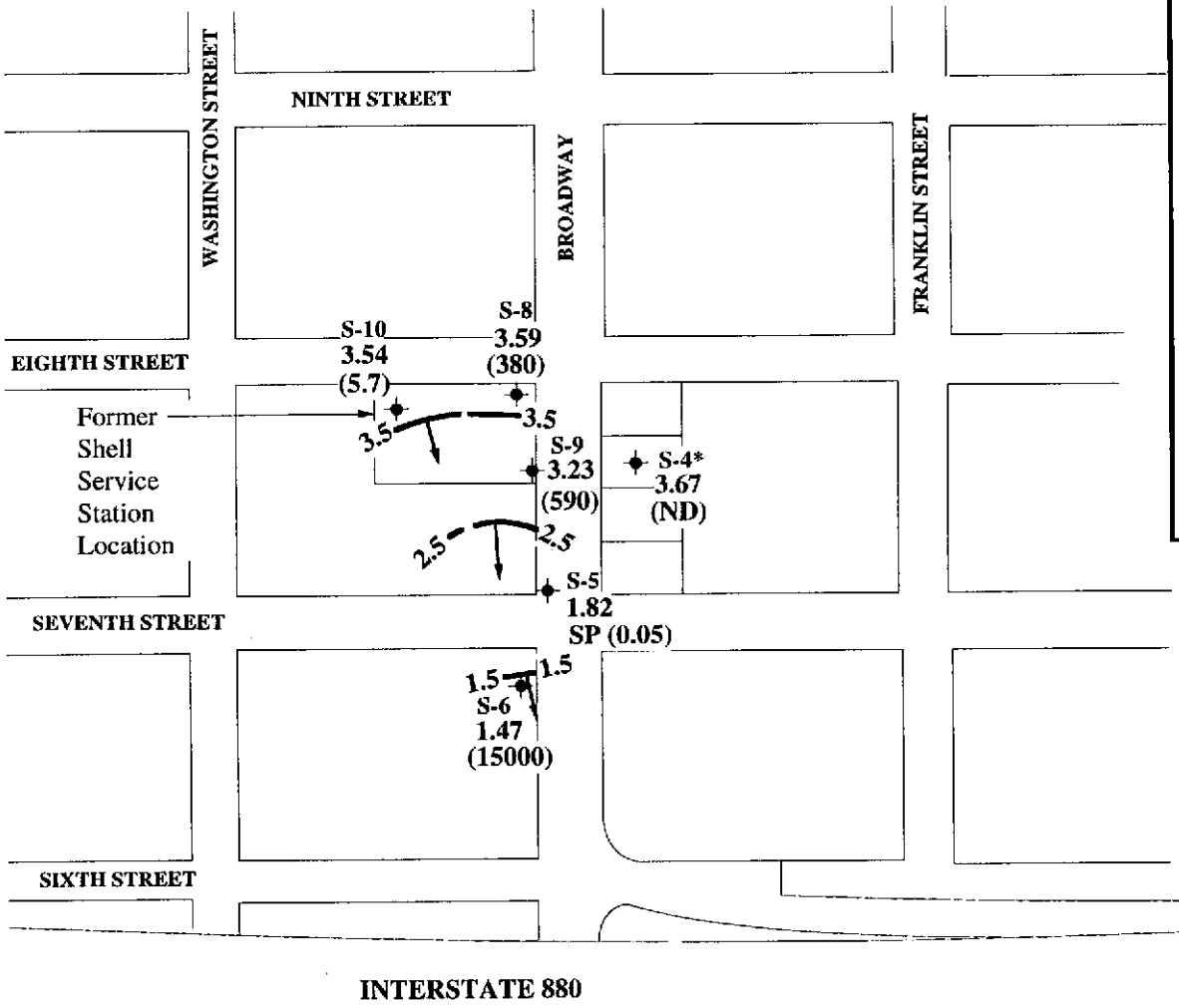
Plate 1

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

enviros®
E494216.03

Drawn By: JWN Date: 10/3/94

Approved By: mh Date: 8·30·94



EXPLANATION

- Ground water monitoring well
- Ground water elevation contour in feet referenced to mean sea level (MSL). Arrows indicate approximate ground water flow direction.
- **3.23** Ground water elevation in feet MSL
- **(590)** Benzene concentration in ppb ND = Not Detected
- **SP (0.05)** Separate phase hydrocarbon thickness in feet

Notes: Quarterly monitoring performed on 21-Jul-97
Approximate hydraulic gradient = 0.007.
* Well S-4 not used in ground water contouring

N

0 200

Scale in Feet

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®
97216

Drawn By: MED

Date: 18-Aug-97

Approved By: _____ Date: 8.30.97

Appendix A

Blaine Tech Services Inc.
Quarterly Ground Water Monitoring Report

BLAINE
TECH SERVICES INC.

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

August 14, 1997

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

Attn: Alex Perez

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

3rd Quarter 1997

Groundwater Monitoring Report 970721-Z-1

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: Enviros, 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	07/21/97	TOB	--	NONE	--	--	22.10	29.00
S-5	07/21/97	TOB	FREE PRODUCT	21.11	0.05	75	21.16	--
S-6	07/21/97	TOB	ODOR	NONE	--	--	20.61	36.74
S-8 *	07/21/97	TOB	ODOR	NONE	--	--	23.62	29.35
S-9	07/21/97	TOB	ODOR	NONE	--	--	22.83	30.20
S-10	07/21/97	TOB	--	NONE	--	--	24.50	36.58

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

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 970721-Z1

Date: 7-21-97
Page 1 of 1

Site Address: 461 8th Street, Oakland, CA

WIC#: 204-5508-6200

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:
Printed Name: BRETT BLEAU

LAB: SEQUOIA

CHECK ONE (1) BOX ONLY		CT/DT
G.W. Monitoring	XX	4461
Site Investigation		4441
Soil Classify/Disposal		4442
Water Classify/Disposal		4443
Soil/Air Rem. or Sys. O & M		4452
Water Rem. or Sys. O & M		4453
Other		

TURN AROUND TIME
24 hours
48 hours
16 days XX (Normal)
Other

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

UST AGENCY:

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
S-4	1	7.21.97			x		3						x							9707B52	
S-6	2	"			x		3						x								
S-8	3	"			x		3						x								
S-9	4	"			x		3						x								
S-10	5	"			x		3						x								
DUP	6	"			x		3						x								

Relinquished By (signature):	Printed Name:	Date: 7/22/97 Time: 1:45	Received (signature):	Printed Name:	Date: 7/22/97 Time: 1:45
Relinquished By (signature):	Printed Name: PENAFLOR	Date: 7/22/97 Time:	Received (signature):	Printed Name:	Date: Time:
Relinquished By (signature):	Printed Name:	Date: Time:	Received (signature):	Printed Name: M. Spears	Date: 7/22/97 Time: 1602

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

Shell Oil Co. Chain 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 Tech Services
1680 Rogers Avenue
San Jose, CA 95112
Attention: Fran Thie

Project: Shell Oakland/970721-Z1

Enclosed are the results from samples received at Sequoia Analytical on July 22, 1997. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE COLLECTED	TEST METHOD
9707B52 -01	LIQUID, S-4	07/21/97	TPGBMW Purgeable TPH/BTEX
9707B52 -02	LIQUID, S-6	07/21/97	TPGBMW Purgeable TPH/BTEX
9707B52 -03	LIQUID, S-8	07/21/97	TPGBMW Purgeable TPH/BTEX
9707B52 -04	LIQUID, S-9	07/21/97	TPGBMW Purgeable TPH/BTEX
9707B52 -05	LIQUID, S-10	07/21/97	TPGBMW Purgeable TPH/BTEX
9707B52 -06	LIQUID, Dup	07/21/97	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

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	Client Proj. ID: Shell Oakland/970721-Z1	Sampled: 07/21/97
1680 Rogers Avenue	Sample Descript: S-4	Received: 07/22/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/25/97
Attention: Fran Thie	Lab Number: 9707B52-01	Reported: 08/01/97

QC Batch Number: GC072597BTEX02A
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	94

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
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 Tech Services	Client Proj. ID: Shell Oakland/970721-Z1	Sampled: 07/21/97
1680 Rogers Avenue	Sample Descript: S-6	Received: 07/22/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/29/97
Attention: Fran Thie	Lab Number: 9707B52-02	Reported: 08/01/97

QC Batch Number: GC072997BTEX03A
Instrument ID: GCHP03

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**20000**	**61000**
Methyl t-Butyl Ether	**1000**	**1900**
Benzene	**200**	**15000**
Toluene	**200**	**2100**
Ethyl Benzene	**200**	**1100**
Xylenes (Total)	**200**	**3500**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	104

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
1680 Rogers Avenue
San Jose, CA 95112

Attention: Fran Thie

Client Proj. ID: Shell Oakland/970721-Z1
Sample Descript: S-8
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9707B52-03

Sampled: 07/21/97
Received: 07/22/97

Analyzed: 07/25/97
Reported: 08/01/97

QC Batch Number: GC072597BTEX03A
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**	**2900**
Methyl t-Butyl Ether	**25**	**85**
Benzene	**5.0**	**380**
Toluene	**5.0**	**110**
Ethyl Benzene	**5.0**	**26**
Xylenes (Total)	**5.0**	**260**
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

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	Client Proj. ID: Shell Oakland/970721-Z1	Sampled: 07/21/97
1680 Rogers Avenue	Sample Descript: S-9	Received: 07/22/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/25/97
Attention: Fran Thie	Lab Number: 9707B52-04	Reported: 08/01/97

QC Batch Number: GC072597BTEX03A
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**	**3400**
Methyl t-Butyl Ether	**25**	**96**
Benzene	**5.0**	**590**
Toluene	**5.0**	**57**
Ethyl Benzene	**5.0**	**19**
Xylenes (Total)	**5.0**	**210**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	89

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

SEQUOIA ANALYTICAL - ELAP #1210

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 Oakland/970721-Z1
Sample Descript: S-10
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9707B52-05

Sampled: 07/21/97
Received: 07/22/97

Analyzed: 07/25/97
Reported: 08/01/97

QC Batch Number: GC072597BTEX02A
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**	**530**
Methyl t-Butyl Ether	2.5	N.D.
Benzene	**0.50**	**5.7**
Toluene	**0.50**	**0.70**
Ethyl Benzene	**0.50**	**29**
Xylenes (Total)	**0.50**	**69**
Chromatogram Pattern:		**C6-C12**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	113

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	Client Proj. ID: Shell Oakland/970721-Z1	Sampled: 07/21/97
1680 Rogers Avenue	Sample Descript: Dup	Received: 07/22/97
San Jose, CA 95112	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 07/25/97
Attention: Fran Thie	Lab Number: 9707B52-06	Reported: 08/01/97

QC Batch Number: GC072597BTEX03A
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**	**3200**
Methyl t-Butyl Ether	**25**	**130**
Benzene	**5.0**	**420**
Toluene	**5.0**	**120**
Ethyl Benzene	**5.0**	**32**
Xylenes (Total)	**5.0**	**300**
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

Sequoia Analytical

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

Client Project ID: Shell Oakland / 970721-Z1
Matrix: Liquid
Work Order #: 9707B52 -01, 05
Reported: Aug 5, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC072597BTEX02A	GC072597BTEX02A	GC072597BTEX02A	GC072597BTEX02A	GC072597BTEX02A
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:	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab	A. Miraftab
MS/MSD #:	9707B3802	9707B3802	9707B3802	9707B3802	9707B3802
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/25/97	7/25/97	7/25/97	7/25/97	7/25/97
Analyzed Date:	7/25/97	7/25/97	7/25/97	7/25/97	7/25/97
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	10	9.8	9.9	30	65
MS % Recovery:	100	98	99	100	108
Dup. Result:	9.4	9.2	9.4	28	63
MSD % Recov.:	94	92	94	93	105
RPD:	6.2	6.3	5.2	6.9	3.1
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK072597	BLK072597	BLK072597	BLK072597	BLK072597
Prepared Date:	7/25/97	7/25/97	7/25/97	7/25/97	7/25/97
Analyzed Date:	7/25/97	7/25/97	7/25/97	7/25/97	7/25/97
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	10	9.8	10	30	67
LCS % Recov.:	100	98	100	100	112
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

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 Avenue
San Jose, CA 95112
Attention: Fran Thie

Client Project ID: Shell Oakland / 970721-Z1
Matrix: Liquid
Work Order #: 9707B52-02
Reported: Aug 5, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC072997BTEX03A	GC072997BTEX03A	GC072997BTEX03A	GC072997BTEX03A	GC072997BTEX03A
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:	D. Jirsa	D. Jirsa	D. Jirsa	D. Jirsa	D. Jirsa
MS/MSD #:	9707B8505	9707B8505	9707B8505	9707B8505	9707B8505
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/29/97	7/29/97	7/29/97	7/29/97	7/29/97
Analyzed Date:	7/29/97	7/29/97	7/29/97	7/29/97	7/29/97
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	8.8	8.7	8.8	24	70
MS % Recovery:	88	87	88	80	117
Dup. Result:	11	8.7	8.8	25	70
MSD % Recov.:	110	87	88	83	117
RPD:	22	0.0	0.0	4.1	0.0
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK072997	BLK072997	BLK072997	BLK072997	BLK072997
Prepared Date:	7/29/97	7/29/97	7/29/97	7/29/97	7/29/97
Analyzed Date:	7/29/97	7/29/97	7/29/97	7/29/97	7/29/97
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	8.3	8.3	8.3	23	66
LCS % Recov.:	83	83	83	77	110
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

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 Avenue
San Jose, CA 95112
Attention: Fran Thie

Client Project ID: Shell Oakland / 970721-Z1
Matrix: Liquid
Work Order #: 9707B52-03-04, 06

Reported: Aug 5, 1997

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC072597BTEX03A	GC072597BTEX03A	GC072597BTEX03A	GC072597BTEX03A	GC072597BTEX03A
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:	D. Jirsa	D. Jirsa	D. Jirsa	D. Jirsa	D. Jirsa
MS/MSD #:	9707A3802	9707A3802	9707A3802	9707A3802	9707A3802
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/25/97	7/25/97	7/25/97	7/25/97	7/25/97
Analyzed Date:	7/25/97	7/25/97	7/25/97	7/25/97	7/25/97
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
Result:	9.0	8.9	9.0	25	72
MS % Recovery:	90	89	90	83	120
Dup. Result:	8.9	8.9	8.9	25	71
MSD % Recov.:	89	89	89	83	118
RPD:	1.1	0.0	1.1	0.0	1.4
RPD Limit:	0-25	0-25	0-25	0-25	0-25
LCS #:	BLK072597	BLK072597	BLK072597	BLK072597	BLK072597
Prepared Date:	7/25/97	7/25/97	7/25/97	7/25/97	7/25/97
Analyzed Date:	7/25/97	7/25/97	7/25/97	7/25/97	7/25/97
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L	60 µg/L
LCS Result:	9.0	8.8	8.9	25	71
LCS % Recov.:	90	88	89	83	118
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

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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Lab Proj. ID: 9707B52

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LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 10 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