



PACIFIC  
ENVIRONMENTAL  
GROUP, INC.

ALCO  
HAZMAT

95 JAN 25 PM 2:05

January 10, 1995  
Project 305-079.2B

*U Be*

Mr. Dan Kirk  
Shell Oil Company  
P.O. Box 4023  
Concord, California 94524

Re: Quarterly Report - Fourth Quarter 1994  
Shell Service Station  
285 Hegenberger Road at Leet Drive  
Oakland, California  
WIC No 204-5508-5504

Dear Mr. Kirk:

The following presents the results of the fourth quarter 1994 groundwater monitoring program and status of remediation for the site referenced above. This letter has been prepared for Shell Oil Company by Pacific Environmental Group, Inc. (PACIFIC).

**REMEDIAL PROGRESS SUMMARY**

Progress toward site remediation is presented in the table below.

Analyte	Total Mass Removed (pounds)	
	Fourth Quarter 1994	Cumulative
<u>Soil Vapor Extraction</u>		
TPH-g	81.75	705.32
Benzene	0.42	6.88
TPH-g =	Total petroleum hydrocarbons calculated as gasoline	

**QUARTERLY MONITORING FINDINGS**

Groundwater monitoring wells were gauged on October 25, 1994 and sampled on October 26, 1994 by Blaine Tech Services, Inc. (Blaine) at the direction of PACIFIC.

Groundwater elevation contours for the sampling date are shown on Figure 1; groundwater elevation data are presented in Table 1.

All wells were analyzed for the presence of total petroleum hydrocarbons calculated as gasoline (TPH-g), benzene, toluene, ethylbenzene, xylenes (BTEX compounds), TPH calculated as diesel (TPH-d), and TPH calculated as motor oil. TPH-g, benzene, and TPH-d concentrations for the sampling event are shown on Figure 2. Corresponding groundwater analytical data are presented in Tables 2 and 3. Blaine's groundwater sampling report, including field data, is presented as Attachment A. Hydrocarbon ranges for TPH-g, TPH-d, and motor oil can be found in the groundwater sampling report.

## **REMEDIAL SYSTEM PERFORMANCE EVALUATION**

### **Remedial System Description**

The soil vapor extraction (SVE) system consists of a 7.5-horsepower vacuum blower connected to five SVE wells (Wells VEW-1 through VEW-5). Extracted soil vapor is treated by catalytic oxidation before discharge to the atmosphere. A process flow diagram of the system is shown on Figure 3.

### **Remedial System Operation**

SVE system operation began on August 30, 1993. The SVE system ran continuously during the fourth quarter.

### **Remedial Objectives**

The interim remedial objective for the site is to reduce petroleum hydrocarbon concentrations in impacted soil and groundwater beneath the site. To evaluate progress toward meeting the interim remedial objective, the following system parameters were monitored:

- SVE system petroleum hydrocarbon mass removal rates,
- SVE well vapor composition, and
- SVE system influence.

Progress toward meeting the remedial objectives for the site is discussed below.

### **Petroleum Hydrocarbon Mass Removal**

Progress toward meeting the mass reduction objective is determined by evaluating remedial system mass removal data and the TPH-g and benzene concentration trends in

- Attachments:
- Table 1 - Groundwater Elevation Data
  - Table 2 - Groundwater Analytical Data -  
Total Petroleum Hydrocarbons  
(TPH as Gasoline, BTEX Compounds,  
and TPH as Diesel)
  - Table 3 - Groundwater Analytical Data -  
Total Petroleum Hydrocarbons (Oil and Grease  
and TPH as Motor Oil)
  - Table 4 - Soil Vapor Extraction System Mass Removal Data -  
Total Petroleum Hydrocarbons (TPH as Gasoline  
and Benzene)
  - Table 5 - Vapor-Phase Analytical Data -  
Total Petroleum Hydrocarbons (TPH as Gasoline  
and BTEX Compounds)
  - Figure 1 - Groundwater Elevation Contour Map
  - Figure 2 - TPH-g/Benzene/TPH-d Concentration Map
  - Figure 3 - Soil Vapor Extraction Process Flow Diagram
  - Figure 4 - Soil Vapor Extraction System Mass Removal Data
  - Figure 5 - Soil Vapor Extraction System Hydrocarbon Concentrations
  - Attachment A - Groundwater Sampling Report
  - Attachment B - Remedial System Certified Analytical Reports and  
Chain-of-Custody Documentation

cc: Mr. Brad Boschetto, Shell Oil Company (without attachments)  
Mr. Barney Chan, Alameda County Health Care Services  
Mr. Richard Hiett, Regional Water Quality Control Board - S.F. Bay Region  
Ms. Anne Singley, Shell Oil Company (without attachments)  
Mr. Joseph J. Armayo, Heller, Ehrman, White and McAuliffe

Table 1 (continued)  
Groundwater Elevation Data

Shell Service Station  
285 Hegenberger Road at Leet Drive  
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-6 (cont.)	10/27/92	11.04	6.69	1.52
	01/14/93		4.52	3.69
	04/23/93		4.32	3.89
	07/20/93		5.39	5.65
	10/18/93		6.67	4.37
	01/06/94		5.66	5.38
	04/12/94		4.91	6.13
	07/25/94		5.55	5.49
	10/25/94		6.24	4.80
MW-7	05/23/89	7.44	5.48	1.96
	08/03/89		4.22	3.22
	12/15/89		4.58	2.86
	02/07/90		5.34	2.10
	04/18/90		4.92	2.52
	07/23/90		4.99	2.45
	09/27/90		6.16	1.28
	01/03/91		4.96	2.48
	04/10/91		4.13	3.31
	07/12/91		4.98	2.46
	10/08/91		5.48	1.96
	02/06/92		5.05	2.39
	05/04/92		4.43	3.01
	07/28/92		4.88	2.56
	10/27/92		5.39	2.05
	01/14/93		4.26	3.18
	04/23/93		4.04	3.40
	07/20/93	10.28	4.36	5.92
	10/18/93		5.14	5.14
	01/06/94		4.83	5.45
04/12/94		4.24	6.04	
07/25/94		4.58	5.70	
10/25/94		5.07	5.21	
MW-8	05/23/89	7.79	6.62	1.17
	08/03/89		6.62	1.17
	12/15/89		6.71	1.08
	03/08/90		4.95	2.84
	04/18/90		6.40	1.89
	07/23/90		6.62	1.17
	09/27/90		6.98	0.81
	01/03/91		7.03	0.76
	04/10/91		4.40	3.39
	07/12/91		6.80	0.99
	10/08/91		7.56	0.23
02/06/92		6.94	0.85	

Table 1 (continued)  
Groundwater Elevation Data

Shell Service Station  
285 Hegenberger Road at Leet Drive  
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)	
MW-8 (cont.)	05/04/92	10.61	5.86	1.93	
	07/28/92		6.94	0.85	
	10/27/92		7.83	-0.04	
	01/14/93		3.60	4.19	
	04/23/93		4.12	3.67	
	07/20/93		6.38	4.23	
	10/18/93		7.47	3.14	
	01/06/94		7.20	3.41	
	04/12/94		6.16	4.45	
	07/25/94		6.94	3.67	
	10/25/94		7.43	3.18	
MW-9	08/03/89	7.63	5.78	1.85	
	12/15/89		5.24	2.39	
	02/07/90		5.23	2.40	
	04/18/90		5.34	2.29	
	07/23/90		5.65	1.98	
	09/27/90		5.96	1.67	
	01/03/91		6.23	1.40	
	04/10/91		4.65	2.98	
	07/12/91		5.65	1.98	
	10/08/91		6.08	1.55	
	02/06/92		5.92	1.71	
	05/04/92		4.80	2.83	
	07/28/92		5.61	2.02	
	10/27/92		6.24	1.39	
	01/14/93		4.95	2.68	
	04/23/93		4.54	3.09	
	07/20/93		10.48	5.25	5.23
	10/18/93		6.00	4.48	
	01/06/94		5.62	4.86	
04/12/94	4.31	6.17			
07/25/94	5.43	5.05			
10/25/94	6.00	4.48			
MW-10	12/15/89	7.45	6.33	0.82	
	03/08/90		5.41	2.00	
	04/18/90		5.60	1.85	
	07/23/90		5.81	1.64	
	09/27/90		6.64	0.81	
	01/03/91		6.96	0.49	
	04/10/91		4.70	2.75	
	07/12/91		5.90	1.55	
	10/08/91		6.68	0.77	
	02/06/92		7.04	0.41	
	05/04/92		4.69	2.76	

Table 1 (continued)  
Groundwater Elevation Data

Shell Service Station  
285 Hegenberger Road at Leet Drive  
Oakland, California

Well Number	Date Gauged	Well Elevation (feet, MSL)	Depth to Water (feet, TOC)	Groundwater Elevation (feet, MSL)
MW-10 (cont.)	07/28/92		6.00	1.45
	10/27/92		-----	Well Inaccessible -----
	01/14/93		6.07	1.38
	04/23/93		4.14	3.31
	07/20/93	10.61	5.62	4.99
	10/18/93		6.43	4.18
	01/06/94		6.74	3.87
	04/12/94		5.98	4.63
	07/25/94		6.31	4.30
	10/25/94		6.64	3.97
MW-11	07/20/93	10.56	8.08	2.48
	10/18/93		8.24	2.32
	01/06/94		8.47	2.09
	04/12/94		8.44	2.12
	07/25/94		8.20	2.36
	10/25/94		8.67	1.89
MW-12	07/20/93	9.56	6.76	2.80
	10/18/93		7.12	2.44
	01/06/94		7.15	2.41
	04/12/94		6.68	2.88
	07/25/94		6.83	2.73
	10/25/94		7.34	2.22
MW-13	07/20/93	10.10	8.32	1.78
	10/18/93		8.66	1.44
	01/06/94		8.70	1.40
	04/12/94		8.20	1.90
	07/25/94		8.39	1.71
	10/25/94		8.70	1.40
MSL = Mean sea level TOC = Top of casing TOB = Top of box elevation N/A = Not available				

Table 2  
**Groundwater Analytical Data**  
**Total Petroleum Hydrocarbons**  
 (TPH as Gasoline, BTEX Compounds, and TPH as Diesel)

Shell Service Station  
 285 Hegenberger Road at Leet Drive  
 Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)
MW-1	02/16/92	99	20	23	5.7	23	NA
	05/23/92	48	4.2	5.2	1.2	7.7	11
	08/04/89	63	5.5	5.5	3.2	9.5	11
	12/15/89	30	ND	ND	ND	ND	11
	02/07/90	93	13	9.6	2.4	14	10
	04/18/90	55	14	8.4	3.2	13	8.7
	07/24/90	73	16	7.4	2.8	15	3.6
	10/01/90	45	8	4.3	2	11	1.7
	01/02/91	43	10	3.4	1.9	11	3.1
	04/09/91	67	20	9.6	3.5	16	1.8
	07/11/91	NR	NR	NR	NR	NR	NR
	10/08/91	55	18	3.5	2.3	8.6	7.4
	02/06/92	48	12	2.8	1.9	7.4	15 <sup>a</sup>
	05/05/92	71	16	6	3.1	14	10 <sup>a</sup>
	07/28/92	68	21	5.5	3.4	15	18 <sup>a</sup>
	07/28/92(D)	70	17	5	2.7	13	19 <sup>a</sup>
	10/27/92	53	18	3.7	3.4	11	1.3
	10/27/92(D)	48	17	3.6	3.1	9.9	2.5 <sup>a</sup>
	01/15/93	84	17	5.4	3	13	22 <sup>a</sup>
	04/23/93	100	18	7.8	4.7	20	23 <sup>a</sup>
	07/20/93	41 <sup>d</sup>	12	0.87	1.5	4.4	3.1 <sup>a</sup>
	10/18/93	33	14	1.2	2	4.9	8.1 <sup>a</sup>
	10/18/93(D)	44	14	1.2	2	4.9	3.7 <sup>a</sup>
	01/06/94	71	9	0.87	1.6	5.1	9 <sup>a</sup>
	04/12/94	42	6.6	0.17	2.3	4.7	5.9
	04/12/94(D)	40	6.3	0.18	2.0	4.4	4.7
	07/25/94	13	4.4	0.11	0.46	1.4	7.0 <sup>a</sup>
10/26/94	19	5.5	0.21	0.88	2	3.9	
MW-2	02/16/89	20	0.2	0.9	2.7	9.6	NA
	05/23/89	1.5	0.0043	0.0029	0.011	0.15	1.6
	08/04/89	15	0.075	0.12	0.85	2.2	7.4
	12/15/89	5	0.052	0.013	0.0041	0.29	2.6
	02/07/90	13	0.032	0.034	0.23	0.64	4.8
	04/18/90	9.8	0.033	0.019	0.46	1.7	3.2
	07/24/90	9.6	0.041	0.027	0.54	0.94	2.7
	10/01/90	0.39	0.0034	0.015	0.0085	0.025	1.6
	01/02/91	1.8	0.056	0.0044	0.0048	0.092	0.83
	04/09/91	1.9	ND	0.028	0.14	0.49	0.28
	07/11/91	8.1	0.089	0.066	0.35	0.93	1.1
	10/08/91	1.4	0.0051	0.0015	0.036	0.27	2.6
	02/06/92	2	0.0078	0.0025	0.13	0.21	5.4 <sup>a</sup>
	05/05/92	21 <sup>b</sup>	ND	ND	0.3	0.96	1
	07/28/92	2.1	0.0077	0.0033	0.13	0.31	0.83 <sup>a</sup>
	10/27/92	1.1	0.016	0.0031	0.0045	0.025	0.53
	01/15/93+	0.29	0.0052	0.0031	0.0084	0.021	0.17 <sup>b</sup>

Table 2 (continued)  
**Groundwater Analytical Data**  
**Total Petroleum Hydrocarbons**  
 (TPH as Gasoline, BTEX Compounds, and TPH as Diesel)

Shell Service Station  
 285 Hegenberger Road at Leet Drive  
 Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)	
MW-2 (cont.)	04/23/93	2.4	ND	ND	0.21	0.61	1.2 <sup>a</sup>	
	07/21/93	0.44	0.0017	0.0017	0.015	0.038	0.13	
	10/18/93	2.1	ND	ND	0.09	0.11	1.6 <sup>a</sup>	
	01/06/94	1.9 <sup>e</sup>	ND	0.0067	0.0071	0.012	0.13	
	04/12/94	0.12	ND	ND	0.0034	0.0043	0.13	
	07/25/94	0.18 <sup>f</sup>	0.0053	ND	0.0062	0.0082	0.28 <sup>a</sup>	
	10/26/94	0.17	ND	ND	ND	ND	0.40	
MW-3	02/16/89	60	5.5	0.2	3.2	5.2	NA	
	05/23/89	ND	ND	ND	ND	ND	1.5	
	08/04/89	2	0.12	0.012	ND	0.086	1.2	
	12/15/89	5.2	0.38	0.047	0.017	0.41	1.7	
	03/08/90	0.26	0.017	ND	0.0054	0.0025	0.23	
	04/19/90	0.26	ND	ND	ND	0.0094	ND	
	07/24/90	0.51	0.046	0.0012	ND	0.0093	0.21	
	09/28/90	0.46	0.0063	0.0017	ND	0.015	0.35	
	01/02/91	4.8	0.92	0.0088	ND	0.19	0.63	
	04/09/91	0.12	0.0012	0.0008	0.0035	0.021	0.06	
	07/11/91	0.43	0.012	ND	ND	0.0077	ND	
	10/08/91	0.77	0.14	0.0007	ND	0.053	0.56	
	02/06/91	0.5	0.074	0.0009	0.0052	0.0053	0.34 <sup>a</sup>	
	05/04/92	0.31	0.047	ND	0.017	0.016	0.29 <sup>a</sup>	
	07/28/92	0.78	0.13	ND	0.013	0.0042	0.1 <sup>a</sup>	
	10/27/92	0.74	0.092	0.0028	0.0078	0.0096	0.069 <sup>a</sup>	
	01/15/93	ND	0.0024	ND	ND	ND	ND	
	04/23/93	----- Well Inaccessible -----						
	07/20/93	----- Well Inaccessible -----						
	10/18/93	----- Well Inaccessible -----						
	01/06/94	0.13	0.0017	ND	ND	0.00093	0.064	
	04/12/94	ND	0.00082	ND	ND	0.0007	0.075	
07/25/94	0.06 <sup>f</sup>	0.0028	ND	ND	0.0007	ND		
10/26/94	0.07	ND	ND	ND	ND	0.10		
MW-4	05/23/89	ND	ND	ND	ND	ND	ND	
	08/04/89	ND	ND	ND	ND	ND	ND	
	12/15/89	ND	ND	ND	ND	ND	ND	
	03/08/90	ND	ND	ND	ND	ND	ND	
	07/25/90	ND	ND	ND	ND	ND	ND	
	09/28/90	ND	ND	ND	ND	ND	ND	
	01/02/91	ND	ND	ND	ND	ND	ND	
	04/09/91	ND	ND	ND	ND	ND	ND	
	07/11/91	ND	ND	ND	ND	ND	ND	
	10/08/91	ND	ND	ND	ND	ND	ND	
	02/06/92	0.12	ND	ND	ND	ND	2.5 <sup>a</sup>	
	05/04/92	ND	ND	ND	ND	ND	0.053	
07/28/92	ND	ND	ND	ND	ND	0.06		



Table 2 (continued)  
**Groundwater Analytical Data**  
**Total Petroleum Hydrocarbons**  
 (TPH as Gasoline, BTEX Compounds, and TPH as Diesel)

Shell Service Station  
 285 Hegenberger Road at Leet Drive  
 Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)
MW-4 (cont.)	10/27/92	ND	ND	ND	ND	ND	ND
	01/14/93	ND	ND	ND	ND	ND	ND
	04/23/93	ND	ND	ND	ND	ND	ND
	07/21/93	ND	0.0022	0.0012	0.0011	0.0077	ND
	10/18/93	ND	ND	ND	ND	ND	ND
	01/06/94	ND	ND	ND	ND	ND	ND
	04/13/94	ND	ND	ND	ND	ND	0.076
	07/26/94	ND	ND	ND	ND	ND	ND
	10/26/94	ND	ND	ND	ND	ND	ND
MW-5	05/23/89	26	1.5	0.28	ND	8.1	7
	08/05/89	12	0.86	0.094	ND	2.6	8.7
	12/15/89	1	0.022	0.035	0.018	0.044	0.71
	02/08/90	ND	0.0008	ND	ND	ND	0.62
	04/19/90	19	4.5	0.85	0.097	8	5
	07/24/90	23	3.6	0.4	0.16	6.5	2.7
	09/28/90	5.4	1.4	0.026	0.013	1.3	0.55
	01/02/91	0.86	0.28	0.0028	0.0008	0.045	0.56
	04/09/91	12	0.71	0.13	0.5	2.4	1.8
	07/11/91	24	2.2	0.28	0.43	5.7	1.7
	10/08/91	2.8	0.86	0.013	ND	0.58	1.4
	02/06/92	1	0.3	ND	0.014	0.062	1.2
	05/05/92	10	1.5	0.35	0.71	2.3	4.1 <sup>a</sup>
	07/28/92	12	2.2	0.063	1.4	3.5	3.8 <sup>a</sup>
	10/27/92	7.5	1.1	0.059	0.23	0.9	0.48 <sup>a</sup>
	01/15/93	7.7	0.42	0.049	0.57	0.84	1.1 <sup>c</sup>
	04/23/93	110	2.9	2.5	3.4	12	16 <sup>a</sup>
	07/21/93	18 <sup>d</sup>	1.4	0.084	1.5	3.2	1.2 <sup>a</sup>
	10/18/93	14	2	0.1	2.3	5.1	5.8 <sup>a</sup>
	01/06/94	81	11	9.3	3.6	12	11 <sup>a</sup>
04/12/94	17	2.9	0.38	0.43	1.3	4.1	
07/25/94	5.9	1.5	0.042	0.034	0.17	5.4 <sup>a</sup>	
10/26/94	2.3	0.035	0.0028	ND	0.0081	1.9 <sup>a</sup>	
MW-6	05/23/89	22	0.016	0.0065	0.0066	3.4	7
	08/04/89	28	1.2	0.13	2.1	2.8	8.8
	12/15/89	16	0.37	0.092	0.2	0.18	5.5
	02/07/90	22	0.52	0.085	0.63	0.77	2.6
	04/18/90	21	0.9	0.077	2.7	2.7	5.7
	07/24/90	24	1	0.094	3.4	2.7	3
	10/01/90	22	0.7	0.093	2.5	2.4	ND
	01/02/91	25	1	0.088	2.6	3.7	0.96
	04/09/91	18	0.56	0.19	0.48	0.83	0.92
	07/11/91	9.5	0.67	0.051	1.1	0.92	1.9
	10/08/91	11	1	0.043	ND	ND	5.1

Table 2 (continued)  
**Groundwater Analytical Data**  
**Total Petroleum Hydrocarbons**  
 (TPH as Gasoline, BTEX Compounds, and TPH as Diesel)

Shell Service Station  
 285 Hegenberger Road at Leet Drive  
 Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)
MW-6 (cont.)	02/06/92	7.2	0.56	0.008	0.72	0.16	15 <sup>a</sup>
	05/05/92	7.9	0.61	ND	1.5	0.24	2.9 <sup>a</sup>
	07/28/92	17	1.2	ND	3	0.61	3.2 <sup>a</sup>
	10/27/92	15	1.3	0.13	1.7	0.49	1.3 <sup>a</sup>
	01/14/93	4.9	0.08	0.031	0.33	0.037	1.6 <sup>a</sup>
	04/23/93	4.8	0.12	ND	0.78	0.073	1.8 <sup>a</sup>
	07/20/93	19 <sup>d</sup>	0.57	0.018	1.1	0.13	0.91 <sup>a</sup>
	10/18/93	24	0.77	0.44	1.6	0.83	2.5 <sup>a</sup>
	01/06/94	20 <sup>d</sup>	0.45	0.03	0.53	0.052	2.3 <sup>a</sup>
	04/12/94	3.6	0.15	ND	0.34	0.021	1.6
	07/25/94	1.6	0.16	ND	ND	0.010	2.2 <sup>a*</sup>
	07/25/94(D)	1.0	0.16	ND	ND	0.018	2.4 <sup>a</sup>
	10/26/94	9.8	0.39	0.022	0.3	0.057	3.0 <sup>a</sup>
MW-7	05/23/89	47	3.5	5	1.5	7.8	11
	08/04/89	68	6.2	6.6	3.6	8.8	22
	12/15/89	100	4.5	5.3	1.3	5.3	12
	02/08/90	96	15	15	2.5	14	8.1
	04/19/90	94	25	13	3.3	13	10
	07/24/90	84	3.8	26	13	3	12
	09/28/90	43	25	6.1	2.4	9	ND
	01/02/91	78	26	16	3	14	3.1
	04/09/91	140	26	16	2.2	14	1.8
	07/11/91	79	7.7	7.2	2.3	10	1.1
	10/08/91	55	29	7.5	1.8	9.3	0.39 <sup>a</sup>
	02/06/92	63	16	8.7	1.6	7.4	9.6 <sup>a</sup>
	05/05/92	67	22	13	1.8	9.4	9.8 <sup>a</sup>
	07/28/92	85	26	17	2.9	15	13 <sup>a</sup>
	10/27/92	63	21	11	3	11	1.9 <sup>a</sup>
	01/14/93	120	28	21	1.6	15	2.3 <sup>a</sup>
	04/23/93	60	17	3.7	2.2	11	12 <sup>a</sup>
	04/23/93(D)	50	17	4.2	2.2	11	14 <sup>a</sup>
	07/21/93	47	23	9.9	2.2	12	13
	10/18/93	44	22	3.8	2.6	10	10 <sup>a</sup>
	01/06/94	65	16	4.9	1.9	8.5	5.2 <sup>a</sup>
04/12/94	68	12	2	0.58	6.4	3.4	
07/25/94	63	16	5.8	0.30	8.3	4.2 <sup>a</sup>	
10/26/94	46	16	3.7	1.2	7.3	3.8 <sup>a</sup>	
MW-8	05/23/89	ND	ND	ND	ND	ND	0.1
	08/04/89	ND	ND	ND	ND	ND	0.075
	12/15/89	ND	ND	ND	ND	ND	ND
	03/08/90	ND	ND	ND	ND	ND	ND
	07/25/90	ND	ND	ND	ND	ND	ND
	09/28/90	ND	ND	ND	ND	ND	1.1
	01/02/91	ND	0.0013	ND	ND	ND	ND

Table 2 (continued)  
**Groundwater Analytical Data**  
**Total Petroleum Hydrocarbons**  
 (TPH as Gasoline, BTEX Compounds, and TPH as Diesel)

Shell Service Station  
 285 Hegenberger Road at Leet Drive  
 Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)
MW-8 (cont.)	04/09/91	0.05	0.0007	0.0011	0.0008	0.001	ND
	07/11/91	ND	ND	ND	ND	ND	ND
	10/08/91	ND	0.0014	ND	ND	ND	ND
	02/06/92	ND	ND	0.0007	ND	ND	0.06 <sup>a</sup>
	05/04/92	ND	ND	ND	ND	ND	0.21 <sup>b</sup>
	07/28/92	0.051	ND	ND	0.001	0.0006	ND
	10/27/92	ND	ND	0.0066	ND	ND	ND
	01/14/93	ND	ND	ND	ND	ND	0.064 <sup>b</sup>
	01/14/93(D)	ND	ND	ND	ND	ND	NA
	04/23/93	ND	ND	ND	ND	ND	ND
	07/21/93	ND	0.0007	0.0007	0.0008	0.0041	ND
	10/18/93	ND	ND	0.8	ND	ND	ND
	01/06/94	ND	ND	ND	ND	ND	ND
	04/13/94	ND	ND	ND	ND	ND	ND
	07/26/94	ND	ND	ND	ND	ND	ND
	10/26/94	ND	ND	0.001	ND	ND	ND
MW-9	08/04/89	47	5.6	6.6	1.5	8.5	12
	12/15/89	88	4.3	5.4	0.14	5.6	9.2
	02/08/90	50	1.8	1.4	3.2	1.8	7.4
	04/19/90	50	14	11	0.73	10	7.5
	07/24/90	62	19	16	0.95	15	3.2
	09/28/90	30	16	6.5	0.98	11	2.7
	01/02/91	34	9.2	3.2	0.77	7	2.5
	04/09/91	66	17	13	1.4	14	2.2
	07/11/91	40	7.7	3.2	1.1	9.4	2
	10/08/91	20	11	0.64	0.24	6	4.7 <sup>a</sup>
	02/06/92	36	11	0.49	1.1	6.7	6.6 <sup>a</sup>
	05/05/92	31	11	1.7	1.2	8.7	5.8 <sup>a</sup>
	07/28/92	50	17	1.2	1.5	12	14
	10/27/92	43	15	0.68	1.7	8.1	0.88 <sup>a</sup>
	01/15/93	52	9.6	1.1	1.1	7	0.73 <sup>a</sup>
	04/23/93	45	11	1.4	1.5	10	8 <sup>a</sup>
	07/21/93	25	10	0.32	1.1	7.1	5.1
	10/18/93	32	14	0.53	2	10	4.9 <sup>a</sup>
	01/06/94	41	15	0.81	1.4	9	7.7 <sup>a</sup>
	01/06/94(D)	43	15	0.92	1.3	8	8.3 <sup>a</sup>
04/13/94	39	8.3	ND	ND	4.0	2.0	
07/26/94	22	7.5	0.15	ND	4.1	3.6 <sup>a</sup>	
10/26/94	31	13	0.24	1	8.5	3.2 <sup>a</sup>	
10/26/94(D)	31	13	0.22	1.1	8.3	3.5 <sup>a</sup>	
MW-10	12/15/89	ND	1.5	ND	ND	ND	3.1
	03/08/90	25	17	0.33	2.1	1.4	1.8
	04/19/90	23	15	1.2	0.19	3.3	3.6
	07/25/90	18	12	0.38	ND	1.4	1.9

Table 2 (continued)  
**Groundwater Analytical Data**  
**Total Petroleum Hydrocarbons**  
 (TPH as Gasoline, BTEX Compounds, and TPH as Diesel)

Shell Service Station  
 285 Hegenberger Road at Leet Drive  
 Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)	
MW-10 (cont.)	09/28/90	9.5	13	0.1	1.8	0.23	0.43	
	01/02/91	4.3	3.7	0.0097	ND	0.11	0.63	
	04/09/91	45	16	4.6	3	6.9	1.4	
	07/11/91	ND	ND	ND	ND	ND		
	10/08/91	3.8	13	0.082	0.0091	0.5	1.5 <sup>a</sup>	
	02/06/92	22	12	ND	0.6	0.17	1.6 <sup>a</sup>	
	05/05/92	39	14	5	1.8	5	8 <sup>a</sup>	
	07/28/92	38	17	2.8	1.5	4	8.7 <sup>a</sup>	
	10/27/92	-----Well Inaccessible-----						
	01/14/93	26	10	ND	ND	0.16	0.95 <sup>c</sup>	
	04/23/93	80	21	13	3.4	12	19 <sup>a</sup>	
	07/21/93	31	14	4.2	1.7	5.5	4.8	
	10/18/93	13	8.6	0.22	ND	0.45	1.2 <sup>a</sup>	
	01/06/94	16	9.7	<0.125	<0.125	0.21	0.67 <sup>a</sup>	
	04/13/94	16	5.6	ND	ND	ND	0.86	
07/25/94	2.3	1.4	0.026	0.025	0.051	2.1 <sup>a</sup>		
10/26/94	1.4	0.29	0.005	0.0017	0.038	1.0 <sup>a</sup>		
MW-11	07/20/93	0.05	0.0025	0.0019	0.0039	0.018	ND	
	10/18/93	ND	ND	ND	ND	ND	0.065	
	01/06/94	ND	ND	ND	ND	ND	ND	
	04/13/94	ND	0.0011	0.00087	ND	0.0015	ND	
	07/25/94	ND	ND	ND	ND	ND	ND	
	10/26/94	ND	ND	ND	ND	ND	0.1	
MW-12	07/20/93	ND	0.0028	0.0019	0.0032	ND	0.015	
	10/18/93	ND	ND	ND	ND	ND	ND	
	01/06/94	ND	ND	ND	ND	ND	ND	
	04/13/94	ND	0.00061	ND	ND	0.0011	ND	
	07/25/94	ND	ND	ND	ND	ND	ND	
	10/26/94	ND	ND	ND	ND	ND	ND	

Table 2 (continued)  
**Groundwater Analytical Data**  
**Total Petroleum Hydrocarbons**  
 (TPH as Gasoline, BTEX Compounds, and TPH as Diesel)

Shell Service Station  
 285 Hegenberger Road at Leet Drive  
 Oakland, California

Well Number	Date Sampled	TPH as Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)	TPH as Diesel (ppm)
MW-13	07/21/93	ND	ND	ND	ND	ND	0.0015
	07/21/93(D)	ND	ND	ND	ND	ND	0.001
	10/18/93	ND	ND	ND	ND	ND	ND
	01/06/94	ND	ND	ND	ND	ND	ND
	04/13/94	ND	0.0017	0.0012	0.00059	0.0024	0.1
	07/25/94	ND	ND	ND	ND	ND	ND
	10/26/94	ND	ND	ND	ND	ND	ND

ppm = Parts per million

NA = Not analyzed

ND = Not detected

NR = Not reported

(D) = Duplicate sample

+ = TPH as diesel analysis from April 8, 1993.

\* = Sampled August 4, 1994.

- a. The laboratory noted that compound detected and calculated as TPH as diesel primarily appears to be due to a lighter petroleum product.
- b. Laboratory noted that compound detected and calculated as diesel appears to be a heavier hydrocarbon compound.
- c. Laboratory noted that compound detected as TPH as diesel is due to the presence of a combination of a heavier petroleum product and a lighter petroleum product.
- d. Laboratory noted that compound detected as gasoline is due to the presence of a combination of gasoline and a discrete peak not indicative of gasoline.
- e. Laboratory noted that compound detected as gasoline is due to the presence of a discrete peak not indicative of gasoline.
- f. Laboratory noted the result to have an atypical gasoline pattern.

See individual certified analytical reports for detection limits.

Table 3  
**Groundwater Analytical Data**  
**Total Petroleum Hydrocarbons**  
(Oil and Grease and TPH as Motor Oil)

Shell Service Station  
285 Hegenberger Road at Leet Drive  
Oakland, California

Well Number	Date Sampled	Oil and Grease (ppm)	TPH as Motor Oil (ppm)
MW-1	07/28/92	NA	ND
	07/28/92(D)	NA	ND
	01/15/93	NA	ND
	04/23/93	NA	ND
	10/18/93	NA	0.96
	10/18/93(D)	NA	0.67
	01/06/94	NA	ND
	04/12/94	NA	2.5
	04/12/94(D)	NA	2.2
	07/25/94	NA	ND
10/26/94	NA	ND	
MW-2	07/28/92	NA	0.32
	01/14/93	NA	NA
	04/23/93	NA	ND
	10/18/93	NA	0.51
	01/06/94	NA	ND
	04/12/94	NA	0.17
	07/25/94	NA	ND
	10/26/94	NA	ND
MW-3	07/28/92	ND	0.12
	10/27/92	ND	0.1
	01/15/93	ND	0.12
	04/23/93	NA	ND
	10/18/93	--- Well Inaccessible ---	
	01/06/94	NA	ND
	04/12/94	NA	0.086
	07/25/94	NA	ND
	10/26/94	NA	ND
MW-4	07/28/92	NA	ND
	01/14/93	NA	0.12
	04/23/93	NA	0.17
	10/18/93	NA	0.2
	01/06/94	NA	ND
	04/13/94	NA	0.39
	07/25/94	NA	ND
	10/26/94	NA	ND

Table 3 (continued)  
**Groundwater Analytical Data**  
**Total Petroleum Hydrocarbons**  
(Oil and Grease and TPH as Motor Oil)

Shell Service Station  
285 Hegenberger Road at Leet Drive  
Oakland, California

Well Number	Date Sampled	Oil and Grease (ppm)	TPH as Motor Oil (ppm)
MW-5	07/28/92	NA	1.2
	01/15/93	NA	0.43
	04/23/93	NA	ND
	10/18/93	NA	0.86
	01/06/94	NA	ND
	04/12/94	NA	2.2
	07/26/94	NA	ND
	10/26/94	NA	720
MW-6	07/28/92	NA	ND
	01/14/93	NA	ND
	04/23/93	NA	ND
	10/18/93	NA	0.83
	01/06/94	NA	ND
	04/12/94	NA	0.58
	07/25/94	NA	ND*
	07/25/94(D) 10/26/94	NA NA	ND ND
MW-7	07/28/92	NA	ND
	01/14/93	NA	NA
	04/23/93	NA	ND
	04/23/93(D)	NA	ND
	10/18/93	NA	1
	01/06/94	NA	ND
	04/12/94	NA	0.75
	07/25/94 10/26/94	NA NA	ND ND
MW-8	07/28/92	NA	0.15
	01/14/93	NA	NA
	04/23/93	NA	0.15
	10/18/93	NA	0.17
	01/06/94	NA	ND
	04/13/94	NA	0.22
	07/26/94	NA	ND
	10/26/94	NA	ND
MW-9	07/28/92	NA	ND
	01/13/93	NA	NA
	04/23/93	NA	ND

Table 3 (continued)  
**Groundwater Analytical Data**  
**Total Petroleum Hydrocarbons**  
(Oil and Grease and TPH as Motor Oil)

Shell Service Station  
285 Hegenberger Road at Leet Drive  
Oakland, California

Well Number	Date Sampled	Oil and Grease (ppm)	TPH as Motor Oil (ppm)
MW-9 (cont.)	10/18/93	NA	0.39
	01/06/94	NA	ND
	01/06/94(D)	NA	ND
	04/13/94	NA	0.59
	07/26/94	NA	ND
	10/26/94	NA	ND
	10/26/94(D)	NA	ND
MW-10	07/28/92	NA	ND
	01/14/93	NA	0.2
	04/23/93	NA	ND
	10/18/93	NA	0.61
	01/06/94	NA	0.62
	04/13/94	NA	0.27
	07/25/94	NA	ND
	10/26/94	NA	ND
MW-11	10/18/93	NA	0.26
	01/06/94	NA	ND
	04/13/94	NA	ND
	07/25/94	NA	ND
	10/26/94	NA	ND
MW-12	10/18/93	NA	0.12
	01/06/94	NA	ND
	04/13/94	NA	ND
	07/25/94	NA	ND
	10/26/94	NA	ND
MW-13	10/18/93	NA	0.1
	01/06/94	NA	ND
	04/13/94	NA	0.072
	07/25/94	NA	ND
	10/26/94	NA	ND
ppm = Parts per million NA = Not analyzed ND = Not detected (D) = Duplicate sample * = Sampled August 4, 1994 See certified analytical report for detection limit.			



Table 4  
**Soil Vapor Extraction System Mass Removal Data**  
 Total Petroleum Hydrocarbons  
 (TPH as Gasoline and Benzene)

Shell Service Station  
 285 Hegenberger Road at Leet Drive  
 Oakland, California

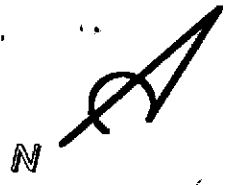
Sample ID	Date Sampled	Hourmeter Reading (hrs)	Flow Rate (scfm)	TPH as Gasoline			Benzene		
				Influent Concentration (ppmv)	Removal Rate (lbs/day)	Removed to Date (lbs)	Influent Concentration (ppmv)	Removal Rate (lbs/day)	Removed to Date (lbs)
INFL	08/30/93	6,248	34	7,801	99.35	0.00	123.83	1.29	0.00
INFL	08/31/93	6,250	37	2,364	33.52	5.54	28.46	0.33	0.07
INFL	09/01/93	6,260	30	3,073	35.17	19.85	48.88	0.46	0.23
INFL	09/02/93	6,269	46	2,080	36.62	33.31	54.63	0.79	0.47
INFL	09/08/93	6,361	25	591	5.64	114.30	27.31	0.21	2.39
INFL	09/14/93	6,502 a	29	780	8.48	155.78	13.80	0.12	3.38
INFL	10/27/93	1,190.00 b	85	121	3.90	155.78	1.52	0.04	3.38
INFL	10/28/93	1,213.57	85	187	6.03	160.66	5.18	0.14	3.47
INFL	10/29/93	1,328.37	87	187	6.18	189.86	4.03	0.11	4.06
INFL	11/11/93	1,511.20	90	260	8.90	247.28	5.46	0.15	5.06
INFL	11/22/93	1,779.22	74	194	5.45	327.41	ND	0.00	5.92
INFL	12/09/93	2,183.44	68	35	0.92	381.06	ND	0.00	5.92
INFL	01/11/94	2,591.27	60	165	3.77	420.92	ND	0.00	5.92
INFL	01/27/94	2,976.94	74	151	4.26	485.44	ND	0.00	5.92
INFL	02/10/94	3,199.56	67	31	0.78	508.81	ND	0.00	5.92
INFL	03/02/94	3,678.57	60	12	0.28	519.42	0.58	0.01	6.03
INFL	03/09/94	3,688.03	70	50	1.32	519.74	0.12	0.00	6.03
INFL	03/24/94	4,051.56	48	43	0.78	535.63	0.78	0.01	6.14
INFL	04/11/94	4,482.67	42	ND	0.00	542.60	ND	0.00	6.25
INFL	04/21/94	4,662.97	45	12	0.20	543.35	ND	0.00	6.25
INFL	05/10/94	5,114.89	40	24	0.36	548.60	0.08	0.00	6.26
INFL	06/08/94	5,187.80	40 c	111	1.69	551.71	ND	0.00	6.26
INFL	06/21/94	5,500.70	64	92	2.24	577.35	ND	0.00	6.26
INFL	06/28/94	5,531.03 d	50	78	1.48	579.70	ND	0.00	6.26
INFL	09/13/94	6,481.00 e	65	284	7.01	579.70	1.5	0.03	6.26
INFL	09/20/94	6,644.00	56	92	1.96	610.17	0.60	0.01	6.40
INFL	09/28/94	6,841.00	50	69	1.90	623.57	0.35	0.01	6.46
INFL	10/11/94	7,155.00	48	40	0.73	636.90	ND	0.00	6.50
INFL	10/31/94	7,631.00	60	61	1.40	658.07	ND	0.00	6.50
INFL	11/10/94	7,871.33	50	402	7.64	703.34	4.6	0.07	6.86
INFL	11/23/94	7,883.71	44	3.1 f	0.05	705.32	ND f	0.00	6.88
<b>TOTAL POUNDS REMOVED:</b>				<b>TPH as Gasoline =</b>			<b>Benzene =</b>		
				<b>705.32</b>			<b>6.88</b>		
hrs	= Hours			a. Internal combustion engine shut down 09/14/94.					
scfm	= Standard cubic feet per minute			b. King-Buck Cat-Ox start-up on 10/27/93.					
ppmv	= Parts per million by volume			c. Estimated flow rate.					
lbs	= Pounds			d. System temporarily shut down June 28, 1994;					
ND	= Not detected			King-Buck Cat-ox removed to different site.					
See certified analytical reports for detection limits.				e. Cat-ox installation and startup on 09/13/94.					
				f. Samples taken on December 1, 1994.					

Table 5  
**Vapor-Phase Analytical Data**  
**Total Petroleum Hydrocarbons**  
 (TPH as Gasoline and BTEX Compounds)

Shell Service Station  
 285 Hegenberger Road at Leet Drive  
 Oakland, California

Well Number	Date Sampled	TPH as Gasoline ( $\mu\text{g/L}$ )	Benzene ( $\mu\text{g/L}$ )	Toluene ( $\mu\text{g/L}$ )	Ethyl-benzene ( $\mu\text{g/L}$ )	Xylenes ( $\mu\text{g/L}$ )
VEW-1	08/30/93	140,000	3,300	860	1,400	3,400
	09/14/93	53,000	1,000	650	57	1,900
	10/27/93	26,000	660	450	300	1,300
	12/22/93	5.3	ND	0.097	0.11	0.75
	09/13/94	23,000	190	ND	59	120
	10/31/94	680	ND	0.88	ND	3.5
VEW-2	08/30/93	21,000	ND	ND	180	190
	09/14/93	4,200	23	26	8.0	250
	10/27/93	1,400	ND	ND	8.0	13
	12/22/93	ND	ND	ND	ND	0.25
	09/13/94	2,600	ND	ND	5.2	ND
	10/31/94	670	1.8	ND	1.9	1.7
VEW-3	08/30/93	41,000	ND	62	510	390
	09/14/93	3,100	ND	6.4	14	79
	10/27/93	3,000	ND	ND	49	45
	12/22/93	ND	ND	ND	ND	0.27
	09/13/94	1,200	3.0	ND	5.4	1.8
	10/31/94	750	ND	ND	ND	ND
VEW-4	08/30/93	12,000	ND	ND	74	98
	09/14/93	5,200	ND	27	ND	160
	10/27/93	1,100	ND	4.0	10	22
	12/22/93	NS	NS	NS	NS	NS
	09/13/94	1,400	ND	ND	2.9	ND
	10/31/94	320	1.2	ND	1.1	0.95
VEW-5	08/30/93	120,000	ND	200	1,900	1,500
	09/14/93	3,500	ND	ND	21	64
	10/27/93	9,400	ND	ND	100	71
	12/22/93	150	ND	ND	ND	0.25
	09/13/94	3,600	5.7	ND	8.0	ND
	10/31/94	960	3.2	ND	ND	2.4

$\mu\text{g/L}$  = Micrograms per liter  
 ND = Not detected  
 NS = Not sampled



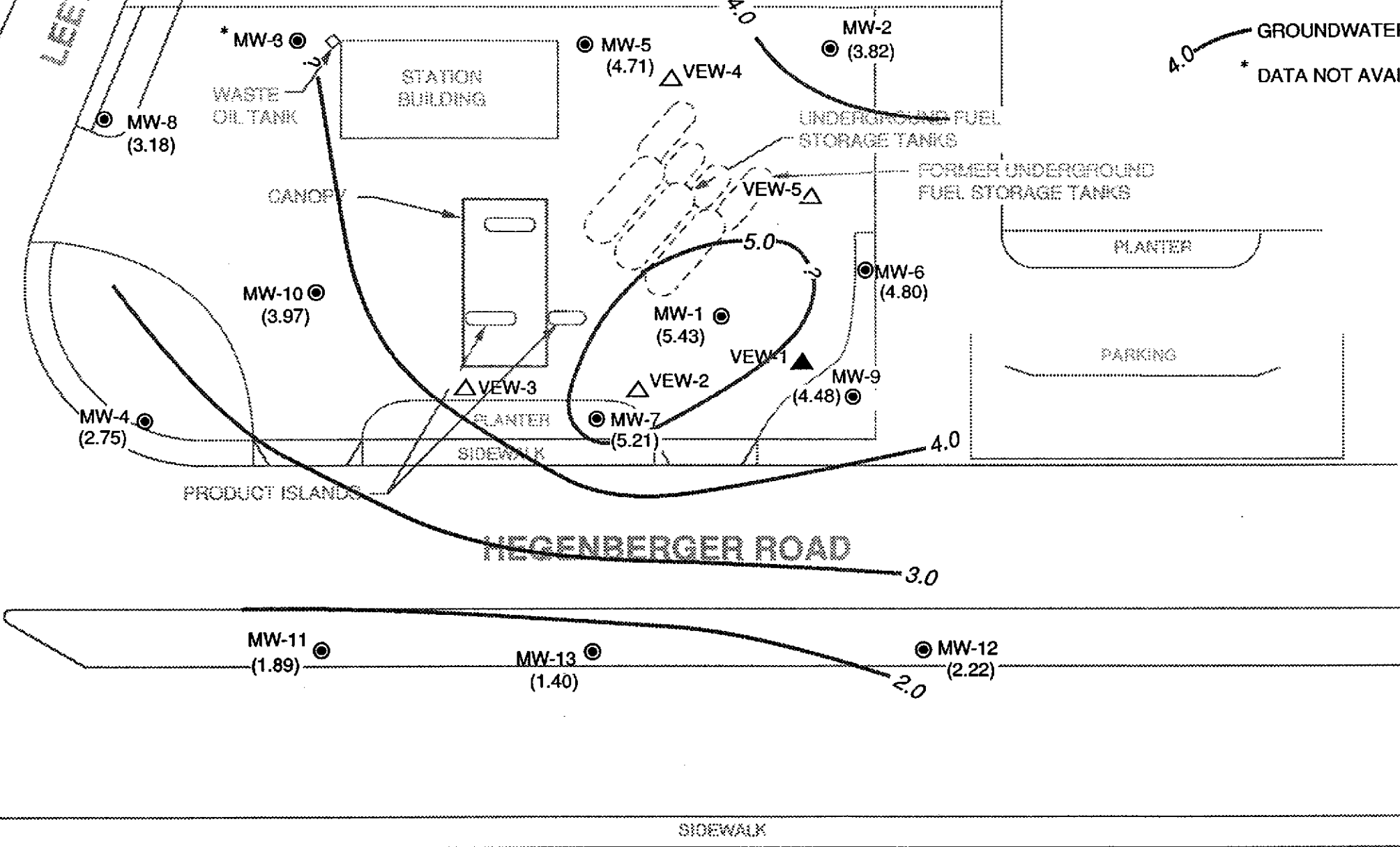
LEET DRIVE

CHANNEL

TRUCK STORAGE AREA

**LEGEND**

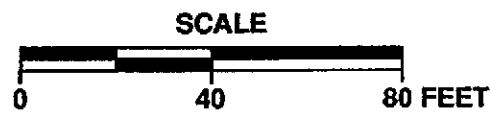
- MW-7 ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION
- VEW-1 ▲ EXISTING SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION
- VEW-4 △ DUAL COMPLETION AIR SPARGING/SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION
- (3.82) GROUNDWATER ELEVATION IN FEET - MSL, 10-25-94
- 4.0 — GROUNDWATER ELEVATION CONTOUR IN FEET - MSL, 10-25-94
- \* DATA NOT AVAILABLE



APPROXIMATE DIRECTION OF GROUNDWATER FLOW  
APPROXIMATE GRADIENT = 0.05



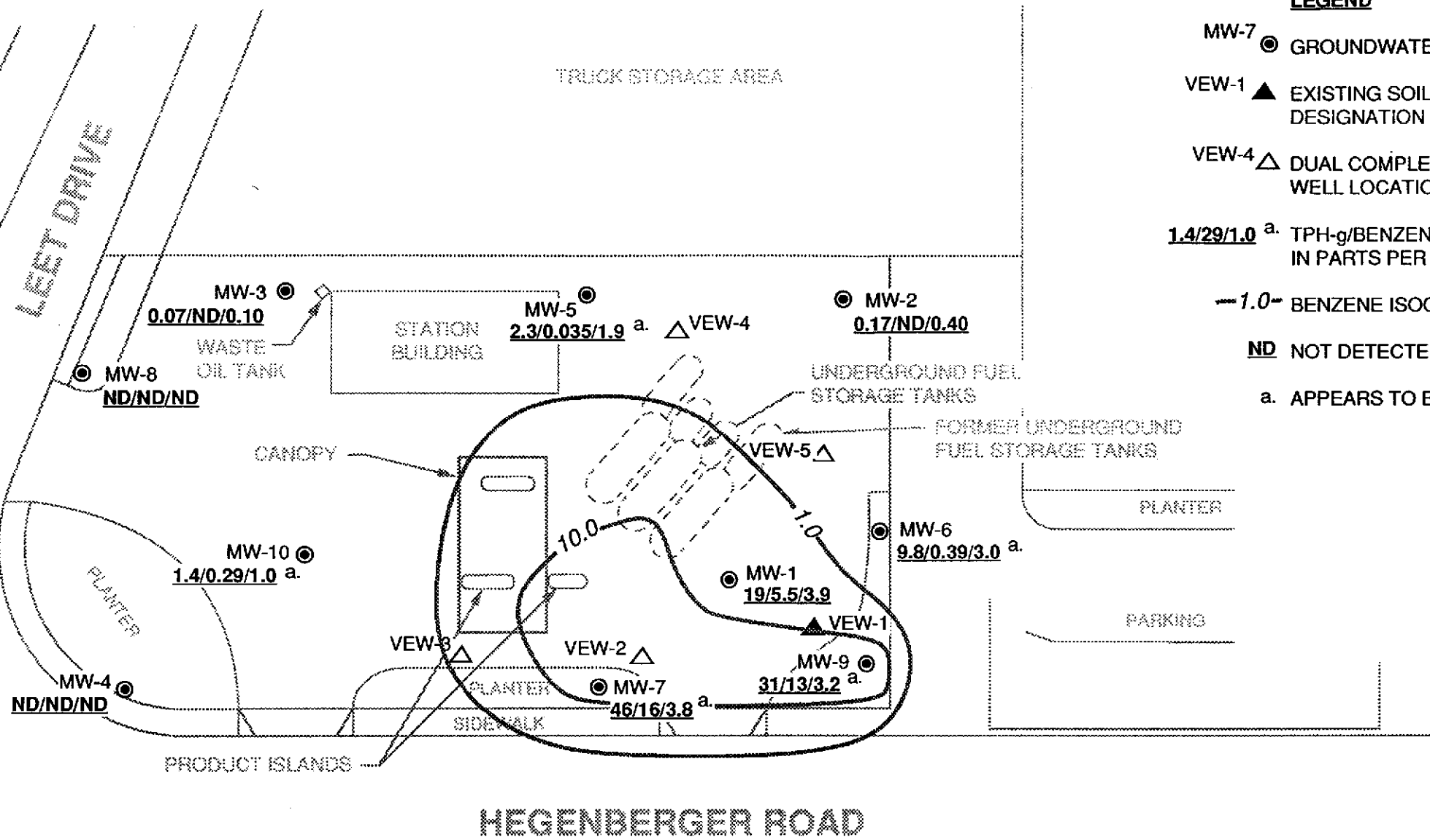
PACIFIC ENVIRONMENTAL GROUP, INC.



**SHELL SERVICE STATION**  
285 Hegenberger Road at Leet Drive  
Oakland, California

**GROUNDWATER ELEVATION CONTOUR MAP**

FIGURE: 1  
PROJECT: 305-079.2B



**LEGEND**

MW-7 ● GROUNDWATER MONITORING WELL LOCATION AND DESIGNATION

VEW-1 ▲ EXISTING SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION

VEW-4 △ DUAL COMPLETION AIR SPARGING/SOIL VAPOR EXTRACTION WELL LOCATION AND DESIGNATION

1.4/29/1.0 a. TPH-g/BENZENE/TPH-d CONCENTRATION IN GROUNDWATER, IN PARTS PER MILLION (ppm), 10-26-94

—1.0— BENZENE ISOCONCENTRATION CONTOUR IN ppm, 10-26-94

ND NOT DETECTED

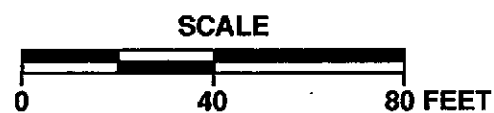
a. APPEARS TO BE A LIGHTER PETROLEUM PRODUCT THAN DIESEL



APPROXIMATE DIRECTION OF GROUNDWATER FLOW



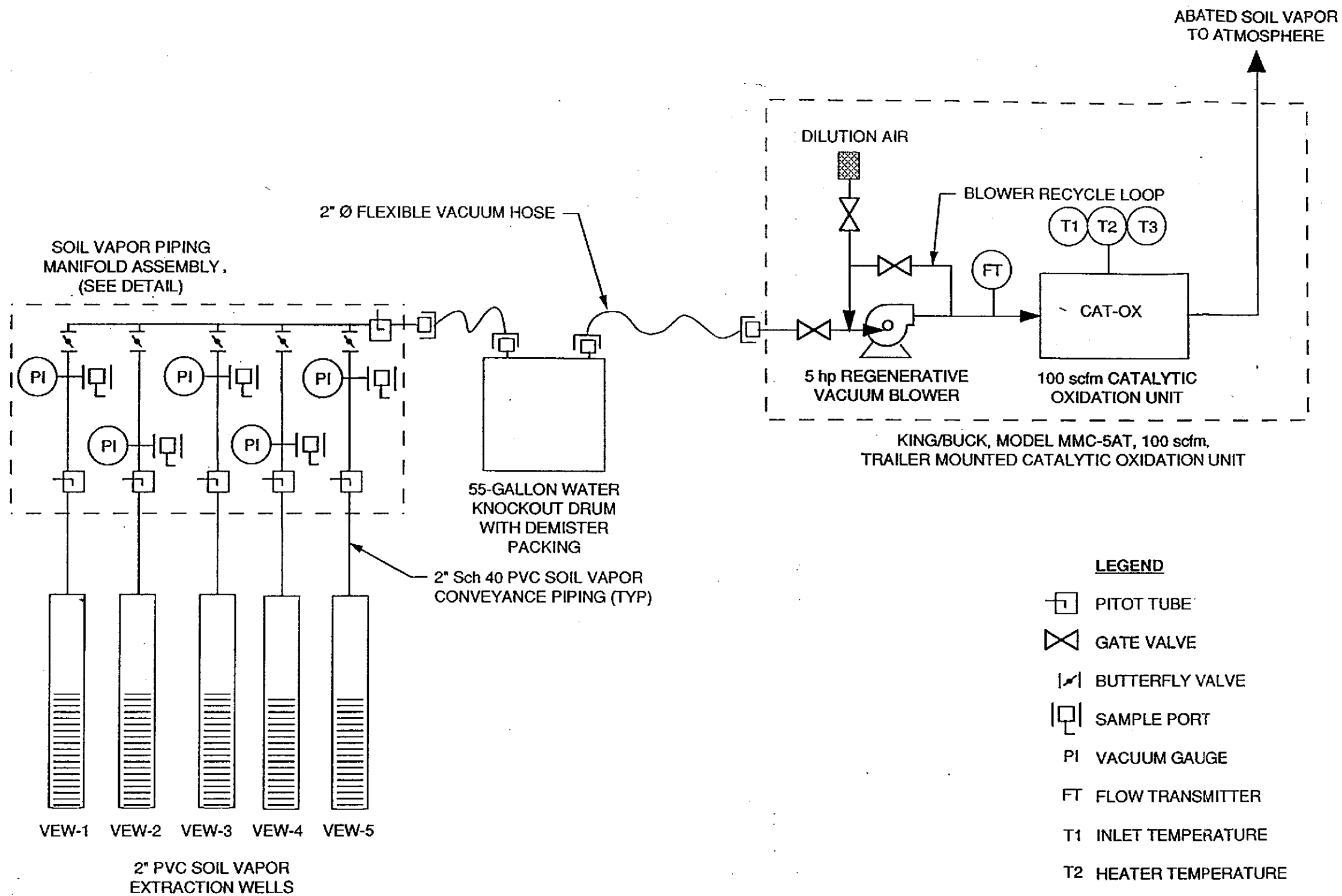
PACIFIC ENVIRONMENTAL GROUP, INC.







**SHELL SERVICE STATION**  
285 Hegenberger Road at Leet Drive  
Oakland, California

TPH-g/BENZENE/TPH-d CONCENTRATION MAP

FIGURE:  
**2**  
PROJECT:  
305-079.2B



**LEGEND**

-  PITOT TUBE
-  GATE VALVE
-  BUTTERFLY VALVE
-  SAMPLE PORT
- PI VACUUM GAUGE
- FT FLOW TRANSMITTER
- T1 INLET TEMPERATURE
- T2 HEATER TEMPERATURE
- T3 EXIT TEMPERATURE



PACIFIC ENVIRONMENTAL GROUP, INC.

NO SCALE

SHELL SERVICE STATION  
285 Hegenberger Road at Leet Drive  
Oakland, California

SOIL VAPOR EXTRACTION PROCESS FLOW DIAGRAM

FIGURE:  
**3**  
PROJECT:  
305-079.2B

Figure 4  
Soil Vapor Extraction System Mass Removal Data

Shell Service Station  
285 Hegenberger Road at Leet Drive  
Oakland, California

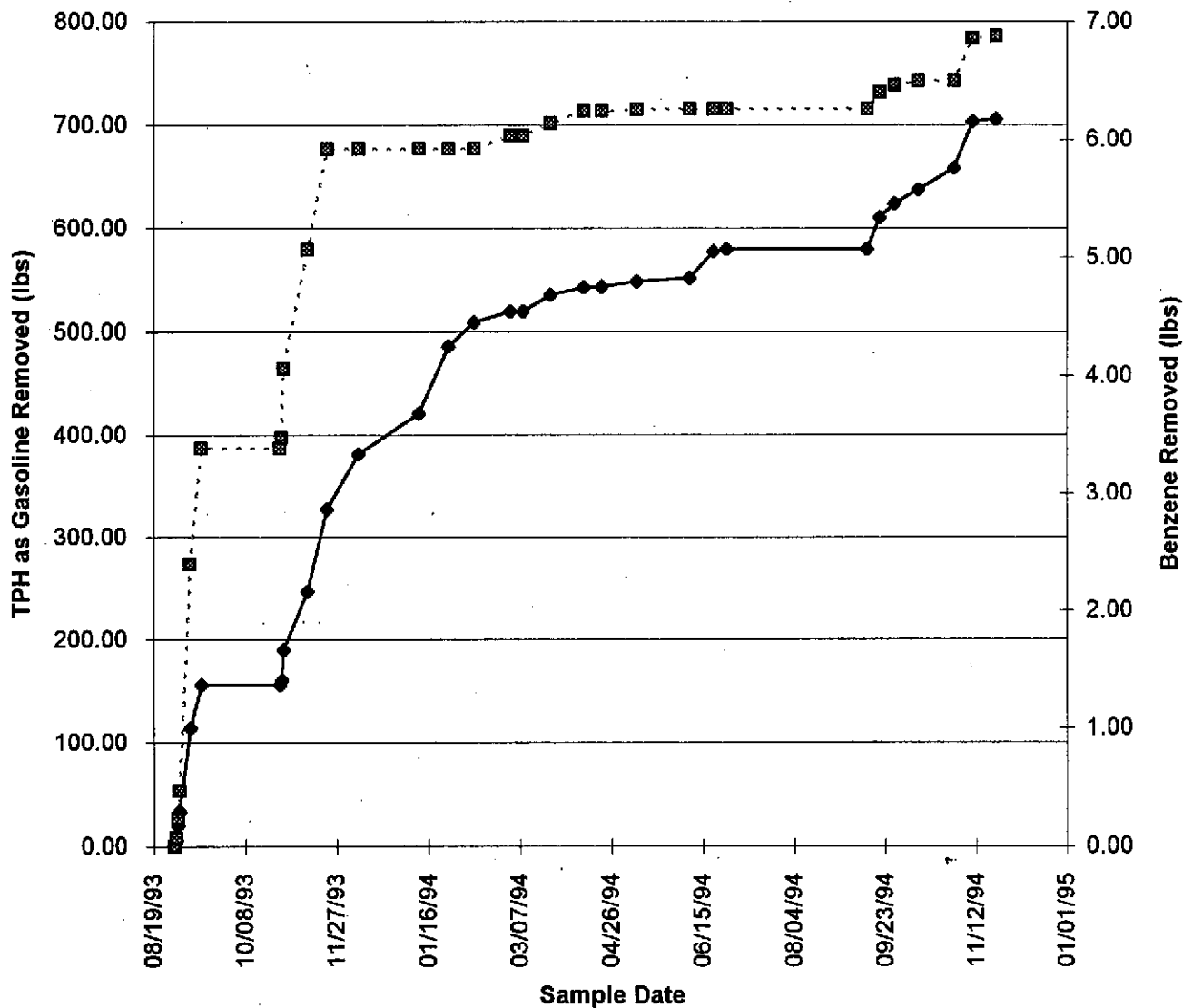
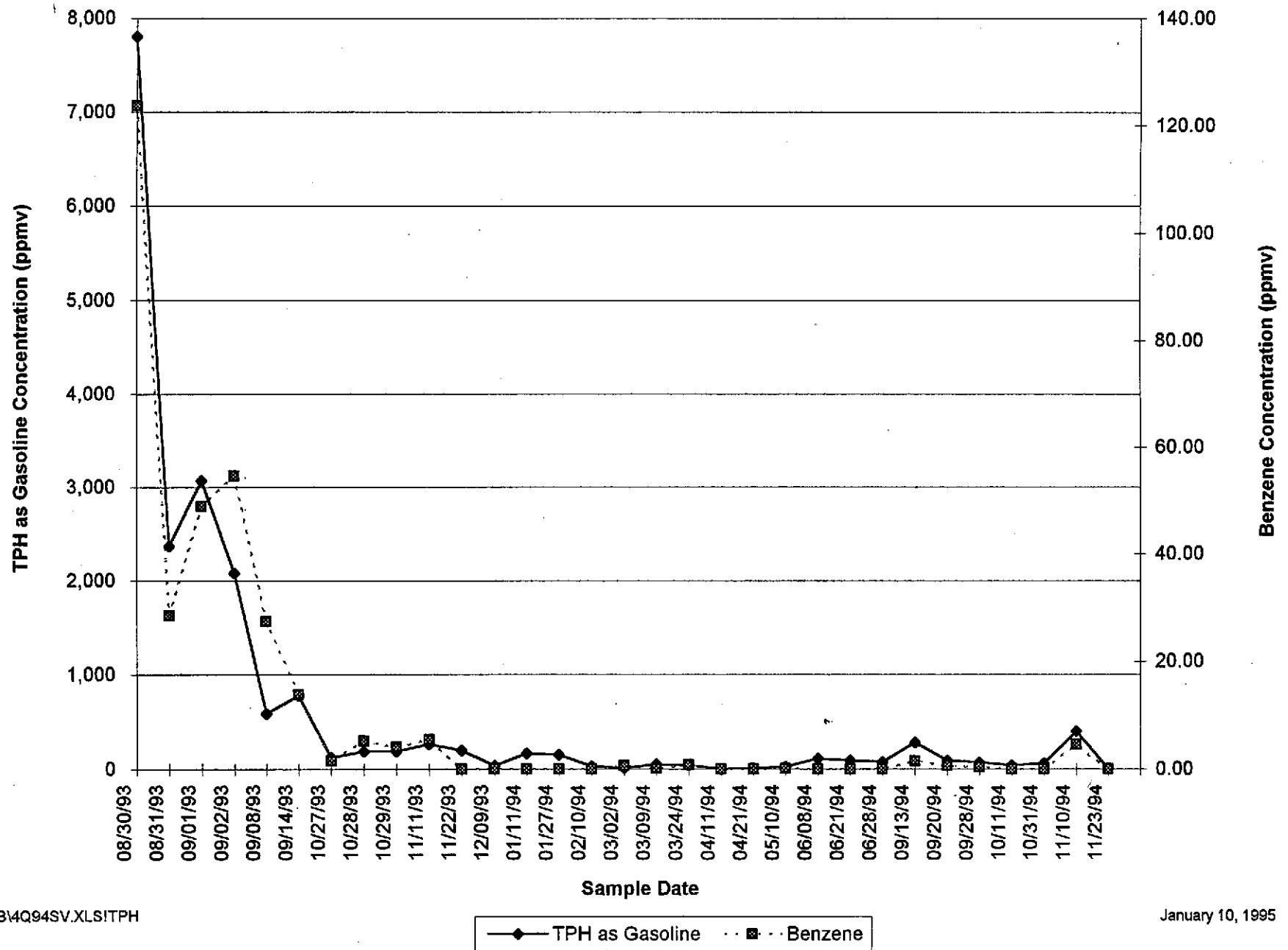
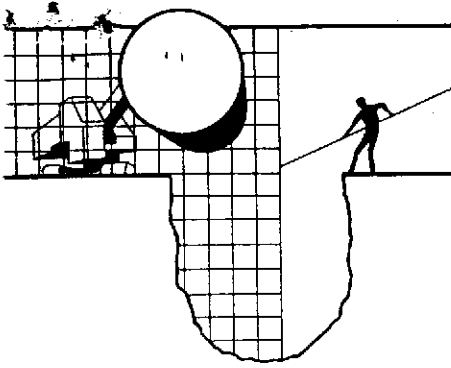


Figure 5  
 Soil Vapor Extraction System Hydrocarbon Concentrations  
 Shell Service Station  
 285 Hegenberger Road at Leet Drive  
 Oakland, California



**ATTACHMENT A**  
**GROUNDWATER SAMPLING REPORT**





# BLAINE TECH SERVICES INC.

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

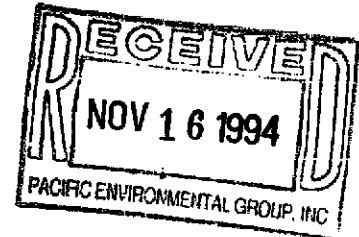
November 14, 1994

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

Attn: Daniel Kirk

SITE:  
Shell WIC #204-5508-5504  
285 Hegenburger Road  
Oakland, California

QUARTER:  
4th quarter of 1994



## QUARTERLY GROUNDWATER SAMPLING REPORT 941025-J-2

---

This report contains data collected during routine inspection, gauging and sampling of groundwater monitoring wells performed by Blaine Tech Services, Inc. in response to the request of the consultant who is overseeing work at this site on behalf of our mutual client, Shell Oil Company. Data collected in the course of our field work is presented in a **TABLE OF WELL GAUGING DATA**. The field information was collected during our preliminary gauging and inspection of the wells, the subsequent evacuation of each well prior to sampling, and at the time of sampling.

Measurements taken include the total depth of the well and the depth to water. The surface of water was further inspected for the presence of immiscibles which may be present as a thin film (a sheen on the surface of the water) or as a measurable free product zone (FPZ). At intervals during the evacuation phase, the purge water was monitored with instruments that measure electrical conductivity (EC), potential hydrogen (pH), temperature (degrees Fahrenheit), and turbidity (NTU). In the interest of simplicity, fundamental information is tabulated here, while the bulk of the information is turned over directly to the consultant who is making professional interpretations and evaluations of the conditions at the site.

## STANDARD PROCEDURES

---

### Evacuation

Groundwater wells are thoroughly purged before sampling to insure that the sample is collected from water that has been newly drawn into the well from the surrounding geologic formation. The selection of equipment to evacuate each well is based on the physical characteristics of the well and what is known about the performance of the formation in which the well has been installed. There are several suitable devices which can be used for evacuation. The most commonly employed devices are air or gas actuated pumps, electric submersible pumps, and hand or mechanically actuated bailers. Our personnel frequently employ USGS/Middleburg positive displacement pumps or similar air actuated pumps which do not agitate the water standing in the well.

Normal evacuation removes three case volumes of water from the well. More than three case volumes of water are removed in cases where more evacuation is needed to achieve stabilization of water parameters and when requested by the local implementing agency. Less water may be removed in cases where the well dewateres and does not recharge to 80% of its original volume within two hours and any additional time our personnel have reason to remain at the site. In such cases, our personnel return to the site within twenty four hours and collect sample material from the water which has recharged into the well case.

### Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site. Effluent water from purging and on-site equipment cleaning is collected and transported to Shell's Martinez Manufacturing Complex in Martinez, California.

### Free Product Skimmer

The column headed, VOLUME OF IMMISCIBLES REMOVED (ml) is included in the TABLE OF WELL GAUGING DATA to cover situations where a free product skimming device must be removed from the well prior to gauging. Skimmers are installed in wells with a free product zone on the surface of the water. The skimmer is a free product recovery device which often prevents normal well gauging and free product zone measurements. The 2.0" and 3.0" PetroTraps fall into the category of devices that obstruct normal gauging. In cases where the consultant elects to have our personnel pull the skimmers out of the well and gauge the well, our personnel perform the additional task of draining the accumulated free product out of the PetroTrap before putting it back in the well. This

recovered free product is measured and logged in the VOLUME OF IMMISCIBLES REMOVED column. Gauging at such sites is performed in accordance with specific directions from the professional consulting firm overseeing work at the site on Shell's behalf.

### **Sample Containers**

Sample material is collected in specially prepared containers which are provided by the laboratory that performs the analyses.

### **Sampling**

Sample material is collected in stainless steel bailer type devices normally fitted with both a top and a bottom check valve. Water is promptly decanted into new sample containers in a manner which reduces the loss of volatile constituents and follows the applicable EPA standard for handling volatile organic and semi-volatile compounds.

Following collection, samples are promptly placed in an ice chest containing prefrozen blocks of an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

### **Sample Designations**

All sample containers are identified with a site designation and a discrete sample identification number specific to that particular groundwater well. Additional standard notations (e.g. time, date, sampler) are also made on the label.

### **Chain of Custody**

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under a standard Shell Oil Company chain of custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date, and signature of the person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

## Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to National Environmental Testing, Inc. in Santa Rosa, California. NET is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #178.

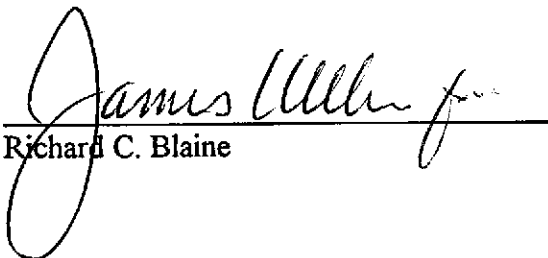
### Objective Information Collection

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. performs no consulting and does not become involved in the marketing or installation of remedial systems of any kind. Blaine Tech Services, Inc. is concerned only with the generation of objective information, not with the use of that information to support evaluations and recommendations concerning the environmental condition of the site. Even the straightforward interpretation of objective analytical data is better performed by interested regulatory agencies, and those engineers and geologists who are engaged in the work of providing professional opinions about the site and proposals to perform additional investigation or design remedial systems.

### Reportage

Submission of this report and the attached laboratory report to interested regulatory agencies is handled by the consultant in charge of the project. Any professional evaluations or recommendations will be made by the consultant under separate cover.

Please call if we can be of any further assistance.

  
Richard C. Blaine

RCB/lp

attachments: table of well gauging data  
chain of custody  
certified analytical report

cc: Pacific Environmental Group  
2025 Gateway Place, Suite #440  
San Jose, CA 95110  
ATTN: Rhonda Barrick

## 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	10/25/94	TOC	ODOR	NONE	--	--	4.07	9.36
MW-2	10/25/94	TOC	ODOR	NONE	--	--	6.73	9.60
MW-3	10/25/94	TOC	ODOR	NONE	--	--	6.48	9.47
MW-4	10/25/94	TOC	--	NONE	--	--	7.53	10.12
MW-5	10/25/94	TOC	ODOR	NONE	--	--	6.16	9.72
MW-6	10/25/94	TOC	--	NONE	--	--	6.24	11.02
MW-7	10/25/94	TOC	ODOR	NONE	--	--	5.07	9.99
MW-8	10/25/94	TOC	--	NONE	--	--	7.43	9.96
MW-9 *	10/25/94	TOC	ODOR	NONE	--	--	6.00	10.75
MW-10	10/25/94	TOC	ODOR	NONE	--	--	6.64	9.96
MW-11	10/25/94	TOC	--	NONE	--	--	8.67	13.89
MW-12	10/25/94	TOC	--	NONE	--	--	7.34	14.63
MW-13	10/25/94	TOC	--	NONE	--	--	8.70	14.37

\* Sample DUP was a duplicate sample taken from well MW-9.



**SHELL OIL COMPANY**  
RETAIL ENVIRONMENTAL ENGINEERING - WEST

**CHAIN OF CUSTODY RECORD**

Serial No: 94102502

Date: 10/26/94

Page 1 of 2

# 3462

Silo Address: 285 Hegenberger Road, Oakland

WIC#: 204-5508-5504

Shell Engineer: Dan Kirk  
Phone No.: (510) 675-6168  
Fax #: 675-6160

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

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

Comments:

Sampled by:

Printed Name: JEAN GATINEAU

**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 8020	<u>MOTOR OIL</u>	Asbestos	Container Size	Preparation Used	Composite Y/N
-------------------------	----------------------------	---------------------	------------------------------	-------------------	----------------------------------	------------------	----------	----------------	------------------	---------------

LAB: NET

CHECK ONE (1) BOX ONLY	CI/DI	TURN AROUND TIME
Quarterly Monitoring <input checked="" type="checkbox"/> 6441		24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/> 6441		48 hours <input type="checkbox"/>
Soil Classify/Disposal <input type="checkbox"/> 6442		15 days <input checked="" type="checkbox"/> (Normal)
Water Classify/Disposal <input type="checkbox"/> 6443		Other <input type="checkbox"/>
Soil/Air Rem. or Sys. O & M <input type="checkbox"/> 6442		
Water Rem. or Sys. O & M <input type="checkbox"/> 6443		
Other <input type="checkbox"/>		

NOTE: Notify Lab as soon as possible of 24/48 hr. S.A.L.

Sample ID	Date	Sludge	Soil	Water	Air	No. of conls.	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	<u>MOTOR OIL</u>	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
MW-1	<u>10/26</u>			X		<u>5</u>	X					X	X						
MW-2																			
MW-3																			
MW-4																			
MW-5																			
MW-6																			
MW-7																			
MW-8																			

CUSTOMER BY 10/27/94  
@ 1350 BH  
Sent In-lab  
JHA

Relinquished By (Signature): <u>[Signature]</u>	Printed Name: <u>JEAN GATINEAU</u>	Date: <u>10/27/94</u>	Received (Signature): <u>[Signature]</u>	Printed Name: <u>BETTY HARVEY</u>	Date: <u>10/27/94</u>
Relinquished By (Signature): <u>[Signature]</u>	Printed Name: <u>BETTY HARVEY</u>	Date: <u>10/27/94</u>	Received (Signature): <u>[Signature]</u>	Printed Name: <u>JAM GREENE VIA</u>	Date: <u>10/28/94</u>
Relinquished By (Signature): <u>[Signature]</u>	Printed Name:	Date:	Received (Signature):	Printed Name:	Date:



**SHELL OIL COMPANY**  
RETAIL ENVIRONMENTAL ENGINEERING - WEST

**CHAIN OF CUSTODY RECORD**

Serial No: 941023 JA

Date: 10/26/94

Page 2 of 2

Silo Address: 285 Hegenberger Road, Oakland

WIC#: 204-5508-5504

Shell Engineer: Dan Kirk  
Phone No.: (510) 675-6168  
Fax #: 675-6160

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

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

Commons:

Sampled by:

Printed Name: JEAN GATINEAU

**Analysis Required**

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	STEX (EPA 8020/802)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	MOTOR OIL	Asbestos	Container Size	Preparation Used	Composite Y/N
-------------------------	----------------------------	---------------------	------------------------------	-------------------	----------------------------------	-----------	----------	----------------	------------------	---------------

LAB: NET

CHECK ONE (1) BOX ONLY	CI/DI	TURN AROUND TIME
Quantity Monitoring <input checked="" type="checkbox"/>	6441	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	6443	48 hours <input type="checkbox"/>
Soil Classify/Disposal <input type="checkbox"/>	6442	16 days <input checked="" type="checkbox"/> (Helmold)
Water Classify/Disposal <input type="checkbox"/>	6443	Other <input type="checkbox"/>
Soil/Air Rem. of Sp. O & M <input type="checkbox"/>	6442	
Water Rem. of Sp. O & M <input type="checkbox"/>	6443	
Other <input type="checkbox"/>		

MATERIAL DESCRIPTION

SAMPLE CONDITION/ COMMENTS

Sample ID	Date	Sludge	Soil	Water	Air	No. of conrs.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	STEX (EPA 8020/802)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020	MOTOR OIL	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS	
MW-9	10/26			X		5	X				X	X								
MW-10																				
MW-11																				
MW-12																				
MW-13																				
DUP																				
E.B.																				
TIB						2														

(CUSTODY STAMP) 10/27/94  
1350  
Seal intact  
JA

Relinquished By (Signature): <u>Jan Gattineau</u>	Printed Name: <u>JEAN GATINEAU</u>	Date: <u>10/27/94</u>	Received (Signature): <u>Betty Harvey</u>	Printed Name: <u>BETTY HARVEY</u>	Date: <u>10/27/94</u>
Relinquished By (Signature): <u>Betty Harvey</u>	Printed Name: <u>BETTY HARVEY</u>	Date: <u>10/27/94</u>	Received (Signature): <u>Pam Greene</u>	Printed Name: <u>PAM GREENE NIS</u>	Date: <u>10/28/94</u>
Relinquished By (Signature):	Printed Name:	Date:	Received (Signature):	Printed Name:	Date:



NATIONAL  
ENVIRONMENTAL  
® TESTING, INC.

Santa Rosa Division  
435 Tesconi Circle  
Santa Rosa, CA 95401  
Tel: (707) 526-7200  
Fax: (707) 526-9623

Jim Keller  
Blaine Tech Services  
985 Timothy Dr.  
San Jose, CA 95133

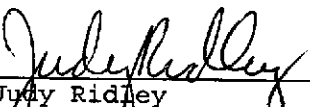
Date: 11/09/1994  
NET Client Acct. No: 1821  
NET Pacific Job No: 94.05113  
Received: 10/28/1994

Client Reference Information

285 Hegenberger Rd., Oakland, 941025J2

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

  
\_\_\_\_\_  
Judy Ridley  
Project Coordinator

  
\_\_\_\_\_  
Jim Hoch  
Operations Manager

Enclosure(s)







Client Name: Blaine Tech Services

Client Acct: 1821

NET Job No: 94.05113

Date: 11/09/1994

ELAP Cert: 1386

Page: 2

Ref: 285 Hegenberger Rd., Oakland, 941025J2

SAMPLE DESCRIPTION: MW-1

Date Taken: 10/26/1994

Time Taken:

NET Sample No: 220679

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTEX, Liquid)								
METHOD 5030/M8015	--						11/05/1994	2270
DILUTION FACTOR*	100						11/05/1994	2270
as Gasoline	19,000		5,000	ug/L	5030		11/05/1994	2270
Carbon Range:	C5-C12						11/05/1994	2270
METHOD 8020 (GC, Liquid)	--						11/05/1994	2270
Benzene	5,500		50	ug/L	8020		11/05/1994	2270
Toluene	210		50	ug/L	8020		11/05/1994	2270
Ethylbenzene	880		50	ug/L	8020		11/05/1994	2270
Xylenes (Total)	2,000		50	ug/L	8020		11/05/1994	2270
SURROGATE RESULTS	--						11/05/1994	2270
Bromofluorobenzene (SURR)	89			µ Rec.	5030		11/05/1994	2270
METHOD M8015 (EXT., Liquid)						10/31/1994		
DILUTION FACTOR*	1						11/01/1994	834
as Diesel	3,900		50	ug/L	3510		11/01/1994	834
as Motor Oil	ND		500	ug/L	3510		11/01/1994	834
Carbon Range:	C8-C18						11/01/1994	834

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services  
Client Acct: 1821  
NET Job No: 94.05113

Date: 11/09/1994  
ELAP Cert: 1386  
Page: 3

Ref: 285 Hegenberger Rd., Oakland, 941025J2

SAMPLE DESCRIPTION: MW-2

Date Taken: 10/26/1994

Time Taken:

NET Sample No: 220680

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch No.
TPH (Gas/BTXE, Liquid)								
METHOD 5030/M8015	--						11/05/1994	2270
DILUTION FACTOR*	1						11/05/1994	2270
as Gasoline	170		50	ug/L	5030		11/05/1994	2270
Carbon Range:	C5-C12						11/05/1994	2270
METHOD 8020 (GC, Liquid)	--						11/05/1994	2270
Benzene	ND		0.5	ug/L	8020		11/05/1994	2270
Toluene	ND		0.5	ug/L	8020		11/05/1994	2270
Ethylbenzene	ND		0.5	ug/L	8020		11/05/1994	2270
Xylenes (Total)	ND		0.5	ug/L	8020		11/05/1994	2270
SURROGATE RESULTS	--						11/05/1994	2270
Bromofluorobenzene (SURR)	94			% Rec.	5030		11/05/1994	2270
METHOD M8015 (EXT., Liquid)						10/31/1994		
DILUTION FACTOR*	1						11/01/1994	834
as Diesel	400		50	ug/L	3510		11/01/1994	834
as Motor Oil	ND		500	ug/L	3510		11/01/1994	834
Carbon Range:	C8-C20						11/01/1994	834

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services  
 Client Acct: 1821  
 NET Job No: 94.05113

Date: 11/09/1994  
 ELAP Cert: 1386  
 Page: 4

Ref: 285 Hegenberger Rd., Oakland, 941025J2

SAMPLE DESCRIPTION: MW-3

Date Taken: 10/26/1994

Time Taken:

NET Sample No: 220681

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTEXE,Liquid)								
METHOD 5030/M8015	--						11/04/1994	2262
DILUTION FACTOR*	1						11/04/1994	2262
as Gasoline	70		50	ug/L	5030		11/04/1994	2262
Carbon Range:	C5-C10						11/04/1994	2262
METHOD 8020 (GC,Liquid)	--						11/04/1994	2262
Benzene	ND		0.5	ug/L	8020		11/04/1994	2262
Toluene	ND		0.5	ug/L	8020		11/04/1994	2262
Ethylbenzene	ND		0.5	ug/L	8020		11/04/1994	2262
Xylenes (Total)	ND		0.5	ug/L	8020		11/04/1994	2262
SURROGATE RESULTS	--						11/04/1994	2262
Bromofluorobenzene (SURR)	85			% Rec.	5030		11/04/1994	2262
METHOD M8015 (EXT., Liquid)						10/31/1994		
DILUTION FACTOR*	1						11/01/1994	834
as Diesel	100		50	ug/L	3510		11/01/1994	834
as Motor Oil	ND		500	ug/L	3510		11/01/1994	834
Carbon Range:	C10-C20						11/01/1994	834

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Elaine Tech Services  
 Client Acct: 1821  
 NET Job No: 94.05113

Date: 11/09/1994  
 ELAP Cert: 1386  
 Page: 5

Ref: 285 Hegenberger Rd., Oakland, 941025J2

SAMPLE DESCRIPTION: MW-4

Date Taken: 10/26/1994

Time Taken:

NET Sample No: 220682

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						11/04/1994	2262
DILUTION FACTOR*	1						11/04/1994	2262
as Gasoline	ND		50	ug/L	5030		11/04/1994	2262
Carbon Range:	--						11/04/1994	2262
METHOD 8020 (GC,Liquid)	--						11/04/1994	2262
Benzene	ND		0.5	ug/L	8020		11/04/1994	2262
Toluene	ND		0.5	ug/L	8020		11/04/1994	2262
Ethylbenzene	ND		0.5	ug/L	8020		11/04/1994	2262
Xylenes (Total)	ND		0.5	ug/L	8020		11/04/1994	2262
SURROGATE RESULTS	--						11/04/1994	2262
Bromofluorobenzene (SURR)	86			% Rec.	5030		11/04/1994	2262
METHOD M8015 (EXT., Liquid)						10/31/1994		
DILUTION FACTOR*	1						11/01/1994	834
as Diesel	ND		50	ug/L	3510		11/01/1994	834
as Motor Oil	ND		500	ug/L	3510		11/01/1994	834
Carbon Range:	--						11/01/1994	834

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services  
 Client Acct: 1821  
 NET Job No: 94.05113

Date: 11/09/1994  
 ELAP Cert: 1386  
 Page: 6

Ref: 285 Hegenberger Rd., Oakland, 941025J2

SAMPLE DESCRIPTION: MW-5  
 Date Taken: 10/26/1994  
 Time Taken:  
 NET Sample No: 220683

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch No.
TPH (Gas/BTXE, Liquid)								
METHOD 5030/M8015	--						11/04/1994	2262
DILUTION FACTOR*	1						11/04/1994	2262
as Gasoline	2,300		50	ug/L	5030		11/04/1994	2262
Carbon Range:	C5-C12						11/04/1994	2262
METHOD 8020 (GC, Liquid)	--						11/04/1994	2262
Benzene	35		0.5	ug/L	8020		11/04/1994	2262
Toluene	2.8		0.5	ug/L	8020		11/04/1994	2262
Ethylbenzene	ND		0.5	ug/L	8020		11/04/1994	2262
Xylenes (Total)	8.1		0.5	ug/L	8020		11/04/1994	2262
SURROGATE RESULTS	--						11/04/1994	2262
Bromofluorobenzene (SURR)	93			† Rec.	5030		11/04/1994	2262
METHOD M8015 (EXT., Liquid)						10/31/1994		
DILUTION FACTOR*	1						11/01/1994	834
as Diesel	1,900	DL	50	ug/L	3510		11/01/1994	834
as Motor Oil	720		500	ug/L	3510		11/01/1994	834
Carbon Range:	C8-C28						11/01/1994	834

DL : The positive result appears to be a lighter hydrocarbon than Diesel.

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services  
 Client Acct: 1821  
 NET Job No: 94.05113

Date: 11/09/1994  
 ELAP Cert: 1386  
 Page: 7

Ref: 285 Hegenberger Rd., Oakland, 941025J2

SAMPLE DESCRIPTION: MW-6  
 Date Taken: 10/26/1994  
 Time Taken:  
 NET Sample No: 220684

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						11/04/1994	2262
DILUTION FACTOR*	10						11/04/1994	2262
as Gasoline	9,800		500	ug/L	5030		11/04/1994	2262
Carbon Range:	C5-C12						11/04/1994	2262
METHOD 8020 (GC,Liquid)	--						11/04/1994	2262
Benzene	390		5	ug/L	8020		11/04/1994	2262
Toluene	22		5	ug/L	8020		11/04/1994	2262
Ethylbenzene	300		5	ug/L	8020		11/04/1994	2262
Xylenes (Total)	57		5	ug/L	8020		11/04/1994	2262
SURROGATE RESULTS	--						11/04/1994	2262
Bromofluorobenzene (SURR)	93			% Rec.	5030		11/04/1994	2262
METHOD M8015 (EXT., Liquid)						10/31/1994		
DILUTION FACTOR*	1						11/01/1994	834
as Diesel	3,000	DL	50	ug/L	3510		11/01/1994	834
as Motor Oil	ND		500	ug/L	3510		11/01/1994	834
Carbon Range:	C8-C20						11/01/1994	834

DL : The positive result appears to be a lighter hydrocarbon than Diesel.

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services

Date: 11/09/1994

Client Acct: 1821

ELAP Cert: 1386

NET Job No: 94.05113

Page: 8

Ref: 285 Hegenberger Rd., Oakland, 941025J2

SAMPLE DESCRIPTION: MW-7

Date Taken: 10/26/1994

Time Taken:

NET Sample No: 220685

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch No.
TPH (Gas/BTXE, Liquid)								
METHOD 5030/M8015	--						11/04/1994	2270
DILUTION FACTOR*	100						11/04/1994	2270
as Gasoline	46,000		5,000	ug/L	5030		11/04/1994	2270
Carbon Range:	C5-C12						11/04/1994	2270
METHOD 8020 (GC, Liquid)	--						11/04/1994	2270
Benzene	16,000	FI	50	ug/L	8020		11/05/1994	2270
Toluene	3,700		50	ug/L	8020		11/04/1994	2270
Ethylbenzene	1,200		50	ug/L	8020		11/04/1994	2270
Xylenes (Total)	7,300		50	ug/L	8020		11/04/1994	2270
SURROGATE RESULTS	--						11/04/1994	2270
Bromofluorobenzene (SURR)	93			† Rec.	5030		11/04/1994	2270
METHOD M8015 (EXT., Liquid)						10/31/1994		
DILUTION FACTOR*	1						11/01/1994	834
as Diesel	3,800	DL	50	ug/L	3510		11/01/1994	834
as Motor Oil	ND		500	ug/L	3510		11/01/1994	834
Carbon Range:	C8-C20						11/01/1994	834

DL : The positive result appears to be a lighter hydrocarbon than Diesel.  
FI : Compound quantitated at a 1000X dilution factor.

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Pacific Environmental Group 2025 Gateway Place, Suite 440 San Jose, CA 95110	Client Proj. ID: 305-079.5B/Oakland Sample Descript: VEW-4 Matrix: AIR Analysis Method: 8015Mod/8020 Lab Number: 9411014-06	Sampled: 10/31/94 Received: 11/01/94 Analyzed: 11/01/94 Reported: 11/02/94
Attention: Maree Doden		

QC Batch Number: GC110194BTEX20A  
Instrument ID: GCHP20

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	25	320
Benzene	0.25	1.2
Toluene	0.25	N.D.
Ethyl Benzene	0.25	1.1
Xylenes (Total)	0.25	0.95
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	248 Q

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

**SEQUOIA ANALYTICAL - ELAP #1210**

Eileen Manning  
Project Manager





Pacific Environmental Group 2025 Gateway Place, Suite 440 San Jose, CA 95110	Client Proj. ID: 305-079.5B/Oakland Sample Descript: VEW-5 Matrix: AIR Analysis Method: 8015Mod/8020 Lab Number: 9411014-07	Sampled: 10/31/94 Received: 11/01/94  Analyzed: 11/01/94 Reported: 11/02/94
Attention: Maree Doden		

QC Batch Number: GC110194BTEX02A  
Instrument ID: GCHP02

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	960
Benzene	0.50	3.2
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	2.4
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	275 Q

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Eileen Manning  
Project Manager





Pacific Environmental Group 2025 Gateway Place, Suite 440 San Jose, CA 95110	Client Proj. ID: 305-079.5B/Oakland Sample Descript: INFL-B Matrix: AIR Analysis Method: 8015Mod/8020 Lab Number: 9411014-08	Sampled: 10/31/94 Received: 11/01/94 Analyzed: 11/01/94 Reported: 11/02/94
--	--	---

QC Batch Number: GC110194BTEX20A  
Instrument ID: GCHP20

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	250	1700
Benzene	2.5	32
Toluene	2.5	13
Ethyl Benzene	2.5	9.0
Xylenes (Total)	2.5	20
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	174 Q

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

SEQUOIA ANALYTICAL - ELAP #1210

Eileen Manning  
Project Manager





**Sequoia  
Analytical**

680 Chesapeake Drive  
1900 Bates Avenue, Suite L  
819 Striker Avenue, Suite 8

Redwood City, CA 94063  
Concord, CA 94520  
Sacramento, CA 95834

(415) 364-9600  
(510) 686-9600  
(916) 921-9600

FAX (415) 364-9233  
FAX (510) 686-9689  
FAX (916) 921-0100

Pacific Environmental Group  
2025 Gateway Place, Suite 440  
San Jose, CA 95110  
Attention: Maree Doden

Client Proj. ID: 305-079.5B/Oakland

Lab Proj. ID: 9411014

Received: 11/01/94

Reported: 11/02/94

### LABORATORY NARRATIVE

Q=Surrogate recovery high due to co-elution.

**SEQUOIA ANALYTICAL**

Eileen Manning  
Project Manager





**Pacific Environmental Group**  
2025 Gateway Place, Suite 440  
San Jose, CA 95110  
Attention: Maree Doden

**Client Project ID: 305-079.5B/Oakland**

**Work Order #: 9411014 01,06,08**

**Reported: Nov 4, 1994**

COC #:

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC110194BTEX20A	GC110194BTEX20A	GC110194BTEX20A	GC110194BTEX20A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	N.A.	N.A.	N.A.	N.A.

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9410E8410	9410E8410	9410E8410	9410E8410
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	N.A.	N.A.	N.A.	N.A.
Analyzed Date:	11/1/94	11/1/94	11/1/94	11/1/94
Instrument I.D.#:	GCHP20	GCHP20	GCHP20	GCHP20
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.9	9.9	9.9	30
MS % Recovery:	99	99	99	100
Dup. Result:	10	10	10	30
MSD % Recov.:	100	100	100	100
RPD:	1.0	1.0	1.0	0.0
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:

Prepared Date:  
Analyzed Date:  
Instrument I.D.#:  
Conc. Spiked:

LCS Result:  
LCS % Recov.:

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120
---------------------------------	--------	--------	--------	--------

**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.

**SEQUOIA ANALYTICAL**

*Eileen A. Manning*  
Eileen A. Manning  
Project Manager

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

9411014.PPP <1>





Pacific Environmental Group  
2025 Gateway Place, Suite 440  
San Jose, CA 95110  
Attention: Maree Doden

Client Project ID: 305-079.5B/Oakland

Work Order #: 9111014 02, 05

Reported: Nov 4, 1994

COC #:

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC110194BTEX03A	GC110194BTEX03A	GC110194BTEX03A	GC110194BTEX03A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	N.A.	N.A.	N.A.	N.A.

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9410E8408	9410E8408	9410E8408	9410E8408
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	N.A.	N.A.	N.A.	N.A.
Analyzed Date:	11/1/94	11/1/94	11/1/94	11/1/94
Instrument I.D.#:	GCHP3	GCHP3	GCHP3	GCHP3
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	9.7	9.8	9.7	29
MS % Recovery:	97	98	97	97
Dup. Result:	10	10	10	30
MSD % Recov.:	100	100	100	100
RPD:	3.0	2.0	3.0	3.4
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:

Prepared Date:  
Analyzed Date:  
Instrument I.D.#:  
Conc. Spiked:

LCS Result:  
LCS % Recov.:

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120

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.

SEQUOIA ANALYTICAL

*Eileen A. Manning*  
Eileen A. Manning  
Project Manager

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

9411014.PPP <2>



**Pacific Environmental Group**  
2025 Gateway Place, Suite 440  
San Jose, CA 95110  
Attention: Maree Doden

**Client Project ID: 305-079.5B/Oakland**

**Work Order #: 9411014 03-04**

**Reported: Nov 4, 1994**

COC #:

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC110194BTEX17A	GC110194BTEX17A	GC110194BTEX17A	GC110194BTEX17A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	N.A.	N.A.	N.A.	N.A.

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	9410E8408	9410E8408	9410E8408	9410E8408
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	N.A.	N.A.	N.A.	N.A.
Analyzed Date:	11/1/94	11/1/94	11/1/94	11/1/94
Instrument I.D.#:	GCHP17	GCHP17	GCHP17	GCHP17
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	10	11	31
MS % Recovery:	100	100	110	103
Dup. Result:	10	10	10	29
MSD % Recov.:	100	100	100	97
RPD:	0.0	0.0	9.5	6.7
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:

Prepared Date:  
Analyzed Date:  
Instrument I.D.#:  
Conc. Spiked:

LCS Result:  
LCS % Recov.:

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120
---------------------------------	--------	--------	--------	--------

**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.

**SEQUOIA ANALYTICAL**

*Eileen A. Manning*  
Eileen A. Manning  
Project Manager

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

9411014.PPP <3>





Pacific Environmental Group  
2025 Gateway Place, Suite 440  
San Jose, CA 95110  
Attention: Maree Doden

Client Project ID: 305-079.5B/Oakland

Work Order #: 9411014 07

Reported: Nov 4, 1994

COC #:

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC110194BTEX02A	GC110194BTEX02A	GC110194BTEX02A	GC110194BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	N.A.	N.A.	N.A.	N.A.

Analyst:	R. Vincent	R. Vincent	R. Vincent	R. Vincent
MS/MSD #:	9410E8410	9410E8410	9410E8410	9410E8410
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	N.A.	N.A.	N.A.	N.A.
Analyzed Date:	11/1/94	11/1/94	11/1/94	11/1/94
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	10	10	31
MS % Recovery:	100	100	100	103
Dup. Result:	9.7	9.9	9.9	30
MSD % Recov.:	97	99	99	100
RPD:	3.0	1.0	1.0	3.3
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:

Prepared Date:  
Analyzed Date:  
Instrument I.D.#:  
Conc. Spiked:

LCS Result:  
LCS % Recov.:

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120
---------------------------------	--------	--------	--------	--------

**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.

**SEQUOIA ANALYTICAL**

*Eileen A. Manning*  
Eileen A. Manning  
Project Manager

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

9411014.PPP <4>



SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME:  
REC. BY (PRINT):

PEG

N.I.

WORKORDER:  
DATE OF LOG-IN:

9411014

11.1.94

CIRCLE THE APPROPRIATE RESPONSE		LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION(ETC.)
1. Custody Seal(s)	Present / <u>Absent</u>	1	A	INFL	Tedlar	Air	10/31	
2. Custody Seal Nos.:	Intact / Broken*	2		INFL B	↓	↓	↓	
3. Chain-of-Custody Records:	<u>Present</u> / Absent*	3		EEFL	↓	↓	↓	
4. Traffic Reports or Packing List:	Present / <u>Absent</u>	4		VEW 1	↓	↓	↓	
5. Airbill:	Airbill / Sticker	5		↓ 2	↓	↓	↓	
	Present / <u>Absent</u>	6		↓ 3	↓	↓	↓	
		7		↓ 4	↓	↓	↓	
6. Airbill No.:		8	+	↓ 5	↓	↓	↓	
7. Sample Tags:	<u>Present</u> / Absent*							
Sample Tag Nos.:	<u>Listed</u> / Not Listed							
	on Chain-of-Custody							
8. Sample Condition:	<u>Intact</u> / Broken* / Leaking*							
9. Does information on on custody reports, traffic reports and sample tags agree?	<u>Yes</u> / No*							
10. Proper preservatives used:	<u>Yes</u> / No*							
11. Date Rec. at Lab:								
12. Temp. Rec. at Lab:								
13. Time Rec. ar Lab:								

\* If Circled, contact Project manager and attach record of resolution



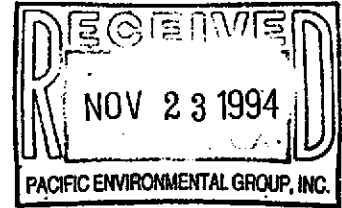


# Sequoia Analytical

680 Chesapeake Drive Redwood City, CA 94063  
1900 Bates Avenue, Suite L Concord, CA 94520  
819 Striker Avenue, Suite 8 Sacramento, CA 95834

(415) 364-9600  
(510) 686-9600  
(916) 921-9600

FAX (415) 364-9233  
FAX (510) 686-9689  
FAX (916) 921-0100



Pacific Environmental Group  
2025 Gateway Place, Suite 440  
San Jose, CA 95110  
Attention: Maree Doden

Project: 305-079.5B/Oakland

Enclosed are the results from samples received at Sequoia Analytical on November 11, 1994.  
The requested analyses are listed below:

<u>SAMPLE #</u>	<u>SAMPLE DESCRIPTION</u>	<u>DATE COLLECTED</u>	<u>TEST METHOD</u>
9411727 -01	AIR, Infl	11/10/94	TPHGBA Purgeable TPH/BTEX
9411727 -02	AIR, Effl	11/10/94	TPHGBA 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**

Eileen Manning  
Project Manager





Pacific Environmental Group  
2025 Gateway Place, Suite 440  
San Jose, CA 95110

Client Proj. ID: 305-079.5B/Oakland  
Sample Descript: Infl  
Matrix: AIR  
Analysis Method: 8015Mod/8020  
Lab Number: 9411727-01

Sampled: 11/10/94  
Received: 11/11/94  
Analyzed: 11/11/94  
Reported: 11/21/94

QC Batch Number: GC111194BTEX02A  
Instrument ID: GCHP2

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	200	1700
Benzene	2.0	16
Toluene	2.0	4.6
Ethyl Benzene	2.0	3.3
Xylenes (Total)	2.0	18
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	180 Q

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Eileen Manning  
Project Manager





Pacific Environmental Group  
 2025 Gateway Place, Suite 440  
 San Jose, CA 95110  
 Attention: Maree Doden

Client Project ID: 305-079.5B/Oakland

Work Order #: 9411727 01

Reported: Nov 22, 1994

COC #:

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC111194BTEX02A	GC111194BTEX02A	GC111194BTEX02A	GC111194BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	N.A.	N.A.	N.A.	N.A.

Analyst:	R. Vincent	R. Vincent	R. Vincent	R. Vincent
MS/MSD #:	941144710	941144710	941144710	941144710
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	N.A.	N.A.	N.A.	N.A.
Analyzed Date:	11/11/94	11/11/94	11/11/94	11/11/94
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	10	10	30
MS % Recovery:	100	100	100	100
Dup. Result:	10	9.9	10	30
MSD % Recov.:	100	99	100	100
RPD:	0.0	1.0	0.0	0.0
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:

Prepared Date:  
 Analyzed Date:  
 Instrument I.D.#:  
 Conc. Spiked:

LCS Result:  
 LCS % Recov.:

MS/MSD	71-133	72-128	72-130	71-120
LCS				
Control Limits				

**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.

**SEQUOIA ANALYTICAL**

Eileen A. Manning  
 Project Manager

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

9411727.PPP <1>



# SHELL WELL MONITORING DATA SHEET

Project #: <b>941025J2</b>	Wic # <b>204-5508-5504</b>
Sampler: <b>J&amp;G</b>	Date Sampled: <b>10/26/94</b>
Well I.D.: <b>MW-12</b>	Well Diameter: (circle one) 2 3 <b>4</b> 6
Total Well Depth: Before <b>14.63</b> After	Depth to Water: Before <b>7.34</b> After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: <b>PVC</b> Grade Other --	

Volume Conversion Factor (VCF):  
 $VCF = (d^2/4) \times \pi / 231$   
 Where:  
 $d = \text{dia./in.}$   
 $\pi = 3.1416$   
 $231 = \text{in.}^3/\text{gal}$

Well dia.	VCF
2"	0.26
3"	0.37
4"	0.48
6"	1.07
8"	1.48
10"	2.00
12"	2.92

<u>4.7</u>	x	<u>3</u>	=	<u>14.1</u>
1 Case Volume		Specified Volumes		gallons

Purging: Bailer  Middleburg   
 Electric Submersible   
 Suction Pump   
 Type of Installed Pump \_\_\_\_\_

Sampling: Bailer  Middleburg   
 Electric Submersible   
 Suction Pump   
 Installed Pump

TIME	TEMP. (F)	PH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
<b>9:50</b>	<b>63.2</b>	<b>7.0</b>	<b>8000</b>	<b>32.</b>	<b>5</b>	
<b>10:00</b>	<b>63.0</b>	<b>7.0</b>	<b>8040</b>	<b>37.</b>	<b>10</b>	
<b>10:10</b>	<b>62.8</b>	<b>6.8</b>	<b>8040</b>	<b>44.</b>	<b>15</b>	

Did Well Dewater? **NO** If yes, gals. Gallons Actually Evacuated: **15**

Sampling Time: **10:20**

Sample I.D.: **MW-12** Laboratory: **NET**

Analyzed for: **TPH, BTEX, TPH D, M.C.**

Duplicate I.D.: \_\_\_\_\_ Cleaning Blank I.D.: **E1B, @ 10:30**

Analyzed for: **(AFTER MW-12)**

Shipping Notations:

Additional Notations:

# SHELL WELL MONITORING DATA SHEET

Project #: <u>941025JR</u>	Wic # <u>204-5508-5504</u>
Sampler: <u>J.G.</u>	Date Sampled: <u>10/26/94</u>
Well I.D.: <u>MW-13</u>	Well Diameter: (circle one) 2 3 <u>4</u> 6
Total Well Depth: Before <u>14.37</u> After	Depth to Water: Before <u>8.70</u> After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: <u>PVC</u>	Grade Other --

Volume Conversion Factor (VCF):  
 $VCF = (d^2/4) \times \pi / 2.31$   
 Where:  
 d = dia./feet  
 d = diameter (in.)  
 π = 3.1416  
 2.31 = in./gal

Well dia.	VCF
2"	0.29
3"	0.57
4"	0.85
6"	1.47
8"	2.44
10"	3.81
12"	5.17

<u>3.6</u>	x	<u>3</u>	=	<u>10.8</u>
1 Case Volume		Specified Volumes		gallons

Purging: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
--	--

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
<u>11:20</u>	<u>62.8</u>	<u>7.0</u>	<u>&gt;10000</u>	<u>14.</u>	<u>4</u>	
<u>11:28</u>	<u>62.4</u>	<u>7.0</u>	<u>710000</u>	<u>95.</u>	<u>8</u>	
<u>11:32</u>	<u>62.2</u>	<u>7.0</u>	<u>710000</u>	<u>46.</u>	<u>12</u>	

Did Well Dewater? NO If yes, gals. Gallons Actually Evacuated: 12

Sampling Time: 11:40

Sample I.D.: MW-13 Laboratory: NET

Analyzed for: TPAG, BTEX, TPAD, M.O.

Duplicate I.D.: \_\_\_\_\_ Cleaning Blank I.D.: \_\_\_\_\_

Analyzed for:

Shipping Notations:

Additional Notations:

**ATTACHMENT B**

**REMEDIAL SYSTEM CERTIFIED ANALYTICAL REPORTS  
AND CHAIN-OF-CUSTODY DOCUMENTATION**



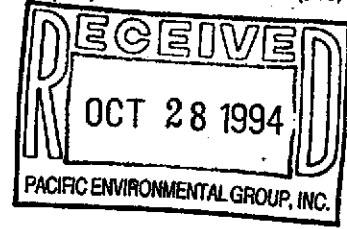
**Sequoia  
Analytical**

680 Chesapeake Drive  
1900 Bates Avenue, Suite L  
819 Striker Avenue, Suite 8

Redwood City, CA 94063  
Concord, CA 94520  
Sacramento, CA 95834

(415) 364-9600  
(510) 686-9600  
(916) 921-9600

FAX (415) 364-9233  
FAX (510) 686-9689  
FAX (916) 921-0100



Pacific Environmental Group  
2025 Gateway Place, Suite 440  
San Jose, CA 95110  
Attention: Maree Doden

Project: 305-079.5B/Oakland

Enclosed are the results from samples received at Sequoia Analytical on October 12, 1994. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
941067001	AIR, Effl	10/11/94	TPHGB Purgeable TPH/BTEX
941067002	AIR, Infl	10/11/94	TPHGB 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

*Eileen A. Manning*  
Eileen A. Manning  
Project Manager



Pacific Environmental Group  
2025 Gateway Place, Suite 440  
San Jose, CA 95110

Attention: Maree Doden

Client Proj. ID: 305-079.5B/Oakland  
Sample Descript: Eff  
Matrix: AIR  
Analysis Method: 8015Mod/8020  
Lab Number: 9410670-01

Sampled: 10/11/94  
Received: 10/12/94  
Analyzed: 10/13/94  
Reported: 10/20/94

QC Batch Number: GC101394BTEX02A  
Instrument ID: GCHP2

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10	10
Benzene	0.10	N.D.
Toluene	0.10	N.D.
Ethyl Benzene	0.10	0.13
Xylenes (Total)	0.10	0.53
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	125

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

**SEQUOIA ANALYTICAL - ELAP #1210**

*Eileen Manning*  
Eileen Manning  
Project Manager





Pacific Environmental Group 2025 Gateway Place, Suite 440 San Jose, CA 95110	Client Proj. ID: 305-079.5B/Oakland Sample Descript: Infl Matrix: AIR Analysis Method: 8015Mod/8020 Lab Number: 9410670-02	Sampled: 10/11/94 Received: 10/12/94 Analyzed: 10/13/94 Reported: 10/20/94
Attention: Maree Doden		

QC Batch Number: GC101394BTEX20A  
Instrument ID: GCHP20

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	25	170
Benzene	0.25	N.D.
Toluene	0.25	N.D.
Ethyl Benzene	0.25	N.D.
Xylenes (Total)	0.25	0.87
Chromatogram Pattern: Gas & Non Gas Mix		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	177 Q

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

**SEQUOIA ANALYTICAL - ELAP #1210**

*Eileen Manning FOR*  
Eileen Manning  
Project Manager



Sequoia  
Analytical

680 Chesapeake Drive  
1900 Bates Avenue, Suite L  
819 Striker Avenue, Suite 8

Redwood City, CA 94063  
Concord, CA 94520  
Sacramento, CA 95834

(415) 364-9600  
(510) 686-9600  
(916) 921-9600

FAX (415) 364-9233  
FAX (510) 686-9689  
FAX (916) 921-0100

Pacific Environmental Group  
2025 Gateway Place, Suite 440  
San Jose, CA 95110  
Attention: Maree Doden

Client Proj. ID: 305-079.5B/Oakland

Received: 10/12/94

Lab Proj. ID: 9410670

Reported: 10/27/94

### LABORATORY NARRATIVE

(TPPH) High surrogate recovery in lab number 9410670-02 is due to co-eluting matrix peaks.

**SEQUOIA ANALYTICAL**

*Eileen Manning* FOR

Eileen Manning  
Project Manager



Pacific Environmental Group  
2025 Gateway Place, Suite 440  
San Jose, CA 95110  
Attention: Maree Doden

Client Project ID: 305-079.5B/Oakland

Work Order #: 9410670 01

Reported: Oct 20, 1994

COC #:

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC101394BTEX02A	GC101394BTEX02A	GC101394BTEX02A	GC101394BTEX02A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	N.A.	N.A.	N.A.	N.A.

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	941033802	941033802	941033802	941033802
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	N.A.	N.A.	N.A.	N.A.
Analyzed Date:	10/13/94	10/13/94	10/13/94	10/13/94
Instrument I.D.#:	GCHP2	GCHP2	GCHP2	GCHP2
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	10	10	31
MS % Recovery:	100	100	100	103
Dup. Result:	10	11	11	32
MSD % Recov.:	100	110	110	107
RPD:	0.0	9.5	9.5	3.2
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:

Prepared Date:  
Analyzed Date:  
Instrument I.D.#:  
Conc. Spiked:

LCS Result:  
LCS % Recov.:

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120
---------------------------------	--------	--------	--------	--------

**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.

**SEQUOIA ANALYTICAL**

*Eileen A. Manning*  
Eileen A. Manning  
Project Manager

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

9410670.PPP <1>



Pacific Environmental Group  
 2025 Gateway Place, Suite 440  
 San Jose, CA 95110  
 Attention: Maree Doden

Client Project ID: 305-079.5B/Oakland

Work Order #: 9410670 02

Reported: Oct 20, 1994

COC #:

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC101394BTEX20A	GC101394BTEX20A	GC101394BTEX20A	GC101394BTEX20A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	N.A.	N.A.	N.A.	N.A.

Analyst:	J. Minkel	J. Minkel	J. Minkel	J. Minkel
MS/MSD #:	941033813	941033813	941033813	941033813
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	N.A.	N.A.	N.A.	N.A.
Analyzed Date:	10/13/94	10/13/94	10/13/94	10/13/94
Instrument I.D.#:	GCHP20	GCHP20	GCHP20	GCHP20
Conc. Spiked:	10 µg/L	10 µg/L	10 µg/L	30 µg/L
Result:	10	10	10	31
MS % Recovery:	100	100	100	103
Dup. Result:	10	10	10	30
MSD % Recov.:	100	100	100	100
RPD:	0.0	0.0	0.0	3.3
RPD Limit:	0-50	0-50	0-50	0-50

LCS #:

Prepared Date:  
 Analyzed Date:  
 Instrument I.D.#:  
 Conc. Spiked:

LCS Result:  
 LCS % Recov.:

MS/MSD LCS Control Limits	71-133	72-128	72-130	71-120
---------------------------------	--------	--------	--------	--------

**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.

**SEQUOIA ANALYTICAL**

*Manning FOR*  
 Eileen A. Manning  
 Project Manager

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

9410670.PPP <2>

SEQUOIA ANALYTICAL SAMPLE RECEIPT LOG

CLIENT NAME:  
REC. BY (PRINT):

PEG (shell 305-079.5B)  
CRS

WORKORDER:  
DATE OF LOG-IN:

9410670  
10/12/94

CIRCLE THE APPROPRIATE RESPONSE		LAB SAMPLE #	DASH #	CLIENT IDENTIFICATION	CONTAINER DESCRIPTION	SAMPLE MATRIX	DATE SAMP.	REMARKS: CONDITION(ETC.)
1. Custody Seal(s)	<input checked="" type="radio"/> Present / <input type="radio"/> Absent	01	A	EFFI	tedlar	21r	10/11/94	
2. Custody Seal Nos.:	<input type="radio"/> Intact / <input type="radio"/> Broken*	02	↓	INPI	↓	↓	↓	
3. Chain-of-Custody Records:	<input checked="" type="radio"/> Present / <input type="radio"/> Absent*							
4. Traffic Reports or Packing List:	<input checked="" type="radio"/> Present / <input type="radio"/> Absent							
5. Airbill:	<input type="radio"/> Airbill / <input type="radio"/> Sticker <input checked="" type="radio"/> Present / <input type="radio"/> Absent							
6. Airbill No.:								
7. Sample Tags:	<input checked="" type="radio"/> Present / <input type="radio"/> Absent*							
Sample Tag Nos.:	<input checked="" type="radio"/> Listed / <input type="radio"/> Not Listed on Chain-of-Custody							
8. Sample Condition:	<input checked="" type="radio"/> Intact / <input type="radio"/> Broken* / <input type="radio"/> Leaking*							
9. Does information on on custody reports, traffic reports and sample tags agree?	<input checked="" type="radio"/> Yes / <input type="radio"/> No*							
10. Proper preservatives used:	<input checked="" type="radio"/> Yes / <input type="radio"/> No*							
11. Date Rec. at Lab:	<u>10/12/94</u>							
12. Temp. Rec. at Lab:	<u>22°C</u>							
13. Time Rec. at Lab:	<u>1345</u>							

\* if Circled, contact Project manager and attach record of resolution



**SHELL OIL COMPANY 305 07958**  
**RETAIL ENVIRONMENTAL ENGINEERING - WEST**

**CHAIN OF CUSTODY RECORD**

Serial No: \_\_\_\_\_

Date: 10-11-94

Page 1 of 1

Address: 285 Hegenberger RD  
Oakland CA

IC#: 204-7620-1502

Well Engineer: Dan Kirk  
Phone No.: 510 675 6168  
Fax #: 675 6172

Consultant Name & Address: 2025 Gateway Place  
Pacific Environmental Group Suite 440 S.J.

Consultant Contact: Justin Hawkins  
Phone No.: 441-7500 (408)  
Fax #: 441-9102

Comments:

Sampled by: PJB

Printed Name: Paul Priebe

**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 8020	Asbestos	Container Size	Preparation Used	Composite Y/N
					X		1L	N	N
					X		↓	↓	↓

LAB: Sequoia

CHECK ONE (1) BOX ONLY	CI/DI	TURN AROUND TIME
G.W. Monitoring <input type="checkbox"/>	4431	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	4441	48 hours <input type="checkbox"/>
Soil Classify/Disposal <input type="checkbox"/>	4442	15 days <input checked="" type="checkbox"/> (Normal)
Water Classify/Disposal <input type="checkbox"/>	4443	Other <input type="checkbox"/>
Soil/Air Rem. of Sys. O & M <input checked="" type="checkbox"/>	4452	
Water Rem. of 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 conds.	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
EFFL	10/11/94	01	A		X	1	UST/soil-	
INFL	10/11/94	02	↓		X	↓	Vapor/Gas	9410670

Relinquished By (signature): <i>PJB</i>	Printed Name: Paul Priebe	Date: 10/12/94 Time: 2:15	Received (signature): <i>M. Doder</i>	Printed Name: M. Doder	Date: 10/12/94 Time: 2:15
Relinquished By (signature): <i>M. Doder</i>	Printed Name: M. Doder	Date: 10/12/94 Time: 2:20	Received (signature): <i>W. Jones</i>	Printed Name: W. Jones	Date: 10/12/94 Time: 12:00
Relinquished By (signature): <i>W. Jones</i>	Printed Name: W. Jones	Date: 10/12/94 Time: 2:45	Received (signature): <i>Chusan</i>	Printed Name: Chusan	Date: 10/12/94 Time: 1:35



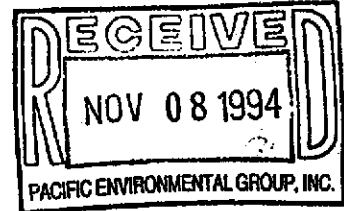
# Sequoia Analytical

680 Chesapeake Drive  
1900 Bates Avenue, Suite L  
819 Striker Avenue, Suite 8

Redwood City, CA 94063  
Concord, CA 94520  
Sacramento, CA 95834

(415) 364-9600  
(510) 686-9600  
(916) 921-9600

FAX (415) 364-9233  
FAX (510) 686-9689  
FAX (916) 921-0100



Pacific Environmental Group  
2025 Gateway Place, Suite 440  
San Jose, CA 95110  
Attention: Maree Dodson

Project: 305-079.5B/Oakland

Enclosed are the results from samples received at Sequoia Analytical on November 1, 1994. The requested analyses are listed below:

SAMPLE #	SAMPLE DESCRIPTION	DATE OF COLLECTION	TEST METHOD
941101401	AIR, Effl	10/31/94	TPHGB Purgeable TPH/BTEX
941101402	AIR, Infl	10/31/94	TPHGB Purgeable TPH/BTEX
941101403	AIR, VEW-1	10/31/94	TPHGB Purgeable TPH/BTEX
941101404	AIR, VEW-2	10/31/94	TPHGB Purgeable TPH/BTEX
941101405	AIR, VEW-3	10/31/94	TPHGB Purgeable TPH/BTEX
941101406	AIR, VEW-4	10/31/94	TPHGB Purgeable TPH/BTEX
941101407	AIR, VEW-5	10/31/94	TPHGB Purgeable TPH/BTEX
941101408	AIR, Infl-B	10/31/94	TPHGB 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

Eileen A. Manning  
Project Manager



Pacific Environmental Group  
2025 Gateway Place, Suite 440  
San Jose, CA 95110

Client Proj. ID: 305-079.5B/Oakland  
Sample Descript: Effl  
Matrix: AIR  
Analysis Method: 8015Mod/8020  
Lab Number: 9411014-01

Sampled: 10/31/94  
Received: 11/01/94  
Analyzed: 11/01/94  
Reported: 11/02/94

Attention: Maree Doden

QC Batch Number: GC110194BTEX20A  
Instrument ID: GCHP20

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10	N.D.
Benzene	0.10	N.D.
Toluene	0.10	N.D.
Ethyl Benzene	0.10	N.D.
Xylenes (Total)	0.10	N.D.
Chromatogram Pattern:		

Surrogates  
Trifluorotoluene

Control Limits %  
70 130

% Recovery  
114

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

**SEQUOIA ANALYTICAL - ELAP #1210**

Eileen Manning  
Project Manager







Pacific Environmental Group  
2025 Gateway Place, Suite 440  
San Jose, CA 95110

Client Proj. ID: 305-079.5B/Oakland  
Sample Descript: Infl  
Matrix: AIR  
Analysis Method: 8015Mod/8020  
Lab Number: 9411014-02

Sampled: 10/31/94  
Received: 11/01/94  
Analyzed: 11/01/94  
Reported: 11/02/94

Attention: Maree Doden

QC Batch Number: GC110194BTEX03A  
Instrument ID: GCHP03

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	260
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	1.4
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	96

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

**SEQUOIA ANALYTICAL - ELAP #1210**

Eileen Manning  
Project Manager





Pacific Environmental Group 2025 Gateway Place, Suite 440 San Jose, CA 95110	Client Proj. ID: 305-079.5B/Oakland Sample Descript: VEW-1 Matrix: AIR Analysis Method: 8015Mod/8020 Lab Number: 9411014-03	Sampled: 10/31/94 Received: 11/01/94 Analyzed: 11/01/94 Reported: 11/02/94
Attention: Maree Doden		

QC Batch Number: GC110194BTEX17A  
Instrument ID: GCHP17

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	680
Benzene	0.50	N.D.
Toluene	0.50	0.88
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	3.5
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	204 Q

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

**SEQUOIA ANALYTICAL - ELAP #1210**

Eileen Manning  
Project Manager





Pacific Environmental Group  
2025 Gateway Place, Suite 440  
San Jose, CA 95110

Client Proj. ID: 305-079.5B/Oakland  
Sample Descript: VEW-2  
Matrix: AIR  
Analysis Method: 8015Mod/8020  
Lab Number: 9411014-04

Sampled: 10/31/94  
Received: 11/01/94  
Analyzed: 11/01/94  
Reported: 11/02/94

Attention: Maree Doden

QC Batch Number: GC110194BTEX17A  
Instrument ID: GCHP17

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	670
Benzene	0.50	1.8
Toluene	0.50	N.D.
Ethyl Benzene	0.50	1.9
Xylenes (Total)	0.50	1.7
Chromatogram Pattern:		C6-C12

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 - 130	206 Q

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

**SEQUOIA ANALYTICAL - ELAP #1210**

Eileen Manning  
Project Manager





Pacific Environmental Group  
2025 Gateway Place, Suite 440  
San Jose, CA 95110

Client Proj. ID: 305-079.5B/Oakland  
Sample Descript: VEW-3  
Matrix: AIR  
Analysis Method: 8015Mod/8020  
Lab Number: 9411014-05

Sampled: 10/31/94  
Received: 11/01/94  
Analyzed: 11/01/94  
Reported: 11/02/94

Attention: Maree Doden

QC Batch Number: GC110194BTEX03A  
Instrument ID: GCHP03

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	100	750
Benzene	1.0	N.D.
Toluene	1.0	N.D.
Ethyl Benzene	1.0	N.D.
Xylenes (Total)	1.0	N.D.
Chromatogram Pattern:		C6-C8

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	129

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

**SEQUOIA ANALYTICAL - ELAP #1210**

Eileen Manning  
Project Manager





Client Name: Blaine Tech Services  
 Client Acct: 1821  
 NET Job No: 94.05113

Date: 11/09/1994  
 ELAP Cert: 1386  
 Page: 9

Ref: 285 Hegenberger Rd., Oakland, 941025J2

SAMPLE DESCRIPTION: MW-8  
 Date Taken: 10/26/1994  
 Time Taken:  
 NET Sample No: 220686

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						11/05/1994	2270
DILUTION FACTOR*	1						11/05/1994	2270
as Gasoline	ND		50	ug/L	5030		11/05/1994	2270
Carbon Range:	--						11/05/1994	2270
METHOD 8020 (GC,Liquid)	--						11/05/1994	2270
Benzene	ND		0.5	ug/L	8020		11/05/1994	2270
Toluene	1.0	C	0.5	ug/L	8020		11/05/1994	2270
Ethylbenzene	ND		0.5	ug/L	8020		11/05/1994	2270
Xylenes (Total)	ND		0.5	ug/L	8020		11/05/1994	2270
SURROGATE RESULTS	--						11/05/1994	2270
Bromofluorobenzene (SURR)	88			% Rec.	5030		11/05/1994	2270
METHOD M8015 (EXT., Liquid)						10/31/1994		
DILUTION FACTOR*	1						11/01/1994	834
as Diesel	ND		50	ug/L	3510		11/01/1994	834
as Motor Oil	ND		500	ug/L	3510		11/01/1994	834
Carbon Range:	--						11/01/1994	834

C : Positive result confirmed by secondary column or GC/MS analysis.

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Elaine Tech Services  
 Client Acct: 1821  
 NET Job No: 94.05113

Date: 11/09/1994  
 ELAP Cert: 1386  
 Page: 10

Ref: 285 Hegenberger Rd., Oakland, 941025J2

SAMPLE DESCRIPTION: MW-9

Date Taken: 10/26/1994

Time Taken:

NET Sample No: 220687

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch No.
TPH (Gas/BTXE, Liquid)								
METHOD 5030/M8015	--						11/06/1994	2270
DILUTION FACTOR*	100						11/05/1994	2270
as Gasoline	31,000		5,000	ug/L	5030		11/05/1994	2270
Carbon Range:	C5-C12						11/05/1994	2270
METHOD 8020 (GC, Liquid)	--						11/06/1994	2270
Benzene	13,000		50	ug/L	8020		11/06/1994	2270
Toluene	240		50	ug/L	8020		11/05/1994	2270
Ethylbenzene	1,000		50	ug/L	8020		11/05/1994	2270
Xylenes (Total)	8,500		50	ug/L	8020		11/05/1994	2270
SURROGATE RESULTS	--						11/06/1994	2270
Bromofluorobenzene (SURR)	94			% Rec.	5030		11/06/1994	2270
METHOD M8015 (EXT., Liquid)						10/31/1994		
DILUTION FACTOR*	1						11/01/1994	834
as Diesel	3,200	DL	50	ug/L	3510		11/01/1994	834
as Motor Oil	ND		500	ug/L	3510		11/01/1994	834
Carbon Range:	C8-C20						11/01/1994	834

DL : The positive result appears to be a lighter hydrocarbon than Diesel.

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services  
 Client Acct: 1821  
 NET Job No: 94.05113

Date: 11/09/1994  
 ELAP Cert: 1386  
 Page: 11

Ref: 285 Hegenberger Rd., Oakland, 941025J2

SAMPLE DESCRIPTION: MW-10  
 Date Taken: 10/26/1994  
 Time Taken:  
 NET Sample No: 220688

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						11/05/1994	2270
DILUTION FACTOR*	1						11/07/1994	2270
as Gasoline	1,400		50	ug/L	5030		11/07/1994	2270
Carbon Range:	C5-C12						11/07/1994	2270
METHOD 8020 (GC,Liquid)	--						11/05/1994	2270
Benzene	290	FC	0.5	ug/L	8020		11/07/1994	2270
Toluene	5.0		0.5	ug/L	8020		11/07/1994	2270
Ethylbenzene	1.7		0.5	ug/L	8020		11/07/1994	2270
Xylenes (Total)	38		0.5	ug/L	8020		11/07/1994	2270
SURROGATE RESULTS	--						11/05/1994	2270
Bromofluorobenzene (SURR)	97			% Rec.	5030		11/07/1994	2270
METHOD M8015 (EXT., Liquid)						10/31/1994		
DILUTION FACTOR*	1						11/01/1994	834
as Diesel	1,000	DL	50	ug/L	3510		11/01/1994	834
as Motor Oil	ND		500	ug/L	3510		11/01/1994	834
Carbon Range:	C8-C20						11/01/1994	834

DL : The positive result appears to be a lighter hydrocarbon than Diesel.  
 FC : Compound quantitated at a 10X dilution factor.

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services  
 Client Acct: 1821  
 NET Job No: 94.05113

Date: 11/09/1994  
 ELAP Cert: 1386  
 Page: 12

Ref: 285 Hegenberger Rd., Oakland, 941025J2

SAMPLE DESCRIPTION: MW-11

Date Taken: 10/26/1994

Time Taken:

NET Sample No: 220689

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						11/05/1994	2270
DILUTION FACTOR*	1						11/05/1994	2270
as Gasoline	ND		50	ug/L	5030		11/05/1994	2270
Carbon Range:	--						11/05/1994	2270
METHOD 8020 (GC,Liquid)	--						11/05/1994	2270
Benzene	ND		0.5	ug/L	8020		11/05/1994	2270
Toluene	ND		0.5	ug/L	8020		11/05/1994	2270
Ethylbenzene	ND		0.5	ug/L	8020		11/05/1994	2270
Xylenes (Total)	ND		0.5	ug/L	8020		11/05/1994	2270
SURROGATE RESULTS	--						11/05/1994	2270
Bromofluorobenzene (SURR)	90			% Rec.	5030		11/05/1994	2270
METHOD M8015 (EXT., Liquid)						10/31/1994		
DILUTION FACTOR*	1						11/01/1994	834
as Diesel	100		50	ug/L	3510		11/01/1994	834
as Motor Oil	ND		500	ug/L	3510		11/01/1994	834
Carbon Range:	C10-C18						11/01/1994	834

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.





Client Name: Blaine Tech Services  
 Client Acct: 1821  
 NET Job No: 94.05113

Date: 11/09/1994  
 ELAP Cert: 1386  
 Page: 13

Ref: 285 Hegenberger Rd., Oakland, 941025J2

SAMPLE DESCRIPTION: MW-12

Date Taken: 10/26/1994

Time Taken:

NET Sample No: 220690

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch No.
TPH (Gas/BTXE, Liquid)								
METHOD 5030/M8015	--						11/04/1994	2262
DILUTION FACTOR*	1						11/04/1994	2262
as Gasoline	ND		50	ug/L	5030		11/04/1994	2262
Carbon Range:	--						11/04/1994	2262
METHOD 8020 (GC, Liquid)	--						11/04/1994	2262
Benzene	ND		0.5	ug/L	8020		11/04/1994	2262
Toluene	ND		0.5	ug/L	8020		11/04/1994	2262
Ethylbenzene	ND		0.5	ug/L	8020		11/04/1994	2262
Xylenes (Total)	ND		0.5	ug/L	8020		11/04/1994	2262
SURROGATE RESULTS	--						11/04/1994	2262
Bromofluorobenzene (SURR)	84			µ Rec.	5030		11/04/1994	2262
METHOD M8015 (EXT., Liquid)						10/31/1994		
DILUTION FACTOR*	1						11/01/1994	834
as Diesel	ND		50	ug/L	3510		11/01/1994	834
as Motor Oil	ND		500	ug/L	3510		11/01/1994	834
Carbon Range:	--						11/01/1994	834

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services  
 Client Acct: 1821  
 NET Job No: 94.05113

Date: 11/09/1994  
 ELAP Cert: 1386  
 Page: 14

Ref: 285 Hegenberger Rd., Oakland, 941025J2

SAMPLE DESCRIPTION: MW-13

Date Taken: 10/26/1994

Time Taken:

NET Sample No: 220691

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						11/05/1994	2270
DILUTION FACTOR*	1						11/05/1994	2270
as Gasoline	ND		50	ug/L	5030		11/05/1994	2270
Carbon Range:	--						11/05/1994	2270
METHOD 8020 (GC,Liquid)	--						11/05/1994	2270
Benzene	ND		0.5	ug/L	8020		11/05/1994	2270
Toluene	ND		0.5	ug/L	8020		11/05/1994	2270
Ethylbenzene	ND		0.5	ug/L	8020		11/05/1994	2270
Xylenes (Total)	ND		0.5	ug/L	8020		11/05/1994	2270
SURROGATE RESULTS	--						11/05/1994	2270
Bromofluorobenzene (SURR)	97			% Rec.	5030		11/05/1994	2270
METHOD M8015 (EXT., Liquid)						10/31/1994		
DILUTION FACTOR*	1						11/01/1994	834
as Diesel	ND		50	ug/L	3510		11/01/1994	834
as Motor Oil	ND		500	ug/L	3510		11/01/1994	834
Carbon Range:	--						11/01/1994	834

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services  
 Client Acct: 1821  
 NET Job No: 94.05113

Date: 11/09/1994  
 ELAP Cert: 1386  
 Page: 15

Ref: 285 Hegenberger Rd., Oakland, 941025J2

SAMPLE DESCRIPTION: DUP  
 Date Taken: 10/26/1994  
 Time Taken:  
 NET Sample No: 220692

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch No.
TPH (Gas/BTXE, Liquid)								
METHOD 5030/M8015	--						11/06/1994	2270
DILUTION FACTOR*	100						11/05/1994	2270
as Gasoline	31,000		5,000	ug/L	5030		11/05/1994	2270
Carbon Range:	C5-C12						11/05/1994	2270
METHOD 8020 (GC, Liquid)	--						11/06/1994	2270
Benzene	13,000	FI	50	ug/L	8020		11/06/1994	2270
Toluene	220		50	ug/L	8020		11/05/1994	2270
Ethylbenzene	1,100		50	ug/L	8020		11/05/1994	2270
Xylenes (Total)	8,300		50	ug/L	8020		11/05/1994	2270
SURROGATE RESULTS	--						11/06/1994	2270
Bromofluorobenzene (SURR)	85			% Rec.	5030		11/06/1994	2270
METHOD M8015 (EXT., Liquid)						10/31/1994		
DILUTION FACTOR*	1						11/01/1994	834
as Diesel	3,500	DL	50	ug/L	3510		11/01/1994	834
as Motor Oil	ND		500	ug/L	3510		11/01/1994	834
Carbon Range:	C8-C20						11/01/1994	834

DL : The positive result appears to be a lighter hydrocarbon than Diesel.  
 FI : Compound quantitated at a 1000X dilution factor.

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services  
 Client Acct: 1821  
 NET Job No: 94.05113

Date: 11/09/1994  
 ELAP Cert: 1386  
 Page: 16

Ref: 285 Hegenberger Rd., Oakland, 941025J2

SAMPLE DESCRIPTION: EB  
 Date Taken: 10/26/1994  
 Time Taken:  
 NET Sample No: 220693

Parameter	Results	Flags	Reporting Limit	Units	Method	Date Extracted	Date Analyzed	Run Batch No.
TPH (Gas/BTXE, Liquid)								
METHOD 5030/M8015	--						11/05/1994	2270
DILUTION FACTOR*	1						11/05/1994	2270
as Gasoline	ND		50	ug/L	5030		11/05/1994	2270
Carbon Range:	--						11/05/1994	2270
METHOD 8020 (GC, Liquid)								
Benzene	ND		0.5	ug/L	8020		11/05/1994	2270
Toluene	ND		0.5	ug/L	8020		11/05/1994	2270
Ethylbenzene	ND		0.5	ug/L	8020		11/05/1994	2270
Xylenes (Total)	ND		0.5	ug/L	8020		11/05/1994	2270
SURROGATE RESULTS								
Bromofluorobenzene (SURR)	79			% Rec.	5030		11/05/1994	2270
METHOD M8015 (EXT., Liquid)								
						10/31/1994		
DILUTION FACTOR*	1						11/01/1994	834
as Diesel	ND		50	ug/L	3510		11/01/1994	834
as Motor Oil	ND		500	ug/L	3510		11/01/1994	834
Carbon Range:	--						11/01/1994	834

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services  
Client Acct: 1821  
NET Job No: 94.05113

Date: 11/09/1994  
ELAP Cert: 1386  
Page: 17

Ref: 285 Hegenberger Rd., Oakland, 941025J2

SAMPLE DESCRIPTION: TB

Date Taken: 10/26/1994

Time Taken:

NET Sample No: 220694

Parameter	Results	Flags	Reporting		Method	Date	Date	Run
			Limit	Units		Extracted	Analyzed	Batch No.
TPH (Gas/BTXE,Liquid)								
METHOD 5030/M8015	--						11/04/1994	2262
DILUTION FACTOR*	1						11/04/1994	2262
as Gasoline	ND		50	ug/L	5030		11/04/1994	2262
Carbon Range:	--						11/04/1994	2262
METHOD 8020 (GC,Liquid)	--						11/04/1994	2262
Benzene	ND		0.5	ug/L	8020		11/04/1994	2262
Toluene	ND		0.5	ug/L	8020		11/04/1994	2262
Ethylbenzene	ND		0.5	ug/L	8020		11/04/1994	2262
Xylenes (Total)	ND		0.5	ug/L	8020		11/04/1994	2262
SURROGATE RESULTS	--						11/04/1994	2262
Bromofluorobenzene (SURR)	89			% Rec.	5030		11/04/1994	2262

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services  
Client Acct: 1821  
NET Job No: 94.05113

Date: 11/09/1994  
ELAP Cert: 1386  
Page: 18

Ref: 285 Hegenberger Rd., Oakland, 941025J2

## CONTINUING CALIBRATION VERIFICATION STANDARD REPORT

Parameter	CCV	CCV	Units	Date Analyzed	Analyst Initials
	Standard % Recovery	Standard Amount Found			
TPH (Gas/BTXE, Liquid)					
as Gasoline	104.0	1.04	1.00	11/04/1994	lss
Benzene	100.8	5.04	5.00	11/04/1994	lss
Toluene	100.8	5.04	5.00	11/04/1994	lss
Ethylbenzene	100.2	5.01	5.00	11/04/1994	lss
Xylenes (Total)	102.7	15.4	15.0	11/04/1994	lss
Bromofluorobenzene (SURR)	101.0	101	100	11/04/1994	lss
TPH (Gas/BTXE, Liquid)					
as Gasoline	105.0	1.05	1.00	11/05/1994	lss
Benzene	93.8	4.69	5.00	11/05/1994	lss
Toluene	92.8	4.64	5.00	11/05/1994	lss
Ethylbenzene	90.6	4.53	5.00	11/05/1994	lss
Xylenes (Total)	99.5	14.93	15.0	11/05/1994	lss
Bromofluorobenzene (SURR)	89.0	89	100	11/05/1994	lss
METHOD M8015 (EXT., Liquid)					
as Diesel	101.0	1010	1000	11/01/1994	tts
as Motor Oil	95.3	953	1000	11/01/1994	tts

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Blaine Tech Services  
Client Acct: 1821  
NET Job No: 94.05113

Date: 11/09/1994  
ELAP Cert: 1386  
Page: 19

Ref: 285 Hegenberger Rd., Oakland, 941025J2

## METHOD BLANK REPORT

Parameter	Method	Reporting	Units	Date	Analyst
	Blank				
	Amount	Limit		Analized	Initials
	Found				
TPH (Gas/BTXE,Liquid)					
as Gasoline	ND	0.05	mg/L	11/04/1994	lss
Benzene	ND	0.5	ug/L	11/04/1994	lss
Toluene	ND	0.5	ug/L	11/04/1994	lss
Ethylbenzene	ND	0.5	ug/L	11/04/1994	lss
Xylenes (Total)	ND	0.5	ug/L	11/04/1994	lss
Bromofluorobenzene (SURR)	97		% Rec.	11/04/1994	lss
TPH (Gas/BTXE,Liquid)					
as Gasoline	ND	0.05	mg/L	11/05/1994	lss
Benzene	ND	0.5	ug/L	11/05/1994	lss
Toluene	ND	0.5	ug/L	11/05/1994	lss
Ethylbenzene	ND	0.5	ug/L	11/05/1994	lss
Xylenes (Total)	ND	0.5	ug/L	11/05/1994	lss
Bromofluorobenzene (SURR)	91		% Rec.	11/05/1994	lss
METHOD M8015 (EXT., Liquid)					
as Diesel	ND	0.05	mg/L	11/01/1994	tts
as Motor Oil	ND	0.5	mg/L	11/01/1994	tts

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



Client Name: Elaine Tech Services  
 Client Acct: 1821  
 NET Job No: 94.05113

Date: 11/09/1994  
 ELAP Cert: 1386  
 Page: 20

Ref: 285 Hegenberger Rd., Oakland, 941025J2

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE

Parameter	Matrix Spike			Spike Amount	Sample Conc.	Matrix Spike		Units	Date Analyzed	Analyst Initials
	Matrix Spike % Rec.	Spike Dup % Rec.	RPD			Matrix Spike Conc.	Spike Dup. Conc.			
TPH (Gas/BTXE, Liquid)										
as Gasoline	102.0	102.0	0.0	1.00	ND	1.02	1.02	mg/L	11/04/1994	lss
Benzene	97.3	99.3	2.0	30.0	ND	29.2	29.8	ug/L	11/04/1994	lss
Toluene	95.8	96.8	1.0	91.8	ND	87.9	88.9	ug/L	11/04/1994	lss
TPH (Gas/BTXE, Liquid)										
as Gasoline	101.0	101.0	0.0	1.00	ND	1.01	1.01	mg/L	11/05/1994	dfw
Benzene	104.2	100.0	4.1	19.0	ND	19.8	19.0	ug/L	11/05/1994	dfw
Toluene	105.5	103.8	1.6	79.6	ND	84.0	82.6	ug/L	11/05/1994	dfw
TPH (Gas/BTXE, Liquid)										
as Gasoline	105.0	96.0	8.9	1.00	ND	1.05	0.96	mg/L	11/05/1994	lss
Benzene	100.3	100.0	0.3	28.8	ND	28.9	28.8	ug/L	11/05/1994	lss
Toluene	98.2	96.0	2.3	90.7	ND	89.1	87.1	ug/L	11/05/1994	lss
METHOD M8015 (EXT., Liquid)										
as Diesel	N/A	N/A	5.4		3.9			mg/L	11/01/1994	tts

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.





Client Name: Blaine Tech Services

Client Acct: 1821

NET Job No: 94.05113

Date: 11/09/1994

ELAP Cert: 1386

Page: 21

Ref: 285 Hegenberger Rd., Oakland, 941025J2

## LABORATORY CONTROL SAMPLE REPORT

<u>Parameter</u>	<u>LCS</u> <u>% Recovery</u>	<u>RPD</u>	<u>LCS</u> <u>Amount</u> <u>Found</u>	<u>LCS</u> <u>Amount</u> <u>Expected</u>	<u>Units</u>	<u>Date</u> <u>Analyzed</u>	<u>Analyst</u> <u>Initials</u>
METHOD M8015 (EXT., Liquid) as Diesel	73.8		0.738	1.00	mg/L	11/01/1994	tts

NOTE: Results apply only to the samples analyzed. Reproduction of this report is permitted only in its entirety.



® KEY TO ABBREVIATIONS and METHOD REFERENCES

- < : Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
- \* : Reporting Limits are a function of the dilution factor for any given sample. Actual reporting limits and results have been multiplied by the listed dilution factor. Do not multiply the reporting limits or reported values by the dilution factor.
- dw : Result expressed as dry weight.
- mean : Average; sum of measurements divided by number of measurements.
- mg/Kg (ppm) : Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
- mg/L : Concentration in units of milligrams of analyte per liter of sample.
- mL/L/hr : Milliliters per liter per hour.
- MPN/100 mL : Most probable number of bacteria per one hundred milliliters of sample.
- N/A : Not applicable.
- NA : Not analyzed.
- ND : Not detected; the analyte concentration is less than the applicable listed reporting limit.
- NTU : Nephelometric turbidity units.
- RPD : Relative percent difference,  $100 \text{ [Value 1 - Value 2] / mean value}$ .
- SNA : Standard not available.
- ug/Kg (ppb) : Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
- ug/L : Concentration in units of micrograms of analyte per liter of sample.
- umhos/cm : Micromhos per centimeter.

Method References

Methods 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, Rev. 1983.

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, Rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986., Rev. 1, December 1987.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

Temp Rec'd 2.1°  
4.2°

COOLER RECEIPT FORM

Project: 941025J2 Log No: 3402  
Cooler received on: 10/28/94 and checked on 10/28/94 by Pam Greene  
Pam Greene  
(signature)

- Were custody papers present?.....  YES NO
  - Were custody papers properly filled out?.....  YES NO
  - Were the custody papers signed?.....  YES NO
  - Was sufficient ice used?.....  YES NO
  - Did all bottles arrive in good condition (unbroken)?.....  YES NO
  - Did bottle labels match COC?.....  YES NO
  - Were proper bottles used for analysis indicated?.....  YES NO
  - Correct preservatives used?.....  YES NO
  - VOA vials checked for headspace bubbles?.....  YES NO
- Note which voas (if any) had bubbles:\*

Sample descriptor:

Number of vials:

Trip Blank  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

1 of 2  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\*All VOAs with headspace bubbles have been set aside so they will not be used for analysis..... YES NO

List here all other jobs received in the same cooler:

Client Job #	NET log #
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

(coolerrec)

# SHELL WELL MONITORING DATA SHEET

Project #: 94 10 25 J2	Wic # 204-5508-5504
Sampler: J.G.	Date Sampled: 10/26/94
Well I.D.: MW-1	Well Diameter: (circle one) 2 3 <b>4</b> 6
Total Well Depth: Before 9.36 After	Depth to Water: Before 4.07 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to:	<input checked="" type="radio"/> FVC <input type="radio"/> Grade <input type="radio"/> Other --

Volume Conversion Factor (VCF):  
 $(2.31 \times (d^2/4) \times \pi) / 2.31$   
 where  
 d = diameter (in.)  
 π = 3.1416  
 2.31 = 2.31/gal

Well dia.	VCF
2"	0.26
3"	0.57
4"	0.85
6"	1.57
8"	2.54
10"	3.98
12"	5.97

3.4	x	3	=	10.2	gallons
1 Case Volume		Specified Volumes			

Purging: Bailer  Middleburg  Electric Submersible  Suction Pump  Type of Installed Pump \_\_\_\_\_

Sampling: Bailer  Middleburg  Electric Submersible  Suction Pump  Installed Pump

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
15:30	71.2	7.0	1100	19.	4	
15:40	70.2	7.0	1000	22.	8	ODOR
15:43	70.0	7.0	900	21.	12	

Did Well Dewater?  No If yes, gals.      Gallons Actually Evacuated: 12

Sampling time: 15:50

Sample I.D.: MW-1      Laboratory: NET

Analyzed for: TPHG, BTEX, TPHD, M.O.

Duplicate I.D.:      Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations:

# SHELL WELL MONITORING DATA SHEET

Project #: 94102502	Wic # 204-3508-6504
Sampler: J.G.	Date Sampled: 10/26/94
Well I.D.: MW-2	Well Diameter: (circle one) 2 3 <u>4</u> 6
Total Well Depth: Before 9.60 After	Depth to Water: Before 6.73 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: <u>PVC</u>	Grade Other --

Volume Conversion Factor (VCF):  
 $VCF = (d^2/7.48) \times \pi/4$   
 where:  
 d = in./foot  
 d = diameter (in.)  
 π = 3.1416  
 ππ = 9.8726

Well Dia.	VCF
2"	0.26
3"	0.57
4"	0.98
6"	2.47
8"	4.80
10"	7.75

1.8	x	3	=	5.4	gallons
1 Case Volume		Specified Volumes			

Purging: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
--	--

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
13:35	67.0	7.3	710000	37.	2	ODOR
13:38	66.4	7.3	710000	59.	4	
13:43	66.2	7.2	9000	132.	6	

Did Well Dewater? NO If yes, gals. Gallons Actually Evacuated: 6

Sampling Time: 13:50

Sample I.D.: MW-2 Laboratory: NET

Analyzed for: TPHG, BTEX, TPHD, M.O.

Duplicate I.D.: \_\_\_\_\_ Cleaning Blank I.D.: \_\_\_\_\_

Analyzed for: \_\_\_\_\_

Shipping Notations: \_\_\_\_\_

Additional Notations: \_\_\_\_\_

# SHELL WELL MONITORING DATA SHEET

Project #: 94102502	Wic # 204-5508-5504
Sampler: J.G.	Date Sampled: 10/26/94
Well I.D.: MW-3	Well Diameter: (circle one) 2 3 <b>4</b> 6
Total Well Depth: Before 9.47 After	Depth to Water: Before 6.48 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to:	<input checked="" type="checkbox"/> PVC      Grade      Other --

Volume Conversion Factor (VCF):  
 $VCF = (d^2/4) \times \pi / 231$   
 where  
 d = diameter (in.)  
 $\pi = 3.1416$   
 231 = cu. ft./gal

Well Dia.	VCF
2"	0.14
3"	0.33
4"	0.51
5"	0.79
6"	1.07

1.9	x	3	=	5.7	gallons
1 Case Volume		Specified Volumes			

Purging: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
--	--

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
13:00	67.6	7.8	2000	13.	2	ODOR
13:04	66.8	7.6	1800	19.	4	
13:08	66.0	7.6	1600	14.	6	

Did Well Dewater? **NO** If yes, gals.      Gallons Actually Evacuated: **6**

Sampling Time: **13:15**

Sample I.D.: **MW-3**      Laboratory: **NET**

Analyzed for: **TPAG, BTX, TPHD, M.O.**

Duplicate I.D.:      Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations:

# SHELL WELL MONITORING DATA SHEET

Project #: 94102502	Wic # 204-5508-5504
Sampler: J.G.	Date Sampled: 10/26/94
Well I.D.: MW-4	Well Diameter: (circle one) 2 3 <b>4</b> 6
Total Well Depth: Before 10.12 After	Depth to Water: Before 7.53 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to:	<input checked="" type="checkbox"/> PVC <input type="checkbox"/> Grade <input type="checkbox"/> Other --

Volume Conversion Factor (VCF):  
 $(12 \times (\pi^2/4) \times \pi) / 2.31$   
 Where  
 12 = in./foot  
 π = diameter (in.)  
 π = 3.1416  
 2.31 = in./gallon

Well dia.	VCF
2"	0.24
3"	0.37
4"	0.48
6"	1.07
8"	1.90
10"	2.94
12"	4.24

1.7	x	3	=	5.1	gallons
1 Case Volume		Specified Volumes			

Purging: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
--	--

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
12:10	64.4	7.5	5000	36.	2	
	-WELL DEWATERED AT			2 GAL.	-	
17:24	-RETURNED TO SAMPLE-					D.T.W. - 8.90
	66.4	7.8	1100	05.	1	

Did Well Dewater  YES If yes, gals. 2      Gallons Actually Evacuated: 3

Sampling Time: 17:27

Sample I.D.: MW-4      Laboratory: NET

Analyzed for: TPH, BTEX, TPAD, M.O.

Duplicate I.D.:      Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations:

# SHELL WELL MONITORING DATA SHEET

Project #: <u>94102502</u>		Wic # <u>204-5508-5504</u>	
Sampler: <u>JIG</u>		Date Sampled: <u>10/26/94</u>	
Well I.D.: <u>MW-5</u>		Well Diameter: (circle one) 2 3 <u>4</u> 6	
Total Well Depth: Before <u>9.72</u> After		Depth to Water: Before <u>6.16</u> After	
Depth to Free Product:		Thickness of Free Product (feet):	
Measurements referenced to: <u>PVC</u> Grade      Other --			

Volume Conversion Factor (VCF):  
 $VCF = (d^2/4) \times \pi / 2.31$   
 where  
 V = cu. feet  
 d = diameter (in.)  
 π = 3.1416  
 2.31 = inch/gal

Well dia.	VCF
2"	0.34
3"	0.77
4"	1.04
6"	2.47
8"	4.08
12"	8.17

<u>2.3</u>	$\times$	<u>3</u>	$=$	<u>6.9</u>	gallons
1 Case Volume		Specified Volumes			

Purging: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
--	--

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
<u>15:05</u>	<u>66.8</u>	<u>7.0</u>	<u>710000</u>	<u>20.</u>	<u>3</u>	
<u>15:10</u>	<u>67.0</u>	<u>7.0</u>	<u>8200</u>	<u>14.</u>	<u>6</u>	
<u>15:14</u>	<u>67.2</u>	<u>7.0</u>	<u>8100</u>	<u>17.</u>	<u>9</u>	

Did Well Dewater? NO If yes, gals.      Gallons Actually Evacuated: 9

Sampling Time: 15:20

Sample I.D.: MW-5      Laboratory: NET

Analyzed for: TPAE, BTEX, TPAD, M.O.

Duplicate I.D.:      Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations:



# SHELL WELL MONITORING DATA SHEET

Project #: <u>941025JR</u>	Wic # <u>204-5508-5504</u>
Sampler: <u>J.G.</u>	Date Sampled: <u>10/26/94</u>
Well I.D.: <u>MW-6</u>	Well Diameter: (circle one) 2 3 <b>4</b> 6
Total Well Depth: Before <u>11.00</u> After	Depth to Water: Before <u>6.24</u> After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to:	<input checked="" type="checkbox"/> PVC <input type="checkbox"/> Grade <input type="checkbox"/> Other --

Volume Conversion Factor (VCF):  
 $(2.31 \times (\frac{d^2}{4}) \times \pi) / 2.31$   
 where  
 2.31 = in./foot  
 d = diameter (in.)  
 π = 3.1416  
 2.31 = in./foot

Well dia.	VCF
2"	0.16
3"	0.37
4"	0.61
6"	1.47
8"	2.68
10"	4.34
12"	6.47

<u>3.1</u>	x	<u>3</u>	=	<u>9.3</u>
1 Case Volume		Specified Volumes		gallons

Purging: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
--	--

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
<u>14:35</u>	<u>66.4</u>	<u>7.4</u>	<u>1000</u>	<u>18.</u>	<u>4</u>	
<u>14:40</u>	<u>66.0</u>	<u>7.0</u>	<u>1100</u>	<u>17.</u>	<u>8</u>	
<u>14:44</u>	<u>65.6</u>	<u>7.0</u>	<u>1000</u>	<u>17.</u>	<u>12</u>	

Did Well Dewater? NO If yes, gals.      Gallons Actually Evacuated: 12

Sampling Time: 14:30

Sample I.D.: MW-6      Laboratory: NET

Analyzed for: TPAG, BTEX, TPHD, M.O.

Duplicate I.D.:      Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations:

# SHELL WELL MONITORING DATA SHEET

Project #: 941025J2	Wic # 204-5505-5504
Sampler: JIG,	Date Sampled: 10/26/94
Well I.D.: MW-7	Well Diameter: (circle one) 2 3 <b>4</b> 6
Total Well Depth: Before 9.99 After	Depth to Water: Before 5.07 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to:	<input checked="" type="checkbox"/> PVC <input type="checkbox"/> Grade <input type="checkbox"/> Other --

Volume Conversion Factor (VCF):  
 $VCF = (C^2/4) \times \pi / 33$   
 where  
 C = diameter (in.)  
 π = 3.1416  
 33 = 12/ft

Well dia.	VCF
2"	0.24
3"	0.37
4"	0.48
6"	0.87
8"	1.47
10"	2.08
12"	2.87

3.2	x	3	=	9.6	gallons
1 Case Volume		Specified Volumes			

Purging: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
--	--

TIME	TEMP. (F)	PH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
16:00	64.2	7.0	1600	15.	4	ODOR
16:07	64.0	7.0	1200	10.	8	
16:09	64.0	7.1	1400	08.	12	

Did Well Dewater? **NO** If yes, gals.      Gallons Actually Evacuated: **12**

Sampling Time: **16:15**

Sample I.D.: **MW-7**      Laboratory: **NET**

Analyzed for: **TPAG, BTEX, TPAD, M.O.**

Duplicate I.D.:      Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations:

# SHELL WELL MONITORING DATA SHEET

Project # <b>94102502</b>		Wic # <b>204-5508-5504</b>	
Sampler: <b>J.G.</b>		Date Sampled: <b>10/26/94</b>	
Well I.D.: <b>MW-8</b>		Well Diameter: (circle one) 2 3 <b>4</b> 6	
Total Well Depth: Before <b>9.96</b> After		Depth to Water: Before <b>7.43</b> After	
Depth to Free Product:		Thickness of Free Product (feet):	
Measurements referenced to: <b>PVC</b> Grade Other --			

Volume Conversion Factor (VCF):  
 $VCF = (d^2/4) \times \pi / 2.31$   
 where  
 $d = \text{in./foot}$   
 $d = \text{diameter (in.)}$   
 $\pi = 3.1416$   
 $2.31 = \text{ft./gal}$

Well dia.	VCF
2"	0.16
3"	0.37
4"	0.63
6"	1.47
8"	3.04
10"	5.17

<u>1.16</u>	x	<u>3</u>	=	<u>4.8</u>
1 Case Volume		Specified Volumes		gallons

Purging: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
--	--

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
12:20	66.4	7.3	6000	25.	2	
	- WEL DEWATERED AT 2 GAL. -					
17:45	- RETURNED TO SAMPLE -					
	65.2	7.8	5200	03.	1	D.T.W. - 8.80

Did Well Dewater? **YES** If yes, gals. **2** Gallons Actually Evacuated: **3**

Sampling Time: **17:50**

Sample I.D.: **MW-8**

Laboratory: **NET**

Analyzed for: **TPH, BTEX, TPH, M.O.**

Duplicate I.D.:

Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations:

# SHELL WELL MONITORING DATA SHEET

Project #: 941025J2	Wic # 204-5508-6504
Sampler: J.G.	Date Sampled: 10/26/94
Well I.D.: MW-9	Well Diameter: (circle one) 2 3 <b>4</b> 6
Total Well Depth: Before 10.75 After	Depth to Water: Before 6.00 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to:	<input checked="" type="checkbox"/> PVC <input type="checkbox"/> Grade <input type="checkbox"/> Other --

Volume Conversion Factor (VCF):  
 $VCF = ((D^2/4) \times \pi) / 231$   
 where  
 D = dia./feet  
 C = diameter (in.)  
 $\pi = 3.1416$   
 231 = in<sup>3</sup>/gal

Well dia.	VCF
2"	0.15
3"	0.33
4"	0.45
6"	1.01
8"	1.60
12"	2.97

<u>3.0</u>	x	<u>3</u>	=	<u>9.0</u>
1 Case Volume		Specified Volumes		gallons

Purging: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
--	--

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
12:40	65.0	7.3	4200	19.	3	ODOR
	- WELL DEWATERED AT 3 GAL.					
18:10						D.T.W. - 8.18
	63.4	7.8	3800	47	1	

Did Well Dewater? **YES** If yes, gals. **3**      Gallons Actually Evacuated: **4**

Sampling Time: **18:15**

Sample I.D.: MW-9      Laboratory: **NET**

Analyzed for: **TPHG, BTEX, TPHD, M.O.**

Duplicate I.D.: **DUP @ 18:15**      Cleaning Blank I.D.:

Analyzed for: **TPHG, BTEX, TPHD, M.O.**

Shipping Notations:

Additional Notations:

# SHELL WELL MONITORING DATA SHEET

Project #: <u>941025J2</u>	Wic # <u>204-5508-5504</u>
Sampler: <u>J.G.</u>	Date Sampled: <u>10/26/94</u>
Well I.D.: <u>MW-10</u>	Well Diameter: (circle one) 2 3 <u>(4)</u> 6
Total Well Depth: Before <u>9.96</u> After	Depth to Water: Before <u>6.64</u> After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to: <u>(PVC)</u> Grade Other --	

Volume Conversion Factor (VCF):  
 $(2.31 \times (d^2/4) \times \pi) / 2.31$   
 where  
 $d = \text{in./ft.}$   
 $d = \text{diameter (in.)}$   
 $\pi = 3.1416$   
 $2.31 = \text{ft./in.}$

Well dia.	VCF
2"	0.24
3"	0.37
4"	0.48
6"	0.67
8"	0.90
10"	1.17

<u>2.12</u>	$\times$	<u>3</u>	$=$	<u>6.36</u>
1 Case Volume		Specified Volumes		gallons

Purging: Bailer  Middleburg   
 Electric Submersible   
 Suction Pump   
 Type of Installed Pump \_\_\_\_\_

Sampling: Bailer  Middleburg   
 Electric Submersible   
 Suction Pump   
 Installed Pump

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
<u>14:15</u>	<u>71.0</u>	<u>7.1</u>	<u>2100</u>	<u>33.</u>	<u>3</u>	
<u>14:21</u>	<u>69.8</u>	<u>7.0</u>	<u>2000</u>	<u>37.</u>	<u>6</u>	<u>ODOR</u>
<u>14:26</u>	<u>69.0</u>	<u>7.0</u>	<u>2000</u>	<u>53.</u>	<u>9</u>	

Did Well Dewater? NO If yes, gals. Gallons Actually Evacuated: 9

Sampling Time: 14:30

Sample I.D.: MW-10

Laboratory: NET

Analyzed for: TPHG, BTEX, TPHD, M.O.

Duplicate I.D.:

Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations:

# SHELL WELL MONITORING DATA SHEET

Project #: 94 10 2501	Wic # 204-5508-5504
Sampler: J.G.	Date Sampled: 10/26/94
Well I.D.: MW-11	Well Diameter: (circle one) 2 3 <b>4</b> 6
Total Well Depth: Before 13.89 After	Depth to Water: Before 8.67 After
Depth to Free Product:	Thickness of Free Product (feet):
Measurements referenced to:	<input checked="" type="checkbox"/> EVC <input type="checkbox"/> Grade <input type="checkbox"/> Other --

Volume Conversion Factor (VCF):  
 $VCF = (d^2/4) \times \pi / 231$   
 where  
 $d = \text{in./ft.}$   
 $d = \text{diameter (in.)}$   
 $\pi = 3.1416$   
 $231 = \text{in.}^3/\text{gal.}$

Well dia.	VCF
2"	0.24
3"	0.37
4"	0.48
6"	1.47
12"	4.08
24"	16.32

3.3	x	3	=	9.9
1 Case Volume		Specified Volumes		gallons

Purging: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Type of Installed Pump _____	Sampling: Bailer <input checked="" type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible <input type="checkbox"/> Suction Pump <input type="checkbox"/> Installed Pump <input type="checkbox"/>
--	--

TIME	TEMP. (F)	pH	COND.	TURBIDITY:	VOLUME REMOVED:	OBSERVATIONS:
11:00	62.6	6.8	710000	26.	4	
11:10	61.6	6.8	710000	30.	8	
	- WELL DEWATERED AT 8 GAL. -					
16:49	- RETURNED TO SAMPLE -					
	62.8	7.4	710000	03.	1	D.T.W. - 10.40

Did Well Dewater? **YES** If yes, gals. **8**      Gallons Actually Evacuated: **9**

Sampling Time: **16:50**

Sample I.D.: **MW-11**      Laboratory: **NET**

Analyzed for: **TPH, BTEX, TPA, M.O.**

Duplicate I.D.:      Cleaning Blank I.D.:

Analyzed for:

Shipping Notations:

Additional Notations: