Weiss Associates
Environmental and Geologic Services
5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone: 510-450-6000

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October 11, 1993

Dennis Byrne
Alameda County Department of
Environmental Health
80 Swan Way, Room 200
Oakland, California 94621-1426

STID 381

Re: Shell Service Station
WIC #204-5508-5306
3420 San Pablo Avenue
Oakland, California
WA Job #81-612-203

Dear Mr. Byrne:

This letter describes recently completed and anticipated activities at the Shell service station referenced above (Figure 1.) This status report satisfies the quarterly reporting requirements prescribed by California Administrative Code Title 23 Waters, Chapter 3, Subchapter 16, Article 5, Section 265.d. Included below are descriptions and results of activities performed in the third quarter 1993 and proposed work for the fourth quarter 1993.

Third Quarter 1993 Activities:

- Blaine Tech Services (BTS) of San Jose, California measured ground water depths in nine of the eleven site wells and collected ground water samples from seven of the wells. Wells MW-9 and MW-11 were recently paved over and could not be sampled. Two of the wells contained floating hydrocarbons and were not sampled. BTS' report describing these activities and presenting analytic results for ground water is included as Attachment A.

- BTS purged a total of 1.09 gallons of floating hydrocarbons from wells MW-1 and MW-4 this quarter (Table 1). To date, about 2.13 gallons of floating hydrocarbons have been removed by purging the wells and by floating hydrocarbon skimmers.

- WA prepared a ground water elevation contour map for wells screened in the first water bearing zone (Figure 2). Since wells MW-1, MW-3, MW-4 and MW-5 are screened slightly deeper than the other site wells, these wells are contoured separately (Figure 3).

- WA relocated wells MW-9 and MW-11 and reset the well vaults to grade on July 21, 1993.

Anticipated Fourth Quarter 1993 Activities:

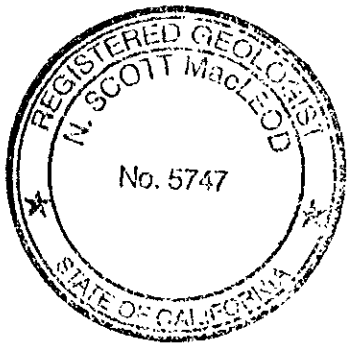
- WA will submit a report presenting the results of the fourth quarter 1993 ground water sampling and ground water depth measurements. The report will include tabulated chemical analytic results, floating hydrocarbons removal data and ground water elevation contour maps.

- Floating hydrocarbon skimmers are installed in wells MW-1, MW-2, MW-4 and MW-6. The skimmers will be purged of hydrocarbons quarterly until no floating hydrocarbons are measured in these wells. Hydrocarbon volumes purged will be tabulated in subsequent quarterly status reports.

Conclusions and Recommendations:

Ground water elevations have decreased by about two feet compared to second quarter. This elevation decrease probably resulted in the reversal of apparent ground water flow in the wells on the northern portion of the site compared to last quarter. We will monitor ground water elevations in upcoming quarters to assess whether this trend continues. WA will also monitor the floating hydrocarbon thickness and begin monthly floating hydrocarbon purging if the skimmers do not appear to be sufficient to remove floating hydrocarbons.

Please call if you have any questions.



Sincerely,
Weiss Associates

J. Michael Asport
Technical Assistant

N. Scott MacLeod, R.G.
Project Geologist

JMA/NSN:jma

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Attachments: A - BTS' Associates Ground Water Monitoring Report

cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, California 94520-9998
Lisa McCann, California Regional Water Quality Control Board, San Francisco Bay Region, 2101 Webster Street, Suite 500, Oakland, California 94612

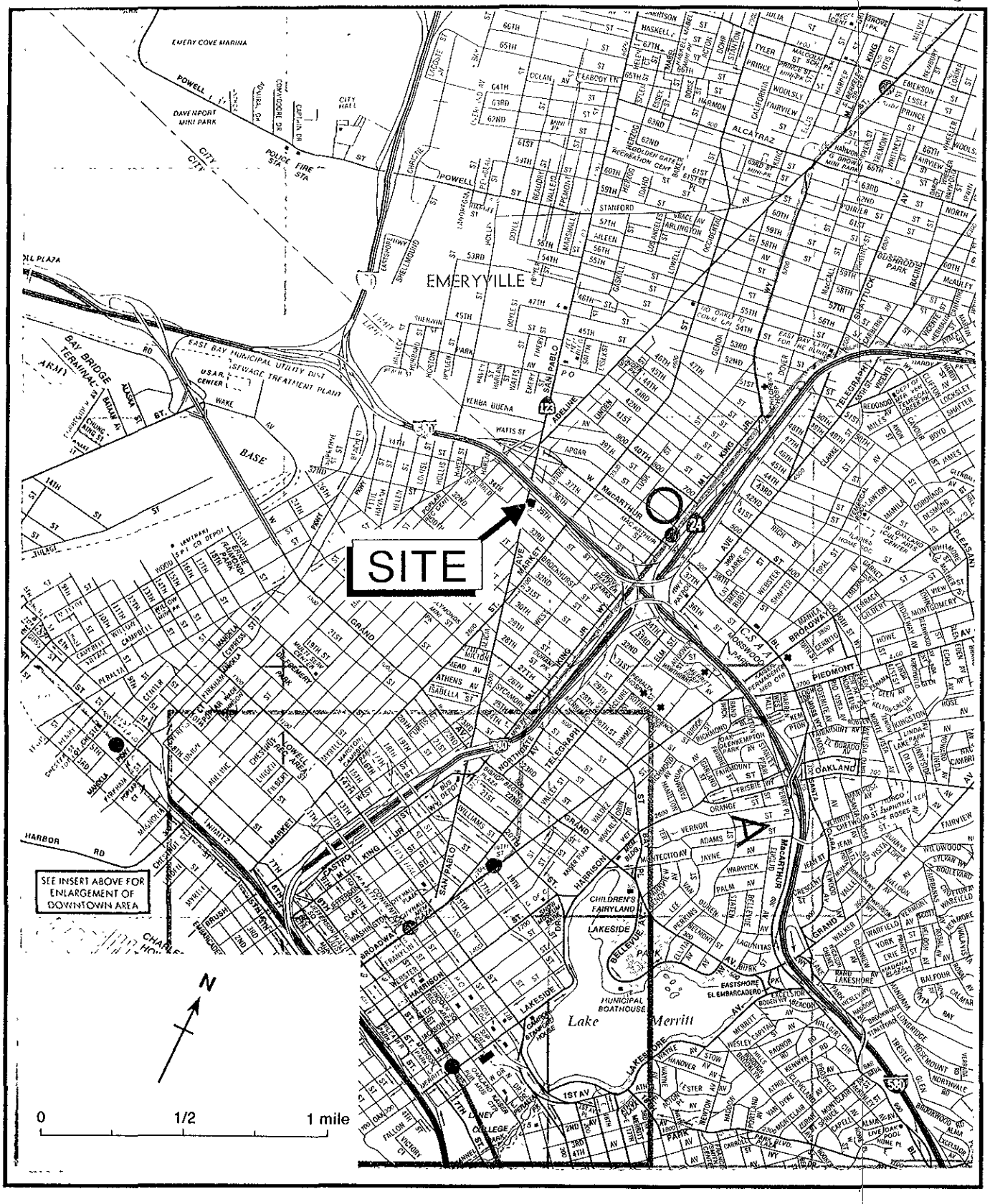

Figure 1. Site Location Map - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

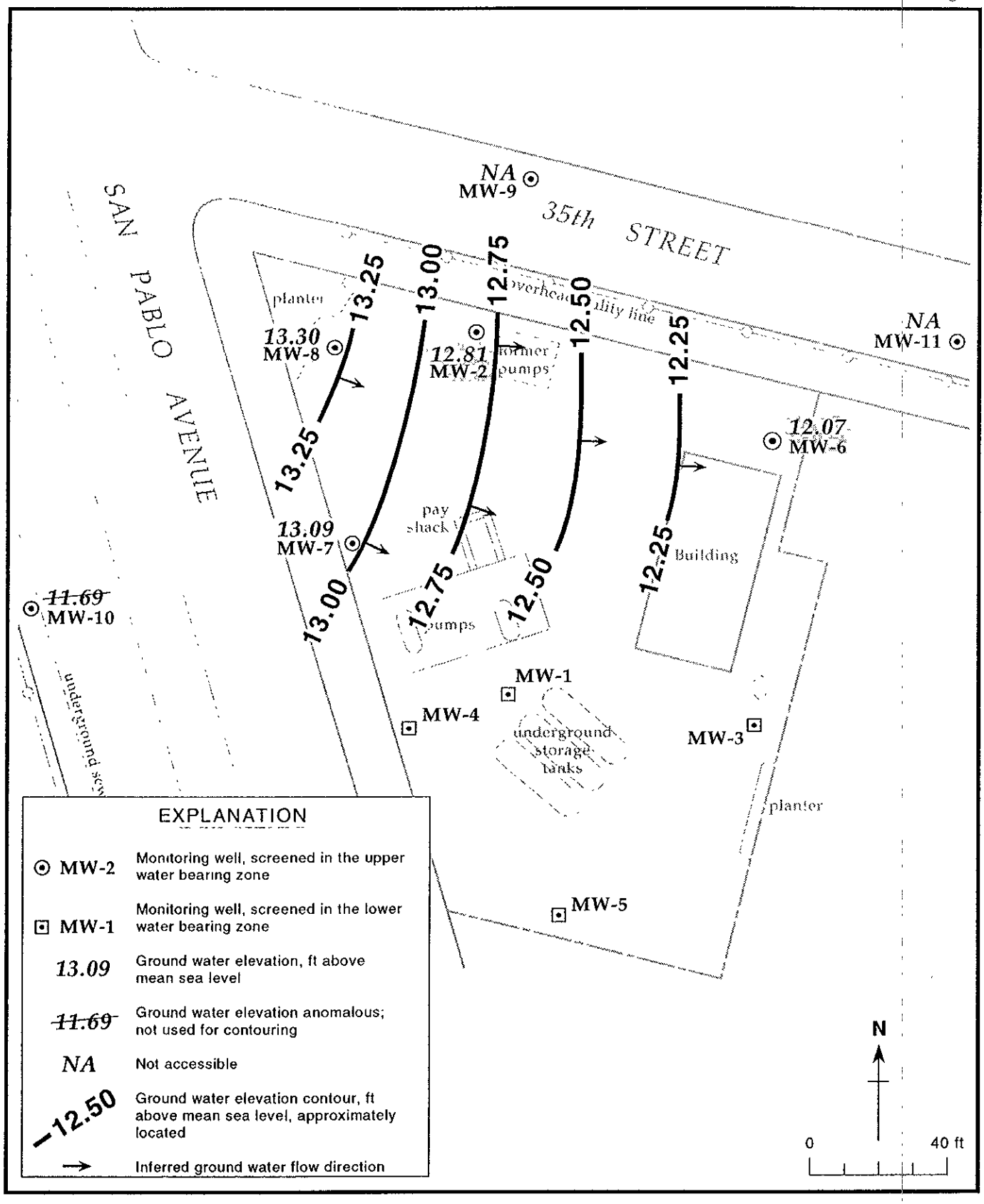

Figure 2. Monitoring Well Locations and Ground Water Elevation Contours, Upper Water Bearing Zone - July 12, 1993 - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

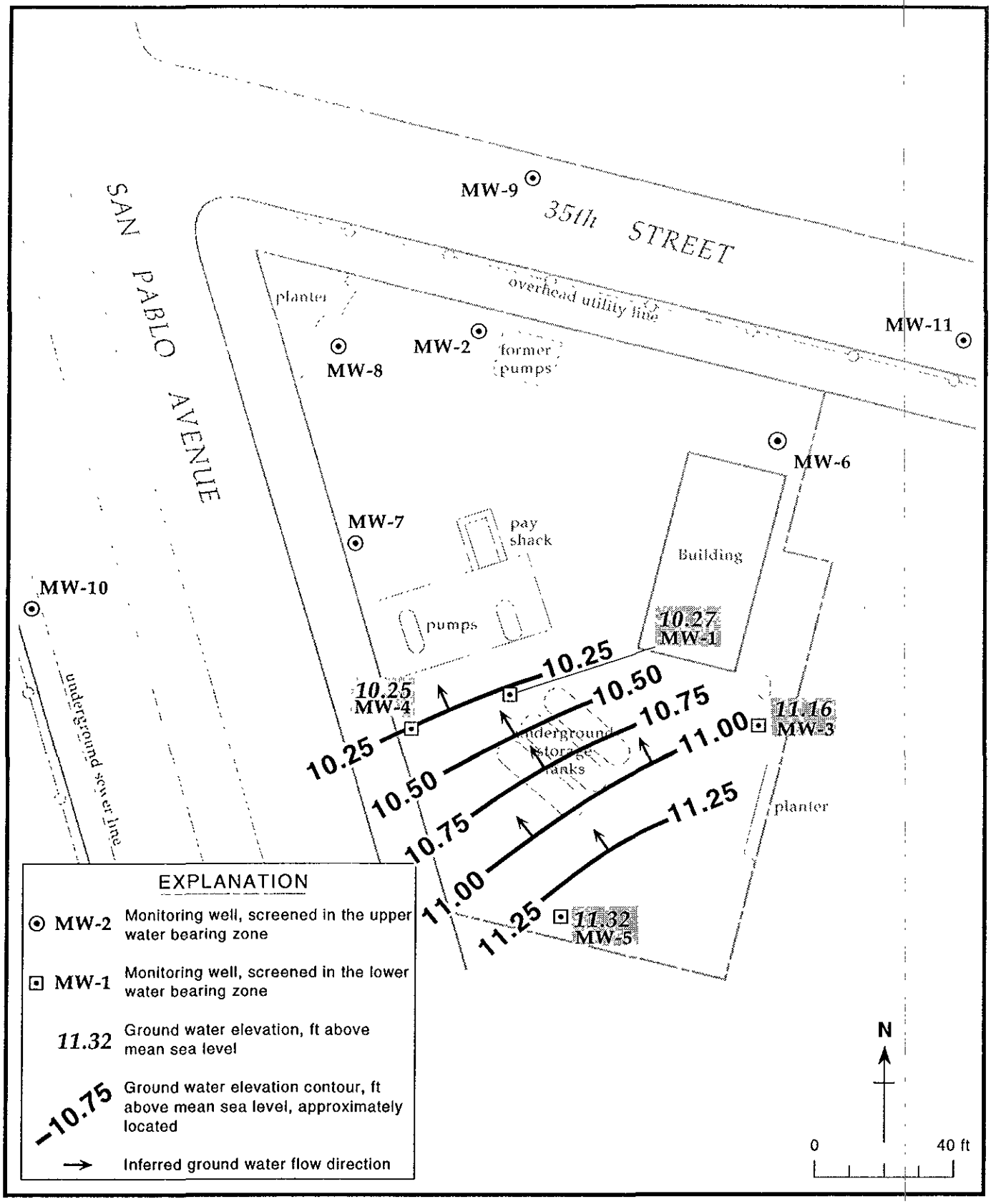

Figure 3. Monitoring Well Locations and Ground Water Elevation Contours, Lower Water Bearing Zone - July 12, 1993 - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

Table 1. Floating Hydrocarbon Removal - Shell Service Station WIC #204-5508-5306, 3420 San Pablo, Avenue, Oakland, California

Well ID	Date	Floating Hydrocarbon Thickness (ft)	Vol. of Floating Hydrocarbon Removed (gal)	Cumulative Volume of Floating Hydrocarbons Removed (gal)
MW-1	10/23/91	0.01	---	---
	05/04/92	<0.01	---	---
	10/12/92	0.09	---	---
	01/12/93	0.02	0.52	0.52
	04/06/93	<0.01	0.13	0.65
	07/12/93	**0.01**	**0.03**	**0.68**
MW-2	10/12/92	0.03	---	---
	01/12/93	0.01	0.26	0.26
	04/06/93	<0.01	0.13	0.39
MW-4	10/12/92	0.78	---	---
	01/12/93	1.0	---	---
	04/06/93	0.95	b	---
	07/12/93	**0.03**	**1.06**	**1.06**
MW-5	10/12/92	0.01	---	---
	01/12/93	<0.01	---	---
MW-6	10/12/92	0.48	---	---
	01/12/93	<0.01	---	---
		Total Floating Hydrocarbons Removed		2.13

Note:

b = Not purged by sampling consultant, floating hydrocarbon skimmer installed on this date.

Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306, 3420 San Pablo, Avenue, Oakland, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Floating Hydrocarbon Thickness	Ground Water Elevation (ft above msl)
MW-1	08/06/91	21.28	10.86	---	10.43
	10/23/91		11.05	0.01	10.24[a]
	01/28/92		10.84	---	10.44
	05/04/92		9.42	<0.01	11.86
	07/13/92		11.36	---	9.92
	10/12/92		13.14	0.09	8.21[a]
	01/12/93		7.52	0.02	13.78[a]
	04/06/93		7.13	<0.01	14.16[a]
	07/12/93		**11.02**	**0.01**	**10.27[a]**
MW-2	08/06/91	21.56	9.72	---	11.84
	10/23/91		10.03	---	11.53
	01/28/92		8.78	---	12.78
	05/04/92		7.58	---	13.98
	07/13/92		9.63	---	11.93
	10/12/92		11.66	0.03	9.92[a]
	01/12/93		7.13	0.01	14.44[a]
	04/06/93		6.40	<0.01	15.17[a]
	07/12/93		**8.75**	**---**	**12.81**
MW-3	08/06/91	21.78	11.18	---	10.60
	10/23/91		11.69	---	10.09
	01/28/92		9.99	---	11.79
	05/04/92		9.46	---	12.32
	07/13/92		11.29	---	10.49
	10/12/92		13.10	---	8.68
	01/12/93		7.32	---	14.46
	04/06/93		7.44	---	14.34
	07/12/93		**10.62**	**---**	**11.16**
MW-4	08/06/91	20.31	10.57	---	9.74
	10/23/91		10.46	---	9.85
	01/28/92		9.54	---	10.77
	05/04/92		8.33	---	11.98
	07/13/92		9.87	---	10.44
	10/12/92		12.43	0.78	8.50[a]
	01/12/93		7.12	1.0	13.99[a]
	04/06/93		7.23	0.95	13.84[a]
	07/12/93		**10.08**	**0.03**	**10.25[a]**

-- Table 2 continues on next page --

Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306, 3420 San Pablo, Avenue, Oakland, California (continued)

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Floating Hydrocarbon Thickness	Ground Water Elevation (ft above msl)
MW-5	08/06/91	20.91	10.23	---	10.68
	10/23/91		10.89	---	10.02
	01/28/92		8.45	---	12.46
	05/04/92		8.05	---	12.86
	07/13/92		10.00	---	10.91
	10/12/92		11.83	0.01	9.09[a]
	01/12/93		6.10	<0.01	14.81
	04/06/93		6.18	---	14.73
	07/12/93		**9.59**	**---**	**11.32**
MW-6	08/06/91	22.32	10.61	---	11.71
	10/23/91		11.68	---	10.64
	01/28/92		8.90	---	13.42
	05/04/92		8.01	---	14.31
	07/13/92		10.77	---	11.55
	10/12/92		13.36	0.48	9.34[a]
	01/12/93		6.40	<0.01	15.92
	04/06/93		5.93	---	16.39
	07/12/93		**10.25**	**---**	**12.07**
MW-7	08/06/91	20.36	8.00	---	12.36
	10/23/91		8.16	---	12.20
	01/28/92		7.11	---	13.25
	05/04/92		6.47	---	13.89
	07/13/92		7.73	---	12.63
	10/12/92		8.68	---	11.68
	01/12/93		6.26	---	14.10
	04/06/93		5.92	---	14.44
	07/12/93		**7.27**	**---**	**13.09**
MW-8	08/06/91	20.95	9.60	---	11.35
	10/23/91		9.73	---	11.22
	01/28/92		7.72	---	13.23
	05/04/92		6.48	---	14.47
	07/13/92		8.55	---	12.40
	10/12/92		9.97	---	10.98
	01/12/93		6.94	---	14.01
	04/06/93		5.72	---	15.23
	07/12/93		**7.65**	**---**	**13.30**

-- Table 2 continues on next page --

Table 2. Ground Water Elevations - Shell Service Station WIC #204-5508-5306, 3420 San Pablo, Avenue, Oakland, California (continued)

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Floating Hydrocarbon Thickness	Ground Water Elevation (ft above msl)
MW-9	08/06/91	21.19	10.33	---	10.86
	10/23/91		11.13	---	10.06
	01/28/92		9.02	---	12.17
	05/04/92		7.67	---	13.52
	07/13/92		10.26	---	10.93
	10/12/92		12.19	---	9.0
	01/12/93[b]		---	---	---
	04/06/93[b]		---	---	---
	07/12/93[b]		---	---	---
MW-10	10/23/91	19.74	8.57	---	11.17
	01/28/92		7.60	---	12.14
	05/04/92		7.54	---	12.20
	07/13/92		8.59	---	11.15
	10/12/92		10.23	---	9.51
	01/12/93[b]		---	---	---
	04/06/93		6.70	---	13.04
	07/12/93[b]		8.05	---	11.69
MW-11	10/23/91	22.06	14.0	---	8.06
	01/28/92		8.74	---	3.32
	05/04/92		8.29	---	13.77
	07/13/92		10.50	---	11.56
	10/12/92		12.40	---	9.66
	01/12/93[b]		---	---	---
	04/06/93[b]		---	---	---
	07/12/93[b]		---	---	---

Notes:

a = Ground water elevation corrected to include 80 percent of the floating product thickness measured in the well

b = Well inaccessible

Table 3. Analytical Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	B	E	T	X
			<----------parts per billion (ug/L)---------->				
MW-1	08/06/91[FHC]	10.86	---	---	---	---	---
	10/23/91	11.05	32,000	2,700	550	360	3,700
	01/28/92	10.84	14,000	1,000	450	106	1,600
	05/05/92	9.42	98,000	11,000	3,500	1,200	18,000
	07/13/92	11.36	11,000	1,100	740	130	1,300
	10/12/92[FHC]	13.14	---	---	---	---	---
	01/12/93[FHC]	7.52	---	---	---	---	---
	04/06/93[FHC]	7.13	---	---	---	---	---
	07/12/93[FHC]	11.02	---	---	---	---	---
MW-2	08/06/91	9.72	50,000	15,000	2,700	1,400	13,000
	10/23/91	10.03	120,000	11,000	3,500	1,400	19,000
	01/28/92	8.78	49,000	7,400	1,800	800	8,300
	05/05/92	7.58	52,000	12,000	2,200	1,100	12,000
	07/13/92	9.63	47,000	15,000	4,500	2,400	16,000
	10/12/92[FHC]	11.66	---	---	---	---	---
	01/12/93[FHC]	7.13	---	---	---	---	---
	04/06/93[FHC]	6.40	---	---	---	---	---
	07/12/93	8.75	59,000	12,000	2,400	950	11,000
MW-3	08/06/91	11.18	430	8	4	1	15
	10/23/91	11.69	390	2.1	0.48	<0.3	2
	01/28/92	9.99	190	<0.5	<0.5	<0.5	<0.5
	05/04/92	9.46	190	<1	<1	<1	0.71
	07/20/92	11.29	200[a]	<0.5	<0.5	<0.5	<0.5
	10/12/92	13.10	180[a]	<0.5	<0.5	<0.5	<0.5
	01/12/93	7.32	180	<0.5	0.9	2.3	5.6
	01/12/93[dup]	7.32	260	<0.5	<0.5	<0.5	<0.5
	04/06/93[a]	7.44	280	<0.5	<0.5	<0.5	<0.5
	07/12/93	10.62	310[a]	<0.5	<0.5	<0.5	<0.5
MW-4	08/06/91	10.57	1,300	28	68	18	150
	10/23/91	10.46	1,900	97	38	6.1	77
	01/28/92	9.54	200	7.6	3	<0.5	3.3
	05/04/92	8.33	690	98	13	3	<1
	07/13/92	9.87	1,500	140	17	2.9	12
	07/13/92[dup]	9.87	870	95	10	1.9	7.1
	10/12/92[FHC]	12.43	---	---	---	---	---
	01/12/93[FHC]	7.12	---	---	---	---	---
	04/06/93[FHC]	7.23	---	---	---	---	---
	07/12/93[FHC]	10.08	---	---	---	---	---

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Table 3. Analytical Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California (continued)

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	B	E	T	X
			<----------parts per billion (ug/L)---------->				
MW-5	08/06/91	10.23	9,100	210	240	27	660
	10/23/91	10.89	12,000	92	230	18	450
	01/28/92	8.45	3,300	130	180	10	220
	05/04/92	8.05	3,900	95	260	<12.5	120
	07/13/92	10.00	4,100	180	250	12	73
	10/12/92[FHC]	11.83	---	---	---	---	---
	01/12/93[FHC]	6.10	---	---	---	---	---
	04/06/93	6.18	6,200	71	53	<0.5	150
	07/12/93	**9.59**	**3,400**	**130**	**170**	**<0.5**	**130**
MW-6	08/06/91	10.61	28,000	1,400	1,300	200	4,200
	10/23/91	11.68	53,000	1,400	1,800	230	6,700
	01/28/92	8.90	87,000	1,200	2,000	470	6,600
	05/05/92	8.01	230,000	<500	3,200	<500	11,000
	07/13/92	10.77	2,700,000	<2,500	14,000	3,500	36,000
	10/12/92[FHC]	8.68	---	---	---	---	---
	01/12/93[FHC]	6.40	---	---	---	---	---
	04/06/93	5.93	320,000	2,500	5,400	980	14,000
	07/12/93	**10.25**	**31,000**	**1,100**	**1,700**	**150**	**4,500**
	07/12/93[dup]	**10.25**	**25,000**	**1,200**	**2,000**	**270**	**4,800**
MW-7	08/06/91	8.00	13,000	4,300	770	76	730
	10/23/91	8.16	18,000	3,200	660	31	770
	01/28/92	7.11	5,000	1,200	220	<10	54
	05/05/92	6.47	9,500	3,100	620	72	880
	07/13/92	7.73	20,000	4,200	1,600	130	1,100
	10/12/92	9.97	16,000	2,500	560	<50	170
	01/12/93	6.26	15,000	2,300	690	<0.5	440
	04/06/93	5.92	26,000	5,400	1,200	310	3,000
	04/06/93[dup]	5.92	21,000	5,200	1,200	180	3,000
	07/12/93	**7.27**	**10,000***	**3,000**	**510**	**100**	**530**
MW-8	08/06/91	9.60	32,000	3,700	1,400	1,100	6,100
	10/23/91	9.73	63,000	4,800	1,300	1,300	6,900
	01/28/92	7.72	32,000	1,900	1,400	750	6,300
	05/05/92	6.48	180,000	2,200	2,700	2,000	13,000
	07/13/92	8.55	56,000	4,500	2,700	1,500	9,100
	10/12/92	9.97	34,000	2,400	1,400	550	6,400
	10/12/92[dup]	9.97	34,000	3,100	1,500	700	7,200
	01/12/93	6.94	110,000	2,100	2,400	1,200	12,000
	04/06/93	5.72	38,000	2,500	1,100	840	4,900
	07/12/93	**7.65**	**27,000**	**2,800**	**1,200**	**990**	**5,300**
MW-9	08/06/91	10.33	11,000	1,700	520	95	1,400

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Table 3. Analytical Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California (continued)

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	B	E	T	X
			<----------parts per billion (ug/L)---------->				
	10/23/91	11.13	20,000	1,000	<0.3	47	940
	01/28/92	9.02	3,500	120	280	<10	36
	05/04/92	7.67	7,700	1,200	380	<50	630
	07/20/92	10.26	11,000	910	220	<50	1,200
	10/12/92	12.19	2,100	340	77	15	44
	01/12/93[b]	---	---	---	---	---	---
	04/06/93[b]	---	---	---	---	---	---
	07/12/93[b]	---	---	---	---	---	---
MW-10	10/23/91	8.57	27,000	1,600	1,800	110	510
	01/28/92	7.60	3,800	360	170	14	39
	05/04/92	7.54	3,000	360	140	<12.5	26
	07/20/92	8.59	15,000	400	180	<25	67
	10/12/92	10.23	16,000	320	360	<50	100
	01/12/93[b]	---	---	---	---	---	---
	04/06/93	6.70	14,000	370	880	<0.5	210
	07/12/93[b]	8.05	10,000	440	890	58	220
MW-11	10/23/91	8.06	140	<12	0.37	<0.3	0.56
	01/28/92	13.32	<50	<0.5	<0.5	<0.5	<0.5
	05/04/92	13.77	<50	<0.5	<0.5	<0.5	<0.5
	07/13/92	11.56	140[b]	<0.5	<0.5	<0.5	<0.5
	10/12/92	12.40	75[b]	<0.5	<0.5	<0.5	<0.5
	01/12/93[b]	---	---	---	---	---	---
	04/06/93[b]	---	---	---	---	---	---
	07/12/93	---	---	---	---	---	---
Bailer Blank	07/13/92		<50	<0.5	<0.5	<0.5	<0.5
	07/20/92		<50	<0.5	<0.5	<0.5	<0.5
	10/12/92		<50	<0.5	<0.5	<0.5	<0.5
Trip Blank	01/28/92		<50	<0.5	<0.5	<0.5	<0.5
	05/05/92		<50	<0.5	<0.5	<0.5	<0.5
	07/13/92		<50	<0.5	<0.5	<0.5	<0.5
	07/20/92		<50	<0.5	<0.5	<0.5	<0.5
	10/12/92		<50	<0.5	<0.5	<0.5	<0.5
	01/12/93		<50	<0.5	<0.5	<0.5	<0.5
	04/06/93		<50	<0.5	<0.5	<0.5	<0.5
	07/12/93		<0.05	<0.5	<0.5	<0.5	<0.5
DTSC MCLs			NE	0.001	0.680	0.10[c]	1.750

Table 3. Analytical Results for Ground Water - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California (continued)

Abbreviations:

TPH-G = Total petroleum hydrocarbons as gasoline by Modified EPA Method 8015
TPH-D = Total petroleum hydrocarbons as diesel by Modified EPA Method 8015
TPH-MO = Total petroleum hydrocarbons as motor oil by Modified EPA Method 8015
B = Benzene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
T = Toluene by EPA Method 8020
X = Xylenes by EPA Method 8020
NE = Not established
DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water
--- = Not analyzed
<n = Not detected at detection limits of n ppb
dup = Duplicate sample
FHC = Not sampled, floating hydrocarbons detected in well

Notes:

a = Concentration reported as gasoline is due to the presence of a discrete hydrocarbon peak that is not indicative of gasoline
b = Not sampled. Well inaccessible
c = DTSC recommended action level; MCL not established

ATTACHMENT A

GROUND WATER MONITORING REPORT AND ANALYTIC REPORT

BLAINE
TECH SERVICES INC.

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

July 27, 1993

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

Attn: Daniel T. Kirk

SITE:
Shell WIC #204-5508-5306
3420 San Pablo Avenue
Oakland, California

QUARTER:
3rd quarter of 1993

QUARTERLY GROUNDWATER SAMPLING REPORT 930712-A-1

This report contains data collected during routine inspection, gauging and sampling of groundwater monitoring wells performed by Blaine Tech Services, Inc. in reponse 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 may be removed in cases where more evacuation is needed to achieve stabilization of water parameters. Less than three case volumes of water may be obtained in cases where the well dewaters 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.

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 site 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. Either the requested analyses or the specific analytes are written on the sample label (e.g. TPH-G, BTEX).

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 Anametrix, Inc. in San Jose, California. Anametrix, Inc. is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #1234.

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/lpn

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

cc: Weiss Associates
5500 Shellmound Street
Emeryville, CA 94608-2411
ATTN: Michael Asport

TABLE OF WELL GAUGING DATA

WELL I.D.	DATA COLLECTION DATE	MEASUREMENT REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLES LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLES LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
MW-1	7/12/92	TOC	FREE PRODUCT	11.01	0.01	100	11.02	--
MW-2	7/12/92	TOC	ODOR	NONE	--	--	8.75	19.30
MW-3	7/12/92	TOC	--	NONE	--	--	10.62	27.55
MW-4	7/12/92	TOC	FREE PRODUCT	10.05	0.03	4000	10.08	--
MW-5	7/12/92	TOC	--	NONE	--	--	9.59	25.20
MW-6 *	7/12/92	TOC	SHEEN/ODOR	NONE	--	--	10.25	19.99
MW-7	7/12/92	TOC	--	NONE	--	--	7.27	19.70
MW-8	7/12/92	TOC	ODOR	NONE	--	--	7.65	20.02
MW-9	7/12/92	PAVED OVER.						
MW-10	7/12/92	TOC	--	NONE	--	--	8.05	18.85
MW-11	7/12/92	PAVED OVER.						

* Sample DUP was a duplicate sample taken from well MW-6.

9307095 CR 10:45 (18)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No:

Date: 7/12/93
Page 1 of 2

Site Address: 3420 San Pablo

WIC#: 204 5508 5306

Shell Engineer: Daniel Kirk — Phone No.: 510 — Fax #: 675 6168

Consultant Name & Address: Blaine Tech Services

Consultant Contact: Jim Keller — Phone No.: 408 — Fax #: 293 7883

Comments:

Sampled by: J. Curtis

Printed Name: JEFF CURTIS

LAB: ANAMETRIX

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(1) MW 10	7/12			W		3						/							ground water	ALL SAMPLE COLD/PRESERVED CONTAINERS NO BUBBLES
(2) MW 3						3						/								
(3) MW 6						3						/								
(4) MW 2						3						/								
(5) MW 8						3						/								
(6) MW 7						3						/								
(7) MW 5						3						/								
(8) TRIP BLANK						2						/								

CHECK ONE (1) BOX ONLY — CT/DT — TURN AROUND TIME

	CT/DT	
Quarterly Monitoring	☒ 6441	24 hours ☐
Site Investigation	☐ 6441	48 hours ☐
Soil Classify/Disposal	☐ 6442	15 days ☒ (Normal)
Water Classify/Disposal	☐ 6443	Other ☐ ____
Soil/Air Rem. or Sys. O & M	☐ 6452	
Water Rem. or Sys. O & M	☐ 6453	NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.
Other	☐	

	Printed Name	Date	Time		Printed Name	Date	Time
Relinquished By (signature):	JEFF CURTIS	7/12/93	1800	Received (signature):	JEFF CURTIS	7-12-93	1800
Relinquished By (signature):	JEFF CURTIS	7-13-93	0820	Received (signature):	DENNY S. CARRIZOSA		
Relinquished By (signature):	DENNY S. CARRIZOSA	7-13-93	0835	Received (signature):	CALVIN ROBINSON	7-13-93	0835

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

Shell COC on Custody

9307095 CW 9307095 CW 10:45 (18)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 7/2/93
Page 2 of 2

Site Address: 3420 San Pablo

WIC#: 204 5508 5306

Shell Engineer: Daniel Kirk — Phone No.: 510 — Fax #: 675 6168

Consultant Name & Address: Blaine Tech Services

Consultant Contact: John Keller — Phone No.: 408 — Fax #: 293 8773

Comments:

Sampled by: Jeff Curtis

Printed Name: JEFF CURTIS

LAB: ANALYTICAL

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Combination TPH 8015 & BTEX 8020			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(9) Dup	7/2			W		3						/							Ground water	

CHECK ONE (1) BOX ONLY — CT/DT — TURN AROUND TIME

Quarterly Monitoring	X 6461	24 hours ☐
Site Investigation	☐ 6441	48 hours ☐
Soil Closure/Disposal	☐ 6442	15 days ☒ (Normal)
Water Closure/Disposal	☐ 6443	Other ☐ ____
Soil/Air Rem. or Sys. O & M	☐ 6462	NOTE: Notify Lab as soon as Possible of 24/48 hr. TAT.
Water Rem. or Sys. O & M	☐ 6463	
Other	☐	

Relinquished By (signature): Jeff Curtis	Printed Name: JEFF CURTIS	Date: 7/2/93 Time: 1800	Received (signature):	Printed Name: JEFF CURTIS	Date: 7-13-93 Time: 1800
Relinquished By (signature):	Printed Name: JEFF CURTIS	Date: 7-13-93 Time: 0820	Received (signature): Benny S. Carrizosa	Printed Name: BENNY S. CARRIZOSA	Date: 7-13-93 Time: 0820
Relinquished By (signature): Benny S. Carrizosa	Printed Name: BENNY S. CARRIZOSA	Date: 7-13-93 Time: 0835	Received (signature):	Printed Name: ALVIN ROBINSON	Date: 7-13-93 Time: 0835

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

Shell CA Chain of Custody

Inchcape Testing Services
Anametrix Laboratories

1961 Concourse Drive
Suite E
San Jose, CA 95131
Tel. 408-432-8192
Fax. 408-432-8198

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9307095
Date Received : 07/13/93
Project ID : 204-5508-5306
Purchase Order: MOH-B813

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9307095- 1	MW 10
9307095- 2	MW 3
9307095- 3	MW 6
9307095- 4	MW 2
9307095- 5	MW 8
9307095- 6	MW 7
9307095- 7	MW 5
9307095- 8	TRIP
9307095- 9	DUP

This report consists of 10 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Larry Kent for

Sarah Schoen, Ph.D.
Laboratory Director

7-23-93
Date

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9307095
Date Received : 07/13/93
Project ID : 204-5508-5306
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9307095- 1	MW 10	WATER	07/12/93	TPHgBTEX
9307095- 2	MW 3	WATER	07/12/93	TPHgBTEX
9307095- 3	MW 6	WATER	07/12/93	TPHgBTEX
9307095- 4	MW 2	WATER	07/12/93	TPHgBTEX
9307095- 5	MW 8	WATER	07/12/93	TPHgBTEX
9307095- 6	MW 7	WATER	07/12/93	TPHgBTEX
9307095- 7	MW 5	WATER	07/12/93	TPHgBTEX
9307095- 8	TRIP	WATER	07/12/93	TPHgBTEX
9307095- 9	DUP	WATER	07/12/93	TPHgBTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. JIM KELLER
BLAINE TECH
985 TIMOTHY DRIVE
SAN JOSE, CA 95133

Workorder # : 9307095
Date Received : 07/13/93
Project ID : 204-5508-5306
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentrations reported as gasoline for sample MW 3 and MW 7 are primarily due to the presence of a discrete peak not indicative of gasoline.

Cheryl Balman 7/23/93
Department Supervisor Date

O R Patel 07/23/93
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9307095
Matrix : WATER
Date Sampled : 07/12/93

Project Number : 204-5508-5306
Date Released : 07/22/93

	Reporting Limit	Sample I.D.# MW 10	Sample I.D.# MW 3	Sample I.D.# MW 6	Sample I.D.# MW 2	Sample I.D.# MW 8
COMPOUNDS	(ug/L)	-01	-02	-03	-04	-05
Benzene	0.5	440	ND	1100	12000	2800
Toluene	0.5	58	ND	150	950	990
Ethylbenzene	0.5	890	ND	1700	2400	1200
Total Xylenes	0.5	220	ND	4500	11000	5300
TPH as Gasoline	50	10000	310	31000	59000	27000
% Surrogate Recovery		110%	103%	100%	120%	98%
Instrument I.D.		HP12	HP12	HP12	HP12	HP4
Date Analyzed		07/16/93	07/15/93	07/16/93	07/16/93	07/21/93
RLMF		50	1	100	500	100

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 61-139%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 7/23/93 Date

Supervisor 7/23/93 Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9307095
Matrix : WATER
Date Sampled : 07/12/93

Project Number : 204-5508-5306
Date Released : 07/22/93

	Reporting Limit	Sample I.D.# MW 7	Sample I.D.# MW 5	Sample I.D.# TRIP	Sample I.D.# DUP	Sample I.D.# BL1601E2
COMPOUNDS	(ug/L)	-06	-07	-08	-09	BLANK
Benzene	0.5	3000	130	ND	1200	ND
Toluene	0.5	100	ND	ND	270	ND
Ethylbenzene	0.5	510	170	ND	2000	ND
Total Xylenes	0.5	530	130	ND	4800	ND
TPH as Gasoline	50	10000	3400	ND	25000	ND
% Surrogate Recovery		119%	126%	111%	97%	109%
Instrument I.D.		HP4	HP12	HP12	HP4	HP12
Date Analyzed		07/20/93	07/16/93	07/15/93	07/21/93	07/16/93
RLMF		50	10	1	100	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 61-139%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 7/23/93 Date

Supervisor 7/23/93 Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9307095
Matrix : WATER
Date Sampled : N/A

Project Number : 204-5508-5306
Date Released : 07/22/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# BL1501E2 BLANK	Sample I.D.# BL2001E2 BLANK	Sample I.D.# BL2101E2 BLANK
Benzene	0.5	ND	ND	ND
Toluene	0.5	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND
TPH as Gasoline	50	ND	ND	ND
% Surrogate Recovery		111%	101%	88%
Instrument I.D.		HP12	HP4	HP4
Date Analyzed		07/15/93	07/20/93	07/21/93
RLMF		1	1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 61-139%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Luana Shor 7/23/93
Analyst Date

Cheryl Balmer 7/23/93
Supervisor Date

TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 5030 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date Sampled : N/A
Date Analyzed : 07/15/93

Anametrix I.D. : ML1502E1
Analyst : [illegible]
Supervisor : [illegible]
Date Released : 07/22/93
Instrument I.D.: HP12

COMPOUND	SPIKE AMT. (ug/L)	REC LCS (ug/L)	%REC LCS	% REC LIMITS
GASOLINE	500	540	108%	67-127
p-BFB			96%	61-139

* Quality control established by Anametrix, Inc.

TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 5030 WITH GC/PID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date Sampled : N/A
Date Analyzed : 07/15/93

Anametrix I.D. : ML1501E1
Analyst : JS
Supervisor : CB
Date Released : 07/22/93
Instrument I.D.: HP12

COMPOUND	SPIKE AMT. (ug/L)	LCS (ug/L)	REC LCS	%REC LIMITS
Benzene	20.0	23.2	116%	52-133
Toluene	20.0	23.0	115%	57-136
Ethylbenzene	20.0	24.1	121%	56-139
TOTAL Xylenes	20.0	22.8	114%	61-139
P-BFB			106%	61-139

* Limits established by Anametrix, Inc.

TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 5030 WITH GC/PID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: ML2001E3
Matrix	: WATER	Analyst	: TS
Date Sampled	: N/A	Supervisor	: cb
Date Analyzed	: 07/20/93	Date Released	: 07/22/93
		Instrument I.D.	: HP4

COMPOUND	SPIKE AMT. (ug/L)	LCS (ug/L)	REC LCS	%REC LIMITS
Benzene	20.0	20.6	103%	52-133
Toluene	20.0	20.8	104%	57-136
Ethylbenzene	20.0	21.8	109%	56-139
TOTAL Xylenes	20.0	21.7	109%	61-139
P-BFB			113%	61-139

* Limits established by Anametrix, Inc.

TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 5030 WITH GC/PID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: ML2101E3
Matrix	: WATER	Analyst	: JS
Date Sampled	: N/A	Supervisor	: CE
Date Analyzed	: 07/21/93	Date Released	: 07/22/93
		Instrument I.D.	: HP4

COMPOUND	SPIKE AMT. (ug/L)	LCS (ug/L)	REC LCS	%REC LIMITS
Benzene	20.0	18.3	92%	52-133
Toluene	20.0	19.1	96%	57-136
Ethylbenzene	20.0	19.6	98%	56-139
TOTAL Xylenes	20.0	19.0	95%	61-139
P-BFB			109%	61-139

* Limits established by Anametrix, Inc.

TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 5030 WITH GC/PID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: ML1602E1
Matrix	: WATER	Analyst	:
Date Sampled	: N/A	Supervisor	:
Date Analyzed	: 07/16/93	Date Released	: 07/22/93
		Instrument I.D.	: HP12

COMPOUND	SPIKE AMT. (ug/L)	LCS (ug/L)	REC LCS	%REC LIMITS
Benzene	20.0	20.8	104%	52-133
Toluene	20.0	19.8	99%	57-136
Ethylbenzene	20.0	19.7	99%	56-139
TOTAL Xylenes	20.0	20.5	102%	61-139
P-BFB			110%	61-139

* Limits established by Anametrix, Inc.