Weiss Associates Environmental and Geologic Services

5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone. **510-547-5420**

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February 10, 1993

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

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 fourth quarter 1992 and proposed work for the first quarter 1993.

Fourth Quarter 1992 Activities:

- EMCON Associates (EMCON) of San Jose, California measured ground water depths from all site wells and collected ground water samples from six of the eleven site wells. Five of the wells contained floating hydrocarbons and were not sampled. Emcon's report describing these activities and presenting analytic results for ground water is included as Attachment A.

- WA conducted a well survey to locate any wells within a ½ mile radius that may have been installed since 1990. One additional well was located at 3400 San Pablo Blvd., which is across the street to the west of the site. This well appears to be a monitoring well.

February 10, 1993

- WA reviewed previous investigation reports and well logs to better understand the variable ground water elevations across the site. Since WA determined that wells MW-1, MW-3, MW-4 and MW-5 screen a deeper water-bearing zone than the other site wells, we contoured ground water elevations for these wells separately (Figures 2 and 3). The recontoured data that excludes wells MW-1, MW-3, MW-4 and MW-5 suggests a ridge of higher ground water elevation extends roughly east-west through the northern portion of the site. It is possible that a leaky water pipe or other water source could explain the mounding observed in the shallow water bearing zone. WA will continue reviewing previous and future water level data to assess the nature of the ground water flow.

Anticipated First Quarter 1993 Activities:

- WA will install floating hydrocarbon skimmers in wells MW-1, MW-2, MW-4 and MW-6 to remove the floating hydrocarbons in these wells. 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.

- WA will submit a report presenting the results of the first quarter 1993 ground water sampling and ground water depth measurements. The report will include tabulated chemical analytic results and a ground water elevation contour map.

Please call if you have any questions.

REGISTERED GEOLOGIST
JOSEPH P. THEISEN
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

Sincerely,
Weiss Associates

J. Michael Asport
Technical Assistant

Joseph P. Theisen, C.E.G.
Senior Hydrogeologist

JMA/JPT:jma

J:\SHELL\600\612QMJA3.WP

Attachments: Figures
A - Emcon 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

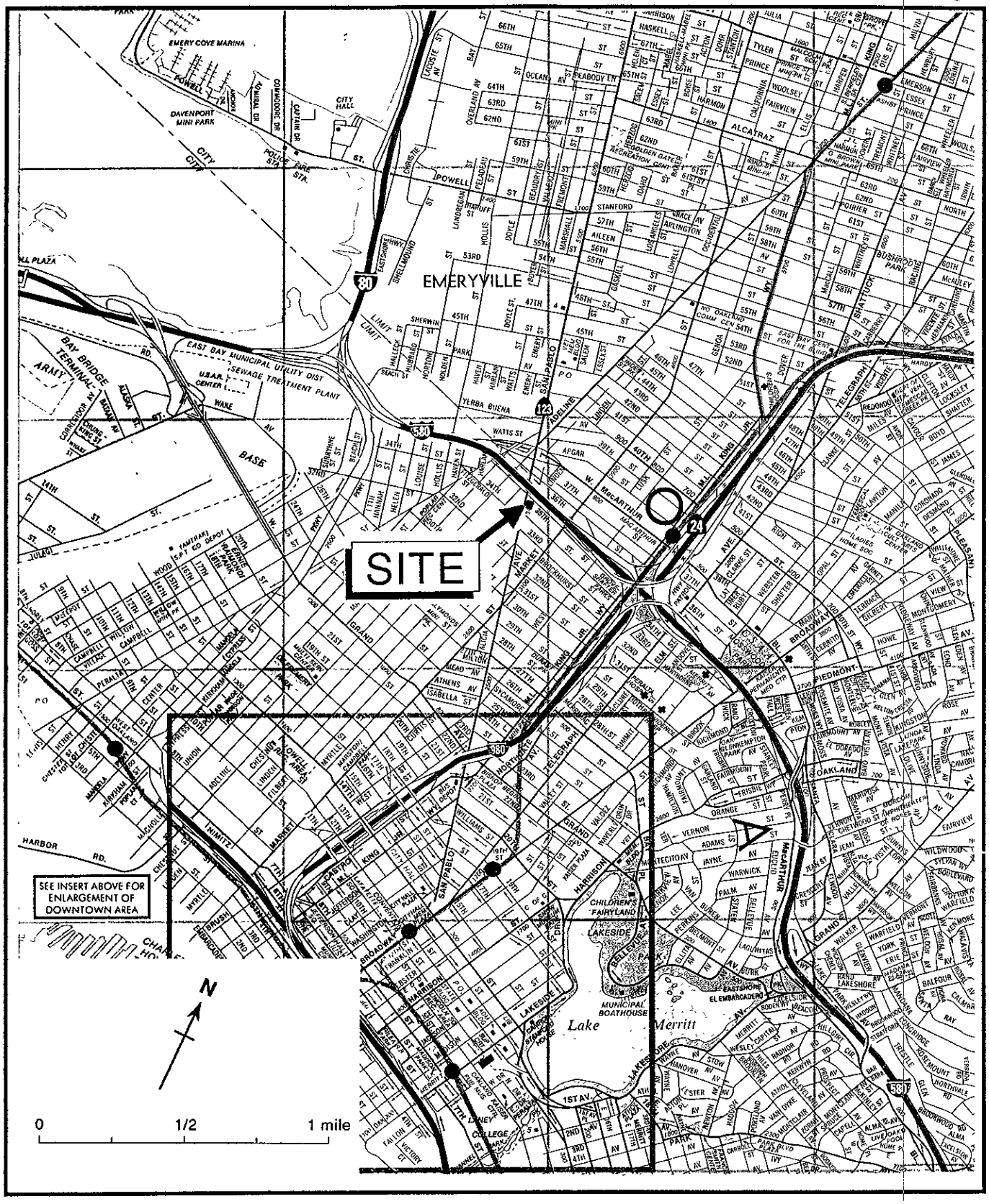

Figure 1. Site Location Map - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

2/13/92

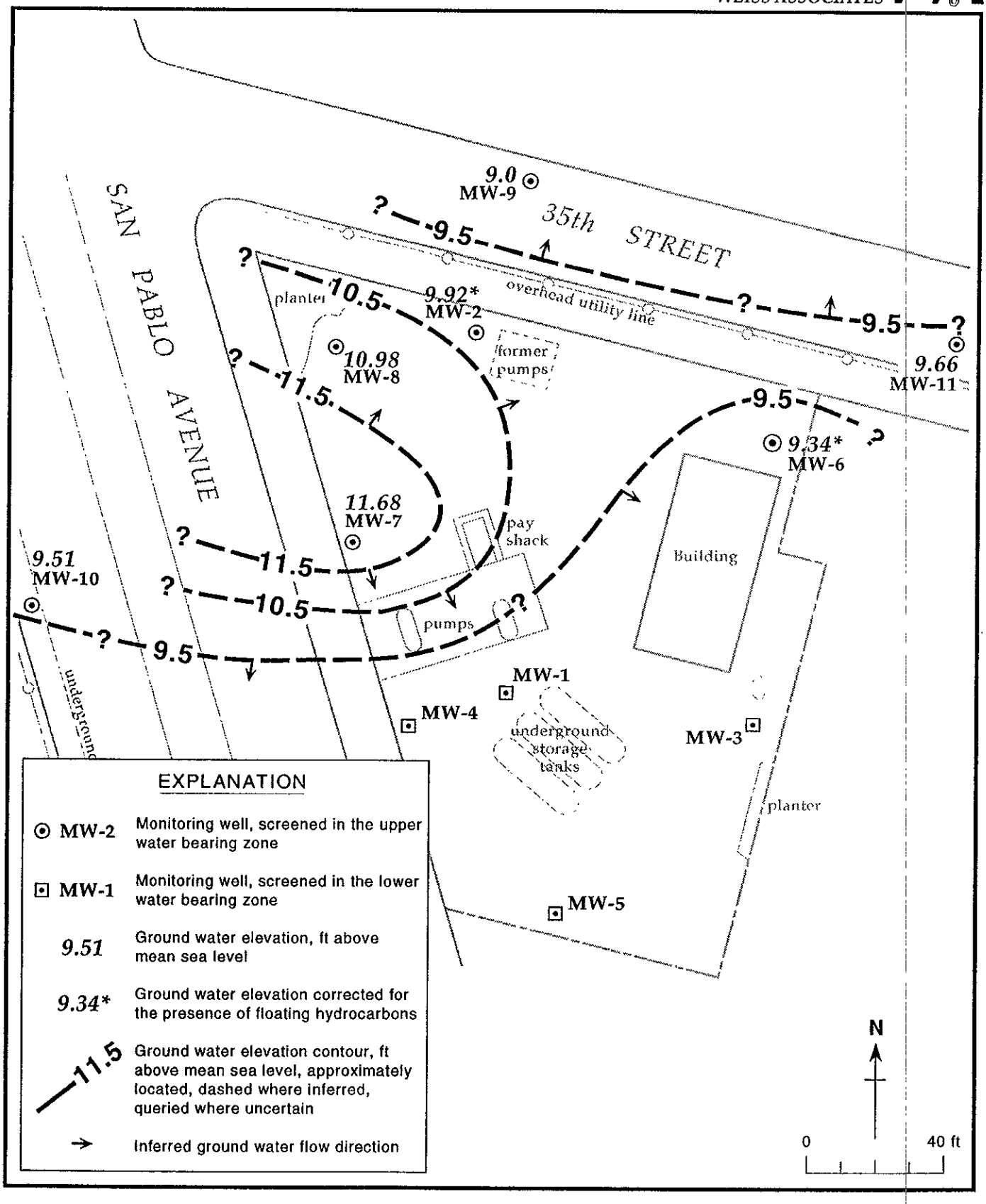

Figure 2. Monitoring Well Locations and Ground Water Elevation Contours, Upper Water Bearing Zone - October 12, 1992 - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

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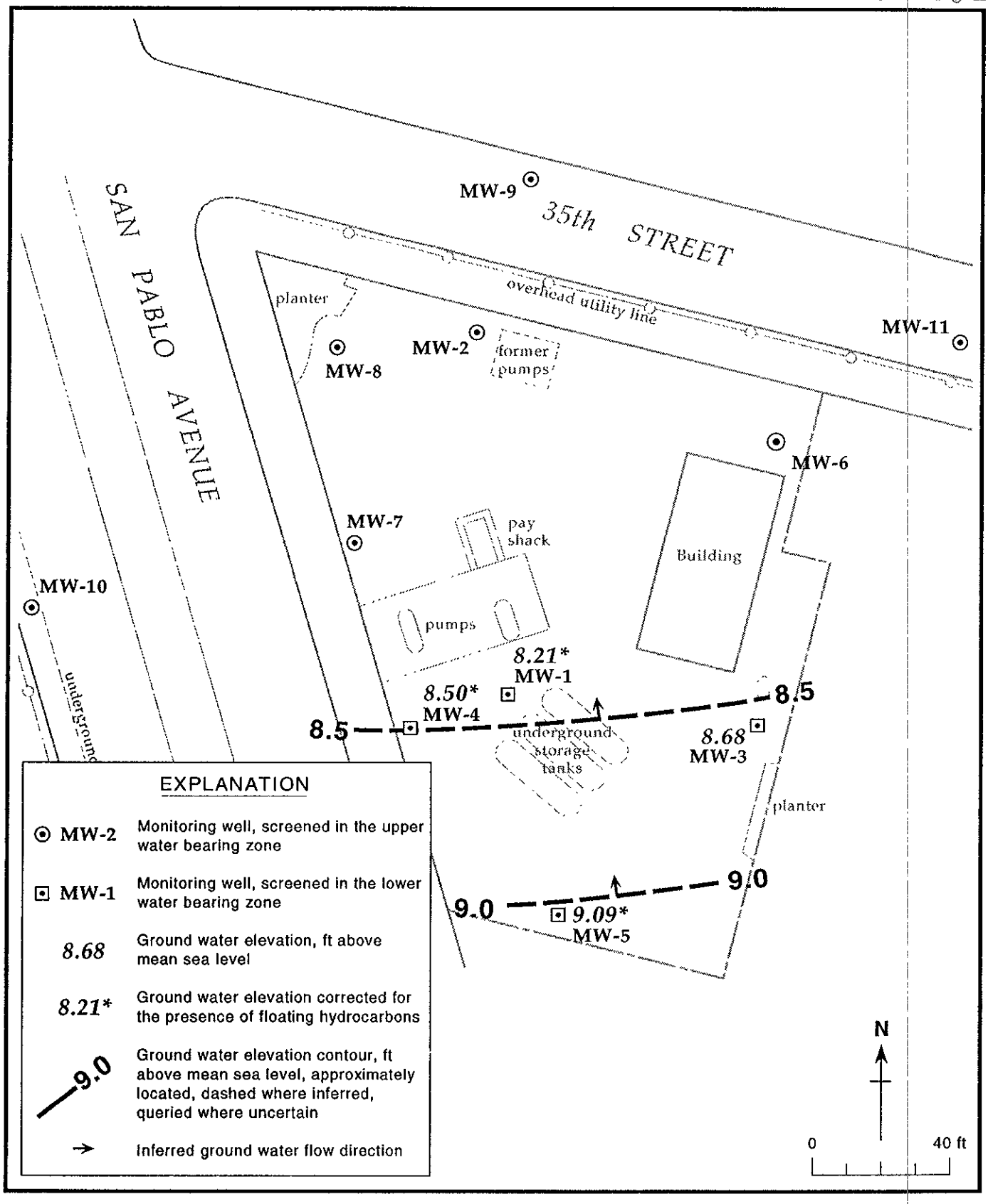

Figure 3. Monitoring Well Locations and Ground Water Elevation Contours, Lower Water Bearing Zone - October 12, 1992 - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

1/29/93

ATTACHMENT A

GROUND WATER MONITORING REPORT AND ANALYTIC REPORT

EMCON ASSOCIATES
Consultants in Wastes Management and Environmental Control

November 17, 1992
Project: 0G67-045.01
WIC#: 204-5508-5306

Mr. David Elias
Weiss Associates
5500 Shellmound Street
Emeryville, California 94608-2411

Re: Fourth quarter 1992 ground-water monitoring report, Shell Oil Company, 3420 San Pablo Avenue, Oakland, California

Dear Mr. Elias:

This letter presents the results of the fourth quarter 1992 ground-water monitoring event for the Shell Oil Company (Shell) site located at 3420 San Pablo Avenue, Oakland, California (figure 1). Fourth quarter monitoring was conducted on October 12, 1992. The site is monitored quarterly.

GROUND-WATER LEVEL SURVEY

A water-level survey preceded the purging and sampling of the monitoring wells. The wells included in the survey are identified in figure 2 (supplied by Weiss Associates). During the survey, wells MW-1 through MW-11 were measured for depth to water, floating product thickness, and total depth. Depth to water and floating product thickness were measured to the nearest 0.01 foot with an oil/water interface probe. Floating product was observed in wells MW-1, MW-2, MW-4, MW-5, and MW-6. Specific product thicknesses for each well are listed in table 1. Total depth was measured to the nearest 0.1 foot. Results of the fourth quarter water-level survey, and available data from four previous surveys, are summarized in table 1.

SAMPLING AND ANALYSIS

Ground-water samples were collected from wells MW-3 and MW-7 through MW-11 on October 12, 1992. Wells MW-1, MW-2, MW-4, MW-5, and MW-6 contained floating product and were not sampled during fourth quarter monitoring. Prior to sample collection, the wells were purged with polyvinyl chloride bailers. During the purging operation, ground water was monitored for pH, electrical conductivity, and temperature as a function of volume of water removed. Purging continued until these parameters were stable and a minimum of three casing volumes of ground water were removed. Wells MW-7 through MW-10 were evacuated to dryness before three casing volumes were removed. These wells

1938 Junction Avenue, San Jose, California 95131-2102, (408) 453-0719, Fax (408) 453-0452

were allowed to recharge for up to 24 hours. Samples were collected after the wells had recharged to a sufficient level. Field measurements from fourth quarter monitoring, and available measurements from four previous monitoring events, are summarized in table 1. Purge water from the monitoring wells was contained in 55-gallon drums. The drums were identified with Shell-approved labels and secured for on-site storage.

Ground-water samples were collected with a Teflon bailer, labeled, placed on ice, and transported to Anametrix Inc. for analysis. Shell chain-of-custody documents accompanied all samples to the laboratory.

All equipment that was placed down a well or that came in contact with ground water was steam cleaned with deionized water prior to use at each well.

Quality control samples for fourth quarter monitoring included a trip blank (TB), a field blank (FB), and a duplicate well sample (MW-8D) collected from well MW-8. All water samples collected during fourth quarter monitoring were analyzed for total petroleum hydrocarbons as gasoline (TPH-g), and benzene, toluene, ethylbenzene, and total xylenes (BTEX).

ANALYTICAL RESULTS

Analytical results for the fourth quarter 1992 monitoring event, and available results from four previous monitoring events, are summarized in table 2. The original certified analytical report and final chain-of-custody document are attached.

If you have any questions, please call.

Very truly yours,

EMCON Associates

David Larsen
Environmental Sampling Coordinator

Orrin Childs
Environmental Sampling Supervisor

DL/OC:dl

Attachments: Table 1 - Monitoring well field measurement data
Table 2 - Summary of analytical results
Figure 1 - Site location map
Figure 2 - Monitoring well locations
Certified analytical report
Chain-of-custody document

Table 1
Monitoring Well Field Measurement Data
Fourth Quarter 1992

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

Date: 11/13/92
Project Number: G67-45.01

Well Designation	Water Level Field Date	TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Well Depth (feet)	Floating Product Thickness (feet)	Water Sample Field Date	pH (std. units)	Electrical Conductivity (micromhos/cm)	Temperature (degrees F)	Turbidity (NTU)
MW-1	10/23/91	21.28	11.05	10.24**	NR	0.01	10/23/91	NR	NR	NR	NR
MW-1	01/28/92	21.28	10.84	10.44	25.1	ND	01/28/92	6.78	1300	64.3	>200
MW-1	05/04/92	21.28	9.42	11.86	25.2	<0.01^	05/05/92	5.96	989	64.2	>200
MW-1	07/13/92	21.28	11.36	9.92	25.2	ND	07/13/92	6.54	1213	71.1	>200
MW-1	10/12/92	21.28	13.14	8.21**	25.1	0.09	10/12/92	FP	FP	FP	FP
MW-2	10/23/91	21.56	10.03	11.53	NR	SHEEN	10/23/91	NR	NR	NR	NR
MW-2	01/28/92	21.56	8.78	12.78	19.3	ND	01/28/92	6.63	1422	62.5	>200
MW-2	05/04/92	21.56	7.58	13.98	19.4	ND	05/05/92	4.48	1352	65.9	198
MW-2	07/13/92	21.56	9.63	11.93	19.3	ND	07/13/92	6.59	1399	75.1	>200
MW-2	10/12/92	21.56	11.66	9.92**	19.3	0.03	10/12/92	FP	FP	FP	FP
MW-3	10/23/91	21.78	11.69	10.09	NR	ND	10/23/91	NR	NR	NR	NR
MW-3	01/28/92	21.78	9.99	11.79	27.5	ND	01/28/92	6.80	950	61.1	>200
MW-3	05/04/92	21.78	9.46	12.32	27.5	ND	05/04/92	6.38	777	69.3	>200
MW-3	07/13/92	21.78	11.29	10.49	27.5	ND	07/20/92	6.81	645	69.8	>200
MW-3	10/12/92	21.78	13.10	8.68	27.5	ND	10/12/92	6.63	663	65.9	200
MW-4	10/23/91	20.31	10.46	9.85	NR	ND	10/23/91	NR	NR	NR	NR
MW-4	01/28/92	20.31	9.54	10.77	25.2	ND	01/28/92	7.20	1088	70.4	>200
MW-4	05/04/92	20.31	8.33	11.98	25.3	ND	05/04/92	6.56	1100	70.8	>200
MW-4	07/13/92	20.31	9.87	10.44	25.3	ND	07/13/92	6.49	1037	71.1	633
MW-4	10/12/92	20.31	12.43	8.50**	25.3	0.78	10/12/92	FP	FP	FP	FP

TOC = top of casing
ft-MSL = elevation in feet, relative to mean sea level
std. units = standard pH units
micromhos/cm = micromhos per centimeter
degrees F = degrees Fahrenheit
NTU = nephelometric turbidity units
** = groundwater elevation corrected to include 80 percent of the floating product thickness measured in the well
NR = Not reported; data not available
ND = None detected
^ = Small drops of floating product were observed in the well with a clear Teflon bailer
FP = Floating product; well contained floating product and was not sampled

Table 1
Monitoring Well Field Measurement Data
Fourth Quarter 1992

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

Date: 11/13/92
Project Number: G67-45.01

Well Designation	Water Level Field Date	TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Well Depth (feet)	Floating Product Thickness (feet)	Water Sample Field Date	pH (std. units)	Electrical Conductivity (micromhos/cm)	Temperature (degrees F)	Turbidity (NTU)
MW-5	10/23/91	20.91	10.89	10.02	NR	ND	10/23/91	NR	NR	NR	NR
MW-5	01/28/92	20.91	8.45	12.46	25.0	ND	01/28/92	6.78	891	68.7	>200
MW-5	05/04/92	20.91	8.05	12.86	25.0	ND	05/04/92	6.48	866	69.2	>200
MW-5	07/13/92	20.91	10.00	10.91	25.0	ND	07/13/92	6.42	794	72.0	>200
MW-5	10/12/92	20.91	11.83	9.09**	24.9	0.01	10/12/92	FP	FP	FP	FP
MW-6	10/23/91	22.32	11.68	10.64	NR	SHEEN	10/23/91	NR	NR	NR	NR
MW-6	01/28/92	22.32	8.90	13.42	19.9	ND	01/28/92	6.70	1050	61.5	>200
MW-6	05/04/92	22.32	8.01	14.31	20.0	ND	05/05/92	7.89	861	63.3	>200
MW-6	07/13/92	22.32	10.77	11.55	19.9	ND	07/13/92	6.62	937	67.5	>200
MW-6	10/12/92	22.32	13.36	9.34**	20.0	0.48	10/12/92	FP	FP	FP	FP
MW-7	10/23/91	20.36	8.16	12.20	NR	ND	10/23/91	NR	NR	NR	NR
MW-7	01/28/92	20.36	7.11	13.25	19.5	ND	01/28/92	6.90	1320	63.5	>200
MW-7	05/04/92	20.36	6.47	13.89	19.7	ND	05/05/92	5.91	1024	63.8	>200
MW-7	07/13/92	20.36	7.73	12.63	19.7	ND	07/13/92	6.37	1028	71.7	>200
MW-7	10/12/92	20.36	8.68	11.68	19.7	ND	10/12/92	6.53	1066	72.4	>200
MW-8	10/23/91	20.95	9.73	11.22	NR	ND	10/23/91	NR	NR	NR	NR
MW-8	01/28/92	20.95	7.72	13.23	20.0	ND	01/28/92	6.74	1254	62.8	>200
MW-8	05/04/92	20.95	6.48	14.47	20.0	ND	05/05/92	6.10	1086	62.8	>200
MW-8	07/13/92	20.95	8.55	12.40	20.0	ND	07/13/92	6.54	1305	72.1	>200
MW-8	10/12/92	20.95	9.97	10.98	20.0	ND	10/12/92	6.78	1144	66.2	885

TOC = top of casing
ft-MSL = elevation in feet, relative to mean sea level
std. units = standard pH units
micromhos/cm = micromhos per centimeter
degrees F = degrees Fahrenheit
NTU = nephelometric turbidity units
NR = Not reported; data not available
ND = None detected
** = groundwater elevation corrected to include 80 percent of the floating product thickness measured in the well
FP = Floating product; well contained floating product and was not sampled

Table 1
Monitoring Well Field Measurement Data
Fourth Quarter 1992

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

Date: 11/13/92
Project Number: G67-45.01

Well Designation	Water Level Field Date	TOC Elevation (ft-MSL)	Depth to Water (feet)	Groundwater Elevation (ft-MSL)	Total Well Depth (feet)	Floating Product Thickness (feet)	Water Sample Field Date	pH (std. units)	Electrical Conductivity (micromhos/cm)	Temperature (degrees F)	Turbidity (NTU)
MW-9	10/23/91	21.19	11.13	10.06	NR	ND	10/23/91	NR	NR	NR	NR
MW-9	01/28/92	21.19	9.02	12.17	19.7	ND	01/28/92	7.01	1381	65.3	>200
MW-9	05/04/92	21.19	7.67	13.52	19.7	ND	05/04/92	6.49	1151	71.3	>200
MW-9	07/13/92	21.19	10.26	10.93	20.0	ND	07/20/92	6.93	1016	79.4	>200
MW-9	10/12/92	21.19	12.19	9.00	19.7	ND	10/12/92	6.86	1233	71.8	>200
MW-10	10/23/91	19.74	8.57	11.17	NR	ND	10/23/91	NR	NR	NR	NR
MW-10	01/28/92	19.74	7.60	12.14	18.8	ND	01/28/92	7.02	1640	61.3	>200
MW-10	05/04/92	19.74	7.54	12.20	19.0	ND	05/04/92	6.72	1042	65.0	>200
MW-10	07/13/92	19.74	8.59	11.15	18.9	ND	07/20/92	6.92	971	67.2	>200
MW-10	10/12/92	19.74	10.23	9.51	18.8	ND	10/12/92	7.01	1070	66.3	177
MW-11	10/23/91	22.06	14.0	8.06	NR	ND	10/23/91	NR	NR	NR	NR
MW-11	01/28/92	22.06	8.74	13.32	19.0	ND	01/28/92	7.28	1040	65.3	>200
MW-11	05/04/92	22.06	8.29	13.77	19.0	ND	05/04/92	6.58	721	66.9	>200
MW-11	07/13/92	22.06	10.50	11.56	19.2	ND	07/13/92	6.35	540	67.9	>200
MW-11	10/12/92	22.06	12.40	9.66	19.0	ND	10/12/92	6.80	655	69.9	>200

TOC = top of casing
ft-MSL = elevation in feet, relative to mean sea level
std. units = standard pH units
micromhos/cm = micromhos per centimeter
degrees F = degrees Fahrenheit
NTU = nephelometric turbidity units
NR = Not reported; data not available
ND = None detected

Table 2
Summary of Analytical Results
Fourth Quarter 1992
milligrams per liter (mg/l) or parts per million (ppm)

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

Date: 11/13/92
Project Number: G67-45.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)
MW-1	10/23/91	32.	2.7	0.36	0.55	3.7
MW-1	01/28/92	14.	1.0	0.16	0.45	1.6
MW-1	05/05/92	98.	11.	1.2	3.5	18.
MW-1	07/13/92	11.	1.1	0.13	0.74	1.3
MW-1	10/12/92	FP	FP	FP	FP	FP
MW-2	10/23/91	120.	11.	1.4	3.5	19.0
MW-2	01/28/92	49.	7.4	0.8	1.8	8.3
MW-2	05/05/92	52.	12.	1.1	2.2	12.
MW-2	07/13/92	47.	15.	2.4	4.5	16.
MW-2	10/12/92	FP	FP	FP	FP	FP
MW-3	10/23/91	0.39	0.0021	<0.0003	0.00048	0.002
MW-3	01/28/92	0.19	<0.0005	<0.0005	<0.0005	<0.0005
MW-3	05/04/92	0.19	<0.001	<0.001	<0.001	0.00071
MW-3	07/20/92	0.20*	<0.0005	<0.0005	<0.0005	<0.0005
MW-3	10/12/92	0.18*	<0.0005	<0.0005	<0.0005	<0.0005
MW-4	10/23/91	1.9	0.097	0.0061	0.038	0.077
MW-4	01/28/92	0.20	0.0076	<0.0005	0.0030	0.0033
MW-4	05/04/92	0.69	0.098	0.003	0.013	<0.001
MW-4	07/13/92	1.5	0.14	0.0029	0.017	0.012
MW-4	10/12/92	FP	FP	FP	FP	FP

TPH-g = total petroleum hydrocarbons as gasoline
FP = Floating product; well contained floating product and was not sampled
* = Concentration reported as gasoline is due to the presence of a discrete hydrocarbon peak not indicative of gasoline

Table 2
Summary of Analytical Results
Fourth Quarter 1992
milligrams per liter (mg/l) or parts per million (ppm)

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

Date: 11/13/92
Project Number: G67-45.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)
MW-5	10/23/91	12.0	0.092	0.018	0.23	0.45
MW-5	01/28/92	3.3	0.13	0.01	0.18	0.22
MW-5	05/04/92	3.9	0.095	<0.0125	0.26	0.12
MW-5	07/13/92	4.1	0.18	0.012	0.25	0.073
MW-5	10/12/92	FP	FP	FP	FP	FP
MW-6	10/23/91	53.0	1.4	0.23	1.8	6.7
MW-6	01/28/92	87.	1.2	0.47	2.0	6.6
MW-6	05/05/92	230.	<0.5	<0.5	3.2	11.
MW-6	07/13/92	2700.	<2.5	3.5	14.	36.
MW-6	10/12/92	FP	FP	FP	FP	FP
MW-7	10/23/91	18.0	3.2	0.031	0.66	0.77
MW-7	01/28/92	5.0	1.2	<0.01	0.22	0.054
MW-7	05/05/92	9.5	3.1	0.072	0.62	0.88
MW-7	07/13/92	20.	4.2	0.13	1.6	1.1
MW-7	10/12/92	16.	2.5	<0.05	0.56	0.17
MW-8	10/23/91	63.0	4.8	1.3	1.3	6.9
MW-8	01/28/92	32.	1.9	0.75	1.4	6.3
MW-8	05/05/92	180.	2.2	2.0	2.7	13.
MW-8	07/13/92	56.	4.5	1.5	2.7	9.1
MW-8	10/12/92	34.	2.4	0.55	1.4	6.4
MW-8D	10/12/92	34.	3.1	0.70	1.5	7.2

TPH-g = total petroleum hydrocarbons as gasoline
FP = Floating product; well contained floating product and was not sampled

Table 2
Summary of Analytical Results
Fourth Quarter 1992
milligrams per liter (mg/l) or parts per million (ppm)

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

Date: 11/13/92
Project Number: G67-45.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)
MW-9	10/23/91	20.0	1.0	0.047	<0.0003	0.94
MW-9	01/28/92	3.5	0.12	<0.01	0.028	0.036
MW-9	05/04/92	7.7	1.2	<0.05	0.38	0.63
MW-9	07/20/92	11.	0.91	<0.05	0.22	1.2
MW-9	10/12/92	2.1	0.34	0.015	0.077	0.044
MW-10	10/23/91	27.	1.6	0.11	1.8	0.51
MW-10	01/28/92	3.8	0.36	0.014	0.17	0.039
MW-10	05/04/92	3.0	0.36	<0.0125	0.14	0.026
MW-10	07/20/92	15.	0.40	<0.025	0.18	0.067
MW-10	10/12/92	16.	0.32	<0.05	0.36	0.10
MW-11	10/23/91	0.14	0.0012	<0.0003	0.00037	0.00056
MW-11	01/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
MW-11	05/04/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
MW-11	07/13/92	0.14*	<0.0005	<0.0005	<0.0005	<0.0005
MW-11	10/12/92	0.075*	<0.0005	<0.0005	<0.0005	<0.0005
FB	07/13/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
FB	07/20/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
FB	10/12/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
TB	01/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
TB	05/05/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
TB	07/13/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
TB	07/20/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
TB	10/12/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

TPH-g = total petroleum hydrocarbons as gasoline
* = Concentration reported as gasoline is due to the presence of a discrete hydrocarbon peak not indicative of gasoline

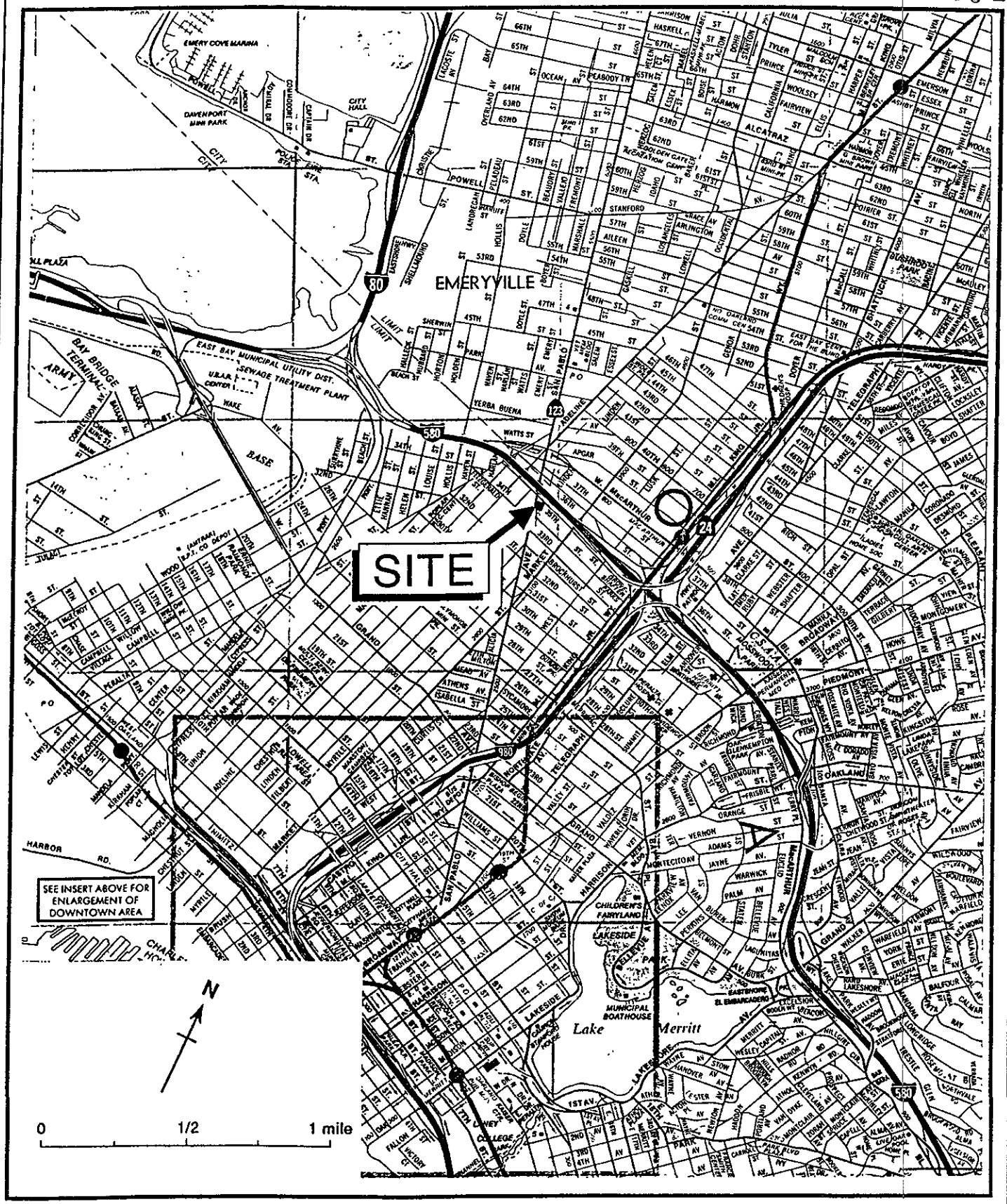

Figure 1. Site Location Map - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

2/13/92

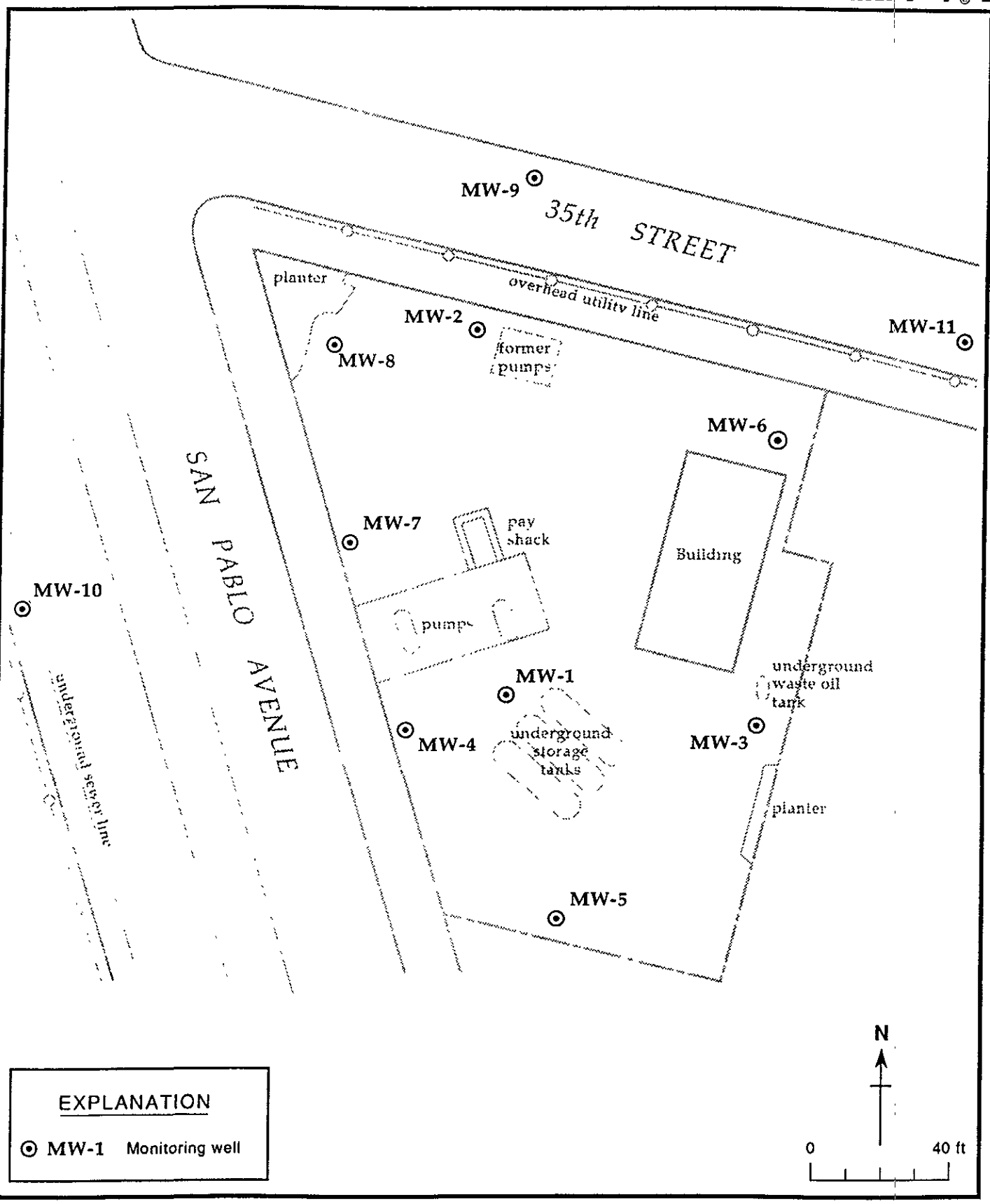

Figure 2. Monitoring Well Locations - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

5/14/92

ANAMETRIX INC
Environmental & Analytical Chemistry

Part of INCHCAPE ENVIRONMENTAL

REPORT

MR. DAVID LARSEN
EMCON ASSOCIATES
1938 JUNCTION AVE.
SAN JOSE, CA 95131

Workorder # : 9210169
Date Received : 10/12/92
Project ID : 204-5508-5306
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9210169- 1	MW-11
9210169- 2	MW-3
9210169- 3	MW-9
9210169- 4	MW-10
9210169- 5	MW-7
9210169- 6	MW-8
9210169- 7	TB
9210169- 8	FB
9210169- 9	MW-8D

This report consists of 7 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.

Sarah Schoen, Ph.D.
Laboratory Director

10-26-92
Date

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

MR. DAVID LARSEN
EMCON ASSOCIATES
1938 JUNCTION AVE.
SAN JOSE, CA 95131

Workorder # : 9210169
Date Received : 10/12/92
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
9210169- 1	MW-11	WATER	10/12/92	TPHg/BTEX
9210169- 2	MW-3	WATER	10/12/92	TPHg/BTEX
9210169- 3	MW-9	WATER	10/12/92	TPHg/BTEX
9210169- 4	MW-10	WATER	10/12/92	TPHg/BTEX
9210169- 5	MW-7	WATER	10/12/92	TPHg/BTEX
9210169- 6	MW-8	WATER	10/12/92	TPHg/BTEX
9210169- 7	TB	WATER	10/12/92	TPHg/BTEX
9210169- 8	FB	WATER	10/12/92	TPHg/BTEX
9210169- 9	MW-8D	WATER	10/12/92	TPHg/BTEX

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

MR. DAVID LARSEN
EMCON ASSOCIATES
1938 JUNCTION AVE.
SAN JOSE, CA 95131

Workorder # : 9210169
Date Received : 10/12/92
Project ID : 204-5508-5306
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentrations reported as gasoline for samples M-11 and MW-3 are primarily due to the presence of a discrete hydrocarbon peak not indicative of gasoline.

Cheryl Balmer 10/26/92
Department Supervisor Date

Reggie Davison 10/26/92
Chemist Date

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

Anametrix W.O.: 9210169
Matrix : WATER
Date Sampled : 10/12/92

Project Number : 204-5508-5306
Date Released : 10/23/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# MW-11 -01	Sample I.D.# MW-3 -02	Sample I.D.# MW-9 -03	Sample I.D.# MW-10 -04	Sample I.D.# MW-7 -05
Benzene	0.0005	ND	ND	0.34	0.32	2.5
Toluene	0.0005	ND	ND	0.015	ND	ND
Ethylbenzene	0.0005	ND	ND	0.077	0.36	0.56
Total Xylenes	0.0005	ND	ND	0.044	0.10	0.17
TPH as Gasoline	0.050	0.075	0.18	2.1	16	16
% Surrogate Recovery		95%	93%	119%	90%	90%
Instrument I.D.		HP21	HP21	HP4	HP21	HP21
Date Analyzed		10/15/92	10/15/92	10/19/92	10/15/92	10/15/92
RLMF		1	1	10	100	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 53-147%.

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

Peggie Davidson 10/26/92
Analyst Date

Cheryl Bateman 10/26/92
Supervisor Date

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

Anametrix W.O.: 9210169
Matrix : WATER
Date Sampled : 10/12/92

Project Number : 204-5508-5306
Date Released : 10/23/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# MW-8 -06	Sample I.D.# TB -07	Sample I.D.# FB -08	Sample I.D.# MW-8D -09	Sample I.D.# BO1501E2 BLANK
Benzene	0.0005	2.4	ND	ND	3.1	ND
Toluene	0.0005	0.55	ND	ND	0.70	ND
Ethylbenzene	0.0005	1.4	ND	ND	1.5	ND
Total Xylenes	0.0005	6.4	ND	ND	7.2	ND
TPH as Gasoline	0.050	34	ND	ND	34	ND
% Surrogate Recovery		105%	112%	112%	105%	94%
Instrument I.D.		HP4	HP4	HP4	HP4	HP21
Date Analyzed		10/20/92	10/19/92	10/19/92	10/19/92	10/15/92
RLMF		250	1	1	250	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 53-147%.

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

Reggie Davison 10/26/92
Analyst Date

Cheryl Beelman 10/26/92
Supervisor Date

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

Anametrix W.O.: 9210169
Matrix : WATER
Date Sampled : N/A

Project Number : 204-5508-5306
Date Released : 10/23/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# BO1901E2 BLANK	Sample I.D.# BO2001E2 BLANK
Benzene	0.0005	ND	ND
Toluene	0.0005	ND	ND
Ethylbenzene	0.0005	ND	ND
Total Xylenes	0.0005	ND	ND
TPH as Gasoline	0.050	ND	ND
% Surrogate Recovery		110%	97%
Instrument I.D.		HP4	HP4
Date Analyzed		10/19/92	10/20/92
RLMF		1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GC/FID 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 53-147%.

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

Reggie Davison 10/26/92
Analyst Date

Cheryl Balmer 10/26/92
Supervisor Date

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

Sample I.D.	: 204-5508-5306 MW-3	Anametrix I.D.	: 9210169-02
Matrix	: WATER	Analyst	: RD
Date Sampled	: 10/12/92	Supervisor	:
Date Analyzed	: 10/15/92	Date Released	: 10/26/92
		Instrument ID	: HP21

COMPOUND	SPIKE AMT (mg/L)	SAMPLE AMT (mg/L)	REC MS (mg/L)	% REC MS	REC MD (mg/L)	% REC MD	RPD	% REC LIMITS
GASOLINE	0.375	0.180	0.510	88%	0.490	83%	-4%	48-145
P-BFB				88%		87%		53-147

* Limits established by Anametrix, Inc.

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 : 10/15/92

Anametrix I.D. : LCSW1015
Analyst : RV
Supervisor : CD
Date Released : 10/23/92
Instrument I.D.: HP21

COMPOUND	SPIKE AMT. (mg/L)	REC LCS (mg/L)	%REC LCS	% REC LIMITS
GASOLINE	0.375	0.360	96%	56-116
SURROGATE		91%		53-147

* Quality control established by Anametrix, Inc.

10/12/92 (10) 16:30 MB

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 1228-5

Date:

Page 1 of 2

Site Address: 3420 San Pablo Avenue, Oakland, CA

WIC#: 204-5508-5306

Shell Engineer: Dan Kirk — **Phone No.:** (510) 675-6168

Consultant Name & Address: 1938 Junction Avenue, San Jose, CA 95131 — EMCON Associates

Consultant Contact: David Larsen — **Phone No.:** (408) 453-2269

Comments: 3-VOAs (HCl) for gas, BTEX

Sampled by:

Printed Name:

LAB: Anametrix

CHECK ONE (1) BOX ONLY	CT/DT
Quarterly Monitoring	X 6441
Site Investigation	6441
Soil Classify/Disposal	6442
Water Classify/Disposal	6443
Soil/Air Rem. or Sys. O & M	6452
Water Rem. or Sys. O & M	6463
Other	

TURN AROUND TIME: 24 hours ☐ ; 48 hours ☐ ; 15 days ☒ (Normal) ; Other ☐ ____

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

Analysis Required

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 gasoline	Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(1) MW-11	10/12/92	MB this date on the vials	95	X		3						X		40 ml	HCl	No		
(2) MW-3				X		3						X						
~~MW-4~~				X		3						X					No Sample	Product in well
(3) MW-9				X		3						X						
~~MW-5~~				X		3						X					No Sample	Product in well
(4) MW-10				X		3						X						
(5) MW-7				X		3						X						
~~MW-1~~				X		3						X					No Sample	Product in well

Relinquished By (signature): M Adler	Printed Name: M ADLER	Date: 10-12-92 Time: 1600	Received (signature): Maria Barajas	Printed Name: Maria Barajas	Date: 10/13/92 Time: 1:00
Relinquished By (signature):	Printed Name:	Date: Time:	Received (signature):	Printed Name:	Date: Time:
Relinquished By (signature):	Printed Name:	Date: Time:	Received (signature):	Printed Name:	Date: Time:

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

Rev 11/91

Shell Oil Chain of Custody

9/12/92 (10) 16:30 MB

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: 1228-5

Date:

Site Address: 3420 San Pablo Avenue Oakland, CA

WIC#: 204-5508-5306

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

Consultant Name & Address: 1938 Junction Avenue EMCON Associates San Jose, CA 95131

Consultant Contact: David Larsen — Phone No.: (408) Fax#: 453-2269

Comments: 3-VOAs (HCl) for gas, BTEX

Sampled by:

Printed Name:

LAB: Anametrix

CHECK ONE (1) BOX ONLY	CT/DT
Quarterly Monitoring	X 6461
Site Investigation	6441
Soil Classify/Disposal	6442
Water Classify/Disposal	6443
Soil/Air Rem. or Sys. O & M	6462
Water Rem. or Sys. O & M	6463
Other	

TURN AROUND TIME: 24 hours ☐ 48 hours ☐ 15 days X (Normal) Other ☐ ____

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

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 gasoline; Asbestos; Container Size; Preparation Used; Composite Y/N

	Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(6)	MW-8	10/12/92	MB this is the date on the vials		X		3	40 ml	HCl	No		
	MW-2				X		3				No Sample	Product in well
	MW-6				X		3				No Sample	Product in well
	MW-6D				X		3				No Sample	Product in well
(7)	TB				X		3				Bubbles (2)	
(8)	FB				X		3					
(9)	MW-8D				X		3					

Relinquished By (signature):	Printed Name: MILLER	Date: 10-12-92 Time: 1600	Received (signature):	Printed Name: Maria Barajas	Date: 10/12/92 Time: 16:00
Relinquished By (signature):	Printed Name:	Date: Time:	Received (signature):	Printed Name:	Date: Time:
Relinquished By (signature):	Printed Name:	Date: Time:	Received (signature):	Printed Name:	Date: Time:

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

Rev 6/92

Shell Oil Chn of Custody