



September 22, 1992

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

SH
5510 387

Re: Shell Service Station
WIC #204-5508-5306
3420 San Pablo Avenue
Oakland, California
WA Job #81-612-201

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 1992 and proposed work for the fourth quarter 1992.

Third Quarter 1992 Activities:

- On July 13, 1992, EMCON Associates (EMCON) of San Jose, California measured ground water depths and collected ground water samples from the eleven site wells. Emcon's report describing these activities and presenting analytic results for ground water is included as Attachment A.
- Weiss Associates (WA) used EMCON's ground water elevation calculations to prepare a ground water elevation contour map (Figure 2).

Anticipated Fourth Quarter 1992 Activities:

WA will submit a report presenting the results of fourth quarter 1992 ground water sampling and ground water depth measurements. The report will include tabulated chemical analytic results and a ground water elevation contour map.

Mr. Dennis Byrne
September 22, 1992

2



Please call if you have any questions.

Sincerely,
Weiss Associates

J. Michael Asport
Technical Assistant

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

JMA/JPT:jma

E:\ALL\SHELL\600\612QMAU2.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

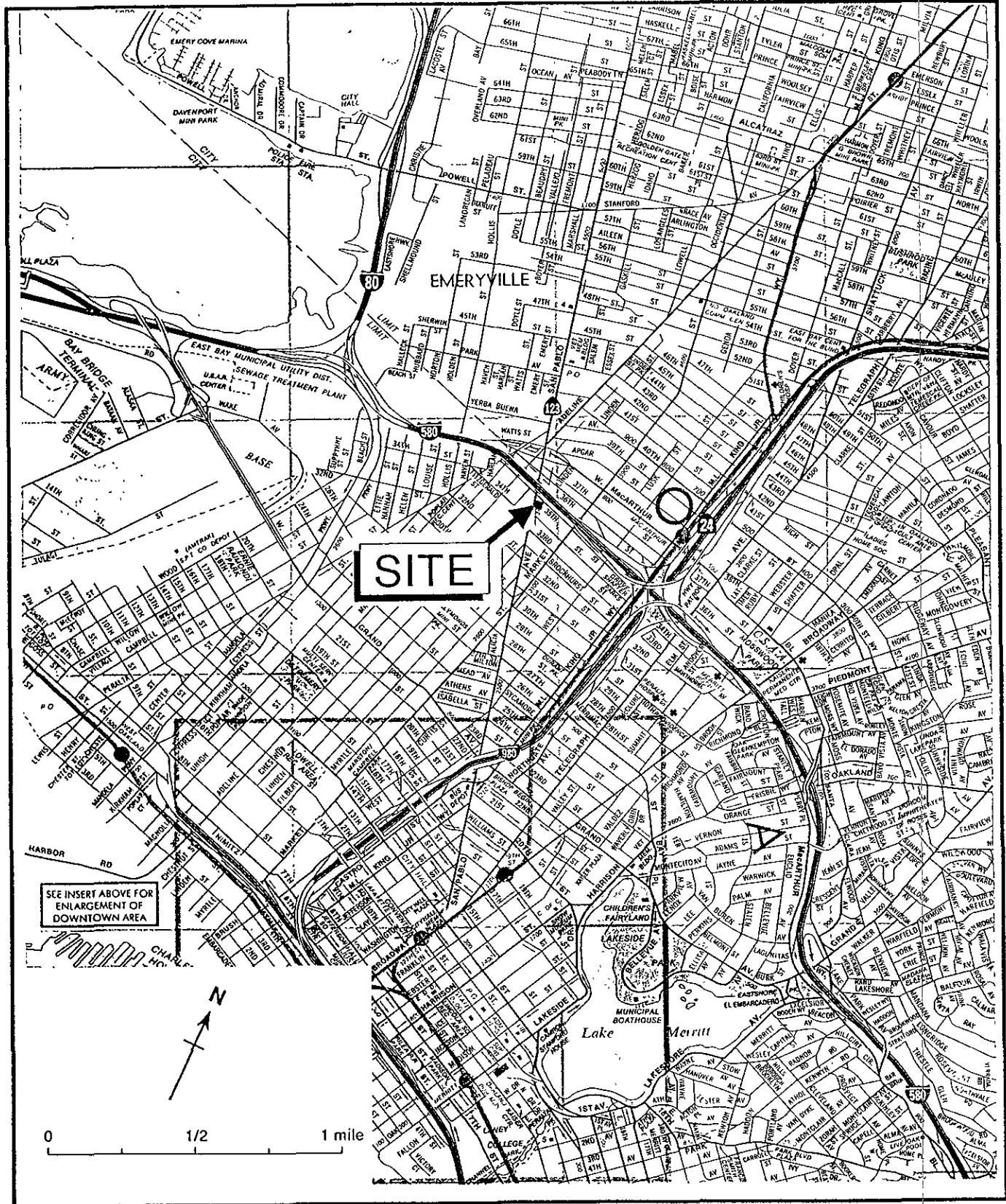


Figure 1. Site Location Map - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

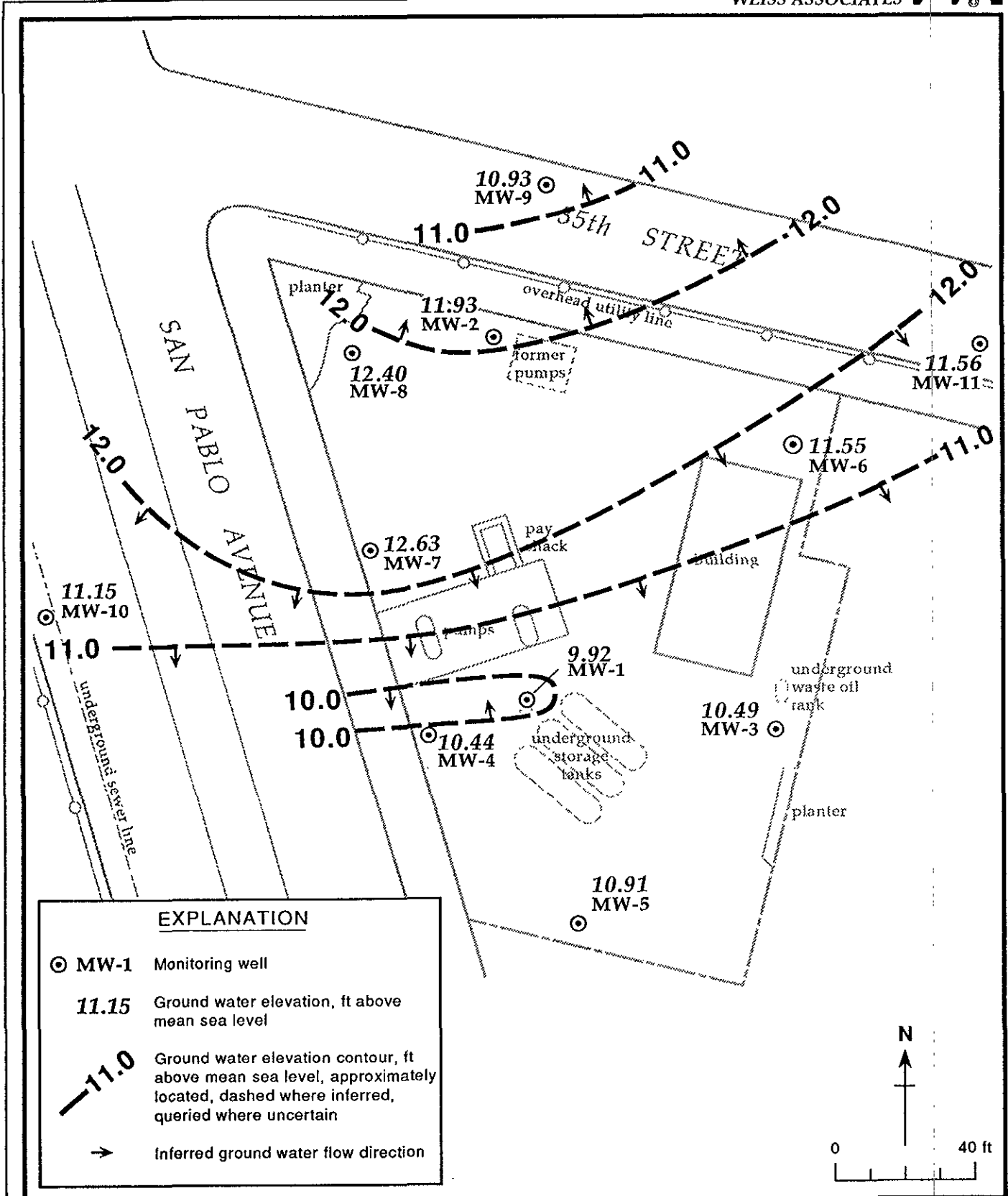


Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - July 13, 1992 - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

ATTACHMENT A

GROUND WATER MONITORING REPORT AND ANALYTIC REPORT



EMCON
ASSOCIATES
Consultants in Wastes
Management and
Environmental Control

August 14, 1992
Project: G67-45.01
WIC#: 204-5508-5306

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

Re: Third 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 third quarter 1992 ground-water monitoring event for the Shell Oil Company (Shell) site located at 3420 San Pablo Avenue, Oakland, California (figure 1). Third quarter monitoring was conducted on July 13 and 20, 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. No floating product was observed in any of the wells. Total depth was measured to the nearest 0.1 foot. Results of the third 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-1 through MW-11 on July 13, 1992. The purge volumes for wells MW-3, MW-9, and MW-10 were incorrectly calculated on July 13, 1992. These 3 wells were resampled on July 20, 1992, using the correct purge volume calculations. 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-2 and MW-5 through MW-10 were evacuated to dryness before three casing volumes were removed. These wells were allowed

G674501C.DOC



to recharge for up to 24 hours. Samples were collected after the wells had recharged to a level sufficient for sample collection. Field measurements from third 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 third quarter monitoring included a trip blank (called TB), a field blank (called FB), and a duplicate well sample (called MW-4D) collected from well MW-4. All water samples collected during third quarter monitoring were analyzed for total petroleum hydrocarbons as gasoline (TPH-g), and benzene, toluene, ethylbenzene, and total xylenes (BTEX).

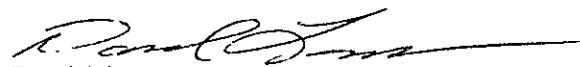
ANALYTICAL RESULTS

Analytical results for the third 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

Mr. David Elias
August 14, 1992
Page 3

Project G67-45.01
WIC# 204-5508-5306

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
Third Quarter 1992

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

Date: 08/13/92
Project Number: G67-45.01

Well Designation	Water Level Field Date	TOC Elevation (ft-MSL)	Depth to Water (feet)	Ground-water 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	08/06/91	21.28	10.86	10.43**	NR	0.01	08/06/91	FP	FP	FP	FP
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-2	08/06/91	21.56	9.72	11.84	NR	ND	08/06/91	NR	NR	NR	NR
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-3	08/06/91	21.78	11.18	10.60	NR	ND	08/06/91	NR	NR	NR	NR
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-4	08/06/91	20.31	10.57	9.74	NR	ND	08/06/91	NR	NR	NR	NR
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

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

FP = Floating product; well contained floating product and was not sampled

ND = None detected

^ = Small drops of floating product were observed in the well with a clear Teflon bailer

Table 1
Monitoring Well Field Measurement Data
Third Quarter 1992

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

Date: 08/13/92
Project Number: G67-45.01

Well Designation	Water Level Field Date	TOC Elevation (ft-MSL)	Depth to Water (feet)	Ground-water 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	08/06/91	20.91	10.23	10.68	NR	ND	08/06/91	NR	NR	NR	NR
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-6	08/06/91	22.32	10.61	11.71	NR	ND	08/06/91	NR	NR	NR	NR
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-7	08/06/91	20.36	8.00	12.36	NR	ND	08/06/91	NR	NR	NR	NR
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-8	08/06/91	20.95	9.60	11.35	NR	ND	08/06/91	NR	NR	NR	NR
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

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 1
Monitoring Well Field Measurement Data
Third Quarter 1992

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

Date: 08/13/92
Project Number: G67-45.01

Well Designation	Water Level Field Date	TOC Elevation (ft-MSL)	Depth to Water (feet)	Ground-water 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	08/06/91	21.19	10.33	10.86	NR	ND	08/06/91	NR	NR	NR	NR
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-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-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

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
 Third 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: 08/13/92
 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	08/06/91	FP	FP	FP	FP	FP
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-2	08/06/91	50.	15.	1.4	2.7	13.0
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-3	08/06/91	0.43	0.008	0.001	0.004	0.015
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-4	08/06/91	1.3	0.028	0.018	0.068	0.15
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-4D	07/13/92	0.87	0.095	0.0019	0.010	0.0071

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
 Third 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: 08/13/92
 Project Number: G67-45.01

Sample Designation	Water Sample Field Date	TPH-g	Benzene	Toluene	Ethylbenzene	Total Xylenes
		(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)
MW-5	08/06/91	9.1	0.21	0.027	0.24	0.66
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-6	08/06/91	28.0	1.4	0.20	1.3	4.2
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-7	08/06/91	13.0	4.3	0.076	0.77	0.73
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-8	08/06/91	32.0	3.7	1.1	1.4	6.1
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-9	08/06/91	11.0	1.7	0.095	0.52	1.4
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

TPH-g = total petroleum hydrocarbons as gasoline

Table 2
 Summary of Analytical Results
 Third 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: 08/13/92
 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-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-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
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
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

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

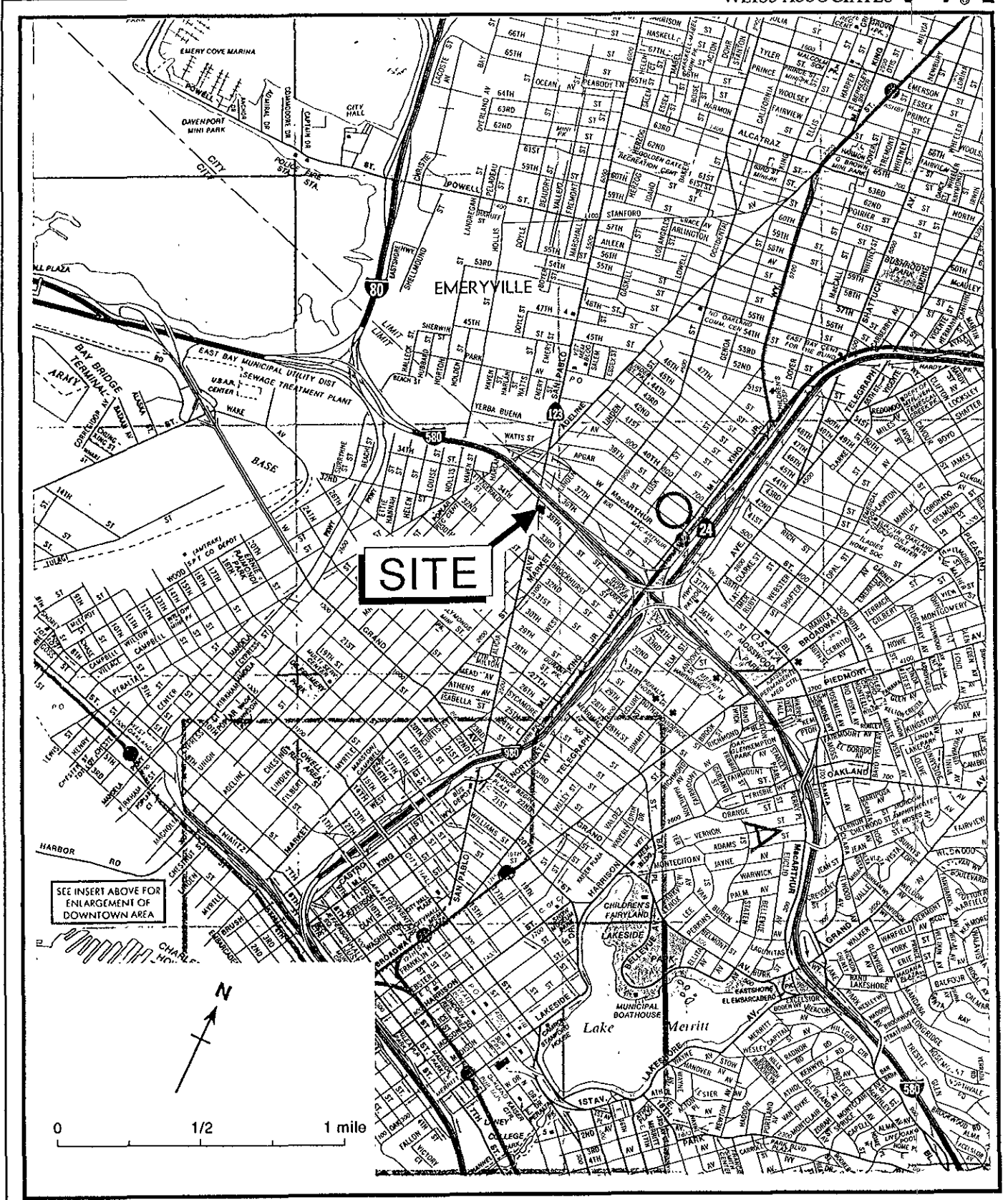


Figure 1. Site Location Map - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

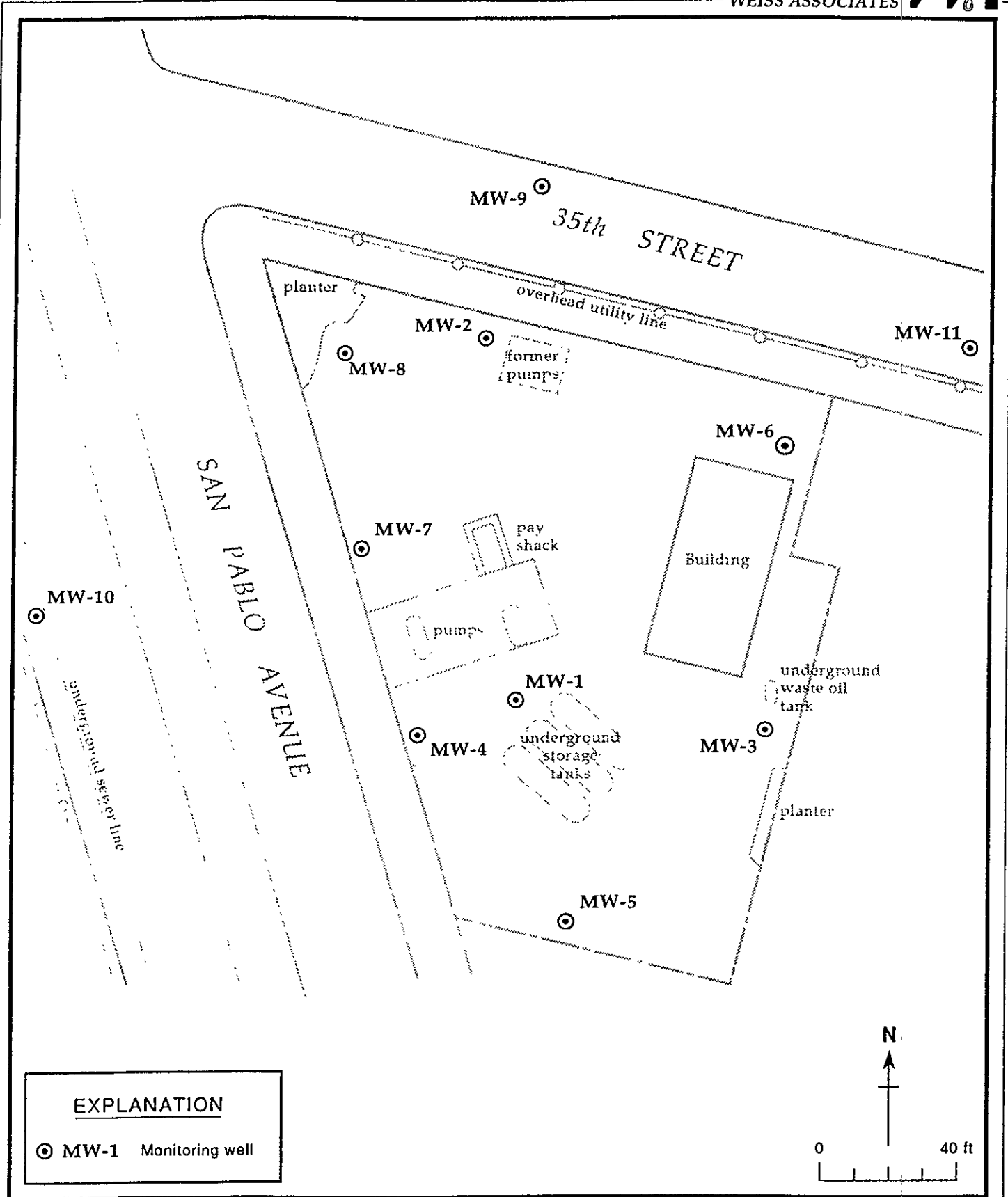


Figure 2. Monitoring Well Locations - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

ANAMETRIX INC

Environmental & Analytical Chemistry
 1961 Concourse Drive, Suite E, San Jose, CA 95131
 (408) 432-8192 • Fax (408) 432 8198

**REPORT**

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

Workorder # : 9207142
 Date Received : 07/14/92
 Project ID : G67-45.01
 Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9207142- 1	MW-11
9207142- 2	MW-3
9207142- 3	MW-4
9207142- 4	MW-9
9207142- 5	MW-5
9207142- 6	MW-10
9207142- 7	MW-7
9207142- 8	MW-1
9207142- 9	MW-8
9207142-10	MW-2
9207142-11	MW-6
9207142-12	TB
9207142-13	FB
9207142-14	MW-4D

This report consists of 5 pages not including the cover letter, and is organized in sections according to the specific Anamatrix 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 Anamatrix 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.

Anamatrix 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 Anamatrix.

Sarah Schoen, Ph.D.
 Laboratory Director

7-29-92

Date

EMCON ASSOCIATES

AUG 03 1992

RECEIVED

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

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

Workorder # : 9207142
Date Received : 07/14/92
Project ID : G67-45.01
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9207142- 1	MW-11	WATER	07/13/92	TPHg/BTEX
9207142- 3	MW-4	WATER	07/13/92	TPHg/BTEX
9207142- 5	MW-5	WATER	07/13/92	TPHg/BTEX
9207142- 7	MW-7	WATER	07/13/92	TPHg/BTEX
9207142- 8	MW-1	WATER	07/13/92	TPHg/BTEX
9207142- 9	MW-8	WATER	07/13/92	TPHg/BTEX
9207142-10	MW-2	WATER	07/13/92	TPHg/BTEX
9207142-11	MW-6	WATER	07/13/92	TPHg/BTEX
9207142-12	TB	WATER	07/13/92	TPHg/BTEX
9207142-13	FB	WATER	07/13/92	TPHg/BTEX
9207142-14	MW-4D	WATER	07/13/92	TPHg/BTEX

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

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

Workorder # : 9207142
Date Received : 07/14/92
Project ID : G67-45.01
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentration reported as gasoline for sample MW-11 is primarily due to the presence of a discrete hydrocarbon peak not indicative of gasoline.

Cheryl Baerman 7/29/92
Department Supervisor Date

Ci Fan 29 July 92
Chemist Date

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

Anametrix W.O.: 9207142
Matrix : WATER
Date Sampled : 07/13/92

Project Number : G67-45.01
Date Released : 07/29/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# MW-11	Sample I.D.# MW-4	Sample I.D.# MW-5	Sample I.D.# MW-7	Sample I.D.# MW-1
Benzene	0.0005	ND	0.14	0.18	4.2	1.1
Toluene	0.0005	ND	0.0029	0.012	0.13	0.13
Ethylbenzene	0.0005	ND	0.017	0.25	1.6	0.74
Total Xylenes	0.0005	ND	0.012	0.073	1.1	1.3
TPH as Gasoline	0.050	0.14	1.5	4.1	20	11
% Surrogate Recovery		67%	92%	97%	94%	112%
Instrument I.D.		HP4	HP4	HP4	HP4	HP4
Date Analyzed		07/22/92	07/23/92	07/23/92	07/23/92	07/23/92
RLMF		1	2	10	250	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.

C. J. [Signature] 29 July 92
Analyst Date

Cheryl Balmer 7/29/92
Supervisor Date

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

Anamatrix W.O.: 9207142
Matrix : WATER
Date Sampled : 07/13/92

Project Number : G67-45.01
Date Released : 07/29/92

Reporting Limit	Sample I.D.# MW-8	Sample I.D.# MW-2	Sample I.D.# MW-6	Sample I.D.# TB	Sample I.D.# FB
COMPOUNDS (mg/L)	-09	-10	-11	-12	-13
Benzene	0.0005	4.5	15	ND	ND
Toluene	0.0005	1.5	2.4	3.5	ND
Ethylbenzene	0.0005	2.7	4.5	14	ND
Total Xylenes	0.0005	9.1	16	36	ND
TPH as Gasoline	0.050	56	47	2700	ND
% Surrogate Recovery	96%	88%	108%	142%	99%
Instrument I.D.	HP4	HP4	HP4	HP4	HP4
Date Analyzed	07/24/92	07/24/92	07/23/92	07/23/92	07/23/92
RLMF	500	500	5000	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.
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C. J. Fu 29 July 92
Analyst Date

Cheryl Balmer 7/29/92
Supervisor Date

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

Anamatrix W.O.: 9207142
Matrix : WATER
Date Sampled : 07/13/92

Project Number : G67-45.01
Date Released : 07/29/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# MW-4D	Sample I.D.# BL2201E2	Sample I.D.# BL2301E2	Sample I.D.# BL2401E2
Benzene	0.0005	0.095	ND	ND	ND
Toluene	0.0005	0.0019	ND	ND	ND
Ethylbenzene	0.0005	0.010	ND	ND	ND
Total Xylenes	0.0005	0.0071	ND	ND	ND
TPH as Gasoline	0.050	0.87	ND	ND	ND
% Surrogate Recovery		62%	105%	105%	99%
Instrument I.D.		HP4	HP4	HP4	HP4
Date Analyzed		07/24/92	07/22/92	07/23/92	07/24/92
RLMF		1	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 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.
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All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Ci Fan 29 July 92
Analyst Date

Cheryl Balmer 7/29/92
Supervisor Date

WIC#: 204-5508-5306

Shell Engineer: Dan Kirk
 Kurt Miller
Phone No. (510)
Fax #: 685-3853

Consultant Name & Address: EMCON Assoc.
 1938 Junction Ave.
 San Jose, CA 95131

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

Comments: 3-VOAS(CHCl) for g, BTEX

Analysis Required

TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal						
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LAB: Anamatrix

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND T
Quarterly Monitoring <input checked="" type="checkbox"/>	5461	24 hours <input type="checkbox"/>
Site Investigation <input type="checkbox"/>	5441	48 hours <input type="checkbox"/>
Soil for disposal <input type="checkbox"/>	5442	15 days <input checked="" type="checkbox"/> (Nor
Water for disposal <input type="checkbox"/>	5443	Other <input type="checkbox"/>
Air Sample- Sys O&M <input type="checkbox"/>	5452	NOTE: Notify Lab soon as possible of 24/48 hrs. TAT.
Water Sample - Sys O&M <input type="checkbox"/>	5453	
Other <input type="checkbox"/>		

Sampled By:
Printed Name:

Sample ID	Date	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	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION COMMENT
1) MW-11	7-13-92		X		3	X		X			40 ml	HCl	No		
2) MW-3					3	X		X							
3) MW-4					3	X		X							
4) MW-9					3	X		X							
5) MW-5					3	X		X							Bubbles
6) MW-10					3	X		X							
7) MW-7					3	X		X							
8) MW-1					3	X		X							

Relinquished By (signature): <i>M. Adler</i>	Printed name: M ADLER	Date: 7-14-92	Received (signature): <i>Kathy Peaffle</i>	Date: 09/04/92	Printed name: KATHY PEAFFLE
Relinquished By (signature): <i>R. Shaffer</i>	Printed name: R. Shaffer	Date: 7-14-92	Received (signature):	Date: 7-14-92	Printed name:
Relinquished By (signature): <i>Kevin Reichelderfer</i>	Printed name: KEVIN REICHELDERFER	Date: 7-14-92	Received (signature):	Date:	Printed name:

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

WIC#: 204-5508-5306
 Shell Engineer: Dan Kirk
 Kurt Miller
 Consultant Name & Address: EMCON Assoc. 1938 Junction Ave. San Jose, CA 95131
 Consultant Contact: David Larsen
 Phone No. (510) 685-3853
 Phone No. (408) 453-2269
 Comments: 3-VOABCH(1) for gIBTEX

Analysis Required

LAB: Anamatrix
 CHECK ONE (1) BOX ONLY CT/DT TURN AROUND T
 Quarterly Monitoring 5461 24 hours
 Site Investigation 5441 48 hours
 Soil for disposal 5442 15 days (Nor
 Water for disposal 5443 Other
 Air Sample- Sys O&M 5452
 Water Sample - Sys O&M 5453
 Other
 NOTE: Notify Lab soon as possible of 24/48 hrs. TAT.

Sampled By:
 Printed Name:

Sample ID	Date	Soil	Water	Air	No. of conds.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION COMMENT
⑦ MW-8	7-13-92		X		3	X		X			40 ml	HGT	No		Bubble
⑩ MW-2			X		3	X		X							
⑪ MW-6			X		3	X		X							
⑫ TB			X		3	X		X							Bubble
⑬ FB			X		3	X		X							
⑭ MW-4D			X		3	X		X							Bubble

Relinquished By (signature):	Printed name:	Date:	Received (signature):	Printed name:	Date:
Relinquished By (signature):	Printed name:	Time:	Received (signature):	Printed name:	Time:
Relinquished By (signature):	Printed name:	Date: 7-14-92	Received (signature):	Printed name:	Date: 7-14
<i>Ken Reichelderfer</i>	KENIN REICHELDER	Time: 09:09	<i>Kathy Raffle</i>	KATHY RAFFLE	Time: 09:04

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

ANAMETRIX INC

Environmental & Analytical Chemistry
 1931 Concourse Drive, Suite E, San Jose, CA 95131
 (408) 432-8192 • Fax (408) 432-8198

**REPORT**

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

Workorder # : 9207229
 Date Received : 07/21/92
 Project ID : 204-5508-5306
 Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9207229- 1	MW-9
9207229- 2	MW-10
9207229- 3	MW-3
9207229- 4	TB
9207229- 5	FB

This report consists of 4 pages not including the cover letter, and is organized in sections according to the specific Anamatrix 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 Anamatrix 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.

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

Sarah Schoen, Ph.D.
 Laboratory Director

8-06-92

Date

EMCON ASSOCIATES

AUG 07 1992

RECEIVED

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

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

Workorder # : 9207229
Date Received : 07/21/92
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
9207229- 1	MW-9	WATER	07/20/92	TPHg/BTEX
9207229- 2	MW-10	WATER	07/20/92	TPHg/BTEX
9207229- 3	MW-3	WATER	07/20/92	TPHg/BTEX
9207229- 4	TB	WATER	07/20/92	TPHg/BTEX
9207229- 5	FB	WATER	07/20/92	TPHg/BTEX

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

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

Workorder # : 9207229
Date Received : 07/21/92
Project ID : 204-5508-5306
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- The concentration reported as gasoline for sample MW-3 is due to the presence of a discrete hydrocarbon peak not indicative of gasoline.

Cheyl Balmer 8/5/92
Department Supervisor Date

C. Fern 5 Aug 92
Chemist Date

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

Anametrix W.O.: 9207229
Matrix : WATER
Date Sampled : 07/20/92

Project Number : 204-5508-5306
Date Released : 08/05/92

Reporting Limit	Sample I.D.# MW-9	Sample I.D.# MW-10	Sample I.D.# MW-3	Sample I.D.# TB	Sample I.D.# FB
(mg/L)	-01	-02	-03	-04	-05
Benzene	0.0005	0.91	0.40	ND	ND
Toluene	0.0005	ND	ND	ND	ND
Ethylbenzene	0.0005	0.22	0.18	ND	ND
Total Xylenes	0.0005	1.2	0.067	ND	ND
TPH as Gasoline	0.050	11	15	0.20	ND
% Surrogate Recovery	85%	66%	84%	80%	100%
Instrument I.D.	HP21	HP21	HP21	HP21	HP21
Date Analyzed	08/03/92	08/03/92	07/31/92	07/31/92	08/03/92
RLMF	100	50	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 53-147%.

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

Jan 5 Aug 92
Analyst Date

Cheryl Balmer 8/5/92
Supervisor Date

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

Anamatrix W.O.: 9207229
Matrix : WATER
Date Sampled : 07/20/92

Project Number : 204-5508-5306
Date Released : 08/05/92

COMPOUNDS	Reporting Limit (mg/L)	Sample I.D.# BL3101E2 BLANK	Sample I.D.# BG0301E2 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		92%	88%
Instrument I.D.		HP21	HP21
Date Analyzed		07/31/92	08/03/92
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 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.
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All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

C. Fern 5 Aug 92
Analyst Date

Cheyl Balmer 8/5/92
Supervisor Date



SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD

Serial No.: 561

Date: / /
Page 1 of 1

Site Address: 3420 San Pablo Avenue
Oakland, CA

Analysis Required

LAB: Anametrix

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

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

Comments: 3-VOAS (HCL) for g_i BTEX

Sampled By:
Printed Name:

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

- Quarterly Monitoring 5461 24 hours
 Site Investigation 5441 48 hours
 Soil for disposal 5442 15 days (Normal)
 Water for disposal 5443 Other
 Air Sample- Sys O&M 5452
 Water Sample - Sys O&M 5453
 Other
 NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.

Sample ID	Date	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					Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
MW-9	7-20-92		X		3	X	X							40 ml	HCL	No			
MW-10	7-20-92				3	X	X												
MW-3	7-20-92				3	X	X												
TB	7-20-92				3	X	X												
FB	7-20-92				3	X	X												

Relinquished By (signature): <u>[Signature]</u>	Printed name: <u>M. ADLER</u>	Date: <u>7-21-92</u>	Time: <u>9:20</u>	Received (signature): <u>[Signature]</u>	Printed name: <u>KATHY PFAFFLE</u>	Date: <u>7-21-92</u>	Time: <u>0920</u>
Relinquished By (signature):	Printed name:	Date:	Time:	Received (signature):	Printed name:	Date:	Time:
Relinquished By (signature):	Printed name:	Date:	Time:	Received (signature):	Printed name:	Date:	Time:

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