Weiss Associates Environmental and Geologic Services

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

92 APR 20 PM 9:30

TRANSMITTAL LETTER

FROM: Jeni Martin **DATE:** April 15, 1992

TO: Dennis Byrne
Hazardous Materials Department
County of Alameda
470 27th Street
Oakland, California 94607

VIA:
- [X] First Class Mail
- [ ] Fax ___ pages
- [ ] UPS (Surface)
- [ ] Federal Express
- [ ] Courier

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

need to transfer to 5th St LOP

JOB: 81-612-01

AS:
- [ ] We discussed on the telephone today
- [ ] You requested _____
- [ ] We believe you may be interested
- [X] Is required

WE ARE SENDING:
- [X] Enclosed
- [ ] Under Separate Cover Via _____

1. Quarterly ground water monitoring report for the subject site

FOR:
- [ ] Your information
- [X] Your use
- [ ] Your review & comments
- [ ] Return to you

PLEASE:
- [X] Keep this material
- [ ] Return within 2 weeks
- [ ] Acknowledge receipt

MESSAGE:

Please call if you have any questions.

Weiss Associates Environmental and Geologic Services

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

April 15, 1992

Mr. Dennis Byrne
Hazardous Materials Department
County of Alameda
470 27th Street
Oakland, California 94607

Re: Shell Service Station
WIC #204-5508-5306
3420 San Pablo Avenue
Oakland, California
WA Job #81-612-01

Dear Mr. Byrne:

This letter describes recent sampling 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 first quarter 1992, and proposed work for the second quarter 1992.

First Quarter 1992 Activities:

- EMCON of San Jose, California measured ground water depths and collected water samples from the eleven site wells. EMCON's report describing these activities and the analytic results for ground water are included as Attachment A.

- Weiss Associates (WA) prepared a ground water elevation contour map (Figure 2) using EMCON's ground water depth measurements. Previous ground water elevation contour maps are included as Attachment B.

Anticipated Second Quarter 1992 Activities :

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

Please call if you have any questions.

Sincerely,
Weiss Associates

Jeni C. Martin
Staff Geologist

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

JCM/JPT:fcr

E:\ALL\SHELL\600\612QMMA2.WP

Attachments: Figures
A - EMCON's Ground Water Monitoring Report
B - Previous Ground Water Elevation Contour Maps

cc: Kurt Miller, 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, Oakland, California 94612

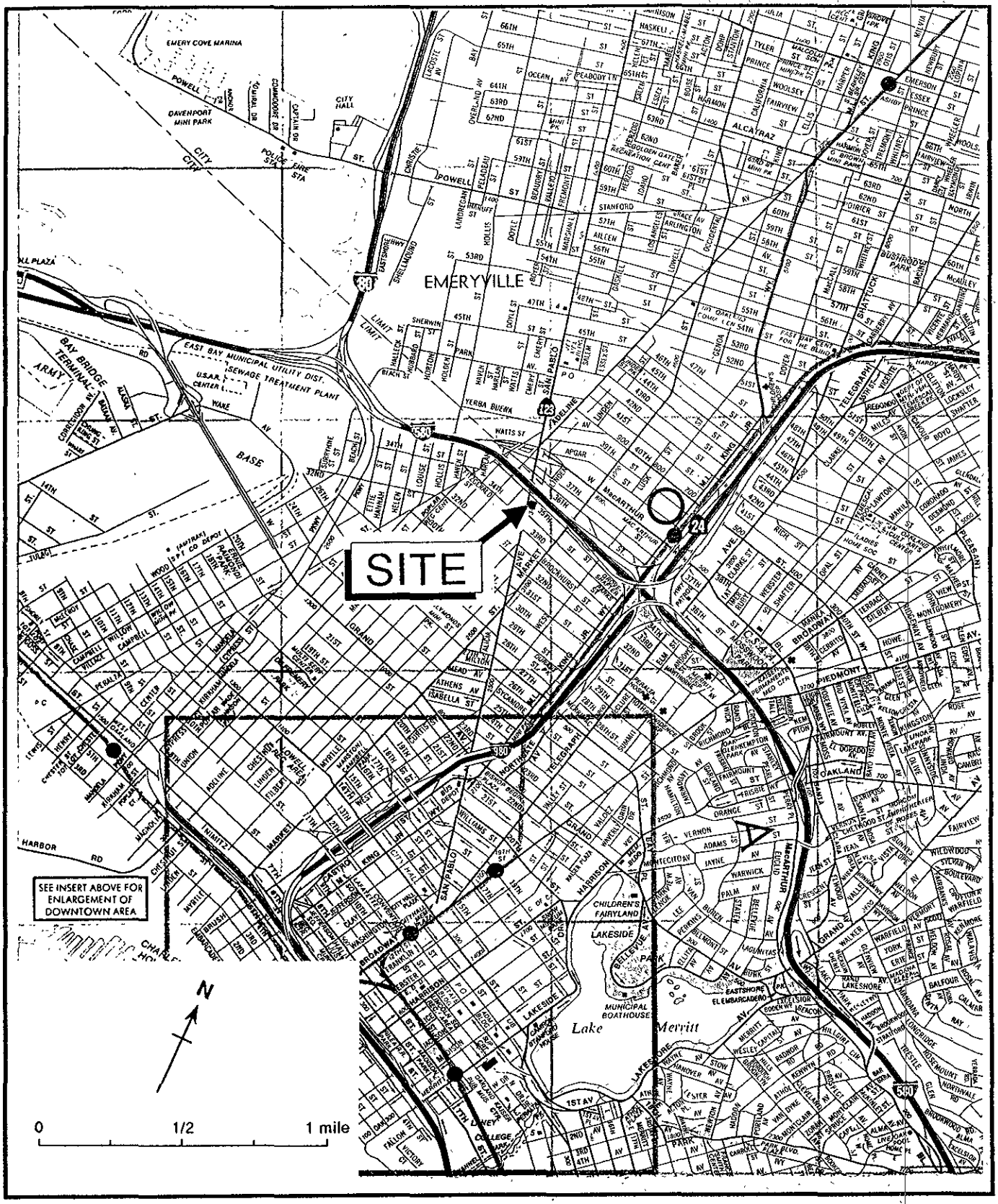


Figure 1. Site Location Map - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

2/13/92

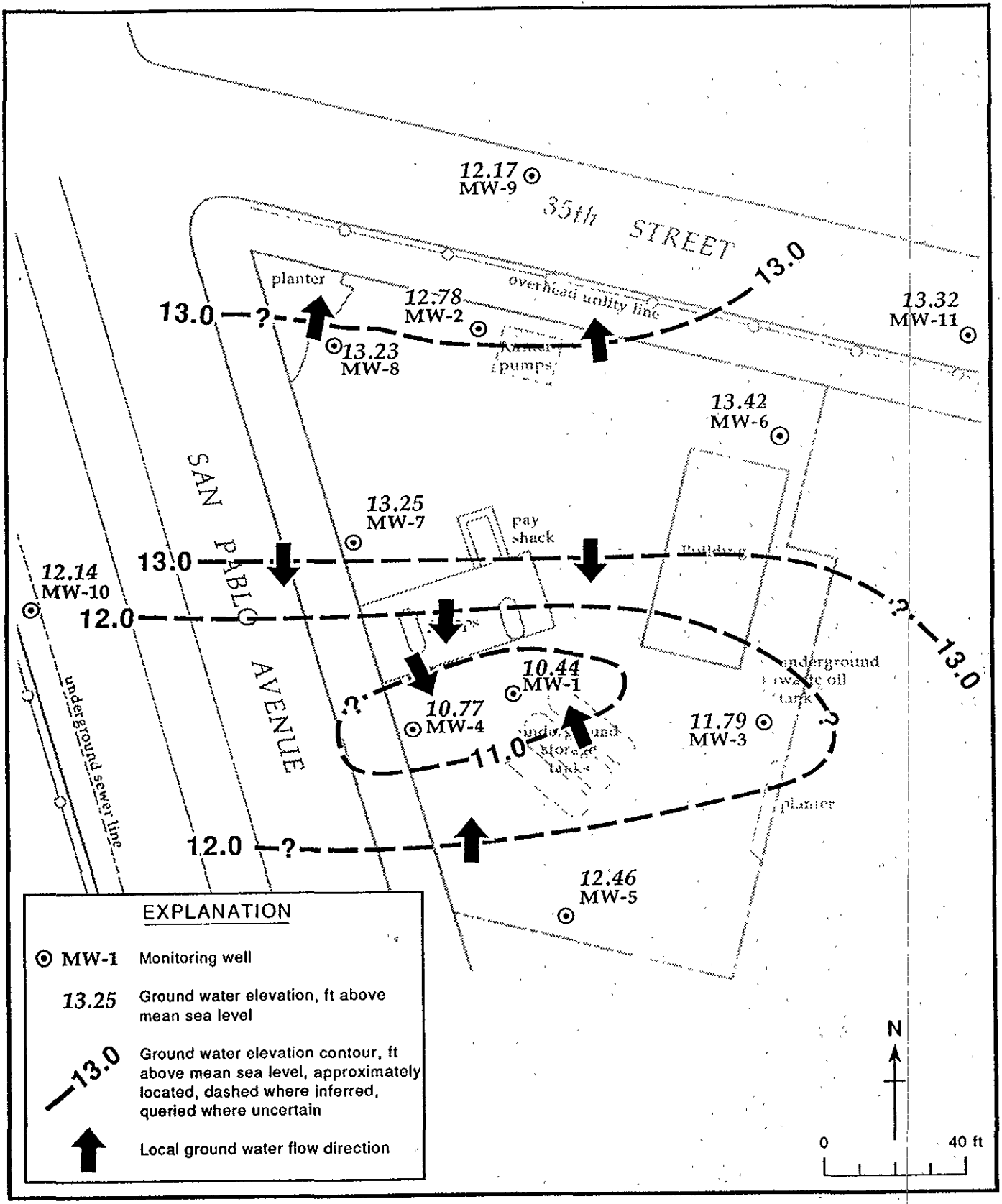


Figure 2. Ground Water Elevation Contour Map - January 28, 1992 - Shell Service Station WIC #204-5508-5306, 3420 San Pablo Avenue, Oakland, California

4/14/92

Table 1. Ground Water Elevation Data - Shell Service Station WIC #204-5508-4507, 2142 East 12th Street, Oakland, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
MW-1	01/28/92	21.28	10.84	10.44
MW-2	01/28/92	21.56	8.78	12.78
MW-3	01/28/92	21.78	9.99	11.79
MW-4	01/28/92	20.31	9.54	10.77
MW-5	01/28/92	20.91	8.45	12.46
MW-6	01/28/92	22.32	8.90	13.42
MW-7	01/28/92	20.36	7.11	13.25
MW-8	01/28/92	20.95	7.72	13.23
MW-9	01/28/92	21.19	9.02	12.17
MW-10	01/28/92	19.74	7.60	12.14
MW-11	01/28/92	22.06	8.74	13.32

ATTACHMENT A

GROUND WATER MONITORING REPORT AND ANALYTIC REPORT

EMCON ASSOCIATES
Consultants in Wastes Management and Environmental Control

February 21, 1992
Project: G67-45.01
WIC#: 204-5508-5306

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

Re: First 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 first quarter 1992 ground-water monitoring event for the Shell Oil Company (Shell) service station located at 3420 San Pablo Avenue, Oakland, California. First quarter monitoring was conducted on January 28, 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 1 (supplied by Weiss Associates and Delta Environmental). 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 wells. Total depth was measured to the nearest 0.1 foot. Results of the water-level survey are summarized in table 1.

SAMPLING AND ANALYSIS

Ground water samples were collected from wells MW-1 through MW-11 on January 28, 1992. Prior to sample collection, the wells were purged with polyvinyl chloride (PVC) 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-9 were evacuated to dryness before three casing volumes were removed. The wells were allowed 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 first quarter monitoring are summarized

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

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 a Shell-approved and state-certified analytical laboratory 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 on site with steaming hot deionized water prior to use at each well.

Quality control samples included one trip blank (TB). All water samples from first quarter monitoring were analyzed for total petroleum hydrocarbons (TPH) as gasoline and benzene, toluene, ethylbenzene, and total xylenes (BTEX).

ANALYTICAL RESULTS

Analytical results for the first quarter 1992 monitoring event are summarized in table 2. The original certified analytical report and a copy of the 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, first quarter 1992
Table 2 - Summary of analytical results, first quarter 1992
Figure 1 - Site map
Certified analytical report
Chain-of-custody document

Table 1

Monitoring Well Field Measurement Data
First Quarter 1992

Shell Station: 3420 San Pablo Avenue
Oakland, California

WIC#: 204-5508-5306

Well Identification	Water Level Survey Date	Depth To Water (feet)	Well Total Depth (feet)	Floating Product Thickness (feet)	Well Sampling Date	pH (stnd. units)[1]	Electrical Conductivity (µmhos/cm)[2]	Temperature (°F)[3]	Turbidity (NTU)[4]
MW-1	01/28/92	10.84	25.1	ND.[5]	01/28/92	6.78	1,300	64.3	>200
MW-2	01/28/92	8.78	19.3	ND.	01/28/92	6.63	1,422	62.5	>200
MW-3	01/28/92	9.99	27.5	ND.	01/28/92	6.80	950	61.1	>200
MW-4	01/28/92	9.54	25.2	ND.	01/28/92	7.20	1,088	70.4	>200
MW-5	01/28/92	8.45	25.0	ND.	01/28/92	6.78	891	68.7	>200
MW-6	01/28/92	8.90	19.9	ND.	01/28/92	6.70	1,050	61.5	>200
MW-7	01/28/92	7.11	19.5	ND.	01/28/92	6.90	1,320	63.5	>200
MW-8	01/28/92	7.72	20.0	ND.	01/28/92	6.74	1,254	62.8	>200
MW-9	01/28/92	9.02	19.7	ND.	01/28/92	7.01	1,381	65.3	>200
MW-10	01/28/92	7.60	18.8	ND.	01/28/92	7.02	1,640	61.3	>200
MW-11	01/28/92	8.74	19.0	ND.	01/28/92	7.28	1,040	65.3	>200

1. Standard pH units
2. µmhos/cm = micromhos per centimeter
3. °F = degrees Fahrenheit
4. NTU = nephelometric turbidity units
5. ND. = not detected

Table 2

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

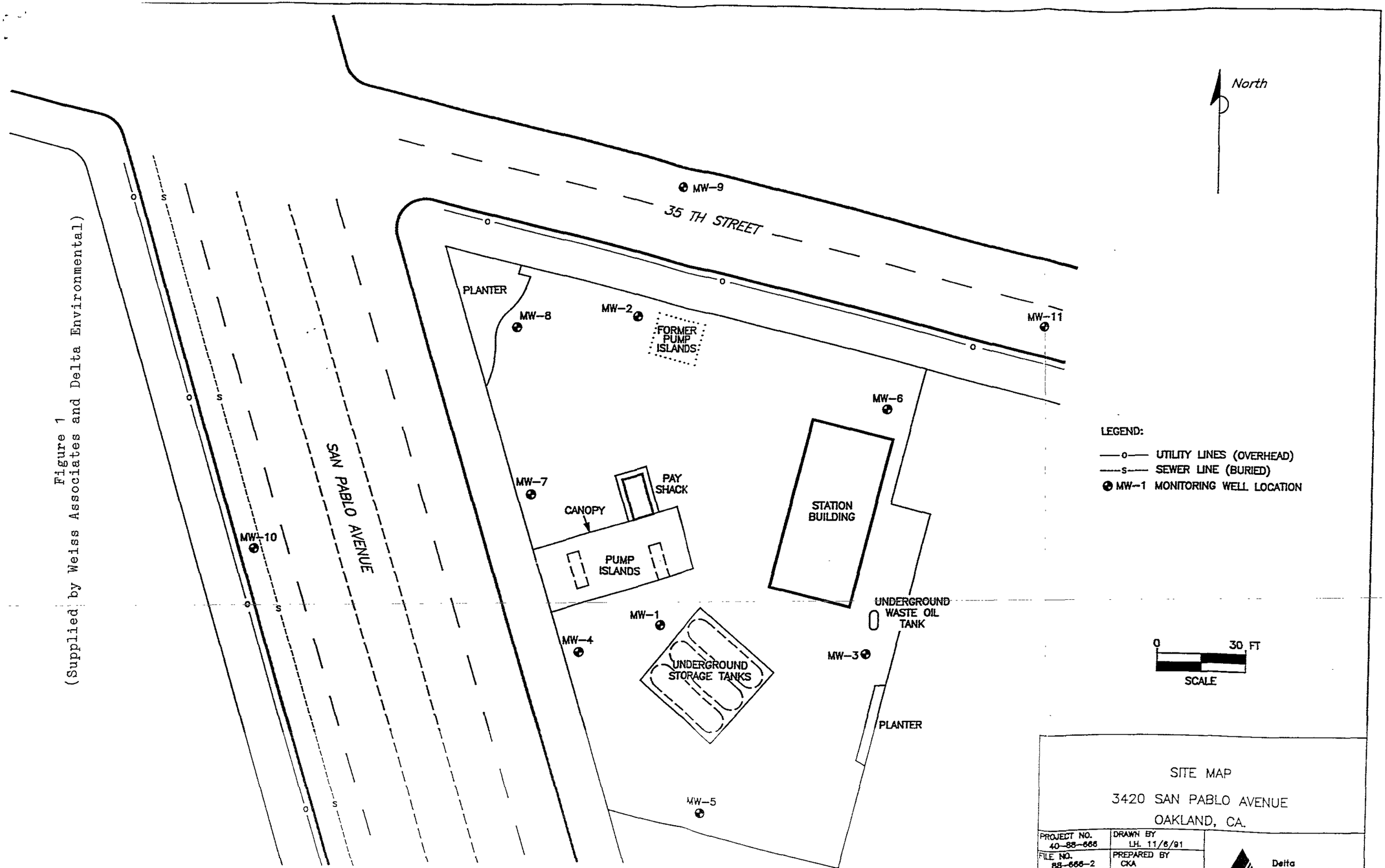
Shell Station: 3420 San Pablo Avenue
OAKLAND, California

WIC#: 204-5508-5306

Sample Designation	Sampling Date	TPH[1] as Gasoline (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)
MW-1	01/28/92	14.	1.0	0.16	0.45	1.6
MW-2	01/28/92	49.	7.4	0.8	1.8	8.3
MW-3	01/28/92	0.19	<0.0005	<0.0005	<0.0005	<0.0005
MW-4	01/28/92	0.20	0.0076	<0.0005	0.0030	0.0033
MW-5	01/28/92	3.3	0.13	0.01	0.18	0.22
MW-6	01/28/92	87.	1.2	0.47	2.0	6.6
MW-7	01/28/92	5.0	1.2	<0.01	0.22	0.054
MW-8	01/28/92	32.	1.9	0.75	1.4	6.3
MW-9	01/28/92	3.5	0.12	<0.01	0.028	0.036
MW-10	01/28/92	3.8	0.36	0.014	0.17	0.039
MW-11	01/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
TB	01/28/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

1. TPH = total petroleum hydrocarbons

Figure 1
(Supplied by Weiss Associates and Delta Environmental)



SITE MAP

3420 SAN PABLO AVENUE

OAKLAND, CA.

PROJECT NO. 40-88-666	DRAWN BY LH. 11/6/91
FILE NO. 88-666-2	PREPARED BY CKA
REVISION NO. 2	REVIEWED BY 12/12/91

Delta Environmental Consultants, Inc.

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Shell Oil Company
Emcon Associates
1938 Junction Ave.
San Jose, CA 95131
David Larsen

Date: 02/12/92

Work Order: T2-01-189 P.O. Number: MOH 880-021 Vendor #I0002402

This is the Certificate of Analysis for the following samples:

Client Work ID: G6745,3420 San Pablo Ave,Okld
Date Received: 01/29/92
Number of Samples: 8
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

David A. Pichette
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/12/92
Client Work ID: G6745,3420 San Pablo Ave,Okld

Work Order: T2-01-189

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **MW-11**
SAMPLE DATE: **01/28/92**
LAB SAMPLE ID: T201189-01
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/04/92
Low Boiling Hydrocarbons	Mod.8015		02/04/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None
BTEX		
Benzene	0.0005	None
Toluene	0.0005	None
Ethylbenzene	0.0005	None
Xylenes (total)	0.0005	None

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	114.
1,3-Dichlorobenzene (BTEX)	96.

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/12/92
Client Work ID: G6745,3420 San Pablo Ave,Okld

Work Order: T2-01-189

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **MW-3**
SAMPLE DATE: **01/28/92**
LAB SAMPLE ID: **T201189-02**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/05/92
Low Boiling Hydrocarbons	Mod.8015		02/05/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	0.19
BTEX		
Benzene	0.0005	None
Toluene	0.0005	None
Ethylbenzene	0.0005	None
Xylenes (total)	0.0005	None

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	112.
1,3-Dichlorobenzene (BTEX)	97.

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/12/92
Client Work ID: G6745,3420 San Pablo Ave,Okld

Work Order: T2-01-189

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **MW-4**
SAMPLE DATE: **01/28/92**
LAB SAMPLE ID: **T201189-03**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/05/92
Low Boiling Hydrocarbons	Mod.8015		02/05/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	**0.20**
BTEX		
Benzene	0.0005	**0.0076**
Toluene	0.0005	**None.**
Ethylbenzene	0.0005	**0.0030**
Xylenes (total)	0.0005	**0.0033**

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	**120*.**
1,3-Dichlorobenzene (BTEX)	**95.**

* Hydrocarbon interference

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/12/92
Client Work ID: G6745,3420 San Pablo Ave,Okld

Work Order: T2-01-189

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **MW-5**
SAMPLE DATE: **01/28/92**
LAB SAMPLE ID: **T201189-04**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/04/92
Low Boiling Hydrocarbons	Mod.8015		02/04/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.0	3.3
BTEX		
Benzene	0.01	0.13
Toluene	0.01	0.01
Ethylbenzene	0.01	0.18
Xylenes (total)	0.01	0.22

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	120.
1,3-Dichlorobenzene (BTEX)	101.

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/12/92
Client Work ID: G6745,3420 San Pablo Ave,Okld

Work Order: T2-01-189

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **MW-7**
SAMPLE DATE: **01/28/92**
LAB SAMPLE ID: T201189-05
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/05/92
Low Boiling Hydrocarbons	Mod.8015		02/05/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.0	5.0
BTEX		
Benzene	0.01	1.2
Toluene	0.01	None.
Ethylbenzene	0.01	0.22
Xylenes (total)	0.01	0.054

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	117*.
1,3-Dichlorobenzene (BTEX)	92.

* Hydrocarbon interference

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/12/92
Client Work ID: G6745,3420 San Pablo Ave,Okld

Work Order: T2-01-189

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **MW-9**
SAMPLE DATE: **01/28/92**
LAB SAMPLE ID: T201189-06
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/05/92
Low Boiling Hydrocarbons	Mod.8015		02/05/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.0	3.5
BTEX		
Benzene	0.01	0.12
Toluene	0.01	None.
Ethylbenzene	0.01	0.028
Xylenes (total)	0.01	0.036

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	121*.
1,3-Dichlorobenzene (BTEX)	94.

* Hydrocarbon interference

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/12/92
Client Work ID: G6745,3420 San Pablo Ave,Okld

Work Order: T2-01-189

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **MW-10**
SAMPLE DATE: **01/28/92**
LAB SAMPLE ID: **T201189-07**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/05/92
Low Boiling Hydrocarbons	Mod.8015		02/05/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.0	3.8
BTEX		
Benzene	0.01	0.36
Toluene	0.01	0.014
Ethylbenzene	0.01	0.17
Xylenes (total)	0.01	0.039

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	116*.
1,3-Dichlorobenzene (BTEX)	96.

* Hydrocarbon interference

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/12/92
Client Work ID: G6745,3420 San Pablo Ave,Okld

Work Order: T2-01-189

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **MW-1**
SAMPLE DATE: **01/28/92**
LAB SAMPLE ID: **T201189-08**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/05/92
Low Boiling Hydrocarbons	Mod.8015		02/05/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	5.0	14.
BTEX		
Benzene	0.05	1.0
Toluene	0.05	0.16
Ethylbenzene	0.05	0.45
Xylenes (total)	0.05	1.6

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	116*.
1,3-Dichlorobenzene (BTEX)	92.

* Hydrocarbon interference

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/12/92
Client Work ID: G6745,3420 San Pablo Ave,Okld

Work Order: T2-01-189

TEST NAME: **Spike and Spike Duplicates**

SAMPLE ID: **Quality Control**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: **T201189-09A**
EXTRACTION DATE:
ANALYSIS DATE: **02/05/92**
ANALYSIS METHOD: **Mod.8015**

QUALITY CONTROL REPORT

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Analyses

RESULTS in Milligrams per Liter

PARAMETER	Sample Amt	Spike Amt	MS Result	MSD Result	MS %Rec	MSD %Rec	RPD
Gasoline	None	500	474	484	95	97	2

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	120*	120*

* Hydrocarbon interference

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/12/92
Client Work ID: G6745,3420 San Pablo Ave,Okld

Work Order: T2-01-189

TEST CODE **QC** TEST NAME **Quality Control**

Quality control (QC) samples are analyzed and used to assess the laboratory control measures. Routine QC samples include method blanks, spikes and duplicates. The purpose of the method blank (MB) analysis is to demonstrate that artifacts of the test do not yield false positives. The laboratory control spike (LS) and /or matrix spike (MS) analysis is used to evaluate the ability of the test to recover analytes of interest, i.e. accuracy. Accuracy is expressed as percent (%) recovery. The laboratory spike duplicate (LSD), matrix spike duplicate (MSD), or duplicate sample (DUP) is used to determine the precision of the test, by comparing the result from the original spike (or sample) to the duplicate spike (or sample). Precision is expressed as relative percent difference (RPD).

The results of appropriate QC samples from QC batches associated with the listed samples are included in this report.

TEST CODE **TPHVB** TEST NAME **TPH Gas,BTEX by 8015/8020**

The method of analysis for low boiling hydrocarbons is taken from EPA Methods modified 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatography using a flame ionization detector in series with a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline. Results in soils are corrected for moisture content and are reported on a dry soil basis unless otherwise noted.

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

Shell Oil Company
Emcon Associates
1938 Junction Ave.
San Jose, CA 95131
David Larsen

Date: 02/12/92

Work Order: T2-01-190 P.O. Number: MOH 880-021 Vendor #I0002402

This is the Certificate of Analysis for the following samples:

Client Work ID: G6745,3420 San Pablo Ave,Okld
Date Received: 01/29/92
Number of Samples: 4
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

David A. Pichette
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/11/92
Client Work ID: G6745,3420 San Pablo Ave,Okld

Work Order: T2-01-190

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **MW-6**
SAMPLE DATE: **01/28/92**
LAB SAMPLE ID: **T201190-01**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/03/92
Low Boiling Hydrocarbons	Mod.8015		02/03/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	25.	87.
BTEX		
Benzene	0.25	1.2
Toluene	0.25	0.47
Ethylbenzene	0.25	2.0
Xylenes (total)	0.25	6.6

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	97.
1,3-Dichlorobenzene (BTEX)	110.

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/11/92
Client Work ID: G6745,3420 San Pablo Ave,Okld

Work Order: T2-01-190

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **MW-8**
SAMPLE DATE: **01/28/92**
LAB SAMPLE ID: **T201190-02**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/01/92
Low Boiling Hydrocarbons	Mod.8015		02/01/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	10.	32.
BTEX		
Benzene	0.1	1.9
Toluene	0.1	0.75
Ethylbenzene	0.1	1.4
Xylenes (total)	0.1	6.3

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	94.
1,3-Dichlorobenzene (BTEX)	98.

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/11/92
Client Work ID: G6745,3420 San Pablo Ave,Okld

Work Order: T2-01-190

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **MW-2**
SAMPLE DATE: **01/28/92**
LAB SAMPLE ID: **T201190-03**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/03/92
Low Boiling Hydrocarbons	Mod.8015		02/03/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	10.	49.
BTEX		
Benzene	0.1	7.4
Toluene	0.1	0.8
Ethylbenzene	0.1	1.8
Xylenes (total)	0.1	8.3

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	111.
1,3-Dichlorobenzene (BTEX)	98.

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/11/92
Client Work ID: G6745,3420 San Pablo Ave,Okld

Work Order: T2-01-190

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **TB**
SAMPLE DATE: **01/28/92**
LAB SAMPLE ID: **T201190-04**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		01/31/92
Low Boiling Hydrocarbons	Mod.8015		01/31/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None.
BTEX		
Benzene	0.0005	None.
Toluene	0.0005	None.
Ethylbenzene	0.0005	None.
Xylenes (total)	0.0005	None.

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	95.
1,3-Dichlorobenzene (BTEX)	97.

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/11/92
Client Work ID: G6745,3420 San Pablo Ave,Okld

Work Order: T2-01-190

TEST NAME: **Spike and Spike Duplicates**

SAMPLE ID: **Quality Control**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: **T201190-05A**
EXTRACTION DATE:
ANALYSIS DATE: **01/31/92**
ANALYSIS METHOD: **Mod.8015**

QUALITY CONTROL REPORT

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Analyses

RESULTS in Milligrams per Liter

PARAMETER	Sample Amt	Spike Amt	MS Result	MSD Result	MS %Rec	MSD %Rec	RPD
Gasoline	None	500	452	426	90	85	6

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	104	96

IT ANALYTICAL SERVICES
SAN JOSE, CA
(408) 943-1540

Company: Shell Oil Company
Date: 02/11/92
Client Work ID: G6745,3420 San Pablo Ave,Okld

Work Order: T2-01-190

TEST CODE **QC** TEST NAME **Quality Control**

Quality control (QC) samples are analyzed and used to assess the laboratory control measures. Routine QC samples include method blanks, spikes and duplicates. The purpose of the method blank (MB) analysis is to demonstrate that artifacts of the test do not yield false positives. The laboratory control spike (LS) and /or matrix spike (MS) analysis is used to evaluate the ability of the test to recover analytes of interest, i.e. accuracy. Accuracy is expressed as percent (%) recovery. The laboratory spike duplicate (LSD), matrix spike duplicate (MSD), or duplicate sample (DUP) is used to determine the precision of the test, by comparing the result from the original spike (or sample) to the duplicate spike (or sample). Precision is expressed as relative percent difference (RPD).

The results of appropriate QC samples from QC batches associated with the listed samples are included in this report.

TEST CODE **TPHVB** TEST NAME **TPH Gas,BTEX by 8015/8020**

The method of analysis for low boiling hydrocarbons is taken from EPA Methods modified 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatography using a flame ionization detector in series with a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline. Results in soils are corrected for moisture content and are reported on a dry soil basis unless otherwise noted.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No.: _____

Date:

Site Address: 3420 San Pablo Ave, Oakland, CA

WIC#: 204-5508-5306

Shell Engineer: 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:

Sampled By: x Lisle Rath

Printed Name: x LISLE RATH

LAB: IT Analytical - San Jose

CHECK ONE (1) BOX ONLY		CT/DT
Quarterly Monitoring	XXX	5461
Site Investigation	[ ]	5441
Soil for disposal	[ ]	5442
Water for disposal	[ ]	5443
Air Sample- Sys O&M	[ ]	5452
Water Sample - Sys O&M	[ ]	5453
Other	[ ]	

TURN AROUND TIME
- 24 hours [ ]
- 48 hours [ ]
- 15 days XXX (Normal)
- Other [ ] _____

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

Analysis Required

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-11	1-28-92		X		3	X		X			40 ml	HCl	No		
MW-3	1-28-92				3	X		X							
MW-4	1-28-92				3	X		X							
MW-5	1-28-92				3	X		X							
MW-7	1-28-92				3	X		X							
MW-9	1-28-92				3	X		X							
MW-10	1-28-92				3	X		X							
MW-1	1-28-92				3	X		X							

Relinquished By (signature): X	**Printed name:** X	**Date:**	**Received (signature):**
		Time:	
Relinquished By (signature):	**Printed name:**	**Date:**	**Received (signature):**
		Time:	
Relinquished By (signature):	**Printed name:**	**Date:**	**Received (signature):**
		Time:	

Printed name:	**Date:**
	Time:
Printed name:	**Date:**
	Time:
Printed name:	**Date:**
	Time:

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

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No.: _____

Date:
Page 2 of 2

Site Address: 3420 San Pablo Ave, Oakland, CA

WIC#: 204-5508-5306

Shell Engineer: 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:

Sampled By: X Lisle Ratt

Printed Name: X Lisle RATT

LAB: IT Analytical - San Jose

CHECK ONE (1) BOX ONLY		CT/DT
Quarterly Monitoring	XX	5461
Site Investigation	[ ]	5441
Soil for disposal	[ ]	5442
Water for disposal	[ ]	5443
Air Sample- Sys O&M	[ ]	5452
Water Sample - Sys O&M	[ ]	5453
Other	[ ]	

TURN AROUND TIME
- 24 hours [ ]
- 48 hours [ ]
- 15 days XX (Normal)
- Other [ ] _____

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

Analysis Required

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	Preservation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
MW-6	1-28-92		X		3	X		X			40 ml	HCl	No		
MW-8	1-28-92		↓		3	X		X			↓	↓	↓		
MW-2	1-28-92		↓		3	X		X			↓	↓	↓		
TB	1-28-92		↓		1	X		X			↓	↓	↓		

Relinquished By (signature): X	**Printed name:** X	**Date:**	**Received (signature):**	**Printed name:**	**Date:**
		Time:			**Time:**
Relinquished By (signature):	**Printed name:**	**Date:**	**Received (signature):**	**Printed name:**	**Date:**
		Time:			**Time:**
Relinquished By (signature):	**Printed name:**	**Date:**	**Received (signature):**	**Printed name:**	**Date:**
		Time:			**Time:**

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

Last Revision Date: 10/15/91

ATTACHMENT B

PREVIOUS GROUND WATER ELEVATION CONTOUR MAPS