Weiss Associates
Environmental and Geologic Services
5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone: 510-547-5420

TRANSMITTAL LETTER

LOP

FROM: J. Michael Asport **DATE:** May 13, 1992

TO: Richard Hiett
Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612

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

SUBJECT: Shell Service Station
WIC #204-5508-5801
500 - 40th Street
Oakland, California

JOB: 81-601-01

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

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

Quarterly Status Report

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.

cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, California 94520-9998
Brian Oliva, Alameda County Department of Environmental Health, 80 Swan Way, Oakland, CA 94621-1426

Weiss Associates
Environmental and Geologic Services
5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone: 510-547-5420

May 8, 1992

Richard Hiett
Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street
Oakland, CA 94612

Re: Shell Service Station
WIC #204-5508-5801
500 - 40th Street
Oakland, California
WA Job #81-601-01

609

Dear Mr. Hiett,

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 first quarter 1992 and proposed work for the second quarter 1992.

First Quarter 1992 Activities:

- EMCON Associates (EMCON) of San Jose, California measured depths to ground water and collected ground water samples from eleven of the twelve site wells. Well OMW-11 was inaccesible and was not sampled. EMCON's report describing these activities and analytic results for ground water is included as Attachment A.

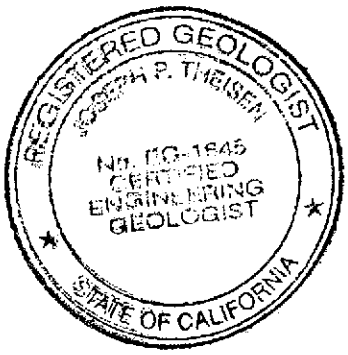
- Weiss Associates (WA) used EMCON's ground water elevation calculations to prepare a ground water elevation contour map (Figure 2).

Anticipated Second Quarter 1992 Activities:

WA will submit a report presenting the results of the second 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.

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\601QMAP2.WP

Attachments: Figures
A - EMCON's Ground Water Monitoring Report

cc: Dan Kirk, Shell Oil Company, P.O. Box 5278, Concord, CA 94520-9998
Brian Oliva, Alameda County Department of Environmental Health, 80 Way, Oakland, CA 94621-1426

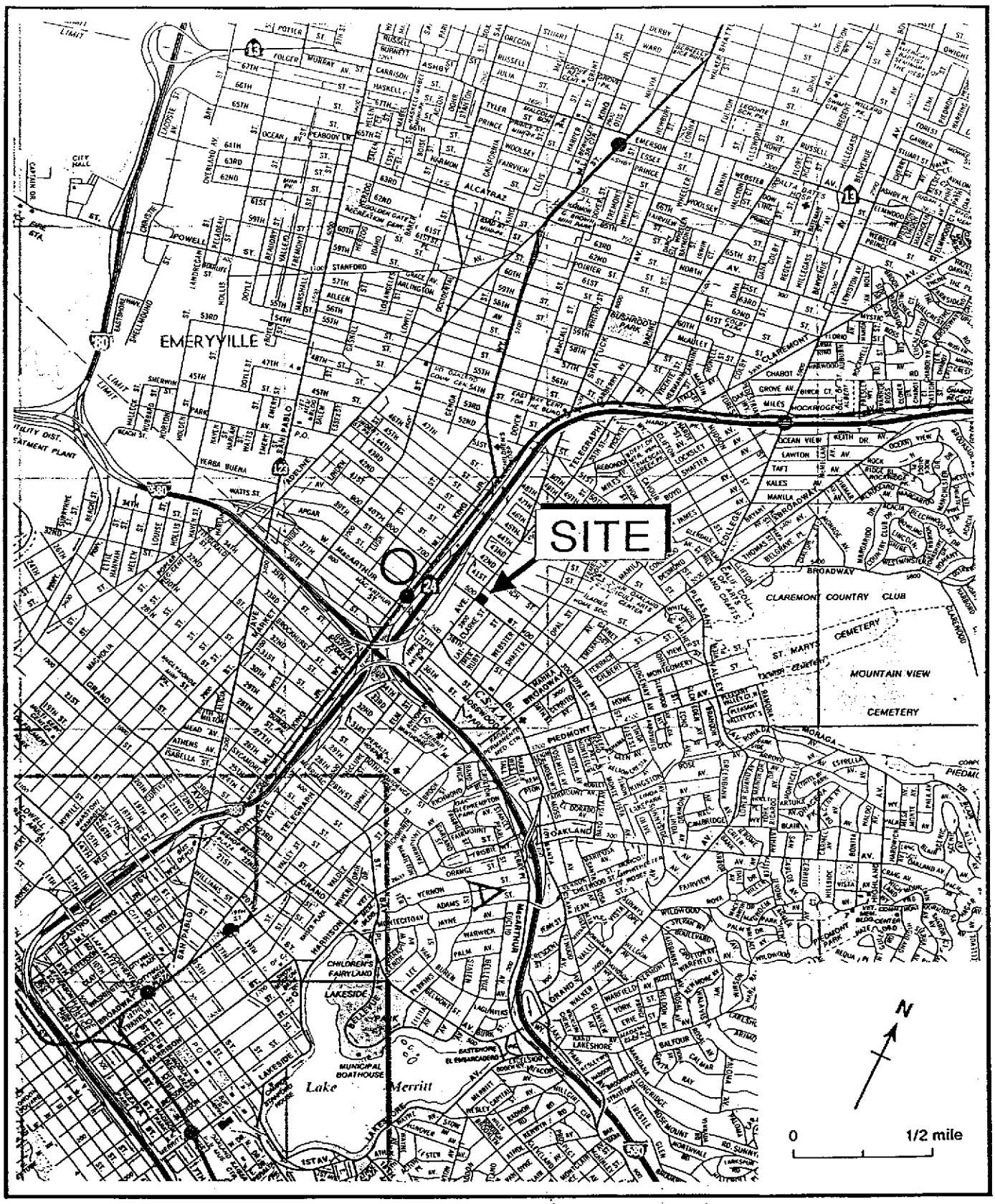


Figure 1. Site Location Map - Shell Service Station WIC #204-5508-4903, 500 40th Street, Oakland, California

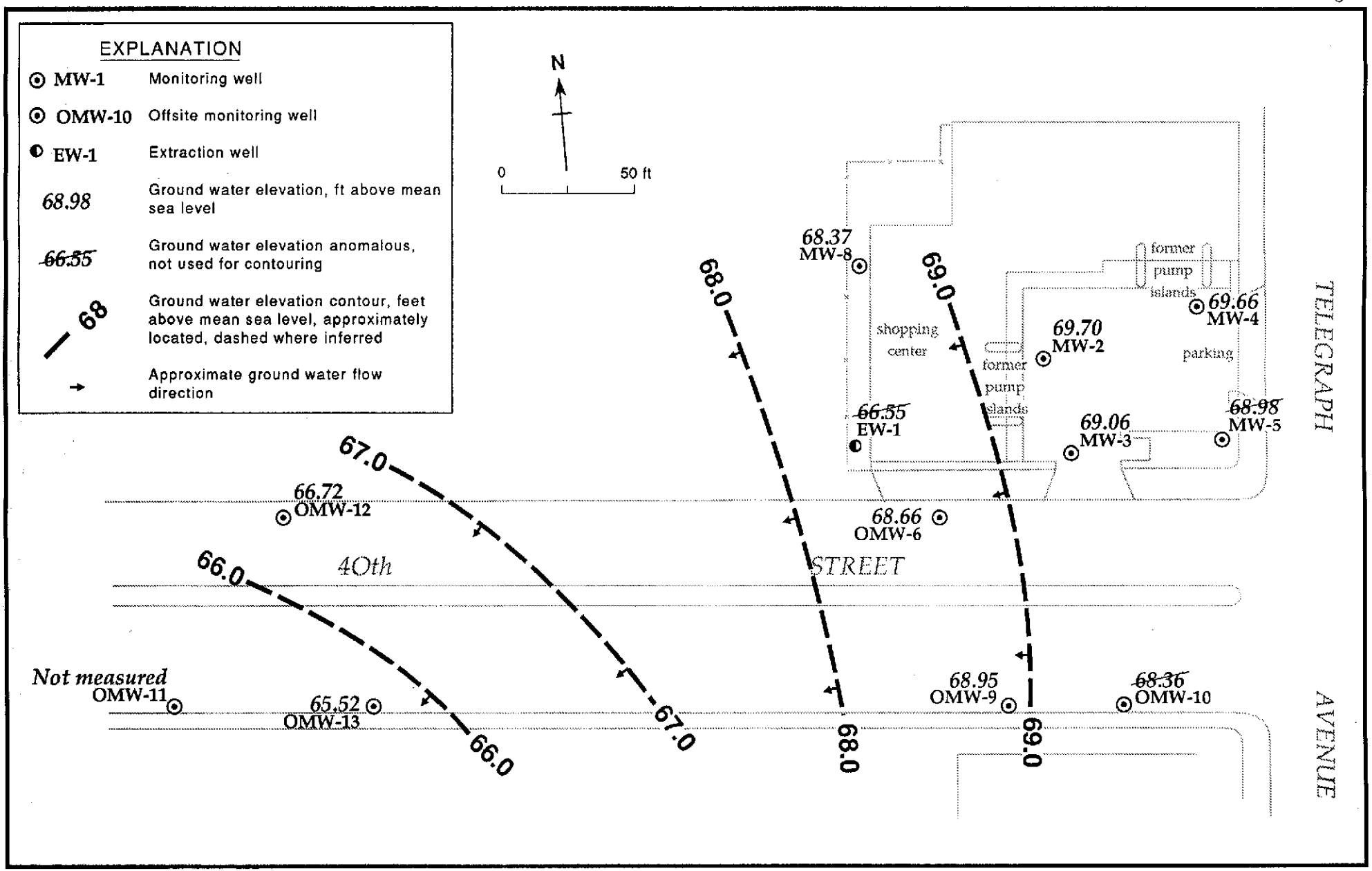


Figure 2. Monitoring Well Locations and Ground Water Elevation Contours - March 18, 1992 - Shell Service Station, WIC #204-5508-4903, 500 40th Street, Oakland, California

5/11/92

ATTACHMENT A

GROUND WATER MONITORING REPORT AND ANALYTIC REPORT

EMCON
ASSOCIATES
Consultants in Wastes
Management and
Environmental Control

April 7, 1992
Project: G67-49.01
WIC#: 204-5508-4903

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

Re: First quarter 1992 ground-water monitoring report, Shell Oil Company, 500 40th Street, 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 500 40th Street, Oakland, California. The site is monitored quarterly.

The first quarter monitoring event was conducted on February 15 and March 18, 1992. Most of the off-site monitoring wells located in parking lanes along 40th Street were inaccessible on February 15. A second event was conducted on March 18 in order to collect all required data. Well OMW-11 was inaccessible during both events and was not monitored during the first quarter of 1992.

GROUND-WATER LEVEL SURVEY

A complete water-level survey of the monitoring wells was conducted on March 18, 1992. The wells included in the survey are identified in figure 1 (supplied by Converse Environmental West). During the survey, wells EW-1, MW-2 through MW-5, OMW-6, MW-8, OMW-9, OMW-10, OMW-12, and OMW-13 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 first 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 EW-1, MW-2 through MW-5, OMW-6, MW-8, and OMW-10 on February 15, 1992; wells OMW-9, OMW-12, and OMW-13 were sampled on March 18, 1992. Well OMW-11 was inaccessible during first quarter monitoring and was not sampled.

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

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 map
Certified analytical reports
Chain-of-custody documents

Table 1
Monitoring Well Field Measurement Data
First Quarter 1992

Shell Station: 500 40th Street
Oakland, California
WIC #: 204-5508-4903

Date: 04/08/92
Project Number: G67-49.01

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	02/21/91	81.50	12.86	68.64	NR	ND	02/21/91	NR	NR	NR	NR
MW-5	05/30/91	81.50	12.88	68.62	NR	ND	05/30/91	NR	NR	NR	NR
MW-5	08/06/91	81.50	13.02	68.48	NR	ND	08/07/91	NR	NR	NR	NR
MW-5	10/30/91	81.50	12.73	68.77	NR	ND	10/30/91	NR	NR	NR	NR
MW-5	03/18/92	81.50	12.52	68.98	20.1	ND	02/15/92	6.45	377	66.1	>200
OMW-6	02/21/91	77.90	10.10	67.80	NR	ND	02/22/91	NR	NR	NR	NR
OMW-6	05/30/91	77.90	10.00	67.90	NR	ND	05/30/91	NR	NR	NR	NR
OMW-6	08/06/91	77.90	10.71	67.19	NR	ND	08/06/91	NR	NR	NR	NR
OMW-6	10/30/91	77.90	10.50	67.40	NR	ND	10/30/91	NR	NR	NR	NR
OMW-6	03/18/92	77.90	9.24	68.66	20.1	ND	02/15/92	6.57	957	61.9	144
MW-8	02/21/91	79.91	12.84	67.07	NR	ND	02/21/91	NR	NR	NR	NR
MW-8	05/30/91	79.91	12.20	67.71	NR	ND	05/31/91	NR	NR	NR	NR
MW-8	08/06/91	79.91	13.08	66.83	NR	ND	08/06/91	NR	NR	NR	NR
MW-8	10/30/91	79.91	12.87	67.04	NR	ND	10/30/91	NR	NR	NR	NR
MW-8	03/18/92	79.91	11.54	68.37	38.7	ND	02/15/92	6.28	381	62.2	>200
OMW-9	02/21/91	77.71	9.64	68.07	NR	ND	02/22/91	NR	NR	NR	NR
OMW-9	05/30/91	77.71	9.86	67.85	NR	ND	05/30/91	NR	NR	NR	NR
OMW-9	08/06/91	77.71	10.38	67.33	NR	ND	08/06/91	NR	NR	NR	NR
OMW-9	10/30/91	77.71	NR	NR	NR	ND	10/30/91	NR	NR	NR	NR
OMW-9	03/18/92	77.71	8.76	68.95	17.2	ND	03/18/92	6.81	663	62.3	>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
First Quarter 1992

Shell Station: 500 40th Street
Oakland, California
WIC #: 204-5508-4903

Date: 04/08/92
Project Number: G67-49.01

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)
OMW-10	02/21/91	77.91	9.86	68.05	NR	ND	02/22/91	NR	NR	NR	NR
OMW-10	05/30/91	77.91	9.87	68.04	NR	ND	05/31/91	NR	NR	NR	NR
OMW-10	08/06/91	77.91	10.00	67.91	NR	ND	08/07/91	NR	NR	NR	NR
OMW-10	10/31/91	77.91	10.10	67.81	NR	ND	10/31/91	NR	NR	NR	NR
OMW-10	03/18/92	77.91	9.55	68.36	16.0	ND	02/15/92	6.61	469	59.3	>200
OMW-11	11/22/91	75.76	11.90	63.86	NR	NR	11/22/91	NR	NR	NR	NR
OMW-11	02/15/92	75.76	IW	IW	IW	IW	02/15/92	IW	IW	IW	IW
OMW-11	03/18/92	75.76	IW	IW	IW	IW	03/18/92	IW	IW	IW	IW
OMW-12	12/02/91	75.65	10.31	65.34	NR	NR	12/02/91	NR	NR	NR	NR
OMW-12	03/18/92	75.65	8.93	66.72	19.5	ND	03/18/92	6.23	458	65.0	>200
OMW-13	11/22/91	76.36	11.96	64.40	NR	NR	11/22/91	NR	NR	NR	NR
OMW-13	03/18/92	76.36	10.84	65.52	21.0	ND	03/18/92	6.50	885	66.8	>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
IW = inaccessible well; well was inaccessible and was not sampled

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

Shell Station: 500 40th Street
Oakland, California
WIC #: 204-5508-4903

Date: 04/21/92
Project Number: G67-49.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)	TPH-d (mg/l)
EW-1	02/21/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
EW-1	05/31/91	0.25	0.012	<0.0005	0.0029	<0.0005	<0.05
EW-1	08/06/91	0.18	0.0054	<0.0005	0.0009	0.0007	<0.05
EW-1	10/30/91	0.07	0.0026	<0.0005	<0.0005	<0.0005	<0.05
EW-1	02/15/92	<0.05	0.0021	<0.0005	<0.0005	<0.0005	NA
MW-2	02/22/91	2.70	0.082	<0.0005	0.057	0.140	0.13
MW-2	05/30/91	1.4	0.023	<0.0005	0.038	0.059	0.15
MW-2	08/07/91	1.2	0.059	0.0011	0.038	0.056	0.23
MW-2	10/30/91	0.52	0.056	<0.0005	0.056	0.1	0.3
MW-2	02/15/92	2.3	0.087	<0.0025	0.088	0.15	2.2#
MW-3	02/22/91	4.4	0.260	0.080	0.088	0.340	0.36
MW-3	05/30/91	2.5	0.160	0.047	0.053	0.180	0.22
MW-3	08/07/91	1.9	0.22	0.057	0.057	0.260	0.47
MW-3	10/30/91	1.9	0.16	0.028	0.063	0.18	0.48
MW-3	02/15/92	2.3	0.17	0.031	0.059	0.18	0.78#
MW-4	02/22/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
MW-4	05/30/91	NR	NR	NR	NR	NR	NR
MW-4	08/07/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
MW-4	10/30/91	0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
MW-4	02/15/92	0.09	0.0009	<0.0005	<0.0005	<0.0005	NA

TPH-g = total petroleum hydrocarbons as gasoline
TPH-d = total petroleum hydrocarbons as diesel
NA = not analyzed
# = compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline
NR = not reported; data not available

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

Shell Station: 500 40th Street
Oakland, California
WIC #: 204-5508-4903

Date: 04/21/92
Project Number: G67-49.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)	TPH-d (mg/l)
MW-5	02/21/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
MW-5	05/30/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
MW-5	08/07/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
MW-5	10/30/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
MW-5	02/15/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
OMW-6	02/22/91	30	0.640	0.610	0.480	3.20	3.0
OMW-6	05/30/91	31	0.730	0.400	0.510	2.40	2.6
OMW-6	08/06/91	26	0.910	0.420	0.560	1.90	3.6
OMW-6	10/30/91	20	0.71	0.24	0.41	1.7	4.6
OMW-6	02/15/92	35	0.69	0.42	0.65	3.0	27.#
MW-8	02/21/91	0.07	<0.0005	0.0007	<0.0005	0.0013	<0.05
MW-8	05/31/91	0.06	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
MW-8	08/06/91	0.09	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
MW-8	10/30/91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
MW-8	02/15/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA
OMW-9	02/22/91	1.7	0.084	0.026	<0.0005	0.210	0.26
OMW-9	05/30/91	3.2	0.049	0.016	0.059	0.110	0.28
OMW-9	08/06/91	3.9	0.058	0.0088	0.080	0.220	0.19
OMW-9	10/30/91	NR	NR	NR	NR	NR	NR
OMW-9	03/18/92	1.8*	0.084	0.011	0.049	0.060	0.21

TPH-g = total petroleum hydrocarbons as gasoline
TPH-d = total petroleum hydrocarbons as diesel
NA = not analyzed
# = compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline
NR = not reported; data not available
* = compounds detected and calculated as gasoline do not match the standard gasoline chromatographic pattern

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

Shell Station: 500 40th Street
Oakland, California
WIC #: 204-5508-4903

Date: 04/21/92
Project Number: G67-49.01

Sample Designation	Water Sample Field Date	TPH-g (mg/l)	Benzene (mg/l)	Toluene (mg/l)	Ethyl-benzene (mg/l)	Total Xylenes (mg/l)	TPH-d (mg/l)
OMW-10	02/22/91	0.35	0.040	0.0012	0.0100	0.0070	<0.05
OMW-10	05/31/91	0.69	0.063	0.0022	0.024	0.016	<0.05
OMW-10	08/07/91	0.46	0.073	0.001	0.018	0.0084	<0.05
OMW-10	10/31/91	0.63	0.100	<0.0005	0.033	0.026	0.15
OMW-10	02/15/92	0.81	0.085	0.0025	0.044	0.038	0.57#
OMW-11	11/22/91	0.45	0.0011	<0.0005	<0.0005	<0.0005	0.24
OMW-11	02/15/92	IW	IW	IW	IW	IW	IW
OMW-11	03/18/92	IW	IW	IW	IW	IW	IW
OMW-12	12/02/91	<1	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
OMW-12	03/18/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
OMW-13	11/22/91	0.90	0.037	0.0095	0.074	0.130	1.0
OMW-13	03/18/92	9.*	0.24	0.028	0.32	0.32	0.59#
TB	02/15/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	<0.05
TB	03/18/92	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	NA

TPH-g = total petroleum hydrocarbons as gasoline
TPH-d = total petroleum hydrocarbons as diesel
# = compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline
IW = inaccessible well; well was inaccessible and was not sampled
* = compounds detected and calculated as gasoline do not match the standard gasoline chromatographic pattern
NA = not analyzed

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

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

Date: 04/06/92

Work Order: T2-02-145

P.O. Number: MOH 880-021 Vendor #I0002402

This is the Certificate of Analysis for the following samples:

Client Work ID: G6749, 500 40th St, Oakland
Date Received: 02/18/92
Number of Samples: 9
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

EMCON ASSOCIATES

APR 06 1992

RECEIVED

Reviewed and Approved:

Thomas L. Paulson
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 04/06/92
Client Work ID: G6749, 500 40th St, Oakland

Work Order: T2-02-145

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **MW-5**
SAMPLE DATE: **02/15/92**
LAB SAMPLE ID: **T202145-01**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/25/92
Low Boiling Hydrocarbons	Mod.8015		02/25/92

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)	98.
1,3-Dichlorobenzene (BTEX)	94.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 04/06/92
Client Work ID: G6749, 500 40th St, Oakland

Work Order: T2-02-145

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **MW-8**
SAMPLE DATE: **02/15/92**
LAB SAMPLE ID: **T202145-02**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/25/92
Low Boiling Hydrocarbons	Mod.8015		02/25/92

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)	104.
1,3-Dichlorobenzene (BTEX)	98.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 04/06/92
Client Work ID: G6749, 500 40th St, Oakland

Work Order: T2-02-145

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **MW-4**
SAMPLE DATE: **02/15/92**
LAB SAMPLE ID: T202145-03
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/25/92
Low Boiling Hydrocarbons	Mod.8015		02/25/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	**0.09**
BTEX		
Benzene	0.0005	**0.0009**
Toluene	0.0005	**None.**
Ethylbenzene	0.0005	**None.**
Xylenes (total)	0.0005	**None.**

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	**101.**
1,3-Dichlorobenzene (BTEX)	**95.**

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 04/06/92
Client Work ID: G6749, 500 40th St, Oakland

Work Order: T2-02-145

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **EW-1**
SAMPLE DATE: **02/15/92**
LAB SAMPLE ID: **T202145-04**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/25/92
Low Boiling Hydrocarbons	Mod.8015		02/25/92

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None.
BTEX		
Benzene	0.0005	0.0021
Toluene	0.0005	None.
Ethylbenzene	0.0005	None.
Xylenes (total)	0.0005	None.

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	102.
1,3-Dichlorobenzene (BTEX)	95.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 04/06/92
Client Work ID: G6749, 500 40th St, Oakland

Work Order: T2-02-145

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **OMW-10**
SAMPLE DATE: **02/15/92**
LAB SAMPLE ID: **T202145-05**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/26/92
Low Boiling Hydrocarbons	Mod.8015		02/26/92
High Boiling Hydrocarbons	Mod.8015	02/19/92	02/20/92

PARAMETER	DETECTION LIMIT	DETECTED	
Low Boiling Hydrocarbons calculated as Gasoline	0.25	**0.81**	
BTEX			
Benzene	0.0025	**0.085**	
Toluene	0.0025	**0.0025**	
Ethylbenzene	0.0025	**0.044**	
Xylenes (total)	0.0025	**0.038**	
High Boiling Hydrocarbons calculated as Diesel	0.05	**0.57**	#

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	**103.**
1,3-Dichlorobenzene (BTEX)	**100.**
nC32 (Diesel)	**102.**

Comments:
Compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 04/06/92
Client Work ID: G6749, 500 40th St, Oakland

Work Order: T2-02-145

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **MW-3**
SAMPLE DATE: **02/15/92**
LAB SAMPLE ID: **T202145-07**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/27/92
Low Boiling Hydrocarbons	Mod.8015		02/27/92
High Boiling Hydrocarbons	Mod.8015	02/19/92	02/20/92

PARAMETER	DETECTION LIMIT	DETECTED	
Low Boiling Hydrocarbons calculated as Gasoline	0.25	**2.3**	
BTEX			
Benzene	0.0025	**0.17**	
Toluene	0.0025	**0.031**	
Ethylbenzene	0.0025	**0.059**	
Xylenes (total)	0.0025	**0.18**	
High Boiling Hydrocarbons calculated as Diesel	0.05	**0.78**	#

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	**121*.**
1,3-Dichlorobenzene (BTEX)	**105.**
nC32 (Diesel)	**123.**

Comments:
Compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline.

*Surrogate elevated due to hydrocarbon interferences.

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

Company: Shell Oil Company
Date: 04/21/92
Client Work ID: G6749, 500 40th St, Oakland

Work Order: T2-02-145

CORRECTED COPY 4/21/92

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: OMW-6
SAMPLE DATE: 02/15/92
LAB SAMPLE ID: T202145-08
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/26/92
Low Boiling Hydrocarbons	Mod.8015		02/26/92
High Boiling Hydrocarbons	Mod.8015	02/19/92	02/24/92

PARAMETER	DETECTION LIMIT	DETECTED	
Low Boiling Hydrocarbons calculated as Gasoline	2.5	35.	
BTEX			
Benzene	0.025	0.69	
Toluene	0.025	0.42	
Ethylbenzene	0.025	0.65	
Xylenes (total)	0.025	3.0	
High Boiling Hydrocarbons calculated as Diesel	0.05	27.	#

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	120*.
1,3-Dichlorobenzene (BTEX)	102.
nC32 (Diesel)	139.

Comments:
Compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline.

*Surrogate elevated due to hydrocarbon interferences.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 04/06/92
Client Work ID: G6749, 500 40th St, Oakland

Work Order: T2-02-145

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **TRIP BLANK**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: **T202145-09**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		02/25/92
Low Boiling Hydrocarbons	Mod.8015		02/25/92
High Boiling Hydrocarbons	Mod.8015	02/19/92	02/20/92

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.
High Boiling Hydrocarbons calculated as Diesel	0.05	None.

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	99.
1,3-Dichlorobenzene (BTEX)	96.
nC32 (Diesel)	126.

Company: Shell Oil Company
Date: 04/06/92
Client Work ID: G6749, 500 40th St, Oakland

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order: T2-02-145

TEST NAME: **Spike and Spike Duplicates**

SAMPLE ID: **Quality Control**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: **T202145-10B**
EXTRACTION DATE: **02/13/92**
ANALYSIS DATE: **02/18/92**
ANALYSIS METHOD: **Mod.8015**

QUALITY CONTROL REPORT

Laboratory Spike(LS) and Laboratory Spike Duplicate(LSD) Analyses

RESULTS in Micrograms per Liter

PARAMETER	Sample Amt	Spike Amt	LS Result	LSD Result	LS %Rec	LSD %Rec	RPD
Diesel	None	1000	809	903	81	90	10

SURROGATES	LS %Rec	LSD %Rec
nC32	120	138

Company: Shell Oil Company
Date: 04/06/92
Client Work ID: G6749, 500 40th St, Oakland

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order: T2-02-145

TEST NAME: **Spike and Spike Duplicates**

SAMPLE ID: **Quality Control**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: **T202145-10A**
EXTRACTION DATE:
ANALYSIS DATE: **02/24/92**
ANALYSIS METHOD: **8020**

QUALITY CONTROL REPORT

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

RESULTS in Micrograms per Liter

PARAMETER	Sample Amt	Spike Amt	MS Result	MSD Result	MS %Rec	MSD %Rec	RPD
Benzene	None	50.0	40.8	37.8	82	76	8
Toluene	None	50.0	40.6	38.1	81	76	6
Ethylbenzene	None	50.0	40.9	38.3	82	77	6
Total Xylenes	None	150	116	109	77	73	5

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	102	100

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 04/06/92
Client Work ID: G6749, 500 40th St, Oakland

Work Order: T2-02-145

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 **TPHN** TEST NAME **TPH High Boiling by 8015**

The method of analysis for high boiling hydrocarbons is taken from the LUFT field manual. Samples are extracted with solvent and examined by gas chromatography using a flame ionization detector. Results in soils are corrected for moisture content and are reported on a dry soil basis unless otherwise noted.

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.: 72-02-145

Date: 2-18-92
Page 1 of 2

Site Address: 500 40th Street, Oakland, CA

WIC#: 204-5508-4903

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: 3-VOAs for TPH-g, BTEX
1-Liter for TPH-d
1-VOA for Trip Blank, & 1 Liter

Sampled By: David Larsen
Printed Name: David Larsen 2/18/92

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	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
MW-5	2/15/92 per David Larsen		X		3	X		X			40 ml	HCl	No		Cool/Ok ur
MW-8	"				3	X		X							
OMW-12	No Sample				4	X	X	X							
MW-4	2-15-92				3	X		X							
EW-1	"				3	X		X							
OMW-11	No Sample				4	X	X	X							
OMW-10	2-15-92				4	X	X	X							
MW-2	"				4	X	X	X							

Relinquished By (signature): D. Larsen	**Printed name:** D. Larsen	**Date:** 2-18-92 **Time:** 9:58	**Received (signature):**	**Printed name:**	**Date:** 2-18-92 **Time:** 0958
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

Last Revision Date: 10/15/91

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

EMCON ASSOCIATES
1938 JUNCTION AVE
SAN JOSE CA 95131
KURT MILLER

Date: 04/01/92

Work Order: C2-03-263

SHELL_NORTH

This is the Certificate of Analysis for the following samples:
Client Work ID: OAKLAND
Date Received: 03/21/92 275000
Number of Samples: 9
Sample Type: LIQUID

Shell Site: 500 40th St., Oakland
WIC No.: 204-5508-4903
Shell Engineer: Kurt Miller
Shell Consultant: EMCON Associates / David Larsen
Work Description: Quarterly Monitoring
Class Type: 5461

Samples were labeled as follows:

SAMPLE IDENTIFICATION	LABORATORY #
OMW-9	C2-03-263-01
OMW-12	C2-03-263-02
OMW-13	C2-03-263-03
TRIP BLANK	C2-03-263-04
MATRIX SPIKE	C2-03-263-05
MATRIX SPIKE DUP	C2-03-263-06
METHOD BLANK 1	C2-03-263-07

EMCON ASSOCIATES
APR 0 2 1992
RECEIVED

Reviewed and Approved:

Marla Miller
Project Manager

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

Samples, continued from above:

SAMPLE IDENTIFICATION	LABORATORY #
METHOD BLANK 2	C2-03-263-08
METHOD BLANK 3	C2-03-263-09

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: **HIGH BOILING FUEL HCs**

SAMPLE ID: **OMW-9**
LAB SAMPLE ID: **C203263-01D**
SAMPLE DATE: **03/18/92**
ANALYSIS DATE: 03/26/92
EXTRACTION DATE: 03/23/92

	Results in	MG/L:	Detection Limit
TPHC AS DIESEL		**0.21	0.05

Surrogate	% Recovery	Limit		
BENZO(A)PYRENE	67	50	–	150

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: OMW-9
LAB SAMPLE ID: C203263-01A
SAMPLE DATE: 03/18/92
ANALYSIS DATE: 03/25/92
EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
Unleaded gasoline		**1.8	0.05

Surrogate	% Recovery
a,a,a-Trifluorotoluene	101

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: OMW-9
LAB SAMPLE ID: C203263-01A
SAMPLE DATE: 03/18/92
ANALYSIS DATE: 03/25/92
CONFIRMATION DATE:

	Results in MG/L:	Detection Limit
BENZENE	0.084	0.0005
TOLUENE	0.011	0.0005
ETHYLBENZENE	0.049	0.0005
XYLENES (TOTAL)	0.060	0.0005

Surrogate	% Recovery	Limits		
A,A,A-TRIFLUOROTOLUENE	94	75	-	125
1-CHLORO-2-FLUOROBENZENE			-	

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: HIGH BOILING FUEL HCs

SAMPLE ID: OMW-12
LAB SAMPLE ID: C203263-02D
SAMPLE DATE: 03/18/92
ANALYSIS DATE: 03/26/92
EXTRACTION DATE: 03/23/92

	Results in	MG/L:	Detection Limit
TPHC AS DIESEL		ND	0.05

Surrogate	% Recovery	Limit		
BENZO(A)PYRENE	65	50	-	150

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: OMW-12
LAB SAMPLE ID: C203263-02A
SAMPLE DATE: 03/18/92
ANALYSIS DATE: 03/25/92
EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
Unleaded gasoline		ND	0.05

Surrogate	% Recovery
a,a,a-Trifluorotoluene	102

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: OMW-12
LAB SAMPLE ID: C203263-02A
SAMPLE DATE: 03/18/92
ANALYSIS DATE: 03/25/92
CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

Surrogate	% Recovery	Limits		
A,A,A-TRIFLUOROTOLUENE	97	75	-	125
1-CHLORO-2-FLUOROBENZENE			-	

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: HIGH BOILING FUEL HCs

SAMPLE ID: OMW-13
LAB SAMPLE ID: C203263-03D
SAMPLE DATE: 03/18/92
ANALYSIS DATE: 03/26/92
EXTRACTION DATE: 03/23/92

	Results in	MG/L:	Detection Limit
TPHC AS DIESEL		**0.59	0.05

Surrogate	% Recovery	Limit		
BENZO(A)PYRENE	62	50	-	150

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: **VOLATILE FUEL HYDROCARBONS**

SAMPLE ID: **OMW-13**
LAB SAMPLE ID: **C203263-03A**
SAMPLE DATE: **03/18/92**
ANALYSIS DATE: 03/26/92
EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
Unleaded gasoline		**9	0.3

Surrogate	% Recovery
a,a,a-Trifluorotoluene	96

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND

IT ANALYTICAL SERVICES
CERRITOS, CA

275000

Work Order: C2-03-263

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: OMW-13
LAB SAMPLE ID: C203263-03A
SAMPLE DATE: 03/18/92
ANALYSIS DATE: 03/26/92
CONFIRMATION DATE:

	Results in MG/L:	Detection Limit
BENZENE	0.24	0.003
TOLUENE	0.028	0.003
ETHYLBENZENE	0.32	0.003
XYLENES (TOTAL)	0.32	0.003

Surrogate	% Recovery	Limits		
A,A,A-TRIFLUOROTOLUENE	89	75	-	125
1-CHLORO-2-FLUOROBENZENE			-	

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND

IT ANALYTICAL SERVICES
CERRITOS, CA

275000

Work Order: C2-03-263

TEST NAME: **VOLATILE FUEL HYDROCARBONS**

SAMPLE ID: **TRIP BLANK**
LAB SAMPLE ID: **C203263-04A**
SAMPLE DATE: **not spec**
ANALYSIS DATE: 03/25/92
EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
Unleaded gasoline		ND	0.05

Surrogate	% Recovery
a,a,a-Trifluorotoluene	103

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: TRIP BLANK
LAB SAMPLE ID: C203263-04A
SAMPLE DATE: not spec
ANALYSIS DATE: 03/25/92
CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

Surrogate	% Recovery	Limits		
A,A,A-TRIFLUOROTOLUENE	95	75	-	125
1-CHLORO-2-FLUOROBENZENE			-	

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: HIGH BOILING FUEL HCs

SAMPLE ID: MATRIX SPIKE
LAB SAMPLE ID: C203263-05A
SAMPLE DATE: not spec
ANALYSIS DATE: 03/19/92
EXTRACTION DATE:

	Results in	%REC:	Detection Limit
TPHC AS DIESEL		91	-

Surrogate	% Recovery	Limit	
BENZO(A)PYRENE	89	50 -	150

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: **VOLATILE FUEL HYDROCARBONS**

SAMPLE ID: **MATRIX SPIKE**
LAB SAMPLE ID: **C203263-05A**
SAMPLE DATE: **not spec**
ANALYSIS DATE: 03/25/92
EXTRACTION DATE:

	Results in	%REC:	Detection Limit
Unleaded gasoline		91	-

Surrogate	% Recovery
a,a,a-Trifluorotoluene	98

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: **BTEX BY METHOD 8020**

SAMPLE ID: **MATRIX SPIKE**
LAB SAMPLE ID: **C203263-05A**
SAMPLE DATE: **not spec**
ANALYSIS DATE: 03/26/92
CONFIRMATION DATE:

	Results in	%REC:	Detection Limit
BENZENE		81	-
TOLUENE		71	-
ETHYLBENZENE		73	-
XYLENES (TOTAL)		71	-

Surrogate	% Recovery	Limits		
A,A,A-TRIFLUOROTOLUENE	93	75	-	125
1-CHLORO-2-FLUOROBENZENE			-	

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: HIGH BOILING FUEL HCs

SAMPLE ID: MATRIX SPIKE DUP
LAB SAMPLE ID: C203263-06A
SAMPLE DATE: not spec
ANALYSIS DATE: 03/19/92
EXTRACTION DATE:

	Results in	%REC:	Detection Limit
TPHC AS DIESEL		80	-

Surrogate	% Recovery	Limit	
BENZO(A)PYRENE	85	50 -	150

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND

IT ANALYTICAL SERVICES
CERRITOS, CA

275000

Work Order: C2-03-263

TEST NAME: **VOLATILE FUEL HYDROCARBONS**

SAMPLE ID: **MATRIX SPIKE DUP**
LAB SAMPLE ID: **C203263-06A**
SAMPLE DATE: **not spec**
ANALYSIS DATE: 03/25/92
EXTRACTION DATE:

	Results in	%REC:	Detection Limit
Unleaded gasoline		90	-

Surrogate	% Recovery
a,a,a-Trifluorotoluene	99

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND

IT ANALYTICAL SERVICES
CERRITOS, CA

275000

Work Order: C2-03-263

TEST NAME: **BTEX BY METHOD 8020**

SAMPLE ID: **MATRIX SPIKE DUP**
LAB SAMPLE ID: **C203263-06A**
SAMPLE DATE: **not spec**
ANALYSIS DATE: 03/26/92
CONFIRMATION DATE:

	Results in	%REC:	Detection Limit
BENZENE		80	-
TOLUENE		71	-
ETHYLBENZENE		72	-
XYLENES (TOTAL)		70	-

Surrogate	% Recovery	Limits		
A,A,A-TRIFLUOROTOLUENE	91	75	-	125
1-CHLORO-2-FLUOROBENZENE			-	

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: HIGH BOILING FUEL HCs

SAMPLE ID: METHOD BLANK 1
LAB SAMPLE ID: C203263-07A
SAMPLE DATE: not spec
ANALYSIS DATE: 03/26/92
EXTRACTION DATE: 03/23/92

	Results in	MG/L:	Detection Limit
TPHC AS DIESEL		ND	0.05

Surrogate	% Recovery	Limit		
BENZO(A)PYRENE	74	50	-	150

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND

IT ANALYTICAL SERVICES
CERRITOS, CA

275000

Work Order: C2-03-263

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: METHOD BLANK 1
LAB SAMPLE ID: C203263-07A
SAMPLE DATE: not spec
ANALYSIS DATE: 03/25/92
EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
Unleaded gasoline		ND	0.05

Surrogate	% Recovery
a,a,a-Trifluorotoluene	103

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: **BTEX BY METHOD 8020**

SAMPLE ID: **METHOD BLANK 1**
LAB SAMPLE ID: **C203263-07A**
SAMPLE DATE: **not spec**
ANALYSIS DATE: 03/26/92
CONFIRMATION DATE:

	Results in MG/L:	Detection Limit
BENZENE	ND	0.0005
TOLUENE	ND	0.0005
ETHYLBENZENE	ND	0.0005
XYLENES (TOTAL)	ND	0.0005

Surrogate	% Recovery	Limits		
A,A,A-TRIFLUOROTOLUENE	96	75	-	125
1-CHLORO-2-FLUOROBENZENE			-	

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: **VOLATILE FUEL HYDROCARBONS**

SAMPLE ID: **METHOD BLANK 2**
LAB SAMPLE ID: **C203263-08A**
SAMPLE DATE: **not spec**
ANALYSIS DATE: 03/25/92
EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
Unleaded gasoline		ND	0.05

Surrogate	% Recovery
a,a,a-Trifluorotoluene	101

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: METHOD BLANK 2
LAB SAMPLE ID: C203263-08A
SAMPLE DATE: not spec
ANALYSIS DATE: 03/25/92
CONFIRMATION DATE:

	Results in	MG/L:	Detection Limit
BENZENE		ND	0.0005
TOLUENE		ND	0.0005
ETHYLBENZENE		ND	0.0005
XYLENES (TOTAL)		ND	0.0005

Surrogate	% Recovery	Limits		
A,A,A-TRIFLUOROTOLUENE	96	75	-	125
1-CHLORO-2-FLUOROBENZENE			-	

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: VOLATILE FUEL HYDROCARBONS

SAMPLE ID: METHOD BLANK 3
LAB SAMPLE ID: C203263-09A
SAMPLE DATE: not spec
ANALYSIS DATE: 03/26/92
EXTRACTION DATE:

	Results in	MG/L:	Detection Limit
Unleaded gasoline		ND	0.05

Surrogate	% Recovery
a,a,a-Trifluorotoluene	105

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME: BTEX BY METHOD 8020

SAMPLE ID: METHOD BLANK 3
LAB SAMPLE ID: C203263-09A
SAMPLE DATE: not spec
ANALYSIS DATE: 03/25/92
CONFIRMATION DATE:

	Results in MG/L:	Detection Limit
BENZENE	ND	0.0005
TOLUENE	ND	0.0005
ETHYLBENZENE	ND	0.0005
XYLENES (TOTAL)	ND	0.0005

Surrogate	% Recovery	Limits		
A,A,A-TRIFLUOROTOLUENE	93	75	-	125
1-CHLORO-2-FLUOROBENZENE			-	

Comments: 'ND' or '<' indicates that the compound is not detected at the specified limit.
'NA' indicates not applicable
'*' Surrogate recovery is outside QC limit.
'D' Surrogate is diluted out.
'B' indicates analyte found in the associated blank as well as in the sample, value reported is not blank corrected.

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

COMMENTS

** The chromatographic pattern of extractable (high boiling) fuel hydrocarbons does not match the diesel standard. The pattern in the sample is consistent with lower boiling fuel hydrocarbons.

** The chromatographic pattern of purgeable hydrocarbons found in the sample has components of gasoline but does not match the gasoline standard.

Company: EMCON ASSOCIATES
Date: 04/01/92
Client Work ID: OAKLAND 275000

IT ANALYTICAL SERVICES
CERRITOS, CA

Work Order: C2-03-263

TEST NAME HIGH BOILING FUEL HCs TEST CODE 8015D1

High boiling fuel hydrocarbons are analyzed by methods established by the California DHS' LUFT manual. An aliquot of the sample is serially extracted with methylene chloride. The extracts are combined, exchanged with hexane, and concentrated to a final volume of 2 ml. A portion of the extract is directly injected into a gas chromatograph equipped with a 30 meter capillary column. Detection and quantitation is made by a flame ionization detector. Diesel Fuel Number 2 is used as the calibration standard.

TEST NAME VOLATILE FUEL HYDROCARBONS TEST CODE 8015U

Low boiling fuel hydrocarbons are analyzed by methods established by the California DHS' LUFT manual. An aliquot of the sample is purged with helium and the volatile fuel hydrocarbons are transferred to the vapor phase. The vapor is swept through a sorbent column where the hydrocarbons are adsorbed. Upon completion, the sorbent column is heated and backflushed onto a gas chromatograph equipped with a 30 meter capillary column. Detection and quantitation is made by a flame ionization detector. Unleaded gasoline is used as the calibration standard.

TEST NAME BTEX BY METHOD 8020 TEST CODE BTEX_W

The sample was analyzed for benzene, toluene, ethylbenzene and total xylenes according to USEPA Methods 8020 and 5030. An aliquot of the sample is purged with helium and the volatile compounds are transferred to the vapor phase. The vapor is swept through a sorbent column where the aromatics are adsorbed. Upon completion the sorbent column is heated and backflushed onto a GC column. The trapped compounds are separated by the megabore column and detected by a photoionization detector.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No.: T2-03-038

Date:
Page 1 of 1

Site Address: 500 40th Street, Oakland, CA

WIC#: 204-5508-4903

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: 3-VOAs for g-BTEX
2-Liters for diesel
1-VOA for TB

Sampled By: JButera

Printed Name: JButera

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	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
OMW-9	3-18-92		X		5	X	X	X			40 ml	HCl	No		3°C Intact
OMW-11	"		"		"	X	X	X			"	"	"	NO SAMPLE INACCESSIBLE WELL	DID NOT RECEIVE
OMW-12	"		"		"	X	X	X			"	"	"		3°C Intact
OMW-13	"		"		"	X	X	X			"	"	"		"
TB	"		X		1	X		X			"	"	"		"

Relinquished By (signature): JButera	Printed name: JButera	Date: 3/19 Time: 0830	Received (signature):	Printed name: DAVID SULEWSKI	Date: 3/20/92 Time: 12:40
Relinquished By (signature): Chris Chaco	Printed name: Chris Chaco	Date: 3-20 Time: 12:40	Received (signature):	Printed name:	Date: Time:
Relinquished By (signature): T Paulson	Printed name: T Paulson	Date: 3/20 Time: 1500	Received (signature): J. Martin	Printed name: J. MARTIN	Date: 3/21/92 Time: 10:45

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

Last Revision Date: 10/15/91