



new name for

CONVERSE ENVIRONMENTAL  
CONSULTANTS CALIFORNIA



September 13, 1989  
88-44-361-01-173

Ms. Dyan Whyte  
Water Resource Control Engineer  
San Francisco Bay Regional Water Quality Control Board  
1111 Jackson Street, Sixth Floor  
Oakland, California 94607

Subject: Shell Oil Company - Monthly Groundwater Monitoring Report  
500 40th Street  
Oakland, California

Dear Ms. Whyte:

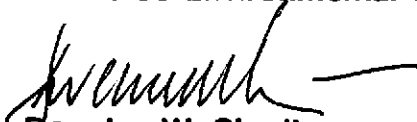
Enclosed please find one copy of the Shell Oil Company Monthly Groundwater Monitoring Report for August 1989 prepared by Converse Environmental West (CEW) - San Francisco.

Analytical results of groundwater samples collected September 11, 1989, will be presented in the Quarter 3 Report for the site. That report, scheduled for delivery on or before October 23, 1989, will include details of investigative activities and a comprehensive review of site water quality during the quarter.

Please call if you have any questions.

Very truly yours,

Converse Environmental West

  
Douglas W. Charlton  
Vice President

  
Marc I. Yalom  
Project Manager

DWC:fs  
Enclosure

cc: Ms. Diane Lundquist - Shell Oil Company - (w/encl.)  
Mr. Rafat Shahid - Alameda County Health - (w/encl.)  
Ms. Robin Breuer - CEW - (w/encl.)

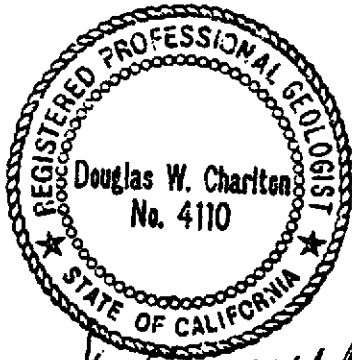
500 40th\173

**FORMER GASOLINE STATION**

**SHELL OIL COMPANY**  
500 40TH Street  
Oakland, California

September 13, 1989

CEW Project No. 88-44-361-01



*Douglas W. Charlton*  
**DOUGLAS W. CHALRTON**  
Principal Geologist

This report has been prepared by the staff of **Converse Environmental West (CEW)** under the professional supervision of the Engineer and/or Geologist whose seal(s) and signature(s) appear hereon.

The findings, recommendations, specifications or professional opinions are presented, within the limits prescribed by the Client, after being prepared in accordance with generally accepted professional engineering and geologic practice. We make no other warranty, either express or implied.

# Converse Environmental West

## REPORT OF ACTIVITIES

### SHELL OIL COMPANY FACILITY

500 40th Street  
Oakland, California

For August 1989  
Submitted: September 12, 1989

**RWQCB Representative:**

Ms. Dyan Whyte  
Waste Water Control Engineer  
San Francisco Bay RWQCB  
1111 Jackson Street, Sixth Floor  
Oakland, California 94607

**LIA Representative:**

Mr. Rafat Shahid  
Alameda County Health Services Agency  
Hazardous Materials  
80 Swan Way, Room 200  
Oakland, California 94621

**Shell Engineer:**

Ms. Diane Lundquist  
Environmental Engineer

**Converse Project Manager:**

Marc I. Yalom, Project Manager  
55 Hawthorne Street, Suite 500  
San Francisco, California 94105  
(415) 543-4200

**Registered Geologist in Charge:**

Douglas W. Charlton, Principal Geologist  
55 Hawthorne Street, Suite 500  
San Francisco, California 94105  
(415) 543-4200

**Site Owner:**

A.M.S. Partnership

## **1. SITE DESCRIPTION**

### **1.1 Maps**

Vicinity Map: See Drawing 1  
Plot Plan: See Drawing 2

### **1.2 Neighborhood Topography**

Slopes gently westward towards San Francisco Bay.

### **1.3 Primary Surface Waters Nearby**

San Francisco Bay is located approximately 1.5 miles to the west.

### **1.4 Water Table Information**

August 1989 Depth to Water: Approximately 12' below grade.  
Depth to Highest High Water: Approximately 11' below grade by redox boundary in soils.

## **2. INVESTIGATION HISTORY**

### **2.1 Soil Borings Drilled to Period Start**

B-1 through B-11 (IT 1982-84)  
MW-2 through MW-4 (CEW [formerly CECC] 5/89)

### **2.2 Soil Borings Abandoned to Period Start**

B-1 through B-11 (Date Unknown).

### **2.3 Groundwater Wells Drilled to Period Start**

B-1 through B-11 (IT 1982-84)  
MW-2 through MW-4 (CEW 5/89)

### **2.4 Groundwater Wells Abandoned to Period Start**

B-6 was abandoned by IT in June, 1986. No records are available for abandonment of the other B-series wells. These wells are covered with pavement or buildings, and they can not be located.

## 2.5 Investigative History Summary

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**TABLE 1: Chronological Summary**

<u>DATE</u>	<u>DESCRIPTION OF ACTIVITY</u>
7/82	IT installed 8 six inch diameter groundwater monitoring wells to 30 feet bgs. onsite. The wells were screened from 5 to 30 feet bgs. Combustible vapors were detected in the storm sewer system in the BART Station across the street.
7/82	IT Progress Report 1: Well installations and constructions were reported, and free product was noted in wells B-7 and B-8. Groundwater gradient was shown to be westward, towards the BART Station. (See Attachment 1 for well construction diagrams.)
11/82	IT Progress Report 6: Groundwater gradient still towards well B-3. From September 1 to November 19, 1982, IT removed 35 pints of product from B-4. Well TOCs were re-surveyed and groundwater gradient was confirmed toward B-3. Maximum product thickness was in B-4, at several inches.
12/82	IT Progress Report 7: Product thickness increased in B-3 in apparent response to rising water table. Product in B-4 remained at several inches.
1/83	IT Progress Report 8: Product in B-4 had diminished to film thickness.
2/83	IT Progress Report 9: Rainfall records were researched, and the relationship between rainfall, water table and product removed was charted by graph. Amount of product in B-4 appeared to vary inversely with water table; as water table rose with winter rains, the amount product in B-4 dropped. IT proposed that product was displaced downgradient as water table rose.
3/83	IT Progress Report 10: Vapor concentrations of TPH (expressed as percent lower explosive limit) were rising in wells B-1, B-2, B-3 and B-7. No product was measurable in B-4.
6/83	Rapid reappearance of product in well B-4, from negligible in May to 4+ feet by June 30 and 6.34 feet on July 15. Increase was also measured B-3, to a thickness of 0.66 feet in July. IT concluded that a reservoir of product existed in the tank backfill, and that as water table dropped in summer time this reservoir was allowed to escape by way of gravel lenses which were saturated at high water table seasons.
7/83	IT installed 8 inch diameter monitoring wells B-9 and B-10 to 20 feet bgs in native soils next to the tank backfill.
8/83	IT Progress Report 11: IT repeated the concept that product was released in surges through gravel lenses exposed to the water table during summer.
8/83	IT installed groundwater monitoring well B-11 and sand backfill in the southwest corner of the tank bed. No free-flowing product was encountered in this well.
9/83	IT drilled two 18 inch diameter borings to 30 feet bgs and completed same as 12 inch diameter recovery wells with screen intervals from 5 to 30 feet bgs. These wells, R-1 and R-2, were located near wells B-3 and B-4, directly west of the tank backfill.
10/83	IT purged and developed wells R-1 and R-2, holding a strong depression on the water table for 2 hours.
11/83	According to IT reference, the tanks were removed and, as part of this excavation wells R-1 and R-2 were also removed. No information was provided on tank excavation or associated soils/groundwater testing and reporting to regulatory agencies.
1/84	IT Progress Report 13: Wells B-3 and B-4 continued to contain measurable product, to thicknesses of 2 feet. In general, product thicknesses decreased during December and January. Product thicknesses also decreased after tank removal. Groundwater piezometric map showed a west-trending, low area encompassing wells R-1, R-2, B-3 and B-4. This extended offsite, suggesting a paleodrainage which controlled product collection and migration offsite.

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## CHRONOLOGICAL SUMMARY Continued

<u>DATE</u>	<u>DESCRIPTION OF ACTIVITY</u>
5/84	IT Report: The thicknesses of product in B-3 and B-4 measured from several inches to one foot during the period January to May 1984.
7/84	IT Report: Product thicknesses increased starting in mid-May in response to lowering water tables. This pattern was similar to the pattern observed in 1983.
8/84	IT Report: The thickness of product in B-3 remained one foot, while the amount of product in B-4 decreased. IT recommended looking for possible upgradient offsite sources.
9/84	IT Report: The thickness of product in B-4 started to increase (still at less than one inch) while the thickness of product in B-3 decreased (still on the order of one foot).
10/84	IT Report: New construction was noted.
1/85	IT Report: The thickness of product of B-3 had decreased to several inches and B-4 contained negligible measurable product. This pattern of decreasing product in the winter (high water table) months was consistent with that observed in the winters of 1982-83, and 1983-84.
2/85	IT Report: Significant measurable gasoline (1.64 feet) was discovered in B-8. The gasoline appeared degraded and "old". IT concluded that this gasoline could be from the same source as that contributing to observed in wells B-3 and B-4.
6/85	IT Report: Product thicknesses in B-3, B-4 and B-8 decreased from January to mid-May, with a dramatic decrease in B-8. IT repeated its interpretation that product thickness decreased as water tables rose and increased as water tables fell. IT further proposed that the product was trapped in permeable lenses, and migrated to different geographic areas as the water tables rose and fell.
12/85	IT Report: The thickness of product in B-3 increased to approximately 2 feet during the summer, showing the seasonal increase of prior years period. Simultaneously, no product was measured in B-8 after June 3, and product reappeared in B-2 in September and October. Product thickness in B-4 fluctuated at less than one foot thick during this period. IT recommended installing a recovery extraction trench along the west boundary of the property.
5/86	IT Quarterly Report: Product thickness decreased in wells B-3 and B-4 in response to seasonal rise in the water table.
6/86	IT requested permission to abandon B-6.
7/86	IT stated that Shell planned to remove the underground storage tanks in the near future.
8/86	IT Quarterly Report: IT noted seasonal decline in water table and negligible measurable product in wells B-2 and B-4, with approximately 2 feet of floating product in B-3.
9/86	A groundwater sample from B-3 contained volatile organics: 0.90 ppm; benzene: 0.32 ppm; toluene: 0.23 ppm; xylene: 0.16 ppm.
1/04/87(?)	A commercial shopping center building was erected on the property, covering wells B-2, B-6, B-7, B-9 and B-10. Wells B-1, B-3, B-4, B-5 and B-8 were covered by site parking and a rear driveway.
1/89	Shell transfers project to CEW.
4/07/89	Revised Work Plan submitted to RWQCB.
5/23/89	Monitoring wells MW-2, MW-3 and MW-4 installed, soil sampled.
8/20/89	Groundwater sampled, wells MW-2 through MW-4.
7/07/89	CEW issues Quarterly Report.
7/19/89	Groundwater sampled, wells MW-2 through MW-4.

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**CHRONOLOGICAL SUMMARY**  
**Continued**

<u>DATE</u>	<u>DESCRIPTION OF ACTIVITY</u>
8/01/89	Right-of-Entry Agreement sent to property owners of 518 40 <sup>th</sup> Street.
8/04/89	CEW issues monthly monitoring report.
8/08/89	Groundwater sampled, wells MW-2 through MW-4.

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**3. WORK COMPLETED THIS PERIOD**

**3.1 Introduction**

Work initiated and completed during August 1989 followed the task descriptions and modifications of the site Work Plan dated April 5, 1989.

**3.2 Soil Boring Drilling/Sampling Well Installations**

A Right-of-Entry Agreement with the property owners of 518 40<sup>th</sup> Street was needed by Shell prior to installation of three onsite wells sited on the west edge of 500 40<sup>th</sup> Street (Drawing 3). The Agreement was sent to the property owners of 518 40<sup>th</sup> Street on August 1, 1989. On August 29, 1989, the property owners indicated the Agreement was being reviewed by their attorneys. As of September 12, 1989, the Right-of-Entry had not been received by Shell or CEW.

No soil boring drilling, sampling, or well installations occurred during August 1989.

**3.3 Groundwater Analysis and Results**

Groundwater samples were collected from 3 onsite wells, properly packaged and transferred to a California State-certified analytical laboratory under proper chain-of-custody and preservation (see Quarter 2 Report of Activities, Appendices E and F). The samples were analyzed for TPH (as gasoline, diesel and motor oil), and BTEX (EPA Methods 3150, 5030, 8015 and 602). The analytical results are summarized in Table 2, and certified sheets from all analyses are enclosed as Attachment 1.

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**TABLE 1: Summary of Groundwater Monitoring Well Installations**

<u>Well No.</u>	<u>Date Installed</u>	<u>Diameter Well (in)</u>	<u>TD (ft bgs)</u>	<u>Screen (ft bgs)</u>	<u>Bentonite Seal (ft bgs)</u>	<u>Grout Seal (ft bgs)</u>
MW-2	5/22/89	12	25	20.0-9.0	9.0-7.0	7.0-0
MW-3	5/23/89	12	21	19.0-9.5	9.5-8.0	8.0-0
MW-4	5/23/89	12	20	15.5-9.5	9.5-7.5	7.5-0

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**TABLE 2: Groundwater Analytical Results (ppm)**

<u>Well No.</u>	<u>Sample Date</u>	<u>TPH-g</u>	<u>TPH-d</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-benzene</u>	<u>Xylenes</u>	<u>Lead</u>
MW-2	6/20/89	0.8	<0.01	0.046	0.0068	0.0027	0.056	NA
MW-2	7/18/89	1.4	0.4	0.033	0.0056	0.024	0.073	0.003
MW-2	8/08/89	0.23	0.50	0.0045	<0.0005	<0.0015	0.011	NA
MW-3	6/20/89	2.3	<0.1	0.18	0.15	0.054	0.80	NA
MW-3	7/18/89	1.5	9.1	0.085	0.034	0.010	0.12	0.002
MW-3	8/08/89	2.5	0.71	0.13	0.073	0.0035	0.33	NA
MW-4	6/20/89	<0.05	<0.01	<0.0005	<0.0015	<0.0015	<0.0015	NA
MW-4	7/18/89	<0.05	<0.05	<0.0005	<0.0015	<0.0015	<0.0015	0.003
MW-4	8/08/89	<0.05	<0.05	<0.0005	<0.0005	<0.0015	<0.0015	NA

NA - Not Analyzed.

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### 3.4 Physical Monitoring Results

Three wells were physically monitored for depth to water table, and measurement of floating product, if any. A summary of these results is presented in Table 3.



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**TABLE 3 Physical Monitoring Results: Evidence of Contamination**

<u>Well No.</u>	<u>Date</u>	<u>Depth to Water (ft)</u>	<u>Petroleum Water Odor</u>	<u>Thickness Floating Product (inches)</u>	<u>Notes</u>
MW-2	6/19/89	11.91	None	None	Soft sed. in bottom
MW-2	7/18/89	11.98	None	None	
MW-2	8/08/89	12.00	Slight	None	
MW-3	6/19/89	10.99	None	None	Soft sed. in bottom
MW-3	7/18/89	11.05	Slight	None	
MW-3	8/08/89	11.07	Slight	None	
MW-4	6/19/89	12.18	None	None	No sed.
MW-4	7/18/89	12.21	None	None	
MW-4	8/08/89	12.23	None	None	

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#### **4. REVIEW OF DATA AND INTERPRETATIONS**

##### **4.1 Groundwater Elevation and Gradient (See Drawing 4)**

- Groundwater gradient remains south, at 0.007 ft/ft.
- The gradient is unchanged from July to August 1989.
- The groundwater elevation declined 0.02 ft from July to August 1989.

##### **4.2 Distribution of Dissolved MVF Contamination in Groundwater (See Drawings 5 and 6)**

- TPH-g was detected at MW-2 (0.23 ppm) and MW-3 (2.5 ppm).
- TPH-d was detected at MW-2 (0.50 ppm) and MW-3 (0.71 ppm).
- Benzene was detected at MW-2 (0.0045 ppm) and MW-3 (0.13 ppm).

- Toluene was detected at MW-3 (0.073 ppm).
- Ethylbenzene was detected at MW-3 (0.0035 ppm).
- Xylenes were detected at MW-2 (0.011 ppm) and MW-3 (0.33 ppm).
- No contamination was detected at MW-4.
- Consistent monthly changes in contaminant concentrations were not apparent at MW-2 and MW-3.
- Consistent monthly concentration ratios of TPH-g to TPH-d were not apparent at MW-2 and MW-3.

#### **4.3 Distribution of Floating Product on Groundwater**

- No floating product was observed during June, July, or August 1989 monitoring.

### **5. WORK PLAN MODIFICATIONS**

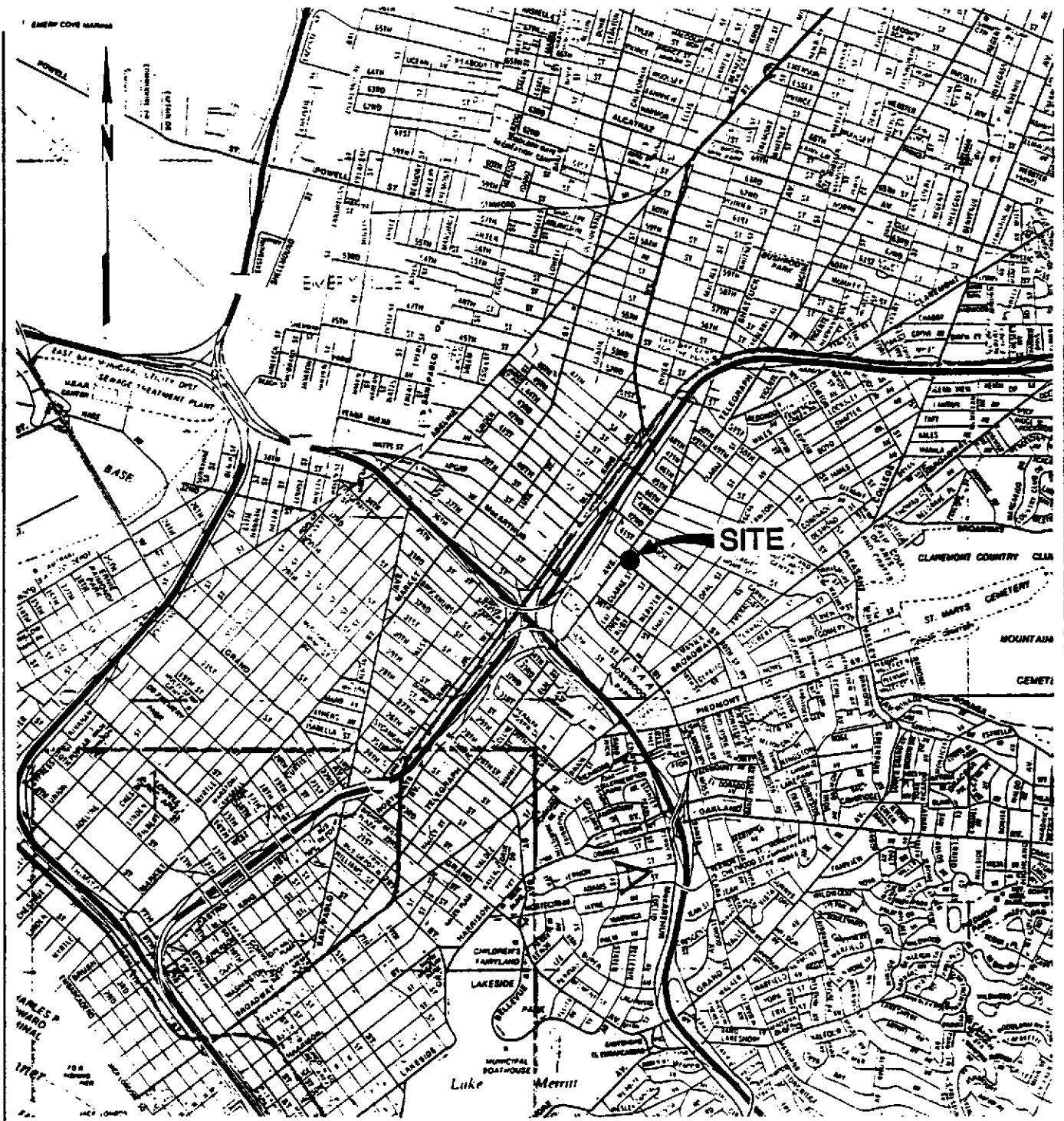
Task 16 was modified to include Monthly Groundwater Sampling.

### **6. WORK PLANNED FOR NEXT MONTH**

Groundwater will be sampled and analyzed in September 1989. The groundwater analytical results will be presented in the Quarter 3, 1989 report. Thereafter, samples will be collected and analyzed quarterly.

Receipt of the Right-of-Entry Agreement from the property owners at 518 40<sup>th</sup> Street is anticipated during September 1989. Installation of three proposed onsite wells (see Drawing 3) will proceed when the Agreement is secured.

Five downgradient offsite wells (See Drawing 3) are planned for installation on 40<sup>th</sup> Street within 100 feet of the property boundary. Encroachment and construction permits are being sought from the City of Oakland. Installation is planned following receipt of the permits.



SOURCE: California State Automobile Association.

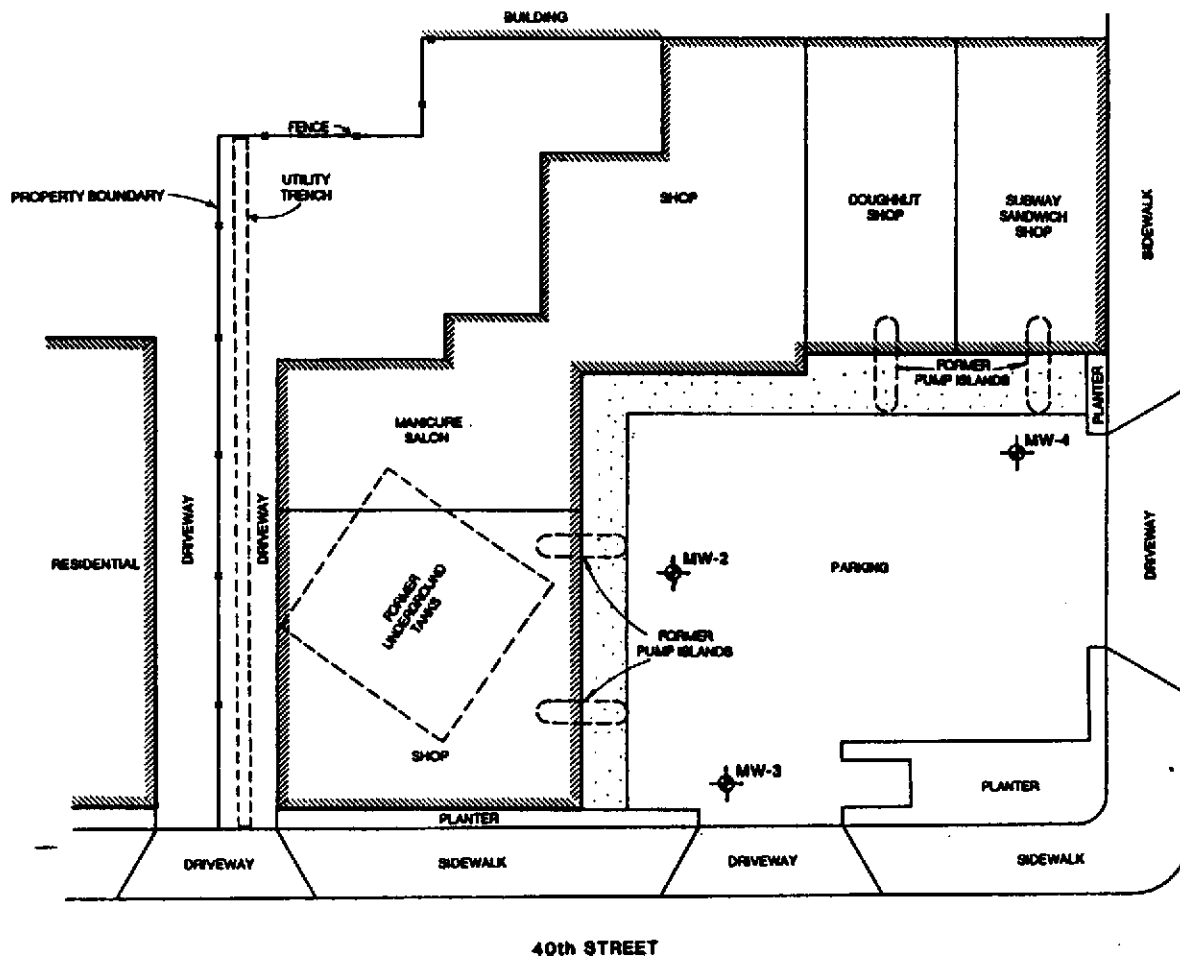
**SITE LOCATION MAP**

**SHELL OIL COMPANY**  
 500 40th Street  
 Oakland, California

Scale	AS SHOWN	Project No.	88-44-361-01
Prepared by	KGC	Date	4/4/89
Checked by	RMB/MIY	Drawing No.	1
Approved by	DWC		



**Converse Environmental  
 Consultants California**



**LEGEND**

MW-2  GROUNDWATER MONITORING WELL

NOTE: GROUNDWATER MONITORING WELL MW-1 WAS NOT INSTALLED



**1989 PLOT PLAN**

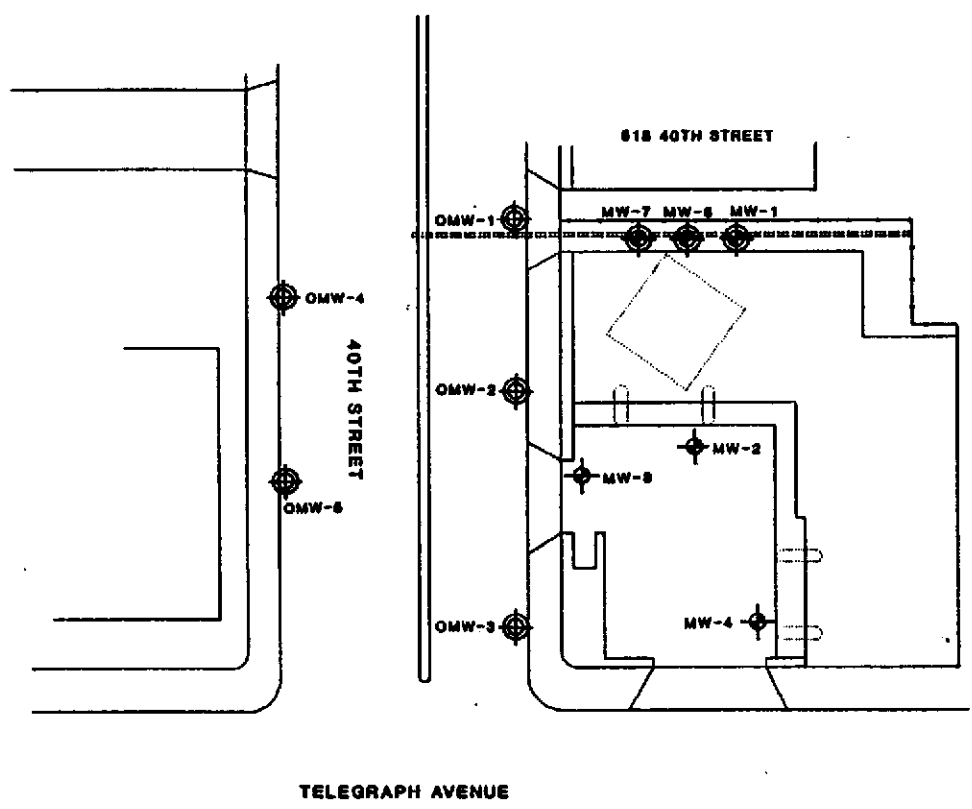
SHELL OIL COMPANY  
500 40th Street  
Oakland, California

Scale	AS SHOWN	Project No.	
Date	7/8/89	Drawing No.	88-44-381-01
Prepared By	KGC		
Checked By	RMB		
Approved By	OWC		



**Converse Environmental Consultants California**

Base Map: Surveyed with EDM, Converse 1989.



**LEGEND**

- MW-1 PROPOSED GROUNDWATER MONITORING WELL
- OMW-1 PROPOSED OFFSITE GROUNDWATER MONITORING WELL
- MW-2 GROUNDWATER MONITORING WELL



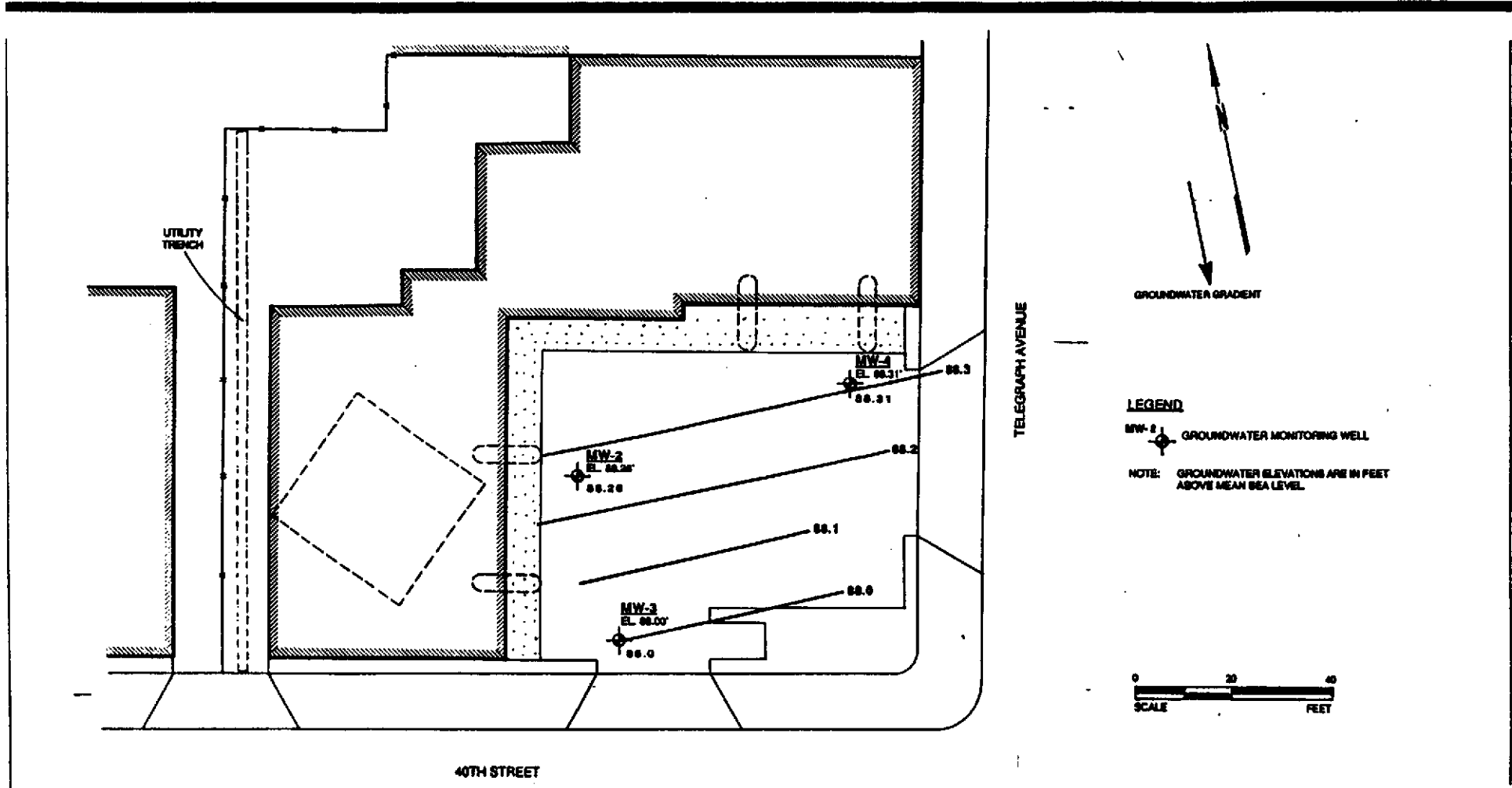
**PROPOSED GROUNDWATER MONITORING WELLS AUGUST 1989**

SHELL OIL COMPANY  
500 40th Street  
Oakland, California

Scale	AS SHOWN	Project No.	
Date	9/11/89	Drawing No.	88-44-381-01
Prepared By	MLL		
Checked By	MIY		
Approved By	DWC		



**Converse Environmental Consultants California**



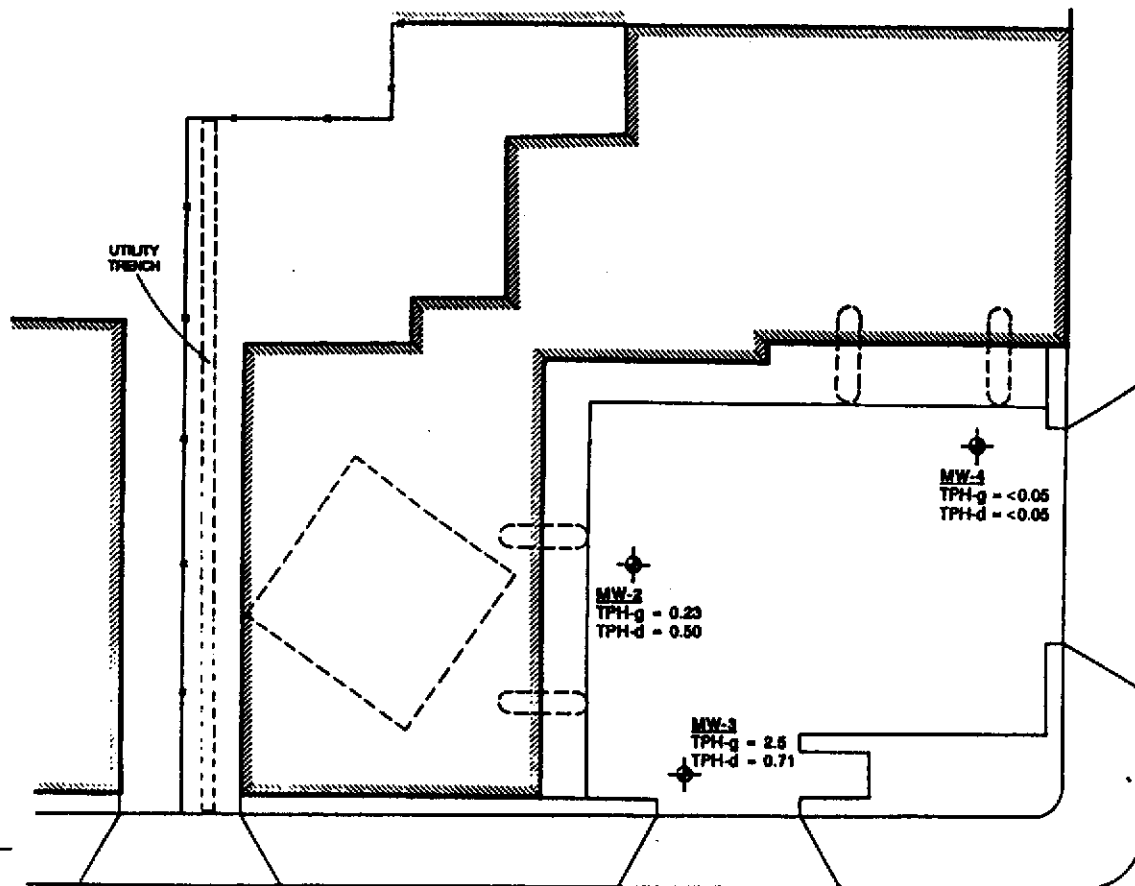
**GROUNDWATER GRADIENT AUGUST 1989**

SHELL OIL COMPANY  
500 40th Street  
Oakland, California

Scale	AS SHOWN	Project No.	
Date	8/11/89	Drawing No.	88-44-381-01
Prepared By	MLL		
Checked By	MIY		4
Approved By	OWC		

 Converse Environmental Consultants California

Base Map Surveyed with EDM Converse 1269



**LEGEND**

- TPH-g = GASOLINE(ppm)
- TPH-d = DIESEL(ppm)
- MW-2 GROUNDWATER MONITORING WELL

NOTE: GROUNDWATER MONITORING WELL MW-1 WAS NOT INSTALLED.

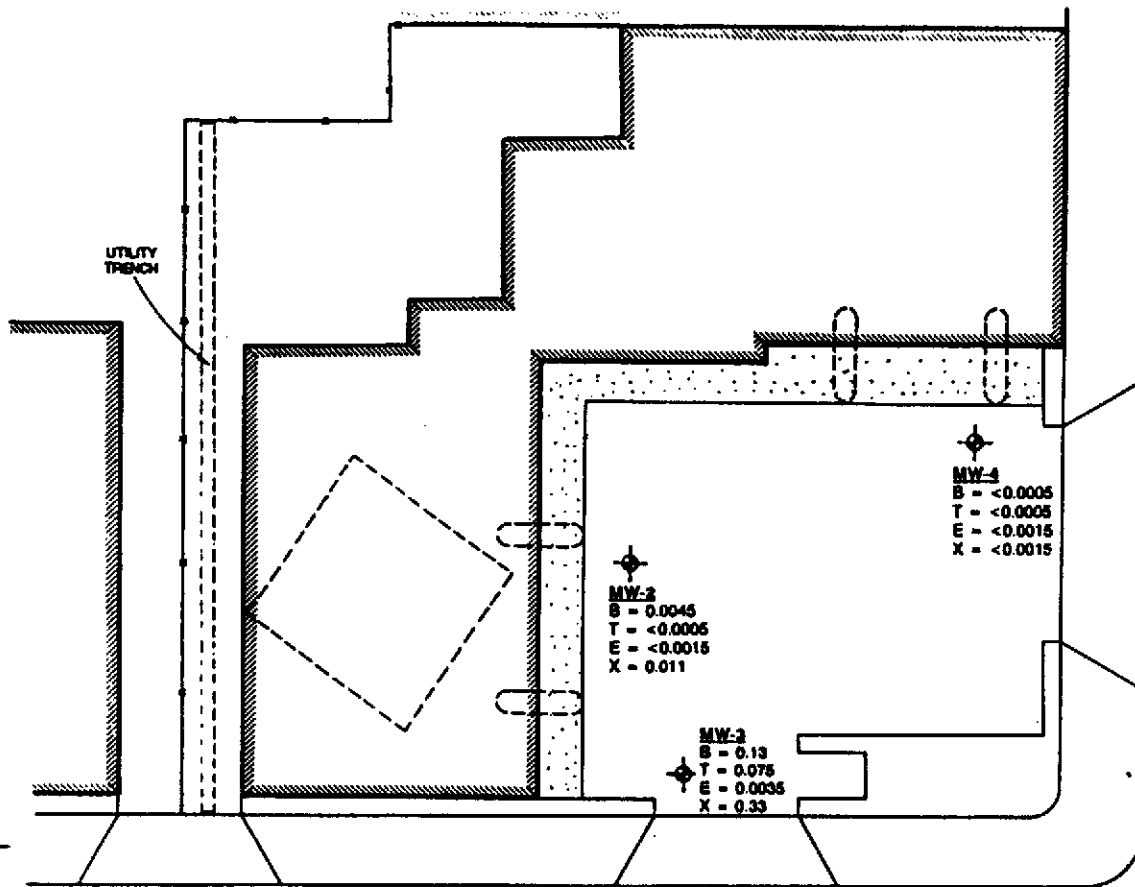


**TPH IN GROUNDWATER AUGUST 1989**

SHELL OIL COMPANY  
500 40th Street  
Oakland, California

Scale	AS SHOWN	Project No.	
Date	9/11/89	Drawing No.	88-44-381-01
Prepared By	MLL		
Checked By	MIY		
Approved By	DWC		5

Converse Environmental Consultants California



UTILITY TRENCH

40TH STREET

TELEGRAPH AVENUE

MW-2  
 B = 0.0045  
 T = <0.0005  
 E = <0.0015  
 X = 0.011

MW-3  
 B = 0.13  
 T = 0.075  
 E = 0.0035  
 X = 0.33

MW-4  
 B = <0.0005  
 T = <0.0005  
 E = <0.0015  
 X = <0.0015



GROUNDWATER GRADIENT

LEGEND

- B - BENZENE (ppm)
- T - TOLUENE (ppm)
- E - ETHYLBENZENE (ppm)
- X - XYLENE (ppm)
- MW-3 [Symbol] GROUNDWATER MONITORING WELL

NOTE: GROUNDWATER MONITORING WELL MW-1 WAS NOT INSTALLED



**BTEX IN GROUNDWATER AUGUST 1989**

SHELL OIL COMPANY  
 500 40th Street  
 Oakland, California

Scale	AS SHOWN	Project No.	
Date	9/11/89	Drawing No.	88-44-381-01
Prepared By	MLL		
Checked By	MIY		
Approved By	DWC		6

Converse Environmental Consultants California

Base Map Surveyed with EDM Converse 1989



**ATTACHMENT 1**  
**GROUNDWATER ANALYTICAL RESULTS**



NATIONAL  
ENVIRONMENTAL  
TESTING, INC.

NET Pacific, Inc.  
435 Tesconi Circle  
Santa Rosa, CA 95401  
Tel: (707) 526-7200  
Fax: (707) 526-9623

Formerly: ANATEC Labs, Inc.

Marc Yalom  
Converse Consultants  
55 Hawthorne St, Ste 500  
San Francisco, CA 94105

08-21-89  
NET Pacific Log No: 7374  
Series No: 212  
Client Ref: Project# 88-44-361-03.

Subject: Analytical Results for "Shell - 500 40th Street, Oakland" Received  
08-11-89.

Dear Mr. Yalom:

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Submitted by:

Approved by:

Brian Fies  
Group Leader  
Atomic Spectroscopy

Susan Joy Griffin  
Group Leader  
Gas Chromatography

/sm

Enc: Sample Custody Document



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**KEY TO ABBREVIATIONS and METHOD REFERENCES****Abbreviations**

- mean : Average; sum of measurements divided by number of measurements.
- mg/Kg (ppm) : Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
- mg/L : Concentration in units of milligrams of analyte per liter of sample.
- mL/L/hr : Milliliters per liter per hour.
- MPN/100 mL : Most probable number of bacteria per one hundred milliliters of sample.
- N/A : Not applicable.
- NA : Not analyzed.
- ND : Not detected; the analyte concentration is less than applicable listed reporting limit.
- NR : Not requested.
- NTU : Nephelometric turbidity units.
- RPD : Relative percent difference,  $100 \text{ [Value 1 - Value 2] / mean value}$ .
- SNA : Standard not available.
- ug/Kg (ppb) : Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
- ug/L : Concentration in units of micrograms of analyte per liter of sample.
- unhos/cm : Microrhos per centimeter.

**Method References**

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.



SAMPLE DESCRIPTION: MW-4 08-08-89 1233  
LAB NO.: (-32664 )

<u>Parameter</u>	<u>Reporting Limit</u>	<u>Results</u>	<u>Units</u>
PETROLEUM HYDROCARBONS VOLATILE (WATER)			
DILUTION FACTOR		1	
DATE ANALYZED		08-14-89	
METHOD GC FID/5030 as Gasoline	0.05	ND	ppm
METHOD 602			
Benzene	0.0005	ND	ppm
Ethylbenzene	0.0015	ND	ppm
Toluene	0.0005	ND	ppm
Xylenes, total	0.0015	ND	ppm
PETROLEUM HYDROCARBONS EXTRACTABLE (WATER)			
DILUTION FACTOR		1	
DATE EXTRACTED		08-12-89	
DATE ANALYZED		08-16-89	
METHOD GC FID/3510			
as Diesel	0.05	ND	ppm
as Motor Oil	0.05	ND	ppm



SAMPLE DESCRIPTION: MW-3 08-08-89 1400  
LAB NO.: (-32665 )

<u>Parameter</u>	<u>Reporting Limit</u>	<u>Results</u>	<u>Units</u>
PETROLEUM HYDROCARBONS VOLATILE (WATER)			
DILUTION FACTOR		1	
DATE ANALYZED		08-14-89	
METHOD GC FID/5030 - as Gasoline			
	0.05	2.5	ppm
METHOD 602			
Benzene	0.0005	0.13	ppm
Ethylbenzene	0.0015	0.0035	ppm
Toluene	0.0005	0.073	ppm
Xylenes, total	0.0015	0.33	ppm
PETROLEUM HYDROCARBONS EXTRACTABLE (WATER)			
DILUTION FACTOR		1	
DATE EXTRACTED		08-12-89	
DATE ANALYZED		08-16-89	
METHOD GC FID/3510			
as Diesel	0.05	0.71	ppm
as Motor Oil	0.05	ND	ppm



SAMPLE DESCRIPTION: MW-2 08-08-89 1320  
LAB NO.: (-32666 )

<u>Parameter</u>	<u>Reporting Limit</u>	<u>Results</u>	<u>Units</u>
PETROLEUM HYDROCARBONS VOLATILE (WATER)			
DILUTION FACTOR		1	
DATE ANALYZED		08-14-89	
METHOD GC FID/5030			
as Gasoline	0.05	0.23	ppm
METHOD 602			
Benzene	0.0005	0.0045	ppm
Ethylbenzene	0.0015	ND	ppm
Toluene	0.0005	ND	ppm
Xylenes, total	0.0015	0.011	ppm
PETROLEUM HYDROCARBONS EXTRACTABLE (WATER)			
DILUTION FACTOR		1	
DATE EXTRACTED		08-12-89	
DATE ANALYZED		08-16-89	
METHOD GC FID/3510			
as Diesel	0.05	0.50	ppm
as Motor Oil	0.05	ND	ppm



CHAIN OF CUSTODY RECORD

P.P. Mary Yaloum

Project No. 88-171-361-03		Project Name Shell - 500 40th St Oakland		Number of Containers 9 Litre 12 UOALS		Shell	
Samplers: (signature) Thomas Smith				Number of Containers 9 Litre 12 UOALS		(7374) Remarks	
Station No.	Date	Time	Comp.	Grab	Station Location	TPE-GAS	TPE-DISSCT
MW-1	8/8/84	12:33		✓	500 40th St	✓	✓
MW-3	8/8/84	2:00		✓		✓	✓
MW-2	8/8/84	1:20		✓		✓	✓
Relinquished by: (signature) Thomas Smith						Date/Time 8/10/84 15:10	
Received by: (signature) Jeff Wickler						Date/Time 8/11/84 10:45	
Relinquished by: (signature)						Date/Time	
Received by: (signature)						Date/Time	
Relinquished by Courier: (signature)						Date/Time	
Received by Courier: (signature)						Date/Time	
Method of Shipment				Shipped by: (signature)		Courier from Airport: (signature) CVIA NCS1	
						Received for Laboratory: (signature) Kemple	
						Date/Time 8/11/84 0635	