

PACIFIC  
ENVIRONMENTAL  
GROUP, INC.

ALCO  
HAZMAT  
94 JUL 25 PM 2:49

July 18, 1994  
Project 310-058.3A

Mr. Richard Hiett  
Regional Water Quality Control Board  
San Francisco Bay Region  
2101 Webster Street, Suite 500  
San Francisco, California 94612

Re: Unocal Corporation  
Quarterly Summary Report  
Second Quarter 1994

Dear Mr. Hiett:

As directed by Ms. Tina Berry of Unocal Corporation, Pacific Environmental Group, Inc. is forwarding the quarterly summary report for the following location:

<u>Service Station</u>	<u>Location</u>
5760	376 Lewelling Boulevard, San Lorenzo

If you have questions or comments, please do not hesitate to contact our office at (408) 441-7500.

Sincerely,

**Pacific Environmental Group, Inc.**

Joe Muzzio  
Project Geologist

Enclosures

cc: Ms. Tina Berry, Unocal Corporation  
Ms. Juliet Shin, Alameda County Environmental Health Care

## Quarterly Summary Report Second Quarter 1994

Unocal Service Station 5760  
376 Lewelling Boulevard  
San Lorenzo, California

City/County ID #: None  
County: Alameda

### BACKGROUND

The underground storage tanks were removed and replaced in November 1987. Currently there are nine monitoring wells on-site. Groundwater monitoring and sampling of wells began in February 1988.

### RECENT QUARTER ACTIVITIES

MPDS performed second quarter 1994 monitoring event. Evaluated site remedial alternatives. PACIFIC submitted a June 17, 1994 response letter to address comments presented in a May 18, 1994 Alameda County Health Services letter. ~~The PACIFIC~~ June 17, 1994 letter presented enhanced biodegradation as the site remedial strategy.

### NEXT QUARTER ACTIVITIES

Groundwater monitoring and sampling for the third quarter 1994 will be performed. Unocal will submit a remedial action work plan which addresses enhanced biodegradation. A 5-day soil vapor extraction test will be performed.

*Sent out  
on Aug 13 '94.*

### CHARACTERIZATION/REMEDIAL STATUS

Soil contamination delineated? Yes.  
Dissolved groundwater delineated? No.  
Free product delineated? Yes.  
Amount of groundwater contaminant recovered this quarter? Not applicable.  
Soil remediation in progress? No.  
Anticipated start? Third Quarter 1994.  
Anticipated completion date? Unknown.  
Dissolved/free product remediation in progress? No.  
Anticipated start? Third Quarter 1994.  
Anticipated completion? Unknown.

CONSULTANT: Pacific Environmental Group, Inc.

MONITORING  
PURGING  
DISPOSING  
SAMPLING

**MPDS**

SERVICES, INCORPORATED

ALCO  
HAZMAT

94 JUL 28 PM 4:33

July 26, 1994

Ms. Juliet Shin  
Alameda County Health Care Services  
80 Swan Way, Room 200  
Oakland, CA 94261

RE: Unocal Service Station #5760  
376 Lewelling Boulevard  
San Lorenzo, California

Dear Ms. Shin:

Per the request of the Unocal Corporation Project Manager, Ms. Tina R. Berry, enclosed please find our report (MPDS-UN5760-03) dated July 13, 1994, for the above referenced site.

Should you have any questions regarding the reporting of data, please feel free to call our office at (510) 602-5120. Any other questions may be directed to the Project Manager at (510) 277-2321.

Sincerely,

MPDS Services, Inc.

  
Brenda Pepito

/bp

Enclosure

cc: Ms. Tina R. Berry

01 JUL 94 PM 1:33

MPDS-UN5760-03  
July 13, 1994

Unocal Corporation  
2000 Crow Canyon Place, Suite 400  
P.O. Box 5155  
San Ramon, California 94583

Attention: Ms. Tina R. Berry

RE: Quarterly Data Report  
Unocal Station Service #5760  
376 Lewelling Boulevard  
San Lorenzo, California

Dear Ms. Berry:

This data report presents the results of the most recent quarter of monitoring and sampling of the monitoring wells at the referenced site by MPDS Services, Inc.

RECENT FIELD ACTIVITIES

The monitoring wells that were monitored and sampled during this quarter are indicated in Table 1. Prior to sampling, the wells were checked for depth to water and the presence of free product or sheen. The monitoring data and the ground water elevations are summarized in Table 1. The ground water flow direction during the most recent quarter is shown on the attached Figure 1.

Ground water samples were collected on June 9, 1994. Prior to sampling, the wells were each purged of between 8 and 19 gallons of water. During purging operations, the field parameters pH, temperature, and electrical conductivity were recorded and are presented in Table 2. Once the field parameters were observed to stabilize, and where possible, a minimum of approximately four casing volumes had been removed from each well, samples were then collected using a clean Teflon bailer. The samples were decanted into clean VOA vials and/or one-liter amber bottles, as appropriate, which were then sealed with Teflon-lined screw caps, labeled, and stored in a cooler, on ice, until delivery to a state-certified laboratory. MPDS Services, Inc. transported the purged ground water to the Unocal Refinery located in Rodeo, California, for treatment and discharge to San Pablo Bay under NPDES permit.

ANALYTICAL RESULTS

The ground water samples were analyzed at Sequoia Analytical Laboratory and were accompanied by properly executed Chain of Custody documentation. The analytical results of the ground water samples collected to date are summarized in Table 3. The concentrations of Total Petroleum

MPDS-UN5760-03  
July 13, 1994  
Page 2

Hydrocarbons (TPH) as gasoline and benzene detected in the ground water samples collected this quarter are shown on the attached Figure 2. Copies of the laboratory analytical results and the Chain of Custody documentation are attached to this report.

LIMITATIONS

Environmental changes, either naturally-occurring or artificially-induced, may cause changes in ground water levels and flow paths, thereby changing the extent and concentration of any contaminants.

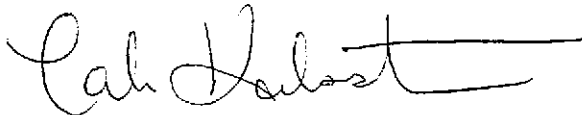
DISTRIBUTION

A copy of this report should be sent to Ms. Juliet Shin of the Alameda County Health Care Services Agency.

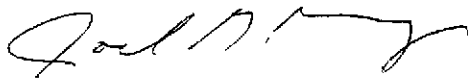
If you have any questions regarding this report, please do not hesitate to call at (510) 602-5120.

Sincerely,

MPDS Services, Inc.



Talin Kaloustian  
Staff Engineer



Joel G. Greger, C.E.G.  
Senior Engineering Geologist

License No. EG 1633  
Exp. Date 8/31/96

/dlh

Attachments: Tables 1, 2 & 3  
Location Map  
Figures 1 & 2  
Laboratory Analyses  
Chain of Custody documentation

cc: Mr. Joe Muzzio, Pacific Environmental Group, Inc.



**TABLE 1**

**SUMMARY OF MONITORING DATA**

Well #	Ground Water Elevation (feet)	Depth to Water (feet)◆	Product Thickness (feet)	Sheen	Water Purged (gallons)	Total Well Depth (feet)◆
<b>(Monitored and Sampled on June 9, 1994)</b>						
U-1	22.78	17.42	0	No	19	30.21
U-2	23.00	18.26	0	No	17.5	29.98
U-3	22.66	16.60	0	No	13	25.04
U-4	22.72	17.53	0	No	15.5	27.88
U-5	22.61	16.70	0	No	8	28.28
U-6	22.50	15.18	0	No	9	28.09
U-7	22.41	14.70	0	No	14	35.02
U-8	22.71	15.86	0	No	10	29.74
U-9	22.26	15.05	0	No	9	28.18
<b>(Monitored and Sampled on March 9, 1994)</b>						
U-1	23.00	17.20	0	No	20	30.10
U-2	23.21	18.05	0	No	18	29.91
U-3	22.91	16.35	0	No	13	24.98
U-4	22.95	17.30	0	No	16	27.80
U-5	22.86	16.45	0	No	8	28.20
U-6	22.78	14.90	0	No	9	28.01
U-7	22.66	14.45	0	No	14	35.00
U-8	22.95	15.62	0	No	10	29.59
U-9	22.57	14.74	0	No	9.5	28.10
<b>(Monitored and Sampled on December 2, 1993)</b>						
U-1*	21.84	18.36	<0.01	N/A	0	29.93
U-2	22.03	19.23	0	No	16	29.87
U-3	21.71	17.55	0	No	12	25.03
U-4	21.79	18.46	0	No	14	27.85
U-5	21.65	17.66	0	No	8	28.26
U-6	21.60	16.08	0	No	8.5	28.05
U-7	21.50	15.61	0	No	14	35.20
U-8	21.77	16.80	0	No	9	29.77
U-9	21.38	15.93	0	No	8.5	28.18

**TABLE 1 (Continued)**

**SUMMARY OF MONITORING DATA**

Well #	Ground Water Elevation (feet)	Depth to Water (feet)◆	Product Thickness (feet)	Sheen	Water Purged (gallons)	Total Well Depth (feet)◆
(Monitored and Sampled on September 9, 1993)						
U-1	22.74	17.77	0			
U-2	22.94	18.68	0			
U-3	22.60	17.04	0			
U-4	23.64	16.89	0			
U-5	22.71	16.90	0			
U-6	22.38	15.56	0			
U-7	22.26	15.23	0			
U-8	22.56	16.38	0			
U-9	22.09	15.79	0			

Well #	Well Cover Elevation (feet)**	Well Casing Elevation (feet)***
U-1	40.51	40.20
U-2	41.62	41.26
U-3	39.64	39.26
U-4	40.53	40.25
U-5	39.61	39.31
U-6	37.94	37.68
U-7	37.49	37.11
U-8	38.94	38.57
U-9	37.88	37.31

◆ The depth to water level and total depth measurements were taken from the top of the well casings. Prior to December 2, 1993, the depth to water level and total well depth measurements were taken from the top of the well covers.

\* Monitored only.

\*\* The elevation of the top of the well covers have been surveyed relative to Mean Sea Level (MSL).

\*\*\* Relative to MSL.

N/A = Not Applicable.

Note: Monitoring data prior to December 2, 1993, were provided by GeoStrategies, Inc.

**TABLE 2**

RECORD OF THE TEMPERATURE, CONDUCTIVITY, AND pH VALUES  
IN THE MONITORING WELLS DURING PURGING AND PRIOR TO SAMPLING

(Measured on June 9, 1994)

Well #	Gallons per Casing Volume	Time	Gallons Purged	Casing Volumes Purged	Temper- ature (°F)	Conductivity ([μmhos/cm] x100)	pH
U-1	4.73	15:20	0	0	82.1	5.83	8.28
			4.5	0.95	73.9	9.38	8.03
			9	1.90	73.8	9.99	7.99
			13.5	2.85	73.2	10.49	7.34
		15:40	19	4.02	73.0	10.61	7.44
U-2	4.34	9:45	0	0	75.4	8.65	7.09
			4.5	1.04	72.2	7.93	7.26
			9	2.07	71.4	6.78	7.33
			13.5	3.11	71.6	6.70	7.39
		10:05	17.5	4.03	72.0	6.68	7.30
U-3	3.12	16:15	0	0	88.5	15.00	7.71
			3	0.96	77.6	14.46	7.35
			6	1.92	74.3	13.88	7.14
			9	2.88	75.1	13.86	7.06
		16:25	13	4.17	74.6	13.67	7.06
U-4	3.83	10:45	0	0	78.6	14.03	7.65
			4	1.04	74.3	14.16	7.60
			8	2.09	72.6	14.13	7.59
			12	3.13	72.6	14.06	7.52
		11:00	15.5	4.05	72.8	14.04	7.48
U-5	1.97	11:37	0	0	76.1	13.83	7.90
			2	1.02	74.2	14.13	7.68
			4	2.03	73.1	14.52	7.65
			6	3.05	72.9	14.72	7.56
		11:42	8	4.06	73.1	14.78	7.49



**TABLE 2 (Continued)**

RECORD OF THE TEMPERATURE, CONDUCTIVITY, AND pH VALUES  
IN THE MONITORING WELLS DURING PURGING AND PRIOR TO SAMPLING

(Measured on June 9, 1994)

Well #	Gallons per Casing Volume	Time	Gallons Purged	Casing Volumes Purged	Temper- ature (°F)	Conductivity ([μmhos/cm] x100)	pH
U-6	2.19	14:40	0	0	76.9	6.30	8.04
			2	0.91	73.4	9.48	7.84
			4	1.83	72.6	9.88	7.80
			6	2.74	72.0	9.87	7.71
			9	4.11	72.0	9.78	7.60
U-7	3.45	12:10	0	0	76.5	9.27	8.25
			3.5	1.01	70.3	8.37	7.97
			7	2.03	69.1	8.30	8.00
			10.5	3.04	69.1	8.30	7.94
			14	4.06	69.0	8.21	7.91
U-8	2.36	14:00	0	0	76.9	9.32	8.34
			2.5	1.06	71.8	8.60	8.18
			5	2.12	70.3	8.91	7.95
			7.5	3.18	69.7	8.85	7.78
			10	4.24	69.1	8.74	7.77
U-9	2.23	13:10	0	0	81.8	10.71	7.99
			2	0.90	74.6	9.95	7.80
			4	1.79	72.0	10.90	7.59
			6	2.69	71.6	10.99	7.60
			9	4.04	71.5	11.04	7.60

TABLE 3

SUMMARY OF LABORATORY ANALYSES  
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes	
6/09/94	U-1	59,000	5,200	1,300	5,200	15,000	
	U-2	ND	ND	ND	ND	ND	
	U-3	120,000*	3,300	6,100	5,200	26,000	
	U-4	ND	ND	ND	ND	ND	
	U-5	ND	ND	ND	ND	ND	
	U-6	2,600*	16	ND	29	ND	
	U-7	ND	ND	ND	ND	ND	
	U-8	ND	ND	ND	ND	ND	
	U-9	2,900**	ND	ND	ND	ND	
4/13/94	U-2	ND	ND	ND	ND	ND	
	U-4	ND	ND	ND	ND	ND	
	U-5	ND	ND	ND	ND	ND	
	U-7	ND	ND	ND	ND	ND	
	U-8	ND	ND	0.78	ND	0.98	
	U-9	ND	ND	ND	ND	ND	
3/09/94	U-1	45,000	930	4,100	2,000	11,000	
	U-2	62	1.1	5.4	1.1	9.7	
	U-3	120,000	4,500	8,300	5,600	28,000	
	U-4	ND	1.4	4.7	1.1	8.1	
	U-5	71	1.7	6.3	1.5	10	
	U-6	2,200	11	8.2	24	16	
	U-7	ND	1.4	4.4	0.96	7.5	
	U-8	ND	1.2	3.7	0.79	6.1	
	U-9	5,700*	ND	ND	ND	ND	
12/02/93	U-1	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	U-2	ND	ND	ND	ND	ND	
	U-3	110,000	3,200	7,700	5,600	26,000	
	U-4	ND	ND	ND	ND	2.6	
	U-5	ND	ND	ND	ND	ND	
	U-6	2,100	12	1.6	21	1.1	
	U-7	ND	ND	ND	ND	ND	
	U-8	ND	ND	ND	ND	ND	
	U-9	ND	ND	ND	ND	ND	

*TPHs/  
non TPHs  
mix*

*Possibly not TPHs*

*TPHs/non TPHs mix*

**TABLE 3 (Continued)**

SUMMARY OF LABORATORY ANALYSES  
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
9/09/93	U-1	67,000	2,900	18,000	6,200	32,000
	U-2	ND	ND	ND	ND	ND
	U-3	110,000	2,800	10,000	6,500	31,000
	U-4	ND	ND	ND	ND	ND
	U-5	ND	ND	ND	ND	ND
	U-6	6,300♦♦	29	ND	120	34
	U-7	ND	ND	ND	ND	ND
	U-8	ND	ND	ND	ND	ND
	U-9	1,200♦	ND	ND	ND	ND
6/04/93	U-1	35,000	1,300	5,700	900	9,200
	U-2	ND	ND	ND	ND	ND
	U-3	92,000	2,900	8,700	4,300	20,000
	U-4	ND	ND	ND	ND	ND
	U-5	ND	ND	ND	ND	ND
	U-6	13,000	100	38	450	320
	U-7	ND	ND	ND	ND	ND
	U-8	ND	ND	ND	ND	ND
	U-9	2,100♦	ND	ND	ND	ND
2/12/93	U-1	70,000	2,200	8,400	3,100	18,000
	U-2	ND	ND	ND	ND	ND
	U-3	80,000	3,700	9,400	3,700	18,000
	U-4	ND	ND	ND	ND	ND
	U-5	ND	ND	ND	ND	ND
	U-6	2,600	27	ND	120	51
	U-7	ND	ND	ND	ND	ND
	U-8	ND	ND	ND	ND	ND
11/20/92	U-1	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	U-2	ND	ND	ND	ND	ND
	U-3	50,000	3,200	4,700	1,900	10,000
	U-4	ND	ND	2.5	ND	ND
	U-5	ND	ND	ND	ND	ND
	U-6	WELL WAS INACCESSIBLE				
	U-7	ND	ND	ND	ND	ND

**TABLE 3 (Continued)**

SUMMARY OF LABORATORY ANALYSES  
WATER

<u>Date</u>	<u>Well #</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-benzene</u>	<u>Xylenes</u>
8/06/92	U-1	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	U-2	ND	ND	ND	ND	ND
	U-3	140,000	5,100	13,000	5,000	23,000
	U-4	ND	ND	ND	ND	ND
	U-5	ND	ND	ND	ND	ND
	U-6	9,200	160	ND	360	150
	U-7	ND	ND	ND	ND	ND
	U-8	ND	ND	ND	ND	ND
4/07/92	U-1	▲	▲	▲	▲	▲
	U-2	ND	ND	ND	ND	ND
	U-3	97,000	6,100	16,000	5,400	28,000
	U-4	ND	ND	ND	ND	ND
	U-5	ND	ND	ND	ND	ND
	U-6	6,600	90	ND	820	1,200
	U-7	ND	ND	ND	ND	ND
	U-8	ND	ND	ND	ND	ND
3/05/92	U-1	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	U-2	ND	ND	0.36	ND	ND
	U-3	160,000	5,300	15,000	5,400	26,000
	U-4	ND	ND	ND	ND	ND
12/04/91	U-1	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	U-2	ND	ND	ND	ND	ND
	U-3	75,000	2,500	6,100	1,900	11,000
	U-4	ND	ND	ND	ND	ND
9/19/91	U-1	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	U-2	ND	ND	ND	ND	ND
	U-3	61,000	3,300	9,700	2,800	15,000
	U-4	ND	ND	ND	ND	ND
6/03/91	U-1	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	U-2	ND	ND	ND	ND	ND
	U-3	130,000	5,800	19,000	4,600	24,000
	U-4	ND	ND	ND	ND	ND

**TABLE 3 (Continued)**

SUMMARY OF LABORATORY ANALYSES  
WATER

<u>Date</u>	<u>Well #</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-benzene</u>	<u>Xylenes</u>
3/04/91	U-1	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	U-2	ND	ND	0.9	ND	2.6
	U-3	84,000	1,400	10,000	2,900	17,000
	U-4	ND	ND	ND	ND	ND
1/18/91	U-3	51,000	1,700	3,100	1,500	7,500
	U-4	ND	ND	ND	ND	ND
12/05/90	U-1	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				
	U-2	ND	ND	ND	ND	ND
	U-3	69,000	1,900	3,500	1,600	9,800
	U-4	ND	ND	ND	ND	ND
8/24/90	U-1	27,000	1,200	1,800	1,400	5,500
8/23/90	U-2	ND	ND	ND	ND	ND
	U-3	110,000	4,400	13,000	2,800	17,000
	U-4	ND	ND	1.0	ND	1.8
6/05/90	U-1	46,000	2,300	5,500	2,500	11,000
3/20/90	U-1	36,000	2,100	5,500	1,900	9,300
2/09/88	U-1	93,000	3,600	11,000	▲▲	20,000

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TABLE 3 (Continued)

SUMMARY OF LABORATORY ANALYSES  
WATER

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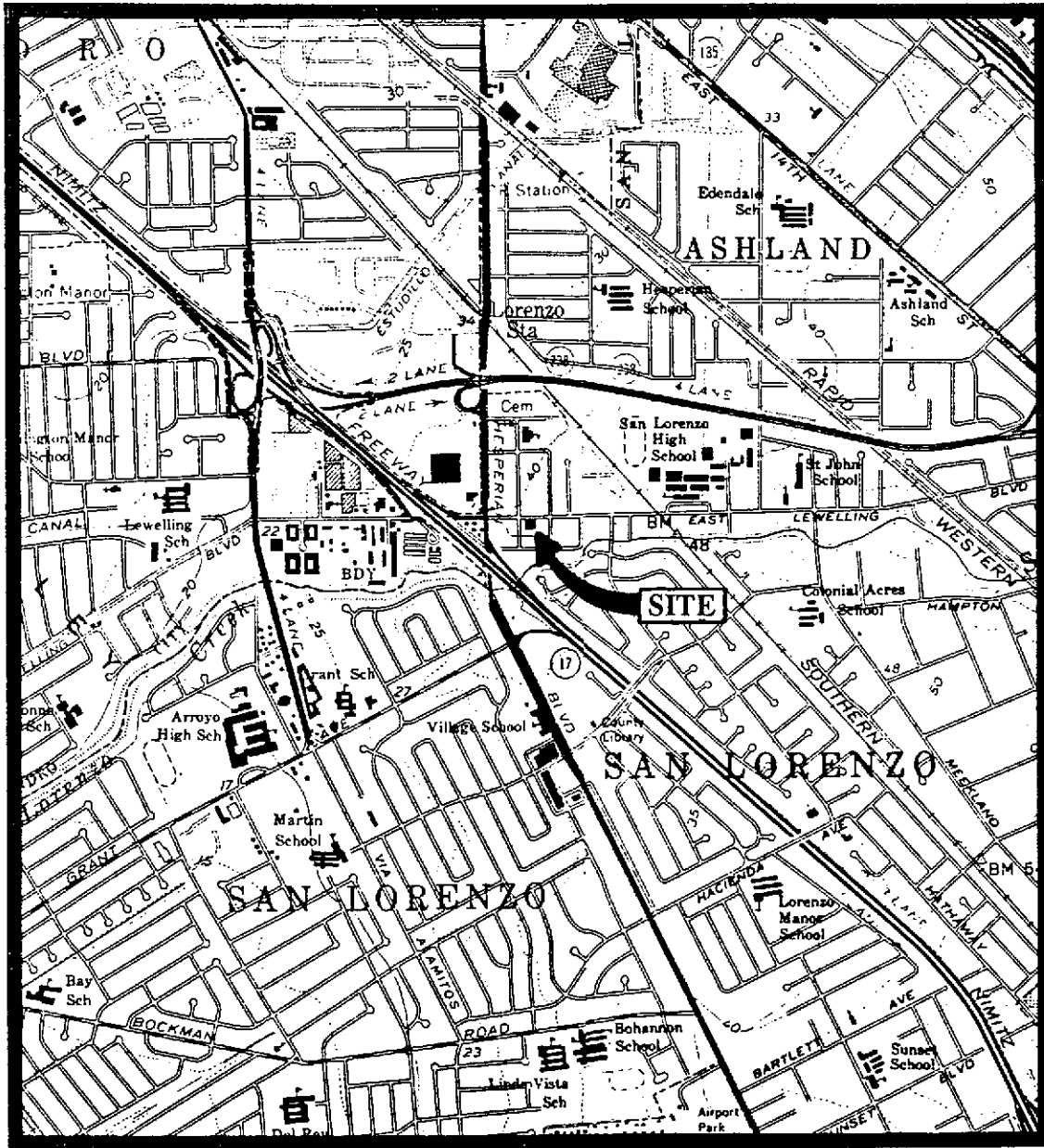
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- \* Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be gasoline and non-gasoline mixture.
- \*\* Sequoia Analytical Laboratory reported that the hydrocarbon detected did not appear to be gasoline.
- ▲ Product Skimmer installed in well
- ▲▲ Ethylbenzene and xylenes were combined prior to March 1990.
- ◆ The concentration reported as gasoline is primarily due to the presence of a discrete hydrocarbon peak not indicative of standard gasoline.
- ◆◆ The concentration reported as gasoline is primarily due to the presence of a combination of gasoline and a discrete peak not indicative of gasoline.

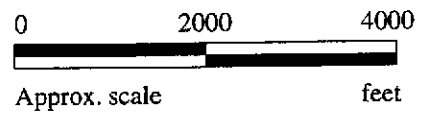
ND = Non-detectable.

Results are in micrograms per liter ( $\mu\text{g/L}$ ), unless otherwise indicated.

Notes: Laboratory analyses data prior to December 2, 1993, were provided by GeoStrategies, Inc.



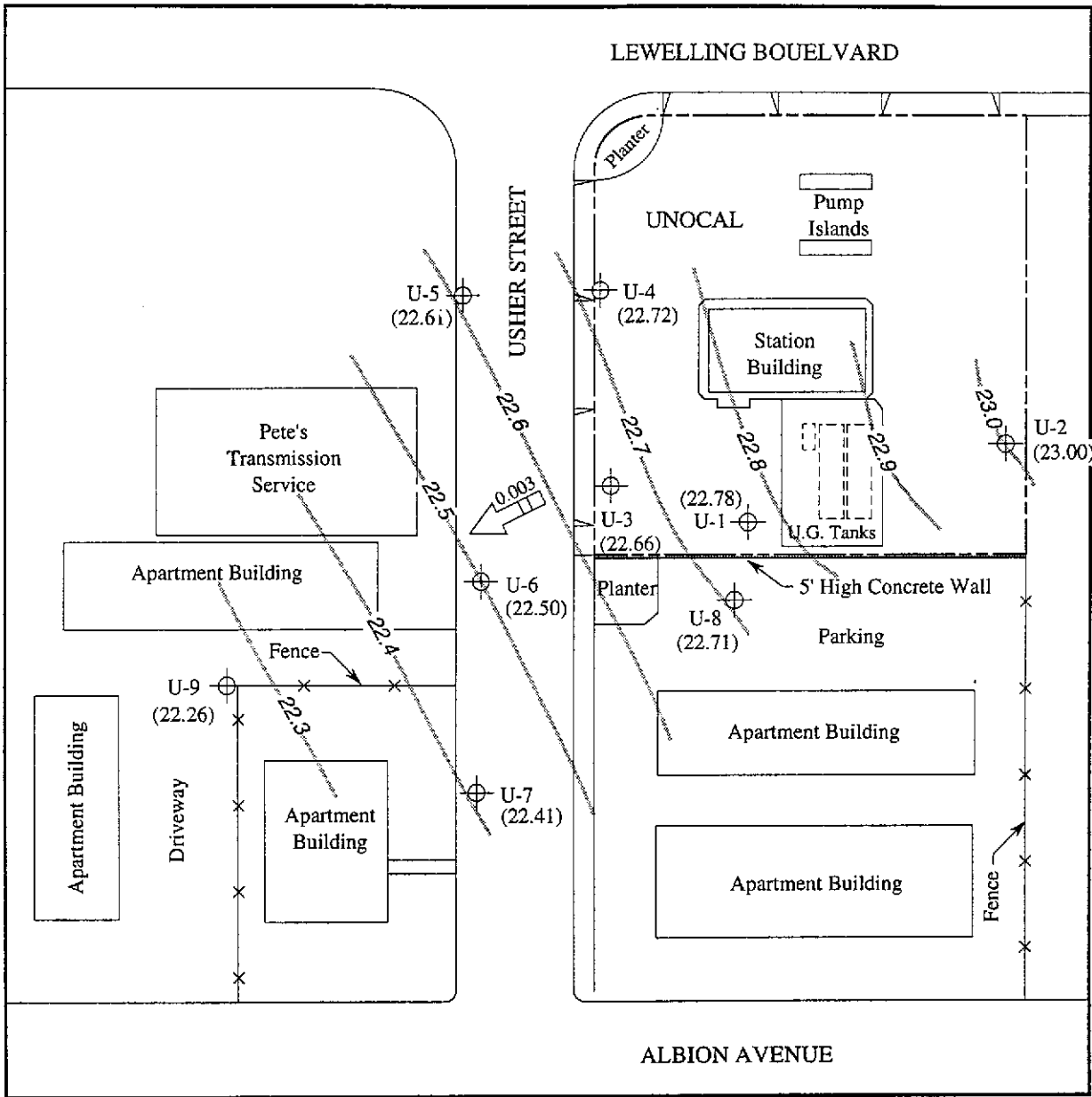
Base modified from 7.5 minute U.S.G.S.  
Hayward and San Leandro Quadrangles  
(both photorevised 1980)



**MPDS** SERVICES, INCORPORATED

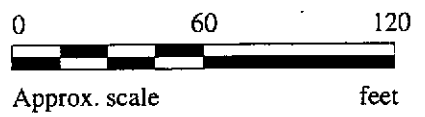
**UNOCAL SERVICE STATION #5760  
376 LEWELLING BOULEVARD  
SAN LORENZO, CALIFORNIA**

**LOCATION  
MAP**



**LEGEND**

- ⊕ Monitoring well
- ( ) Ground water elevation in feet above Mean Sea Level
- ### → Direction of ground water flow with approximate hydraulic gradient
- Contours of ground water elevation



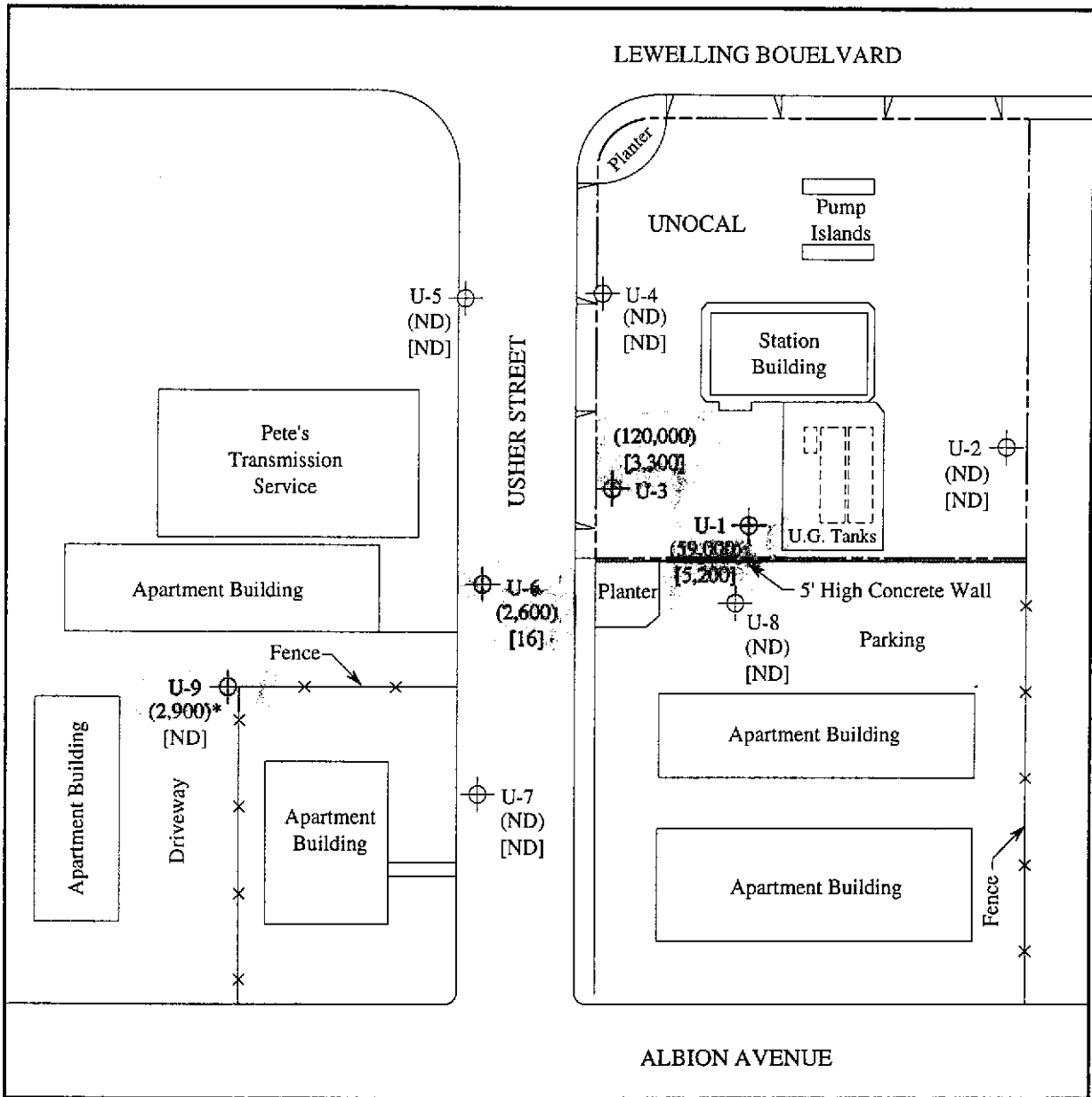
**POTENTIOMETRIC SURFACE MAP FOR THE JUNE 9, 1994 MONITORING EVENT**



**UNOCAL SERVICE STATION #5760  
376 LEWELLING BOULEVARD  
SAN LORENZO, CALIFORNIA**

**FIGURE  
1**





**LEGEND**

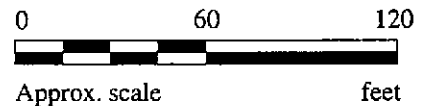
⊕ Monitoring well

( ) Concentration of TPH as gasoline in  $\mu\text{g/L}$

[ ] Concentration of benzene in  $\mu\text{g/L}$

ND = Non-detectable

\* The lab reported that the hydrocarbons detected did not appear to be gasoline.



**PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON JUNE 9, 1994**



**UNOCAL SERVICE STATION #5760  
376 LEWELLING BOULEVARD  
SAN LORENZO, CALIFORNIA**

**FIGURE  
2**



MPDS Services 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian	Client Project ID: Unocal #5760, 376 Lewelling Blvd, Sample Matrix: Water San Lorenzo Analysis Method: EPA 5030/8015/8020 First Sample #: 406-0628	Sampled: Jun 9, 1994 Received: Jun 9, 1994 Reported: Jun 24, 1994
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**TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION**

Analyte	Reporting Limit µg/L	Sample I.D. 406-0628 U1	Sample I.D. 406-0629 U2	Sample I.D. 406-0630 U3*	Sample I.D. 406-0631 U4	Sample I.D. 406-0632 U5	Sample I.D. 406-0633 U6*
Purgeable Hydrocarbons	50	59,000	N.D.	120,000	N.D.	N.D.	2,600
Benzene	0.5	5,200	N.D.	3,300	N.D.	N.D.	16
Toluene	0.5	1,300	N.D.	6,100	N.D.	N.D.	N.D.
Ethyl Benzene	0.5	5,200	N.D.	5,200	N.D.	N.D.	29
Total Xylenes	0.5	15,000	N.D.	26,000	N.D.	N.D.	N.D.
Chromatogram Pattern:		Gasoline	--	Gasoline and Discrete Peak	--	--	Gasoline and Discrete Peak

**Quality Control Data**

Report Limit Multiplication Factor:	100	1.0	200	1.0	1.0	10
Date Analyzed:	6/23/94	6/23/94	6/22/94	6/23/94	6/23/94	6/23/94
Instrument Identification:	HP-2	HP-4	HP-5	HP-4	HP-4	HP-2
Surrogate Recovery, %: (QC Limits = 70-130%)	104	99	93	96	98	92

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.  
 Analytes reported as N.D. were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp  
 Project Manager

Please Note:  
 \* This sample appears to contain gasoline and non-gasoline mixtures. "Discrete Peak" refers to an unidentified peak in the MTBE range.





MPDS Services 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedessian	Client Project ID: Unocal #5760, 376 Lewelling Blvd, Sample Matrix: Water San Lorenzo Analysis Method: EPA 5030/8015/8020 First Sample #: 406-0634	Sampled: Jun 9, 1994 Received: Jun 9, 1994 Reported: Jun 24, 1994
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**TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION**

Analyte	Reporting Limit µg/L	Sample I.D. 406-0634 U7	Sample I.D. 406-0635 U8	Sample I.D. 406-0636 U9*
Purgeable Hydrocarbons	50	N.D.	N.D.	2,900
Benzene	0.5	N.D.	N.D.	N.D.
Toluene	0.5	N.D.	N.D.	N.D.
Ethyl Benzene	0.5	N.D.	N.D.	N.D.
Total Xylenes	0.5	N.D.	N.D.	N.D.
Chromatogram Pattern:		--	--	Discrete Peak

**Quality Control Data**

Report Limit Multiplication Factor:	1.0	1.0	20
Date Analyzed:	6/22/94	6/22/94	6/23/94
Instrument Identification:	HP-5	HP-5	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	102	109	105

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.  
 Analytes reported as N.D. were not detected above the stated reporting limit.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp  
 Project Manager

Please Note:  
 \* This sample does not appear to contain gasoline. "Discrete Peak" refers to an unidentified peak in the MTBE range.





MPDS Services  
 2401 Stanwell Dr., Ste. 400  
 Concord, CA 94520  
 Attention: Avo Avedessian

Client Project ID: Unocal #5760, 376 Lewelling Blvd, San Lorenzo  
 Matrix: Liquid

QC Sample Group: 4060628-36

Reported: Jun 24, 1994

**QUALITY CONTROL DATA REPORT**

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J. Fontecha	J. Fontecha	J. Fontecha	J. Fontecha

MS/MSD	Benzene	Toluene	Ethyl Benzene	Xylenes
Batch#:	4060631	4060631	4060631	4060631
Date Prepared:	6/22/94	6/22/94	6/22/94	6/22/94
Date Analyzed:	6/22/94	6/22/94	6/22/94	6/22/94
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	90	90	95	100
Matrix Spike Duplicate % Recovery:	90	95	100	100
Relative % Difference:	0.0	5.4	5.1	0.0

LCS Batch#:	3LCS062294	3LCS062294	3LCS062294	3LCS062294
Date Prepared:	6/22/94	6/22/94	6/22/94	6/22/94
Date Analyzed:	6/22/94	6/22/94	6/22/94	6/22/94
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
LCS % Recovery:	105	102	99	99

% Recovery Control Limits:	71-133	72-128	72-130	71-120
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**Please Note:**  
 The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

**SEQUOIA ANALYTICAL, #1271**

Alan B. Kemp  
 Project Manager





MPDS Services  
 2401 Stanwell Dr., Ste. 400  
 Concord, CA 94520  
 Attention: Avo Avedessian

Client Project ID: Unocal #5760, 376 Lewelling Blvd, San Lorenzo  
 Matrix: Liquid

QC Sample Group: 4060628-36

Reported: Jun 24, 1994

**QUALITY CONTROL DATA REPORT**

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	J. Fontecha	J. Fontecha	J. Fontecha	J. Fontecha

<b>MS/MSD</b>				
Batch#:	4060723	4060723	4060723	4060723
Date Prepared:	6/23/94	6/23/94	6/23/94	6/23/94
Date Analyzed:	6/23/94	6/23/94	6/23/94	6/23/94
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	100	100	100	102
Matrix Spike Duplicate % Recovery:	100	105	100	102
Relative % Difference:	0.0	4.9	0.0	0.0

LCS Batch#:	1LCS062394	1LCS062394	1LCS062394	1LCS062394
Date Prepared:	6/23/94	6/23/94	6/23/94	6/23/94
Date Analyzed:	6/23/94	6/23/94	6/23/94	6/23/94
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	94	93	92	94

% Recovery Control Limits:	71-133	72-128	72-130	71-120
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**Please Note:**  
 The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL, #1271

Alan B. Kemp  
 Project Manager





MPDS Services  
 2401 Stanwell Dr., Ste. 400  
 Concord, CA 94520  
 Attention: Avo Avedessian

Client Project ID: Unocal #5760, 376 Lewelling Blvd, San Lorenzo  
 Matrix: Liquid

QC Sample Group: 4060628-36

Reported: Jun 24, 1994

**QUALITY CONTROL DATA REPORT**

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
<b>Method:</b>	EPA 8020	EPA 8020	EPA 8020	EPA 8020
<b>Analyst:</b>	J. Fontecha	J. Fontecha	J. Fontecha	J. Fontecha

MS/MSD	Benzene	Toluene	Ethyl Benzene	Xylenes
<b>Batch#:</b>	4060632	4060632	4060632	4060632
<b>Date Prepared:</b>	6/23/94	6/23/94	6/23/94	6/23/94
<b>Date Analyzed:</b>	6/23/94	6/23/94	6/23/94	6/23/94
<b>Instrument I.D.#:</b>	HP-4	HP-4	HP-4	HP-4
<b>Conc. Spiked:</b>	20 µg/L	20 µg/L	20 µg/L	60 µg/L
<b>Matrix Spike % Recovery:</b>	90	90	90	93
<b>Matrix Spike Duplicate % Recovery:</b>	90	90	90	92
<b>Relative % Difference:</b>	0.0	0.0	0.0	1.1

LCS Batch#:	2LCS062394	2LCS062394	2LCS062394	2LCS062394
<b>Date Prepared:</b>	6/23/94	6/23/94	6/23/94	6/23/94
<b>Date Analyzed:</b>	6/23/94	6/23/94	6/23/94	6/23/94
<b>Instrument I.D.#:</b>	HP-4	HP-4	HP-4	HP-4
<b>LCS % Recovery:</b>	89	90	89	91

% Recovery Control Limits:	71-133	72-128	72-130	71-120
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**Please Note:**  
 The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

SEQUOIA ANALYTICAL, #1271

Alan B. Kemp  
 Project Manager



# M P D S Services, Inc.

2401 Stanwell Drive, Suite 400, Concord, CA 94520

Tel: (510) 602-5120 Fax: (510) 689-1918

## CHAIN OF CUSTODY

SAMPLER <b>RAY MARANGOSIAN</b>			UNOCAL S/S # <u>5760</u> CITY: <u>SAN LORENZO</u>					ANALYSES REQUESTED							TURN AROUND TIME: <u>REGULAR</u>		
WITNESSING AGENCY			ADDRESS: <u>376 LEWELLING BLVD</u>					TPH-GAS BTEX	TPH-DIESEL	TOG	8010						REMARKS
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-GAS BTEX	TPH-DIESEL	TOG	8010						
U1	6-9-94		X	X		2	Well	X								4060628 AB	
U2	4		X	X		4	4	X								4060629	
U3	4		X	X		4	4	X								4060630	
U4	4		X	X		4	4	X								4060631	
U5	4		X	X		4	4	X								4060632	
U6	4		X	X		4	4	X								4060633	
U7	4		X	X		4	4	X								4060634	
U8	4		X	X		4	4	X								4060635	
U9	4		X	X		4	4	X								4060636	

REINQUISHED BY: <u>Ray Marangosian</u>	DATE/TIME: <u>7:20 6-9-94</u>	RECEIVED BY: <u>D. J. [Signature]</u>	THE FOLLOWING <u>MUST BE</u> COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:			
(SIGNATURE)	<u>6/10/94</u> <u>1325</u>	(SIGNATURE)	1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE?	<u>yes</u>		
(SIGNATURE)	<u>6-10 1445</u>	(SIGNATURE)	2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED?	<u>yes</u>		
(SIGNATURE)		(SIGNATURE)	3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE?	<u>No</u>		
(SIGNATURE)		(SIGNATURE)	4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED?	<u>yes</u>		
(SIGNATURE)		(SIGNATURE)	SIGNATURE:	TITLE:	DATE:	
			<u>[Signature]</u>	<u>Analyst</u>	<u>6/10/94</u>	