



PACIFIC  
ENVIRONMENTAL  
GROUP, INC.

01-1594  
CALIFORNIA REGIONAL WATER

JAN 17 1995

QUALITY CONTROL BOARD

January 13, 1995  
Project 310-058.3A

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

Re: Unocal Corporation  
Quarterly Summary Report  
Fourth Quarter 1994

Dear Mr. Hiatt:

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

Service Station

5760

Location

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

Enclosure

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

**Quarterly Summary Report  
Fourth Quarter 1994**

*Reviewed by A. J. ...  
on 2/1/95  
See notes*

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. A remedial action plan was submitted during the third quarter 1994.

**RECENT QUARTER ACTIVITIES**

Fourth quarter 1994 groundwater monitoring was performed. A report documenting the results of a 5-day soil vapor extraction test was submitted.

**NEXT QUARTER ACTIVITIES**

Groundwater monitoring and sampling for the first quarter 1995 will be performed. Implementation of site remediation actions will commence.

**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? Second quarter 1995. ✓ *Brown*
- Anticipated completion date? Unknown.
- Dissolved/free product remediation in progress? No.
- Anticipated start? Second Quarter 1995. ✓ *SVE*
- Anticipated completion? Unknown.

**CONSULTANT:** Pacific Environmental Group, Inc.



PACIFIC  
ENVIRONMENTAL  
GROUP, INC.

ALCOA  
HAZMAT

95 JAN 19 09 14: 18

January 13, 1995  
Project 310-058.3A

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Regional Water Quality Control Board  
San Francisco Bay Region  
2101 Webster Street, Suite 500  
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cc: Ms. Tina Berry, Unocal Corporation  
Ms. Juliet Shin, Alameda County Environmental Health Care

MONITORING  
PURGING  
DISPOSING  
SAMPLING



SERVICES, INCORPORATED

January 9, 1995

Ms. Juliet Shin  
Alameda County Health Care Services  
1131 Harbor Bay Parkway  
Alameda, CA 94501

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-UN5760-05) dated January 5, 1995 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.

A handwritten signature in cursive script that reads 'Jarrel F. Crider'.

Jarrel F. Crider

/jfc

Enclosure

cc: Ms. Tina R. Berry

RECEIVED  
JAN 11 1995  
13

MPDS-UN5760-05  
January 4, 1995

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 December 5, 1994. Prior to sampling, the wells were each purged of between 8 and 20 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

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 Mr. Nubar Srabian at (510) 602-5120.

Sincerely,

MPDS Services, Inc.

  
Sarkis A. Karkarian  
Staff Engineer



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

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

/bp

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)♦	Total Well Depth (feet)♦	Product Thickness (feet)	Sheen	Water Purged (gallons)
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**(Monitored and Sampled on December 5, 1994)**

U-1	23.53	16.67	29.90	0	No	20
U-2	22.44	18.82	29.92	0	No	16.5
U-3	22.17	17.08	25.02	0	No	12
U-4	22.20	18.08	27.87	0	No	15
U-5	22.08	17.23	28.40	0	No	8
U-6	22.08	15.60	28.28	0	No	9
U-7	22.01	15.10	34.98	0	No	14
U-8	22.25	16.32	29.83	0	No	9.5
U-9	21.88	15.43	28.20	0	No	9

**(Monitored and Sampled on September 7, 1994)**

U-1	22.03	18.17	30.00	0	No	18
U-2	21.98	19.28	29.98	0	No	16
U-3	21.64	17.61	24.72	0	No	11
U-4	21.76	18.52	27.88	0	No	14
U-5	21.58	17.73	28.26	0	No	8
U-6	21.48	16.20	28.32	0	No	8.5
U-7	21.39	15.72	35.00	0	No	14
U-8	21.70	16.87	29.70	0	No	9
U-9	21.25	16.06	28.23	0	No	8.5

**(Monitored and Sampled on June 9, 1994)**

U-1	22.78	17.42	30.21	0	No	19
U-2	23.00	18.26	29.98	0	No	17.5
U-3	22.66	16.60	25.04	0	No	13
U-4	22.72	17.53	27.88	0	No	15.5
U-5	22.61	16.70	28.28	0	No	8
U-6	22.50	15.18	28.09	0	No	9
U-7	22.41	14.70	35.02	0	No	14
U-8	22.71	15.86	29.74	0	No	10
U-9	22.26	15.05	28.18	0	No	9

**TABLE 1 (Continued)**

SUMMARY OF MONITORING DATA

Well #	Ground Water Elevation (feet)	Depth to Water (feet)♦	Total Well Depth (feet)♦	Product Thickness (feet)	Sheen	Water Purged (gallons)
(Monitored and Sampled on March 9, 1994)						
U-1	23.00	17.20	30.10	0	No	20
U-2	23.21	18.05	29.91	0	No	18
U-3	22.91	16.35	24.98	0	No	13
U-4	22.95	17.30	27.80	0	No	16
U-5	22.86	16.45	28.20	0	No	8
U-6	22.78	14.90	28.01	0	No	9
U-7	22.66	14.45	35.00	0	No	14
U-8	22.95	15.62	29.59	0	No	10
U-9	22.57	14.74	28.10	0	No	9.5

Well #	Well Casing Elevation (feet)*
U-1	40.20
U-2	41.26
U-3	39.25▲
U-4	40.28▲
U-5	39.31
U-6	37.68
U-7	37.11
U-8	38.57
U-9	37.31

- ♦ The depth to water level and total depth measurements were taken from the top of the well casings.
- \* The elevation of the top of the well casing are relative to Mean Sea Level.
- ▲ Recently remeasured levels. Prior to September 7, 1994, the respective top of well casing levels were; U-3 = 39.26 ft., U-4 = 40.25 ft.



**TABLE 3**

**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>
12/05/94	U-1	1,300	55	20	16	330
	U-2	ND	ND	ND	ND	ND
	U-3	140,000	3,100	5,100	4,900	21,000
	U-4	ND	ND	ND	ND	ND
	U-5	ND	ND	ND	ND	ND
	U-6	450**	ND	ND	ND	ND
	U-7	ND	ND	ND	ND	ND
	U-8	ND	ND	ND	ND	ND
	U-9	3,700**	ND	ND	ND	ND
9/07/94	U-1	41,000	1,600	6,200	3,100	16,000
	U-2	ND	ND	0.63	ND	0.61
	U-3	100,000	2,400	4,900	4,200	21,000
	U-4	ND	ND	1.1	ND	1.0
	U-5	ND	ND	0.73	ND	0.84
	U-6	1,600*	ND	ND	ND	ND
	U-7	ND	ND	ND	ND	ND
	U-8	ND	ND	ND	ND	ND
	U-9	2,700**	ND	ND	ND	ND
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

**TABLE 3 (Continued)**

SUMMARY OF LABORATORY ANALYSES  
WATER

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethylbenzene	Xylenes
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
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

**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>
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
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

**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>
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
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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- \* 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.

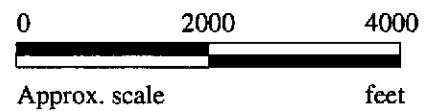
ND = Non-detectable.

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

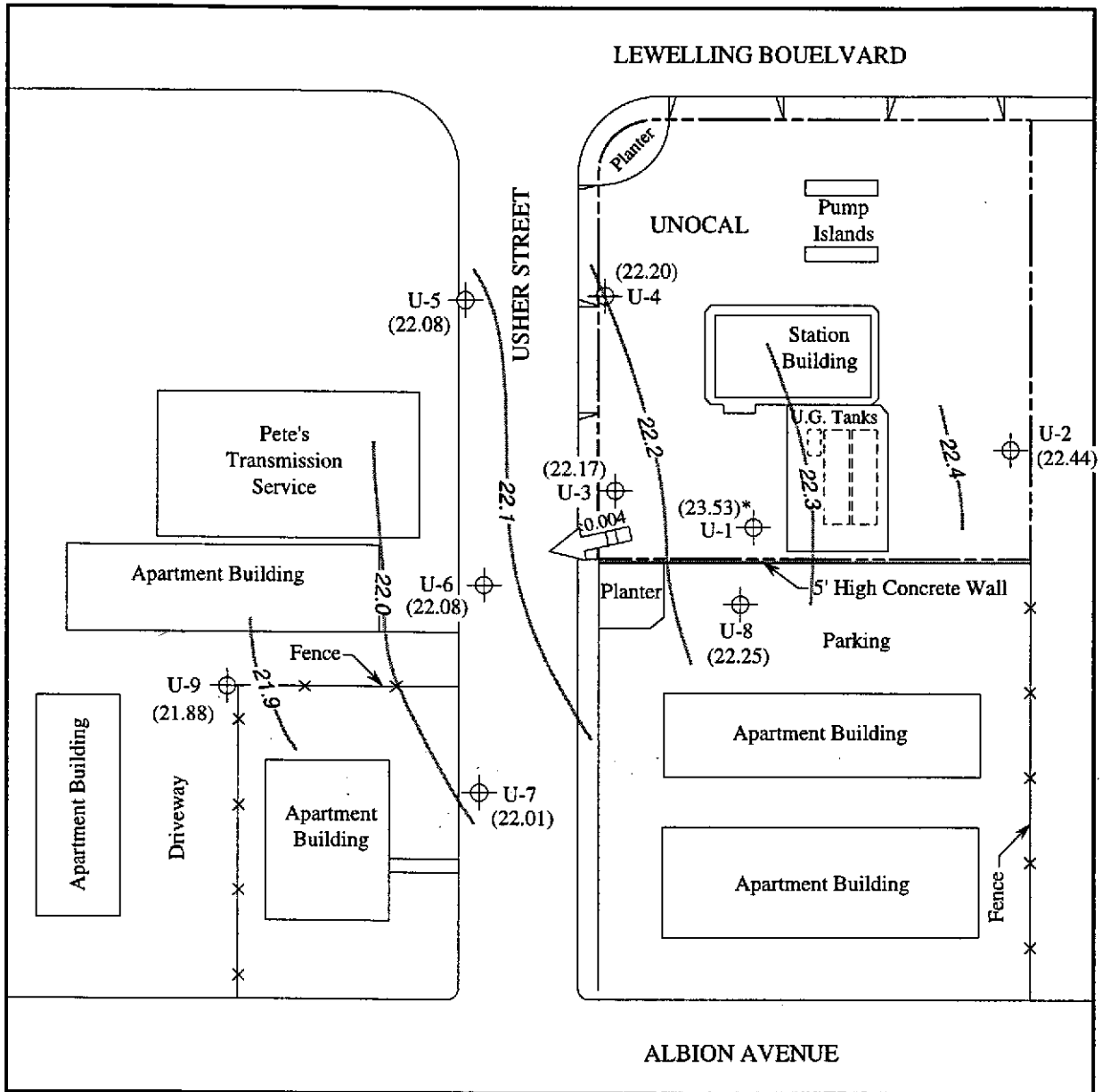
Notes: Laboratory analyses data prior to December 2, 1993, were provided by GeoStrategies, Inc.



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

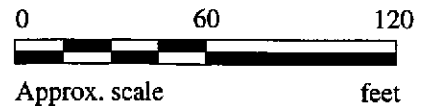


	<p><b>UNOCAL SERVICE STATION #5760</b>  <b>376 LEWELLING BOULEVARD</b>  <b>SAN LORENZO, CALIFORNIA</b></p>	<p><b>LOCATION</b>  <b>MAP</b></p>
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**LEGEND**

- 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
- \* Elevation was not used to calculate contours.

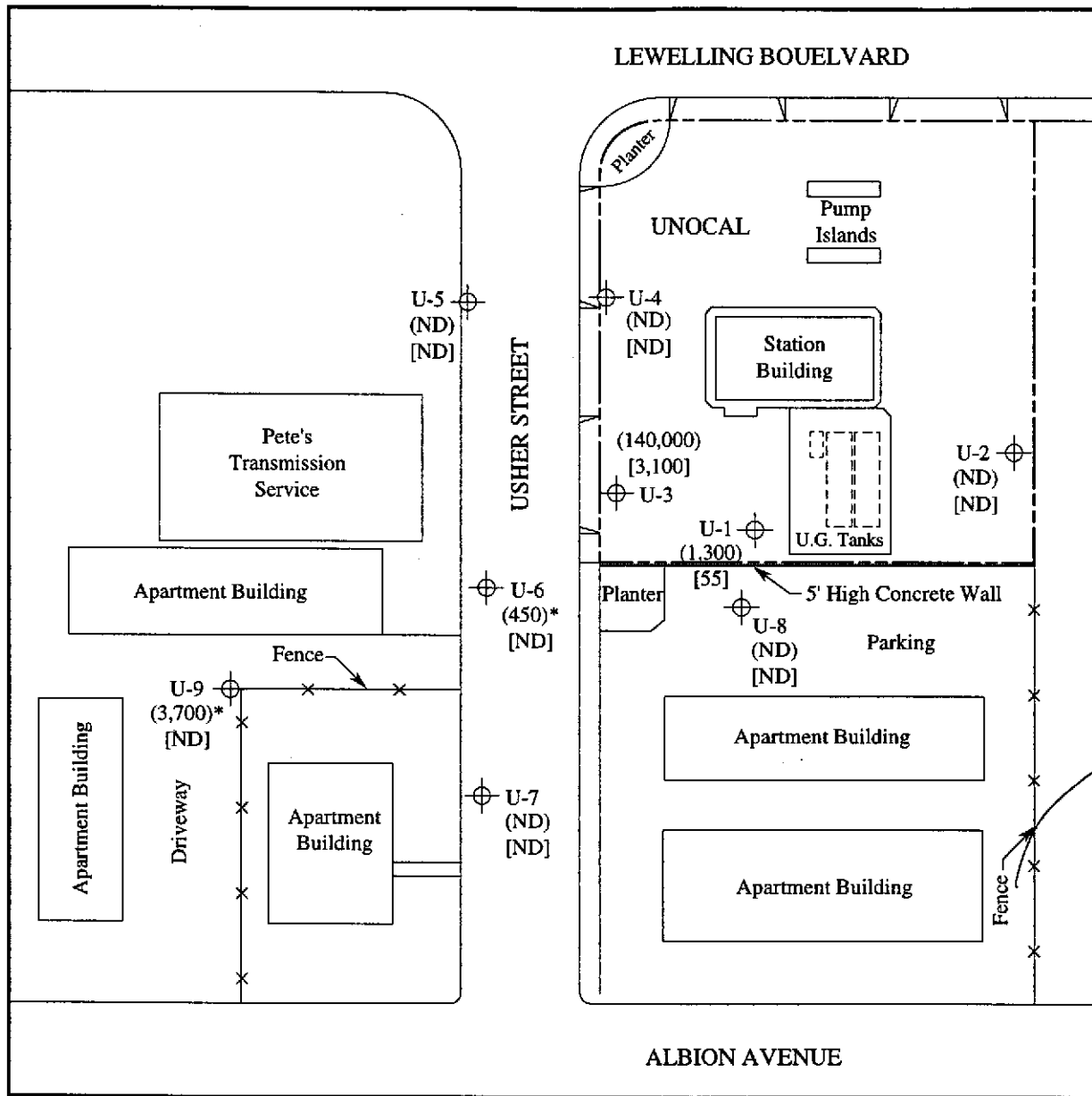


**POTENTIOMETRIC SURFACE MAP FOR THE DECEMBER 5, 1994 MONITORING EVENT**



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

**FIGURE  
1**

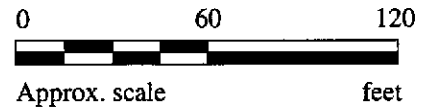


**LEGEND**

- ⊕ 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 DECEMBER 5, 1994**



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

**FIGURE  
 2**





<b>MPDS Services</b>	<b>Client Project ID:</b> Unocal #5760, 376 Lewelling, San Lorenzo	<b>Sampled:</b> Dec 5, 1994
2401 Stanwell Dr., Ste. 400	<b>Matrix Descript:</b> Water	<b>Received:</b> Dec 5, 1994
Concord, CA 94520	<b>Analysis Method:</b> EPA 5030/8015/8020	<b>Reported:</b> Dec 21, 1994
<b>Attention: Avo Avedessian</b>	<b>First Sample #:</b> 412-0600	

**TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION**

Sample Number	Sample Description	Purgeable Hydrocarbons µg/L	Benzene µg/L	Toluene µg/L	Ethyl Benzene µg/L	Total Xylenes µg/L
412-0600	U-1	1,300	55	20	16	330
412-0601	U-2	ND	ND	ND	ND	ND
412-0602	U-3	140,000	3,100	5,100	4,900	21,000
412-0603	U-4	ND	ND	ND	ND	ND
412-0604	U-5	ND	ND	ND	ND	ND
412-0605	U-6	450*	ND	ND	ND	ND
412-0606	U-7	ND	ND	ND	ND	ND
412-0607	U-8	ND	ND	ND	ND	ND
412-0608	U-9	3,700*	ND	ND	ND	ND

\* Hydrocarbons detected did not appear to be gasoline.

<b>Detection Limits:</b>	<b>50</b>	<b>0.50</b>	<b>0.50</b>	<b>0.50</b>	<b>0.50</b>
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Total Purgeable Petroleum Hydrocarbons are quantitated against a fresh gasoline standard.  
Analytes reported as ND were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager





MPDS Services	Client Project ID: Unocal #5760, 376 Lewelling, San Lorenzo	Sampled: Dec 5, 1994
2401 Stanwell Dr., Ste. 400	Matrix Descript: Water	Received: Dec 5, 1994
Concord, CA 94520	Analysis Method: EPA 5030/8015/8020	Reported: Dec 21, 1994
Attention: Avo Avedessian	First Sample #: 412-0600	

**TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION**

Sample Number	Sample Description	Chromatogram Pattern	DL Mult. Factor	Date Analyzed	Instrument ID	Surrogate Recovery, % QC Limits: 70-130
412-0600	U-1	Gasoline	1.0	12/16/94	HP-2	121
412-0601	U-2	--	1.0	12/16/94	HP-2	88
412-0602	U-3	Gasoline	400	12/19/94	HP-5	91
412-0603	U-4	--	1.0	12/16/94	HP-2	95
412-0604	U-5	--	1.0	12/16/94	HP-2	96
412-0605	U-6	Discrete Peak*	4.0	12/19/94	HP-2	99
412-0606	U-7	--	1.0	12/16/94	HP-4	86
412-0607	U-8	--	1.0	12/16/94	HP-4	83
412-0608	U-9	Discrete Peak*	10	12/19/94	HP-2	96

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager

Please Note:

\* "Discrete Peak" refers to unidentified peaks in the MTBE range.





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

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

QC Sample Group: 4120600-608

Reported: Dec 22, 1994

**QUALITY CONTROL DATA REPORT**

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
<b>Method:</b>	EPA 8020	EPA 8020	EPA 8020	EPA 8020
<b>Analyt:</b>	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon

**MS/MSD**

<b>Batch#:</b>	4120675	4120675	4120675	4120675
<b>Date Prepared:</b>	12/16/94	12/16/94	12/16/94	12/16/94
<b>Date Analyzed:</b>	12/16/94	12/16/94	12/16/94	12/16/94
<b>Instrument I.D.#:</b>	HP-2	HP-2	HP-2	HP-2
<b>Conc. Spiked:</b>	20 µg/L	20 µg/L	20 µg/L	60 µg/L
<b>Matrix Spike % Recovery:</b>	100	100	105	100
<b>Matrix Spike Duplicate % Recovery:</b>	95	95	100	98
<b>Relative % Difference:</b>	5.1	5.1	4.9	2.0

<b>LCS Batch#:</b>	1LCS121694	1LCS121694	1LCS121694	1LCS121694
<b>Date Prepared:</b>	12/16/94	12/16/94	12/16/94	12/16/94
<b>Date Analyzed:</b>	12/16/94	12/16/94	12/16/94	12/16/94
<b>Instrument I.D.#:</b>	HP-2	HP-2	HP-2	HP-2
<b>LCS % Recovery:</b>	97	96	101	99

<b>% Recovery Control Limits:</b>	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**

Signature on File

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, San Lorenzo  
Matrix: Liquid

QC Sample Group: 4120600-608

Reported: Dec 22, 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>	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon

**MS/MSD**

<b>Batch#:</b>	4120623	4120623	4120623	4120623
<b>Date Prepared:</b>	12/16/94	12/16/94	12/16/94	12/16/94
<b>Date Analyzed:</b>	12/16/94	12/16/94	12/16/94	12/16/94
<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>	85	95	95	93
<b>Matrix Spike Duplicate % Recovery:</b>	85	90	90	93
<b>Relative % Difference:</b>	0.0	5.4	5.4	0.0

<b>LCS Batch#:</b>	2LCS121694	2LCS121694	2LCS121694	2LCS121694
<b>Date Prepared:</b>	12/16/94	12/16/94	12/16/94	12/16/94
<b>Date Analyzed:</b>	12/16/94	12/16/94	12/16/94	12/16/94
<b>Instrument I.D.#:</b>	HP-4	HP-4	HP-4	HP-4
<b>LCS % Recovery:</b>	86	91	95	93

<b>% Recovery Control Limits:</b>	71-133	72-128	72-130	71-120
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**Please Note:**

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**SEQUOIA ANALYTICAL, #1271**

Signature on File

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, San Lorenzo Matrix: Liquid QC Sample Group: 4120600-608	Reported: Dec 22, 1994
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**QUALITY CONTROL DATA REPORT**

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
<b>Method:</b>	EPA 8020	EPA 8020	EPA 8020	EPA 8020
<b>Analyst:</b>	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon

<b>MS/MSD Batch#:</b>	4120829	4120829	4120829	4120829
<b>Date Prepared:</b>	12/19/94	12/19/94	12/19/94	12/19/94
<b>Date Analyzed:</b>	12/19/94	12/19/94	12/19/94	12/19/94
<b>Instrument I.D.#:</b>	HP-2	HP-2	HP-2	HP-2
<b>Conc. Spiked:</b>	20 µg/L	20 µg/L	20 µg/L	60 µg/L
<b>Matrix Spike % Recovery:</b>	100	95	100	98
<b>Matrix Spike Duplicate % Recovery:</b>	105	105	110	102
<b>Relative % Difference:</b>	4.9	10	9.5	8.8

<b>LCS Batch#:</b>	1LCS121994	1LCS121994	1LCS121994	1LCS121994
<b>Date Prepared:</b>	12/19/94	12/19/94	12/19/94	12/19/94
<b>Date Analyzed:</b>	12/19/94	12/19/94	12/19/94	12/19/94
<b>Instrument I.D.#:</b>	HP-2	HP-2	HP-2	HP-2
<b>LCS % Recovery:</b>	99	99	102	101

<b>% Recovery Control Limits:</b>	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**

Signature on File

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, San Lorenzo  
Matrix: Liquid

QC Sample Group: 4120600-608

Reported: Dec 22, 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>	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon

**MS/MSD**

<b>Batch#:</b>	4120822	4120822	4120822	4120822
<b>Date Prepared:</b>	12/19/94	12/19/94	12/19/94	12/19/94
<b>Date Analyzed:</b>	12/19/94	12/19/94	12/19/94	12/19/94
<b>Instrument I.D.#:</b>	HP-5	HP-5	HP-5	HP-5
<b>Conc. Spiked:</b>	20 µg/L	20 µg/L	20 µg/L	60 µg/L
<b>Matrix Spike % Recovery:</b>	105	105	105	100
<b>Matrix Spike Duplicate % Recovery:</b>	100	100	100	97
<b>Relative % Difference:</b>	4.9	4.9	4.9	3.0

<b>LCS Batch#:</b>	3LCS121994	3LCS121994	3LCS121994	3LCS121994
<b>Date Prepared:</b>	12/19/94	12/19/94	12/19/94	12/19/94
<b>Date Analyzed:</b>	12/19/94	12/19/94	12/19/94	12/19/94
<b>Instrument I.D.#:</b>	HP-5	HP-5	HP-5	HP-5
<b>LCS % Recovery:</b>	95	95	94	91

<b>% Recovery Control Limits:</b>	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**

Signature on File

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			UNOCAL					ANALYSES REQUESTED							TURN AROUND TIME:		
(JOE) HOVSIA AJEMIAN			S/S # <u>5760</u> CITY: <u>San Lorenzo</u>					TPH-GAS BTEX	TPH-DIESEL	TOG	8010						Regular
WITNESSING AGENCY			ADDRESS: <u>376 Lewelling</u>														
SAMPLE ID NO	DATE	TIME	WATER	URAB	COMP	NO OF CONT	SAMPLING LOCATION										
U-1	12-5-94	1:50 P.M.	✓	✓		2 (VOA)	Wells	✓					4120600	17, B		VOA - preserved	
U-2	"	9:10 A.M.	✓	✓		"	"	✓					4120601				
U-3	"	2:20 P.M.	✓	✓		"	"	✓					4120602				
U-4	"	9:55 A.M.	✓	✓		"	"	✓					4120603				
U-5	"	10:40 A.M.	✓	✓		"	"	✓					4120604				
U-6	"	12:35 P.M.	✓	✓		"	"	✓					4120605				
U-7	"	11:20 A.M.	✓	✓		"	"	✓					4120606				
U-8	"	11:55 A.M.	✓	✓		"	"	✓					4120607				
U-9	"	1:12 P.M.	✓	✓		"	"	✓					4120608	✓			
																14°C	

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	THE FOLLOWING MUST BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:
(SIGNATURE) Joe Jenian	12-5-94	(SIGNATURE) <i>[Signature]</i> 12-5-94 1645	1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? <b>YES</b>
(SIGNATURE) <i>[Signature]</i>	12/6/94 8:00 AM	(SIGNATURE) <i>[Signature]</i> 12-6-94 1240	2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? <b>YES</b>
(SIGNATURE) <i>[Signature]</i>	12-6-1350	(SIGNATURE) <i>[Signature]</i>	3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? <b>NO</b>
(SIGNATURE) <i>[Signature]</i>		(SIGNATURE) <i>[Signature]</i>	4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? <b>YES</b>
(SIGNATURE)		(SIGNATURE)	SIGNATURE: <i>[Signature]</i> TITLE: Analyst DATE: 12-5-94