

MONITORING  
PURGING  
DISPOSING  
SAMPLING

**MPDS**

SERVICES, INCORPORATED

January 9, 1995

Mr. Scott Seery  
Alameda County Health Care Services  
1131 Harbor Bay Parkway  
Alameda, California 94501

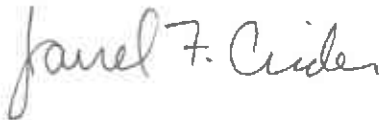
RE: Unocal Service Station #5430  
1935 Washington Avenue  
San Leandro, California

Per the request of the Unocal Corporation Project Manager, Mr. David J. Camille, enclosed please find our report (MPDS-UN5430-05) dated January 3, 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) 277-2335.

Sincerely,

MPDS Services, Inc.



Jarrel F. Crider

/jfc

Enclosure

cc: Mr. David J. Camille

95 JAN 11 PM 3:23

MPDS  
SERVICES  
INCORPORATED

MPDS-UN5430-05  
January 3, 1995

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

Attention: Mr. David J. Camille

RE: Quarterly Data Report  
Unocal Service Station #5430  
1935 Washington Avenue  
San Leandro, California

Dear Mr. Camille:

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 directions during the most recent quarter are shown on the attached Figures 1, 2, and 3.

Ground water samples were collected on December 6, 1994. Prior to sampling, the wells were each purged of between 5 and 5.5 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 Tables 3 and 4. The concentrations of Total Petroleum Hydrocarbons (TPH) as gasoline, TPH as diesel, and benzene detected in the ground water samples collected this quarter are shown on the attached Figure 4. 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 Mr. Scott Seery of the Alameda County Environmental Health Care Services, Mr. Michael Bakaldin of the San Leandro Fire Department.

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 through 4  
Location Map  
Figures 1 through 4  
Laboratory Analyses  
Chain of Custody documentation

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



**TABLE 1**

**SUMMARY OF MONITORING DATA**

<u>Well #</u>	<u>Ground Water Elevation (feet)</u>	<u>Depth to Water (feet)♦</u>	<u>Total Well Depth (feet)♦</u>	<u>Product Thickness (feet)</u>	<u>Sheen</u>	<u>Water Purged (gallons)</u>
<b>(Monitored and Sampled on December 6, 1994)</b>						
U-1	23.73	32.37	39.64	0	No	5
U-2	23.83	31.44	39.35	0	No	5.5
U-3	23.90	31.34	38.44	0	No	5
<b>(Monitored on November 8, 1994)</b>						
U-1	22.05	34.05	★	0	--	0
U-2	22.18	33.09	★	0	--	0
U-3	22.23	33.01	★	0	--	0
<b>(Monitored on October 11, 1994)</b>						
U-1	22.85	33.25	39.65	0	--	0
U-2	22.92	32.35	39.33	0	--	0
U-3	23.04	32.20	38.42	0	--	0
<b>(Monitored and Sampled on September 15, 1994)</b>						
U-1	22.17	33.93	39.68	0	No	2
U-2	22.27	33.00	39.38	0	No	4.5
U-3	22.40	32.84	38.48	0	No	4
<b>(Monitored and Sampled on June 19, 1994)</b>						
U-1	23.84	32.26	39.65	0	No	4
U-2	23.96	31.31	39.36	0	No	5.5
U-3	24.05	31.19	38.46	0	No	5
<b>(Monitored and Sampled on March 25, 1994)</b>						
U-1	25.03	31.07	39.62	0	No	6
U-2	25.18	30.09	39.33	0	No	6.5
U-3	25.21	30.03	38.45	0	No	6

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TABLE 1 (Continued)

SUMMARY OF MONITORING DATA

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<u>Well #</u>	<u>Well Casing Elevation (feet)*</u>
U-1	56.10
U-2	55.27
U-3	55.24

- ◆ The depth to water level and total well depth measurements were taken from the top of the well casings.
- \* The elevations of the top of the well casings are relative to Mean Sea Level.
- ★ Total well depth not measured.
- Sheen determination was not performed.

**TABLE 2**

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

(Measured on December 6, 1994)

Well #	Gallons per Casing Volume	Time	Gallons Purged	Casing Volumes Purged	Temper- ature (°F)	Conductivity ([μmhos/cm] x1000)	pH
U-1	1.24	09:30	0	0	43.4	1.61	6.28
			1.25	1.01	54.5	1.18	6.68
			2.5	2.02	62.0	1.02	6.99
			3.75	3.02	63.0	0.95	7.36
			5	4.03	64.0	0.94	7.41
U-2	1.34	10:25	0	0	64.4	0.82	7.89
			1.5	1.12	68.5	0.70	7.46
			3	2.24	69.8	0.67	7.20
			4	2.99	70.1	0.68	7.13
		10:35	5.5	4.10	70.5	0.67	7.08
U-3	1.21	11:00	0	0	74.1	0.71	7.70
			1.25	1.03	73.7	0.92	7.08
			2.5	2.07	73.1	0.98	6.97
			3.75	3.10	72.3	0.96	6.95
		11:10	5	4.13	72.7	0.98	7.08

**TABLE 3**

**SUMMARY OF LABORATORY ANALYSES  
WATER**

<u>Date</u>	<u>Well#</u>	<u>TPH as Diesel</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-benzene</u>	<u>Xylenes</u>
12/06/94	U-1▲	ND	ND	ND	ND	ND	ND
	U-2	--	250	19	ND	ND	ND
	U-3	--	17,000	390	ND	990	560
9/15/94	U-1▲	83**	ND	0.50	0.85	ND	0.77
	U-2	--	1,000◆◆	44	ND	ND	ND
	U-3	--	12,000	370	ND	970	610
6/19/94	U-1▲	61**	51	ND	1.4	ND	2.7
	U-2	--	180◆	ND	ND	ND	0.86
	U-3	--	17,000	580	ND	1,300	90
3/25/94	U-1▲	57**	58	0.63	0.79	ND	0.65
	U-2	--	130	0.70	0.78	0.65	0.64
	U-3	--	18,000	560	40	1,000	770
12/16/93	U-1▲	130**	ND	ND	ND	ND	ND
	U-2	--	330	1.7	ND	11	8.5
	U-3	--	15,000	570	ND	940	670
8/13/93	U-1▲	50*	310	0.84	ND	2.6	1
	U-2	--	1,400	ND	ND	ND	ND
	U-3	--	23,000	1,000	ND	1,700	1,600

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**TABLE 3 (Continued)**

SUMMARY OF LABORATORY ANALYSES  
WATER

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- ▲ Total Oil and Grease was non-detectable.
- ◆ Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.
- ◆◆ Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be gasoline.
- \* Not a typical diesel pattern; lower boiling hydrocarbons in the boiling range of stoddard calculated as diesel.
- \*\* Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be diesel.

ND = Non-detectable.

-- Indicates analysis was not performed.

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

Note: Laboratory analyses data prior to December 16, 1993, were provided by Pacific Environmental Group, Inc.



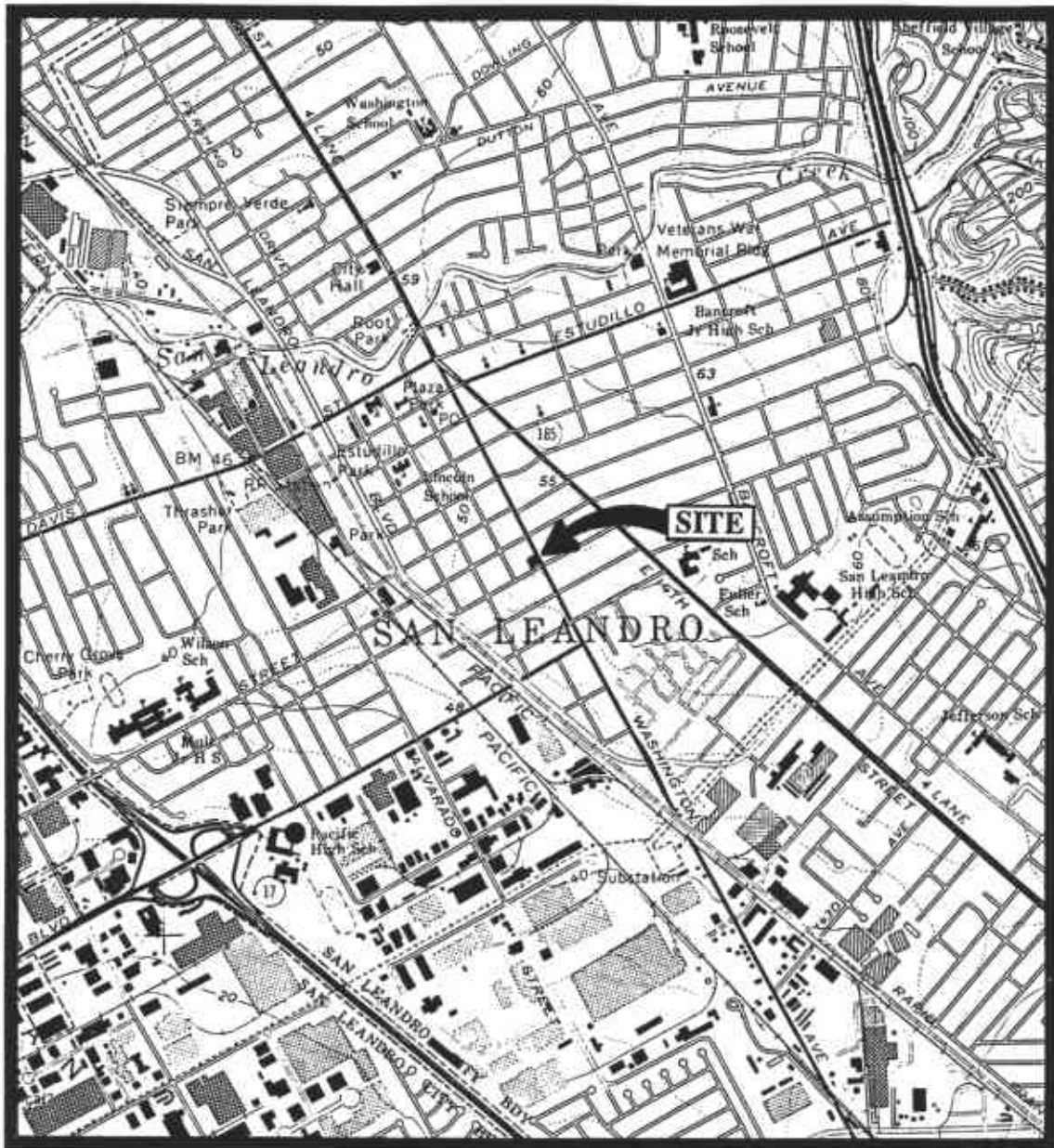
**TABLE 4**  
SUMMARY OF LABORATORY ANALYSES  
WATER

<u>Date</u>	<u>Well #</u>	<u>1,2-Dichloro- benzene</u>	<u>1,2-Dichloro- ethane</u>
12/06/94	U-1	ND	5.8
	U-2	ND	ND
	U-3	ND	430
9/15/94	U-1	ND	9.5
	U-2	ND	0.66
	U-3	ND	420
6/19/94	U-1	ND	7.4
	U-2	ND	0.54
	U-3	ND	410
3/25/94	U-1	ND	11
	U-2	ND	ND
	U-3	ND	480

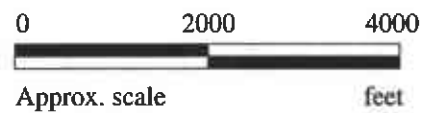
ND = Non-detectable.

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

Note: All EPA method 8010 constituents were non-detectable, except as indicated above.



Base modified from 7.5 minute U.S.G.S. San Leandro Quadrangle  
(photorevised 1980)

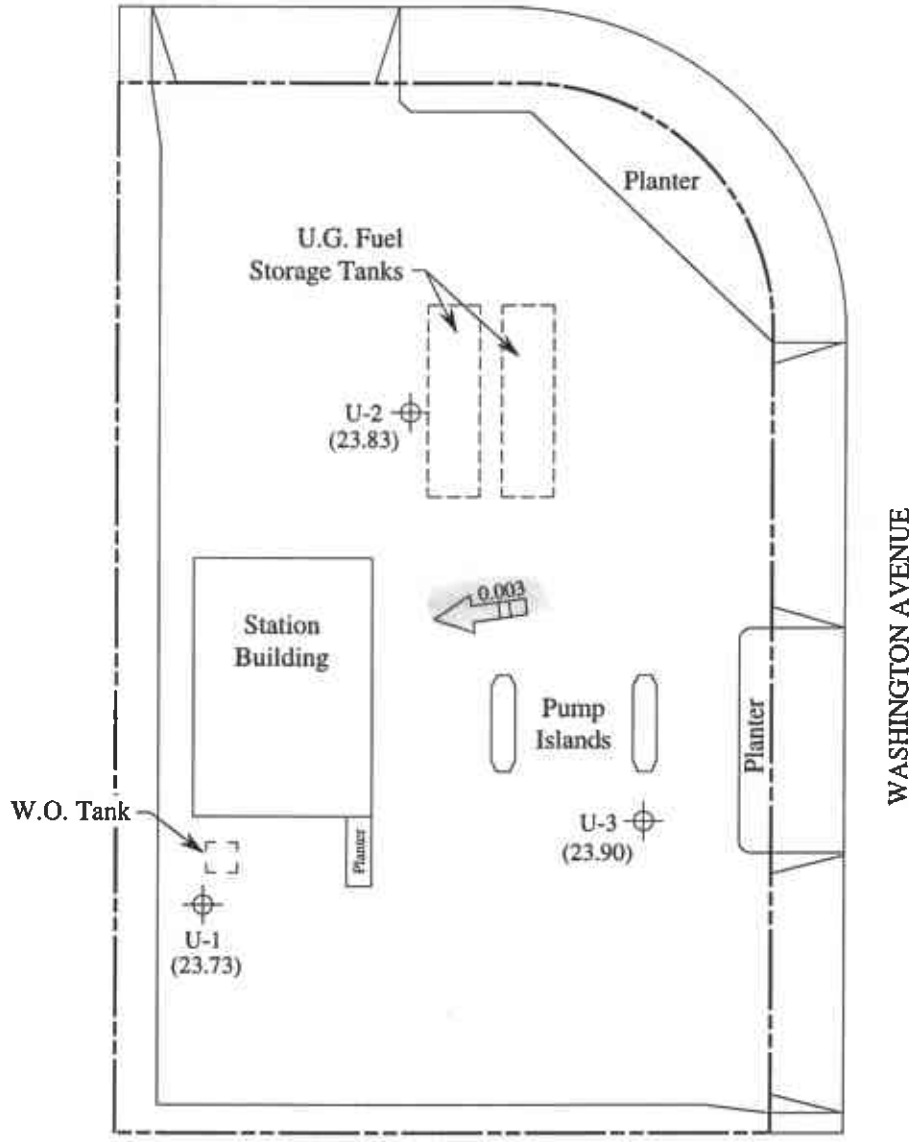


**MPDS** SERVICES, INCORPORATED




**UNOCAL SERVICE STATION #5430  
1935 WASHINGTON AVENUE  
SAN LEANDRO, CALIFORNIA**

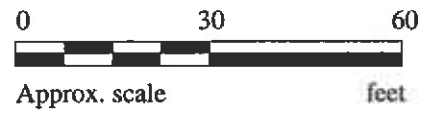
**LOCATION  
MAP**

CASTRO STREET



**LEGEND**

-  Monitoring well
-  Ground water elevation in feet above Mean Sea Level
-  Direction of ground water flow with approximate hydraulic gradient



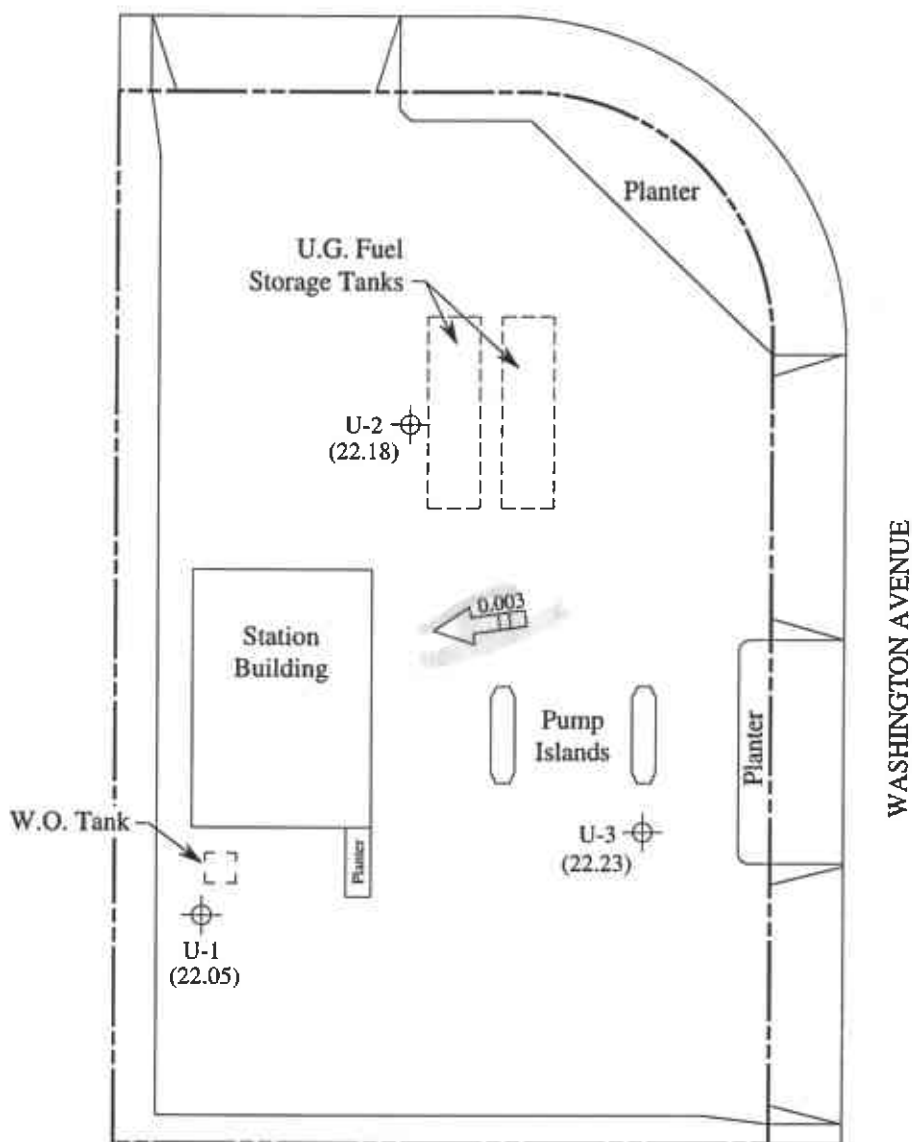
**GROUND WATER FLOW DIRECTION MAP FOR THE DECEMBER 6, 1994 MONITORING EVENT**






**UNOCAL SERVICE STATION #5430  
1935 WASHINGTON AVENUE  
SAN LEANDRO, CALIFORNIA**

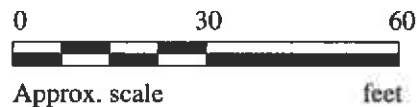
**FIGURE  
1**

CASTRO STREET



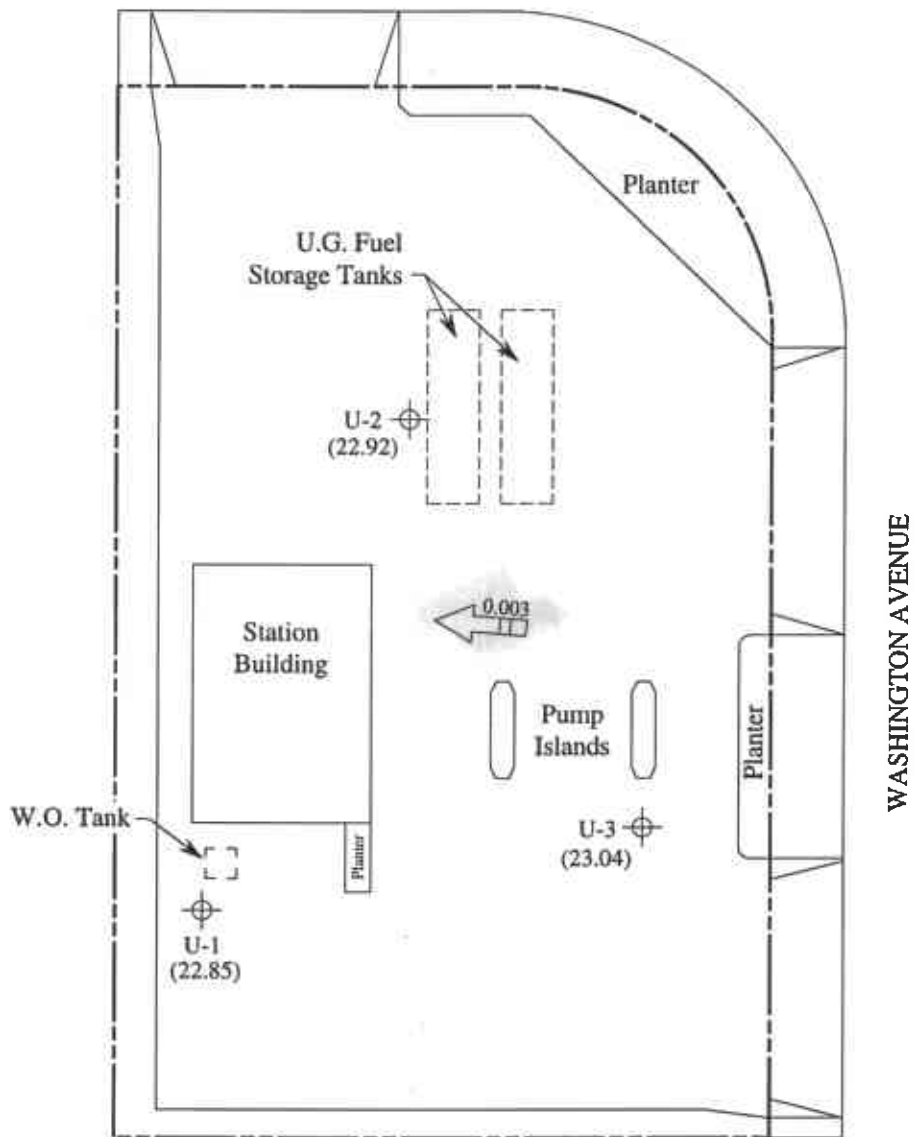
**LEGEND**

-  Monitoring well
-  Ground water elevation in feet above Mean Sea Level
-  Direction of ground water flow with approximate hydraulic gradient



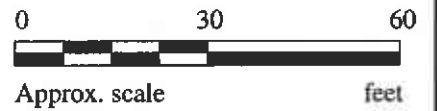
**GROUND WATER FLOW DIRECTION MAP FOR THE NOVEMBER 8, 1994 MONITORING EVENT**

CASTRO STREET



**LEGEND**

- Monitoring well
- Ground water elevation in feet above Mean Sea Level
- Direction of ground water flow with approximate hydraulic gradient



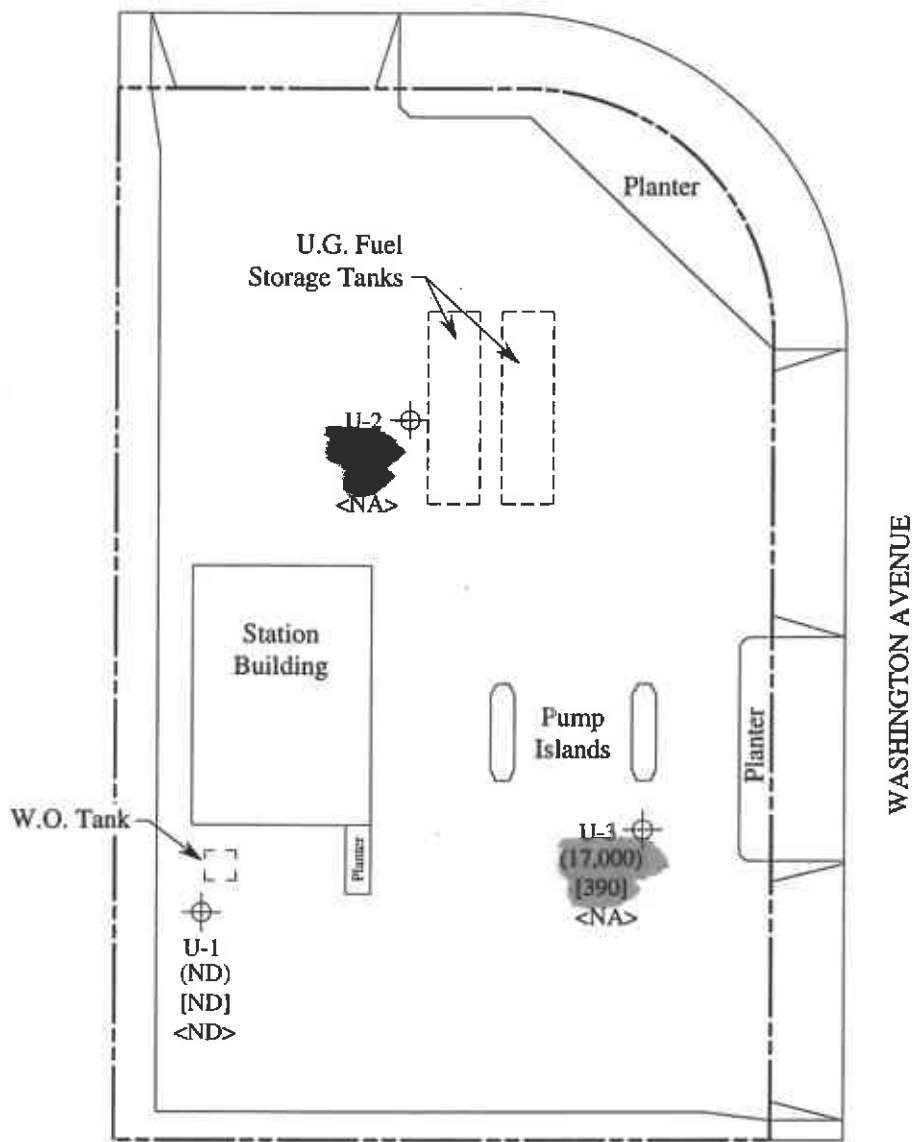
**GROUND WATER FLOW DIRECTION MAP FOR THE OCTOBER 11, 1994 MONITORING EVENT**



**UNOCAL SERVICE STATION #5430  
1935 WASHINGTON AVENUE  
SAN LEANDRO, CALIFORNIA**

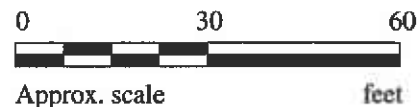
**FIGURE  
3**

CASTRO STREET



**LEGEND**

- ⊕ Monitoring well
- ( ) Concentration of TPH as gasoline in  $\mu\text{g/L}$
- [ ] Concentration of benzene in  $\mu\text{g/L}$
- < > Concentration of TPH as diesel in  $\mu\text{g/L}$
- ND = Non-detectable, NA = Not analyzed



**PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON DECEMBER 6, 1994**



<b>MPDS Services</b>	<b>Client Project ID:</b> Unocal #5430, 1935 Washington Ave.,	<b>Sampled:</b> Dec 6, 1994
2401 Stanwell Dr., Ste. 400	<b>Matrix Descript:</b> Water	<b>Received:</b> Dec 6, 1994
Concord, CA 94520	<b>Analysis Method:</b> EPA 5030/8015/8020	<b>Reported:</b> Dec 22, 1994
<b>Attention:</b> Avo Avedissian	<b>First Sample #:</b> 412-0445	

**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
412-0445	U-1	ND	ND	ND	ND	ND
412-0446	U-2	250	19	ND	ND	ND
412-0447	U-3	17,000	390	ND	990	560

<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 #5430, 1935 Washington Ave.,	Sampled: Dec 6, 1994
2401 Stanwell Dr., Ste. 400	Matrix Descript: Water	Received: Dec 6, 1994
Concord, CA 94520	San Leandro	Reported: Dec 22, 1994
Attention: Avo Avedissian	Analysis Method: EPA 5030/8015/8020	
	First Sample #: 412-0445	

**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
412-0445	U-1	--	1.0	12/13/94	HP-5	95
412-0446	U-2	Gasoline	1.0	12/13/94	HP-5	93
412-0447	U-3	Gasoline	20	12/14/94	HP-4	73

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager

4120445.MPD <2>







MPDS Services	Client Project ID: Unocal #5430, 1935 Washington Ave.,	Sampled: Dec 6, 1994
2401 Stanwell Dr., Ste. 400	Sample Matrix: Water	Received: Dec 6, 1994
Concord, CA 94520	San Leandro	Reported: Dec 22, 1994
Attention: Avo Avedissian	Analysis Method: EPA 3510/3520/8015	
	First Sample #: 412-0445	

**TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS**

Analyte	Reporting Limit µg/L	Sample I.D. 412-0445 U-1
Extractable Hydrocarbons	50	N.D.
Chromatogram Pattern:		--

**Quality Control Data**

Report Limit Multiplication Factor:	1.0
Date Extracted:	12/13/94
Date Analyzed:	12/14/94
Instrument Identification:	HP-3A

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

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager





MPDS Services 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedissian	Client Project ID: Unocal #5430, 1935 Washington Ave., Matrix Descript: Water Analysis Method: SM 5520 B&F (Gravimetric) First Sample #: 412-0445	San Leandro Sampled: Dec 6, 1994 Received: Dec 6, 1994 Extracted: Dec 7, 1994 Analyzed: Dec 8, 1994 Reported: Dec 22, 1994
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**TOTAL RECOVERABLE PETROLEUM OIL**

Sample Number	Sample Description	Oil & Grease mg/L (ppm)	Detection Limit Multiplication Factor
412-0445	U-1	N.D.	1.0

<b>Detection Limits:</b>	<b>5.0</b>
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Analytes reported as N.D. 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 #5430, 1935 Washington Ave.,	Sampled: Dec 6, 1994
2401 Stanwell Dr., Ste. 400	Sample Descript: Water, U-1	Received: Dec 6, 1994
Concord, CA 94520	San Leandro	Analyzed: Dec 9, 1994
Attention: Avo Avedissian	Analysis Method: EPA 5030/8010	Reported: Dec 22, 1994
	Lab Number: 412-0445	

**HALOGENATED VOLATILE ORGANICS (EPA 8010)**

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane.....	0.50	N.D.
Bromoform.....	0.50	N.D.
Bromomethane.....	1.0	N.D.
Carbon tetrachloride.....	0.50	N.D.
Chlorobenzene.....	0.50	N.D.
Chloroethane.....	1.0	N.D.
2-Chloroethylvinyl ether.....	1.0	N.D.
Chloroform.....	0.50	N.D.
Chloromethane.....	1.0	N.D.
Dibromochloromethane.....	0.50	N.D.
1,3-Dichlorobenzene.....	0.50	N.D.
1,4-Dichlorobenzene.....	0.50	N.D.
1,2-Dichlorobenzene.....	0.50	N.D.
1,1-Dichloroethane.....	0.50	N.D.
<b>1,2-Dichloroethane.....</b>	<b>0.50</b>	<b>5.8</b>
1,1-Dichloroethene.....	0.50	N.D.
cis-1,2-Dichloroethene.....	0.50	N.D.
trans-1,2-Dichloroethene.....	0.50	N.D.
1,2-Dichloropropane.....	0.50	N.D.
cis-1,3-Dichloropropene.....	0.50	N.D.
trans-1,3-Dichloropropene.....	0.50	N.D.
Methylene chloride.....	5.0	N.D.
1,1,2,2-Tetrachloroethane.....	0.50	N.D.
Tetrachloroethene.....	0.50	N.D.
1,1,1-Trichloroethane.....	0.50	N.D.
1,1,2-Trichloroethane.....	0.50	N.D.
Trichloroethene.....	0.50	N.D.
Trichlorofluoromethane.....	0.50	N.D.
Vinyl chloride.....	1.0	N.D.

Analytes reported as N.D. 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 #5430, 1935 Washington Ave.,	Sampled: Dec 6, 1994
2401 Stanwell Dr., Ste. 400	Sample Descript: Water, U-2	Received: Dec 6, 1994
Concord, CA 94520	Analysis Method: EPA 5030/8010	Analyzed: Dec 9, 1994
Attention: Avo Avedissian	Lab Number: 412-0446	Reported: Dec 22, 1994

**HALOGENATED VOLATILE ORGANICS (EPA 8010)**

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane.....	0.50	N.D.
Bromoform.....	0.50	N.D.
Bromomethane.....	1.0	N.D.
Carbon tetrachloride.....	0.50	N.D.
Chlorobenzene.....	0.50	N.D.
Chloroethane.....	1.0	N.D.
2-Chloroethylvinyl ether.....	1.0	N.D.
Chloroform.....	0.50	N.D.
Chloromethane.....	1.0	N.D.
Dibromochloromethane.....	0.50	N.D.
1,3-Dichlorobenzene.....	0.50	N.D.
1,4-Dichlorobenzene.....	0.50	N.D.
1,2-Dichlorobenzene.....	0.50	N.D.
1,1-Dichloroethane.....	0.50	N.D.
1,2-Dichloroethane.....	0.50	N.D.
1,1-Dichloroethene.....	0.50	N.D.
cis-1,2-Dichloroethene.....	0.50	N.D.
trans-1,2-Dichloroethene.....	0.50	N.D.
1,2-Dichloropropane.....	0.50	N.D.
cis-1,3-Dichloropropene.....	0.50	N.D.
trans-1,3-Dichloropropene.....	0.50	N.D.
Methylene chloride.....	5.0	N.D.
1,1,2,2-Tetrachloroethane.....	0.50	N.D.
Tetrachloroethene.....	0.50	N.D.
1,1,1-Trichloroethane.....	0.50	N.D.
1,1,2-Trichloroethane.....	0.50	N.D.
Trichloroethene.....	0.50	N.D.
Trichlorofluoromethane.....	0.50	N.D.
Vinyl chloride.....	1.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager





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

Client Project ID: Unocal #5430, 1935 Washington Ave.,  
Sample Descript: Water, U-3 San Leandro  
Analysis Method: EPA 5030/8010  
Lab Number: 412-0447

Sampled: Dec 6, 1994  
Received: Dec 6, 1994  
Analyzed: Dec 9-12, 1994  
Reported: Dec 22, 1994

**HALOGENATED VOLATILE ORGANICS (EPA 8010)**

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane.....	50	N.D.
Bromoform.....	50	N.D.
Bromomethane.....	100	N.D.
Carbon tetrachloride.....	50	N.D.
Chlorobenzene.....	50	N.D.
Chloroethane.....	100	N.D.
2-Chloroethylvinyl ether.....	100	N.D.
Chloroform.....	50	N.D.
Chloromethane.....	100	N.D.
Dibromochloromethane.....	50	N.D.
1,3-Dichlorobenzene.....	50	N.D.
1,4-Dichlorobenzene.....	50	N.D.
1,2-Dichlorobenzene.....	50	N.D.
1,1-Dichloroethane.....	50	N.D.
<b>1,2-Dichloroethane.....</b>	<b>50</b>	<b>430</b>
1,1-Dichloroethene.....	50	N.D.
cis-1,2-Dichloroethene.....	50	N.D.
trans-1,2-Dichloroethene.....	50	N.D.
1,2-Dichloropropane.....	50	N.D.
cis-1,3-Dichloropropene.....	50	N.D.
trans-1,3-Dichloropropene.....	50	N.D.
Methylene chloride.....	500	N.D.
1,1,2,2-Tetrachloroethane.....	50	N.D.
Tetrachloroethene.....	50	N.D.
1,1,1-Trichloroethane.....	50	N.D.
1,1,2-Trichloroethane.....	50	N.D.
Trichloroethene.....	50	N.D.
Trichlorofluoromethane.....	50	N.D.
Vinyl chloride.....	100	N.D.

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager





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

Client Project ID: Unocal #5430, 1935 Washington Ave., San Leandro  
 Matrix: Liquid

QC Sample Group: 4120445-47

Reported: Dec 22, 1994

**QUALITY CONTROL DATA REPORT**

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes	Diesel	Oil & Grease
<b>Method:</b>	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015 Mod.	SM 5520 BF
<b>Analyst:</b>	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon	K.V.S.	D. Newcomb

**MS/MSD**

**Batch#:** 4120441 4120441 4120441 4120441 BLK121394 BLK120794

**Date Prepared:** 12/14/94 12/14/94 12/14/94 12/14/94 12/13/94 12/7/94

**Date Analyzed:** 12/14/94 12/14/94 12/14/94 12/14/94 12/14/94 12/8/94

**Instrument I.D.#:** HP-4 HP-4 HP-4 HP-4 HP-3B Manual

**Conc. Spiked:** 20 µg/L 20 µg/L 20 µg/L 60 µg/L 300 µg/L 5,000 mg/L

**Matrix Spike**

**% Recovery:** 85 90 95 95 79 95

**Matrix Spike**

**Duplicate % Recovery:** 90 95 100 98 76 87

**Relative %**

**Difference:** 5.7 5.4 5.1 3.1 3.9 8.8

**LCS Batch#:** 2LCS121494 2LCS121494 2LCS121494 2LCS121494 BLK121394 BLK120794

**Date Prepared:** 12/14/94 12/14/94 12/14/94 12/14/94 12/13/94 12/7/94

**Date Analyzed:** 12/14/94 12/14/94 12/14/94 12/14/94 12/14/94 12/7/94

**Instrument I.D.#:** HP-4 HP-4 HP-4 HP-4 HP-3B Manual

**LCS %**

**Recovery:** 82 93 93 94 79 95

**% Recovery**

**Control Limits:** 71-133 72-128 72-130 71-120 28-122 75-125

**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 Avedissian

Client Project ID: Unocal #5430, 1935 Washington Ave., San Leandro  
Matrix: Liquid

QC Sample Group: 4120445-47

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

<b>MS/MSD Batch#:</b>	4120445	4120445	4120445	4120445
<b>Date Prepared:</b>	12/13/94	12/13/94	12/13/94	12/13/94
<b>Date Analyzed:</b>	12/13/94	12/13/94	12/13/94	12/13/94
<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>	110	105	100	100
<b>Matrix Spike Duplicate % Recovery:</b>	105	105	105	100
<b>Relative % Difference:</b>	4.7	0.0	4.9	0.0

<b>LCS Batch#:</b>	3LCS121394	3LCS121394	3LCS121394	3LCS121394
<b>Date Prepared:</b>	12/13/94	12/13/94	12/13/94	12/13/94
<b>Date Analyzed:</b>	12/13/94	12/13/94	12/13/94	12/13/94
<b>Instrument I.D.#:</b>	HP-5	HP-5	HP-5	HP-5
<b>LCS % Recovery:</b>	106	106	106	103

<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



**CHAIN OF CUSTODY**

5° c

SAMPLER			UNOCAL					ANALYSES REQUESTED						TURN AROUND TIME:	
<b>NICHOLAS PERROW</b>			S/S # <u>5430</u> CITY: <u>SAN LEANDRO</u>					TPH-GAS BTEX	TPH-DIESEL	TOG	8010				REGULAR
WITNESSING AGENCY			ADDRESS: <u>1935 WASHINGTON BLVD</u>												
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION								
U-1	12/6/94	10:10	✓	✓		4 VOLS 2 ARBERS	WELL	✓	✓	✓	✓			4120445 A-F	
U-2	"	10:50	✓	✓		4 VOLS	"	✓			✓			4120446 A-D	
U-3	"	11:20	✓	✓		4 VOLS	"	✓			✓			4120447 ↓	
RELINQUISHED BY:			DATE/TIME		RECEIVED BY:			DATE/TIME		THE FOLLOWING <u>MUST BE</u> COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:					
(SIGNATURE) <u>[Signature]</u>			12/6/94 2:25 PM		(SIGNATURE) <u>[Signature]</u>			12-06-94 1425		1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? <u>YES (5°c)</u>					
(SIGNATURE) <u>[Signature]</u>			12/7 12:18		(SIGNATURE) <u>[Signature]</u>					2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? <u>YES</u>					
(SIGNATURE) <u>[Signature]</u>			12-7		(SIGNATURE) <u>[Signature]</u>			1:45 12/7/94		3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? <u>NO</u>					
(SIGNATURE) <u>[Signature]</u>					(SIGNATURE) <u>[Signature]</u>					4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? <u>YES</u>					
										SIGNATURE: <u>[Signature]</u> TITLE: <u>DM</u> DATE: <u>12-06-94</u>					

Note: All water containers to be sampled for TPHG/BTEX, 8010 & 8240 are preserved with HCL. All water containers to be sampled for Lead or Metals are preserved with HN03. All other containers are unpreserved.