

March 8, 1996

Alameda County Health Care Services
1131 Harbor Bay Parkway
Alameda, California 94501

RE: Unocal Service Station #6034
4700 First Street
Livermore, California

Per the request of the Unocal Corporation Project Manager, Ms. Tina R. Berry, enclosed please find our most recent data report 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.



Jarrel F. Crider

bp:jfc

Enclosure

cc: Ms. Tina R. Berry

40001 110000
MAR 11 1996
10:07

MPDS-UN6034-09
February 12, 1996

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 Service Station #6034
4700 First Street
Livermore, 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 for the wells are summarized in Table 1. The ground water flow direction during the most recent quarter is shown on the attached Figure 1.

A joint monitoring event was scheduled to be conducted with the consultant for the nearby Chevron site on January 17, 1996. However, monitoring at that site was not conducted on the scheduled date. MPDS Services, Inc. will attempt to resume the joint monitoring program with the Chevron site next quarter.

A ground water sample was collected from the monitoring well MW2 on January 17, 1996. Prior to sampling, well MW2 was purged of 8 gallons of water. In addition, dissolved oxygen concentrations were also measured and are presented in Table 5. A sample was then collected using a clean Teflon bailer. The sample was 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. Field blank and Trip blank samples (denoted as ES1 and ES2 respectively) were also collected for quality assurance and control. 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 sample collected from well MW2 was analyzed at Sequoia Analytical Laboratory and was accompanied by properly executed Chain of Custody documentation. The analytical results of the ground water

samples collected to date are summarized in Tables 2, 3 and 4. The concentrations of Total Petroleum Hydrocarbons (TPH) as gasoline and benzene detected in the ground water sample collected from well MW2 this quarter are shown on the attached Figure 2. Copies of the laboratory analytical results and the Chain of Custody documentation for the Unocal wells 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 the Alameda County Health Care Services Agency.

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

Sincerely,

MPDS Services, Inc.

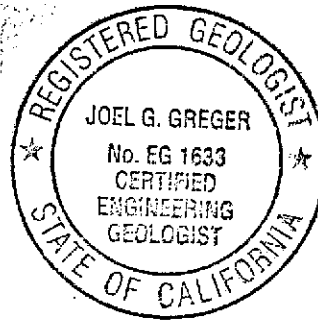


Haig (Gary) Tejirian
Senior Staff Geologist



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

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



/bp

Attachments: Tables 1 through 5
Location Map
Figures 1 & 2
Laboratory Analyses
Chain of Custody documentation

cc: Mr. Thomas J. Berkins, Kaprealian Engineering, Inc.

TABLE 1

**SUMMARY OF MONITORING DATA
 UNOCAL MONITORING WELLS**

Well #	Ground Water Elevation (feet)	Depth to Water (feet)◆	Total Well Depth (feet)◆	Product Thickness (feet)	Sheen	Water Purged (gallons)
(Monitored and Sampled on January 17, 1996)						
MW1*	505.68	14.96	27.88	0	--	0
MW2	505.47	14.35	25.63	0	No	8
MW3*	505.98	13.68	25.41	0	--	0
MW4*	506.59	13.02	25.46	0	--	0
MW5*	505.79	14.48	23.59	0	--	0
MW6*	WELL WAS OBSTRUCTED BY ROOTS					
MW7*	505.27	13.56	23.65	0	--	0
(Monitored and Sampled on October 17, 1995)						
MW1*	505.81	14.83	27.90	0	--	0
MW2	505.67	14.15	25.63	0	No	8
MW3	506.42	13.24	25.42	0	No	8.5
MW4	506.39	13.22	25.46	0	No	8.5
MW5	505.81	14.46	23.57	0	No	7
MW6	504.85	13.90	23.18	0	No	7
MW7	505.42	13.41	23.62	0	No	7
(Monitored and Sampled on July 18, 1995)						
MW1*	505.86	14.78	27.91	0	--	0
MW2	505.71	14.11	25.64	0	No	8
MW3*	506.47	13.19	25.43	0	--	0
MW4	506.40	13.21	25.50	0	No	8.5
MW5	505.86	14.41	23.60	0	No	6.5
MW6	504.91	13.84	23.17	0	No	6.5
MW7	505.47	13.36	23.65	0	No	7
(Monitored and Sampled on April 17, 1995)						
MW1	505.82	14.82	27.90	0	No	9
MW2	505.69	14.13	25.62	0	No	8
MW3	506.46	13.20	25.42	0	No	8.5
MW4	506.42	13.19	25.47	0	No	8.5
MW5	505.77	14.50	23.58	0	No	6.5
MW6	504.93	13.82	23.15	0	No	6.5
MW7	505.45	13.38	23.65	0	No	7

TABLE 1 (Continued)

SUMMARY OF MONITORING DATA
UNOCAL MONITORING WELLS

<u>Well #</u>	<u>Well Casing Elevation (feet)**</u>
MW1	520.64
MW2	519.82
MW3	519.66
MW4	519.61
MW5	520.27
MW6	518.75
MW7	518.83

- ◆ The depth to water level and total well depth measurements were taken from the top of the well casings.
- * Monitored only.
- ** The elevations of the top of the well casings are relative to Mean Sea Level (MSL), per the City of Livermore Benchmark No. C-18-5 (elevation = 551.77 feet MSL).
- Sheen determination was not performed.

TABLE 2

**SUMMARY OF LABORATORY ANALYSES
 WATER
 UNOCAL MONITORING WELLS**

<u>Date</u>	<u>Well #</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-benzene</u>	<u>Xylenes</u>
11/18/89	MW1	ND	ND	ND	ND	ND
3/08/90	MW1	ND	ND	ND	ND	ND
6/05/90	MW1	ND	ND	ND	ND	ND
9/07/90	MW1	ND	ND	1.2	ND	ND
12/24/90	MW1	ND	ND	ND	ND	0.40
4/10/91	MW1	ND	ND	ND	ND	ND
7/10/91	MW1	ND	ND	ND	ND	ND
4/21/94	MW1	ND	ND	ND	ND	ND
7/21/94	MW1	SAMPLED ANNUALLY				
10/19/94	MW1	SAMPLED ANNUALLY				
1/18/95	MW1	SAMPLED ANNUALLY				
4/17/95	MW1*	ND	ND	ND	ND	ND
7/18/95	MW1	SAMPLED ANNUALLY				
10/17/95	MW1	SAMPLED ANNUALLY				
1/17/96	MW1	SAMPLED ANNUALLY				
11/18/89	MW2	53,000	540	500	130	22,000
3/08/90	MW2	26,000	230	410	1,300	2,100
6/05/90	MW2	31,000	250	460	950	9,200
9/07/90	MW2	ND	ND	1.5	ND	ND
12/24/90	MW2	32,000	440	340	460	13,000
4/10/91	MW2	22,000	170	190	490	6,200
7/10/91	MW2	14,000	70	160	570	5,400
10/14/91	MW2	11,000	79	130	660	4,700
1/14/92	MW2	5,600	36	120	450	2,600
4/06/92	MW2	760	6.3	2.1	ND	130
7/07/92	MW2	44,000	160	1,100	1,000	17,000
10/16/92	MW2	290	2.3	ND	5.1	15
1/14/93	MW2	19,000	75	430	900	8,400
4/22/93	MW2	49,000	150	1,000	3,000	18,000
7/20/93	MW2	25,000	68	94	1,000	6,200
10/20/93	MW2	12,000	27	10	100	3,000
1/20/94	MW2	20,000	ND	ND	270	3,300
4/21/94	MW2	27,000	85	65	880	5,300
7/21/94	MW2	31,000	58	29	940	6,200
10/19/94	MW2	4,100	16	3.5	8.6	1,100
1/18/95	MW2	5,100	6.8	7.3	100	1,500

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
 WATER
 UNOCAL MONITORING WELLS

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes	
4/17/95	MW2	320	1.3	0.67	6.6	74	
7/18/95	MW2	12,000	25	24	550	3,700	
10/17/95	MW2	77,000	60	58	760	8,300	
1/17/96	MW2	7,000	15	ND	150	1,600	
11/18/89	MW3	ND	0.35	ND	ND	ND	
3/08/90	MW3	ND	ND	ND	ND	ND	
6/05/90	MW3	ND	ND	ND	ND	ND	
9/07/90	MW3	1,100	11	ND	6.6	16	
12/24/90	MW3	ND	ND	ND	ND	ND	
4/10/91	MW3	ND	ND	ND	ND	ND	
7/10/91	MW3	ND	ND	ND	ND	ND	
10/14/91	MW3	ND	ND	ND	ND	ND	
1/14/92	MW3	ND	ND	ND	ND	ND	
4/06/92	MW3	ND	ND	ND	ND	ND	
7/07/92	MW3	ND	ND	ND	ND	ND	
10/16/92	MW3	ND	ND	ND	ND	ND	
1/14/93	MW3	ND	ND	ND	ND	ND	
4/22/93	MW3	ND	ND	ND	ND	ND	
7/20/93	MW3	ND	ND	ND	ND	ND	
10/20/93	MW3	ND	ND	ND	ND	ND	
1/20/94	MW3	SAMPLED ANNUALLY					
4/21/94	MW3	ND	ND	ND	ND	ND	
7/21/94	MW3	SAMPLED SEMI-ANNUALLY					
10/19/94	MW3	ND	ND	0.61	ND	0.51	
1/18/95	MW3	SAMPLED SEMI-ANNUALLY					
4/17/95	MW3	ND	ND	ND	ND	ND	
7/18/95	MW3	SAMPLED SEMI-ANNUALLY					
10/17/95	MW3	ND	ND	ND	ND	ND	
1/17/96	MW3	SAMPLED ANNUALLY					
11/18/89	MW4	990	9.8	10	7.1	4.7	
3/08/90	MW4	1,200	18	8.4	37	28	
6/05/90	MW4	1,400	1.2	4.7	24	12	
9/07/90	MW4	15,000	100	140	210	4,600	
12/24/90	MW4	1,400	ND	8.7	15	10	
4/10/91	MW4	950	0.84	4.3	9.6	5.0	
7/10/91	MW4	830	8.4	19	7.7	7.2	

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
 WATER
 UNOCAL MONITORING WELLS

Date	Well #	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
10/14/91	MW4	880	3.8	2.2	8.6	5.8
1/14/92	MW4	1,500	4.2	7.1	18	9.2
4/06/92	MW4	660	1.3	3.8	2.9	4.1
7/07/92	MW4	340	ND	2.2	2.4	2.4
10/16/92	MW4	300	2.1	ND	4.8	13
1/14/93	MW4	920	ND	6.3	12	3.9
4/22/93	MW4	1,100	8.8	1.0	7.2	6.0
7/20/93	MW4	NOT SAMPLED - SAMPLING ACCESS DENIED				
10/20/93	MW4	640	ND	2.5	2.3	1.9
1/20/94	MW4	1,200	ND	2.6	4.7	7.4
4/21/94	MW4	380	0.83	1.2	1.2	1.7
7/21/94	MW4	320	0.51	1.4	1.0	1.6
10/19/94	MW4	750	ND	3.6	4.2	3.4
1/18/95	MW4	790	1.5	3.3	1.2	2.6
4/17/95	MW4	570	2.8	ND	3.3	3.9
7/18/95	MW4	340	1.0	1.9	2.8	2.7
10/17/95	MW4	260	1.1	0.57	0.69	1.6
1/17/96	MW4	SAMPLED SEMI-ANNUALLY				
4/10/91	MW5	630	35	14	47	30
7/10/91	MW5	220	5.1	8.7	9.1	9.7
10/14/91	MW5	660	55	4.4	50	66
1/14/92	MW5	99	1.0	1.2	ND	0.32
4/06/92	MW5	240♦	ND	ND	0.35	ND
7/07/92	MW5	76	0.48	1.1	0.32	1.3
10/16/92	MW5	180	7.8	1.1	17	6.4
1/14/93	MW5	91	ND	0.53	1.2	11
4/22/93	MW5	94	1.2	ND	ND	1.3
7/20/93	MW5	89	1.1	0.51	ND	1.8
10/20/93	MW5	110	0.80	ND	ND	ND
1/20/94	MW5	ND	ND	ND	ND	ND
4/21/94	MW5	ND	ND	ND	ND	ND
7/21/94	MW5	ND	ND	ND	ND	ND
10/19/94	MW5	ND	ND	0.71	ND	0.57
1/18/95	MW5	ND	ND	ND	ND	ND
4/17/95	MW5	ND	ND	ND	ND	ND
7/18/95	MW5	ND	ND	ND	ND	1.1
10/17/95	MW5	ND	ND	ND	ND	ND
1/17/96	MW5	SAMPLED ANNUALLY				

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
 WATER
 UNOCAL MONITORING WELLS

<u>Date</u>	<u>Well #</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-benzene</u>	<u>Xylenes</u>	
4/10/91	MW6	ND	ND	ND	ND	ND	
7/10/91	MW6	ND	ND	ND	ND	ND	
10/14/91	MW6	ND	ND	ND	ND	ND	
1/14/92	MW6	ND	ND	ND	ND	ND	
4/06/92	MW6	ND	ND	ND	ND	ND	
7/07/92	MW6	ND	ND	ND	ND	ND	
10/16/92	MW6	WELL WAS OBSTRUCTED					
1/14/93	MW6	WELL WAS OBSTRUCTED					
4/22/93	MW6	WELL WAS OBSTRUCTED					
7/20/93	MW6	WELL WAS OBSTRUCTED					
10/20/93	MW6	ND	ND	ND	ND	ND	
1/20/94	MW6	ND	ND	ND	ND	ND	
4/21/94	MW6	ND	ND	ND	ND	ND	
7/21/94	MW6	ND	ND	ND	ND	ND	
10/19/94	MW6	WELL WAS OBSTRUCTED BY ROOTS					
1/18/95	MW6	WELL WAS OBSTRUCTED BY ROOTS					
4/17/95	MW6	ND	ND	ND	ND	ND	
7/18/95	MW6	ND	ND	ND	ND	ND	
10/17/95	MW6	ND	ND	ND	ND	ND	
1/17/96	MW6	SAMPLED ANNUALLY					
4/10/91	MW7	ND	ND	ND	ND	ND	
7/10/91	MW7	ND	ND	ND	ND	ND	
10/14/91	MW7	ND	ND	ND	ND	ND	
1/14/92	MW7	ND	ND	ND	ND	ND	
4/06/92	MW7	ND	ND	ND	ND	ND	
7/07/92	MW7	ND	ND	ND	ND	ND	
10/16/92	MW7	ND	ND	ND	ND	ND	
1/14/93	MW7	ND	ND	ND	ND	ND	
4/22/93	MW7	ND	ND	ND	ND	ND	
7/20/93	MW7	ND	ND	ND	ND	ND	
10/20/93	MW7	ND	ND	ND	ND	ND	
1/20/94	MW7	ND	ND	ND	ND	ND	
4/21/94	MW7	ND	ND	ND	ND	ND	
7/21/94	MW7	ND	ND	ND	ND	ND	
10/19/94	MW7	ND	ND	0.87	ND	0.61	
1/18/95	MW7	ND	ND	ND	ND	ND	
4/17/95	MW7	ND	ND	ND	ND	ND	
7/18/95	MW7	ND	ND	ND	ND	ND	
10/17/95	MW7	ND	ND	ND	ND	ND	
1/17/96	MW7	SAMPLED ANNUALLY					

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
WATER
UNOCAL MONITORING WELLS

* TPH as diesel was non detectable.

◆ Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be gasoline.

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 January 20, 1994, were provided by Kaprealian Engineering, Inc.

TABLE 3

SUMMARY OF LABORATORY ANALYSES
WATER
UNOCAL MONITORING WELLS

<u>Date</u>	<u>Well #</u>	<u>Total Oil & Grease</u> <u>mg/L</u>	<u>Trichlorethene</u> <u>µg/L</u>	<u>Chloroform</u> <u>µg/L</u>
4/17/95	MW1	ND	ND	0.69
4/21/94	MW1	ND	ND	ND
7/10/91	MW1	ND	ND	ND
4/10/91	MW1	ND	ND	ND
12/24/90	MW1	ND	ND	ND
9/07/90	MW1	ND	ND	ND
6/05/90	MW1	ND	ND	ND
3/08/90	MW1	4.7	ND	ND
11/18/89	MW1	3.1	0.55	ND

ND = Non-detectable.

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

mg/L = milligrams per liter.

Results are in micrograms per liter (µg/L), unless otherwise indicated.

TABLE 4

SUMMARY OF LABORATORY ANALYSES
WATER
UNOCAL MONITORING WELLS

<u>Date</u>	<u>Well #</u>	<u>MTBE</u>
10/17/95	MW2	220
1/17/96	MW2	670
10/17/95	MW3	ND
10/17/95	MW4	2.0
1/14/92	MW5	1.2
7/07/92	MW5	1.5
10/16/92	MW5	2.0
4/22/93	MW5	0.82
7/20/93	MW5	2.2
10/17/95	MW5	ND
10/17/95	MW6	2.2
10/17/95	MW7	3.5

ND = Non-detectable.

MTBE = methyl tert butyl ether

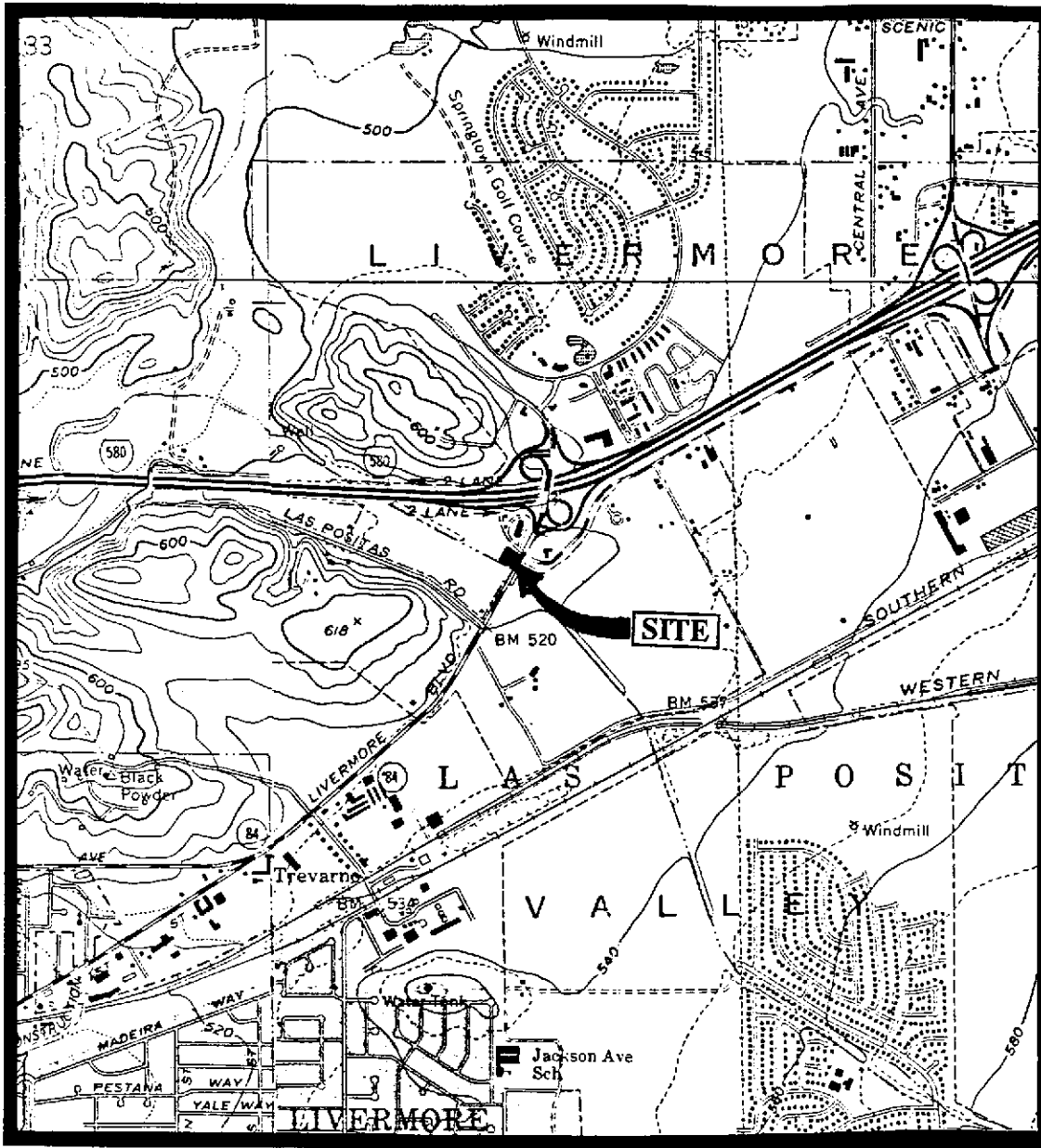
Results are in micrograms per liter ($\mu\text{g/L}$), unless otherwise indicated.

TABLE 5

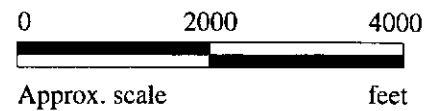
SUMMARY OF MONITORING DATA
Dissolved Oxygen Concentrations

<u>Well #</u>	<u>Date</u>	<u>Dissolved Oxygen Concentration (DO2)</u>
MW2	7/18/95	4.22
	10/17/95	3.96
	1/17/96	5.25

Results are in milligrams per liter (mg/L), unless otherwise indicated.



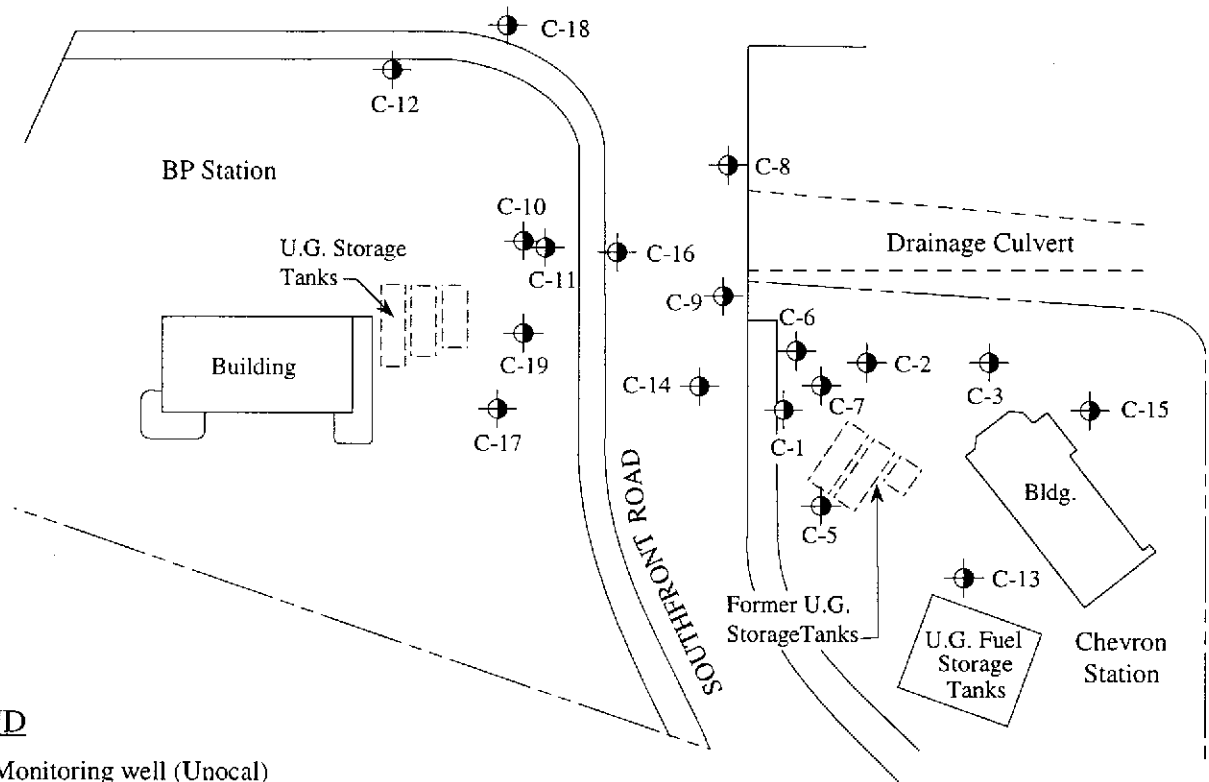
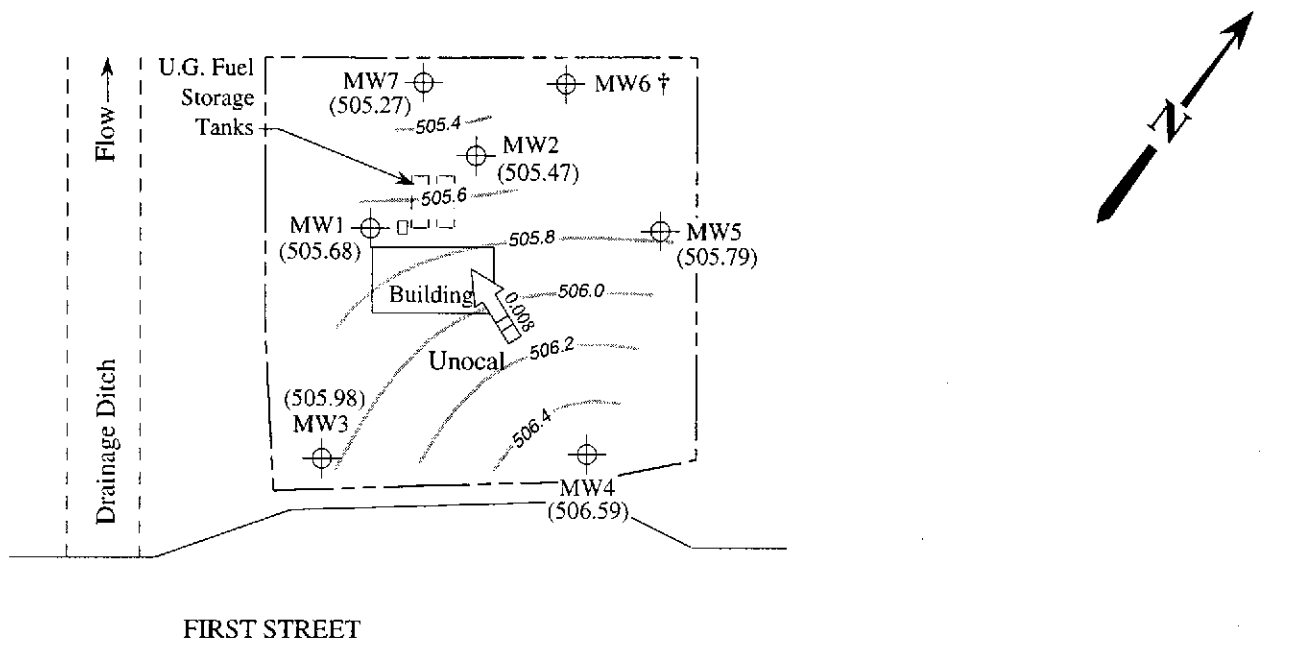
Base modified from 7.5 minute U.S.G.S. Livermore and Altamont Quadrangles
 (photorevised 1980 and 1981, respectively)



MPDS SERVICES, INCORPORATED

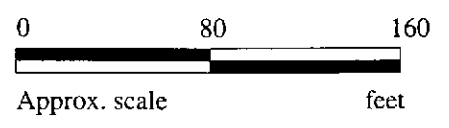
**UNOCAL SERVICE STATION # 6034
 4700 FIRST STREET
 LIVERMORE, CALIFORNIA**

**LOCATION
 MAP**



LEGEND

- ⊕ Monitoring well (Unocal)
- ⊙ Monitoring well (Chevron)
- () Ground water elevation in feet above Mean Sea Level
- ### → Direction of ground water flow with approximate hydraulic gradient
- Contours of ground water elevation
- † Well was obstructed by roots

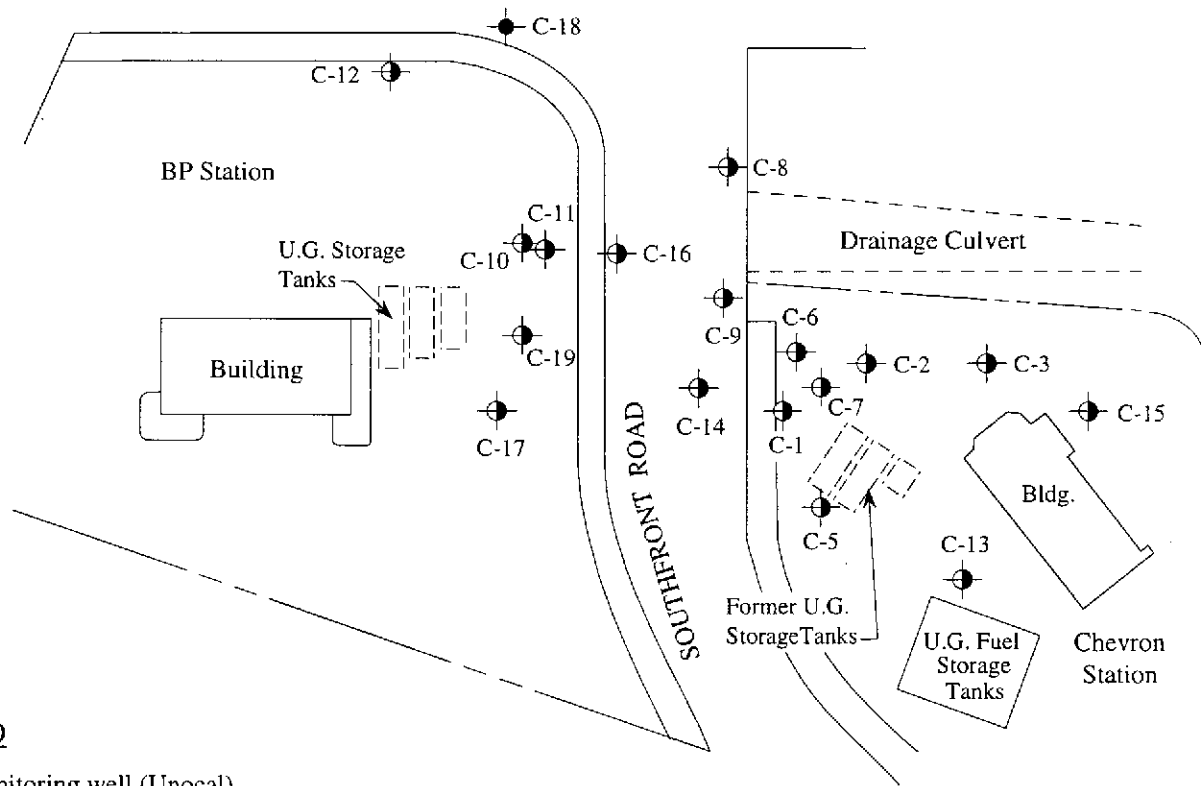
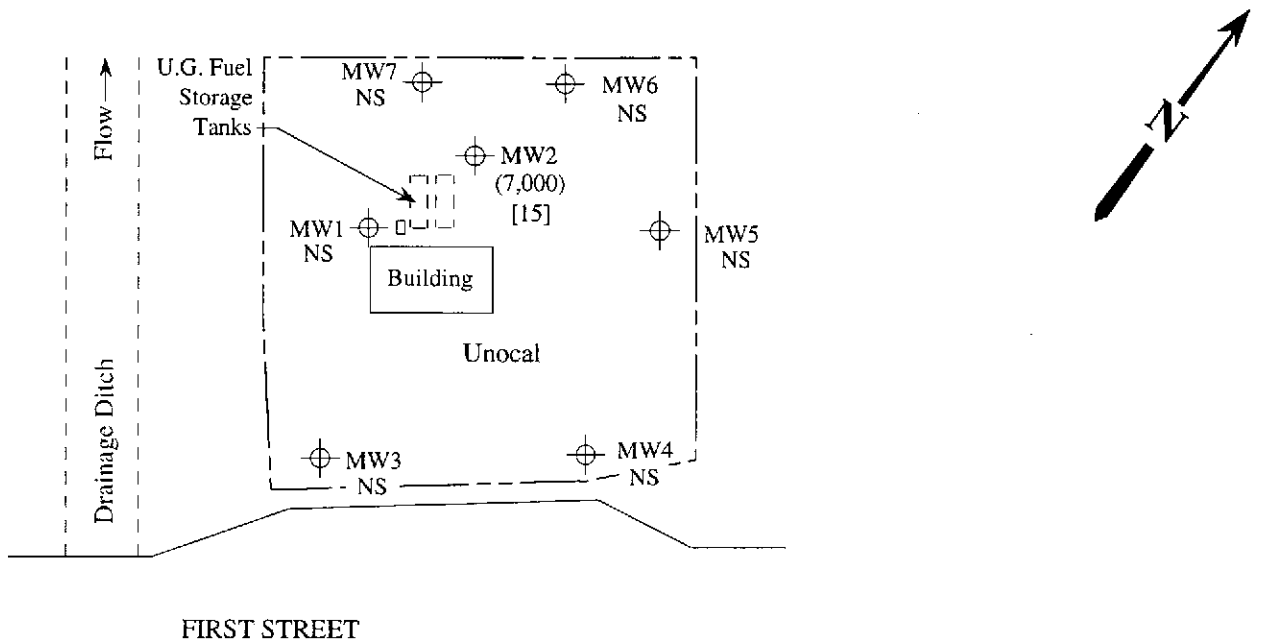


POTENTIOMETRIC SURFACE MAP FOR THE JANUARY 17, 1996 MONITORING EVENT



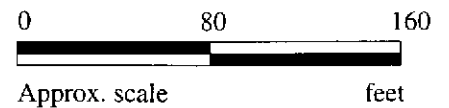
**UNOCAL SERVICE STATION # 6034
4700 FIRST STREET
LIVERMORE, CALIFORNIA**

**FIGURE
1**



LEGEND

- ⊕ Monitoring well (Unocal)
- ⊙ Monitoring well (Chevron, existing)
- Monitoring well (Chevron, abandoned)
- () Concentration of TPH as gasoline in $\mu\text{g/L}$
- [] Concentration of benzene in $\mu\text{g/L}$
- ND Non-detectable, NS Not sampled



PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON JANUARY 17, 1996



MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Unocal #6034, 4700 First St., Livermore
Matrix Descript: Water
Analysis Method: EPA 5030/8015 Mod./8020
First Sample #: 601-1027

Sampled: Jan 17, 1996
Received: Jan 17, 1996
Reported: Feb 1, 1996

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
601-1027	MW-2	7,000	15	ND	150	1,600
601-1028	ES1	ND	ND	ND	ND	ND
601-1029	ES2	ND	ND	ND	ND	ND

Detection Limits:	50	0.50	0.50	0.50	0.50
--------------------------	-----------	-------------	-------------	-------------	-------------

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 #6034, 4700 First St., Livermore	Sampled: Jan 17, 1996
2401 Stanwell Dr., Ste. 300	Matrix Descript: Water	Received: Jan 17, 1996
Concord, CA 94520	Analysis Method: EPA 5030/8015 Mod./8020	Reported: Feb 1, 1996
Attention: Jarrel Crider	First Sample #: 601-1027	

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
601-1027	MW-2	Gasoline	20	1/30/96	HP-5	85
601-1028	ES1	--	1.0	1/27/96	HP-5	107
601-1029	ES2	--	1.0	1/27/96	HP-5	108

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager





Sequoia Analytical

680 Chesapeake Drive	Redwood City, CA 94063	(415) 364-9600	FAX (415) 364-9233
404 N. Wiget Lane	Walnut Creek, CA 94598	(510) 988-9600	FAX (510) 988-9673
819 Striker Avenue, Suite 8	Sacramento, CA 95834	(916) 921-9600	FAX (916) 921-0100

MPDS Services	Client Project ID: Unocal #6034, 4700 First St., Livermore	Sampled: Jan 17, 1996
2401 Stanwell Dr., Ste. 300	Sample Descript: Water	Received: Jan 17, 1996
Concord, CA 94520	Analysis for: MTBE (Modified EPA 8020)	Analyzed: Jan 29, 1996
Attention: Jarrel Crider	First Sample #: 601-1027	Reported: Feb 1, 1996

LABORATORY ANALYSIS FOR: MTBE (Modified EPA 8020)

Sample Number	Sample Description	Detection Limit µg/L	Sample Result µg/L
601-1027	MW-2	3.0	670

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. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Unocal #6034, 4700 First St., Livermore
Matrix: Liquid

QC Sample Group: 6011027-029

Reported: Feb 1, 1996

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	S. Chullakorn	S. Chullakorn	S. Chullakorn	S. Chullakorn

MS/MSD Batch#:	6010965	6010965	6010965	6010965
Date Prepared:	1/27/96	1/27/96	1/27/96	1/27/96
Date Analyzed:	1/27/96	1/27/96	1/27/96	1/27/96
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:	110	105	110	107
Matrix Spike Duplicate % Recovery:	115	110	110	112
Relative % Difference:	4.4	47	0.0	4.6

LCS Batch#:	1LCS012796	1LCS012796	1LCS012796	1LCS012796
Date Prepared:	1/27/96	1/27/96	1/27/96	1/27/96
Date Analyzed:	1/27/96	1/27/96	1/27/96	1/27/96
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	120	115	120	120

% Recovery Control Limits:	71-133	72-128	72-130	71-120
---------------------------------------	--------	--------	--------	--------

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager

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.



CHAIN OF CUSTODY

9601271

SAMPLER			UNOCAL					ANALYSES REQUESTED						TURN AROUND TIME:		
STEVE BALIAN			SIS # 6034 CITY: LIVERMORE					TPH-GAS BTEX	TPH-DIESEL	TOG	8010	MTBE				REGULAR
			ADDRESS: 4700 FIRST STREET													REMARKS
WITNESSING AGENCY			WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION									
SAMPLE ID NO.	DATE	TIME														
MW-2	1-17-96	11:30	X	X		4	WELL	X		6011027	X	A-D				
RELINQUISHED BY:		DATE/TIME	RECEIVED BY:		DATE/TIME	THE FOLLOWING <u>MUST BE</u> COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:										
STEVE BALIAN		15:00			1/17 1500	1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? <u>Y</u>										
(SIGNATURE)		1-17-96	(SIGNATURE)			2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? <u>Y</u>										
(SIGNATURE)			(SIGNATURE)			3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? <u>N</u>										
(SIGNATURE)			(SIGNATURE)			4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? <u>Y</u>										
(SIGNATURE)			(SIGNATURE)			SIGNATURE: TITLE: DATE: 1/17/96										

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 HNO3. All other containers are

CHAIN OF CUSTODY

9601271

SAMPLER			UNOCAL					ANALYSES REQUESTED							TURN AROUND TIME:		
STEVE BALIAN			SIS # <u>6034</u> CITY: <u>LIVERMORE</u>					TPH-GAS BTEX	TPH-DIESEL	TOG	8010						REGULAR
WITNESSING AGENCY			ADDRESS: <u>4700 FIRST STREET</u>														
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION										
ES1	1-17-96		X	X		1		X								6011028	
ES2	"		X	X		1		X								6011029	
RELINQUISHED BY:		DATE/TIME	RECEIVED BY:				DATE/TIME	THE FOLLOWING <u>MUST BE</u> COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:									
STEVE BALIAN		15:00					1/17	1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? _____									
(SIGNATURE)		1-17-96	(SIGNATURE)				1500	2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? _____									
(SIGNATURE)			(SIGNATURE)					3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? _____									
(SIGNATURE)			(SIGNATURE)					4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? _____									
(SIGNATURE)			(SIGNATURE)					SIGNATURE:			TITLE:			DATE:			

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