MONITORING
PURGING
DISPOSING
SAMPLING
mpds SERVICES, INCORPORATED

ENVIRONMENTAL PROTECTION

96 DEC 17 AM 9:59

December 13, 1996

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

Discont ~~Annual~~ sampling of MW 1, 3, 5, 6, 7
Semi-ann. sampling of MW 2, 4
in Apr + Oct.

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 report (MPDS-UN6034-12) dated November 20, 1996 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

Jarrel F. Crider

/jfc

Enclosure

cc: Ms. Tina R. Berry

2401 Stanwell Drive, Suite 400, Concord, CA 94520
TEL: (510) 602-5120 FAX: (510) 689-1918

MONITORING
PURGING
DISPOSING
SAMPLING

MPDS SERVICES, INCORPORATED

MPDS-UN6034-12
November 20, 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 Unocal monitoring wells that were monitored and sampled during this quarter are indicated in Table 1. Oxygen Release Compound (ORC®) filter socks were present in monitoring well MW2. Prior to sampling, the Unocal 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 Unocal wells are summarized in Table 1.

A joint monitoring event was conducted with the consultant for the nearby Chevron site on October 16, 1996. The monitoring data collected for the Chevron monitoring wells (provided by Blaine Tech Services, Inc.) are summarized in Table 5. The ground water flow direction in the vicinity of the Unocal and Chevron sites during the most recent quarter is shown on the attached Figure 1.

Ground water samples were collected from Unocal monitoring wells MW2 and MW4 on October 16, 1996. Prior to sampling, wells MW2 and MW4 were purged of 6 and 7 gallons of water, respectively. In addition, dissolved oxygen concentrations were measured and are presented in Table 4. The ground water 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 collected from the Unocal monitoring wells 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 from the Unocal wells to date are summarized in Tables 2 and 3. The concentrations of Total Petroleum Hydrocarbons (TPH) as gasoline and

benzene detected in the ground water sample collected from the Unocal monitoring wells 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

REGISTERED GEOLOGIST
JOEL G. GREGER
No. EG 1633
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

License No. EG 1633
Exp. Date 8/31/98

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

cc: Mr. Mark W. Boyd, Kaprealian Engineering, 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)
			(Monitored and Sampled on October 16, 1996)			
MW1*	506.14	14.50	27.89	0	--	0
MW2	505.70	14.12	25.65	0	No	6
MW3*	506.56	13.10	25.38	0	--	0
MW4	506.63	12.98	25.43	0	No	7
MW5*	506.12	14.15	23.58	0	--	0
MW6*	505.03	13.72	23.41	0	--	0
MW7*	505.25	13.58	23.65	0	--	0
			(Monitored and Sampled on July 16, 1996)			
MW1*	506.07	14.57	27.89	0	No	0
MW2	505.82	14.00	25.64	0	No	9
MW3*	506.42	13.24	25.41	0	No	0
MW4*	506.70	12.91	25.46	0	No	0
MW5*	506.00	14.27	23.58	0	No	0
MW6*	WELL WAS OBSTRUCTED BY ROOTS					
MW7*	505.61	13.22	23.65	0	No	0
			(Monitored and Sampled on April 17, 1996)			
MW1	506.17	14.47	27.88	0	No	9
MW2	505.89	13.93	25.65	0	No	8
MW3	506.62	13.04	25.40	0	No	9
MW4	506.53	13.08	25.45	0	No	9
MW5	506.05	14.22	23.57	0	No	8
MW6	505.09	13.66	23.19	0	No	8
MW7	505.62	13.21	23.64	0	No	8
			(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

Table 1

Summary of Monitoring Data

Well #	Well Casing Elevation (feet)**
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

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
MW1	11/18/89	ND	ND	ND	ND	ND	--
	3/8/90	ND	ND	ND	ND	ND	--
	6/5/90	ND	ND	ND	ND	ND	--
	9/7/90	ND	ND	1.2	ND	ND	--
	12/24/90	ND	ND	ND	ND	0.40	--
	4/10/91	ND	ND	ND	ND	ND	--
	7/10/91	ND	ND	ND	ND	ND	--
	4/21/94	ND	ND	ND	ND	ND	--
	7/21/94	SAMPLED ANNUALLY					
	4/17/95	ND	ND	ND	ND	ND	--
	4/17/96	ND	ND	ND	ND	ND	ND
MW2	11/18/89	53,000	540	500	130	22,000	--
	3/8/90	26,000	230	410	1,300	2,100	--
	6/5/90	31,000	250	460	950	9,200	--
	9/7/90	ND	ND	1.5	ND	ND	--
	12/24/90	32,000	440	340	460	13,000	--
	4/10/91	22,000	170	190	490	6,200	--
	7/10/91	14,000	70	160	570	5,400	--
	10/14/91	11,000	79	130	660	4,700	--
	1/14/92	5,600	36	120	450	2,600	--
	4/6/92	760	6.3	2.1	ND	130	--
	7/7/92	44,000	160	1,100	1,000	17,000	--
	10/16/92	290	2.3	ND	5.1	15	--
	1/14/93	19,000	75	430	900	8,400	--
	4/22/93	49,000	150	1,000	3,000	18,000	--
	7/20/93	25,000	68	94	1,000	6,200	--
	10/20/93	12,000	27	10	100	3,000	--
	1/20/94	20,000	ND	ND	270	3,300	--
	4/21/94	27,000	85	65	880	5,300	--
	7/21/94	31,000	58	29	940	6,200	--
	10/19/94	4,100	16	3.5	8.6	1,100	--
	1/18/95	5,100	6.8	7.3	100	1,500	--
	4/17/95	320	1.3	0.67	6.6	74	--
	7/18/95	12,000	25	24	550	3,700	--
	10/17/95	77,000	60	58	760	8,300	220
	1/17/96	7,000	15	ND	150	1,600	370
	4/17/96	19,000	ND	ND	600	4,900	6,100
	7/16/96	23,000	16	22	900	4,500	410
	10/16/96	14,000	28	31	1,600	6,900	9,600

Table 2

Summary of Laboratory Analyses
Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
MW3	11/18/89	ND	0.35	ND	ND	ND	--
	3/8/90	ND	ND	ND	ND	ND	--
	6/5/90	ND	ND	ND	ND	ND	--
	9/7/90	1,100	11	ND	6.6	16	--
	12/24/90	ND	ND	ND	ND	ND	--
	4/10/91	ND	ND	ND	ND	ND	--
	7/10/91	ND	ND	ND	ND	ND	--
	10/14/91	ND	ND	ND	ND	ND	--
	1/14/92	ND	ND	ND	ND	ND	--
	4/6/92	ND	ND	ND	ND	ND	--
	7/7/92	ND	ND	ND	ND	ND	--
	10/16/92	ND	ND	ND	ND	ND	--
	1/14/93	ND	ND	ND	ND	ND	--
	4/22/93	ND	ND	ND	ND	ND	--
	7/20/93	ND	ND	ND	ND	ND	--
	10/20/93	ND	ND	ND	ND	ND	--
	1/20/94	SAMPLED ANNUALLY					
	4/21/94	ND	ND	ND	ND	ND	--
	7/21/94	SAMPLED SEMI-ANNUALLY					
	10/19/94	ND	ND	0.61	ND	0.51	--
	4/17/95	ND	ND	ND	ND	ND	--
	10/17/95	ND	ND	ND	ND	ND	ND
	1/17/96	SAMPLED ANNUALLY*					
	4/17/96	ND	ND	ND	ND	ND	ND
MW4	11/18/89	990	9.8	10	7.1	4.7	--
	3/8/90	1,200	18	8.4	37	28	--
	6/5/90	1,400	1.2	4.7	24	12	--
	9/7/90	15,000	100	140	210	4,600	--
	12/24/90	1,400	ND	8.7	15	10	--
	4/10/91	950	0.84	4.3	9.6	5.0	--
	7/10/91	830	8.4	19	7.7	7.2	--
	10/14/91	880	3.8	2.2	8.6	5.8	--
	1/14/92	1,500	4.2	7.1	18	9.2	--
	4/6/92	660	1.3	3.8	2.9	4.1	--
	7/7/92	340	ND	2.2	2.4	2.4	--
	10/16/92	300	2.1	ND	4.8	13	--
	1/14/93	920	ND	6.3	12	3.9	--
	4/22/93	1,100	8.8	1.0	7.2	6.0	--
	7/20/93	NOT SAMPLED - SAMPLING ACCESS DENIED					
	10/20/93	640	ND	2.5	2.3	1.9	--

Table 2

Summary of Laboratory Analyses
Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
MW4	1/20/94	1,200	ND	2.6	4.7	7.4	--
(Cont.)	4/21/94	380	0.83	1.2	1.2	1.7	--
	7/21/94	320	0.51	1.4	1.0	1.6	--
	10/19/94	750	ND	3.6	4.2	3.4	--
	1/18/95	790	1.5	3.3	1.2	2.6	--
	4/17/95	570	2.8	ND	3.3	3.9	--
	7/18/95	340	1.0	1.9	2.8	2.7	--
	10/17/95	260	1.1	0.57	0.69	1.6	2.0
	1/17/96	SAMPLED SEMI-ANNUALLY					
	4/17/96	720	3.0	2.6	6.1	6.9	ND
	10/16/96	1,100	6.6	23	24	85	15
MW5	4/10/91	630	35	14	47	30	--
	7/10/91	220	5.1	8.7	9.1	9.7	--
	10/14/91	660	55	4.4	50	66	--
	1/14/92	99	1.0	1.2	ND	0.32	1.2
	4/6/92	240†	ND	ND	0.35	ND	--
	7/7/92	76	0.48	1.1	0.32	1.3	1.5
	10/16/92	180	7.8	1.1	17	6.4	2.0
	1/14/93	91	ND	0.53	1.2	11	--
	4/22/93	94	1.2	ND	ND	1.3	0.82
	7/20/93	89	1.1	0.51	ND	1.8	2.2
	10/20/93	110	0.8	ND	ND	ND	--
	1/20/94	ND	ND	ND	ND	ND	--
	4/21/94	ND	ND	ND	ND	ND	--
	7/21/94	ND	ND	ND	ND	ND	--
	10/19/94	ND	ND	0.71	ND	0.57	--
	1/18/95	ND	ND	ND	ND	ND	--
	4/17/95	ND	ND	ND	ND	ND	--
	7/18/95	ND	ND	ND	ND	1.1	--
	10/17/95	ND	ND	ND	ND	ND	ND
	1/17/96	SAMPLED ANNUALLY*					
	4/17/96	ND	ND	ND	ND	ND	ND
MW6	4/10/91	ND	ND	ND	ND	ND	--
	7/10/91	ND	ND	ND	ND	ND	--
	10/14/91	ND	ND	ND	ND	ND	--
	1/14/92	ND	ND	ND	ND	ND	--
	4/6/92	ND	ND	ND	ND	ND	--
	7/7/92	ND	ND	ND	ND	ND	--
	10/16/92	WELL WAS OBSTRUCTED					

Table 2

Summary of Laboratory Analyses
Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
MW6	1/14/93	WELL WAS OBSTRUCTED					
(Cont.)	4/22/93	WELL WAS OBSTRUCTED					
	7/20/93	WELL WAS OBSTRUCTED					
	10/20/93	ND	ND	ND	ND	ND	--
	1/20/94	ND	ND	ND	ND	ND	--
	4/21/94	ND	ND	ND	ND	ND	--
	7/21/94	ND	ND	ND	ND	ND	--
	10/19/94	WELL WAS OBSTRUCTED BY ROOTS					
	1/18/95	WELL WAS OBSTRUCTED BY ROOTS					
	4/17/95	ND	ND	ND	ND	ND	--
	7/18/95	ND	ND	ND	ND	ND	--
	10/17/95	ND	ND	ND	ND	ND	2.2
	1/17/96	SAMPLED ANNUALLY*					
	4/17/96	ND	ND	ND	ND	ND	ND
MW7	4/10/91	ND	ND	ND	ND	ND	--
	7/10/91	ND	ND	ND	ND	ND	--
	10/14/91	ND	ND	ND	ND	ND	--
	1/14/92	ND	ND	ND	ND	ND	--
	4/06/92	ND	ND	ND	ND	ND	--
	7/7/92	ND	ND	ND	ND	ND	--
	10/16/92	ND	ND	ND	ND	ND	--
	1/14/93	ND	ND	ND	ND	ND	--
	4/22/93	ND	ND	ND	ND	ND	--
	7/20/93	ND	ND	ND	ND	ND	--
	10/20/93	ND	ND	ND	ND	ND	--
	1/20/94	ND	ND	ND	ND	ND	--
	4/21/94	ND	ND	ND	ND	ND	--
	7/21/94	ND	ND	ND	ND	ND	--
	10/19/94	ND	ND	0.87	ND	0.61	--
	1/18/95	ND	ND	ND	ND	ND	--
	4/17/95	ND	ND	ND	ND	ND	--
	7/18/95	ND	ND	ND	ND	ND	--
	10/17/95	ND	ND	ND	ND	ND	3.5
	1/17/96	SAMPLED ANNUALLY*					
	4/17/96	ND	ND	ND	ND	ND	ND

* Annual sampling beginning April, 1996.

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

ND = Non-detectable.

Table 2

Summary of Laboratory Analyses
Water

-- Indicates analysis was not performed.

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

Note: The detection limit for results reported as ND by Sequoia Analytical Laboratory is equal to the stated detection limit times the dilution factor indicated on the laboratory analytical sheets.

Prior to August 1, 1995, the total purgeable petroleum hydrocarbon (TPH as gasoline) quantification range used by Sequoia Analytical Laboratory was C4 - C12. Since August 1, 1995, the quantification range used by Sequoia Analytical Laboratory is C6 - C12.

Laboratory analyses data prior to January 20, 1994, were provided by Kaprealian Engineering, Inc.

Table 3

Summary of Laboratory Analyses
Water

Well #	Date	TPH as Diesel (µg/L)	Total Oil & Grease (mg/L)	Trichloroethene (µg/L)	Chloroform (µg/L)
MW1	11/18/89	--	3.1	0.55	ND
	3/8/90	--	4.7	ND	ND
	6/5/90	--	ND	ND	ND
	9/7/90	--	ND	ND	ND
	12/24/90	--	ND	ND	ND
	4/10/91	--	ND	ND	ND
	7/10/91	--	ND	ND	ND
	4/21/94	--	ND	ND	ND
	4/17/95	ND	ND	ND	0.69
	4/17/96	100	ND	ND	ND

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

mg/L = milligrams per liter.

µg/L = micrograms per liter.

ND = Non-detectable.

-- Indicates analysis was not performed.

Table 4

Summary of Monitoring Data

Well	Date	Dissolved Oxygen Concentrations Before Purging (mg/L)	After Purging (mg/L)
MW1	7/16/96	4.24	4.28
MW2	7/18/95	--	4.22
	10/17/95	--	3.96
	1/17/96	--	5.25
	4/17/96	--	2.59
	7/16/96	4.46	4.35
	10/16/96	3.87	2.92
MW3	7/16/96	4.19	4.20
MW4	7/16/96	4.25	4.30
MW5	7/16/96	4.18	4.21
MW6	7/16/96	WELL WAS OBSTRUCTED BY ROOTS	
MW7	7/16/96	4.20	4.19

mg/L = milligrams per liter

-- Indicates measurement was not taken.

Note: Measurements were taken using a LaMotte DO4000 dissolved oxygen meter.

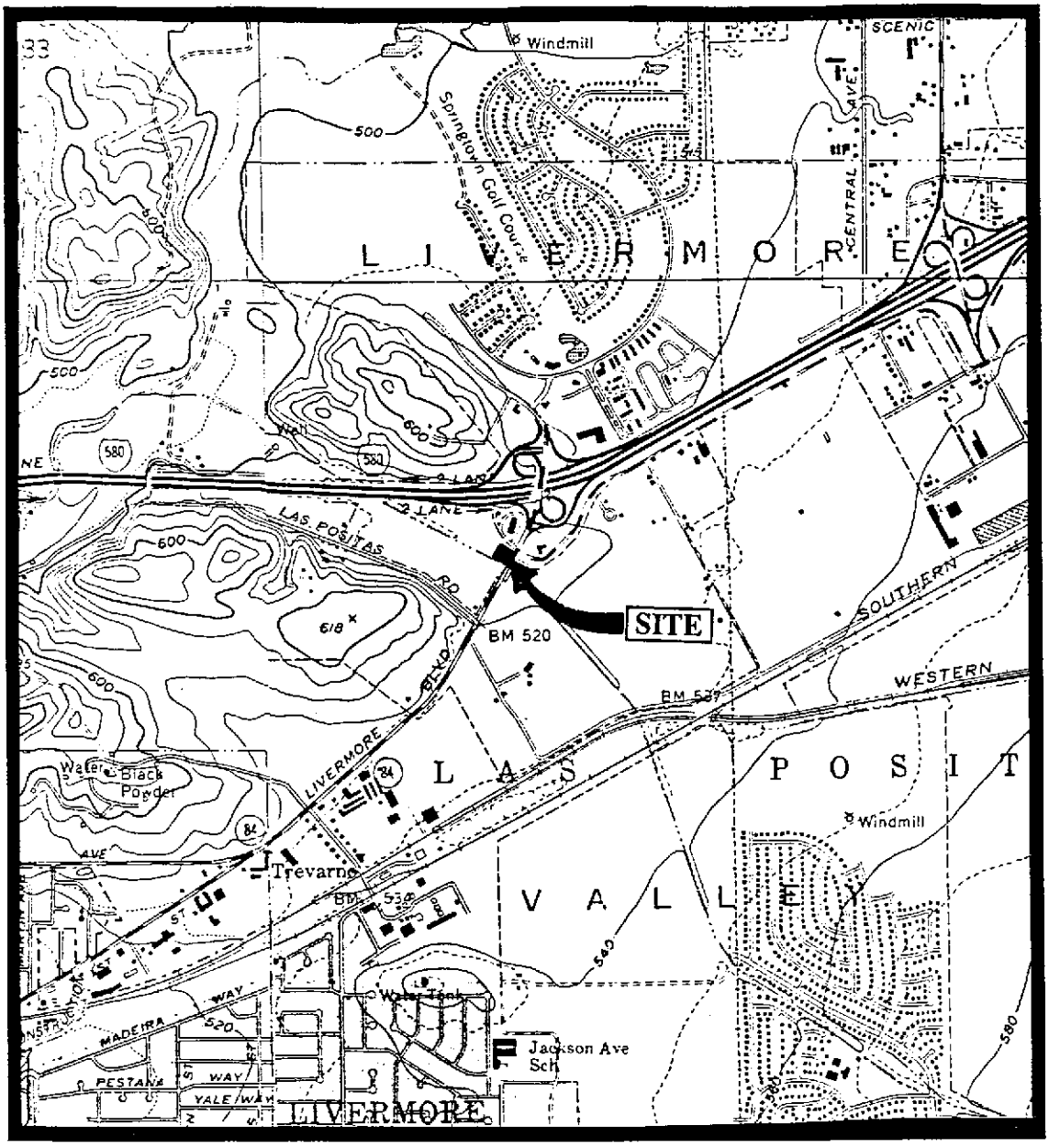
Table 5

Summary of Monitoring Data
Chevron Wells
(Data provided by Blaine Tech Services, Inc.)

Well #	Ground Water Elevation (feet)	Depth to Water (feet)♦	Total Well Depth (feet)♦	Top of Casing Elevation (feet)*
		(Monitored on October 16, 1996)		
C-1	508.58	11.81	18.43	520.39
C-2	508.36	12.40	24.20	520.76
C-5	508.82	12.00	19.00	520.82
C-6	508.12	11.50	21.95	519.62
C-7	508.30	12.00	21.70	520.30
C-8	507.78	11.96	12.36	519.74
C-9	508.42	11.30	22.20	519.72
C-10	506.91	13.50	34.58	520.41
C-11	506.99	13.05	19.50	520.04
C-14	507.98	12.10	12.20	520.08
C-16	INACCESSIBLE - UNABLE TO LOCATE			
C-17	507.12	13.70	20.00	520.82
C-19	505.13	13.83	24.05	518.96
C-20	507.43	13.24	24.12	520.67
C-21	508.17	11.47	24.40	519.64

♦ The depth to water and total well depth measurements are taken from the top of the well casings.

* Relative to Mean Sea Level.

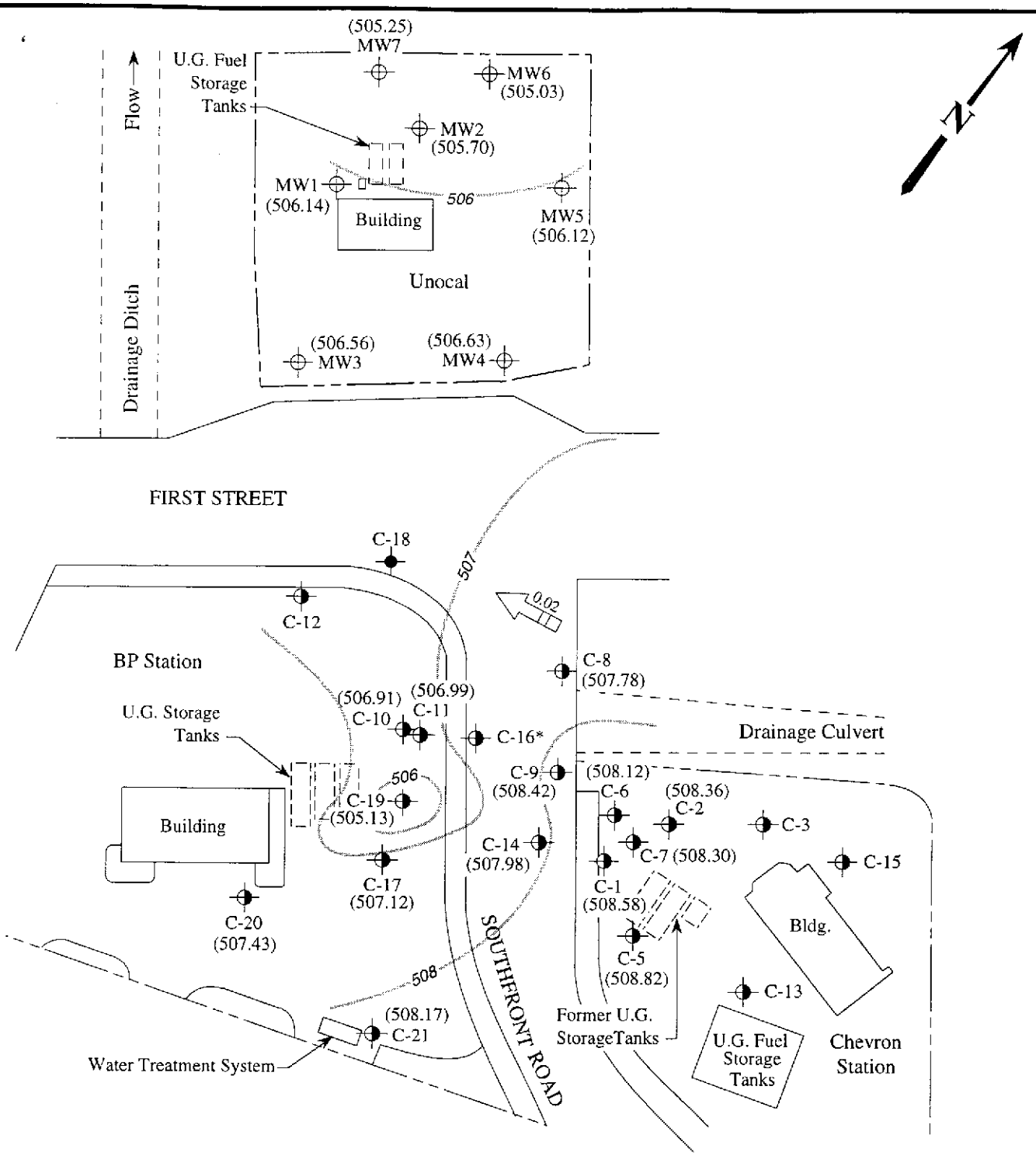


Base modified from 7.5 minute U.S.G.S. Livermore and Altamont Quadrangles (photorevised 1980 and 1981, respectively)

0 2000 4000

Approx. scale feet

mpds SERVICES, INCORPORATED	**UNOCAL SERVICE STATION # 6034** **4700 FIRST STREET** **LIVERMORE, CALIFORNIA**	**LOCATION MAP**



LEGEND

- Monitoring well (Unocal)
- Monitoring well (Chevron, existing)
- Monitoring well (Chevron, abandoned)
- ( ) 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 inaccessible

0 80 160

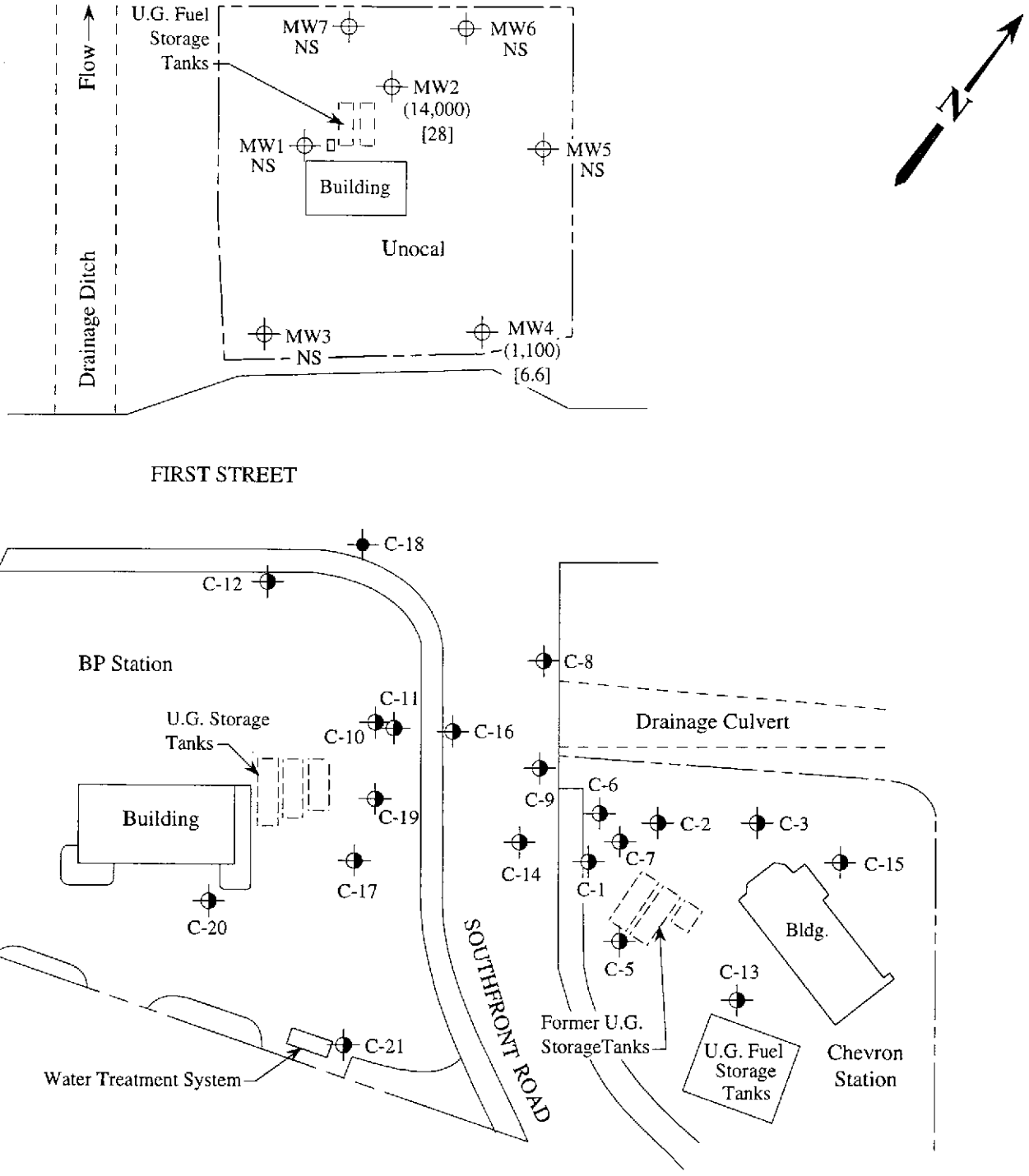
Approx. scale feet

POTENTIOMETRIC SURFACE MAP FOR THE OCTOBER 16, 1996 JOINT MONITORING EVENT

mpds SERVICES, INCORPORATED

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 µg/L
- [ ] Concentration of benzene in µg/L
- NS Not sampled

0 80 160

Approx. scale feet

PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON OCTOBER 16, 1996

mpds SERVICES, INCORPORATED

UNOCAL SERVICE STATION # 6034
4700 FIRST STREET
LIVERMORE, CALIFORNIA

FIGURE **2**

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 - 1st St., Livermore	Sampled: Oct 16, 1996
2401 Stanwell Dr., Ste. 300	Matrix Descript:	Water	Received: Oct 16, 1996
Concord, CA 94520	Analysis Method:	EPA 5030/8015 Mod./8020	Reported: Nov 14, 1996
Attention: Jarrel Crider	First Sample #:	610-1007	

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
610-1007	MW-2	14,000	28	31	1,600	6,900
610-1008	MW-4	1,100	6.6	23	24	85
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

6101007.MPD <1>

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 - 1st St., Livermore	Sampled:	Oct 16, 1996
2401 Stanwell Dr., Ste. 300	Matrix Descript:	Water	Received:	Oct 16, 1996
Concord, CA 94520	Analysis Method:	EPA 5030/8015 Mod./8020	Reported:	Nov 14, 1996
Attention: Jarrel Crider	First Sample #:	610-1007		

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
610-1007	MW-2	Gasoline	20	10/29/96	HP-2	124
610-1008	MW-4	Gasoline	10	10/29/96	HP-2	98

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager

6101007.MPD <2>

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services	Client Project ID:	Unocal #6034, 4700 - 1st St., Livermore	Sampled:	Oct 16, 1996
2401 Stanwell Dr., Ste. 300	Sample Descript:	Water	Received:	Oct 16, 1996
Concord, CA 94520	Analysis for:	MTBE (Modified EPA 8020)		
Attention: Jarrel Crider	First Sample #:	610-1007	Analyzed:	Oct 29, 1996
			Reported:	Nov 14, 1996

LABORATORY ANALYSIS FOR: MTBE (Modified EPA 8020)

Sample Number	Sample Description	Detection Limit µg/L	Sample Result µg/L
610-1007	MW-2	10	9,600
610-1008	MW-4	5.0	15

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

6101007.MPD <3>

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

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

Client Project ID: Unocal #6034, 4700 - 1st St., Livermore
Matrix: Liquid
QC Sample Group: 6101007-008
Reported: Nov 14, 1996

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb
MS/MSD Batch#:	6101013	6101013	6101013	6101013
Date Prepared:	10/29/96	10/29/96	10/29/96	10/29/96
Date Analyzed:	10/29/96	10/29/96	10/29/96	10/29/96
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:	100	105	110	107
Matrix Spike Duplicate % Recovery:	105	105	110	108
Relative % Difference:	4.9	0.0	0.0	1.6
LCS Batch#:	2LCS102996	2LCS102996	2LCS102996	2LCS102996
Date Prepared:	10/29/96	10/29/96	10/29/96	10/29/96
Date Analyzed:	10/29/96	10/29/96	10/29/96	10/29/96
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	105	105	115	112
% Recovery Control Limits:	60-140	60-140	60-140	60-140

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.

M P D S Services, Inc.
2401 Stanwell Drive, Suite 400, Concord, CA 94520
Tel: (510) 602-5120 Fax: (510) 689-1918

961026C

CHAIN OF CUSTODY

SAMPLER: (JOE) HOVSIA AJEMIAN
WITNESSING AGENCY:
UNOCAL S/S # 6034 CITY: Livermore
ADDRESS: 4700 1st st.

ANALYSES REQUESTED

TURN AROUND TIME: Regular

SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-GAS BTEX & MTBE	TPH-DIESEL	TOG	8010					REMARKS
MW-2	10-16-96	10:30 A.M	✓			2(VOA)	wells	✓								6101007 A,B
MW-4	"	9:40 A.M.	✓			"	"	✓								6101008 ↓

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:
(SIGNATURE) Joe Ajemian	10-16-96 12:10 p.m	(SIGNATURE) LDCardenas 10-16-96 1210
(SIGNATURE) LDCardenas	10-17-96 1238	(SIGNATURE)
(SIGNATURE)	10-17 1400	(SIGNATURE)
(SIGNATURE)		(SIGNATURE)

THE FOLLOWING MUST BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:

1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? Y
2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? Y
3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? N
4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? Y

SIGNATURE: LDCardenas TITLE: analyst DATE: 10-16-96