

MPDS-UN5366-06
June 22, 1995

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

Attention: Mr. Edward C. Ralston

RE: Quarterly Data Report
Unocal Service Station #5366
7375 Amador Valley Boulevard
Dublin, California

Dear Mr. Ralston:

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. 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. The ground water flow directions at the Unocal site during the most recent quarter are shown on the attached Figures 1 and 2.

A joint monitoring event was conducted with the consultant for the nearby former Shell and B.P. service station sites on May 24, 1995. The monitoring data collected for the former Shell and B.P. service stations are summarized in Table 4. Monitoring data from the Arco service station wells were unavailable. The ground water flow direction in the vicinity of these sites during the most recent quarter is also shown on the attached Figure 1.

Ground water samples were collected from the Unocal wells on June 13, 1995. Prior to sampling, the Unocal wells were each purged of 8 gallons of water. 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 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, TPH as diesel, and benzene detected in the ground water samples collected from the Unocal wells this quarter are shown on the attached Figure 3. 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

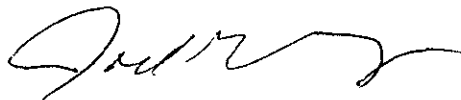
A copy of this report should be sent to Ms. Eva Chu of the Alameda County Health Care Services Agency.

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

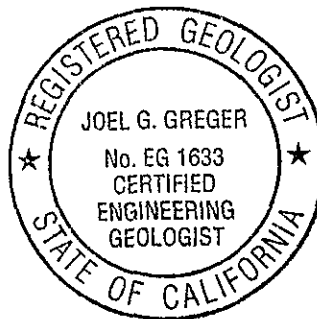
Sincerely,

MPDS Services, Inc.


Sarkis 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, 2 & 3
Laboratory Analyses
Chain of Custody documentation

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

TABLE 1

SUMMARY OF MONITORING DATA
UNOCAL MONITORING WELLS

<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>
(Monitored and Sampled June 13, 1995)						
MW1	327.25	8.82	19.45	0	No	8
MW2*	327.81	8.97	19.24	0	--	0
MW3*	327.80	9.18	18.90	0	--	0
MW4*	327.22	9.21	19.40	0	--	0
MW5	327.31	8.65	19.68	0	No	8
(Monitored on May 24, 1995)						
MW1	327.09	8.98	19.49	0	--	0
MW2	328.45	8.33	19.25	0	--	0
MW3	328.72	8.26	18.93	0	--	0
MW4	327.75	8.68	19.40	0	--	0
MW5	327.98	7.98	20.00	0	--	0
(Monitored and Sampled February 15, 1995)						
MW1	328.27	7.80	19.52	0	No	8
MW2	329.20	7.58	19.30	0	No	8
MW3	329.36	7.62	18.98	0	No	8
MW4	328.31	8.12	19.44	0	No	8
MW5	328.20	7.76	20.02	0	No	8.5
(Monitored and Sampled November 18, 1994)						
MW1	326.38	9.69	19.49	0	No	7
MW2*	326.83	9.95	19.26	0	--	0
MW3*	326.83	10.15	18.91	0	--	0
MW4*	326.33	10.10	19.44	0	--	0
MW5	325.87	10.09	19.99	0	No	7

TABLE 1 (Continued)

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 August 25, 1994)						
MW1	325.49	10.58	19.49	0	No	6.5
MW2*	326.03	10.75	19.27	0	--	0
MW3*	326.05	10.93	18.94	0	--	0
MW4*	325.49	10.94	19.43	0	--	0
MW5	325.53	10.43	20.00	0	No	7

Well #	Well Casing Elevation (feet)**
MW1	336.07
MW2	336.78
MW3	336.98
MW4	336.43
MW5	335.96

- ♦ 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 have been surveyed relative to Mean Sea Level (MSL), per the County of Alameda Benchmark, standard brass disk in the westerly center island of Amador Valley Boulevard at Village Parkway, 15 feet from the nose and 0.8 feet from the northerly curb, stamped "VL PK AM VY, 1977" (elevation = 337.40 feet MSL).
- Sheen determination was not performed.

TABLE 2

SUMMARY OF LABORATORY ANALYSES
 UNOCAL MONITORING WELLS
 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>
6/13/95	MW1▲	1,300	28	ND	15	ND
	MW2	SAMPLED ANNUALLY				
	MW3	SAMPLED ANNUALLY				
	MW4	SAMPLED ANNUALLY				
	MW5▲	14,000	2,200	ND	2,200	ND
2/15/95	MW1	2,400	61	ND	87	34
	MW2	ND	ND	ND	ND	ND
	MW3	ND	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND
	MW5	16,000	2,700	ND	1,700	50
11/18/94	MW1	820	21	ND	19	6.6
	MW2	SAMPLED ANNUALLY				
	MW3	SAMPLED ANNUALLY				
	MW4	SAMPLED ANNUALLY				
	MW5	18,000	2,400	52	1,600	51
8/25/94	MW1	650	10	1.6	7.7	2.1
	MW5	9,400	3,800	ND	2,200	150
5/17/94	MW1	1,000	41	ND	49	32
	MW2	SAMPLED ANNUALLY				
	MW3	SAMPLED ANNUALLY				
	MW4	SAMPLED ANNUALLY				
	MW5	20,000	4,300	ND	2,300	130
2/11/94	MW1	970	40	3.2	2.8	15
	MW2	ND	ND	ND	ND	ND
	MW3	ND	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND
	MW5	18,000	2,400	140	920	3,100
11/11/93	MW1	350	19	2.5	2.7	3.4

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
 UNOCAL MONITORING WELLS
 WATER

<u>Date</u>	<u>Well #</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethyl-benzene</u>	<u>Xylenes</u>
8/12/93	MW1	1,000	46	ND	29	6.3
5/10/93	MW1	1,600	39	0.40	25	3.3
2/10/93	MW1	3,000	230	ND	340	200
	MW2	ND	ND	ND	ND	ND
	MW3	ND	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND
11/10/92	MW1	1,100	49	ND	71	21
8/12/92	MW1	1,700	51	ND	93	21
5/22/92	MW1	2,500	120	ND	230	37
	MW2	ND	ND	ND	ND	ND
2/25/92	MW1	3,900	500	ND	450	400
11/13/91	MW1	860	40	ND	11	2.5
8/12/91	MW1	1,100	68	2.6	210	9.3
5/15/91	MW1	2,100	220	ND	360	27
2/14/91	MW1	1,900	150	2.9	340	43
11/14/90	MW1	2,000	110	0.52	410	16
8/15/90	MW1	2,200	160	ND	570	45
5/18/90	MW1	2,000	140	1.8	460	19
	MW2	ND	ND	ND	ND	ND
	MW3	ND	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
 UNOCAL MONITORING WELLS
 WATER

<u>Date</u>	<u>Well #</u>	<u>TPH as Gasoline</u>	<u>Benzene</u>	<u>Toluene</u>	<u>Ethylbenzene</u>	<u>Xylenes</u>
2/06/90	MW1	2,700	170	ND	350	29
	MW2	ND	ND	ND	ND	ND
	MW3	ND	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND
10/20/89	MW1	ND	ND	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3	ND	ND	ND	0.38	ND
	MW4	ND	ND	ND	ND	ND
7/27/89	MW1	1,900	130	6.3	ND	68
	MW2	ND	ND	ND	ND	ND
	MW3	ND	ND	ND	ND	ND
	MW4	ND	0.34	ND	ND	ND
5/22/89	MW3	ND	ND	ND	ND	ND
	MW1	1,000	97	0.8	170	24
	MW2	ND	ND	ND	ND	ND
	MW3	880	9.6	9.7	19	12.7
MW4	ND	0.3	ND	ND	ND	
1/26/89	MW1	1,900	240	1.8	81	30
	MW2	ND	ND	ND	ND	ND
	MW3	ND	ND	ND	ND	ND
	MW4	ND	0.67	ND	ND	ND
10/28/88	MW1	5,200	150	ND	250	12
	MW2	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND
7/25/88	MW1	6,100	170	2.1	94	94
	MW2	ND	ND	ND	ND	ND
	MW3	--	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES
UNOCAL MONITORING WELLS
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>
4/29/88	MW1	10,000	960	17	870	1,500
	MW2	170	2.7	0.6	ND	13
	MW3	ND	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND

▲ Dissolved oxygen concentrations were as follows:

On May 24, 1995: 2.32 mg/L in MW1, 2.80 mg/L in MW5

On Jun 13, 1995: 2.97 mg/L in MW1, 3.03 mg/L in MW5

ND = Non-detectable.

-- Indicates that analysis was not performed.

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

Note: Laboratory analyses data prior to February 11, 1994, were provided by Kaprealian Engineering, Inc.

TABLE 3

SUMMARY OF LABORATORY ANALYSES
 UNOCAL MONITORING WELLS
 WATER

<u>Date</u>	<u>Well #</u>	<u>TPH as Diesel</u>	<u>Total Oil & Grease (mg/L)</u>	<u>EPA 8010 Constituents</u>
6/13/95	MW5	2,400**	--	--
2/15/95	MW3	ND	ND	--
	MW5	2,000*	--	--
11/18/94	MW5	2,000**	--	--
8/25/94	MW5	2,000**	--	--
5/17/94	MW5	2,500*	--	--
2/11/94	MW3	ND	ND	--
	MW5	2,300*	--	--
5/10/93	MW1	730*	--	--
2/10/93	MW3	200	ND	--
5/18/90	MW3	ND	ND	ND
2/06/90	MW3	ND	ND	ND
10/20/89	MW3	ND	2.5	ND
7/27/89	MW3	ND	1.6	ND
5/22/89	MW3	--	--	--
4/28/89	MW3	72	ND	ND
1/26/89	MW3	ND	--	ND
10/28/88	MW3	ND	--	ND
7/25/88	MW3	ND	--	ND
4/29/88	MW3	ND	--	ND

TABLE 3 (Continued)

SUMMARY OF LABORATORY ANALYSES
UNOCAL MONITORING WELLS
WATER

* Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a diesel and non-diesel mixture.

** Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be diesel.

ND = Non-detectable.

-- Indicates analysis was not performed.

mg/L = milligrams per liter.

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

Note: Laboratory analyses data prior to February 11, 1994, were provided by Kaprealian Engineering, Inc.

TABLE 4

**SUMMARY OF MONITORING DATA
WATER**

<u>Well #</u>	<u>Ground Water Elevation (feet)</u>	<u>Depth to Water (feet)</u>	<u>Well Casing Elevation (feet)*</u>
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**BP Service Station Wells
(Monitored on May 24, 1995)
Provided by Alisto Engineering Group**

MW1	328.37	6.80	335.17
MW2	328.08	6.50	334.58
MW3	328.30	6.83	335.13
AW4	328.09	5.32	333.41
AW5	327.54	7.27	334.81
AW6	328.03	6.87	334.90

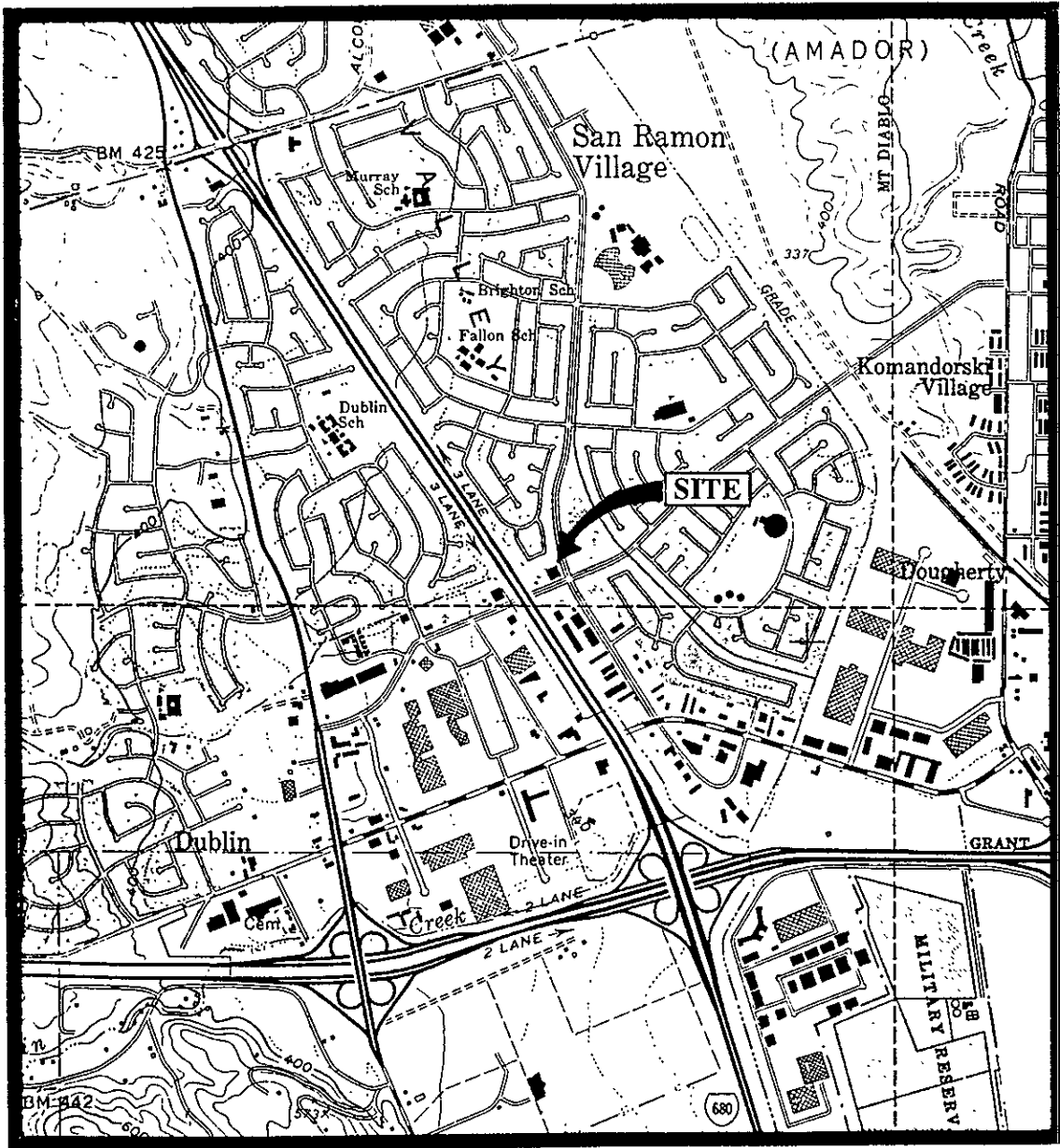
**Shell Service Station Wells
(Monitored on May 24, 1995)
Provided by Blaine Tech Services, Inc.**

MW1	326.92	7.91	334.83
MW2	326.94	10.02	336.96
MW3	327.26	9.67	336.93
MW4	326.41	10.73	337.14
MW5	326.92	8.04	334.96
MW6	326.62	8.80	335.42
MW7	326.41	6.82	333.23
MW8	328.24	7.56	335.80
MW9	326.82	7.75	334.57
MW11	326.51	7.69	334.20
MW12	325.58	6.95	332.53
MW13	325.74	9.90	335.64
RW1	N/A	9.66	NA

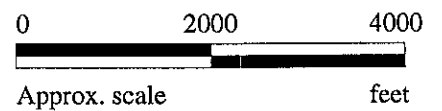
* Relative MSL.

N/A = Not applicable.

NA = Not available.



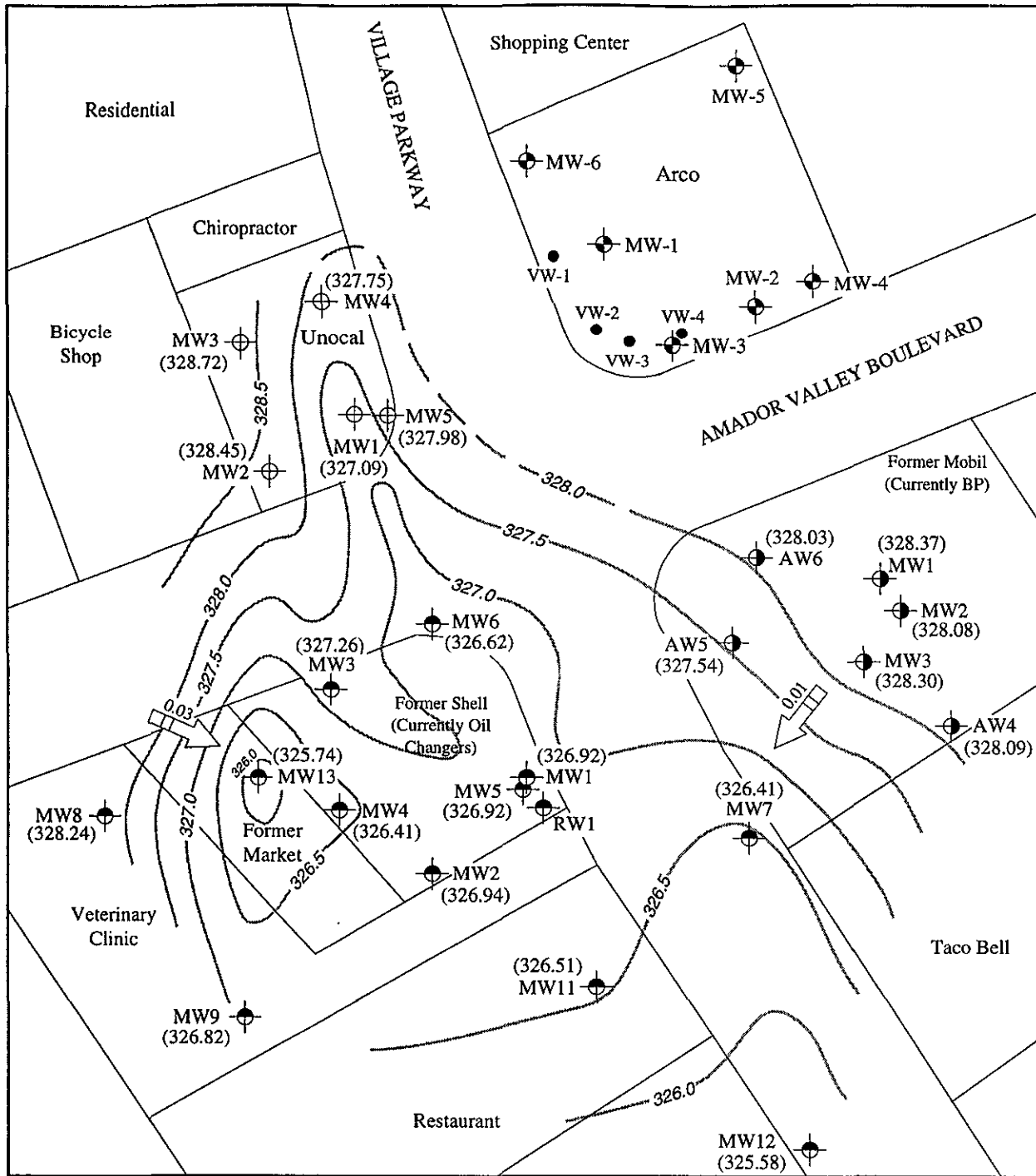
Base modified from 7.5 minute U.S.G.S. Dublin Quadrangle
(photorevised 1980)



MPDS
SERVICES, INCORPORATED

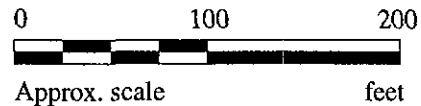
**UNOCAL SERVICE STATION #5366
7375 AMADOR VALLEY BLVD.
DUBLIN, CALIFORNIA**

**LOCATION
MAP**



LEGEND

- ⊕ Monitoring well (Unocal)
- ⊙ Monitoring well (BP)
- ⊙ Monitoring well (Shell)
- ⊙ Monitoring well (Arco)
- Vapor extraction well (Arco)
- () Ground water elevation in feet above Mean Sea Level
- ➔### Direction of ground water flow with approximate hydraulic gradient
- Contours of ground water elevation

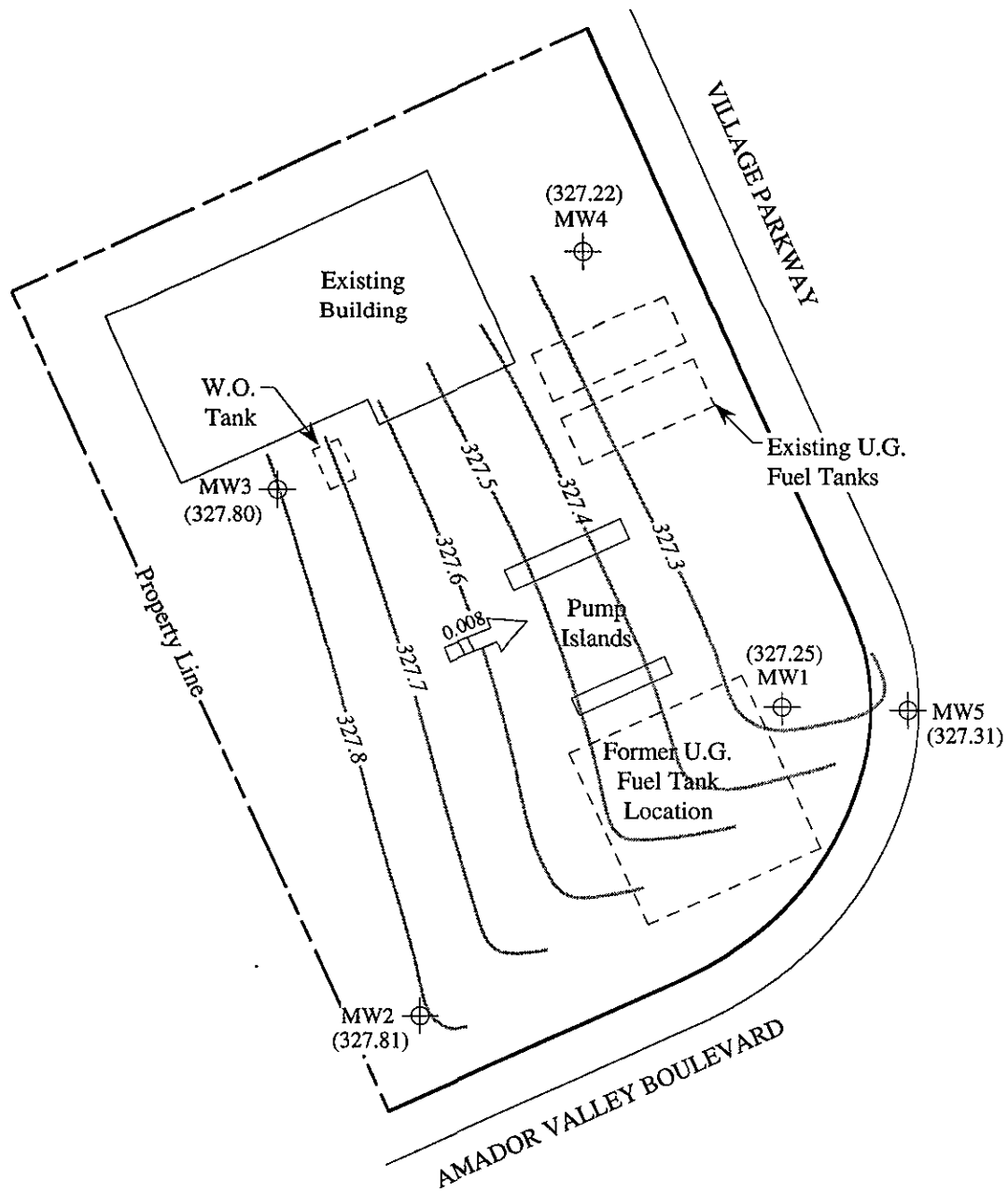


POTENTIOMETRIC SURFACE MAP FOR THE MAY 24, 1995 JOINT MONITORING EVENT







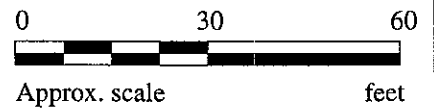
**UNOCAL SERVICE STATION #5366
7375 AMADOR VALLEY BLVD.
DUBLIN, CALIFORNIA**

**FIGURE
1**

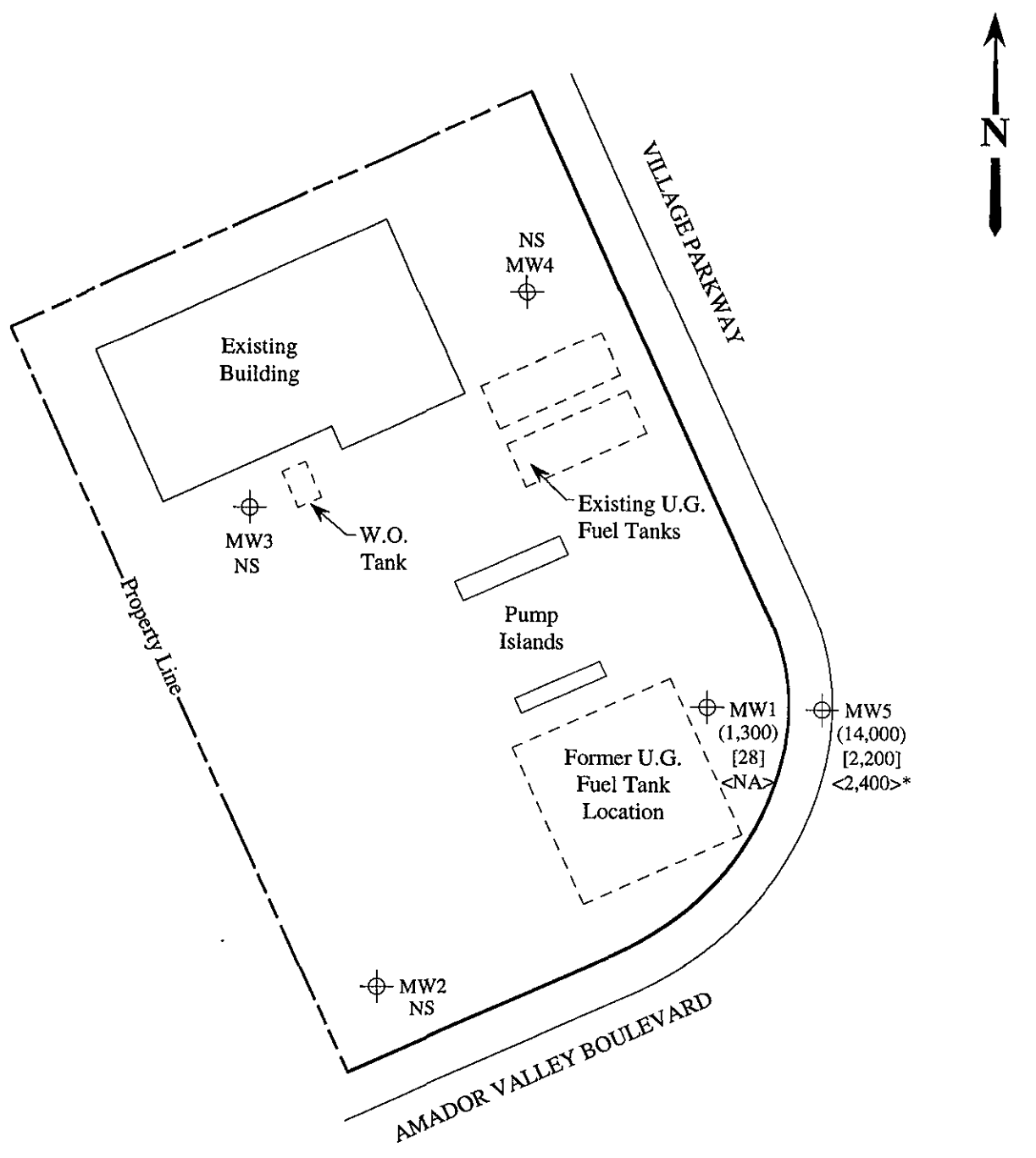


LEGEND

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

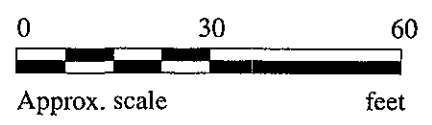


POTENTIOMETRIC SURFACE MAP FOR THE JUNE 13, 1995 MONITORING EVENT



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 $\mu\text{g/L}$
- NS = Not sampled, NA = Not analyzed



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

PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON JUNE 13, 1995



UNOCAL SERVICE STATION #5366
7375 AMADOR VALLEY BLVD.
DUBLIN, CALIFORNIA

FIGURE
3



MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Sarkis Karkarian

Client Project ID: Unocal #5366, 7375 Amador Valley Blvd.,
Matrix Descript: Water Dublin
Analysis Method: EPA 5030/8015/8020
First Sample #: 506-0716

Sampled: Jun 13, 1995
Received: Jun 13, 1995
Reported: Jun 14, 1995

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
506-0716	MW-1	1,300	28	ND	15	ND
506-0717	MW-5	14,000	2,200	ND	2,200	ND

Detection Limits:	50	0.50	0.50	0.50	0.50
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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
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Sarkis Karkarian

Client Project ID: Unocal #5366, 7375 Amador Valley B
Matrix Descript: Water
Analysis Method: EPA 5030/8015/8020
First Sample #: 506-0716

Sampled: Jun 13, 1995
Received: Jun 13, 1995
Reported: Jun 14, 1995

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
506-0716	MW-1	Gasoline	5.0	6/14/95	HP-5	70
506-0717	MW-5	Gasoline	100	6/14/95	HP-5	88

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Sarkis Karkarian

Client Project ID: Unocal #5366, 7375 Amador Valley Blvd.,
Sample Matrix: Water
Analysis Method: EPA 3510/8015
First Sample #: 506-0716

Sampled: Jun 13, 1995
Received: Jun 13, 1995
Reported: Jun 14, 1995

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 506-0716 MW-5*
Extractable Hydrocarbons	50	2400

Chromatogram Pattern: Unidentified Hydrocarbons <C15

Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Extracted:	6/13/95
Date Analyzed:	6/14/95
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

Please Note:
* This sample does not appear to contain diesel. Unidentified Hydrocarbons <C15 are probably gasoline.





MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Sarkis Karkarian

Client Project ID: Unocal #5366, 7375 Amador Valley Blvd., Dublin
Matrix: Liquid

Work Order #: 5060716-717

Reported: Jun 20, 1995

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Diesel
QC Batch#:	GC061495802005A				SP0618958015
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 3510

Analyst:	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon	J. Dinsay
MS/MSD #:	5060620	5060620	5060620	5060620	BLK061395
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	6/14/95	6/14/95	6/14/95	6/14/95	6/13/95
Analyzed Date:	6/14/95	6/14/95	6/14/95	6/14/95	6/14/95
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5	GCHP-3A
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	300 µg/L

Result:	21	21	22	67	250
MS % Recovery:	105	105	110	112	83

Dup. Result:	20	20	20	62	210
MSD % Recov.:	100	100	100	103	70

RPD:	4.9	4.9	9.5	8.4	17
RPD Limit:	20	20	20	20	20

LCS #:	3LCS061495	3LCS061495	3LCS061495	3LCS061495	BLK061395
Prepared Date:	6/14/95	6/14/95	6/14/95	6/14/95	6/13/95
Analyzed Date:	6/14/95	6/14/95	6/14/95	6/14/95	6/14/95
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5	GCHP-3A
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	300 µg/L
LCS Result:	19.3	19.7	20.3	61.9	250
LCS % Recov.:	97	99	102	103	83

MS/MSD	LCS		Control Limits	
LCS	71-133	72-128	72-130	71-120
Control Limits	55-145	47-149	47-155	56-140 38-122

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.

** MS=Matrix Spike, MSD=MS Duplicate, IS=Instrument Spike, ISD=IS Duplicate,
RPD=Relative % Difference

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Signature on File

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Project Manager



