

MPDS-UN5366-08  
January 4, 1996

RECEIVED  
JAN 15 11 13 AM '96  
UNOCAL

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 direction at the Unocal site during the most recent quarter is shown on the attached Figure 1.

A joint monitoring event was conducted with the consultants for the nearby Arco and B.P. sites on November 28, 1995. The consultant for the nearby former Shell service station could not participate in the joint monitoring event during this quarter. The monitoring data collected for the Arco and B.P. service stations (provided by Emcon and Alisto Engineering Group, respectively) are summarized in Tables 4 and 5. The ground water elevation contours at and in the vicinity of these sites during the most recent quarter are also shown on the attached Figure 1.

Ground water samples were collected from the Unocal wells on November 28, 1995. Prior to sampling, the Unocal wells were each purged of between 6.5 and 7 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. Trip blank and Field blank samples (denoted as ES1 and ES3 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 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 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 Ms. Eva Chu of the Alameda County Health Care Services Agency.

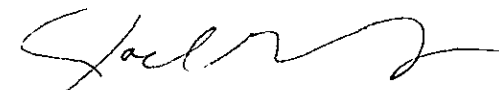
If you have any questions regarding this report, please do not hesitate to call Mr. Nubar Srabian at (510) 602-5120.

Sincerely,

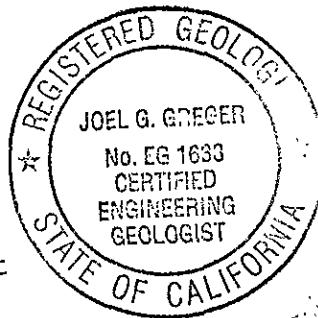
MPDS Services, Inc.



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 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>
<b>(Monitored and Sampled November 28, 1995)</b>						
MW1	325.62	10.45	19.51	0	No	6.5
MW2*	326.13	10.65	19.28	0	--	0
MW3*	326.13	10.85	18.95	0	--	0
MW4*	325.62	10.81	19.41	0	--	0
MW5	325.63	10.33	20.01	0	No	7
<b>(Monitored and Sampled August 25, 1995)</b>						
MW1	326.39	9.68	19.50	0	No	7
MW2*	327.02	9.76	19.27	0	--	0
MW3*	326.95	10.03	18.90	0	--	0
MW4*	326.35	10.08	19.41	0	--	0
MW5	326.39	9.57	20.00	0	No	7.5
<b>(Monitored and Sampled June 13, 1995)</b>						
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
<b>(Monitored and Sampled February 15, 1995)</b>						
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

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**TABLE 1 (Continued)**

SUMMARY OF MONITORING DATA  
UNOCAL MONITORING WELLS

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<u>Well #</u>	<u>Well Casing Elevation (feet)**</u>
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>
11/28/95▼	MW1▲	650	15	ND	21	6.7
	MW2	SAMPLED ANNUALLY				
	MW3	SAMPLED ANNUALLY				
	MW4	SAMPLED ANNUALLY				
	MW5▲	6,400	320	ND	720	ND
8/25/95▼	MW1▲	530	16	ND	2.2	13
	MW2	SAMPLED ANNUALLY				
	MW3	SAMPLED ANNUALLY				
	MW4	SAMPLED ANNUALLY				
	MW5▲	3,100	43	ND	590	8.4
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

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>
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
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
4/28/89	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
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

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TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES  
UNOCAL MONITORING WELLS  
WATER

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- ▲ Dissolved oxygen concentrations were as follows:
  - May 24, 1995: 2.32 mg/L in MW1, 2.80 mg/L in MW5
  - Jun 13, 1995: 2.97 mg/L in MW1, 3.03 mg/L in MW5
  - Aug 25, 1995: 3.20 mg/L in MW1, 5.79 mg/L in MW5
  - Nov 28, 1995: 3.26 mg/L in MW1, 2.25 mg/L in MW5
  
- ▼ Sequoia Analytical Laboratory has potentially identified the presence of MTBE at reportable levels in the ground water samples collected from monitoring wells MW1 and MW5.
  
- ▼▼ Sequoia Analytical Laboratory has identified the presence of MTBE at a level above or equal to the taste and odor threshold of 40 µg/L in the sample collected from this well.

ND = Non-detectable.

-- Indicates that analysis was not performed.

Results are in micrograms per liter (µg/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 &amp; Grease (mg/L)</u>	<u>EPA 8010 Constituents</u>
11/28/95	MW5	3,800**	--	--
8/25/95	MW5	2,300**	--	--
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

TABLE 3 (Continued)

SUMMARY OF LABORATORY ANALYSES  
UNOCAL MONITORING WELLS  
WATER

<u>Date</u>	<u>Well #</u>	<u>TPH as Diesel</u>	<u>Total Oil &amp; Grease (mg/L)</u>	<u>EPA 8010 Constituents</u>
10/28/88	MW3	ND	--	ND
7/25/88	MW3	ND	--	ND
4/29/88	MW3	ND	--	ND

\* 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>
ARCO Service Station Wells (Monitored on November 28, 1995) Provided by EMCON			
MW1	325.55	11.01	336.56
MW2	325.74	9.06	334.80
MW3	325.62	9.91	335.53
MW4	326.01	8.21	334.22
MW5	325.75	10.12	335.87
MW6	325.56	10.28	335.84

♦ The depth to water level measurements were taken from the top of the well casings.

\* The benchmark used for the survey is a standard Bronze Disk in the westerly center island of Amador Valley and Village Parkway, 15 feet from nose and 0.8 feet +/- from northerly curb. The disk is stamped "VL-PK-AM-VY 1977" (El. = 334.402 feet).

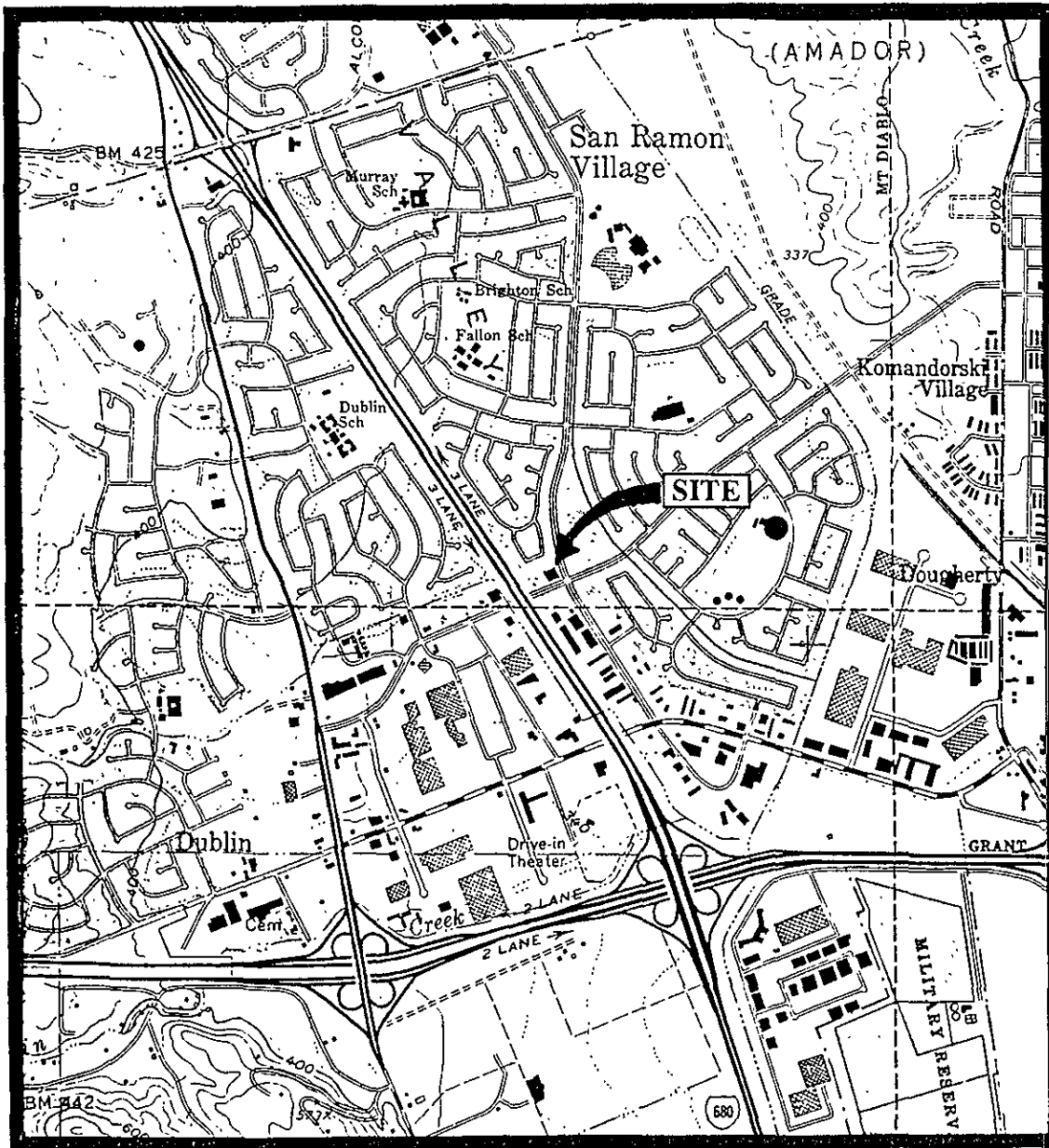
TABLE 5

SUMMARY OF MONITORING DATA  
WATER

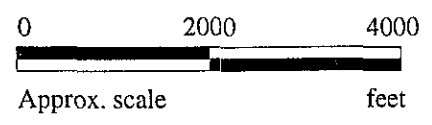
<u>Well #</u>	<u>Ground Water Elevation (feet)</u>	<u>Depth to Water (feet)◆</u>	<u>Well Casing Elevation (feet)*</u>
BP Service Station Wells (Monitored on November 28, 1995) Provided by Alisto Engineering Group			
MW1	325.63	9.54	335.17
MW2	325.53	9.05	334.58
MW3	326.56	8.57	335.13
AW4	325.60	7.81	333.41
AW5	325.49	9.32	334.81
AW6	325.70	9.20	334.90

◆ The depth to water level measurements were taken from the top of the well casings.

\* Relative to Mean Sea Level.



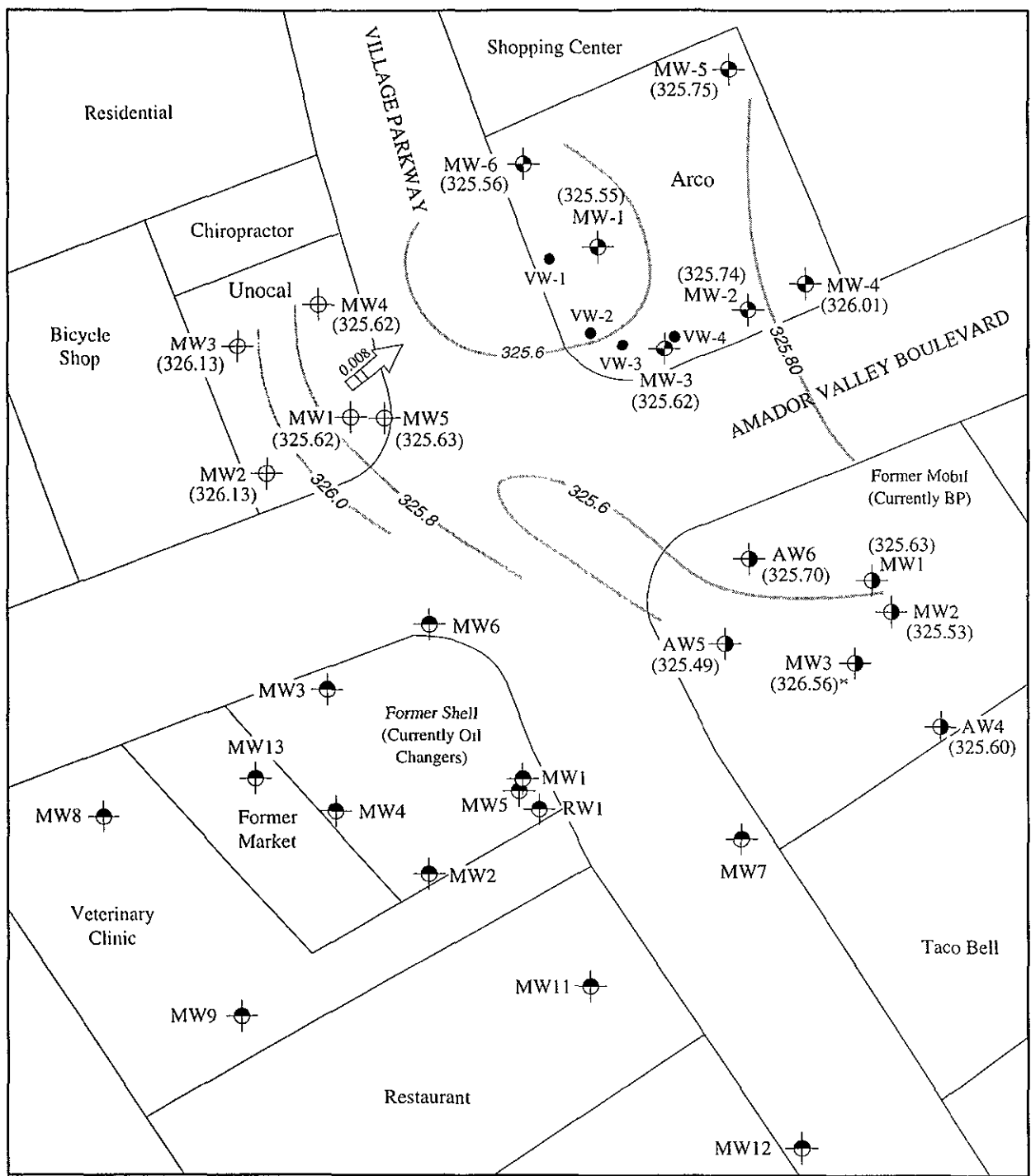
Base modified from 7.5 minute U.S.G.S. Dublin Quadrangle  
(photorevised 1980)



**MPDS** SERVICES, INCORPORATED

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

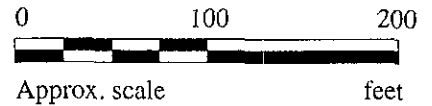
LOCATION  
MAP



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

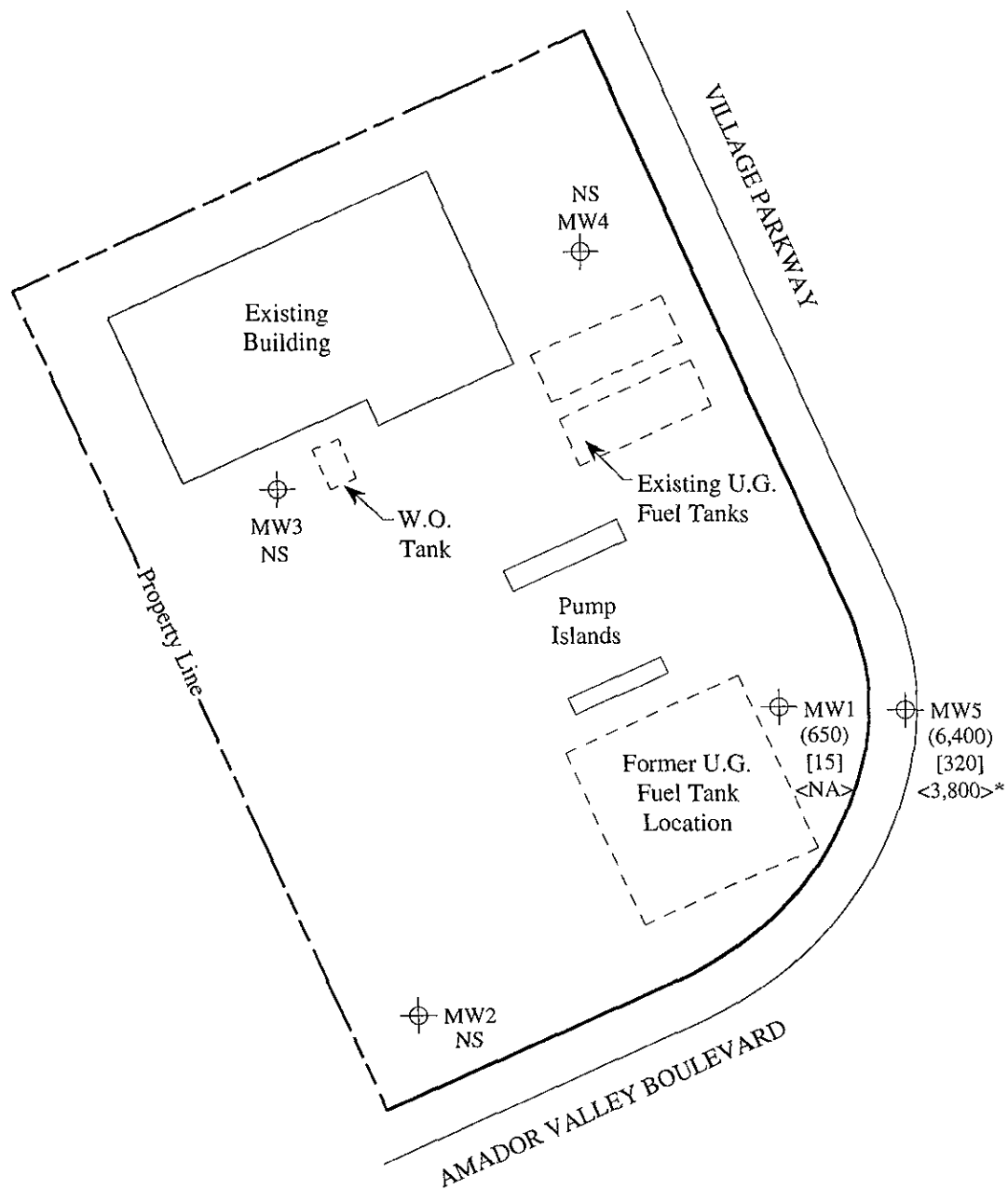


**POTENTIOMETRIC SURFACE MAP FOR THE NOVEMBER 28, 1995 JOINT MONITORING EVENT**

**MPDS** SERVICES, INCORPORATED

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

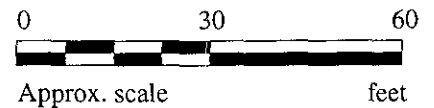
**FIGURE  
1**



**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 NOVEMBER 28, 1995**



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

**FIGURE  
2**



<b>MPDS Services</b>	<b>Client Project ID:</b> Unocal #5366, 7375 Amador Valley Rd.	<b>Sampled:</b> Nov 28, 1995
2401 Stanwell Dr., Ste. 300	<b>Matrix Descript:</b> Water	<b>Received:</b> Nov 28, 1995
Concord, CA 94520	<b>Analysis Method:</b> EPA 5030/8015 Mod./8020	<b>Reported:</b> Dec 15, 1995
<b>Attention: Jarrel Crider</b>	<b>First Sample #:</b> 511-2221	

**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
511-2221	MW-1	650	15	ND	21	6.7
511-2222	MW-5	6,400	320	ND	720	ND
511-2223	ES1	ND	ND	ND	ND	ND
511-2224	ES3	ND	ND	ND	ND	ND

<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







<b>MPDS Services</b> 2401 Stanwell Dr., Ste. 300 Concord, CA 94520 Attention: Jarrel Crider	<b>Client Project ID:</b> Unocal #5366, 7375 Amador Valley Rd. <b>Matrix Descript:</b> Water <b>Analysis Method:</b> EPA 5030/8015 Mod./8020 <b>First Sample #:</b> 511-2221	Dublin	<b>Sampled:</b> Nov 28, 1995 <b>Received:</b> Nov 28, 1995 <b>Reported:</b> Dec 15, 1995
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**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
511-2221	MW-1	Gasoline	4.0	12/11/95	HP-2	103
511-2222	MW-5	Gasoline	100	12/08/95	HP-5	77
511-2223	ES1	--	1.0	12/08/95	HP-5	83
511-2224	ES3	--	1.0	12/08/95	HP-4	90

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager





<b>MPDS Services</b>	<b>Client Project ID:</b> Unocal #5366, 7375 Amador Valley Rd.	<b>Sampled:</b> Nov 28, 1995
2401 Stanwell Dr., Ste. 300	<b>Sample Matrix:</b> Water	Dublin <b>Received:</b> Nov 28, 1995
Concord, CA 94520	<b>Analysis Method:</b> EPA 3510/8015 Mod.	<b>Reported:</b> Dec 15, 1995
<b>Attention:</b> Jarrel Crider	<b>First Sample #:</b> 511-2222	

**TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS**

Analyte	Reporting Limit µg/L	Sample I.D. 511-2222 MW-5 *
Extractable Hydrocarbons	50	3800

**Chromatogram Pattern:** Unidentified Hydrocarbons <C15

**Quality Control Data**

Report Limit Multiplication Factor:	1.0
Date Extracted:	11/30/95
Date Analyzed:	11/30/95
Instrument Identification:	HP-3B

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 Client Project ID: Unocal #5366, 7375 Amador Valley Rd. Dublin  
 2401 Stanwell Dr., Ste. 300 Matrix: Liquid  
 Concord, CA 94520  
 Attention: Jarrel Crider QC Sample Group: 5112221-224 Reported: Dec 15, 1995

**QUALITY CONTROL DATA REPORT**

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes	Diesel
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015
Analyst:	I.Z.	I.Z.	I.Z.	I.Z.	S. Le

<b>MS/MSD</b>					
Batch#:	5112324	5112324	5112324	5112324	BLK113095
Date Prepared:	12/11/95	12/11/95	12/11/95	12/11/95	11/30/95
Date Analyzed:	12/11/95	12/11/95	12/11/95	12/11/95	12/1/95
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4	HP-3B
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	300 µg/L
<b>Matrix Spike</b>					
% Recovery:	100	110	110	112	130
<b>Matrix Spike Duplicate %</b>					
Recovery:	95	105	105	107	136
<b>Relative %</b>					
Difference:	5.1	4.7	4.7	4.6	4.5

<b>LCS Batch#:</b>	2LCS121195	2LCS121195	2LCS121195	2LCS121195	LCS113095
Date Prepared:	12/11/95	12/11/95	12/11/95	12/11/95	11/30/95
Date Analyzed:	12/11/95	12/11/95	12/11/95	12/11/95	12/1/95
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4	HP-3B
<b>LCS %</b>					
Recovery:	95	100	100	100	123

<b>% Recovery</b>					
Control Limits:	71-133	72-128	72-130	71-120	50-150

**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 Client Project ID: Unocal #5366, 7375 Amador Valley Rd. Dublin  
 2401 Stanwell Dr., Ste. 300 Matrix: Liquid  
 Concord, CA 94520  
 Attention: Jarrel Crider QC Sample Group: 5112221-224 Reported: Dec 15, 1995

**QUALITY CONTROL DATA REPORT**

<b>ANALYTE</b>	<i>Benzene</i>	<i>Toluene</i>	<i>Ethyl Benzene</i>	<i>Xylenes</i>
<b>Method:</b>	EPA 8020	EPA 8020	EPA 8020	EPA 8020
<b>Analyst:</b>	N. Beaman	N. Beaman	N. Beaman	N. Beaman

<b>MS/MSD</b>				
<b>Batch#:</b>	5120431	5120431	5120431	5120431
<b>Date Prepared:</b>	12/8/95	12/8/95	12/8/95	12/8/95
<b>Date Analyzed:</b>	12/8/95	12/8/95	12/8/95	12/8/95
<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</b>				
<b>% Recovery:</b>	90	90	90	93
<b>Matrix Spike Duplicate %</b>				
<b>Recovery:</b>	95	95	95	97
<b>Relative %</b>				
<b>Difference:</b>	5.4	5.4	5.4	3.5

<b>LCS Batch#:</b>	3LCS120895	3LCS120895	3LCS120895	3LCS120895
<b>Date Prepared:</b>	12/8/95	12/8/95	12/8/95	12/8/95
<b>Date Analyzed:</b>	12/8/95	12/8/95	12/8/95	12/8/95
<b>Instrument I.D.#:</b>	HP-5	HP-5	HP-5	HP-5
<b>LCS %</b>				
<b>Recovery:</b>	85	85	85	88

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

**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. 300  
 Concord, CA 94520  
 Attention: Jarrel Crider

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

QC Sample Group: 5112221-224

Reported: Dec 15, 1995

**QUALITY CONTROL DATA REPORT**

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
<b>Method:</b>	EPA 8020	EPA 8020	EPA 8020	EPA 8020
<b>Analyst:</b>	N. Beaman	N. Beaman	N. Beaman	N. Beaman

MS/MSD Batch#:	5120420	5120420	5120420	5120420
<b>Date Prepared:</b>	12/8/95	12/8/95	12/8/95	12/8/95
<b>Date Analyzed:</b>	12/8/95	12/8/95	12/8/95	12/8/95
<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>	95	100	105	103
<b>Matrix Spike Duplicate % Recovery:</b>	95	95	100	102
<b>Relative % Difference:</b>	0.0	5.1	4.9	1.6

LCS Batch#:	2LCS120895	2LCS120895	2LCS120895	2LCS120895
<b>Date Prepared:</b>	12/8/95	12/8/95	12/8/95	12/8/95
<b>Date Analyzed:</b>	12/8/95	12/8/95	12/8/95	12/8/95
<b>Instrument I.D.#:</b>	HP-4	HP-4	HP-4	HP-4
<b>LCS % Recovery:</b>	85	90	90	93

% Recovery Control Limits:	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





**Sequoia  
Analytical**

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FAX (916) 921-0100

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

Date: 12/18/95

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Sequoia Analytical has identified the presence of MTBE at a level above or equal to the taste and odor threshold of 40 µg/L in the following site(s):

Client Project I.D. - **Unocal #5366, Dublin**

Sequoia Work Order # - **9511557**

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**Sample Number:**

5112221

5112222

**Sample Description:**

MW1

MW5

**SEQUOIA ANALYTICAL, #1271**

  
Alan B. Kemp  
Project Manager



**CHAIN OF CUSTODY**

SAMPLER <b>RAY MARANGOSIAN</b>			UNOCAL S/S # <u>5366</u> CITY: <u>DUBLIN</u>					ANALYSES REQUESTED						TURN AROUND TIME: <b>REGULAR</b>				
			ADDRESS: <u>7375 Amador Valley Rd</u>					TPH-GAS	BTEX	TPH-DIESEL	TOG	8010						
WITNESSING AGENCY			WATER	GRAB	COMP	NO OF CONT.	SAMPLING LOCATION	TPH-GAS	BTEX	TPH-DIESEL	TOG	8010						REMARKS
SAMPLE ID NO.	DATE	TIME																
MW1	11.28.95	13:05	X	X		2		X				5112221A,B						
MW5	"	13:45	X	X		3		X	X			5112222A-C						
RELINQUISHED BY:		DATE/TIME	RECEIVED BY:		DATE/TIME	THE FOLLOWING <u>MUST</u> BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:												
<i>Ray Marangosian</i>		11.28.95	<i>Charles</i>		11/28 1415	1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? <u>Y</u>												
(SIGNATURE)			(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: <i>Charles</i> TITLE: DATE: 11/28/95												

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 unpreserved.

**CHAIN OF CUSTODY**

5.11.1557

<b>SAMPLER</b> RAY MARANGOSIAN			<b>UNOCAL</b> S/S # <u>5366</u> CITY: <u>DUBLIN</u>					<b>ANALYSES REQUESTED</b>							<b>TURN AROUND TIME:</b> REGULAR				
<b>WITNESSING AGENCY</b>			ADDRESS: <u>7375 Amador Valley Rd</u>					TPH-GAS BTEX	TPH-DIESEL	TOG	8010								
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-GAS BTEX	TPH-DIESEL	TOG	8010								REMARKS
ES1	11-28-55		X	✓		1		X											
ES3	11		X	✓		1		X											
RELINQUISHED BY: Ray Marangosian		DATE/TIME 11-28-55	RECEIVED BY: Charles		DATE/TIME 11/28 1975	THE FOLLOWING <u>MUST BE</u> COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:													
(SIGNATURE)			(SIGNATURE)			1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? _____													
(SIGNATURE)			(SIGNATURE)			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 unpreserved