

MPDS-UN5901-05  
December 21, 1994

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

Attention: Mr. Adadu Yemane

RE: Quarterly Data Report  
Former Unocal Service Station #5901  
11976 Dublin Boulevard  
Dublin, California

Dear Mr. Yemane:

This data report presents the results of the most recent quarter of monitoring and sampling of the monitoring wells at the referenced site by MPDS Services, Inc.

#### RECENT FIELD ACTIVITIES

The monitoring wells that were monitored and sampled during this quarter are indicated in Table 1. Prior to sampling, the wells were checked for depth to water and the presence of free product or sheen. The monitoring data and the ground water elevations are summarized in Table 1. The ground water elevations during the most recent quarter are shown on the attached Figure 1.

Ground water samples were collected on December 1, 1994. Prior to sampling, the wells were each purged of between 3.5 and 7.5 gallons of 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 were analyzed at Sequoia Analytical Laboratory and were accompanied by properly executed Chain of Custody documentation. The analytical results of the ground water samples collected to date are summarized in Table 2. The concentrations of Total Petroleum Hydrocarbons (TPH) as gasoline and benzene detected in the ground water

samples collected this quarter are shown on the attached Figure 2. Copies of the laboratory analytical results and the Chain of Custody documentation are attached to this report.

LIMITATIONS

Environmental changes, either naturally-occurring or artificially-induced, may cause changes in ground water levels and flow paths, thereby changing the extent and concentration of any contaminants.

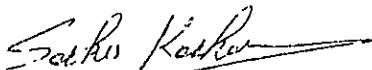
DISTRIBUTION

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

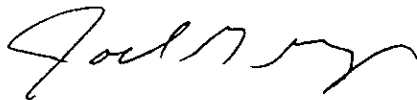
If you have any questions regarding this report, please do not hesitate to call Mr. Nubar Srabian at (510) 602-5120.

Sincerely,

MPDS Services, Inc.



Sarkis A. Karkarian  
Staff Engineer



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

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

/bp

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

cc: Mr. Timothy R. Ross, Kaprealian Engineering, Inc.



**TABLE 1**

**SUMMARY OF MONITORING DATA**

<u>Well #</u>	<u>Ground Water Elevation (feet)</u>	<u>Depth to Water (feet)◆</u>	<u>Total Well Depth (feet)◆</u>	<u>Product Thickness (feet)</u>	<u>Sheen</u>	<u>Water Purged (gallons)</u>
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(Monitored and Sampled on December 1, 1994)

MW1*	362.13	4.67	19.75	0	--	0
MW3*	352.13	14.73	19.67	0	--	0
MW4*	362.48	5.10	19.70	0	--	0
MW5	351.55	14.00	24.97	0	No	7.5
MW6	345.04	20.64	25.13	0	No	3.5

(Monitored and Sampled on September 1, 1994)

MW1*	361.80	5.00	19.73	0	--	0
MW3*	351.83	15.03	19.66	0	--	0
MW4*	362.10	5.48	19.72	0	--	0
MW5	350.73	14.82	24.97	0	No	7
MW6	343.33	22.35	25.12	0	No	2

(Monitored and Sampled on June 3, 1994)

MW1*	362.01	4.79	NM	0	--	0
MW3*	351.94	14.92	NM	0	--	0
MW4*	362.35	5.23	NM	0	--	0
MW5	351.25	14.30	25.02	0	No	5.5
MW6	344.34	21.34	25.12	0	No	2

(Monitored and Sampled on March 3, 1994)

MW1*	362.05	4.75	19.81	0	--	0
MW3*	352.05	14.81	19.71	0	--	0
MW4*	362.42	5.16	19.74	0	--	0
MW5	351.64	13.91	25.03	0	No	8
MW6	346.47	19.21	25.11	0	No	4.5

TABLE 1 (Continued)

SUMMARY OF MONITORING DATA

<u>Well #</u>	<u>Well Casing Elevation (feet)**</u>
MW1	366.80
MW3	366.86
MW4	367.58
MW5	365.55
MW6	365.68

◆ 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 National Geodetic Survey disk stamped "I-1257, reset 1975" (elevation = 439.93 feet MSL).

-- Sheen determination was not performed.

NM = Not measured.

Note: - Wells MW1 and MW4, wells MW3 and MW5, and well MW6 are reportedly located in three separate hydrologic regimes caused by fault splays.

TABLE 2

SUMMARY OF LABORATORY ANALYSES  
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>
12/01/94	MW5	ND	ND	ND	ND	1.3
	MW6	240	5.1	2.6	ND	1.8
9/01/94	MW5	ND	ND	1.6	ND	2.1
	MW6	490	8.1	2.9	ND	1.9
6/03/94	MW5	ND	ND	ND	ND	ND
	MW6	ND	ND	ND	ND	ND
3/03/94	MW5	ND	ND	0.84	ND	0.60
	MW6	150	2.4	2.8	ND	1.2
12/09/93	MW1♦	--	--	--	--	--
	MW3	ND	ND	ND	ND	ND
	MW5	ND	ND	ND	ND	ND
	MW6	790	0.64	1.0	ND	ND
10/09/93	MW5	ND	ND	ND	ND	ND
	MW6	480	1.8	0.63	0.81	ND
9/16/93	MW1♦	--	--	--	--	--
	MW3	ND	ND	ND	ND	ND
6/18/93	MW1♦	--	--	--	--	--
	MW3	ND	ND	ND	ND	ND
4/03/92	MW1*	ND	ND	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3	ND	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND
1/02/92	MW1*	ND	ND	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3**	38	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND

TABLE 2 (Continued)

SUMMARY OF LABORATORY ANALYSES  
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>
10/03/91	MW1*	ND	ND	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3	32	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND
7/02/91	MW1*	ND	ND	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3	ND	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND
4/01/91	MW1*	ND	ND	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3	ND	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND
11/16/90	MW1*	ND	ND	ND	ND	ND
	MW2	ND	ND	ND	ND	ND
	MW3	ND	ND	ND	ND	ND
	MW4	ND	ND	ND	ND	ND

◆ All EPA method 8100 constituents (polynuclear aromatic hydrocarbons) were non-detectable.

\* TPH as diesel, Total Oil & Grease, and EPA method 8010 constituents were all non-detectable for MW1.

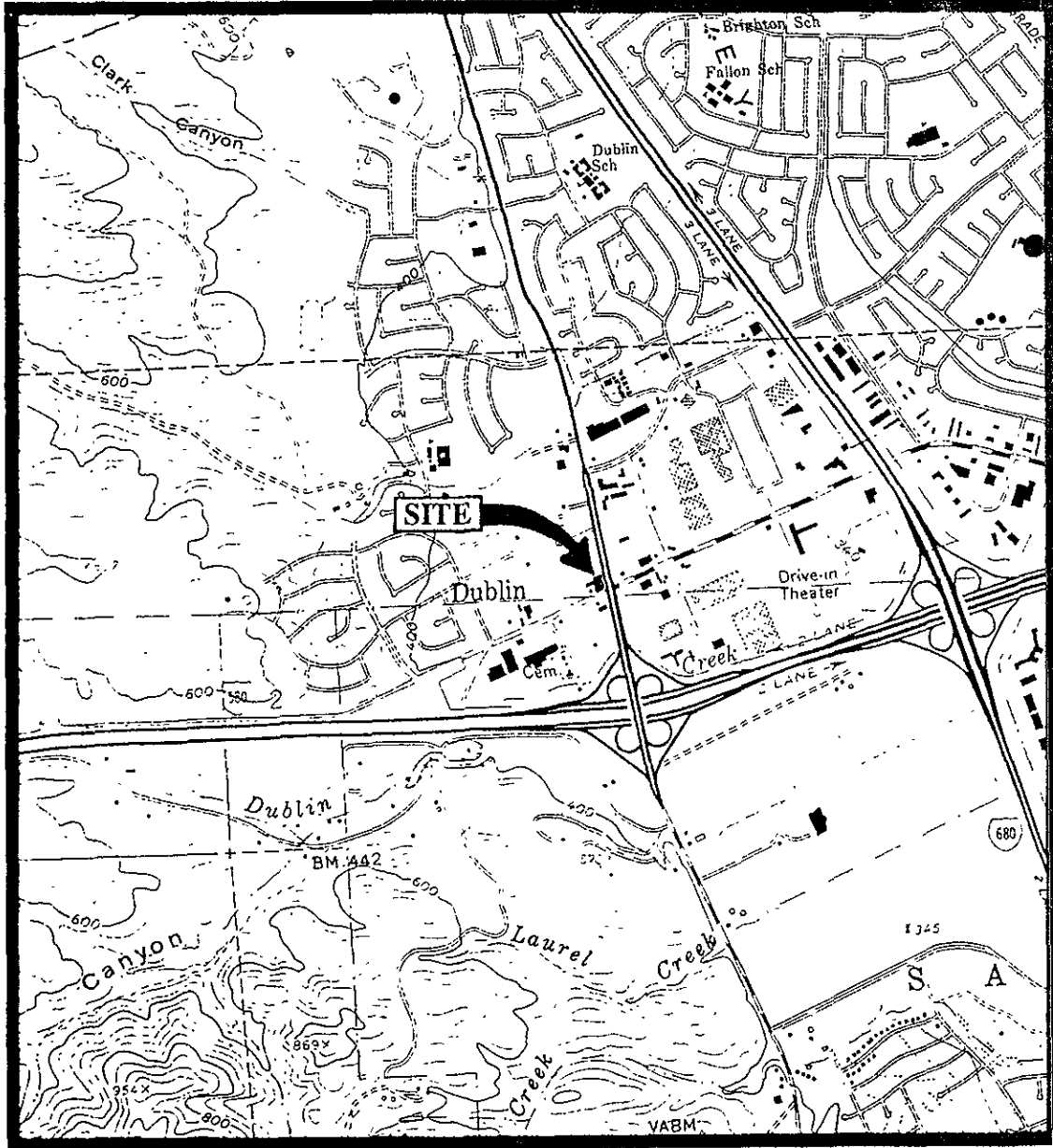
\*\* All EPA method 8010 constituents were non-detectable.

ND = Non-detectable.

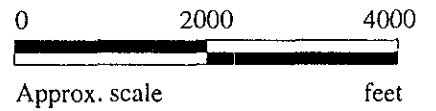
-- Indicates analysis was not performed.

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

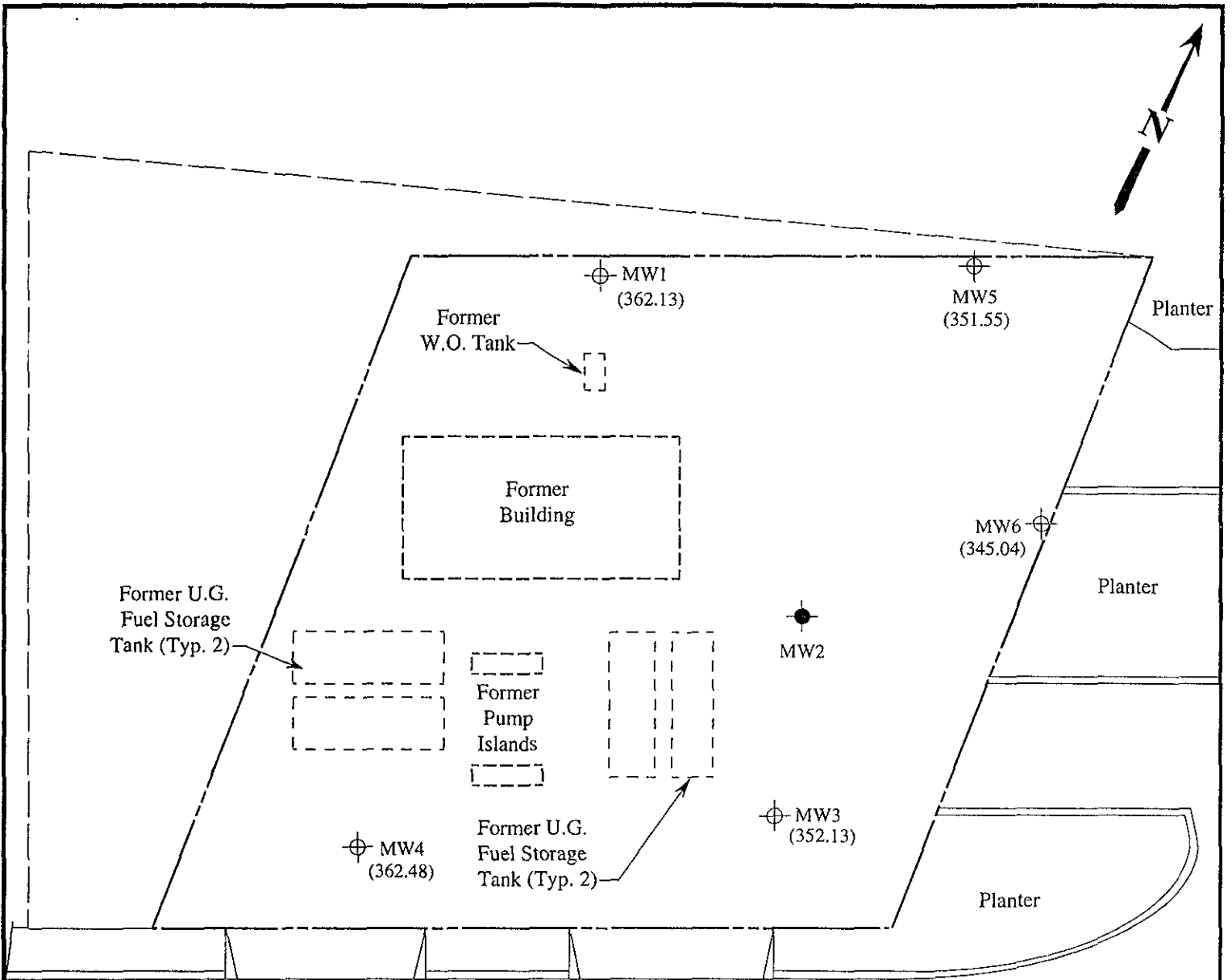
Note: Laboratory analyses data prior to December 9, 1993, were provided by Kaprealian Engineering, Inc.



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



	<p><b>FORMER UNOCAL S/S #5901</b>  <b>11976 DUBLIN BOULEVARD</b>  <b>DUBLIN, CALIFORNIA</b></p>	<p><b>LOCATION</b>  <b>MAP</b></p>
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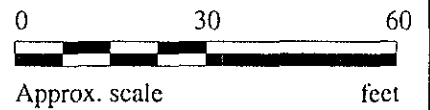


DUBLIN BOULEVARD

**LEGEND**

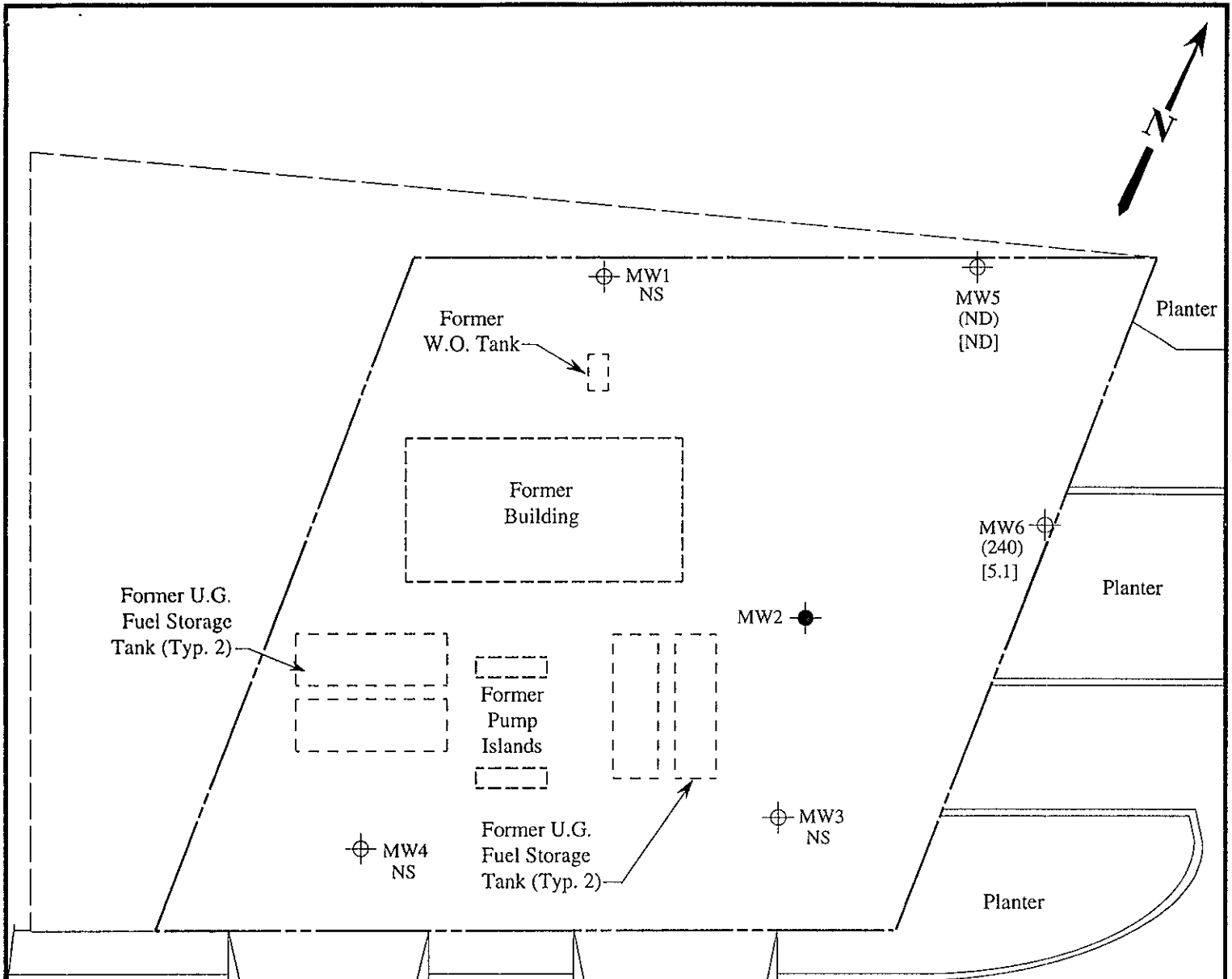
- ⊕ Monitoring well (existing)
- Monitoring well (previously destroyed)
- ( ) Ground water elevation in feet above Mean Sea Level

Note: The monitoring wells are reportedly located in separate hydrologic regimes caused by fault splays; therefore, ground water elevation contours are not shown.



**GROUND WATER ELEVATION MAP FOR THE DECEMBER 1, 1994 MONITORING EVENT**

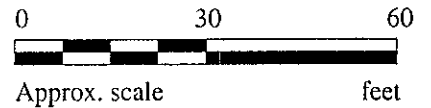




DUBLIN BOULEVARD

**LEGEND**

- ⊕ Monitoring well (existing)
  - Monitoring well (destroyed)
  - ( ) 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 DECEMBER 1, 1994**



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

Client Project ID: Unocal #5901, 11976 Dublin Blvd., Dublin  
Matrix Descript: Water  
Analysis Method: EPA 5030/8015/8020  
First Sample #: 412-0024

Sampled: Dec 1, 1994  
Received: Dec 1, 1994  
Reported: Dec 15, 1994

**TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION**

Sample Number	Sample Description	Purgeable Hydrocarbons µg/L	Benzene µg/L	Toluene µg/L	Ethyl Benzene µg/L	Total Xylenes µg/L
412-0024	MW-5	ND	ND	ND	ND	1.3
412-0025	MW-6	240	5.1	2.6	ND	1.8

<b>Detection Limits:</b>	<b>50</b>	<b>0.50</b>	<b>0.50</b>	<b>0.50</b>	<b>0.50</b>
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Total Purgeable Petroleum Hydrocarbons are quantitated against a fresh gasoline standard.  
Analytes reported as ND were not present above the stated limit of detection.

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager





MPDS Services	Client Project ID: Unocal #5901, 11976 Dublin Blvd., Dublin	Sampled: Dec 1, 1994
2401 Stanwell Dr., Ste. 400	Matrix Descript: Water	Received: Dec 1, 1994
Concord, CA 94520	Analysis Method: EPA 5030/8015/8020	Reported: Dec 15, 1994
Attention: Avo Avedlssian	First Sample #: 412-0024	

**TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION**

Sample Number	Sample Description	Chromatogram Pattern	DL Mult. Factor	Date Analyzed	Instrument ID	Surrogate Recovery, % QC Limits: 70-130
412-0024	MW-5	--	1.0	12/12/94	HP-5	90
412-0025	MW-6	Gasoline	1.0	12/11/94	HP-5	98

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
Project Manager





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

Client Project ID: Unocal #5901, 11976 Dublin Blvd., Dublin  
 Matrix: Liquid

QC Sample Group: 4120024-25

Reported: Dec 15, 1994

**QUALITY CONTROL DATA REPORT**

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
<b>Method:</b>	EPA 8020	EPA 8020	EPA 8020	EPA 8020
<b>Analyst:</b>	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon

<b>MS/MSD Batch#:</b>	4120083	4120083	4120083	4120083
<b>Date Prepared:</b>	12/11/94	12/11/94	12/11/94	12/11/94
<b>Date Analyzed:</b>	12/11/94	12/11/94	12/11/94	12/11/94
<b>Instrument I.D.#:</b>	HP-5	HP-5	HP-5	HP-5
<b>Conc. Spiked:</b>	20 µg/L	20 µg/L	20 µg/L	60 µg/L
<b>Matrix Spike % Recovery:</b>	110	105	105	102
<b>Matrix Spike Duplicate % Recovery:</b>	110	110	110	103
<b>Relative % Difference:</b>	0.0	4.7	4.7	0.98

<b>LCS Batch#:</b>	3LCS121194	3LCS121194	3LCS121194	3LCS121194
<b>Date Prepared:</b>	12/11/94	12/11/94	12/11/94	12/11/94
<b>Date Analyzed:</b>	12/11/94	12/11/94	12/11/94	12/11/94
<b>Instrument I.D.#:</b>	HP-5	HP-5	HP-5	HP-5
<b>LCS % Recovery:</b>	101	101	99	96

<b>% Recovery Control Limits:</b>	71-133	72-128	72-130	71-120
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**Please Note:**  
 The LCS is a control sample of known, interferent free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

**SEQUOIA ANALYTICAL, #1271**

Signature on File

Alan B. Kemp  
 Project Manager





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

Client Project ID: Unocal #5901, 11976 Dublin Blvd., Dublin  
 Matrix: Liquid

QC Sample Group: 4120024-25

Reported: Dec 15, 1994

**QUALITY CONTROL DATA REPORT**

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
<b>Method:</b>	EPA 8020	EPA 8020	EPA 8020	EPA 8020
<b>Analyst:</b>	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon

MS/MSD	Benzene	Toluene	Ethyl Benzene	Xylenes
<b>Batch#:</b>	4120417	4120417	4120417	4120417
<b>Date Prepared:</b>	12/12/94	12/12/94	12/12/94	12/12/94
<b>Date Analyzed:</b>	12/12/94	12/12/94	12/12/94	12/12/94
<b>Instrument I.D.#:</b>	HP-5	HP-5	HP-5	HP-5
<b>Conc. Spiked:</b>	20 µg/L	20 µg/L	20 µg/L	60 µg/L
<b>Matrix Spike % Recovery:</b>	100	105	100	100
<b>Matrix Spike Duplicate % Recovery:</b>	105	110	105	100
<b>Relative % Difference:</b>	4.9	4.7	4.9	0.0

LCS Batch#:	Benzene	Toluene	Ethyl Benzene	Xylenes
<b>Batch#:</b>	3LCS121294	3LCS121294	3LCS121294	3LCS121294
<b>Date Prepared:</b>	12/12/94	12/12/94	12/12/94	12/12/94
<b>Date Analyzed:</b>	12/12/94	12/12/94	12/12/94	12/12/94
<b>Instrument I.D.#:</b>	HP-5	HP-5	HP-5	HP-5
<b>LCS % Recovery:</b>	102	102	100	97

% Recovery Control Limits:	Benzene	Toluene	Ethyl Benzene	Xylenes
<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



**CHAIN OF CUSTODY**

SAMPLER			UNOCAL					ANALYSES REQUESTED							TURN AROUND TIME:	
NICHOLAS PERROW			S/S # <u>5901</u> CITY: <u>DUBLIN</u>					TPH-GAS BTEX	TPH-DIESEL	TOG	8010					REGULAR REMARKS
			ADDRESS: <u>11976 DUBLIN BLVD.</u>													
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION									
MW-5	12/1/94	10:00	✓	✓		2 VDAS	WELL	✓						4120024	A,B	
MW-6	12/1/94	10:20	✓	✓		2 VDAS	WELL	✓						4120025	↓	
RELINQUISHED BY:		DATE/TIME	RECEIVED BY:		DATE/TIME	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? <u>yes</u>										
(SIGNATURE)		12/1/94 1:10 PM	(SIGNATURE)		12/1/94 1:10 PM	2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? <u>yes</u>										
(SIGNATURE)			(SIGNATURE)			3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? <u>no</u>										
(SIGNATURE)			(SIGNATURE)			4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? <u>yes</u>										
(SIGNATURE)			(SIGNATURE)			SIGNATURE:			TITLE:			DATE:				
(SIGNATURE)			(SIGNATURE)			Melissa Crews			Sample Control			12-1-94				

**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.