MPDS

SERVICES, INCORPORATED

MPDS-UN5901-01
January 17, 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 on 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 9, 1993. Prior to sampling, the wells were each purged of between 2.5 and 10.5 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.

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 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.

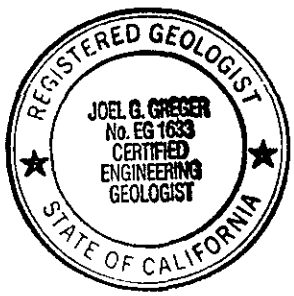
DISTRIBUTION

A copy of this report should be sent to Ms. Eva Chu of the Alameda County Health Care Services, and to Mr. Lester Feldman of the Regional Water Quality Control Board, San Francisco Bay Region.

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

Sincerely,

MPDS Services, Inc.



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

License No. EG 1633
Exp. Date 6/30/94

/dlh

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

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

602-5160

TABLE 1

SUMMARY OF MONITORING DATA

Well #	Ground Water Elevation (feet)	Depth to Water (feet)◆	Product Thickness (feet)	Sheen	Water Purged (gallons)	Total Well Depth (feet)◆
(Monitored and Sampled on December 9, 1993)						
MW1	362.22	4.58	0	No	10.5	19.80
MW3	352.26	14.60	0	No	3.5	19.65
MW4*	362.53	5.05	0	N/A		19.76
MW5	352.01	13.54	0	No	8	25.04
MW6	344.03	21.65	0	No	2.5	25.12
(Monitored and Sampled on October 9, 1993)						
MW1	361.96	4.84	0	No	10.5	
MW3	351.59	15.27	0	No	3	
MW4*	362.29	5.29	0	--	0	
MW5	351.20	14.35	0	No	7.5	
MW6	341.54	24.14	0	No	1	
(Monitored and Developed on October 6, 1993)						
MW5	350.95	14.60	0	--	30	
MW6	WELL WAS DRY					
(Monitored and Sampled on September 16, 1993)						
MW1	362.00	4.80	0	No	11	
MW3	351.57	15.29	0	No	3	
MW4*	362.33	5.25	0	--	0	
(Monitored and Sampled on June 18, 1993)						
MW1	**	4.77	0	No	11	
MW3	**	15.45	0	No	3	
MW4*	**	5.28	0	--	0	

TABLE 1 (Continued)

SUMMARY OF MONITORING DATA

Well #	Well Casing Elevation (feet)***
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 casing. Prior to September 16, 1993, the water level measurement were taken from the top of the well cover.

* Monitored only.

** The Christy boxes for wells MW1, MW3, and MW4 were damaged during the tank removal and soil excavation activities that were previously conducted at the site; therefore, the ground water elevation could not be accurately determined.

*** The elevations of the tops of the well casing have been surveyed relative to Mean Sea Level (MSL), per the National Geodetic Survey disk stamped "I-2757, reset 1975" (elevation = 439.93 MSL).

-- Sheen determination was not performed.

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

- Monitoring data prior to December 9, 1993, were provided by Kapreal-ian Engineering, Inc.

TABLE 2

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
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	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	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3**	--	38	ND	ND	ND	ND
	MW4	--	ND	ND	ND	ND	ND
10/03/91	MW1*	ND	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	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	ND
	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
WATER

Date	Well #	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
11/16/90	MW1*	ND	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.

* TOG and all EPA method 8010 constituents were non-detectable.

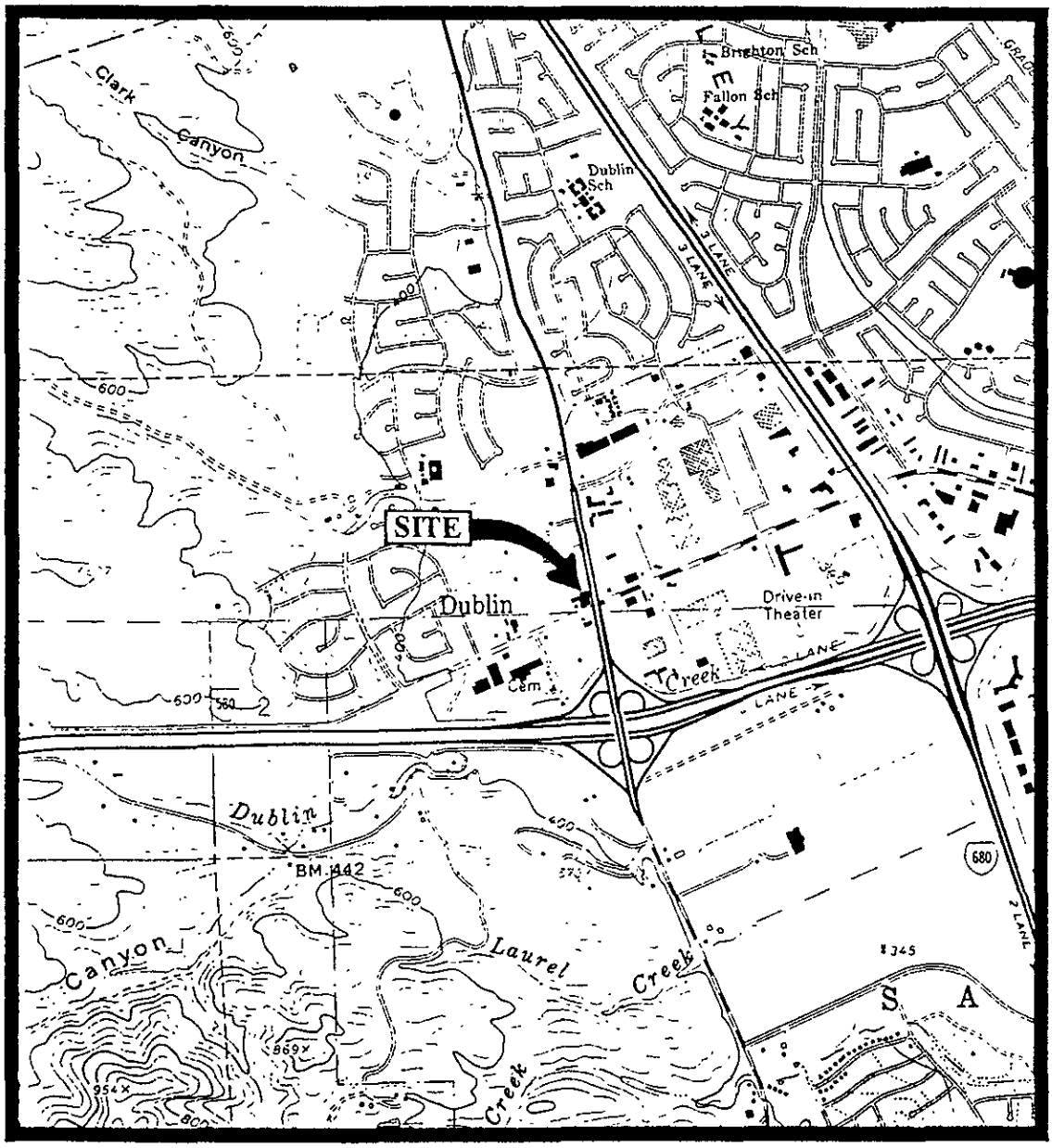
** All EPA method 8010 constituents were non-detectable.

ND = Non-detectable.

-- Indicates analysis was not performed.

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

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

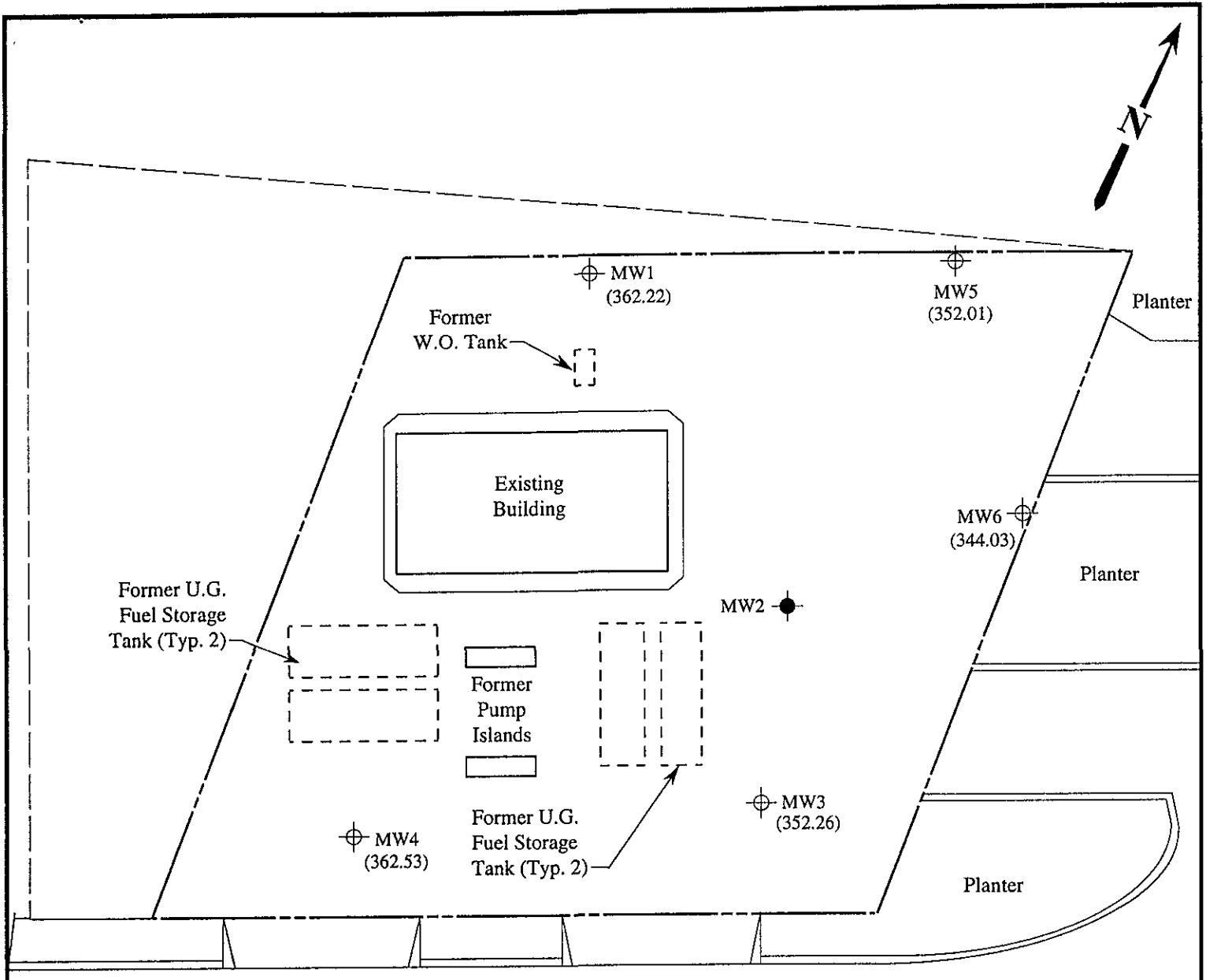


Base modified from 7.5 minute U.S.G.S. Dublin Quadrangle
(photorevised 1980)

0 2000 4000

Approx. scale feet

MPDS	**UNOCAL SERVICE STATION #5901** **11976 DUBLIN BOULEVARD** **DUBLIN, CALIFORNIA**	**LOCATION MAP**



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.

0 30 60

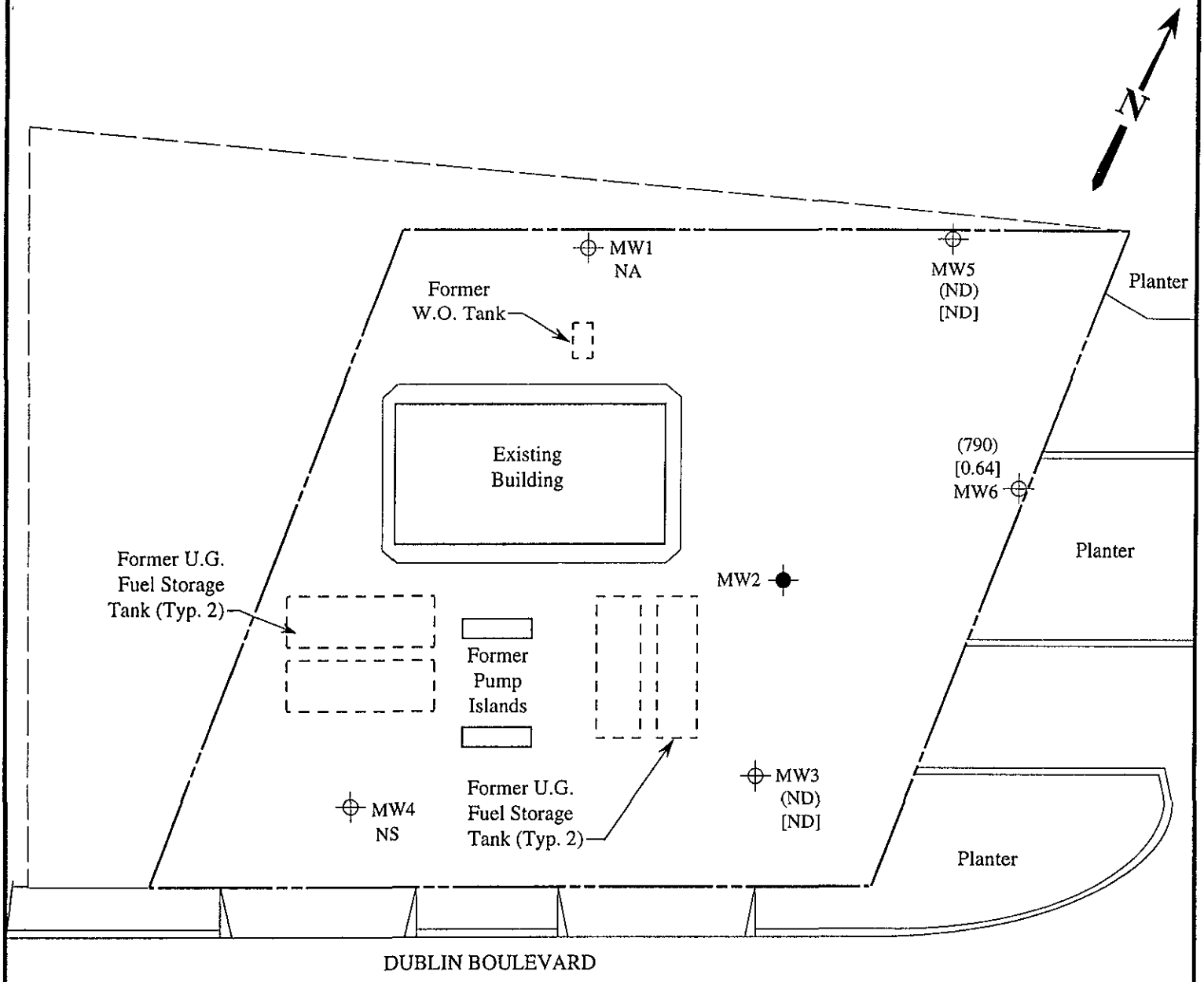
Approx. scale feet

GROUND WATER ELEVATION MAP FOR THE DECEMBER 9, 1993 MONITORING EVENT

MPDS
SERVICES, INCORPORATED

FORMER UNOCAL S/S #5901
11976 DUBLIN BOULEVARD
DUBLIN, CALIFORNIA

FIGURE
1



LEGEND

- Monitoring well (existing)
- Monitoring well (destroyed)
- ( ) Concentration of TPH as gasoline in ppb
- [ ] Concentration of benzene in ppb

ND = Non-detectable, NA = Not analyzed, NS = Not sampeld

0 30 60

Approx. scale feet

PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON DECEMBER 9, 1993

MPDS SERVICES, INCORPORATED	**FORMER UNOCAL S/S #5901** **11976 DUBLIN BOULEVARD** **DUBLIN, CALIFORNIA**	FIGURE **2**

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

MPDS Services	Client Project ID:	Unocal #5901, 11976 Dublin Blvd., Dublin	Sampled:	Dec 9, 1993
2401 Stanwell Dr., Ste. 400	Sample Descript:	Water, MW-1	Received:	Dec 9, 1993
Concord, CA 94520	Analysis Method:	EPA 8100	Extracted:	Dec 13, 1993
Attention: Avo Avedissian	Lab Number:	312-0581	Analyzed:	Dec 15, 1993
			Reported:	Dec 23, 1993

POLYNUCLEAR AROMATIC HYDROCARBONS (EPA 8100)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene	2.0	N.D.
Acenaphthylene	2.0	N.D.
Anthracene	2.0	N.D.
Benzo (a) anthracene	2.0	N.D.
Benzo (a) pyrene	2.0	N.D.
Benzo (b) fluoranthene	2.0	N.D.
Benzo (ghi) perylene	2.0	N.D.
Benzo (k) fluoranthene	2.0	N.D.
Chrysene	2.0	N.D.
Dibenzo (a,h) anthracene	2.0	N.D.
Fluoranthene	2.0	N.D.
Fluorene	2.0	N.D.
Indeno (1,2,3-cd) pyrene	2.0	N.D.
Naphthalene	2.0	N.D.
Phenanthrene	2.0	N.D.
Pyrene	2.0	N.D.

Analytes reported as N.D. were not present above the stated limit of detection.

SEQUOIA ANALYTICAL

Alan B. Kemp
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

MPDS Services	Client Project ID:	Unocal #5901, 11976 Dublin Blvd., Dublin	Sampled:	Dec 9, 1993
2401 Stanwell Dr., Ste. 400	Sample Matrix:	Water	Received:	Dec 9, 1993
Concord, CA 94520	Analysis Method:	EPA 5030/8015/8020	Reported:	Dec 23, 1993
Attention: Avo Avedissian	First Sample #:	312-0582		

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX DISTINCTION

Analyte	Reporting Limit µg/L	Sample I.D. 312-0582 MW-3	Sample I.D. 312-0583 MW-5	Sample I.D. 312-0584 MW-6	Sample I.D. Method Blank
Purgeable Hydrocarbons	50	N.D.	N.D.	790	
Benzene	0.5	N.D.	N.D.	0.64	
Toluene	0.5	N.D.	N.D.	1.0	
Ethyl Benzene	0.5	N.D.	N.D.	N.D.	
Total Xylenes	0.5	N.D.	N.D.	N.D.	
Chromatogram Pattern:		--	--	Gasoline	

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0
Date Analyzed:	12/18/93	12/18/93	12/18/93	12/18/93
Instrument Identification:	HP-4	HP-4	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	100	101	82	105

Purgeable Hydrocarbons are quantitated against a fresh gasoline standard.
Analytes reported as N.D. were not detected above the stated reporting limit.

SEQUOIA ANALYTICAL

Alan B. Kemp
Project Manager

SEQUOIA ANALYTICAL

1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

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: 312-0581

Reported: Dec 23, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Pyrene	Acenaphthene	Naphthalene
Method:	EPA 8100	EPA 8100	EPA 8100
Analyst:	L. Laikhtman	L. Laikhtman	L. Laikhtman
MS/MSD Batch#:	BLK120993	BLK120993	BLK120993
Date Prepared:	12/9/93	12/9/93	12/9/93
Date Analyzed:	12/14/93	12/14/93	12/14/93
Instrument I.D.#:	GCHP-11	GCHP-11	GCHP-11
Conc. Spiked:	50 µg/L	50 µg/L	50 µg/L
Matrix Spike % Recovery:	67	77	71
Matrix Spike Duplicate % Recovery:	72	70	65
Relative % Difference:	7.2	9.5	8.8
LCS Batch#:	-	-	-
Date Prepared:	-	-	-
Date Analyzed:	-	-	-
Instrument I.D.#:	-	-	-
LCS % Recovery:	-	-	-
% Recovery Control Limits:	DL-140	DL-124	DL-122

SEQUOIA ANALYTICAL

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.

SEQUOIA ANALYTICAL
1900 Bates Avenue • Suite LM • Concord, California 94520
(510) 686-9600 • FAX (510) 686-9689

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: 3120582-84

Reported: Dec 23, 1993

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon
MS/MSD Batch#:	3120434	3120434	3120434	3120434
Date Prepared:	12/18/93	12/18/93	12/18/93	12/18/93
Date Analyzed:	12/18/93	12/18/93	12/18/93	12/18/93
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	110	110	110	110
Matrix Spike Duplicate % Recovery:	105	105	105	105
Relative % Difference:	4.7	4.7	4.7	4.7
LCS Batch#:	LCS121893	LCS121893	LCS121893	LCS121893
Date Prepared:	12/18/93	12/18/93	12/18/93	12/18/93
Date Analyzed:	12/18/93	12/18/93	12/18/93	12/18/93
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
LCS % Recovery:	100	100	102	101
% Recovery Control Limits:	71-133	72-128	72-130	71-120

SEQUOIA ANALYTICAL

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.

MPDS
Services, Inc.

CHAIN OF CUSTODY

S. R: STEVE
UI ING AGENCY

SITE NAME & ADDRESS: UNO. # 5901 DUBLIN
11976 DUBLIN BLVD.

SAMPLE NO.	DATE	TIME	SOIL	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPH-G BTXE	PNA	REMARKS
MW-1	12-9-93			X	X		1	MW		X	3120581
MW-3	"			X	X		2	"	X		0582 AB
MW-5	"			X	X		2	"	X		0583
MW-6	"			X	X		2	"	X		0584

TURN AROUND TIME: REGULAR

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
STEVE	12/9/93 5:45p	Melissa Cruiser
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received by: (Signature)

The following MUST BE completed by the laboratory accepting samples for analysis:

1. Have all samples received for analysis been stored in ice? yes
2. Will samples remain refrigerated until analyzed? yes
3. Did any samples received for analysis have head space? no
4. Were samples in appropriate containers and properly packaged? yes

Melissa Cruiser — Signature; Sample Control — Title; 12/9/93 — Date

2401 Stanwell Drive, Suite 400
Concord, California 94520
Tel 510 602 5100 Fax 510 602 0602