

MONITORING
PURGING
DISPOSING
SAMPLING

MPDS

SERVICES, INCORPORATED

ALCO
HAZMAT

95 JAN 16 AM 7:49

January 12, 1995

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

RE: Unocal Service Station #6419
6401 Dublin Boulevard
Dublin, California

Per the request of the Unocal Corporation Project Manager, Mr. Edward C. Ralston, enclosed please find our report (MPDS-UN6419-02) dated December 12, 1994 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) 277-2311.

Sincerely,

MPDS Services, Inc.



Jarrel F. Crider

/jfc

Enclosure

cc: Mr. Edward C. Ralston

MONITORING
PURGING
DISPOSING
SAMPLING

MPDS

SERVICES, INCORPORATED

MPDS-UN6419-02
December 12, 1994

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

*MW probably required SE ^{and} SW
of MW 1*

Attention: Mr. Edward C. Ralston

RE: Quarterly Data Report
Unocal Service Station #6419
6401 Dublin 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 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 Figures 1, 2, and 3.

Ground water samples were collected on November 18, 1994. Prior to sampling, the wells were each purged of between 7.5 and 8.5 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 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 this quarter are shown on the attached Figure 4. 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 the Alameda County Health Care Services.

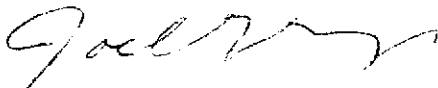
If you have any questions regarding this report, please do not hesitate to call Mr. Nubar Srabian at (510) 602-5120.

Sincerely,

MPDS Services, Inc.

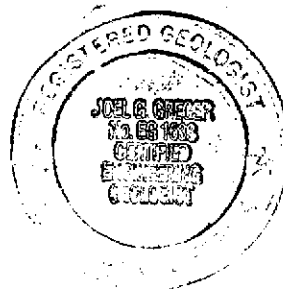


Sarkis A. Karkarian
Staff Engineer



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

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



/bp

Attachments: Tables 1, 2 & 3
Location Map
Figures 1 through 4
Laboratory Analyses
Chain of Custody documentation

cc: Mr. Timothy R. Ross, 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 November 18, 1994)

MW1	322.76	7.69	19.35	0	No	8
MW2	322.73	7.67	19.81	0	No	8.5
MW3	322.72	8.39	19.03	0	No	7.5

(Monitored October 20, 1994)

MW1	321.47	8.98	★	0	--	0
MW2	321.48	8.92	★	0	--	0
MW3	321.47	9.64	★	0	--	0

(Monitored on September 30, 1994)

MW1	321.67	8.78	★	0	--	0
MW2	321.67	8.73	★	0	--	0
MW3	321.68	9.43	★	0	--	0

(Monitored and Sampled on August 25, 1994)

MW1	321.88	8.57	19.34	0	No	8
MW2	321.99	8.41	19.81	0	No	8
MW3	321.91	9.20	19.02	0	No	7

(Monitored and Sampled on March 14, 1994)

MW1	323.18	7.27	19.38	0	No	10
MW2	323.17	7.23	19.85	0	No	10
MW3	323.18	7.93	19.06	0	No	10

TABLE 1 (Continued)

SUMMARY OF MONITORING DATA

<u>Well #</u>	<u>Well Casing Elevation (feet)*</u>
MW1	330.45
MW2	330.40
MW3	331.11

- ◆ The depth to water level and total well depth measurements were taken from the top of the well casings.
- * The elevations of the top of the well casings have been surveyed relative to Mean Sea Level, per the benchmark on the northwest corner of Dougherty Road and Sierra Way (elevation = 331.728 feet MSL).
- ★ Total well depth was not measured.

Note: Monitoring data prior to August 25, 1994, were provided by Kaprealian Engineering, Inc.

TABLE 2

SUMMARY OF LABORATORY ANALYSES
WATER

Date	Well #	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-benzene	Xylenes
11/18/94	MW1	910◆◆	5,100	33	ND	560	38
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	130**	ND	ND	ND	ND
8/25/94	MW1	910◆◆	9,200*	48	ND	540	ND
	MW2	--	ND	ND	ND	ND	ND
	MW3	--	130**	ND	ND	ND	ND
3/14/94	MW1	810◆	1,800*	17	ND	ND	ND
	MW2	--	ND	ND	2.8	1.1	8.0
	MW3	--	150**	ND	ND	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.
- * Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.
- ** Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be gasoline.

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 August 25, 1994, were provided by Kaprealian Engineering, Inc.

TABLE 3

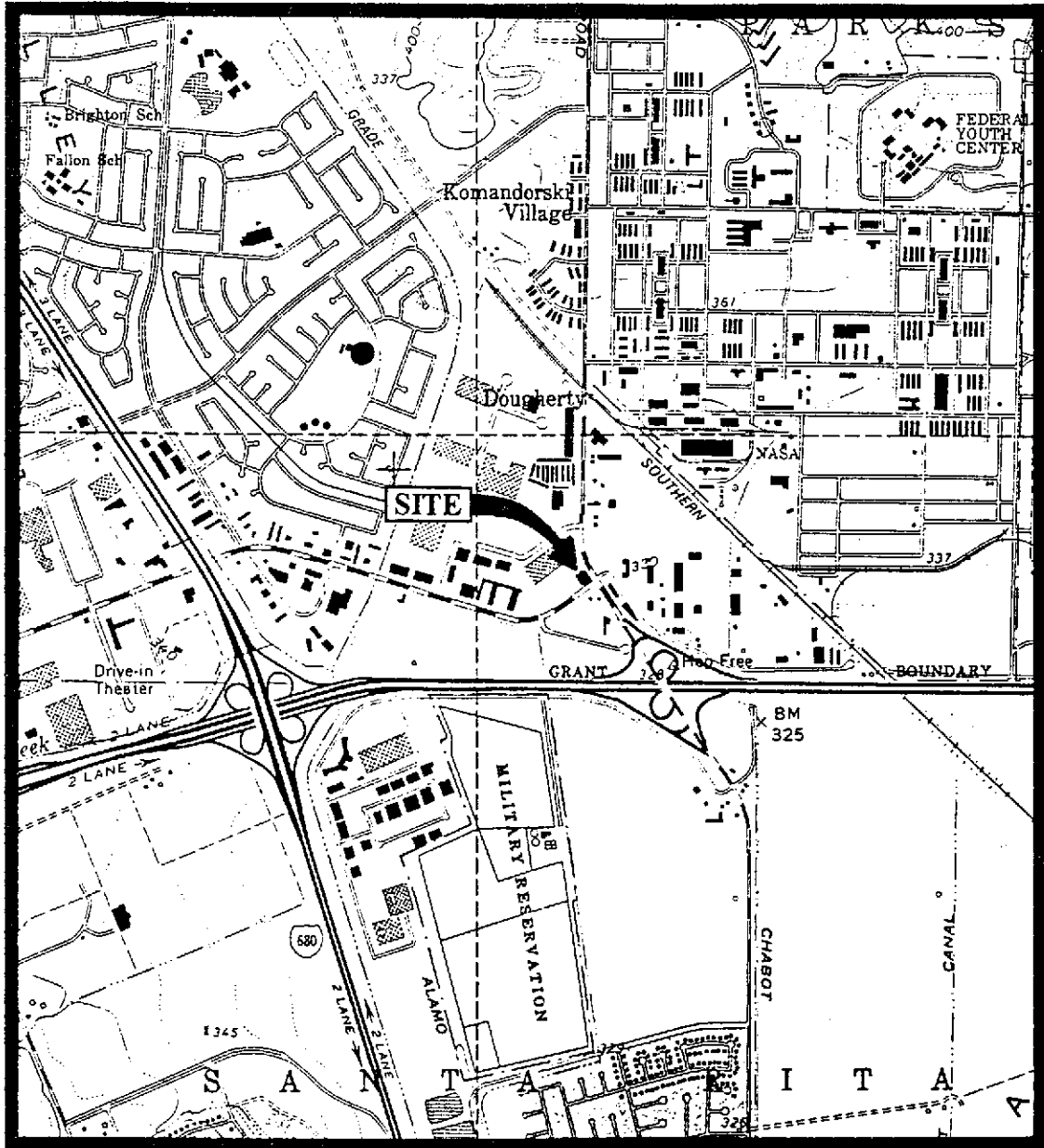
SUMMARY OF LABORATORY ANALYSES
WATER

<u>Date</u>	<u>Well #</u>	<u>Cadmium</u>	<u>Chromium</u>	<u>Lead</u>	<u>Nickel</u>	<u>Zinc</u>
11/18/94	MW1	ND	0.076	ND	0.067	ND
8/25/94	MW1	ND	ND	0.024	ND	ND
3/14/94	MW1	ND	0.012	ND	0.030	0.039

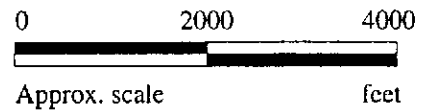
ND = Non-detectable.

Results are in milligrams per liter (mg/L), unless otherwise indicated.

Note: Laboratory analyses data prior to August 25, 1994, were provided by Kaprealian Engineering, Inc.



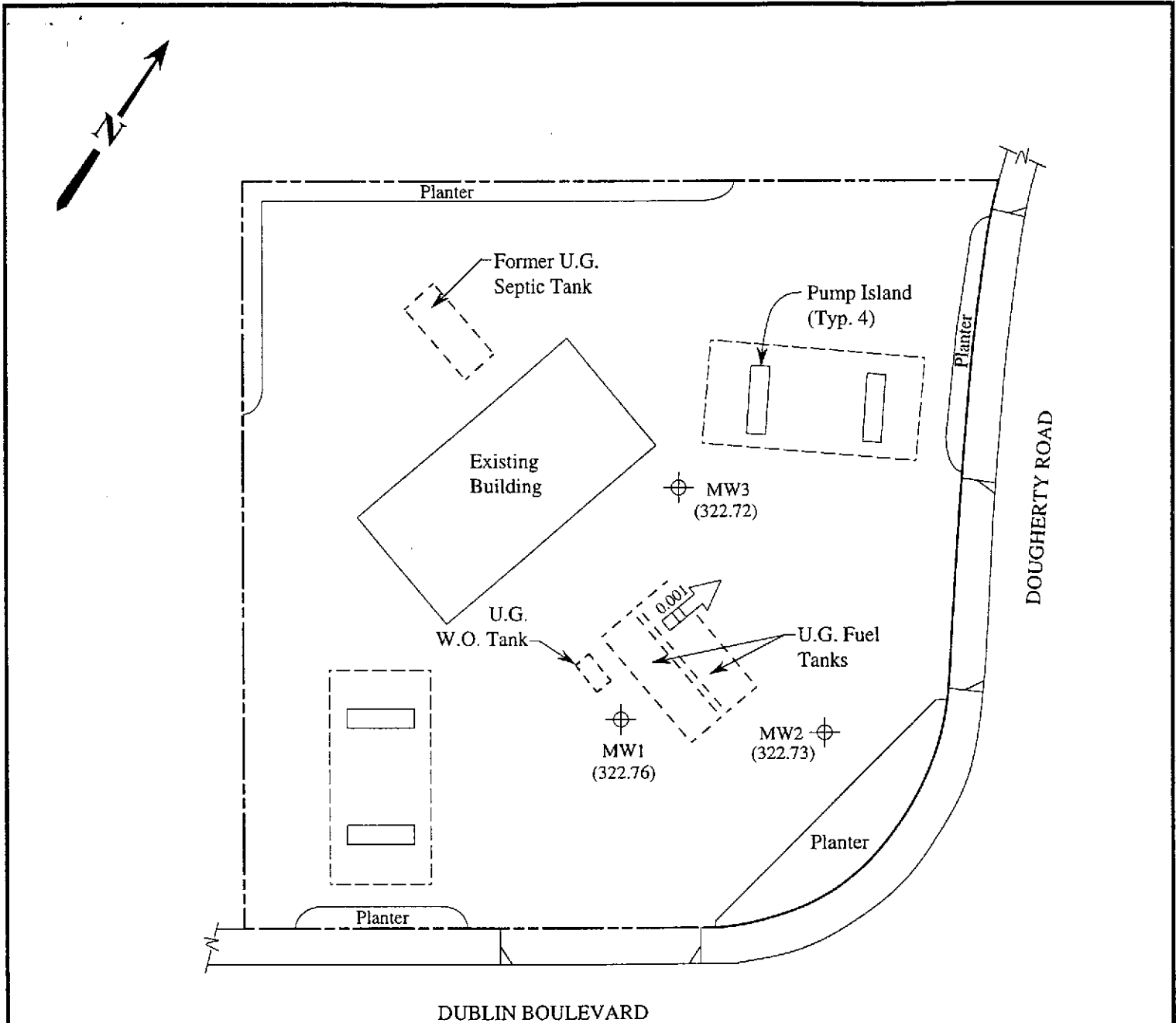
Base modified from 7.5 minute U.S.G.S. Dublin Quadrangle
(photorevised 1980)



MPDS SERVICES, INCORPORATED

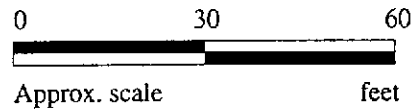
UNOCAL SERVICE STATION #6419
6401 DUBLIN BOULEVARD
DUBLIN, CALIFORNIA

LOCATION
MAP



LEGEND

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

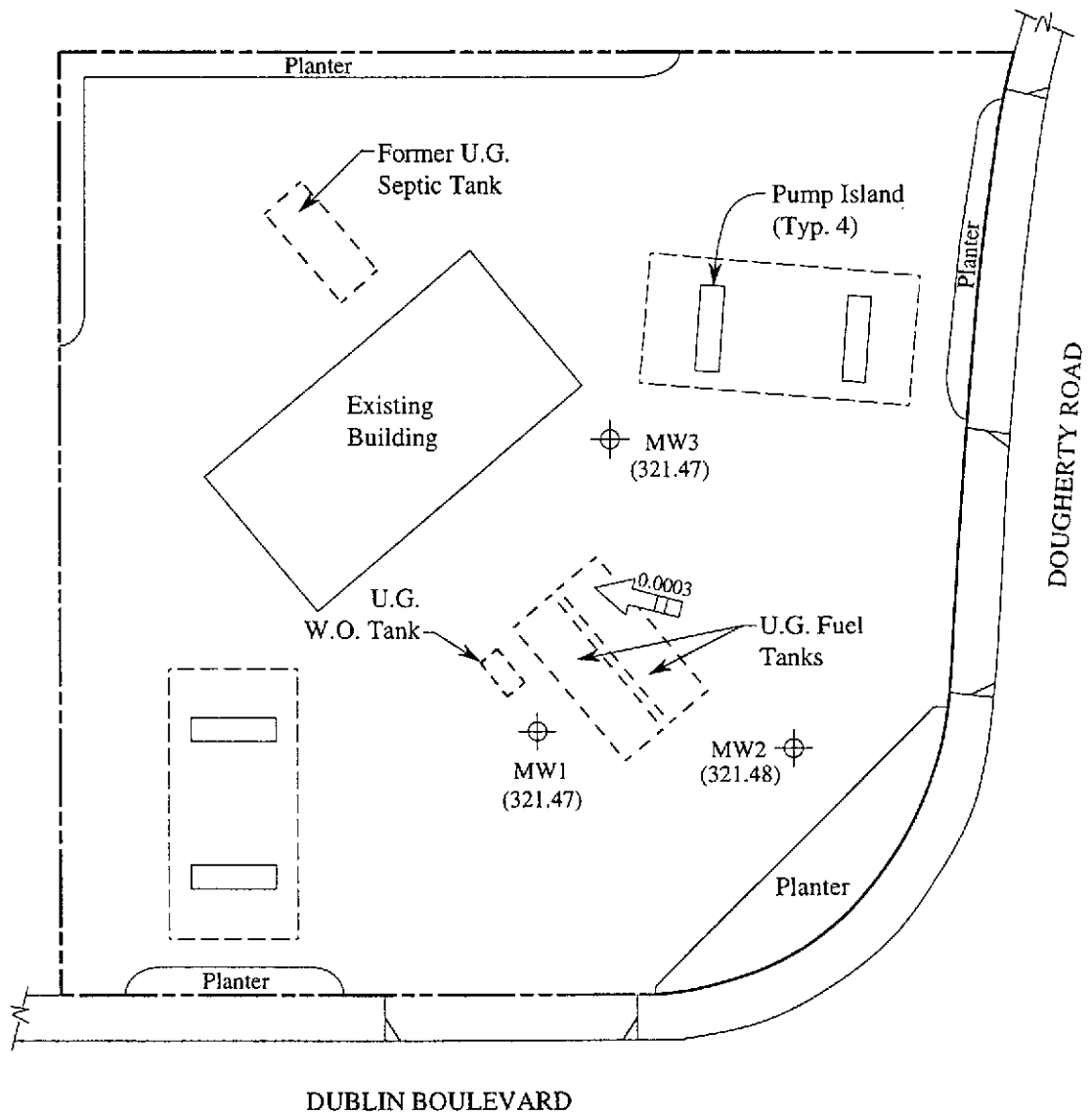
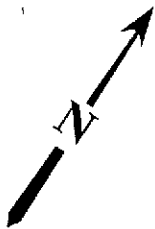


GROUND WATER ELEVATION MAP FOR THE NOVEMBER 18, 1994 MONITORING EVENT






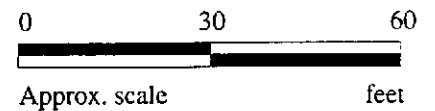
**UNOCAL SERVICE STATION #6419
6401 DUBLIN BOULEVARD
DUBLIN, CALIFORNIA**

**FIGURE
1**



LEGEND

-  Monitoring well
-  Ground water elevation in feet above Mean Sea Level
-  Direction of ground water flow with approximate hydraulic gradient

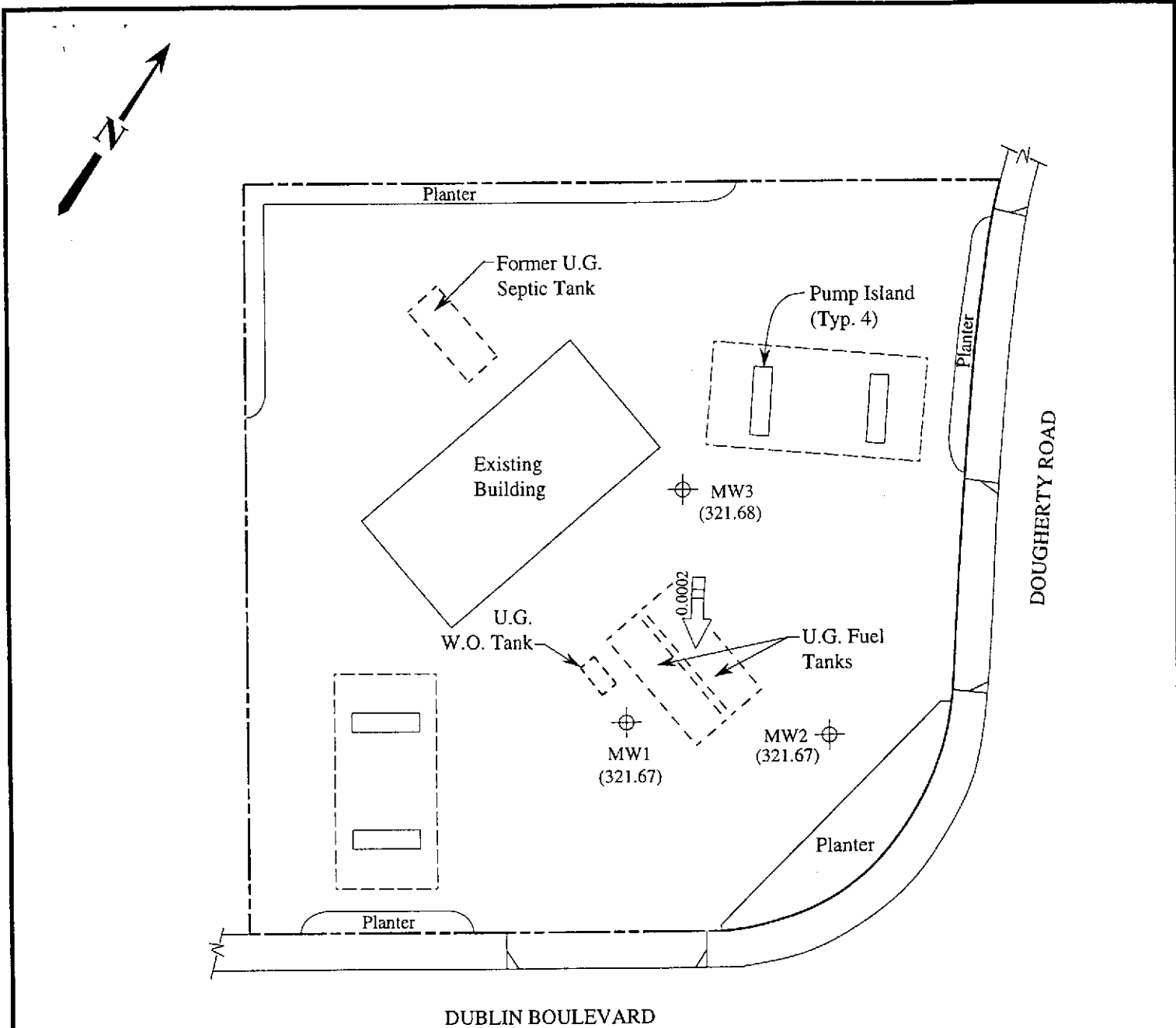


GROUND WATER ELEVATION MAP FOR THE OCTOBER 20, 1994 MONITORING EVENT



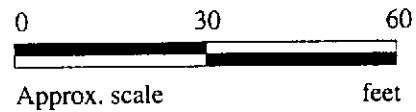
**UNOCAL SERVICE STATION #6419
6401 DUBLIN BOULEVARD
DUBLIN, CALIFORNIA**

**FIGURE
2**

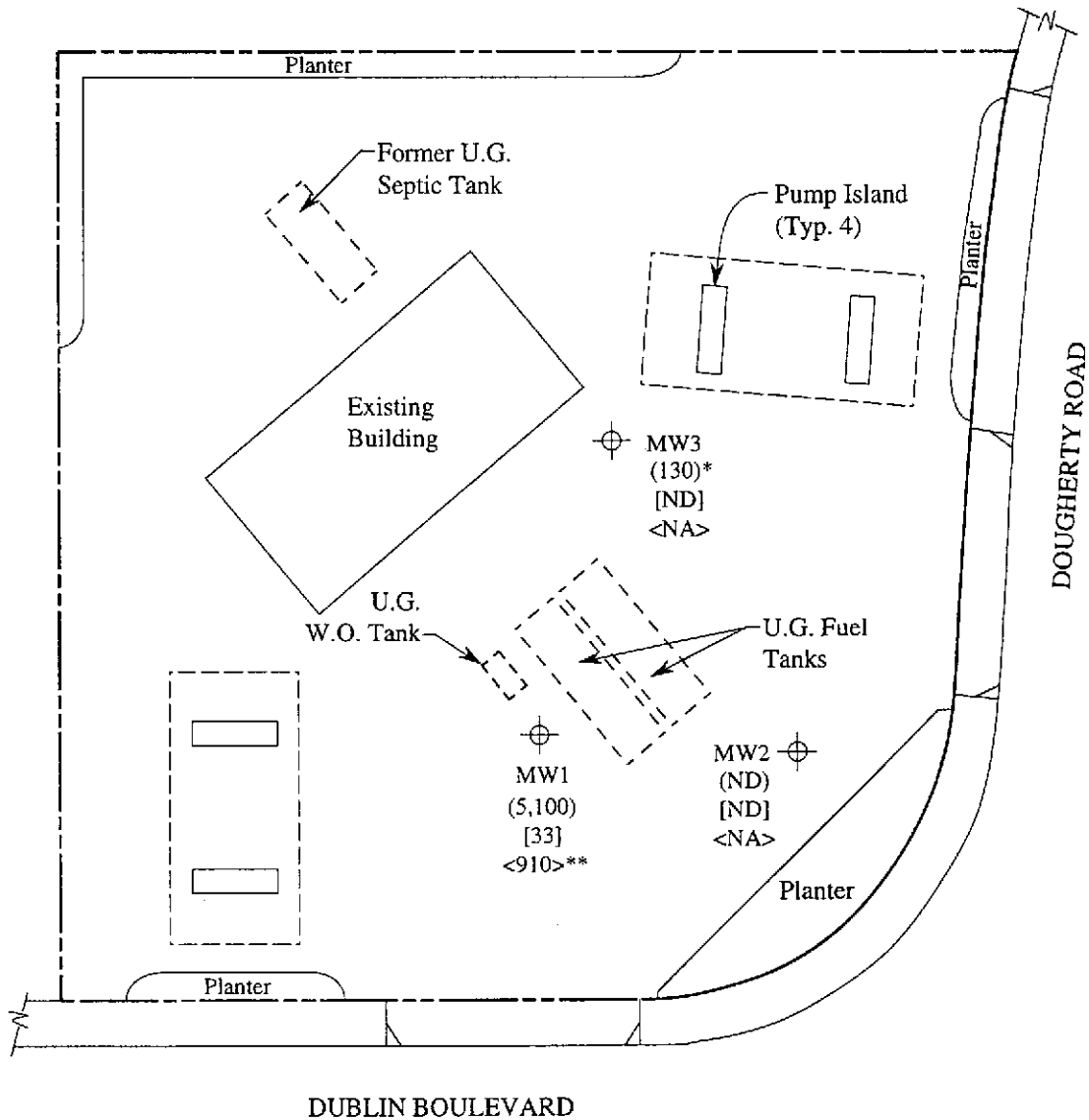
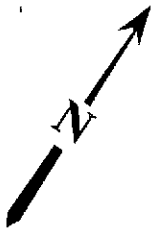


LEGEND

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



GROUND WATER ELEVATION MAP FOR THE SEPTEMBER 30, 1994 MONITORING EVENT



LEGEND

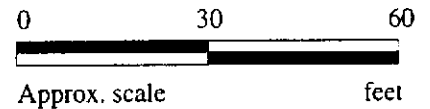
- ⊕ Monitoring well
- () Concentration of TPH as gasoline in $\mu\text{g/L}$
- [] Concentration of benzene in $\mu\text{g/L}$
- < > Concentration of TPH as diesel in $\mu\text{g/L}$

ND = Non-detectable, NA = Not analyzed

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

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

site plan



PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON NOVEMBER 18, 1994



**UNOCAL SERVICE STATION #6419
6401 DUBLIN BOULEVARD
DUBLIN, CALIFORNIA**

**FIGURE
4**



MPDS Services 2401 Stanwell Dr., Ste. 400 Concord, CA 94520 Attention: Avo Avedissian	Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin Matrix Descript: Water Analysis Method: EPA 5030/8015/8020 First Sample #: 411-0929	Sampled: Nov 18, 1994 Received: Nov 18, 1994 Reported: Dec 6, 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
411-0929	MW-1	5,100	33	ND	560	38
411-0930	MW-2	ND	ND	ND	ND	ND
411-0931	MW-3	130*	ND	ND	ND	ND

* Hydrocarbons detected did not appear to be gasoline.

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	Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin	Sampled: Nov 18, 1994
2401 Stanwell Dr., Ste. 400	Matrix Descript: Water	Received: Nov 18, 1994
Concord, CA 94520	Analysis Method: EPA 5030/8015/8020	Reported: Dec 6, 1994
Attention: Avo Avedissian	First Sample #: 411-0929	

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
411-0929	MW-1	Gasoline	10	11/29/94	HP-4	75
411-0930	MW-2	--	1.0	11/29/94	HP-4	87
411-0931	MW-3	Discrete Peak*	1.0	11/30/94	HP-4	95

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager

Please Note:
* "Discrete Peak" refers to an unidentified peak in the MTBE range.





MPDS Services	Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin	Sampled: Nov 18, 1994
2401 Stanwell Dr., Ste. 400	Sample Matrix: Water	Received: Nov 18, 1994
Concord, CA 94520	Analysis Method: EPA 3510/3520/8015	Reported: Dec 6, 1994
Attention: Avo Avedissian	First Sample #: 4111-0929	

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 4111-0929 MW-1*
Extractable Hydrocarbons	50	910

Chromatogram Pattern: Unidentified Hydrocarbons <C16 & >C20

Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Extracted:	11/24/94
Date Analyzed:	11/30/94
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 <C16" are probably gasoline; "> C20" refers to unidentified peaks in the total oil and grease range.





MPDS Services	Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin	Sampled: Nov 18, 1994
2401 Starwell Dr., Ste. 400	Sample Descript: Water, MW-1	Received: Nov 18, 1994
Concord, CA 94520		Analyzed: Nov 21, 1994
Attention: Avo Avedissian	Lab Number: 411-0929	Reported: Dec 6, 1994

LABORATORY ANALYSIS

Analyte	Detection Limit mg/L	Sample Results mg/L
Cadmium.....	0.010	N.D.
Chromium.....	0.010	0.076
Lead.....	0.020	N.D.
Nickel.....	0.020	0.057
Zinc.....	0.020	N.D.

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





MPDS Services	Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
2401 Stanwell Dr., Ste. 400	Matrix: Liquid
Concord, CA 94520	
Attention: Avo Avedissian	QC Sample Group: 4110929-31
	Reported: Dec 6, 1994

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#:	4110930	4110930	4110930	4110930
Date Prepared:	11/29/94	11/29/94	11/29/94	11/29/94
Date Analyzed:	11/29/94	11/29/94	11/29/94	11/29/94
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:	85	95	100	102
Matrix Spike				
Duplicate %				
Recovery:	85	90	95	95
Relative %				
Difference:	0.0	5.1	5.1	7.1

LCS Batch#:	2LCS112994	2LCS112994	2LCS112994	2LCS112994
Date Prepared:	11/29/94	11/29/94	11/29/94	11/29/94
Date Analyzed:	11/29/94	11/29/94	11/29/94	11/29/94
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
LCS %				
Recovery:	82	89	91	93

% Recovery				
Control Limits:	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. 400
 Concord, CA 94520
 Attention: Avo Avedissian

Client Project ID: Unocal #6419, 6401 Dublin Blvd., Dublin
 Matrix: Liquid

QC Sample Group: 4110929-31

Reported: Dec 6, 1994

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes	Diesel
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015 Mod.
Analyst:	A. Tuzon	A. Tuzon	A. Tuzon	A. Tuzon	K.V.S.

MS/MSD Batch#:	4111303	4111303	4111303	4111303	BLK112494
Date Prepared:	11/30/94	11/30/94	11/30/94	11/30/94	11/24/94
Date Analyzed:	11/30/94	11/30/94	11/30/94	11/30/94	11/30/94
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4	HP-3A
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	300 µg/L
Matrix Spike % Recovery:	75	85	90	95	72
Matrix Spike Duplicate % Recovery:	80	90	90	95	70
Relative % Difference:	6.5	5.6	0.0	0.0	2.8

LCS Batch#:	2LCS113094	2LCS113094	2LCS113094	2LCS113094	BLK112494
Date Prepared:	11/30/94	11/30/94	11/30/94	11/30/94	11/24/94
Date Analyzed:	11/30/94	11/30/94	11/30/94	11/30/94	11/30/94
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4	HP-3A
LCS % Recovery:	88	98	102	104	72

% Recovery Control Limits:	71-133	72-128	72-130	71-120	28-122
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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 #6419, 6401 Dublin Blvd., Dublin Matrix: Liquid QC Sample Group: 4110929-31	Reported: Dec 6, 1994
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QUALITY CONTROL DATA REPORT

ANALYTE	Cadmium	Chromium	Lead	Nickel	Zinc
Method:	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200.7	EPA 200.7
Analyst:	J. Dinsay	J. Dinsay	J. Dinsay	J. Dinsay	J. Dinsay

MS/MSD					
Batch#:	4110929	4110929	4110929	4110929	4110929
Date Prepared:	11/21/94	11/21/94	11/21/94	11/21/94	11/21/94
Date Analyzed:	11/21/94	11/21/94	11/21/94	11/21/94	11/21/94
Instrument I.D.#:	Liberty-100	Liberty-100	Liberty-100	Liberty-100	Liberty-100
Conc. Spiked:	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L	1.0 mg/L
Matrix Spike					
% Recovery:	97	87	89	90	98
Matrix Spike					
Duplicate %					
Recovery:	100	89	91	90	101
Relative %					
Difference:	3.1	2.3	2.2	0.0	3.0

LCS Batch#:	BLK112194	BLK112194	BLK112194	BLK112194	BLK112194
Date Prepared:	11/21/94	11/21/94	11/21/94	11/21/94	11/21/94
Date Analyzed:	11/21/94	11/21/94	11/21/94	11/21/94	11/21/94
Instrument I.D.#:	Liberty-100	Liberty-100	Liberty-100	Liberty-100	Liberty-100
LCS %					
Recovery:	97	98	96	100	98

% Recovery					
Control Limits:	75-125	75-125	75-125	75-125	75-125

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



M P D S Services, Inc.

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

CHAIN OF CUSTODY

SAMPLER			UNOCAL					ANALYSES REQUESTED						TURN AROUND TIME:	
STEVE BALIAN			S/S # <u>6419</u> CITY: <u>DUBLIN</u>					TPH-GAS BTEX	TPH-DIESEL	TOG	8010	5-METALS			REGULAR
WITNESSING AGENCY			ADDRESS: <u>6401 DUBLIN BLV.</u>												
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION								
MW-1	11-18-94	10:50	X	X		4	WELL	X	X			X	4110929	A-D	
MW-2	"	9:55	X	X		2	"	X					4110930	A,B	
MW-3	"	10:20	X	X		2	"	X					4110931	↓	
RELINQUISHED BY: STEVE BALIAN 11-18-94 (SIGNATURE)			DATE/TIME 14:20		RECEIVED BY: <i>Melissa Creusere</i> (SIGNATURE)			THE FOLLOWING MUST BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:							
								1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? <i>Yes</i>							
								2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? <i>Yes</i>							
								3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? <i>No</i>							
								4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? <i>Yes</i>							
								SIGNATURE: <i>Melissa Creusere</i>				TITLE: <i>Sample Control</i>		DATE: <i>11/18/94</i>	