

MPDS-UN6419-10
September 16, 1997

Tosco Marketing Company
Environmental Compliance Department
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

Attention: Ms. Tina R. Berry

RE: Semi-Annual Data Report
Unocal Service Station #6419
6401 Dublin Boulevard
Dublin, California

Dear Ms. Berry:

This data report presents the results of the most recent 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 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 flow direction during the most recent semi-annual period is shown on the attached Figure 1.

A ground water sample was collected from well MW1 on August 18, 1997. Prior to sampling, well MW1 was purged of one gallon of water. In addition, dissolved oxygen concentrations were measured in wells MW1, MW2 and MW3, and are presented in Table 4. The water sample was collected using a clean Teflon bailer and was decanted into clean VOA vials 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 Tosco Refinery located in Rodeo, California, for treatment and discharge to San Pablo Bay under NPDES permit.

ANALYTICAL RESULTS

The ground water sample collected from well MW1 was analyzed at Sequoia Analytical Laboratory and was 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 and benzene detected in the ground water sample collected this semi-annual period is 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.

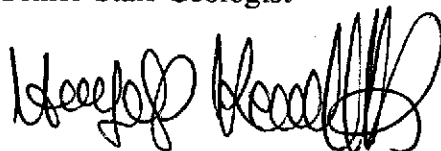
If you have any questions regarding this report, please do not hesitate to call Mr. Nubar Srabian at (510) 602-5120.

Sincerely,

MPDS Services, Inc.



Haig (Gary) Tejirian
Senior Staff Geologist



Hagop Kevork, P.E.
Senior Staff Engineer



License No. C 55734
Exp. Date : December 31, 2000

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

cc: Sarkis A. Soghomonian, 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)
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(Monitored and Sampled on August 18, 1997)

MW1	322.85	7.38	9.18‡	0	No	1
MW2	322.87	7.40	17.59	0	--	0
MW3	322.86	7.82	18.56	0	--	0

(Monitored and Sampled on February 17, 1997)

MW1	324.50	5.73	8.91‡	0	No	6.5
MW2	324.63	5.64	17.27	0	No	23
MW3	324.61	6.07	18.28	0	No	24

(Monitored and Sampled on August 23, 1996)

MW1	322.67	7.78	19.34	0	No	0
MW2†	322.96	7.44	19.80	0	No	0
MW3†	323.13	7.98	19.03	0	No	0

(Monitored and Sampled on February 26, 1996)

MW1	324.68	5.77	19.33	0	No	9.5
MW2	324.91	5.49	19.80	0	No	10
MW3	324.86	6.25	19.01	0	No	9

Well #	Well Casing Elevation (feet)*	Well Casing Elevation (feet)**
MW1	330.23	330.45
MW2	330.27	330.40
MW3	330.68	331.11

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

‡ Well MW1 appears to be obstructed at approximately 9 feet.

† Monitored only.

Table 1
Summary of Monitoring Data

- * The elevations of the top of the well casings have been resurveyed (after station rebuilding) relative to Mean Sea Level (MSL), per the benchmark on the northwest corner of Dougherty Road and Sierra Way (elevation = 331.728 feet MSL). These top of casing elevations are used beginning with the February 17, 1997 monitoring event.

- ** The elevations of the top of the well casings have been surveyed relative to MSL, per the benchmark on the northwest corner of Dougherty Road and Sierra Way (elevation = 331.728 feet MSL). These top of casing elevations have been used prior to the February 17, 1997 monitoring event.

Table 2
 Summary of Laboratory Analyses
 Water

Well #	Date	TPH as Diesel	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE	
MW1	3/14/94	810†	1,800*	17	ND	ND	ND	--	
	8/25/94	910††	9,200*	48	ND	540	ND	--	
	11/18/94	910††	5,100	33	ND	560	38	--	
	2/15/95	660†	3,300	13	ND	180	5.2	--	
	5/17/95	200††	130	0.75	ND	1.5	ND	--	
	8/25/95	--	490	9.1	ND	21	2.0	‡	
	11/28/95	--	1,400	18	3.0	98	3.6	‡	
	2/26/96	--	560	9.3	ND	22	ND	1,300	
	8/23/96	--	ND	ND	ND	ND	ND	640	
	2/17/97	--	120**	1.0	0.95	ND	ND	280	
	8/18/97	--	ND	ND	ND	ND	ND	100	
MW2	3/14/94	--	ND	ND	2.8	1.1	8.0	--	
	8/25/94	--	ND	ND	ND	ND	ND	--	
	11/18/94	--	ND	ND	ND	ND	ND	--	
	2/15/95	--	ND	ND	ND	ND	ND	--	
	5/17/95	--	ND	ND	ND	ND	ND	--	
	8/25/95	--	ND	ND	ND	ND	ND	--	
	11/28/95	--	ND	ND	ND	ND	ND	--	
	2/26/96	--	ND	ND	ND	ND	ND	--	
	8/23/96	SAMPLED ANNUALLY IN FEBRUARY							--
	2/17/97	--	ND	ND	ND	ND	ND	ND	
MW3	3/14/94	--	150**	ND	ND	ND	ND	--	
	8/25/94	--	130**	ND	ND	ND	ND	--	
	11/18/94	--	130**	ND	ND	ND	ND	--	
	2/15/95	--	130**	ND	ND	ND	ND	--	
	5/17/95	--	99**	ND	ND	ND	ND	--	
	8/25/95	--	ND	ND	ND	ND	ND	‡	
	11/28/95	--	ND	ND	ND	ND	ND	--	
	2/26/96	--	ND	ND	ND	ND	ND	‡	
	8/23/96	SAMPLED ANNUALLY IN FEBRUARY							--
	2/17/97	--	ND	ND	ND	ND	ND	68	

† 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.

Table 2
Summary of Laboratory Analyses
Water

‡ 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.

-- Indicates analysis was not performed.

ND = Non-detectable.

MTBE = Methyl tert butyl ether.

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

Note: The detection limit for results reported as ND by Sequoia Analytical Laboratory is equal to the stated detection limit times the dilution factor indicated on the laboratory analytical sheets.

Prior to August 1, 1995, the total purgeable petroleum hydrocarbon (TPH as gasoline) quantification range used by Sequoia Analytical Laboratory was C4 - C12. Since August 1, 1995, the quantification range used by Sequoia Analytical Laboratory is C6 - C12.

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

Table 3
Summary of Laboratory Analyses
Water

Well #	Date	Cadmium	Chromium	Lead	Nickel	Zinc
MW1	3/14/94	ND	0.012	ND	0.030	0.039
	8/25/94	ND	ND	0.024	ND	ND
	11/18/94	ND	0.076	ND	0.067	ND
	2/15/95	ND	ND	ND	ND	ND
	5/17/95	ND	ND	ND	0.021	ND

ND = Non-detectable.

Results are in milligrams 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 4
 Summary of Monitoring Data

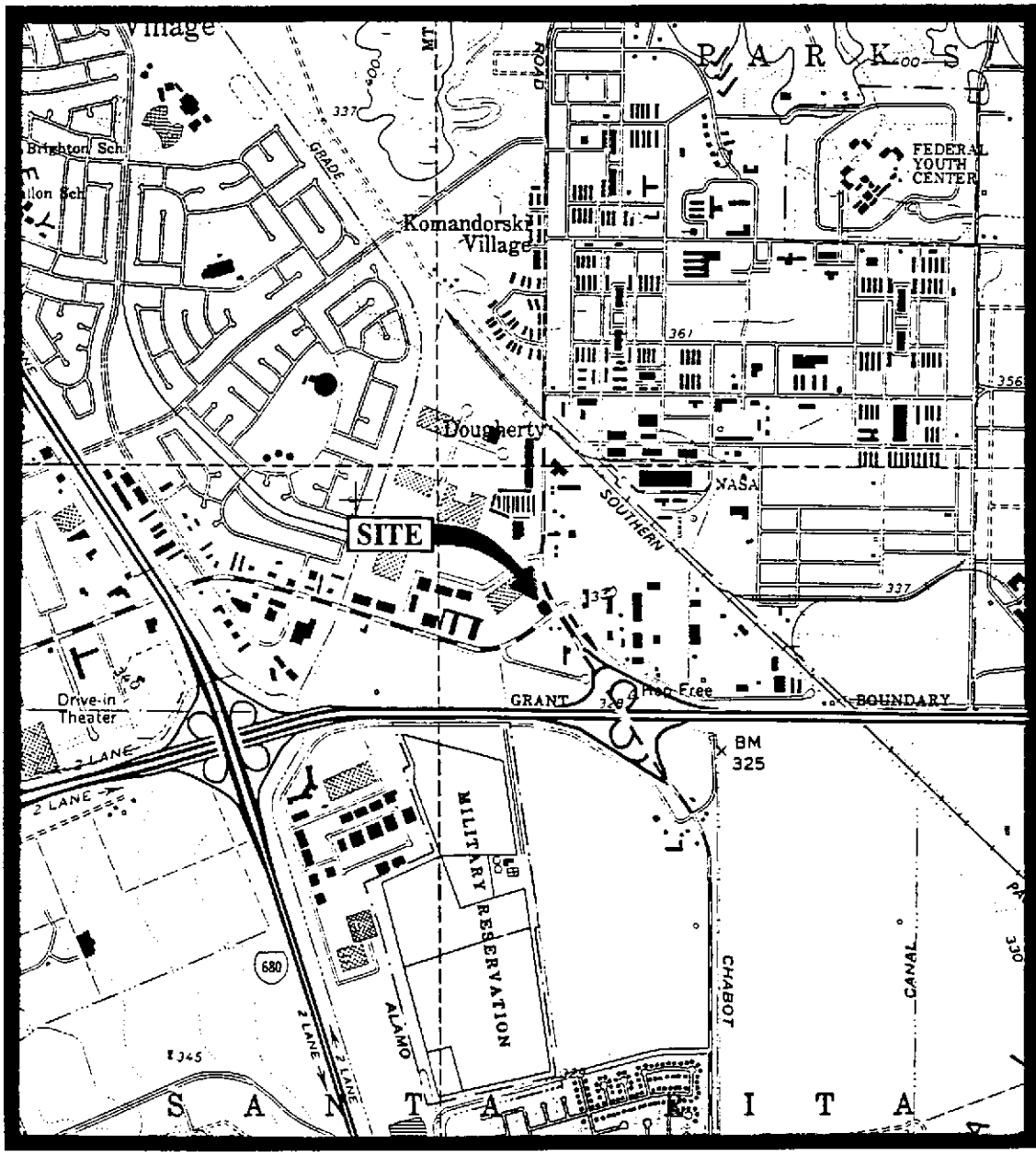
Well	Date	Dissolved Oxygen Concentrations	
		Before Purging (mg/L)	After Purging (mg/L)
MW1	2/15/95	--	4.30
	5/17/95	--	1.20
	8/25/95	--	2.71
	11/28/95	--	3.25
	2/26/96	5.23	1.41
	8/23/96	3.83	N/A
	2/17/97	0.82	0.78
	8/18/97	1.28	2.35
MW2	2/15/95	--	1.90
	2/26/96	0.62	0.43
	8/23/96	2.04	N/A
	2/17/97	0.90	0.82
	8/18/97	1.16	--
MW3	2/15/95	--	2.60
	5/17/95	--	1.13
	8/25/95	--	1.86
	11/28/95	--	6.81
	2/26/96	16.83	1.11
	8/23/96	3.29	N/A
	2/17/97	0.80	0.80
	8/18/97	1.43	--

-- Indicates measurement was not taken.

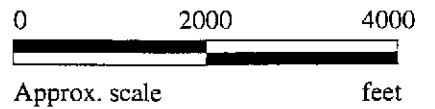
mg/L = Milligrams per liter.

N/A = Not Applicable.

Note: Measurements were taken using a LaMotte DO4000 dissolved oxygen meter.



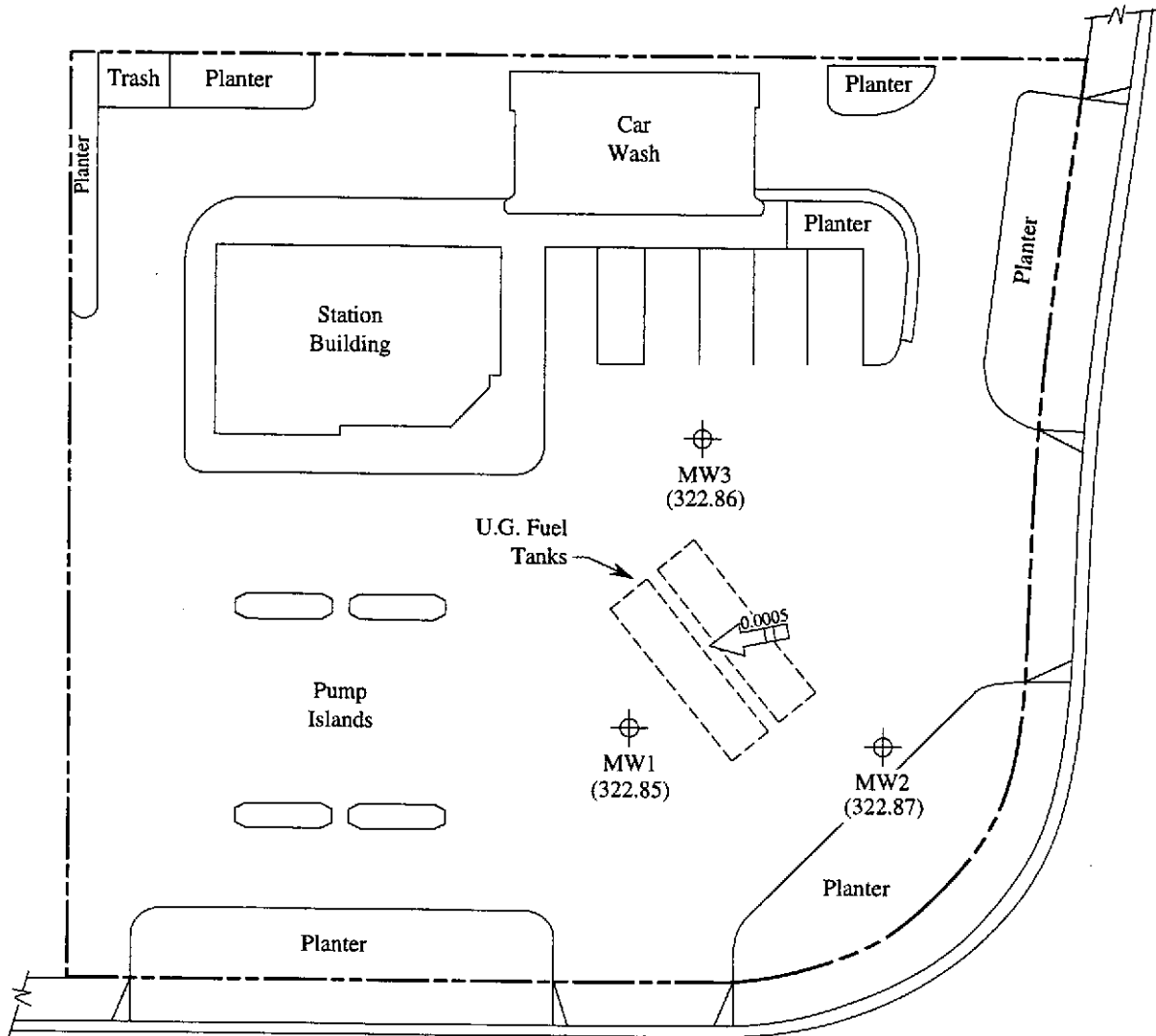
Base modified from 7.5 minute U.S.G.S. Dublin Quadrangle
 (photorevised 1980)






MPDS SERVICES, INCORPORATED

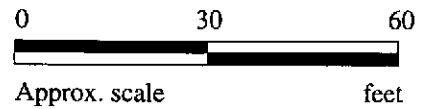
UNOCAL SERVICE STATION #6419
 6401 DUBLIN BOULEVARD
 DUBLIN, CALIFORNIA

LOCATION
 MAP



LEGEND

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

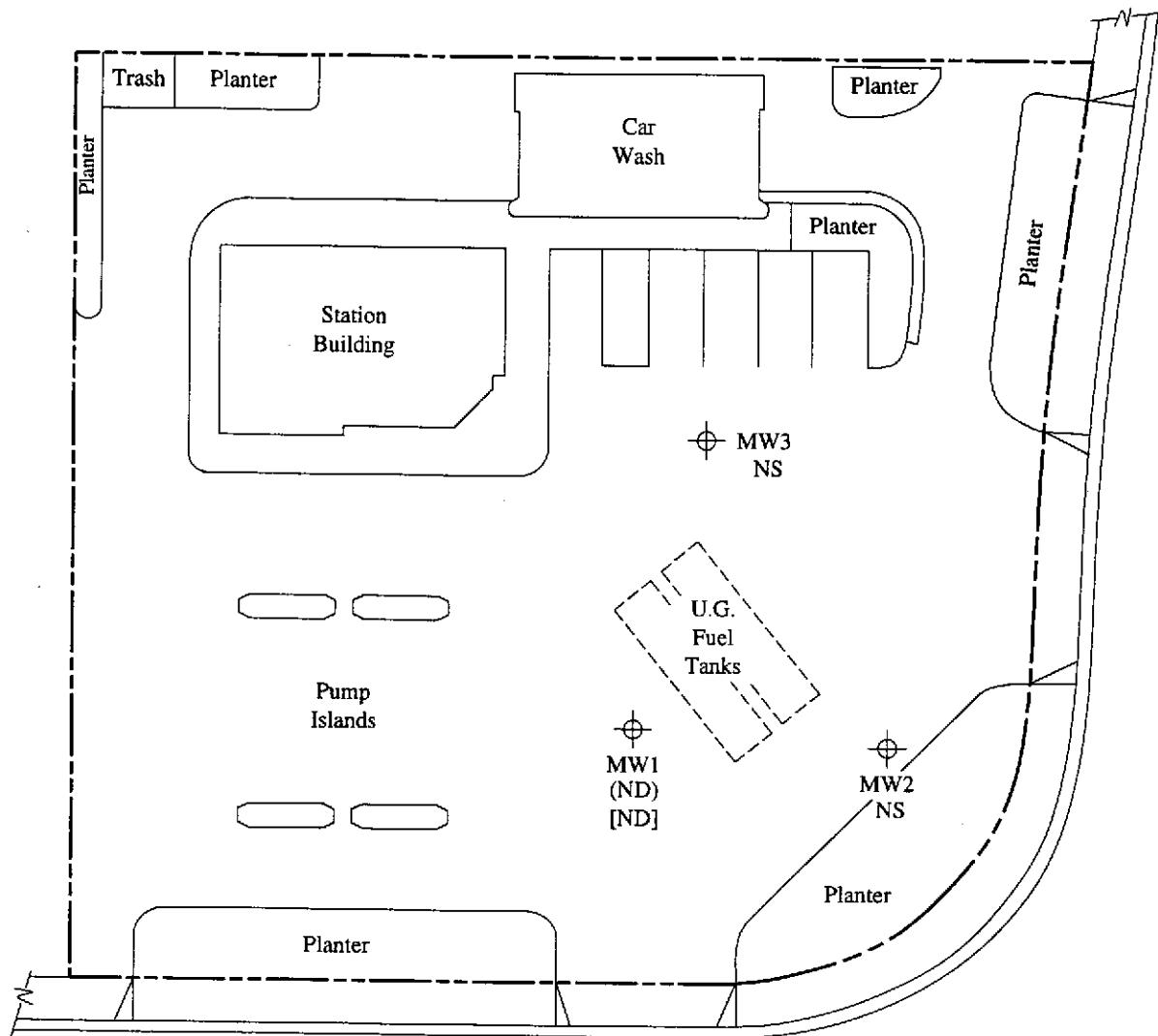


GROUND WATER FLOW DIRECTION MAP FOR THE AUGUST 18, 1997 MONITORING EVENT

MPDS SERVICES, INCORPORATED

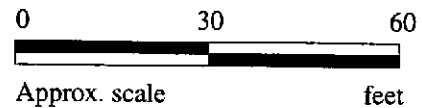
**UNOCAL SERVICE STATION #6419
6401 DUBLIN BOULEVARD
DUBLIN, CALIFORNIA**

**FIGURE
1**



LEGEND

- ⊕ Monitoring well
- () Concentration of TPH as gasoline in $\mu\text{g/L}$
- [] Concentration of benzene in $\mu\text{g/L}$
- ND Non-detectable, NS Not sampled



PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER ON AUGUST 18, 1997

MPDS SERVICES, INCORPORATED

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

**FIGURE
2**



MPDS Services	Client Project ID: Tosco #5734,47011 Warm Springs Blvd.	Sampled: Aug 20, 1997
2401 Stanwell Dr., Ste. 300	Matrix Descript: Water	Received: Aug 20, 1997
Concord, CA 94520	Analysis Method: EPA 5030/8015 Mod./8020	Reported: Sep 3, 1997
Attention: Jarrel Crider	First Sample #: 708-1162	

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
708-1162	LF-1	ND	1.0	ND	ND	ND
708-1163	LF-4	ND	ND	ND	ND	ND
708-1164	LF-5	ND	ND	ND	ND	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: Jarrel Crider	Client Project ID: Tosco #5734,47011 Warm Springs Blvd. Matrix Descript: Water Analysis Method: EPA 5030/8015 Mod./8020 First Sample #: 708-1162	Sampled: Aug 20, 1997 Received: Aug 20, 1997 Reported: Sep 3, 1997
---	---	--

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
708-1162	LF-1	--	1.0	08/25/97	HP-2	80
708-1163	LF-4	--	1.0	08/25/97	HP-2	77
708-1164	LF-5	--	1.0	08/25/97	HP-2	77

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: Tosco #5734,47011 Warm Springs Blvd.
Sample Descript: Water Fremont
Analysis for: MTBE (Modified EPA 8020)
First Sample #: 708-1162

Sampled: Aug 20, 1997
Received: Aug 20, 1997
Analyzed: Aug 25, 1997
Reported: Sep 3, 1997

LABORATORY ANALYSIS FOR: MTBE (Modified EPA 8020)

Sample Number	Sample Description	Detection Limit µg/L	Sample Result µg/L
708-1162	LF-1	5.0	6.5
708-1163	LF-4	5.0	N.D.
708-1164	LF-5	5.0	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
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Tosco #5734,47011 Warm Springs Blvd. Fremont
Matrix: Liquid

QC Sample Group: 7081162-164

Reported: Sep 3, 1997

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	K. Nill	K. Nill	K. Nill	K. Nill

MS/MSD Batch#:	7081302	7081302	7081302	7081302
Date Prepared:	8/26/97	8/26/97	8/26/97	8/26/97
Date Analyzed:	8/26/97	8/26/97	8/26/97	8/26/97
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	85	105	95	103
Matrix Spike Duplicate % Recovery:	85	105	100	100
Relative % Difference:	0.0	0.0	5.1	3.2

LCS Batch#:	2LCS082597	2LCS082597	2LCS082597	2LCS082597
Date Prepared:	8/25/97	8/26/97	8/26/97	8/26/97
Date Analyzed:	8/25/97	8/26/97	8/26/97	8/26/97
Instrument I.D.#:	HP-2	HP-2	HP-2	HP-2
LCS % Recovery:	85	105	95	103

% Recovery Control Limits:	60-140	60-140	60-140	60-140
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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



CHAIN OF CUSTODY

9708319

SAMPLER		TOSCO		ANALYSES REQUESTED										TURN AROUND TIME:				
JOE AJEMIAN		S/S # 5734 CITY: <u>Flement</u>												Regular				
WITNESSING AGENCY		ADDRESS: <u>47011 Warm Springs Blvd</u>												REMARKS				
SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPHG/BTEX	MTBE	TPHD	TOG	8010						
LF-1	8.20.97		-	-		240A	welc	✓				7081162						MTBE: 5ppb.
LF-4	/		-	-		1	/	✓				7081163						
LF-5	/		-	-		1	/	✓				7081164						
RELINQUISHED BY:		DATE/TIME		RECEIVED BY:			DATE/TIME		THE FOLLOWING <u>MUST</u> BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:									
		11:40 A.M.					1140		1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON ICE? <u>Y</u>									
(SIGNATURE) <u>Joe Ajemian</u>		8-20-97		(SIGNATURE) <u>[Signature]</u>			8/20/97		2. WILL SAMPLES REMAIN REFRIGERATED UNTIL ANALYZED? <u>Y</u>									
(SIGNATURE) <u>[Signature]</u>				(SIGNATURE) <u>[Signature]</u>			8-20-97		3. DID ANY SAMPLES RECEIVED FOR ANALYSIS HAVE HEAD SPACE? <u>N</u>									
(SIGNATURE) <u>[Signature]</u>		8-20		(SIGNATURE) <u>[Signature]</u>			8/20/97		4. WERE SAMPLES IN APPROPRIATE CONTAINERS AND PROPERLY PACKAGED? <u>Y</u>									
(SIGNATURE) <u>[Signature]</u>				(SIGNATURE) <u>[Signature]</u>			1435		SIGNATURE: <u>[Signature]</u> TITLE: DATE: 8/20/97									

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.