



GETTLER-RYAN INC.

TRANSMITTAL

Responding to
10/14/99

STIP
4104

June 10, 1999
G-R #:180022

TO: Mr. David B. De Witt
Tosco Marketing Company
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

CC: Mr. Keith Romstad
ERI
73 Digital Drive, Suite 100
Novato, California 94949

FROM: Deanna L. Harding
Project Coordinator
Gettler-Ryan Inc.
6747 Sierra Court, Suite J
Dublin, California 94568

RE: Tosco(Unocal) SS #7176
7850 Amador Valley Blvd.
Dublin, California


WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	June 8, 1999	Groundwater Monitoring and Sampling Report Second Quarter 1999 - Event of April 5, 1999

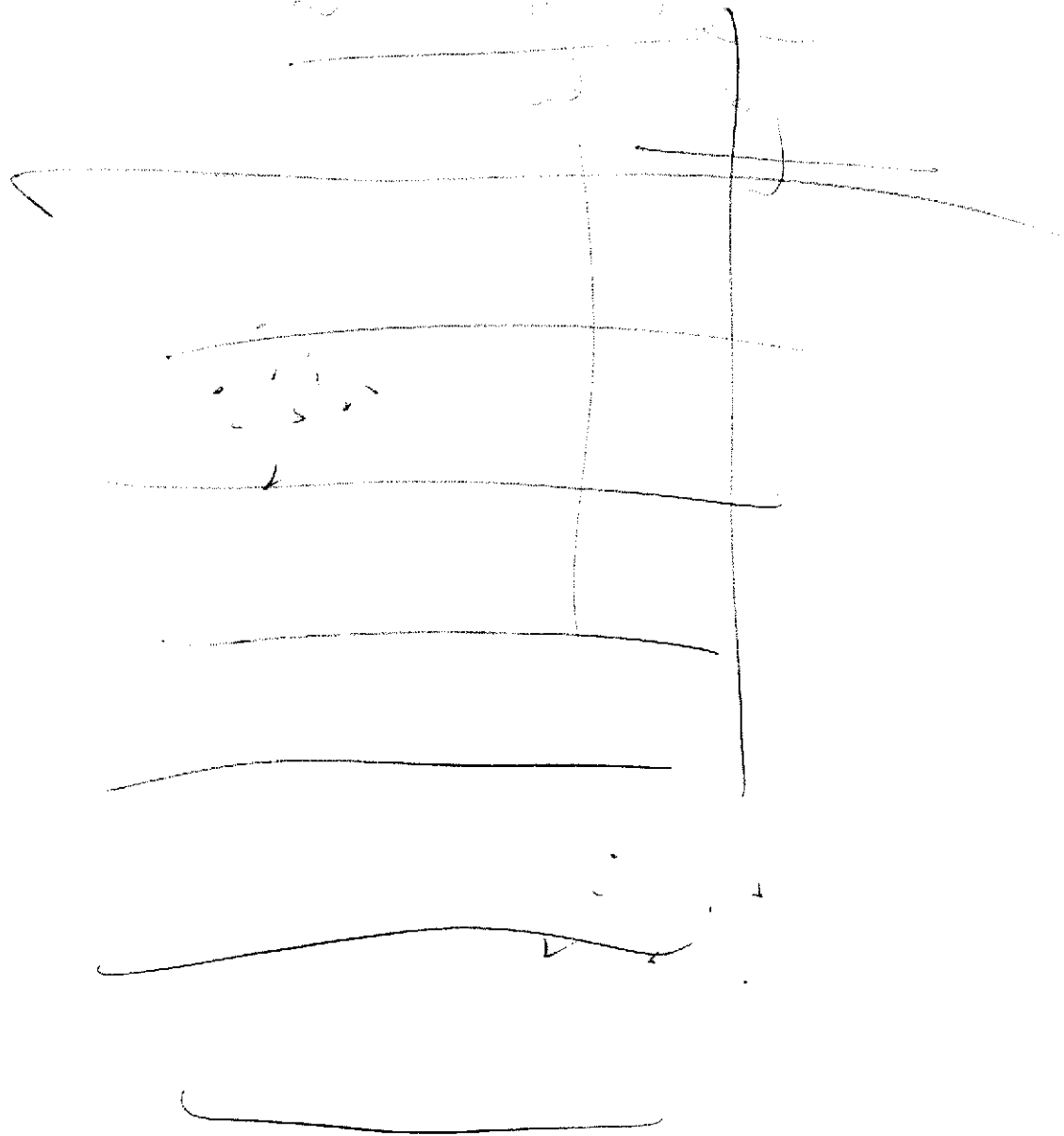
COMMENTS:

This report is being sent to you for your review/comment, prior to being distributed on your behalf. If no comments are received by **June 22, 1999**, this report will be distributed to the following:

Enclosure

cc: 
Alameda County Health Care Services
1131 Harbor Bay Parkway
Alameda, California 94502

99 JUN 24 PM 3:41
ENVIRONMENTAL PROTECTION





GETTLER - RYAN INC.

June 8, 1999
G-R Job #180022

Mr. David B. De Witt
Tosco Marketing Company
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

RE: Second Quarter 1999 Groundwater Monitoring & Sampling Report
Tosco (Unocal) Service Station #7176
7850 Amador Valley Boulevard
Dublin, California

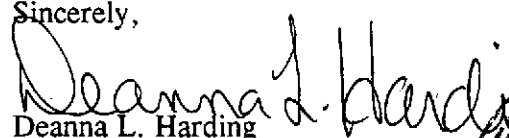
Dear Mr. De Witt:


This report documents the quarterly groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On April 5, 1999, field personnel monitored and sampled five wells (U-1, U-2, U-3, MW-4, and MW-5) at the above referenced site.

Static groundwater levels were measured and all wells were checked for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were not present in the wells. Static water level data and groundwater elevations are summarized in Table 1. Dissolved Oxygen Concentrations are summarized in Table 2. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells as specified by G-R Standard Operating Procedure - Groundwater Sampling (attached). The field data sheets are also attached. The samples were analyzed by Sequoia Analytical. Analytical results are summarized in Table 1. A Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

Sincerely,


Deanna L. Harding
Project Coordinator


Stephen J. Carter
Senior Geologist, R.G. No. 5577

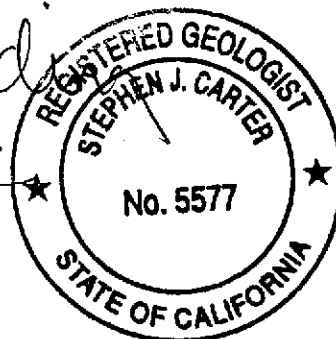


Figure 1: Potentiometric Map
Figure 2: Concentration Map
Table 1: Groundwater Monitoring Data and Analytical Results
Table 2: Dissolved Oxygen Concentrations
Table 3: Groundwater Analytical Results - Oxygenate Compounds
Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports

7176.qml

AMADOR VALLEY BOULEVARD

EXPLANATION

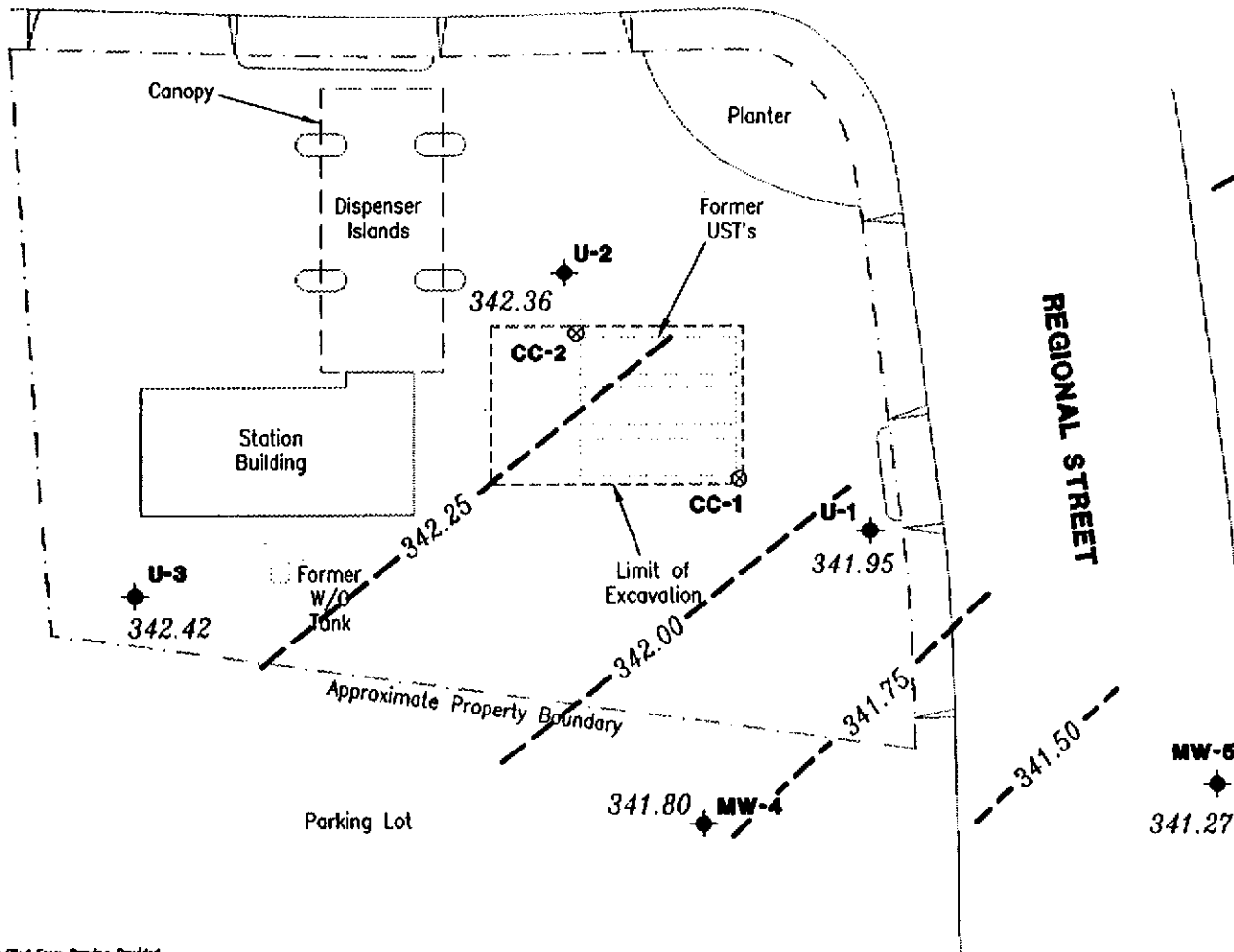
- ◆ Groundwater monitoring well
- ⊗ Conductor casing
- 99.99 Groundwater elevation in feet referenced to Mean Sea Level (MSL)
- Groundwater elevation contour, dashed where inferred.



Approximate groundwater flow direction at a gradient of 0.01 FL/FL.



Scale in Feet



Source: Figure Modified From Drawing Provided By MPOS Services, Inc.



Gettler - Ryan Inc.

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Dublin, CA 94568

POTENTIOMETRIC MAP

Tosco (Unocal) Service Station No. 7176
7850 Amador Valley Boulevard
Dublin, California

JOB NUMBER
180022

REVIEWED BY

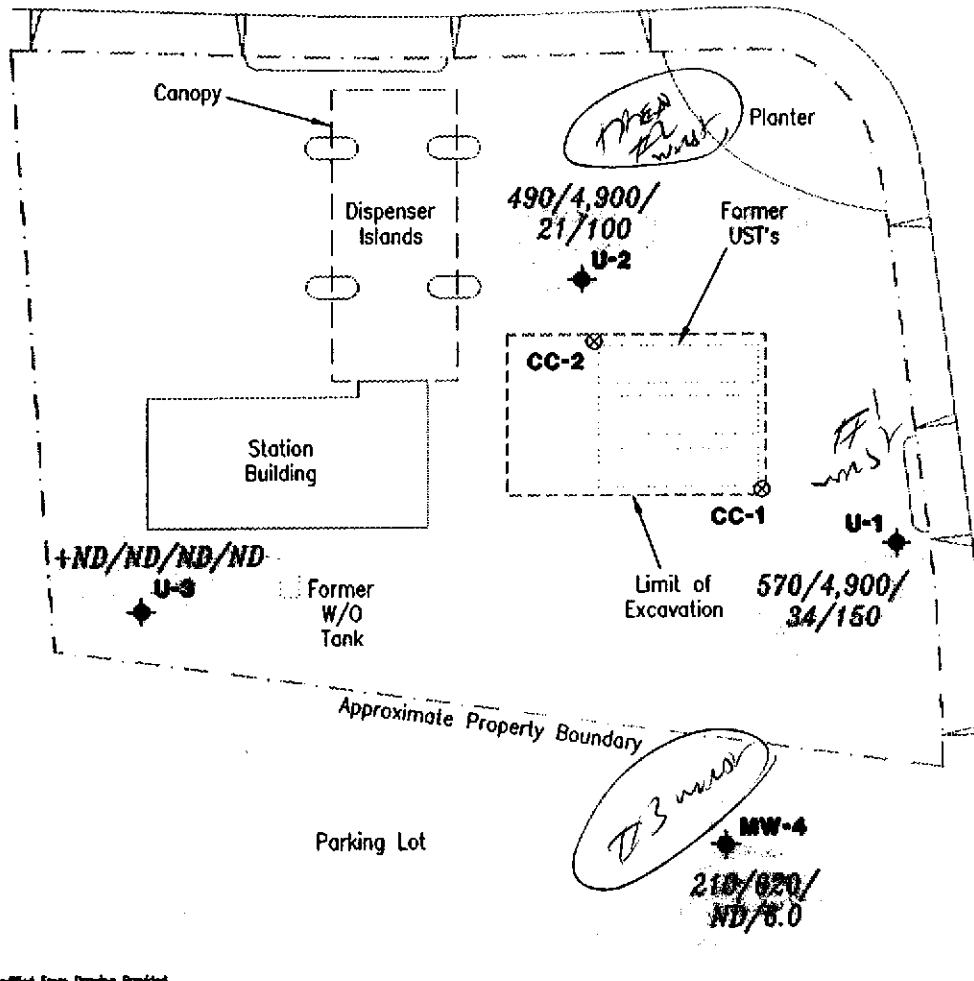
DATE
April 5, 1999

REVISED DATE

FIGURE

1

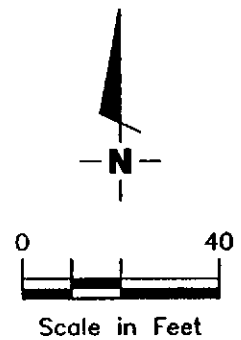
AMADOR VALLEY BOULEVARD



EXPLANATION

- ◆ Groundwater monitoring well
- ⊗ Conductor casing
- A/B/C/D TPH(D) (Total Petroleum Hydrocarbons as Diesel) with silica gel/TPH(G) (Total Petroleum Hydrocarbons as Gasoline)/Benzene/MTBE concentrations in ppb
- ND Not Detected
- + No silica gel clean-up

REGIONAL STREET



Source: Figure Modified From Drawing Provided By MPDS Services, Inc.



Gettler - Ryan Inc.

6747 Sierra Ct., Suite J (925) 551-7555
 Dublin, CA 94568

CONCENTRATION MAP

Tosco (Unocal) Service Station No. 7176
 7850 Amador Valley Boulevard
 Dublin, California

FIGURE

2

JOB NUMBER
 180022

REVIEWED BY

DATE
 April 5, 1999

REVISED DATE

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #7176
 7850 Amador Valley Boulevard
 Dublin, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(D)* (ppb)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MIBK (ppb)	
U-1											
355.62	07/08/95	12.59	343.03	9,400 ³	39,000	1,500	19	1,600	5,200	--	
	10/12/95	15.38	340.24	4,200 ⁵	33,000	1,400	ND	1,400	3,100	-- ⁷	
	01/11/96 ¹	16.33	339.29	8,200 ⁵	8,300	690	11	680	1,500	-- ⁸	
	04/11/96 ²	12.20	343.42	630 ⁵	3,200	110	ND	180	290	790	
	07/10/96	13.84	341.78	2,200 ⁵	2,600	81	4.4	210	230	510	
	10/30/96	15.85	339.77	560 ⁵	2,200	67	19	140	150	360	
	01/27/97	12.20	343.42	2,300 ⁵	4,600	98	ND	360	290	150	
	04/08/97	13.46	342.16	1,300 ⁵	2,800	50	ND	220	140	ND	
	07/17/97	15.30	340.32	460 ⁶	2,300	30	4.5	140	94	190	
	10/17/97	16.33	339.29	510 ⁶	1,500	31	6.7	110	88	220	
	01/19/98	14.34	341.28	¹⁰ 1,900/1,300 ¹⁰	3,100	46	3.4	310	200	170	
	355.59	NP 04/23/98	11.16	344.43	--/1,700 ¹¹	3,400	72	3.8	470	350	280
		NP 07/08/98	12.67	342.92	2,000 ¹⁴	4,500	51	ND ¹²	590	430	190
		10/05/98	14.57	341.02	--/2,500 ¹⁰	7,500 ¹⁶	53	ND ¹²	680	350	190/180 ¹⁷
01/04/99		15.35	340.24	¹¹ 2,700/2,500 ¹¹	10,000 ¹⁹	ND ¹²	ND ¹²	1,200	540	ND ¹²	
04/05/99		13.64	341.95	1,300¹⁰	4,900	53	ND¹²	350	150	190	
U-2											
356.59	07/08/95	12.68	343.91	4,700 ³	17,000	430	ND	2,200	590	--	
	10/12/95	16.01	340.58	3,600 ⁵	24,000	310	60	1,900	190	-- ⁷	
	01/11/96 ¹	17.06	339.53	8,600 ⁵	10,000	210	55	1,400	240	-- ⁸	
	04/11/96 ²	12.75	343.84	1,900 ⁵	7,700	130	27	1,100	110	340	
	07/10/96	14.42	342.17	2,300 ⁵	5,600	59	15	610	42	250	
	10/30/96	16.82	339.77	1,800 ⁵	7,700	67	35	1,000	54	260	
	01/27/97	12.91	343.68	660 ⁵	1,600	14	ND	130	7.0	100	
	04/08/97	14.07	342.52	2,000 ⁵	4,300	35	ND	400	16	ND	
	07/17/97	15.96	340.63	1,300 ⁶	6,200	17	22	410	ND	130	
	10/17/97	17.03	339.56	1,400 ⁶	7,100	71	26	520	50	ND	
	01/19/98	15.10	341.49	¹⁰ 2,100/1,500 ¹⁰	5,300	46	11	350	16	110	
	356.55	NP 04/23/98	11.74	344.81	--/1,200 ¹¹	3,200	23	11	210	38	160
		NP 07/08/98	13.27	343.28	1,100 ¹⁴	1,600	34	8.5	100	7.4	190
		10/05/98	14.90	341.65	--/1,300 ¹⁰	2,900 ¹⁸	37	8.4	110	7.3	78
01/04/99		15.94	340.61	¹¹ 670/250 ²⁰	2,200 ²¹	35	ND ¹²	17	ND ¹²	86	
04/05/99		14.19	342.36	1,300¹⁰	4,900	53	77	130	310	190	

Table 1
Groundwater Monitoring Data and Analytical Results
Tosco (Unocal) Service Station #7176
7850 Amador Valley Boulevard
Dublin, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(D)* (ppb)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	ATPES (ppb)
U-3										
358.13	07/08/95	14.58	343.55	710 ³	1,100 ⁴	0.57	2.1	1.7	2.4	--
	10/12/95	17.60	340.53	470 ⁶	560	ND	0.87	0.7	1.1	--
	01/11/96 ¹	18.65	339.48	260 ⁶	230	0.62	0.91	0.97	1.9	--
	04/11/96	13.20	344.93	ND	68 ⁹	ND	ND	ND	ND	ND
	07/10/96	15.98	342.15	ND	ND	ND	ND	ND	ND	ND
	10/30/96	18.24	339.89	ND	70	ND	ND	ND	ND	ND
	01/27/97	14.41	343.72	ND	ND	ND	ND	ND	ND	ND
	04/08/97	15.73	342.40	ND	ND	ND	ND	ND	ND	ND
	07/17/97	17.54	340.59	ND	ND	ND	ND	ND	ND	ND
	10/17/97	18.64	339.49	63 ⁶	ND	ND	ND	ND	ND	ND
01/19/98	16.67	341.46	1068/ND	ND	ND	ND	ND	ND	ND	
358.09	NP 04/23/98	13.28	344.81	--/ND	ND	ND	ND	ND	ND	ND
	NP 07/08/98	14.90	343.19	80 ¹⁵	ND	ND	ND	ND	ND	ND
	10/05/98	16.50	341.59	--/ND	ND	ND	ND	ND	ND	ND
	01/04/99	17.70	340.39	ND	ND	ND	ND	ND	ND	ND
	04/05/99	15.67	342.42	ND	ND	ND	ND	ND	ND	ND/ND¹⁷
MW-4										
356.41	04/23/98	12.11	344.30	--/1,400 ¹¹	2,500	5.9	6.4	16	31	ND ¹²
	07/08/98	13.70	342.71	1,400 ¹¹	1,000 ¹³	ND ¹²	ND ¹²	ND ¹²	ND ¹²	ND ¹²
	10/05/98	15.18	341.23	--/230 ¹⁰	890 ¹⁶	ND ¹²	ND ¹²	ND ¹²	14	ND ¹²
	01/04/99	16.39	340.02	1071/71 ¹⁰	230 ²²	0.56	1.3	1.4	1.8	40
	04/05/99	14.61	341.80	10210/210¹⁰	220	ND¹²	1.8	2.1	ND¹²	ND¹⁷
MW-5										
355.03	04/23/98	11.15	343.88	--/100 ¹¹	120	0.53	0.90	1.0	3.8	13
	07/08/98	12.63	342.40	170 ¹⁰	ND	ND	ND	ND	ND	12
	10/05/98	14.00	341.03	--/100 ¹⁰	ND	ND	ND	ND	ND	12
	01/04/99	15.21	339.82	ND	ND	ND	ND	ND	ND	ND
	04/05/99	13.76	341.27	ND	ND	ND	ND	ND	ND	ND/ND¹⁷

Table 1
Groundwater Monitoring Data and Analytical Results
 Tosco (Unocal) Service Station #7176
 7850 Amador Valley Boulevard
 Dublin, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(D)* (ppb)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)
Trip Blank										
TB-LB	01/19/98	--	--	--	ND	ND	ND	ND	ND	ND
	04/23/98	--	--	--	ND	ND	ND	ND	ND	ND
	07/08/98	--	--	--	ND	ND	ND	ND	ND	ND
	10/05/98	--	--	--	ND	ND	0.70	ND	0.71	ND
	01/04/99	--	--	--	ND	ND	0.74	ND	0.92	ND
	04/05/99	--	--	--	ND	ND	ND	ND	ND	ND

Table 1
Groundwater Monitoring Data and Analytical Results
Tosco (Unocal) Service Station #7176
7850 Amador Valley Boulevard
Dublin, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to January 19, 1998, were compiled from reports prepared by MPDS Services, Inc.

TOC = Top of Casing elevation	TPH(G) = Total Petroleum Hydrocarbons as Gasoline	
DTW = Depth to Water	B = Benzene	ppb = Parts per billion
(ft.) = Feet	T = Toluene	ND = Not Detected
GWE = Groundwater Elevation	E = Ethylbenzene	-- = Not Measured/Not Analyzed
msl = Relative to mean sea level	X = Xylenes	NP = No purge
TPH(D) = Total Petroleum Hydrocarbons as Diesel	MTBE = Methyl tertiary butyl ether	PNA = Polynuclear Aromatic Hydrocarbons

- * TOC elevations were surveyed relative to msl, per the Benchmark AM-STW1977 located at the easterly return at the most easterly corner of intersection at Amador Valley Boulevard and Starward Street (Elevation = 344.17 feet msl).
- ◆ Analytical results reported as follows: TPH(D)/TPH(D) with silica gel cleanup.
- ¹ PNA compound naphthalene was detected in well U-1 at a concentration of 320 ppb, and at a concentration of 310 ppb in well U-2. All other PNA compounds were ND in both wells.
- ² PNA compounds were ND.
- ³ Laboratory report indicates unidentified hydrocarbons C9-C26.
- ⁴ Laboratory report indicates gasoline and unidentified hydrocarbons > C12.
- ⁵ Laboratory report indicates the hydrocarbons detected appeared to be a diesel and non-diesel mixture.
- ⁶ Laboratory report indicates the hydrocarbons detected did not appear to be diesel.
- ⁷ Laboratory has potentially identified the presence of MTBE at reportable levels in the groundwater sample collected from this well.
- ⁸ Laboratory has identified the presence of MTBE at a level above or equal to the taste and odor threshold of 40 ppb in the sample collected from this well.
- ⁹ Laboratory report indicates the hydrocarbons detected did not appear to be gasoline.
- ¹⁰ Laboratory report indicates unidentified hydrocarbons C9-C24.
- ¹¹ Laboratory report indicates diesel and unidentified hydrocarbons < C14.
- ¹² Detection limit raised. Refer to analytical results.
- ¹³ Laboratory report indicates unidentified hydrocarbons > C8.
- ¹⁴ Laboratory report indicates unidentified hydrocarbons < C14.
- ¹⁵ Laboratory report indicates discrete peaks.
- ¹⁶ Laboratory report indicates weathered gas C6-C12.
- ¹⁷ MTBE by EPA Method 8260.
- ¹⁸ Laboratory report indicates unidentified hydrocarbons < C8.
- ¹⁹ Laboratory report indicates gasoline and unidentified hydrocarbons C6-C12.
- ²⁰ Laboratory report indicates diesel and unidentified hydrocarbons < C16.
- ²¹ Laboratory report indicates unidentified hydrocarbons C6-C12.
- ²² Laboratory report indicates gasoline and unidentified hydrocarbons > C10.
- ²³ Laboratory report indicates gasoline and unidentified hydrocarbons < C7.

Table 2
Dissolved Oxygen Concentrations
 Tosco (Unocal) Service Station #7176
 7850 Amador Valley Boulevard
 Dublin, California

Well ID	Date	Before Purging (mg/L)	After Purging (mg/L)
U-1	01/11/96	--	3.41
	04/11/96	3.77	3.78
	07/10/96 ¹	1.22	--
	10/30/96 ¹	1.41	--
	01/27/97 ¹	1.34	--
	04/08/97 ¹	2.09	--
	07/17/97 ¹	2.00	--
	10/17/97 ¹	1.86	--
	01/19/98 ¹	2.91	--
	04/23/98 ¹	0.59	--
07/08/98 ¹	1.10	--	
U-2	01/11/96	--	3.99
	04/11/96	3.32	3.41
	07/10/96 ¹	1.01	--
	10/30/96 ¹	1.42	--
	01/27/97 ¹	1.29	--
	04/08/97 ¹	1.69	--
	07/17/97 ¹	2.08	--
	10/17/97 ¹	1.80	--
	01/19/98 ¹	2.95	--
	04/23/98 ¹	0.55	--
07/08/98 ¹	1.36	--	
U-3	01/11/96	--	5.05
	04/11/96	5.16	4.96
	07/10/96 ¹	3.44	--
	10/30/96 ¹	2.18	--
	01/27/97 ¹	2.61	--
	04/08/97 ¹	3.73	--
	07/17/97 ¹	2.65	--
	10/17/97 ¹	2.44	--
	01/19/98 ¹	6.51	--
	04/23/98 ¹	4.72	--
07/08/98 ¹	4.35	--	
CC-1	10/02/95	2.83	--

EXPLANATIONS:

Dissolved oxygen concentrations prior to January 19, 1998, were compiled from reports prepared by MPDS Services, Inc.

CC-1 = Conductor casing in the underground storage tank backfill

-- = Not Measured

mg/L = milligrams per liter

¹ The wells were not purged on this date.

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

Table 3
Dissolved Oxygen Concentrations
 Tosco (Unocal) Service Station #7176
 7850 Amador Valley Boulevard
 Dublin, California

Well ID	Date	Ethanol (ppb)	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	EDB (ppb)	1,2-DCA (ppb)
U-1	04/05/99	ND ¹	ND ¹	55	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹
U-2	04/05/99	ND ¹	ND ¹	6.9	ND ¹	ND ¹	ND ¹	ND ¹	ND ¹
U-3	04/05/99	ND	ND	ND	ND	ND	ND	ND	ND
MW-4	04/05/99	ND	ND	9.3	ND	ND	ND	ND	ND
MW-5	04/05/99	ND	ND	ND	ND	ND	ND	ND	ND

EXPLANATIONS:

TBA = Tertiary Butyl Alcohol
 MTBE = Methyl Tertiary Butyl Ether
 DIPE = Di-isopropyl Ether
 ETBE = Ethyl Tertiary Butyl Ether
 TAME = Tertiary Amyl Methyl Ether
 EDB = 1,2-Dibromomethane
 1,2-DCA = 1,2-Dichloroethane
 ppb = Parts per billion
 ND = Not Detected

ANALYTICAL METHOD:

EPA Method 8260 for Oxygenate Compounds

¹ Detection limit raised. Refer to analytical results.

STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. Prior to sample collection, the type of analysis to be performed is determined. Loss prevention of volatile compounds is controlled and sample preservation for subsequent analysis is maintained.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using a MMC flexi-dip interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, static water level measurements are collected with the interface probe and are also recorded in the field notes.

After water levels are collected and prior to sampling, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or polyvinyl chloride bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging. Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used when possible. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory supplied trip blank accompanies each sampling set. For sampling sets greater than 20 samples, 5% trip blanks are included. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

As requested by Tosco Marketing Company, the purge water and decontamination water generated during sampling activities is transported to Tosco - San Francisco Area Refinery, located in Rodeo, California.

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility # 7176 Job#: 180022
 Address: 7850 Amador Valley Blvd. Date: 4-5-99
 City: Dublin Sampler: Joe

Well ID U-1 Well Condition: O.K.
 Well Diameter 2 in. Hydrocarbon Amount Bailed
 Thickness: 0 (feet) (product/water): 0 (Gallons)
 Total Depth 27.95 ft.
 Depth to Water 13.64 ft.

Volume	2" = 0.17	3" = 0.38	4" = 0.66
Factor (VF)	6" = 1.50	12" = 5.80	

14.31 X VF 0.17 = 2.43 X 3 (case volume) = Estimated Purge Volume: 7.5 (gal.)

Purge Equipment: Disposable Bailer
 Bailer
 Stack
 Suction
 Grundfos
 Other: _____

Sampling Equipment: Disposable Bailer
 Bailer
 Pressure Bailer
 Grab Sample
 Other: _____

Starting Time: 10:38 Weather Conditions: overcast
 Sampling Time: 11:03 A.M. Water Color: clear Odor: yes
 Purging Flow Rate: _____ gpm. Sediment Description: none
 Did well de-water? 1 If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu\text{mhos/cm} \times 10^2$	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>10:47</u>	<u>2.5</u>	<u>7.29</u>	<u>4.62</u>	<u>70.5</u>			
<u>10:49</u>	<u>5</u>	<u>7.47</u>	<u>4.72</u>	<u>71.0</u>			
<u>10:52</u>	<u>7.5</u>	<u>7.28</u>	<u>4.75</u>	<u>70.3</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-1</u>	<u>3 vOA</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>
<u>"</u>	<u>1 Amb.</u>	<u>"</u>	<u>-</u>	<u>"</u>	<u>TPHD (Silica Gel)</u>

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility # 7176 Job#: 180022
 Address: 7850 Amador Valley Blvd. Date: 4-5-99
 City: Dublin Sampler: Joe

Well ID U-2 Well Condition: O.K.

Well Diameter 2 in.

Hydrocarbon Thickness: 0 (feet) Amount Bailed (product/water): 0 (Gallons)

Total Depth 26.51 ft.

Depth to Water 14.19 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

12.32 x VF 0.17 = 2.09 x 3 (case volume) = Estimated Purge Volume: 7 (gal.)

Purge Equipment: Disposable Bailer
 Bailer
 Stack
 Suction
 Grundfos
 Other: _____

Sampling Equipment: Disposable Bailer
 Bailer
 Pressure Bailer
 Grab Sample
 Other: _____

Starting Time: 10:11 Weather Conditions: light rain
 Sampling Time: 10:36 AM Water Color: clear Odor: yes
 Purging Flow Rate: 1 gpm. Sediment Description: none
 Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu\text{mhos/cm} \times 10^2$	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>10:20</u>	<u>2.5</u>	<u>7.17</u>	<u>3.12</u>	<u>71.2</u>			
<u>10:22</u>	<u>5</u>	<u>7.16</u>	<u>3.40</u>	<u>71.6</u>			
<u>10:24</u>	<u>7</u>	<u>7.12</u>	<u>3.47</u>	<u>72.0</u>			
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-2</u>	<u>3 VOA</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(GI)/btax/mtbe</u>
<u>"</u>	<u>1 Amb.</u>	<u>"</u>	<u>-</u>	<u>"</u>	<u>TPHD (Silica Gel)</u>
_____	_____	_____	_____	_____	_____

COMMENTS: _____

WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility # 7176 Job#: 180022
 Address: 7850 Amador Valley Blvd. Date: 4-5-99
 City: Dublin Sampler: Joe

Well ID: U-3 Well Condition: O.K.
 Well Diameter: 2 in. Hydrocarbon Amount Bailed
 Thickness: 0 (feet) (product/water): 0 (Gallons)
 Total Depth: 28.58 ft.
 Depth to Water: 15.67 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

12.91 x VF 0.17 = 2.19 x 3 (case volume) = Estimated Purge Volume: 7 (gal.)

Purge Equipment: Disposable Bailer
 Bailer
 Stack
 Suction
 Grundfos
 Other: _____

Sampling Equipment: Disposable Bailer
 Bailer
 Pressure Bailer
 Grab Sample
 Other: _____

Starting Time: 8:20 Weather Conditions: overcast
 Sampling Time: 8:42 AM Water Color: clear Odor: none
 Purging Flow Rate: 1 gpm. Sediment Description: none
 Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu\text{mhos/cm} \times 10^3$	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>8:30</u>	<u>2.5</u>	<u>7.41</u>	<u>5.50</u>	<u>71.2</u>			
<u>8:32</u>	<u>5</u>	<u>7.37</u>	<u>5.40</u>	<u>72.3</u>			
<u>8:34</u>	<u>7</u>	<u>7.30</u>	<u>5.53</u>	<u>73.0</u>			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-3</u>	<u>3 VOA</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>
<u>"</u>	<u>1 Amb.</u>	<u>"</u>	<u>-</u>	<u>"</u>	<u>TPHD (Silica Gel)</u>

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/
Facility # 7176
Address: 7850 Amador Valley Blvd.
City: Dublin

Job#: 180022
Date: 4-5-99
Sampler: Joe

Well ID MW-4

Well Condition: O.K.

Well Diameter 2 in.

Hydrocarbon Thickness: 0 (feet) Amount Bailed (product/water): 0 (Gallons)

Total Depth 25.50 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

Depth to Water 14.61 ft.

10.89 x VF 0.17 = 1.85 x 3 (case volume) = Estimated Purge Volume: 6 (gal.)

Purge Equipment: Disposable Bailer
Bailer
Stack
Suction
Grundfos
Other: _____

Sampling Equipment: Disposable Bailer
Bailer
Pressure Bailer
Grab Sample
Other: _____

Starting Time: 9:28
Sampling Time: 9:53 AM
Purging Flow Rate: 1 gpm.
Did well de-water? _____

Weather Conditions: clear
Water Color: clear Odor: none
Sediment Description: none
If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu\text{mhos/cm} \times 10^2$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>9:38</u>	<u>2</u>	<u>7.70</u>	<u>6.12</u>	<u>71.1</u>	_____	_____	_____
<u>9:40</u>	<u>4</u>	<u>7.49</u>	<u>6.15</u>	<u>70.8</u>	_____	_____	_____
<u>9:42</u>	<u>6</u>	<u>7.52</u>	<u>6.19</u>	<u>71.9</u>	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-4</u>	<u>3 VOA</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(GI)/btex/mtbe</u>
<u>1</u>	<u>1 Amb.</u>	<u>"</u>	<u>-</u>	<u>"</u>	<u>TPHD (Silica Gel)</u>
_____	_____	_____	_____	_____	_____

COMMENTS: _____

**WELL MONITORING/SAMPLING
FIELD DATA SHEET**

Client/Facility # 7176 Job#: 180022
 Address: 7850 Amador Valley Blvd. Date: 4-5-99
 City: Dublin Sampler: Joe

Well ID MW-5 Well Condition: O.K.
 Well Diameter 2 in. Hydrocarbon Amount Bailed
 Thickness: 0 (feet) (product/water): 0 (Gallons)
 Total Depth 25.0 ft.
 Depth to Water 13.67 ft.

Volume Factor (VF)	2" = 0.17	3" = 0.38	4" = 0.66
	6" = 1.50	12" = 5.80	

11.33 x VF 0.17 = 1.93 x 3 (case volume) = Estimated Purge Volume: 6 (gal.)

Purge Equipment: Disposable Bailer
 Bailer
 Stack
Suction
 Grundfos
 Other: _____

Sampling Equipment: Disposable Bailer
 Bailer
 Pressure Bailer
 Grab Sample
 Other: _____

Starting Time: 8:58 Weather Conditions: cloudy
 Sampling Time: 9:25 AM Water Color: clear Odor: none
 Purging Flow Rate: 1 gpm. Sediment Description: none
 Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu\text{mhos/cm} \times 10^2$	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
9:10	2	7.60	5.52	72.2			
9:12	4	7.28	5.51	72.4			
9:14	6	7.27	5.63	72.1			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-5</u>	<u>3 VOA</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>
<u>0'</u>	<u>1 Amb.</u>	<u>"</u>	<u>-</u>	<u>"</u>	<u>TPHD (Silica Gel)</u>

COMMENTS: _____



TOSCO

Tosco Marketing Company
 3020 Civic Center Pl., Ste. 400
 San Ramon, California 94583

Facility Number: UNOCAL SS# 7176
 Facility Address: 7850 Amador Valley Blvd. Dublin, CA
 Consultant Project Number: 180022.85
 Consultant Name: Gettler-Ryan Inc. (G-R Inc.)
 Address: 6747 Sierra Court, Suite J, Dublin, CA 94568
 Project Contact (Name): Deanna L. Harding
 (Phone) 510-551-7555 (Fax Number) 510-551-7888

Contact (Name): MS-TINA-BERRY DeWitt
 (Phone): (925) 277-2321
 Laboratory Name: Sequoia Analytical 9904176
 Laboratory Release Number: _____
 Samples Collected by (Name): JOE ASEMIAN
 Collection Date: 4-5-99
 Signature: [Signature]

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analytes To Be Performed										DO NOT BILL TB-LB ANALYSIS	Remarks
								TPH Gas STEK w/MTBE (8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd, Cr, Pb, Zn, Ni (ICAP or AA)				
B-LB ✓		30A	W	-	-	HCL	Y	✓										9040546	Run silica Gel
U-1 ✓		30A 1Ams		G	11:03 A.M.			✓	✓									9040547	check-up on any
U-2 ✓					10:36 A.M.			✓	✓									9040548	Diesel hits.
U-3 ✓					8:42 A.M.			✓	✓									9040549	
mw.4 ✓					9:53 A.M.			✓	✓									9040550	
mw.5 ✓					9:25 A.M.			✓	✓									9040551	

Shipped By (Signature) <u>[Signature]</u>	Organization G-R Inc.	Date/Time 4.5.99	Received By (Signature) <u>[Signature]</u>	Organization USC	Date/Time 4/6/99	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days 10 Days As Contracted
Shipped By (Signature) <u>[Signature]</u>	Organization USC	Date/Time 4/6/99	Received By (Signature) <u>[Signature]</u>	Organization USC	Date/Time 4/6/99	
Shipped By (Signature) <u>[Signature]</u>	Organization USC	Date/Time 4/6/99	Received For Laboratory By (Signature) <u>[Signature]</u>	Date/Time 4/8/99	1441	

Ronald C. Jensen 4/6/99 18:15



Sequoia Analytical

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FAX (650) 232-9612

Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#7176, Dublin
Sample Matrix: Water
Analysis Method: EPA 5030/8015 Mod./8020
First Sample #: 904-0546

Sampled: Apr 5, 1999
Received: Apr 6, 1999
Reported: May 10, 1999

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX / MTBE

Analyte	Reporting Limit µg/L	Sample I.D. 904-0546 TB-LB	Sample I.D. 904-0547 U-1	Sample I.D. 904-0548 U-2	Sample I.D. 904-0549 U-3	Sample I.D. 904-0550 MW-4	Sample I.D. 904-0551 MW-5
Purgeable Hydrocarbons	50	N.D.	4,900	4,900	N.D.	620	N.D.
Benzene	0.50	N.D.	34	21	N.D.	N.D.	N.D.
Toluene	0.50	N.D.	N.D.	77	N.D.	1.8	N.D.
Ethyl Benzene	0.50	N.D.	350	130	N.D.	2.1	N.D.
Total Xylenes	0.50	N.D.	150	310	N.D.	N.D.	N.D.
MTBE	2.5	N.D.	150	100	N.D.	6.0	N.D.
Chromatogram Pattern:		--	Gasoline	Gasoline	--	Gasoline & Unidentified Hydrocarbons <C7	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	20	10	1.0	2.0	1.0
Date Analyzed:	4/12/99	4/16/99	4/12/99	4/12/99	4/12/99	4/12/99
Instrument Identification:	HP-5	HP-5	HP-5	HP-5	HP-5	HP-5
Surrogate Recovery, %: (QC Limits = 70-130%)	86	79	76	83	73	97

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

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Julianne Fegley
Project Manager



Sequoia Analytical

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Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#7176, Dublin
Sample Matrix: Water
Analysis Method: EPA 3510/8015 Mod.
First Sample #: 904-0547

Sampled: Apr 5, 1999
Received: Apr 6, 1999
Reported: May 10, 1999

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 904-0547 U-1	Sample I.D. 904-0548 U-2	Sample I.D. 904-0549 U-3	Sample I.D. 904-0550 MW-4	Sample I.D. 904-0551 MW-5
Extractable Hydrocarbons	50	920	660	N.D.	340	N.D.
Chromatogram Pattern:		Unidentified Hydrocarbons C9 - C24	Unidentified Hydrocarbons C9 - C24	--	Unidentified Hydrocarbons C9 - C24	--

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0	1.0	1.0
Date Extracted:	4/12/99	4/12/99	4/12/99	4/12/99	4/12/99
Date Analyzed:	4/15/99	4/15/99	4/15/99	4/15/99	4/15/99
Instrument Identification:	HP-3B	HP-3B	HP-3B	HP-3B	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

Julianne Fegley
Project Manager



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Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#7176, Dublin
Sample Matrix: Water
Analysis Method: EPA 3510/3630/8015 Mod.
First Sample #: 904-0547

Sampled: Apr 5, 1999
Received: Apr 6, 1999
Reported: May 10, 1999

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS WITH SILICA GEL CLEAN-UP

Analyte	Reporting Limit µg/L	Sample I.D. 904-0547 U-1	Sample I.D. 904-0548 U-2	Sample I.D. 904-0550 MW-4
Extractable Hydrocarbons	50	570	490	210
Chromatogram Pattern:		Unidentified Hydrocarbons C9 - C24	Unidentified Hydrocarbons C9 - C24	Unidentified Hydrocarbons C9 - C24

Quality Control Data

Report Limit Multiplication Factor:	1.0	1.0	1.0
Date Extracted:	4/12/99	4/12/99	4/12/99
Date Analyzed:	5/7/99	5/7/99	5/7/99
Instrument Identification:	HP-3B	HP-3B	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

Julianne Fegley
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Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#7176, Dublin
Sample Descript: Water, U-1
Analysis Method: EPA 8260
Lab Number: 904-0547

Sampled: Apr 5, 1999
Received: Apr 6, 1999
Analyzed: Apr 19, 1999
Reported: May 10, 1999

OXYGENATED COMPOUNDS (EPA 8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Ethanol.....	1,000	N.D.
t-Butanol.....	200	N.D.
Methyl t-Butyl Ether (MTBE).....	4.0	55
Di-Isopropyl Ether (DIPE).....	4.0	N.D.
Ethyl t-Butyl Ether (ETBE).....	4.0	N.D.
t-Amyl Methyl Ether (TAME).....	4.0	N.D.
1,2-Dibromomethane.....	4.0	N.D.
1,2-Dichloroethane.....	4.0	N.D.
Surrogates	Control Limit %	% Recovery
Dibromofluoromethane.....	50 150	81
1,2-Dichloroethane-d4.....	50 150	105

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Julianne Fegley
Project Manager





Sequoia Analytical

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Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#7176, Dublin
Sample Descript: Water, U-2
Analysis Method: EPA 8260
Lab Number: 904-0548

Sampled: Apr 5, 1999
Received: Apr 6, 1999
Analyzed: Apr 19, 1999
Reported: May 10, 1999

OXYGENATED COMPOUNDS (EPA 8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Ethanol.....	1,000	N.D.
t-Butanol.....	200	N.D.
Methyl t-Butyl Ether (MTBE).....	4.0	6.9
Di-Isopropyl Ether (DIPE).....	4.0	N.D.
Ethyl t-Butyl Ether (ETBE).....	4.0	N.D.
t-Amyl Methyl Ether (TAME).....	4.0	N.D.
1,2-Dibromomethane.....	4.0	N.D.
1,2-Dichloroethane.....	4.0	N.D.
Surrogates	Control Limit %	% Recovery
Dibromofluoromethane.....	50 150	80
1,2-Dichloroethane-d4.....	50 150	103

Analytes reported as N.D. were not present above the stated limit of detection. Because matrix effects and/or other factors required additional sample dilution, detection limits for this sample have been raised.

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Project Manager





Sequoia Analytical

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Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#7176, Dublin
Sample Descript: Water, U-3
Analysis Method: EPA 8260
Lab Number: 904-0549

Sampled: Apr 5, 1999
Received: Apr 6, 1999
Analyzed: Apr 19, 1999
Reported: May 10, 1999

OXYGENATED COMPOUNDS (EPA 8260)

Analyte	Detection Limit µg/L	Sample Results µg/L	
Ethanol.....	500	N.D.	
t-Butanol.....	100	N.D.	
Methyl t-Butyl Ether (MTBE).....	2.0	N.D.	
Di-Isopropyl Ether (DIPE).....	2.0	N.D.	
Ethyl t-Butyl Ether (ETBE).....	2.0	N.D.	
t-Amyl Methyl Ether (TAME).....	2.0	N.D.	
1,2-Dibromomethane.....	2.0	N.D.	
1,2-Dichloroethane.....	2.0	N.D.	
Surrogates	Control Limit %	% Recovery	
Dibromofluoromethane.....	50	150	83
1,2-Dichloroethane-d4.....	50	150	100

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

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Project Manager





Sequoia Analytical

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Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#7176, Dublin
Sample Descript: Water, MW-4
Analysis Method: EPA 8260
Lab Number: 904-0550

Sampled: Apr 5, 1999
Received: Apr 6, 1999
Analyzed: Apr 19, 1999
Reported: May 10, 1999

OXYGENATED COMPOUNDS (EPA 8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Ethanol.....	500	N.D.
t-Butanol.....	100	N.D.
Methyl t-Butyl Ether (MTBE).....	2.0	9.3
Di-Isopropyl Ether (DIPE).....	2.0	N.D.
Ethyl t-Butyl Ether (ETBE).....	2.0	N.D.
t-Amyl Methyl Ether (TAME).....	2.0	N.D.
1,2-Dibromomethane.....	2.0	N.D.
1,2-Dichloroethane.....	2.0	N.D.
Surrogates	Control Limit %	% Recovery
Dibromofluoromethane.....	50 150	82
1,2-Dichloroethane-d4.....	50 150	100

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

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Julianne Fegley
Project Manager

9040546.GET <7>





Sequoia Analytical

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Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#7176, Dublin
Sample Descript: Water, MW-5
Analysis Method: EPA 8260
Lab Number: 904-0551

Sampled: Apr 5, 1999
Received: Apr 6, 1999
Analyzed: Apr 19, 1999
Reported: May 10, 1999

OXYGENATED COMPOUNDS (EPA 8260)

Analyte	Detection Limit µg/L	Sample Results µg/L
Ethanol.....	500	N.D.
t-Butanol.....	100	N.D.
Methyl t-Butyl Ether (MTBE).....	2.0	N.D.
Di-Isopropyl Ether (DIPE).....	2.0	N.D.
Ethyl t-Butyl Ether (ETBE).....	2.0	N.D.
t-Amyl Methyl Ether (TAME).....	2.0	N.D.
1,2-Dibromomethane.....	2.0	N.D.
1,2-Dichloroethane.....	2.0	N.D.
Surrogates	Control Limit %	% Recovery
Dibromofluoromethane.....	50 150	80
1,2-Dichloroethane-d4.....	50 150	95

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

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Julianne Fegley
Project Manager





Sequoia Analytical

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Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#7176, Dublin
Matrix: Liquid

QC Sample Group: 9040546-551

Reported: May 10, 1999

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	C. Westwater	C. Westwater	C. Westwater	C. Westwater

MS/MSD Batch#:	9040549	9040549	9040549	9040549
Date Prepared:	4/12/99	4/12/99	4/12/99	4/12/99
Date Analyzed:	4/12/99	4/12/99	4/12/99	4/12/99
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L
Matrix Spike % Recovery:	90	95	95	97
Matrix Spike Duplicate % Recovery:	90	90	90	93
Relative % Difference:	0.0	5.4	5.4	3.5

LCS Batch#:	5LCS041299	5LCS041299	5LCS041299	5LCS041299
Date Prepared:	4/12/99	4/12/99	4/12/99	4/12/99
Date Analyzed:	4/12/99	4/12/99	4/12/99	4/12/99
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5
LCS % Recovery:	90	90	90	90

% Recovery Control Limits:	70-130	70-130	70-130	70-130
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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

Julianne Fegley
Project Manager





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Gettler-Ryan - Dublin
6747 Sierra Court, Suite J
Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#7176, Dublin
Matrix: Liquid

QC Sample Group: 9040546-551

Reported: May 10, 1999

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes	Diesel	Diesel	MTBE
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M.	EPA 8015M.	EPA 8260
Analyst:	C. Westwater	C. Westwater	C. Westwater	C. Westwater	K. Grubb	K. Grubb	N. Nelson

MS/MSD

Batch#:	9040628	9040628	9040628	9040628	BLK041299	BLK041299	9040551
Date Prepared:	4/16/99	4/16/99	4/16/99	4/16/99	4/12/99	4/12/99	4/19/99
Date Analyzed:	4/16/99	4/16/99	4/16/99	4/16/99	4/14/99	4/22/99	4/19/99
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5	HP-3A	HP-3A	GC/MS-2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	500 µg/L	500 µg/L	50 µg/L
Matrix Spike % Recovery:	105	105	100	105	80	72	90
Matrix Spike Duplicate % Recovery:	95	95	90	97	76	72	98
Relative % Difference:	10	10	11	8.3	5.1	0.0	8.5

LCS Batch#:	5LCS041699	5LCS041699	5LCS041699	5LCS041699	LCS041299	LCS041299	LCS041899
Date Prepared:	4/16/99	4/16/99	4/16/99	4/16/99	4/12/99	4/12/99	4/18/99
Date Analyzed:	4/16/99	4/16/99	4/16/99	4/16/99	4/14/99	5/7/99	4/18/99
Instrument I.D.#:	HP-5	HP-5	HP-5	HP-5	HP-3A	HP-3A	GC/MS-2
LCS % Recovery:	100	100	100	105	74	66	116

% Recovery Control Limits:	70-130	70-130	70-130	70-130	60-140	35-125	70-130
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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

Jillianne Fegley

Jillianne Fegley
Project Manager

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