RC

STID 1059

GETTLER-RYAN INC.

TRANSMITTAL

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

DATE: March 6, 1998
G-R #: 180061

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

RE: Tosco (Unocal) SS #5325
3220 Lakeshore Avenue
Oakland, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	February 20, 1998	Groundwater Monitoring and Sampling Report Fourth Quarter 1997-Event of December 12, 1997

COMMENTS:

At the request of Tosco Marketing Company, we are providing you a copy of the above referenced report. The site is monitored and sampled on a quarterly basis in March, June, September and December. If you have questions please contact the Tosco Project Manager, Ms. Tina R. Berry at (510) 277-2321.

3164 Gold Camp Drive
Suite 240

Enclosure

cc: Mr. Greg Gurss, Gettler-Ryan Inc., Rancho Cordova, CA 95670

agency/5325trb.qmt

GETTLER-RYAN INC.

February 20, 1998
G-RJob #180061

Ms. Tina R. Berry
Tosco Marketing Company
2000 Crow Canyon Place, Suite 200
San Ramon, California 94583

RE: Fourth Quarter 1997 Groundwater Monitoring & Sampling Report
Unocal Service Station #5325
3220 Lakeshore Avenue
Oakland, California

Dear Ms. Berry:

This report documents the quarterly groundwater monitoring and sampling event performed by MPDS Services, Inc. On December 12, 1997, MPDS field personnel monitored six wells (U-1 through U-6) and sampled four wells (U-3 through U-6) at the referenced site.

Static groundwater levels were measured and all wells were checked for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were present in two of the wells (U-1 and U-2). Static water level data and groundwater elevations are summarized in Table 1. Dissolved Oxygen Concentrations are summarized in Table 4. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells as specified by 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 Tables 2 and 3, and a Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

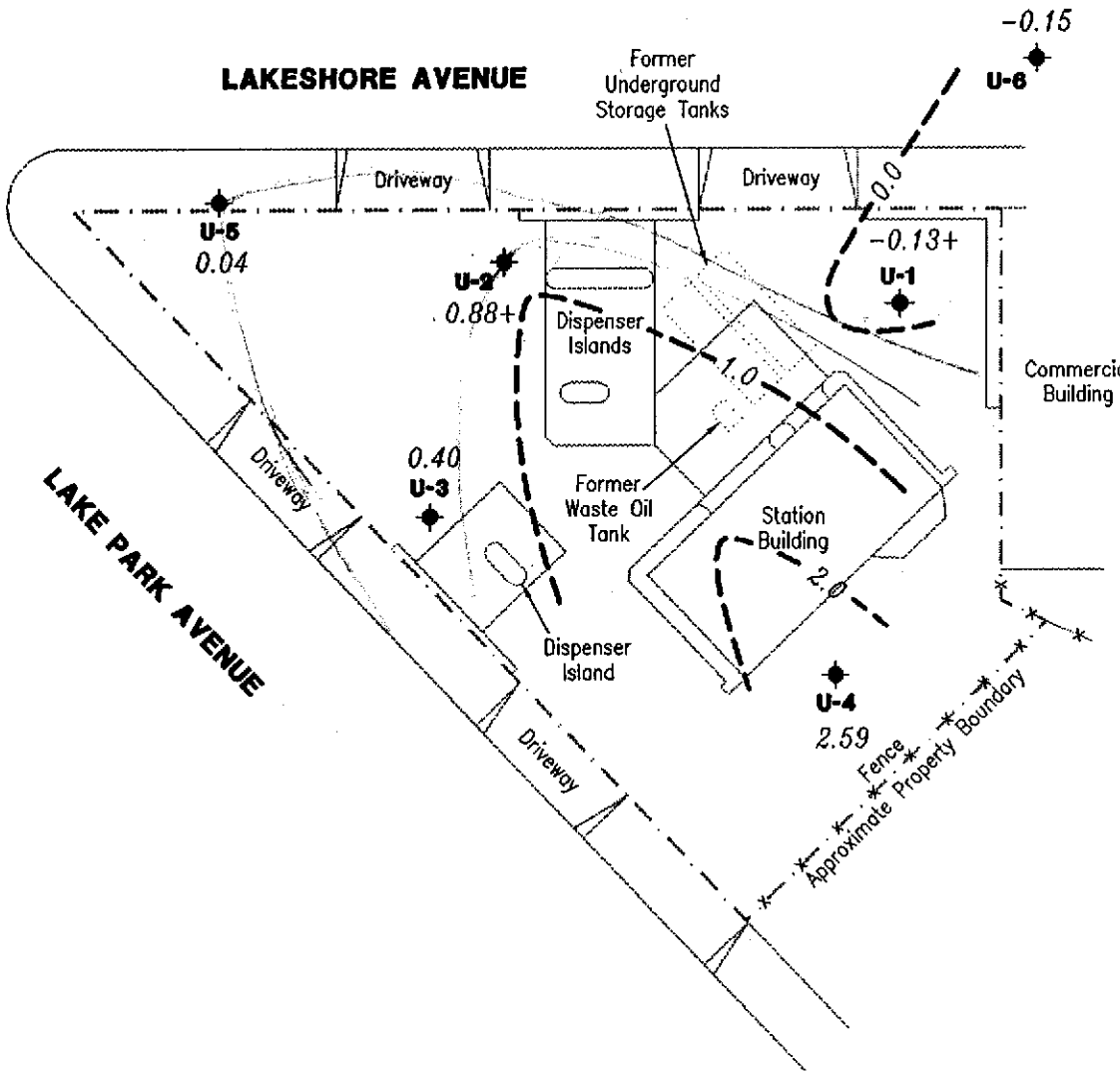
Sincerely,

Deanna L. Harding
Project Manager

Hagop Kevork, P.E.
Senior Staff Engineer, P.E. No. C55734

REGISTERED PROFESSIONAL ENGINEER
HAGOP KEVORK
No. C 55734
Exp. 12/31/00
CIVIL
STATE OF CALIFORNIA

Figure 1: Potentiometric Map
Figure 2: Concentration Map
Table 1: Summary of Monitoring Data
Table 2: Summary of Laboratory Analyses
Table 3: Summary of Laboratory Analyses
Table 4: Summary of Monitoring Data - Dissolved Oxygen Concentrations
Attachments: Standard Operating Procedure - Groundwater Sampling
Field Data Sheets
Chain of Custody Document and Laboratory Analytical Reports



EXPLANATION

- Groundwater monitoring well
- 99.99 — Groundwater elevation in feet referenced to Mean Sea Level (MSL)
- 99.99 — Groundwater elevation contour, dashed where inferred.
- \+ — Groundwater elevation corrected for the presence of free-phase hydrocarbons

Approximate groundwater flow direction at a gradient of 0.02 to 0.05 Ft./Ft.

N

0 40

Scale in Feet

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

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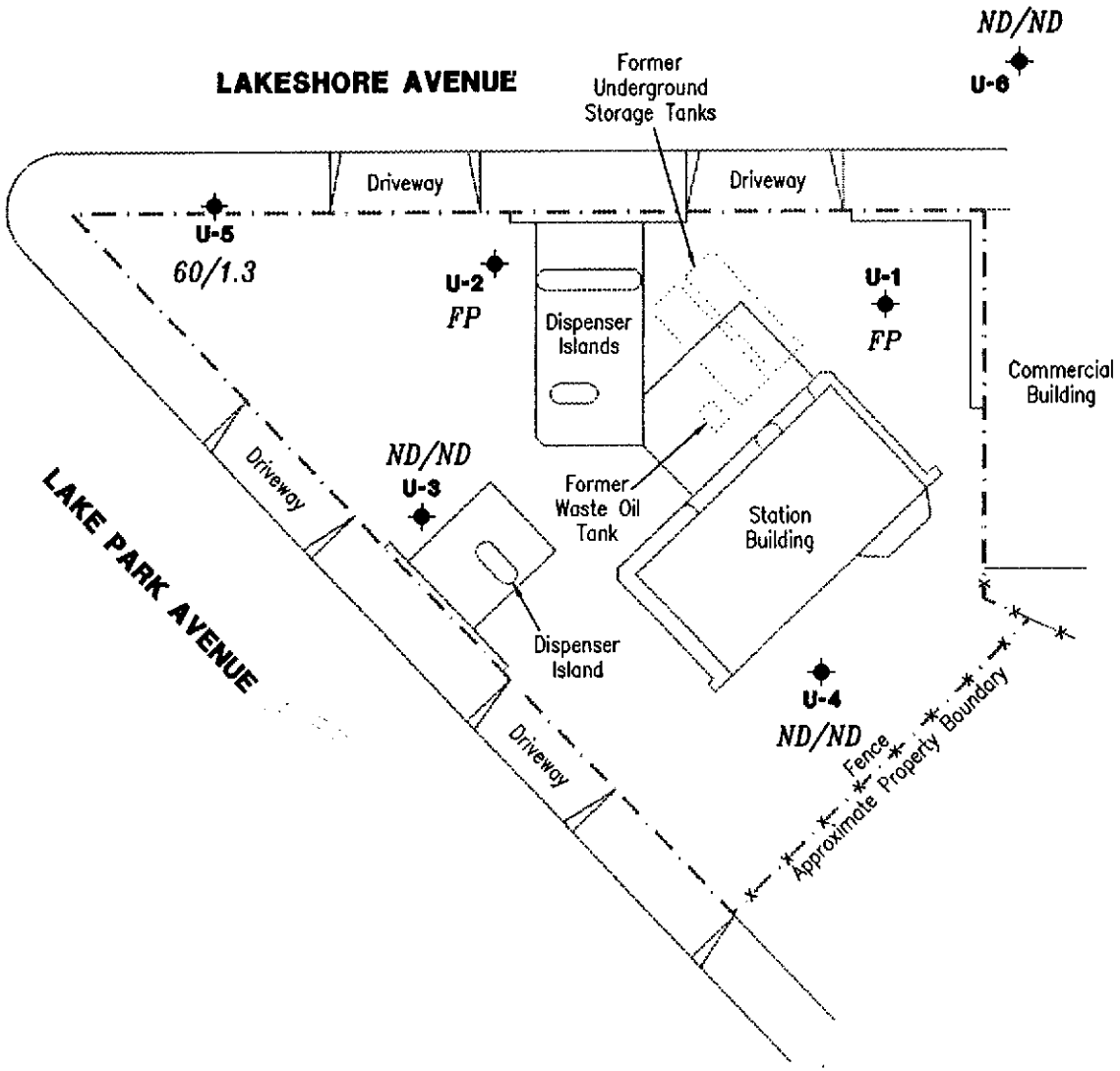
Dublin, CA 94568

POTENTIOMETRIC MAP
Tosco (Unocal) Service Station No. 5325
3220 Lakeshore Avenue
Oakland, California

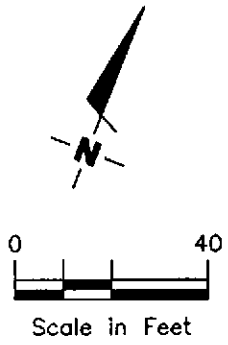
FIGURE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
180061		December 12, 1997	



EXPLANATION

✦	Groundwater monitoring well
99/9.9	TPH(G) as gasoline/Benzene in ppb
ND	Not Detected
FP	Free product



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

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Dublin, CA 94568

CONCENTRATION MAP
Tosco (Unocal) Service Station No. 5325
3220 Lakeshore Avenue
Oakland, California

FIGURE **2**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
180061		December 12, 1997	

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 December 12, 1997)			
U-1*	-0.13**	8.58	19.73	0.01	N/A	0.25(<1)
U-2*	0.88**	6.75	19.67	0.01	N/A	0.25(<1)
U-3	0.40	10.58	19.42	0	No	6
U-4	2.59	8.56	20.17	0	No	19
U-5	0.04	6.94	20.10	0	No	26
U-6	-0.15	7.29	23.82	0	No	8.5
			(Monitored and Sampled on September 19, 1997)			
U-1*	-0.09**	8.56	19.81	0.02	N/A	0
U-2*	0.31	7.31	19.53	<0.01	N/A	0
U-3	-0.07	11.05	19.80	0	No	10
U-4	1.19	9.96	20.20	0	No	12
U-5	0.20	6.78	20.09	0	No	22
U-6	-0.11	7.25	23.80	0	No	8.5
			(Monitored and Sampled on June 30, 1997)			
U-1*	0.07**	8.41	19.80	0.02	N/A	0
U-2*	1.43	6.19	19.53	<0.01	N/A	0
U-3	-0.10	11.08	19.80	0	No	9.5
U-4	1.26	9.89	20.20	0	No	13
U-5	-0.10	7.08	20.08	0	No	20
U-6	-0.21	7.35	23.81	0	No	8
			(Monitored and Sampled on March 14, 1997)			
U-1*	-0.15**	9.02	★	0.55	N/A	0 (13.5)
U-2*	0.52**	7.12	★	0.03	N/A	0
U-3	0.11	10.87	19.80	0	No	9
U-4	1.80	9.35	20.21	0	No	15
U-5	-0.01	6.99	20.10	0	No	25
U-6	-0.16	7.30	23.80	0	No	9.5

Table 1

Summary of Monitoring Data

Well #	Well Casing Elevation (feet)***
U-1	8.46
U-2	7.62
U-3	10.98
U-4	11.15
U-5	6.98
U-6	7.14

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

★ Well depth measurements were not taken.

* Monitored only.

** Ground water elevation corrected due to the presence of free product (correction factor = 0.75).

*** The elevations of the top of the well casings are surveyed relative to City of Oakland benchmark, at the northeasterly corner of Weller and Cheney Avenue (elevation = 9.055 feet, city datum; add 3.00' to U.S.G.S. datum).

(x) Amount of product purged in ounces.

N/A = Not applicable.

Table 2

Summary of Laboratory Analyses
Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
U-1	12/12/97	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	9/19/19	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	6/30/97	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	3/14/97	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	12/9/96	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	9/26/96	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	6/27/96	120,000	540	4,300	2,600	26,000	ND
	3/18/96	27,000	ND	2,300	1,400	11,000	4,900
	12/19/96	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--
	9/19/95	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--
	6/21/95	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--
	3/25/95	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--
	12/24/94	50,000	2,500	9,700	2,400	17,000	--
	9/22/94	6,100♦	ND	ND	ND	ND	--
	6/22/94	200	ND	ND	5.9	21	--
	2/16/94	6,800♦♦	ND	ND	ND	ND	--
	11/16/93	690♦	ND	ND	ND	ND	--
	8/8/93	4,900**	79	ND	832	270	--
	5/7/93	8,700	600	240	650	3,300	--
	2/22/93	34,000	1,400	5,500	910	7,300	--
	8/20/92	400*	1.0	ND	ND	0.6	--
	6/11/92	1,000	80	1.4	6.7	41	--
	5/5/92	230	1.2	ND	ND	ND	--
	2/12/92	250	ND	ND	ND	ND	--
	10/9/91	ND	ND	ND	ND	ND	--
	7/3/91	140	21	4.3	0.36	17	--
	4/1/91	160	13	8.6	1.0	15	--
	1/7/91	250	22	16	4.2	17	--
	8/10/90	690	38	75	8.6	130	--
U-2	12/12/97	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	9/19/19	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	6/30/97	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	3/14/97	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	12/9/96	13,000	5,100	290	980	370	2,700
	9/26/96	5,900	750	ND	ND	ND	18,000
	6/27/96	28,000	3,400	ND	2,800	3,100	3,000
	3/18/96	12,000	2,200	ND	1,200	2,200	22,000
	12/19/95	1,600	140	55	52	270	##
	9/19/95	3,000	610	ND	78	240	#
	6/21/95	16,000	2,100	ND	1,800	1,700	--
	3/25/95	170,000	1,900	21,000	4,800	33,000	--
	12/24/94	32,000	1,500	890	1,300	5,000	--
	9/22/94	8,500♦	29	ND	ND	ND	--
	6/22/94	31,000	2,200	62	1,500	3,500	--

Table 2

Summary of Laboratory Analyses
Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
U-2	2/16/94	980♦♦	49	13	2.7	40	--
(Cont.)	11/16/93	510♦	ND	ND	ND	ND	--
	8/8/93	5,600**	420	ND	410	670	--
	5/7/93	17,000	1,800	660	1,700	4,000	--
	2/22/93	3,400	2,400	2,100	1,200	5,800	--
	8/20/92	700	28	6.5	1.3	4.6	--
	6/11/92	620	17	2.1	ND	37	--
	5/5/92	1,600	120	52	6.2	290	--
	2/12/92	410	1.9	ND	0.36	0.4	--
	10/9/91	230	7.1	ND	ND	11	--
	7/3/91	2,100	150	25	3.1	290	--
	4/1/91	1,700	250	89	34	190	--
	1/7/91	1,900	67	5.8	58	69	--
	8/10/90	780	27	46	15	130	--
U-3	12/12/97	ND	ND	ND	ND	ND	ND
	9/19/19	ND	ND	ND	ND	ND	ND
	6/30/97	ND	ND	ND	ND	ND	ND
	3/14/97	ND	ND	ND	ND	ND	ND
	12/9/96	ND	ND	ND	ND	ND	29
	9/26/96	ND	ND	ND	ND	ND	ND
	6/27/96	440	49	50	51	140	50
	3/18/96	ND	ND	ND	ND	ND	--
	12/19/95	ND	ND	ND	ND	ND	--
	9/19/95	ND	ND	ND	ND	ND	#
	6/21/95	ND	ND	ND	ND	ND	--
	3/25/95	ND	ND	ND	ND	ND	--
	12/24/94	ND	ND	ND	ND	ND	--
	9/22/94	ND	ND	ND	ND	ND	--
	6/22/94	ND	ND	ND	ND	ND	--
	2/16/94	ND	ND	ND	ND	ND	--
	11/16/93	ND	ND	ND	ND	ND	--
	8/8/93	210	5.0	9.7	0.7	4.1	--
	5/7/93	ND	ND	ND	ND	ND	--
	2/22/93	ND	ND	ND	ND	ND	--
	8/20/92	ND	ND	ND	ND	ND	--
	6/11/92	ND	ND	ND	ND	ND	--
	5/5/92	ND	ND	ND	ND	ND	--
	2/12/92	ND	ND	ND	ND	ND	--
	10/9/91	ND	ND	ND	ND	ND	--
	7/3/91	ND	ND	ND	ND	ND	--
	4/1/91	ND	1.0	2.9	0.53	5.4	--
	1/7/91	ND	ND	ND	ND	1.8	--
	8/10/90	ND	ND	ND	ND	ND	--

Table 2

Summary of Laboratory Analyses
Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
U-4	12/12/97	ND	ND	ND	ND	ND	ND
	9/19/97	ND	ND	ND	ND	ND	ND
	6/30/97	ND	ND	ND	ND	ND	ND
	3/14/97	ND	ND	ND	ND	ND	ND
	12/9/96	ND	ND	ND	ND	ND	33
	9/26/96	ND	ND	ND	ND	ND	ND
	6/27/96	ND	ND	ND	ND	ND	ND
	3/18/96	ND	ND	ND	ND	ND	--
	12/19/95	ND	ND	ND	ND	ND	--
	9/19/95	ND	ND	ND	ND	ND	--
	6/21/95	ND	ND	ND	ND	ND	--
	3/25/95	ND	ND	ND	ND	ND	--
	12/24/94	ND	ND	ND	ND	ND	--
	9/22/94	ND	0.78	1.3	ND	1.4	--
	6/22/94	ND	ND	ND	ND	ND	--
U-5	12/12/97	60	1.3	ND	1.6	2.1	47
	9/19/97	6,300	160	13	370	1000	480
	6/30/97	4,200	74	51	180	980	270
	3/14/97	ND	ND	ND	ND	ND	14
	12/9/96	1,300	29	46	ND	140	97
	9/26/96	ND	ND	0.57	ND	0.96	ND
	6/27/96	16,000	280	150	1,400	4,600	530
	3/18/96	100	0.67	0.5	0.51	5.4	--
	12/19/95	ND	ND	ND	ND	ND	--
	9/19/95	850	14	7.1	13	66	#
	6/21/95	400	2.3	ND	9.1	3.5	--
	3/25/95	44,000	390	960	1,500	7,600	--
	12/24/94	8,700	560	70	670	430	--
	9/22/94	170	8.4	10	8.5	18	--
	6/22/94	210	7.1	13	4.5	26	--
U-6	12/12/97	ND	ND	ND	ND	ND	680
	9/19/97	ND	ND	ND	ND	ND	1,400
	6/30/97	ND	ND	ND	ND	ND	990
	3/14/97	ND	ND	ND	ND	ND	1,500
	12/9/96	1,200	29	48	6.4	140	58
	9/26/96	ND	ND	ND	ND	ND	1,400
	6/27/96	ND	ND	ND	ND	ND	510
	3/18/96	ND	ND	ND	ND	ND	--
	12/19/95	210	2.5	1.0	2.9	17	--
	9/19/95	ND	ND	ND	ND	ND	#
	6/21/95	ND	ND	ND	ND	ND	--

Table 2

Summary of Laboratory Analyses
Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
U-6	3/25/95	47,000	450	1,300	1,700	8,200	--
(Cont.)	12/24/94	6,900	500	59	600	380	--
	9/22/94	130	1.3	0.8	ND	0.73	--
	6/22/94	ND	ND	ND	ND	ND	--

♦ Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be gasoline.

♦♦ Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.

* The positive result for gasoline does not appear to have a typical gasoline pattern.

** The concentration reported as gasoline is primarily due to the presence of a combination of gasoline and a discrete peak not indicative of gasoline.

\# Sequoia Analytical Laboratory has potentially identified the presence of MTBE at reportable levels in the groundwater sample collected from this well.

\#\# 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.

MTBE = methyl tert butyl ether.

ND = Non-detectable.

-- Indicates analyses was not performed.

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 November 16, 1993, were provided by GeoStrategies, Inc.

Table 2

Summary of Laboratory Analyses
Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
U-1	12/12/97	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	9/19/19	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	6/30/97	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	3/14/97	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	12/9/96	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	9/26/96	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	6/27/96	120,000	540	4,300	2,600	26,000	ND
	3/18/96	27,000	ND	2,300	1,400	11,000	4,900
	12/19/96	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--
	9/19/95	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--
	6/21/95	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--
	3/25/95	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					--
	12/24/94	50,000	2,500	9,700	2,400	17,000	--
	9/22/94	6,100♦	ND	ND	ND	ND	--
	6/22/94	200	ND	ND	5.9	21	--
	2/16/94	6,800♦♦	ND	ND	ND	ND	--
	11/16/93	690♦	ND	ND	ND	ND	--
	8/8/93	4,900**	79	ND	832	270	--
	5/7/93	8,700	600	240	650	3,300	--
	2/22/93	34,000	1,400	5,500	910	7,300	--
	8/20/92	400*	1.0	ND	ND	0.6	--
	6/11/92	1,000	80	1.4	6.7	41	--
	5/5/92	230	1.2	ND	ND	ND	--
	2/12/92	250	ND	ND	ND	ND	--
	10/9/91	ND	ND	ND	ND	ND	--
	7/3/91	140	21	4.3	0.36	17	--
	4/1/91	160	13	8.6	1.0	15	--
	1/7/91	250	22	16	4.2	17	--
	8/10/90	690	38	75	8.6	130	--
U-2	12/12/97	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	9/19/19	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	6/30/97	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	3/14/97	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT					
	12/9/96	13,000	5,100	290	980	370	2,700
	9/26/96	5,900	750	ND	ND	ND	18,000
	6/27/96	28,000	3,400	ND	2,800	3,100	3,000
	3/18/96	12,000	2,200	ND	1,200	2,200	22,000
	12/19/95	1,600	140	55	52	270	##
	9/19/95	3,000	610	ND	78	240	#
	6/21/95	16,000	2,100	ND	1,800	1,700	--
	3/25/95	170,000	1,900	21,000	4,800	33,000	--
	12/24/94	32,000	1,500	890	1,300	5,000	--
	9/22/94	8,500♦	29	ND	ND	ND	--
	6/22/94	31,000	2,200	62	1,500	3,500	--

Table 2

Summary of Laboratory Analyses
Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
U-2	2/16/94	980♦♦	49	13	2.7	40	--
(Cont.)	11/16/93	510♦	ND	ND	ND	ND	--
	8/8/93	5,600**	420	ND	410	670	--
	5/7/93	17,000	1,800	660	1,700	4,000	--
	2/22/93	3,400	2,400	2,100	1,200	5,800	--
	8/20/92	700	28	6.5	1.3	4.6	--
	6/11/92	620	17	2.1	ND	37	--
	5/5/92	1,600	120	52	6.2	290	--
	2/12/92	410	1.9	ND	0.36	0.4	--
	10/9/91	230	7.1	ND	ND	11	--
	7/3/91	2,100	150	25	3.1	290	--
	4/1/91	1,700	250	89	34	190	--
	1/7/91	1,900	67	5.8	58	69	--
	8/10/90	780	27	46	15	130	--
U-3	12/12/97	ND	ND	ND	ND	ND	ND
	9/19/19	ND	ND	ND	ND	ND	ND
	6/30/97	ND	ND	ND	ND	ND	ND
	3/14/97	ND	ND	ND	ND	ND	ND
	12/9/96	ND	ND	ND	ND	ND	29
	9/26/96	ND	ND	ND	ND	ND	ND
	6/27/96	440	49	50	51	140	50
	3/18/96	ND	ND	ND	ND	ND	--
	12/19/95	ND	ND	ND	ND	ND	--
	9/19/95	ND	ND	ND	ND	ND	#
	6/21/95	ND	ND	ND	ND	ND	--
	3/25/95	ND	ND	ND	ND	ND	--
	12/24/94	ND	ND	ND	ND	ND	--
	9/22/94	ND	ND	ND	ND	ND	--
	6/22/94	ND	ND	ND	ND	ND	--
	2/16/94	ND	ND	ND	ND	ND	--
	11/16/93	ND	ND	ND	ND	ND	--
	8/8/93	210	5.0	9.7	0.7	4.1	--
	5/7/93	ND	ND	ND	ND	ND	--
	2/22/93	ND	ND	ND	ND	ND	--
	8/20/92	ND	ND	ND	ND	ND	--
	6/11/92	ND	ND	ND	ND	ND	--
	5/5/92	ND	ND	ND	ND	ND	--
	2/12/92	ND	ND	ND	ND	ND	--
	10/9/91	ND	ND	ND	ND	ND	--
	7/3/91	ND	ND	ND	ND	ND	--
	4/1/91	ND	1.0	2.9	0.53	5.4	--
	1/7/91	ND	ND	ND	ND	1.8	--
	8/10/90	ND	ND	ND	ND	ND	--

Table 2

Summary of Laboratory Analyses
Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
U-4	12/12/97	ND	ND	ND	ND	ND	ND
	9/19/97	ND	ND	ND	ND	ND	ND
	6/30/97	ND	ND	ND	ND	ND	ND
	3/14/97	ND	ND	ND	ND	ND	ND
	12/9/96	ND	ND	ND	ND	ND	33
	9/26/96	ND	ND	ND	ND	ND	ND
	6/27/96	ND	ND	ND	ND	ND	ND
	3/18/96	ND	ND	ND	ND	ND	--
	12/19/95	ND	ND	ND	ND	ND	--
	9/19/95	ND	ND	ND	ND	ND	--
	6/21/95	ND	ND	ND	ND	ND	--
	3/25/95	ND	ND	ND	ND	ND	--
	12/24/94	ND	ND	ND	ND	ND	--
	9/22/94	ND	0.78	1.3	ND	1.4	--
	6/22/94	ND	ND	ND	ND	ND	--
U-5	12/12/97	60	1.3	ND	1.6	2.1	47
	9/19/97	6,300	160	13	370	1000	480
	6/30/97	4,200	74	51	180	980	270
	3/14/97	ND	ND	ND	ND	ND	14
	12/9/96	1,300	29	46	ND	140	97
	9/26/96	ND	ND	0.57	ND	0.96	ND
	6/27/96	16,000	280	150	1,400	4,600	530
	3/18/96	100	0.67	0.5	0.51	5.4	--
	12/19/95	ND	ND	ND	ND	ND	--
	9/19/95	850	14	7.1	13	66	#
	6/21/95	400	2.3	ND	9.1	3.5	--
	3/25/95	44,000	390	960	1,500	7,600	--
	12/24/94	8,700	560	70	670	430	--
	9/22/94	170	8.4	10	8.5	18	--
	6/22/94	210	7.1	13	4.5	26	--
U-6	12/12/97	ND	ND	ND	ND	ND	680
	9/19/97	ND	ND	ND	ND	ND	1,400
	6/30/97	ND	ND	ND	ND	ND	990
	3/14/97	ND	ND	ND	ND	ND	1,500
	12/9/96	1,200	29	48	6.4	140	58
	9/26/96	ND	ND	ND	ND	ND	1,400
	6/27/96	ND	ND	ND	ND	ND	510
	3/18/96	ND	ND	ND	ND	ND	--
	12/19/95	210	2.5	1.0	2.9	17	--
	9/19/95	ND	ND	ND	ND	ND	#
	6/21/95	ND	ND	ND	ND	ND	--

Table 2

Summary of Laboratory Analyses
Water

Well #	Date	TPH as Gasoline	Benzene	Toluene	Ethyl-Benzene	Xylenes	MTBE
U-6	3/25/95	47,000	450	1,300	1,700	8,200	--
(Cont.)	12/24/94	6,900	500	59	600	380	--
	9/22/94	130	1.3	0.8	ND	0.73	--
	6/22/94	ND	ND	ND	ND	ND	--

♦ Sequoia Analytical Laboratory reported that the hydrocarbons detected did not appear to be gasoline.

♦♦ Sequoia Analytical Laboratory reported that the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.

* The positive result for gasoline does not appear to have a typical gasoline pattern.

** The concentration reported as gasoline is primarily due to the presence of a combination of gasoline and a discrete peak not indicative of gasoline.

\# Sequoia Analytical Laboratory has potentially identified the presence of MTBE at reportable levels in the groundwater sample collected from this well.

\#\# 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.

MTBE = methyl tert butyl ether.

ND = Non-detectable.

-- Indicates analyses was not performed.

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 November 16, 1993, were provided by GeoStrategies, Inc.

Table 3

Summary of Laboratory Analyses
Water

Well #	Date	Iron (mg/L)	Nitrate as NO3 (mg/L)	Phosphate as PO4 (mg/L)	Redox Potential (mg/L)
U-3	12/12/97	1.9	23	0.85	390
	9/19/97	0.57	19	ND	75
	6/30/97	1.4	21	0.86	190
U-4	12/12/97	0.68	31	0.73	380
	9/19/97	0.35	30	ND	45
	6/30/97	0.13	35	0.52	200
U-5	12/12/97	6.7	ND	ND	400
	9/19/97	0.22	ND	ND	63
	6/30/97	16	ND	ND	160
U-6	12/12/97	51	ND	ND	380
	9/19/97	2.9	1.80	ND	ND
	6/30/97	88	0.80	ND	190

mg/L = milligrams per liter.

Table 4

Summary of Monitoring Data
Water

Well #	Date	Dissolved Oxygen (mg/L)
U-3	12/12/97	2.97
	9/19/97	4.2
	6/30/97	4.1
U-4	12/12/97	3.11
	9/19/97	5.1
	6/30/97	5.4
U-5	12/12/97	1.75
	9/19/97	0.6
	6/30/97	3.4
U-6	12/12/97	2.70
	9/19/97	0.60
	6/30/97	0.30

mg/L = milligrams per liter.

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 or equivalent. 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.

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.

MPDS Services Inc.
2401 Stanwell Drive
Concord, California 94520

Tel: (510) 602-5120
Fax: (510) 689-1918

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: # 5325 - Oakland
3220 Lake Shore Ave.

DATE & TIME SAMPLED 12/12/97 11:35 (A.M.) P.M.

FIELD TECHNICIAN Vastle

PURGE METHOD Pump

DATE(S) PURGED 12/12/97

WELL NUMBER 43

WATER LEVEL-**INITIAL** 10.58

SAMPLING METHOD Bail

WATER LEVEL-**FINAL** 14.76

CONTAINERS 4

WELL DEPTH 19.42

PRESERVATIVES VOA's HCl

WELL CASING VOLUME 3.27

†CASING DIAMETER 3"

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µmhos/cmx100) or µS/cm	pH
11:18	0	67.3	5.49	7.96
	3	68.2	5.63	7.80
	6	68.7	5.80	7.69
11:25	"	Dew Aired	—	—

† Conversion Factors:

Well Diameter	Factor
2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:
Temperature = ± 1 °F
Conductivity = ± 10% of total
pH = ± 0.2

/P&S

MPDS Services Inc.
2401 Stanwell Drive
Concord, California 94520

Tel: (510) 602-5120
Fax: (510) 689-1918

PURGING/SAMPLING DATA SHEET

SAMPLING LOCATION: #5325. Oakland
3220 Lake Shore Ave.

DATE & TIME SAMPLED 12/12/92 1:05 A.M. (P.M)

FIELD TECHNICIAN Vaughan

PURGE METHOD Pump

DATE(S) PURGED 12/12/92

WELL NUMBER U5

WATER LEVEL-**INITIAL** 6.94

SAMPLING METHOD Bail

WATER LEVEL-**FINAL** 12.67

CONTAINERS 4

WELL DEPTH 20.10

PRESERVATIVES VOA; HCl

WELL CASING VOLUME 8.5

†CASING DIAMETER 4"

TIME	GALLONS PURGED	TEMPERATURE (°F)	ELECTRICAL CONDUCTIVITY (µmhos/cmx100) or µS/cm	pH
12:35	0	70.4	9.74	7.42
	8.5	69.5	9.92	7.30
	17	69.0	10.03	7.19
12:54	26	68.6	10.11	7.12

† Conversion Factors:

Well Diameter	Factor
2"	0.17
3"	0.37
4"	0.65
4.5"	0.82
6"	1.46
8"	2.60
12"	5.87

S = Siemens = mhos

Stabilization Criteria:
Temperature = ± 1 °F
Conductivity = ± 10% of total
pH = ± 0.2

/P&S

Project Manager: DAVE DEWITT

CHAIN OF CUSTODY

SAMPLER: VARTRES TASHJIAN

WITNESSING AGENCY:

TOSCO S/S # 5325 CITY: Oakland

ADDRESS: 3220 Lake Shore Ave.

ANALYSES REQUESTED

TURN AROUND TIME: Regular.

SAMPLE ID NO.	DATE	TIME	WATER	GRAB	COMP	NO. OF CONT.	SAMPLING LOCATION	TPHG + BTEX	MTBE	IRON	PHOSPHATE, NITRATE, REDOX POTENTIAL				REMARKS
U 3	12/12/97	11:35 AM	X	X		2 VOA, 2 Plastic	Well	X	X	X	X	7121171			MTBE: 5ppb.
U 4	"	12:17 PM	X	X		"	"	X	X	X	X	7121172			
U 5	"	1:05 PM	X	X		"	"	X	X	X	X	7121173			
U 6	"	11:00 AM	X	X		"	"	X	X	X	X	7121174			

RELINQUISHED BY:	DATE/TIME	RECEIVED BY:	DATE/TIME
Vartkes Tashjian	12/12/97 3:15 PM		12/12/97 1515
(SIGNATURE) T Parsley	12/15/97	(SIGNATURE)	1430 12-15
(SIGNATURE)	12-15	(SIGNATURE)	
(SIGNATURE)		(SIGNATURE)	
(SIGNATURE)		(SIGNATURE) C. Palmer	1600 12/15/97

THE FOLLOWING MUST BE COMPLETED BY THE LABORATORY ACCEPTING SAMPLES FOR ANALYSES:

1. HAVE ALL SAMPLES RECEIVED FOR ANALYSIS BEEN STORED ON 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

SIGNATURE: TITLE: Lab Analyst DATE: 12/12/97

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.

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services	Client Project ID:	Tosco#5325,3320 Lake Shore Ave., Oakland	Sampled: Dec 12, 1997
2401 Stanwell Dr., Ste. 300	Matrix Descript:	Water	Received: Dec 12, 1997
Concord, CA 94520	Analysis Method:	EPA 5030/8015 Mod./8020	Reported: Dec 31, 1997
Attention: Jarrel Crider	First Sample #:	712-1171	

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
712-1171	U3	ND	ND	ND	ND	ND
712-1172	U4	ND	ND	ND	ND	ND
712-1173	U5	60	1.3	ND	1.6	2.1
712-1174	U6	ND	ND	ND	ND	ND
Detection Limits:		**50**	**0.50**	**0.50**	**0.50**	**0.50**

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

7121171.MPD <1>

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services	Client Project ID:	Tosco#5325,3320 Lake Shore Ave., Oakland	Sampled:	Dec 12, 1997
2401 Stanwell Dr., Ste. 300	Matrix Descript:	Water	Received:	Dec 12, 1997
Concord, CA 94520	Analysis Method:	EPA 5030/8015 Mod./8020	Reported:	Dec 31, 1997
Attention: Jarrel Crider	First Sample #:	712-1171		

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
712-1171	U3	--	1.0	12/18/97	HP-4	106
712-1172	U4	--	1.0	12/18/97	HP-4	107
712-1173	U5	Gasoline	1.0	12/19/97	HP-4	101
712-1174	U6	--	10	12/18/97	HP-4	108

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager

Sequoia Analytical

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MPDS Services	Client Project ID:	Tosco#5325,3320 Lake Shore Ave., Oakland	Sampled: Dec 12, 1997
2401 Stanwell Dr., Ste. 300	Sample Descript:	Water	Received: Dec 12, 1997
Concord, CA 94520	Analysis for:	MTBE (Modified EPA 8020)	
Attention: Jarrel Crider	First Sample #:	712-1171	Analyzed: 12-18 & 12-19-97
			Reported: Dec 31, 1997

LABORATORY ANALYSIS FOR: MTBE (Modified EPA 8020)

Sample Number	Sample Description	Detection Limit µg/L	Sample Result µg/L
712-1171	U3	5.0	N.D.
712-1172	U4	5.0	N.D.
712-1173	U5	5.0	47
712-1174	U6	25	680

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

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services	Client Project ID:	Tosco#5325,3320 Lake Shore Ave., Oakland	Sampled:	Dec 12, 1997
2401 Stanwell Dr., Ste. 300	Sample Descript:	Water	Received:	Dec 12, 1997
Concord, CA 94520	Analysis for:	Redox Potential		
Attention: Jarrel Crider	First Sample #:	712-1171	Analyzed:	Dec 16, 1997
			Reported:	Dec 31, 1997

LABORATORY ANALYSIS FOR: Redox Potential

Sample Number	Sample Description	Detection Limit ~~mg/L~~	Sample Result ~~mg/L~~
712-1171	U-3	10	390
712-1172	U-4	10	380
712-1173	U-5	10	400
712-1174	U-6	10	380

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

SEQUOIA ANALYTICAL, #1210

Signature on File

Alan B. Kemp
Project Manager

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services	Client Project ID:	Tosco#5325,3320 Lake Shore Ave., Oakland	Sampled: Dec 12, 1997
2401 Stanwell Dr., Ste. 300	Sample Descript:	Water	Received: Dec 12, 1997
Concord, CA 94520	Analysis for:	Iron (EPA 200.7)	Digested: Dec 19, 1997
Attention: Jarrel Crider	First Sample #:	712-1171	Analyzed: Dec 23, 1997
			Reported: Dec 31, 1997

LABORATORY ANALYSIS FOR: Iron (EPA 200.7)

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
712-1171	U-3	0.010	1.9
712-1172	U-4	0.010	0.68
712-1173	U-5	0.010	6.7
712-1174	U-6	0.010	51

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

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services	Client Project ID:	Tosco#5325,3320 Lake Shore Ave., Oakland	Sampled: Dec 12, 1997
2401 Stanwell Dr., Ste. 300	Sample Descript:	Water	Received: Dec 12, 1997
Concord, CA 94520	Analysis for:	Nitrate as N03 (EPA 300.0)	
Attention: Jarrel Crider	First Sample #:	712-1171	Analyzed: Dec 17, 1997
			Reported: Dec 31, 1997

LABORATORY ANALYSIS FOR: Nitrate as N03 (EPA 300.0)

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
712-1171	U-3	0.10	23
712-1172	U-4	0.10	31
712-1173	U-5	0.10	N.D.
712-1174	U-6	0.10	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

Sequoia Analytical

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services	Client Project ID:	Tosco#5325,3320 Lake Shore Ave., Oakland	Sampled:	Dec 12, 1997
2401 Stanwell Dr., Ste. 300	Sample Descript:	Water	Received:	Dec 12, 1997
Concord, CA 94520	Analysis for:	Phosphate as P04 (EPA 300.0)		
Attention: Jarrel Crider	First Sample #:	712-1171	Analyzed:	Dec 17, 1997
			Reported:	Dec 31, 1997

LABORATORY ANALYSIS FOR: Phosphate as P04 (EPA 300.0)

Sample Number	Sample Description	Detection Limit mg/L	Sample Result mg/L
712-1171	U-3	0.50	0.85
712-1172	U-4	0.50	0.73
712-1173	U-5	0.50	N.D.
712-1174	U-6	0.50	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

7121171.MPD <7>

Sequoia Analytical

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819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Tosco#5325,3320 Lake Shore Ave., Oakland
Matrix: Liquid
QC Sample Group: 7121171-174

Reported: Dec 31, 1997

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb
MS/MSD Batch#:	7121269	7121269	7121269	7121269
Date Prepared:	12/18/97	12/18/97	12/18/97	12/18/97
Date Analyzed:	12/18/97	12/18/97	12/18/97	12/18/97
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:	100	100	100	103
Matrix Spike Duplicate % Recovery:	100	100	95	100
Relative % Difference:	0.0	0.0	5.1	3.3
LCS Batch#:	4LCS121897	4LCS121897	4LCS121897	4LCS121897
Date Prepared:	12/18/97	12/18/97	12/18/97	12/18/97
Date Analyzed:	12/18/97	12/18/97	12/18/97	12/18/97
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
LCS % Recovery:	100	100	100	103
% Recovery Control Limits:	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL, #1271

Signature on File

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.

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MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Tosco#5325,3320 Lake Shore Ave., Oakland
Matrix: Liquid
QC Sample Group: 7121171-174

Reported: Dec 31, 1997

QUALITY CONTROL DATA REPORT

ANALYTE	Benzene	Toluene	Ethyl Benzene	Xylenes
Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb
MS/MSD Batch#:	7121254	7121254	7121254	7121254
Date Prepared:	12/19/97	12/19/97	12/19/97	12/19/97
Date Analyzed:	12/18/97	12/19/97	12/19/97	12/19/97
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:	90	90	90	93
Matrix Spike Duplicate % Recovery:	90	90	90	93
Relative % Difference:	0.0	0.0	0.0	0.0
LCS Batch#:	4LCS121997	4LCS121997	4LCS121997	4LCS121997
Date Prepared:	12/19/97	12/19/97	12/19/97	12/19/97
Date Analyzed:	12/19/97	12/19/97	12/19/97	12/19/97
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4
LCS % Recovery:	80	80	80	83
% Recovery Control Limits:	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL, #1271

Signature on File

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

680 Chesapeake Drive, Redwood City, CA 94063, (650) 364-9600, FAX (650) 364-9233
404 N. Wiget Lane, Walnut Creek, CA 94598, (510) 988-9600, FAX (510) 988-9673
819 Striker Avenue, Suite 8, Sacramento, CA 95834, (916) 921-9600, FAX (916) 921-0100

MPDS Services
2401 Stanwell Dr., Ste. 300
Concord, CA 94520
Attention: Jarrel Crider

Client Project ID: Tosco#5325,3320 Lake Shore Ave., Oakland
Matrix: Liquid
QC Sample Group: 7121171-174
Reported: Dec 31, 1997

QUALITY CONTROL DATA REPORT

ANALYTE	Iron	Nitrate as N03	Phosphate as P04
Method:	EPA 200.7	EPA 300.0	EPA 300.0
Analyst:	J. Kelly	K. Anderson	K. Anderson
MS/MSD Batch#:	7121066	7121174	7121174
Date Prepared:	12/19/97	12/17/97	12/17/97
Date Analyzed:	12/23/97	12/17/97	12/17/97
Instrument I.D.#:	MV-4	INIC-1	INIC-1
Conc. Spiked:	1.0 mg/L	10 mg/L	20 mg/L
Matrix Spike % Recovery:	100	100	100
Matrix Spike Duplicate % Recovery:	100	100	100
Relative % Difference:	0.0	0.0	0.0
LCS Batch#:	LCS121997A	LCS121797B	LCS121797B
Date Prepared:	12/19/97	12/17/97	12/17/97
Date Analyzed:	12/23/97	12/17/97	12/17/97
Instrument I.D.#:	MV-4	INIC-1	INIC-1
LCS % Recovery:	100	100	100
% Recovery Control Limits:	80-120	80-120	80-120

SEQUOIA ANALYTICAL, #1271

Signature on File

Alan B. Kemp
Project Manager

Please Note:
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Reported: Dec 31, 1997

QUALITY CONTROL DATA REPORT

Analyte: Redox Potential

Analy. Method: ASTM DI 49876
Analyst: T. McMahon

Duplicate Sample #: 9712A33-04

Prepared Date: 12/15/97
Analyzed Date: 12/15/97
Instrument I.D.#: Manual

Sample Concentration: 380 mg/L

Dup. Sample Concentration: 380 mg/L

RPD: 0.0
RPD Limit: 0-20

SEQUOIA ANALYTICAL, #1210

Signature on File

Alan B. Kemp
Project Manager

** RPD=Relative % Difference