GETTLER-RYAN INC.

TRANSMITTAL

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

DATE: September 15, 1998
G-R #: 180068

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

RE: Tosco (Former Unocal) SS #1871
96 MacArthur Blvd.
Oakland, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	August 31, 1998	Groundwater Monitoring and Sampling Report Semi-Annual 1998 - Event of July 1, 1998

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 semi-annual basis. If you have questions please contact the Tosco Project Manager, Ms. Tina R. Berry at (510) 277-2321.

Enclosure

cc: Mr. Dave Vossler, Gettler-Ryan Inc., Novato, CA 94945

agency/1871trb.qmt

GETTLER-RYAN INC.

August 31, 1998
G-R Job #180068

Ms. Tina R. Berry
Tosco Marketing Company
2000 Crow Canyon Place, Suite 400
San Ramon, California 94583

RE: Semi-Annual 1998 Groundwater Monitoring & Sampling Report
Tosco (Former Unocal) Service Station #1871
96 MacArthur Boulevard
Oakland, California

Dear Ms. Berry:

This report documents the semi-annual groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On July 1, 1998, field personnel monitored and sampled five wells (MW-1 through 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. 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 Tables 1 and 2, and a Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

Sincerely,

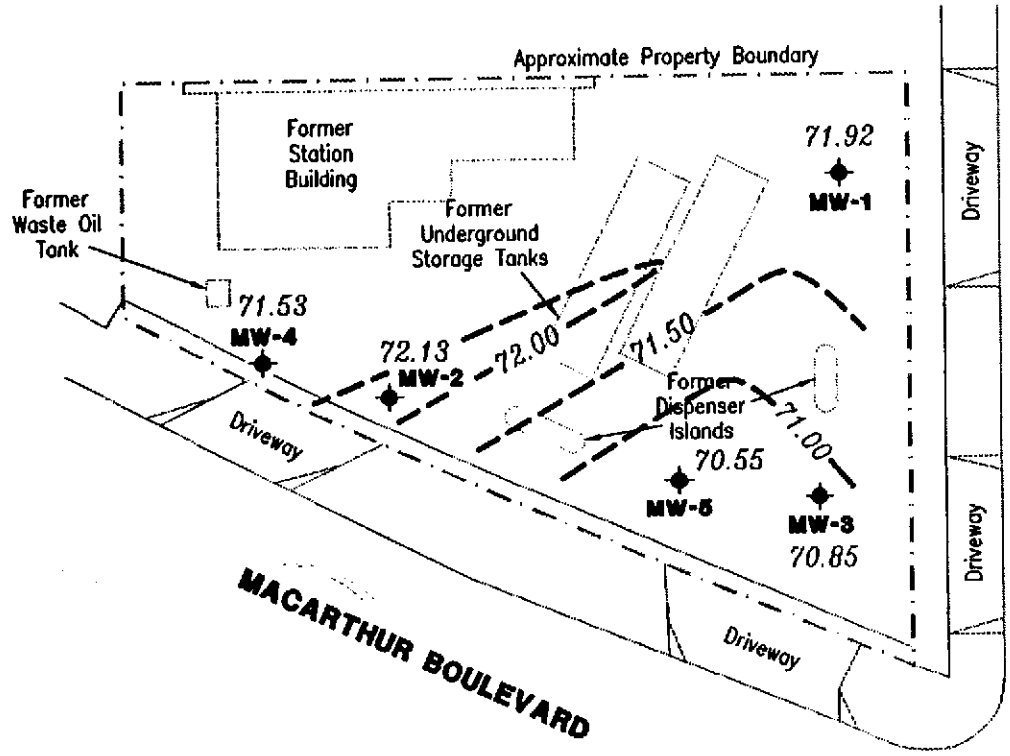
Deanna L. Harding
Project Manager

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

REGISTERED GEOLOGIST
STEPHEN J. CARTER
No. 5577
STATE OF CALIFORNIA

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

1871.qml



EXPLANATION

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

Approximate groundwater flow direction at a gradient of 0.03 Ft./Ft.

0 30

Scale in Feet

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

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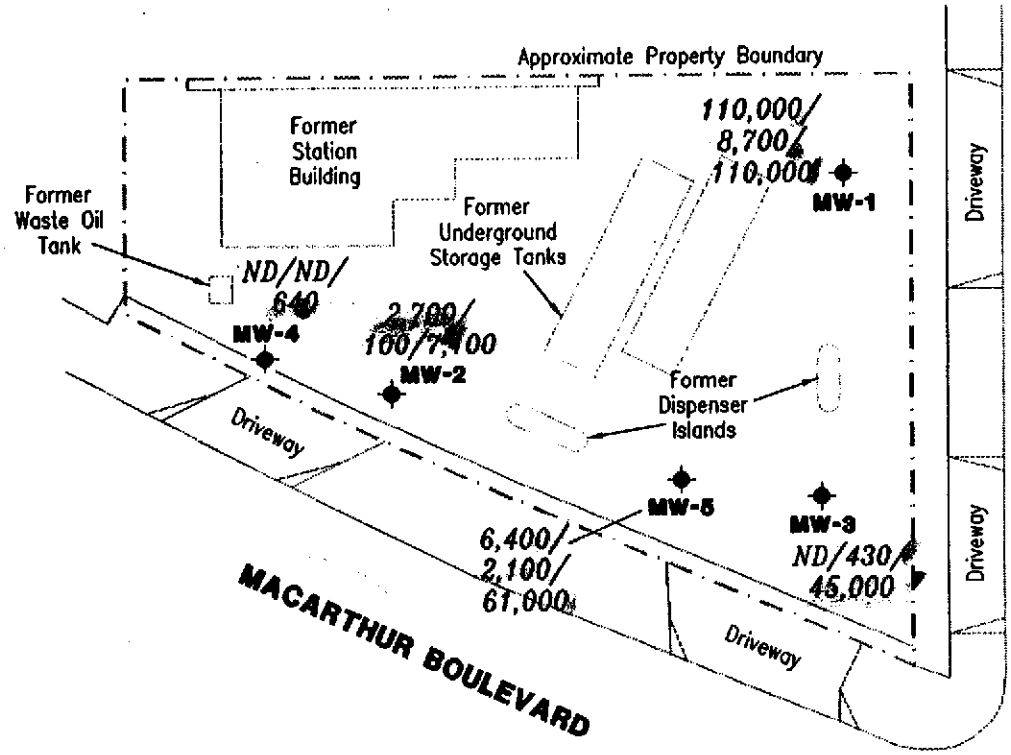
Dublin, CA 94568

POTENTIOMETRIC MAP
Tosco (Former Unocal) Service Station No. 1871
96 MacArthur Boulevard
Oakland, California

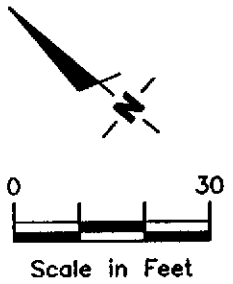
FIGURE 1

JOB NUMBER 180068 | REVIEWED BY | DATE July 1, 1998 | REVISED DATE



EXPLANATION

- ✦ Groundwater monitoring well
- *A/B/C* TPH(G) (Total Petroleum Hydrocarbons as Gasoline)/Benzene/MTBE concentrations in ppb
- *ND* Not Detected



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

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CONCENTRATION MAP
Tosco (Former Unocal) Service Station No. 1871
96 MacArthur Boulevard
Oakland, California

FIGURE
2

JOB NUMBER
180068

REVIEWED BY

DATE
July 1, 1998

REVISED DATE

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Former Unocal) Service Station #1871

96 MacArthur Boulevard

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(G)	B	T	E	X	MTBE
				<--------		ppb			-------->
MW-1	11/03/92	--	--	260,000	2,300	4,600	3,700	17,000	--
	01/25/93	--	--	120,000	2,100	4,600	4,900	22,000	--
81.18	04/29/93	13.71	67.47	100,000	850	2,000	4,300	19,000	--
	07/16/93	14.51	66.67	29,000	590	560	980	4,200	--
	10/19/93	15.20	65.98	67,000	1,400	2,600	2,900	5,000	--
	01/20/94	15.17	66.01	92,000	1,200	3,000	3,400	17,000	--
	04/13/94	14.44	66.74	51,000	1,000	2,600	3,200	15,000	--
	07/13/94	14.88	66.30	35,000	550	150	1,400	5,700	--
	10/10/94	15.55	65.63	52,000	1,000	810	3,300	12,000	--
	01/10/95	12.44	68.74	810	16	18	59	250	--
	04/17/95	12.68	68.50	48,000	880	530	2,500	11,000	--
	07/24/95	13.97	67.21	48,000	1,500	420	2,700	9,700	--
	10/23/95	14.85	66.33	47,000	780	210	2,100	11,000	270
	01/18/96	14.21	66.97	30,000	1,500	500	3,500	13,000	2,400
86.24	04/18/96	13.40	72.84	66,000	2,700	2,200	3,100	13,000	57,000
	07/24/96	14.15	72.09	5,600	2,100	ND	160	160	24,000
	10/24/96	14.85	71.39	110,000	7,500	8,000	3,300	14,000	58,000
	01/28/97	11.25	74.99	94,000	7,700	19,000	3,100	15,000	120,000
	07/29/97	14.67	71.57	ND	ND	ND	ND	ND	70,000
	01/14/98	12.27	73.97	85,000	6,100	10,000	3,000	17,000	110,000
	07/01/98	**14.32**	**71.92**	**110,000**	**8,700**	**12,000**	**2,700**	**15,000**	**110,000**
					Exceeds Tier 1 Residential?				
MW-2	11/03/92	--	--	140	2.2	ND	ND	2.0	--
	01/25/93	--	--	2,100	56	1.1	90	140	--
76.61	04/29/93	9.73	66.88	1,500	290	ND	33	11	--
	07/16/93	10.17	66.44	510[1]	17	0.60	3.2	2.5	--
	10/19/93	11.18	65.43	670	24	1.1	7.7	23	--
	01/20/94	11.12	65.49	820	97	ND	12	ND	--
	04/13/94	10.12	66.49	550	71	ND	5.1	1.3	--
	07/13/94	10.86	65.75	2,000	490	ND	17	13	--
	10/10/94	11.48	65.13	2,300	340	ND	25	ND	--
	01/10/95	8.71	67.90	850	3.8	ND	8.5	1.3	--
	04/17/95	8.90	67.71	1,300	4.7	ND	8.3	1.2	--
	07/24/95	9.94	66.67	960	20	ND	4.2	6.2	--

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Former Unocal) Service Station #1871

96 MacArthur Boulevard

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(G)	B	T	E	X	MTBE
				<----------ppb---------->					
MW-2	10/23/95	10.70	65.91	ND	ND	ND	ND	ND	19
(cont)	01/18/96	10.11	66.50	900	300	86	7.6	18	4,300
81.66	04/18/96	9.27	72.39	18,000	3,600	680	890	4,100	19,000
	07/24/96	10.02	71.64	100,000	13,000	21,000	2,700	16,000	120,000
	10/24/96	10.78	70.88	800	110	17	11	20	20,000
	01/28/97	7.70	73.96	45,000	2,400	2,900	2,000	7,600	29,000
	07/29/97	10.28	71.38	ND	1.2	0.72	0.63	0.62	17,000
	01/14/98	8.63	73.03	14,000	1,000	150	790	3,300	23,000
	07/01/98	**9.53**	**72.13**	**2,700**	**100**	**ND[3]**	**180**	**78**	**7,100**
MW-3	11/03/92	--	--	2,100	120	15	38	200	--
	01/25/93	--	--	2,300	80	1	55	52	-
77.48	04/29/93	11.37	66.11	4,500	1,700	ND	200	140	--
	07/16/93	12.09	65.39	4,000[1]	1,100	28	52	70	--
	10/19/93	12.69	64.79	3,800	42	ND	50	56	--
	01/20/94	12.65	64.83	4,200	11	ND	21	15	--
	04/13/94	12.02	65.46	4,200	210	ND	36	53	--
	07/13/94	12.46	65.02	1,800[2]	16	16	ND	21	--
	10/10/94	12.98	64.50	4,300	11	ND	12	ND	--
	01/10/95	10.42	67.06	310	4.6	ND	3.5	2.1	--
	04/17/95	10.42	67.06	7,800	ND	4.6	300	450	--
	07/24/95	11.76	65.72	3,200	170	ND	22	16	--
	10/23/95	12.50	64.98	3,900	55	ND	19	11	4,500
	01/18/96	11.79	65.69	2,200	270	33	26	18	5,500
82.55	04/18/96	11.30	71.25	6,000	1,800	ND	100	230	48,000
	07/24/96	12.17	70.38	ND	2,500	ND	ND	ND	71,000
	10/24/96	12.65	69.90	3,800	660	ND	15	ND	65,000
	01/28/97	9.50	73.05	4,400	250	13	87	47	54,000
	07/29/97	11.99	70.56	ND	3,500	ND	220	ND	75,000
	01/14/98	10.30	72.25	ND[3]	430	ND[3]	100	380	37,000
	07/01/98	**11.70**	**70.85**	**ND[3]**	**430**	**ND[3]**	**ND[3]**	**ND[3]**	**45,000**

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Former Unocal) Service Station #1871
96 MacArthur Boulevard
Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(G)	B	T	E	X	MTBE
				<----------ppb---------->					
MW-4									
82.04	04/18/96	9.83	72.21	ND	630	ND	ND	ND	18,000
	07/24/96	10.47	71.57	ND	ND	ND	ND	5.2	3,900
	10/24/96	11.14	70.90	ND	ND	ND	ND	ND	6,300
	01/28/97	7.94	74.10	1,200	490	ND	17	6.8	16,000
	07/29/97	10.86	71.18	50	1.5	0.61	0.73	0.78	15,000
	01/14/98	8.73	73.31	ND[3]	ND[3]	ND[3]	ND[3]	ND[3]	5,200
	07/01/98	**10.51**	**71.53**	**ND**	**ND**	**ND**	**ND**	**ND**	**640**
MW-5									
81.80	04/18/96	9.65	72.15	31,000	5,500	1,400	1,700	8,100	66,000
	07/24/96	10.80	71.00	32,000	6,400	ND	1,600	6,100	120,000
	10/24/96	11.40	70.40	17,000	6,900	ND	970	130	84,000
	01/28/97	7.76	74.04	19,000	6,100	62	82	310	160,000
	07/29/97	11.58	70.22	ND	ND	ND	ND	ND	71,000
	01/14/98	9.08	72.72	ND[3]	3,600	ND[3]	ND[3]	ND[3]	80,000
	07/01/98	**11.25**	**70.55**	**6,400**	**2,100**	**21**	**120**	**330**	**61,000**
Trip Blank									
TB-LB	01/14/98	--	--	ND	ND	ND	ND	ND	ND
	07/01/98	**--**	**--**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Former Unocal) Service Station #1871
96 MacArthur Boulevard
Oakland, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to January 14, 1998, were compiled from reports prepared by MPDS Services, Inc.

TOC = Top of Casing elevation
DTW = Depth to Water
(ft.) = Feet
GWE = Groundwater Elevation
(msl) = Referenced relative to mean sea level
TPH(G) = Total Petroleum Hydrocarbons as Gasoline

B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes
MTBE = Methyl tertiary butyl ether

ppb = Parts per billion
ND = Not Detected
-- = Not Measured/Not Analyzed

* TOC elevations were re-surveyed by Kier & Wright in May, 1996, per City of Oakland Benchmark No. 2310, a cut square in concrete curb at mid point of return at the northeast corner of El Dorado and Fairmont Street. (Elevation = 77.53 feet msl).

[1] Laboratory report indicates the presence of discrete peaks not indicative of gasoline.

[2] Laboratory report indicates the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.

[3] Detection limit raised. Refer to analytical results.

Table 2

Groundwater Analytical Results

Tosco (Former Unocal) Service Station #1871
96 MacArthur Boulevard
Oakland, California

Well ID	Date	TPH(D)	TOG	VOC	SVOC
		<-------- ppb -------->			
MW-4	04/18/96	110[1]	ND	ND	--
	07/24/96	ND	ND	ND	ND
	10/24/96	ND	ND	ND	ND[2]
	01/28/97	210[3]	ND	ND	ND[4]
	07/29/97	ND	ND	ND	ND
	01/14/98	ND	ND	ND	ND
	07/01/98	**ND**	**ND**	**ND**	**ND**

EXPLANATIONS:

Groundwater analytical results prior to January 14, 1998, were compiled from reports prepared by MPDS Services, Inc.

TPH(D) = Total Petroleum Hydrocarbons as Diesel
TOG = Total Oil and Grease
VOC = Volatile Organic Compounds by EPA Method 8010
SVOC = Semi-Volatile Organic Compounds by EPA Method 8270
ppb = Parts per billion
-- = Not Analyzed
ND = Not Detected

1 Laboratory report indicates the hydrocarbons detected did not appear to contain diesel.
2 Bis (2-ethylhexyl) phthalate was detected at a concentration of 14 ppb.
3 Laboratory report indicates the hydrocarbons detected appeared to be a diesel and non-diesel mixture.
4 Naphthalene was detected at a concentration of 17 ppb.

All EPA Method 8010 and 8270 constituents were ND, unless noted.

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 # 1871 Job#: 180068

Address: 96 MacArthur Blvd. Date: 7-1-98

City: Oakland Sampler: Joe

Well ID MW-1 Well Condition: O.K. (Christy Sox Broken)

Well Diameter 4 in. Hydrocarbon Thickness: (feet) Amount Bailed (product/water): (Gallons)

Total Depth 24.12 ft.

Depth to Water 14.32 ft.

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

9.8 X VF 0.66 = 6.47 X 3 (case volume) = Estimated Purge Volume: 20 (gal.)

Purge Equipment:
- Disposable Bailer
- Bailer
- Stack
- (Suction)
- Grundfos
- Other: _____

Sampling Equipment:
- (Disposable Bailer)
- ~~Bailer~~
- Pressure Bailer
- Grab Sample
- Other: _____

Starting Time: 10:00 Weather Conditions: clear

Sampling Time: 10:30 A.M. Water Color: clear Odor: Some

Purging Flow Rate: 2 gpm. Sediment Description: None

Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm X1000	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
10:10	7	7.66	2.34	68.9			
10:15	14	7.60	2.47	70.0			
10:19	20	7.52	2.48	69.5			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-1	3 VOA	Y	HCL	SEQUOIA	TPH(G)/btex/mtbe

COMMENTS: _____

9/97-fieldst.fmn

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 1871 Job#: 180068

Address: 96 MacArthur Blvd. Date: 7-1-98

City: Oakland Sampler: Joe

Well ID mw-2 Well Condition: O.K. (Christy Sox broken)

Well Diameter 4 in. Hydrocarbon Thickness: _____ (feet) Amount Bailed (product/water): _____ (Gallons)

Total Depth 24.72 ft.

Depth to Water 9.53 ft.

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

15.19 X VF 0.66 = 10.03 X 3 (case volume) = Estimated Purge Volume: 30 (gal.)

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

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

Starting Time: 7:20 Weather Conditions: clear

Sampling Time: 7:50 A.M Water Color: clear Odor: some

Purging Flow Rate: 2 gpm. Sediment Description: None

Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm x100	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
7:30	10	7.39	3.70	69.5			
7:35	20	7.25	7.61	69.8			
7:40	30	7.22	7.66	69.5			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
mw-2	3 voA	Y	HCL	SEQUOIA	TPH(G)/btex/mtbe

COMMENTS: _____

9/97-fieldst.frm

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 1871 Job#: 180068

Address: 96 MacArthur Blvd. Date: 7-1-98

City: Oakland Sampler: Joe

Well ID: MW-3 Well Condition: O.K (Christy Sox Stuck on)

Well Diameter: 4 in. Hydrocarbon Thickness: _____ (feet) Amount Bailed (product/water): _____ (Gallons)

Total Depth: 23.69 ft.

Depth to Water: 11.70 ft.

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

11.99 X VF 0.66 = 7.91 X 3 (case volume) = Estimated Purge Volume: 24 (gal.)

Purge Equipment: Disposable Bailer; Bailer; Stack; (Suction); Grundfos; Other: _____

Sampling Equipment: (Disposable Bailer); ~~Bailer~~; Pressure Bailer; Grab Sample; Other: _____

Starting Time: 8:45 Weather Conditions: clear

Sampling Time: 9:15 A.M. Water Color: clear Odor: ~~None~~ Some

Purging Flow Rate: 2 gpm. Sediment Description: None

Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm x10³	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
8:59	8	7.43	5.16	69.6			
9:04	16	7.40	5.19	70.5			
9:08	24	7.37	5.24	70.0			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-3	3 VOA	Y	HCL	SEQUOIA	TPH(G)/btex/mtbe

COMMENTS: _____

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 1871 Job#: 180068

Address: 96 MacArthur Blvd. Date: 7-1-98

City: Oakland Sampler: Joe

Well ID mw-4 Well Condition: O.K. (christy box broken)

Well Diameter 2 in. Hydrocarbon Thickness: _____ (feet) Amount Bailed (product/water): _____ (Gallons)

Total Depth 19.56 ft.

Depth to Water 10.51 ft.

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

9.05 X VF 0.17 = 1.54 X 3 (case volume) = Estimated Purge Volume: 5 (gal.)

Purge Equipment:
- (Disposable Bailer)
- Bailer
- Stack
- (Suction)
- Grundfos
- Other: _____

Sampling Equipment:
- (Disposable Bailer)
- ~~Bailer~~
- Pressure Bailer
- Grab Sample
- Other: _____

Starting Time: 8:00 Weather Conditions: clear

Sampling Time: 8:20 A.M. Water Color: clear Odor: None

Purging Flow Rate: 0.5 gpm. Sediment Description: None

Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm X 100	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
8:08	1.5	7.05	5.02	66.2			
8:10	3	6.98	4.76	66.3			
8:12	5	7.08	4.75	66.1			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
mw-4	5 VOA	Y	HCL	SEQUOIA	TPH(G)/btex/mtbe - 8010
"	3 Ambers	"	—	"	TOG, TPHD, 8270

COMMENTS: _____

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 1871 Job#: 180068

Address: 96 MacArthur Blvd. Date: 7-1-98

City: Oakland Sampler: Joe

Well ID: MW-5 Well Condition: O.K. (chrisly box broken)

Well Diameter: 2 in. Hydrocarbon Thickness: (feet) Amount Bailed (product/water): (Gallons)

Total Depth: 20.00 ft.

Depth to Water: 11.25 ft.

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

8.75 X VF 0.17 = 1.49 X 3 (case volume) = Estimated Purge Volume: 5 (gal.)

Purge Equipment: (Disposable Bailer) ~~Bailer~~ Stack (Suction) Grundfos Other: _____

Sampling Equipment: (Disposable Bailer) ~~Bailer~~ Pressure Bailer Grab Sample Other: _____

Starting Time: 9:30 Weather Conditions: clear

Sampling Time: 9:50 A.m Water Color: clear Odor: strong

Purging Flow Rate: 1 gpm. Sediment Description: None

Did well de-water? _____ If yes; Time: _____ Volume: _____ (gal.)

Time	Volume (gal.)	pH	Conductivity µmhos/cm x100	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
9:33	1.5	7.50	3.11	66.5			
9:39	3	7.59	3.14	66.1			
9:42	5	7.48	3.16	66.0			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-5	3 VOA	Y	HCL	SEQUOIA	TPH(G)/btex/mtbe

COMMENTS: _____

Chain-of-Custody-Record

TOSCO

Tosco Marketing Company
2000 Crow Canyon Pl., Ste. 400
San Ramon, California 94583

Facility Number: UNOCAL SS# 1871
Facility Address: 96 MacArthur Blvd
Consultant Project Number: 180068
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
(Phone): (510) 277-2321
Laboratory Name: Sequoia Analytical
Laboratory Release Number: 9807078
Samples Collected by (Name): JOE AJEMIAN
Collection Date: 7-1-98
Signature: [signature]

Analyses To Be Performed

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)	TPH Gas + BTEX w/MTBE (8015) (8020)	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)					DO NOT BILL TB-LB ANALYSIS Remarks
TB-LB		1 VOA	W	G	—	HCL	Y	✓								8070338				
MW-1		3 VOA	✓	✓	10:30 A.M	✓	✓	✓								8070339				
MW-2		3 VOA	✓	✓	7:50 A.M	✓	✓	✓								8070340				
MW-3		3 VOA	✓	✓	9:15 A.M	✓	✓	✓								8070341				
MW-4		5 VOA 3 Amb	✓	✓	8:20 A.M	✓	✓	✓	✓	✓	✓			✓		8070342				
MW-5		3 VOA	✓	✓	9:50 A.M	✓	✓	✓								8070343				

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
[signature]	G-R Inc.	7-1-98 1900 4:00 P.M	[signature]	CBC	7-2 1500
[signature]					
[signature]	CBC	7-2 1720	Received For Laboratory By (Signature): [signature]		7/1/98 1900

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted (circled)

7/2 1730

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
1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

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

Client Project ID: Unocal SS#1871, Oakland
Sample Matrix: Water
Analysis Method: EPA 5030/8015 Mod./8020
First Sample #: 807-0338

Sampled: Jul 1, 1998
Received: Jul 2, 1998
Reported: Jul 27, 1998

TOTAL PURGEABLE PETROLEUM HYDROCARBONS with BTEX / MTBE

Analyte	Reporting Limit µg/L	Sample I.D. 807-0338 TB-LB	Sample I.D. 807-0339 MW-1	Sample I.D. 807-0340 MW-2	Sample I.D. 807-0341 MW-3	Sample I.D. 807-0342 MW-4	Sample I.D. 807-0343 MW-5
Purgeable Hydrocarbons	50	N.D.	110,000	2,700	N.D.	N.D.	6,400
Benzene	0.50	N.D.	8,700	100	430	N.D.	2,100
Toluene	0.50	N.D.	12,000	N.D.	N.D.	N.D.	21
Ethyl Benzene	0.50	N.D.	2,700	180	N.D.	N.D.	120
Total Xylenes	0.50	N.D.	15,000	78	N.D.	N.D.	330
MTBE	2.5	N.D.	110,000	7,100	45,000	640	61,000
Chromatogram Pattern:		--	Gasoline	Gasoline	--	--	Gasoline

Quality Control Data

Report Limit Multiplication Factor:	1.0	1,000	10	100	1.0	20
Date Analyzed:	7/15/98	7/15/98	7/16/98	7/15/98	7/15/98	7/15/98
Instrument Identification:	HP-4	HP-4	HP-4	HP-4	HP-4	HP-4
Surrogate Recovery, %: (QC Limits = 70-130%)	105	101	100	111	114	95

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
Project Manager

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Gettler-Ryan - Dublin	Client Project ID:	Unocal SS#1871, Oakland	Sampled:	Jul 1, 1998
6747 Sierra Court, Suite J	Sample Matrix:	Water	Received:	Jul 2, 1998
Dublin, CA 94568	Analysis Method:	EPA 3510/8015 Mod.	Reported:	Jul 27, 1998
Attention: Deanna Harding	First Sample #:	807-0342		

TOTAL EXTRACTABLE PETROLEUM HYDROCARBONS

Analyte	Reporting Limit µg/L	Sample I.D. 807-0342 MW-4
Extractable Hydrocarbons	50	N.D.
Chromatogram Pattern:		--

Quality Control Data

Report Limit Multiplication Factor:	1.0
Date Extracted:	7/8/98
Date Analyzed:	7/13/98
Instrument Identification:	HP-3A

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

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Project Manager

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Gettler-Ryan - Dublin	Client Project ID:	Unocal SS#1871, Oakland	Sampled: Jul 1, 1998
6747 Sierra Court, Suite J	Matrix Descript:	Water	Received: Jul 2, 1998
Dublin, CA 94568	Analysis Method:	SM 5520 B (Gravimetric)	Extracted: Jul 9, 1998
Attention: Deanna Harding	First Sample #:	807-0342	Analyzed: Jul 9, 1998
			Reported: Jul 27, 1998

TOTAL RECOVERABLE OIL AND GREASE

Sample Number	Sample Description	Oil & Grease mg/L (ppm)	Detection Limit Multiplication Factor
807-0342	MW-4	N.D.	1.4

Detection Limits:	**5.0**

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

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Project Manager

8070338.GET <3>

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Gettler-Ryan - Dublin	Client Project ID:	Unocal SS#1871, Oakland	Sampled:	Jul 1, 1998
6747 Sierra Court, Suite J	Sample Descript:	Water, MW-4	Received:	Jul 2, 1998
Dublin, CA 94568	Analysis Method:	EPA 5030/8010	Analyzed:	Jul 10, 1998
Attention: Deanna Harding	Lab Number:	807-0342	Reported:	Jul 27, 1998

HALOGENATED VOLATILE ORGANICS (EPA 8010)

Analyte	Detection Limit µg/L	Sample Results µg/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
Tetrachloroethene	0.50	N.D.
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.

Surrogates	Control Limit %		% Recovery
Dibromodifluoromethane	50	150	93
4-Bromofluorobenzene	50	150	86

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

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

Client Project ID: Unocal SS#1871, Oakland
Sample Descript: Water, MW-4
Analysis Method: EPA 8270
Lab Number: 807-0342

Sampled: Jul 1, 1998
Received: Jul 2, 1998
Extracted: Jul 7, 1998
Analyzed: Jul 8, 1998
Reported: Jul 27, 1998

ACID & BASE/NEUTRALS by GC/MS (EPA 8270)

Analyte	Detection Limit µg/L	Sample Results µg/L
Acenaphthene	7.5	N.D.
Acenaphthylene	7.5	N.D.
Anthracene	7.5	N.D.
Benzoic Acid	15	N.D.
Benzo(a)anthracene	7.5	N.D.
Benzo(b)fluoranthene	7.5	N.D.
Benzo(k)fluoranthene	7.5	N.D.
Benzo(g,h,i)perylene	7.5	N.D.
Benzo(a)pyrene	7.5	N.D.
Benzyl alcohol	7.5	N.D.
Bis(2-chloroethoxy)methane	7.5	N.D.
Bis(2-chloroethyl)ether	7.5	N.D.
Bis(2-chloroisopropyl)ether	7.5	N.D.
Bis(2-ethylhexyl)phthalate	20	N.D.
4-Bromophenyl phenyl ether	7.5	N.D.
Butyl benzyl phthalate	7.5	N.D.
4-Chloroaniline	15	N.D.
2-Chloronaphthalene	7.5	N.D.
4-Chloro-3-methylphenol	7.5	N.D.
2-Chlorophenol	7.5	N.D.
4-Chlorophenyl phenyl ether	7.5	N.D.
Chrysene	7.5	N.D.
Dibenz(a,h)anthracene	7.5	N.D.
Dibenzofuran	7.5	N.D.
Di-N-butyl phthalate	15	N.D.
1,3-Dichlorobenzene	7.5	N.D.
1,4-Dichlorobenzene	7.5	N.D.
1,2-Dichlorobenzene	7.5	N.D.
3,3-Dichlorobenzidine	15	N.D.
2,4-Dichlorophenol	7.5	N.D.
Diethyl phthalate	7.5	N.D.
2,4-Dimethylphenol	7.5	N.D.
Dimethyl phthalate	7.5	N.D.
4,6-Dinitro-2-methylphenol	15	N.D.
2,4-Dinitrophenol	15	N.D.
2,4-Dinitrotoluene	7.5	N.D.
2,6-Dinitrotoluene	7.5	N.D.
Di-N-octyl phthalate	7.5	N.D.

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Gettler-Ryan - Dublin	Client Project ID:	Unocal SS#1871, Oakland	Sampled: Jul 1, 1998
6747 Sierra Court, Suite J	Sample Descript:	Water, MW-4	Received: Jul 2, 1998
Dublin, CA 94568	Analysis Method:	EPA 625	Extracted: Jul 7, 1998
Attention: Deanna Harding	Lab Number:	807-0342	Analyzed: Jul 8, 1998
			Reported: Jul 27, 1998

ACID & BASE/NEUTRALS by GC/MS (EPA 625)

Analyte	Detection Limit µg/L	Sample Results µg/L
Fluoranthene	7.5	N.D.
Fluorene	7.5	N.D.
Hexachlorobenzene	7.5	N.D.
Hexachlorobutadiene	7.5	N.D.
Hexachlorocyclopentadiene	15	N.D.
Hexachloroethane	7.5	N.D.
Indeno(1,2,3-cd)pyrene	7.5	N.D.
Isophorone	7.5	N.D.
2-Methylnaphthalene	7.5	N.D.
2-Methylphenol	7.5	N.D.
4-Methylphenol	7.5	N.D.
Naphthalene	7.5	N.D.
2-Nitroaniline	15	N.D.
3-Nitroaniline	15	N.D.
4-Nitroaniline	15	N.D.
Nitrobenzene	7.5	N.D.
2-Nitrophenol	7.5	N.D.
4-Nitrophenol	15	N.D.
N-Nitrosodiphenylamine	7.5	N.D.
N-Nitroso-di-N-propylamine	7.5	N.D.
Pentachlorophenol	15	N.D.
Phenanthrene	7.5	N.D.
Phenol	7.5	N.D.
Pyrene	7.5	N.D.
1,2,4-Trichlorobenzene	7.5	N.D.
2,4,5-Trichlorophenol	15	N.D.
2,4,6-Trichlorophenol	7.5	N.D.

Surrogates	Control Limit %		% Recovery
2-Fluorophenol	21	110	50
Phenol-d6	10	110	37
Nitrobenzene-d5	35	114	71
2-Fluorobiphenyl	43	116	81
2,4,6-Tribromophenol	10	123	83
p-Terphenyl-d14	33	141	89

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#1871, Oakland
Matrix: Liquid

QC Sample Group: 8070338-343

Reported: Jul 27, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Diesel	Oil & Grease
QC Batch#:	GC071598	GC071598	GC071598	GC071598	SP070898	SP070298
	802004A	802004A	802004A	802004A	8015EXA	5520EXA
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015	SM 5520
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 3510	SM 5520
Analyst:	C. Westwater	C. Westwater	C. Westwater	C. Westwater	K. Grubb	L. Diaz
MS/MSD #:	8070342	8070342	8070342	8070342	BLK070898	BLK070298
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/15/98	7/15/98	7/15/98	7/15/98	7/8/98	7/2/98
Analyzed Date:	7/15/98	7/15/98	7/15/98	7/15/98	7/14/98	7/2/98
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4	HP-3B	Manual
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	500 µg/L	100 mg/L
Result:	20	20	20	64	430	91
MS % Recovery:	100	100	100	107	86	91
Dup. Result:	20	21	21	66	410	85
MSD % Recov.:	100	105	105	110	82	85
RPD:	0.0	4.9	4.9	3.1	4.8	6.8
RPD Limit:	0-20	0-20	0-20	0-20	0-50	0-30
LCS #:	4LCS071598	4LCS071598	4LCS071598	4LCS071598	LCS070898	LCS070998
Prepared Date:	7/15/98	7/15/98	7/15/98	7/15/98	7/8/98	7/9/98
Analyzed Date:	7/15/98	7/15/98	7/15/98	7/15/98	7/14/98	7/9/98
Instrument I.D.#:	HP-4	HP-4	HP-4	HP-4	HP-3B	Manual
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	500 µg/L	100 mg/L
LCS Result:	20	21	22	67	390	100
LCS % Recov.:	100	105	110	112	78	100
MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130	60-140	60-140

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
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.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

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

Client Project ID: Unocal SS#1871, Oakland
Matrix: Liquid

QC Sample Group: 8070338-343

Reported: Jul 27, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes
QC Batch#:	GC071698	GC071698	GC071698	GC071698
	802004A	802004A	802004A	802004A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb
MS/MSD #:	8070256	8070256	8070256	8070256
Sample Conc.:	N.D.	N.D.	N.D.	N.D.
Prepared Date:	7/16/98	7/16/98	7/16/98	7/16/98
Analyzed Date:	7/16/98	7/16/98	7/16/98	7/16/98
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
Result:	19	20	20	62
MS % Recovery:	95	100	100	103
Dup. Result:	20	21	21	66
MSD % Recov.:	100	105	105	110
RPD:	5.1	4.9	4.9	6.3
RPD Limit:	0-20	0-20	0-20	0-20

LCS #:	4LCS071698	4LCS071698	4LCS071698	4LCS071698
Prepared Date:	7/16/98	7/16/98	7/16/98	7/16/98
Analyzed Date:	7/16/98	7/16/98	7/16/98	7/16/98
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
LCS Result:	19	20	21	65
LCS % Recov.:	95	100	105	108

MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
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.

** MS = Matrix Spike, MSD = MS Duplicate, RPD = Relative % Difference

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1455 McDowell Blvd. North, Ste. D, Petaluma, CA 94954, (707) 792-1865, FAX (707) 792-0342

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

Client Project ID: Unocal SS#1871, Oakland
Matrix: Liquid
QC Sample Group: 8070338-343

Reported: Jul 27, 1998

QUALITY CONTROL DATA REPORT

ANALYTE	1,1-Dichloro-ethene	Trichloro-ethene	Chloro-benzene
Method:	EPA 8010	EPA 8010	EPA 8010
Analyst:	N. Nelson	N. Nelson	N. Nelson
MS/MSD Batch#:	8070342	8070342	8070342
Date Prepared:	7/10/98	7/10/98	7/10/98
Date Analyzed:	7/10/98	7/10/98	7/10/98
Instrument I.D.#:	HP-6	HP-6	HP-6
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L
Matrix Spike % Recovery:	80	80	75
Matrix Spike Duplicate % Recovery:	85	80	80
Relative % Difference:	6.1	0.0	6.5
LCS Batch#:	LCS071098	LCS071098	LCS071098
Date Prepared:	7/10/98	7/10/98	7/10/98
Date Analyzed:	7/10/98	7/10/98	7/10/98
Instrument I.D.#:	HP-6	HP-6	HP-6
LCS % Recovery:	90	85	80
% Recovery Control Limits:	65-135	70-130	70-130

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
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
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Attention: Deanna Harding

Client Project ID: Unocal SS#1871, Oakland
Matrix: Liquid
QC Sample Group: 8070338-343

Reported: Jul 27, 1998

QUALITY CONTROL DATA REPORT

ANALYTE	Phenol	2-Chlorophenol	1,4-Dichloro-benzene	N-Nitroso-Di-N-propylamine	1,2,4-Trichloro-benzene	4-Chloro-3-Methylphenol
Prep. Method:	EPA 3510	EPA 3510	EPA 3510	EPA 3510	EPA 3510	EPA 3510
Method:	EPA 8270	EPA 8270	EPA 8270	EPA 8270	EPA 8270	EPA 8270
Analyst:	L. Diaz	L. Diaz	L. Diaz	L. Diaz	L. Diaz	L. Diaz
MS/MSD Batch#:	BLK070798B	BLK070798B	BLK070798B	BLK070798B	BLK070798B	BLK070798B
Date Prepared:	7/7/98	7/7/98	7/7/98	7/7/98	7/7/98	7/7/98
Date Analyzed:	7/8/98	7/8/98	7/8/98	7/8/98	7/8/98	7/8/98
Instrument I.D.#:	GC/MS 1	GC/MS 1	GC/MS 1	GC/MS 1	GC/MS 1	GC/MS 1
Conc. Spiked:	150 µg/L	150 µg/L	100 µg/L	100 µg/L	100 µg/L	150 µg/L
Matrix Spike % Recovery:	27	62	58	73	64	66
Matrix Spike Duplicate % Recovery:	27	61	57	74	63	57
Relative % Difference:	0.0	1.1	1.7	1.4	1.6	1.0
RPD Limit:	0-30	0-30	0-30	0-30	0-30	0-30
LCS Batch#:	-	-	-	-	-	-
Date Prepared:	-	-	-	-	-	-
Date Analyzed:	-	-	-	-	-	-
Instrument I.D.#:	-	-	-	-	-	-
LCS % Recovery:	-	-	-	-	-	-
% Recovery Control Limits:	12-110	27-123	36-97	41-116	39-98	23-97

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Project Manager

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8070338.GET <10>

Sequoia Analytical

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Gettler-Ryan - Dublin
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Dublin, CA 94568
Attention: Deanna Harding

Client Project ID: Unocal SS#1871, Oakland
Matrix: Liquid
QC Sample Group: 8070338-343

Reported: Jul 27, 1998

QUALITY CONTROL DATA REPORT

ANALYTE	Acenaphthene	4-Nitrophenol	2,4-Dinitro-toluene	Pentachloro-phenol	Pyrene
Prep. Method:	EPA 3510	EPA 3510	EPA 3510	EPA 3510	EPA 3510
Method:	EPA 8270	EPA 8270	EPA 8270	EPA 8270	EPA 8270
Analyst:	L. Diaz	L. Diaz	L. Diaz	L. Diaz	L. Diaz
MS/MSD Batch#:	BLK070798B	BLK070798B	BLK070798B	BLK070798B	BLK070798B
Date Prepared:	7/7/98	7/7/98	7/7/98	7/7/98	7/7/98
Date Analyzed:	7/8/98	7/8/98	7/8/98	7/8/98	7/8/98
Instrument I.D.#:	GC/MS 1	GC/MS 1	GC/MS 1	GC/MS 1	GC/MS 1
Conc. Spiked:	100 µg/L	150 µg/L	100 µg/L	150 µg/L	100 µg/L
Matrix Spike % Recovery:	68	23	67	73	78
Matrix Spike Duplicate % Recovery:	71	25	69	80	82
Relative % Difference:	4.3	5.6	2.9	8.7	5.0
RPD Limit:	0-30	0-30	0-30	0-30	0-30
LCS Batch#:	-	-	-	-	-
Date Prepared:	-	-	-	-	-
Date Analyzed:	-	-	-	-	-
Instrument I.D.#:	-	-	-	-	-
LCS % Recovery:	-	-	-	-	-
% Recovery Control Limits:	46-118	10-80	24-96	9-103	26-127

SEQUOIA ANALYTICAL, #1271

Julianne Fegley
Project Manager

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GETTLER-RYAN INC.

FAX TRANSMITTAL PAGE

TO: Tina Berry
TOSCO

DATE: 9/11/98

FAX NO.: 277-2361

NUMBER OF PAGES: _____
(Including this page)

FROM: DEANNA HARDING

RE: #1821 - 2nd Semi-Annual Report dated 8/31/98

Should you have any questions, or do not receive all pages of this transmission, please call (510) 551-7555. Thank you.

6747 Sierra Court, Suite J • Dublin, California 94568 • (510) 551-7555

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Former Unocal) Service Station #1871

96 MacArthur Boulevard

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(G)	B	T	E	X	MTBE
				<----------ppb---------->					
MW-1	11/03/92	--	--	260,000	2,300	4,600	3,700	17,000	--
	01/25/93	--	--	120,000	2,100	4,600	4,900	22,000	--
81.18	04/29/93	13.71	67.47	100,000	850	2,000	4,300	19,000	--
	07/16/93	14.51	66.67	29,000	590	560	980	4,200	--
	10/19/93	15.20	65.98	67,000	1,400	2,600	2,900	5,000	--
	01/20/94	15.17	66.01	92,000	1,200	3,000	3,400	17,000	--
	04/13/94	14.44	66.74	51,000	1,000	2,600	3,200	15,000	--
	07/13/94	14.88	66.30	35,000	550	150	1,400	5,700	--
	10/10/94	15.55	65.63	52,000	1,000	810	3,300	12,000	--
	01/10/95	12.44	68.74	810	16	18	59	250	--
	04/17/95	12.68	68.50	48,000	880	530	2,500	11,000	--
	07/24/95	13.97	67.21	48,000	1,500	420	2,700	9,700	--
	10/23/95	14.85	66.33	47,000	780	210	2,100	11,000	270
	01/18/96	14.21	66.97	30,000	1,500	500	3,500	13,000	2,400
86.24	04/18/96	13.40	72.84	66,000	2,700	2,200	3,100	13,000	57,000
	07/24/96	14.15	72.09	5,600	2,100	ND	160	160	24,000
	10/24/96	14.85	71.39	110,000	7,500	8,000	3,300	14,000	58,000
	01/28/97	11.25	74.99	94,000	7,700	19,000	3,100	15,000	120,000
	07/29/97	14.67	71.57	ND	ND	ND	ND	ND	70,000
	01/14/98	12.27	73.97	85,000	6,100	10,000	3,000	17,000	110,000
	07/01/98	**14.32**	**71.92**	**110,000**	**8,700**	**12,000**	**2,700**	**15,000**	**110,000**
MW-2	11/03/92	--	--	140	2.2	ND	ND	2.0	--
	01/25/93	--	--	2,100	56	1.1	90	140	--
76.61	04/29/93	9.73	66.88	1,500	290	ND	33	11	--
	07/16/93	10.17	66.44	510[1]	17	0.60	3.2	2.5	--
	10/19/93	11.18	65.43	670	24	1.1	7.7	23	--
	01/20/94	11.12	65.49	820	97	ND	12	ND	--
	04/13/94	10.12	66.49	550	71	ND	5.1	1.3	--
	07/13/94	10.86	65.75	2,000	490	ND	17	13	--
	10/10/94	11.48	65.13	2,300	340	ND	25	ND	--
	01/10/95	8.71	67.90	850	3.8	ND	8.5	1.3	--
	04/17/95	8.90	67.71	1,300	4.7	ND	8.3	1.2	--
	07/24/95	9.94	66.67	960	20	ND	4.2	6.2	--

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Former Unocal) Service Station #1871

96 MacArthur Boulevard

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(G)	B	T	E	X	MTBE
				<--------		ppb			-------->
MW-2	10/23/95	10.70	65.91	ND	ND	ND	ND	ND	19
(cont)	01/18/96	10.11	66.50	900	300	86	7.6	18	4,300
81.66	04/18/96	9.27	72.39	18,000	3,600	680	890	4,100	19,000
	07/24/96	10.02	71.64	100,000	13,000	21,000	2,700	16,000	120,000
	10/24/96	10.78	70.88	800	110	17	11	20	20,000
	01/28/97	7.70	73.96	45,000	2,400	2,900	2,000	7,600	29,000
	07/29/97	10.28	71.38	ND	1.2	0.72	0.63	0.62	17,000
	01/14/98	8.63	73.03	14,000	1,000	150	790	3,300	23,000
	07/01/98	**9.53**	**72.13**	**2,700**	**100**	**ND[3]**	**180**	**78**	**7,100**
MW-3	11/03/92	--	--	2,100	120	15	38	200	--
	01/25/93	--	--	2,300	80	1	55	52	-
77.48	04/29/93	11.37	66.11	4,500	1,700	ND	200	140	--
	07/16/93	12.09	65.39	4,000[1]	1,100	28	52	70	--
	10/19/93	12.69	64.79	3,800	42	ND	50	56	--
	01/20/94	12.65	64.83	4,200	11	ND	21	15	--
	04/13/94	12.02	65.46	4,200	210	ND	36	53	--
	07/13/94	12.46	65.02	1,800[2]	16	16	ND	21	--
	10/10/94	12.98	64.50	4,300	11	ND	12	ND	--
	01/10/95	10.42	67.06	310	4.6	ND	3.5	2.1	--
	04/17/95	10.42	67.06	7,800	ND	4.6	300	450	--
	07/24/95	11.76	65.72	3,200	170	ND	22	16	--
	10/23/95	12.50	64.98	3,900	55	ND	19	11	4,500
	01/18/96	11.79	65.69	2,200	270	33	26	18	5,500
	04/18/96	11.30	71.25	6,000	1,800	ND	100	230	48,000
82.55	07/24/96	12.17	70.38	ND	2,500	ND	ND	ND	71,000
	10/24/96	12.65	69.90	3,800	660	ND	15	ND	65,000
	01/28/97	9.50	73.05	4,400	250	13	87	47	54,000
	07/29/97	11.99	70.56	ND	3,500	ND	220	ND	75,000
	01/14/98	10.30	72.25	ND[3]	430	ND[3]	100	380	37,000
	07/01/98	**11.70**	**70.85**	**ND[3]**	**430**	**ND[3]**	**ND[3]**	**ND[3]**	**45,000**

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Former Unocal) Service Station #1871

96 MacArthur Boulevard

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(G)	B	T	E	X	MTBE
				<--------		ppb			-------->
MW-4									
82.04	04/18/96	9.83	72.21	ND	630	ND	ND	ND	18,000
	07/24/96	10.47	71.57	ND	ND	ND	ND	5.2	3,900
	10/24/96	11.14	70.90	ND	ND	ND	ND	ND	6,300
	01/28/97	7.94	74.10	1,200	490	ND	17	6.8	16,000
	07/29/97	10.86	71.18	50	1.5	0.61	0.73	0.78	15,000
	01/14/98	8.73	73.31	ND[3]	ND[3]	ND[3]	ND[3]	ND[3]	5,200
	07/01/98	**10.51**	**71.53**	**ND**	**ND**	**ND**	**ND**	**ND**	**640**
MW-5									
81.80	04/18/96	9.65	72.15	31,000	5,500	1,400	1,700	8,100	66,000
	07/24/96	10.80	71.00	32,000	6,400	ND	1,600	6,100	120,000
	10/24/96	11.40	70.40	17,000	6,900	ND	970	130	84,000
	01/28/97	7.76	74.04	19,000	6,100	62	82	310	160,000
	07/29/97	11.58	70.22	ND	ND	ND	ND	ND	71,000
	01/14/98	9.08	72.72	ND[3]	3,600	ND[3]	ND[3]	ND[3]	80,000
	07/01/98	**11.25**	**70.55**	**6,400**	**2,100**	**21**	**120**	**330**	**61,000**
Trip Blank									
TB-LB	01/14/98	--	--	ND	ND	ND	ND	ND	ND
	07/01/98	--	--	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Former Unocal) Service Station #1871

96 MacArthur Boulevard

Oakland, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to January 14, 1998, were compiled from reports prepared by MPDS Services, Inc.

TOC = Top of Casing elevation
DTW = Depth to Water
(ft.) = Feet
GWE = Groundwater Elevation
(msl) = Referenced relative to mean sea level
TPH(G) = Total Petroleum Hydrocarbons as Gasoline

B = Benzene
T = Toluene
E = Ethylbenzene
X = Xylenes
MTBE = Methyl tertiary butyl ether

ppb = Parts per billion
ND = Not Detected
-- = Not Measured/Not Analyzed

* TOC elevations were re-surveyed by Kier & Wright in May, 1996, per City of Oakland Benchmark No. 2310, a cut square in concrete curb at mid point of return at the northeast corner of El Dorado and Fairmont Street. (Elevation = 77.53 feet msl).

1 Laboratory report indicates the presence of discrete peaks not indicative of gasoline.

2 Laboratory report indicates the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.

3 Detection limit raised. Refer to analytical results.

Table 2

Groundwater Analytical Results

Tosco (Former Unocal) Service Station #1871
96 MacArthur Boulevard
Oakland, California

Well ID	Date	TPH(D)	TOG	VOC	SVOC
		< ppb >			
MW-4	04/18/96	110[1]	ND	ND	--
	07/24/96	ND	ND	ND	ND
	10/24/96	ND	ND	ND	ND[2]
	01/28/97	210[3]	ND	ND	ND[4]
	07/29/97	ND	ND	ND	ND
	01/14/98	ND	ND	ND	ND
	07/01/98	**ND**	**ND**	**ND**	**ND**

EXPLANATIONS:

Groundwater analytical results prior to January 14, 1998, were compiled from reports prepared by MPDS Services, Inc.

TPH(D) = Total Petroleum Hydrocarbons as Diesel
TOG = Total Oil and Grease
VOC = Volatile Organic Compounds by EPA Method 8010
SVOC = Semi-Volatile Organic Compounds by EPA Method 8270
ppb = Parts per billion
-- = Not Analyzed
ND = Not Detected

1 Laboratory report indicates the hydrocarbons detected did not appear to contain diesel.
2 Bis (2-ethylhexyl) phthalate was detected at a concentration of 14 ppb.
3 Laboratory report indicates the hydrocarbons detected appeared to be a diesel and non-diesel mixture.
4 Naphthalene was detected at a concentration of 17 ppb.

All EPA Method 8010 and 8270 constituents were ND, unless noted.