



# GETTLER-RYAN INC.

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## TRANSMITTAL

ENVIRONMENTAL  
PROTECTION

98 JUL -1 PM 3:23

**TO:** Mr. Scott Seery  
Alameda County Health Care Services  
1131 Harbor Bay Parkway  
Alameda, California 94501

**DATE:** June 26, 1998  
**G-R #:** 180107

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

**RE:** Tosco (Unocal) SS #5430  
1935 Washington Avenue  
San Leandro, California

WE HAVE ENCLOSED THE FOLLOWING:

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COPIES	DATED	DESCRIPTION
1	June 15, 1998	Groundwater Monitoring and Sampling Report Semi-Annual 1998 - Event of March 9, 1998

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### 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 an semi-annual basis. If you have questions please contact the Tosco Project Manager, Ms. Tina R. Berry at (925) 277-2321.

### Enclosure

cc: Mr. Tim Ripp, PEG, 2025 Gateway Pl., Suite 440, San Jose, CA 95110  
Mr. Michael Bakaldin, City of San Leandro Fire Dept., 835 East 14th Street, San Leandro, CA 94577

agency/5430trb.qmt



PACIFIC ENVIRONMENTAL GROUP, INC.

AN IT COMPANY

ENVIRONMENTAL PROTECTION

98 JUL 10 PM 3:57

SMO 1740  
SOS

July 7, 1998  
Project 311-038.1A

Mr. John Jang  
Regional Water Quality Control Board  
San Francisco Bay Region  
2101 Webster Street, Suite 500  
Oakland, California 94612

Re: 76 Service Station 5430  
Quarterly Summary Report  
Second Quarter 1998

Dear Mr. Jang:

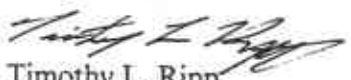
As directed by Ms. Tina Berry of Tosco Marketing Company, Pacific Environmental Group, Inc. is forwarding the quarterly summary report for the following location:

<u>Service Station</u>	<u>Location</u>
5430	1935 Washington Avenue, San Leandro

If you have questions or comments, please do not hesitate to contact our office at (408) 441-7500.

Sincerely,

**Pacific Environmental Group, Inc.**

  
Timothy L. Ripp  
Project Geologist

Enclosure

cc: Ms. Tina Berry, Tosco Marketing Company  
Mr. Kevin Tinsley, Alameda County Environmental Health Care Services

## Quarterly Summary Report Second Quarter 1998

76 Service Station 5430  
1935 Washington Avenue at Castro Street  
San Leandro, California

County STID #: 1747  
County: Alameda

### **BACKGROUND**

Unocal files suggest that a product line leak occurred in June 1976, and that one of the original underground gasoline storage tanks failed a precision test in October 1981. In December 1981, the two original steel gasoline storage tanks were replaced with two fiberglass gasoline storage tanks. Groundwater Monitoring Wells U-1 through U-3 and Borings U-A through U-E were installed in August 1993. Perimeter Wells U-4 through U-7 were installed in June 1995 for further delineation of hydrocarbon-impacted groundwater. Monthly groundwater monitoring and quarterly sampling of the wells was initiated in December 1993.

Alameda County Health Services (ACHS) submitted a request for delineation of hydrocarbon-impacted groundwater in the southern portion of the site. Unocal submitted a work plan in January 1996. Unocal investigated former usage of the site located south of their site. The review found that the adjacent site was formerly a service station which included four underground storage tanks. In July 1997, an investigation was completed to delineate the lateral extent of hydrocarbon-impacted groundwater. A report documenting the results was submitted in September 1997. Based on the investigation results groundwater impact beneath the Unocal facility was delineated.

### **RECENT QUARTER ACTIVITIES**

No activities were performed.

### **NEXT QUARTER ACTIVITIES**

Semiannual groundwater monitoring will be performed in September 1998.

## **CHARACTERIZATION/REMEDIAL STATUS**

Soil contamination delineated? None encountered.

Dissolved groundwater delineated? Yes.

Free product delineated? Not applicable.

Amount of groundwater contaminant recovered this quarter? None.

Soil remediation in progress? Not applicable.

Anticipated start date? Not applicable.

Anticipated completion date? Not applicable.

Dissolved/free product remediation in progress? No.

Anticipated start? Unknown.

Anticipated completion? Unknown.

**CONSULTANT:** Pacific Environmental Group, Inc.



PACIFIC ENVIRONMENTAL GROUP INC.

ST 10 1740  
P

ENVIRONMENTAL PROTECTION  
98 APR 22 PM 2:03

April 20, 1998  
Project 311-038.1A

Mr. John Jang  
Regional Water Quality Control Board  
San Francisco Bay Region  
2101 Webster Street, Suite 500  
Oakland, California 94612

Re: Unocal Station 5430  
Quarterly Summary Report  
First Quarter 1998

Dear Mr. Jang:

As directed by Ms. Tina Berry of Tosco Marketing Company, Pacific Environmental Group, Inc. is forwarding the quarterly summary report for the following location:

Service Station

Location

5430

1935 Washington Avenue, San Leandro

If you have questions or comments, please do not hesitate to contact our office at (408) 441-7500.

Sincerely,

Pacific Environmental Group, Inc.

Joseph Muzzio  
Project Geologist

Enclosure

cc: Ms. Tina Berry, Tosco Marketing Company  
Mr. Kevin Tinsley, Alameda County Environmental Health Care Services

## Quarterly Summary Report First Quarter 1998

Unocal Service Station 5430  
1935 Washington Avenue at Castro Street  
San Leandro, California

County STID #: 1747  
County: Alameda

### BACKGROUND

Unocal files suggest that a product line leak occurred in June 1976, and that one of the original underground gasoline storage tanks failed a precision test in October 1981. In December 1981, the two original steel gasoline storage tanks were replaced with two fiberglass gasoline storage tanks. Groundwater monitoring wells U-1 through U-3 and Borings U-A through U-E were installed in August 1993. Perimeter wells U-4 through U-7 were installed in June 1995 for further delineation of hydrocarbon impacted groundwater. Monthly groundwater monitoring and quarterly sampling of the wells was initiated in December 1993.

Alameda County Health Services (ACHS) submitted a request for delineation of hydrocarbon impacted groundwater in the southern portion of the site. Unocal submitted a workplan in January 1996. Unocal investigated former usage of the site located south of their site. The review found that the adjacent site was formerly a service station which included four USTs. In July 1997, An investigation was completed to delineate the lateral extent of hydrocarbon impacted groundwater. A report documenting the results was submitted in September 1997. Based on the investigation results groundwater impact beneath the Unocal facility was delineated.

### RECENT QUARTER ACTIVITIES

Semiannual groundwater monitoring were performed in March.

### NEXT QUARTER ACTIVITIES

No activities are planned.

### CHARACTERIZATION/REMEDIAL STATUS

Soil contamination delineated? None encountered.

Dissolved groundwater delineated? Yes.

Free product delineated? Not applicable.

Amount of groundwater contaminant recovered this quarter? None

Soil remediation in progress? Not applicable.

Anticipated start date? Not applicable.

Anticipated completion date? Not applicable.  
Dissolved/free product remediation in progress? No.  
Anticipated start? Unknown.  
Anticipated completion? Unknown.

**CONSULTANT:** Pacific Environmental Group, Inc.



# GETTLER-RYAN INC.

June 15, 1998  
G-R Job #180107

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 (Unocal) Service Station #5430  
1935 Washington Avenue  
San Leandro, California

Dear Ms. Berry:

This report documents the semi-annual groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On March 9, 1998, field personnel monitored and sampled seven wells (U-1 through U-7) 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 Table 1, 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 Coordinator



Stephen J. Carter

Senior Geologist, R.G. No. 5577



Figure 1: Potentiometric Map

Figure 2: Concentration Map

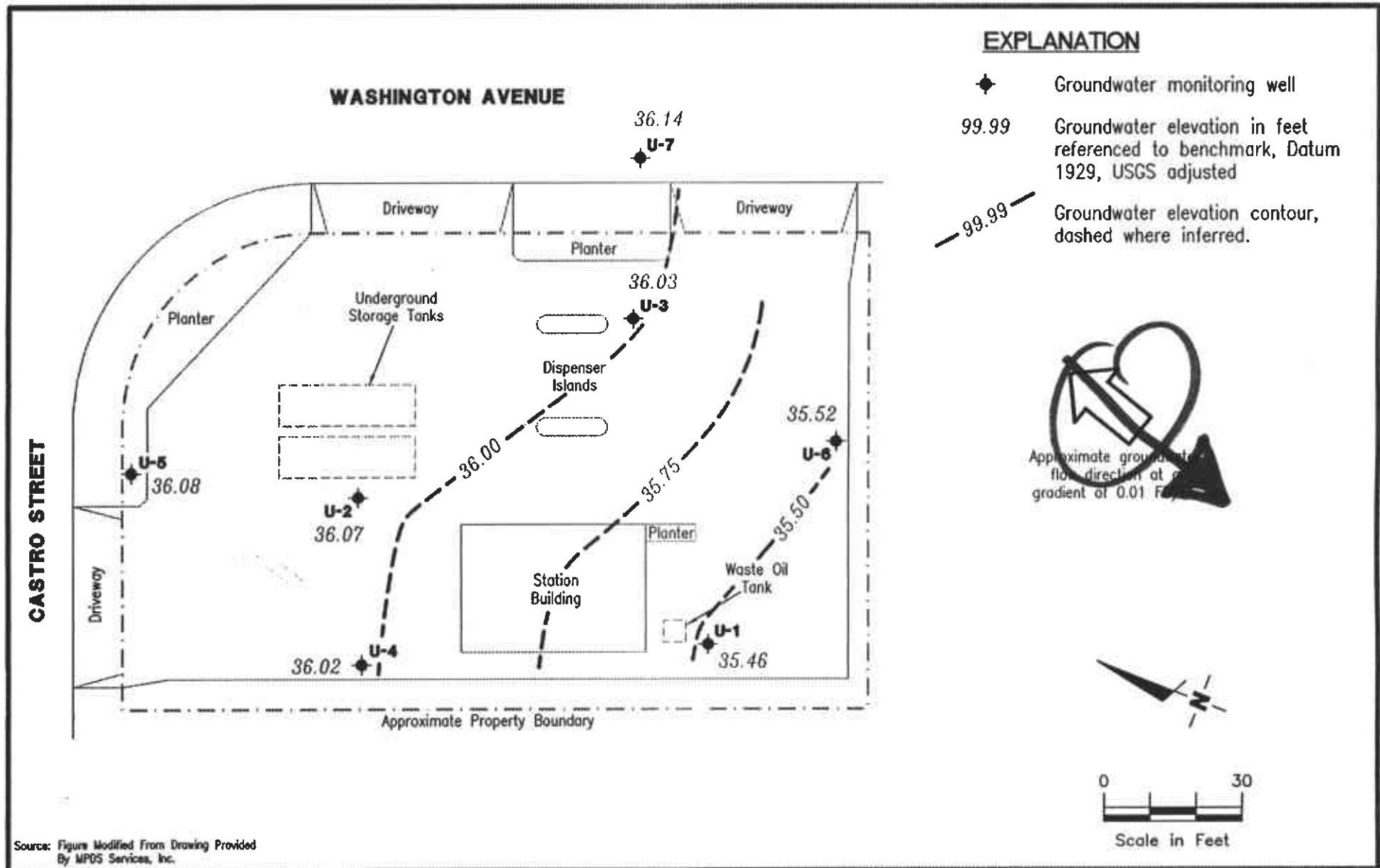
Table 1: Groundwater Monitoring Data and Analytical Results

Attachments: Standard Operating Procedure - Groundwater Sampling  
Field Data Sheets

Chain of Custody Document and Laboratory Analytical Reports

5430.qml





**Gettler - Ryan Inc.**

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

**POTENTIOMETRIC MAP**  
 Tosco (Unocal) Service Station No. 5430  
 1935 Washington Avenue  
 San Leandro, California

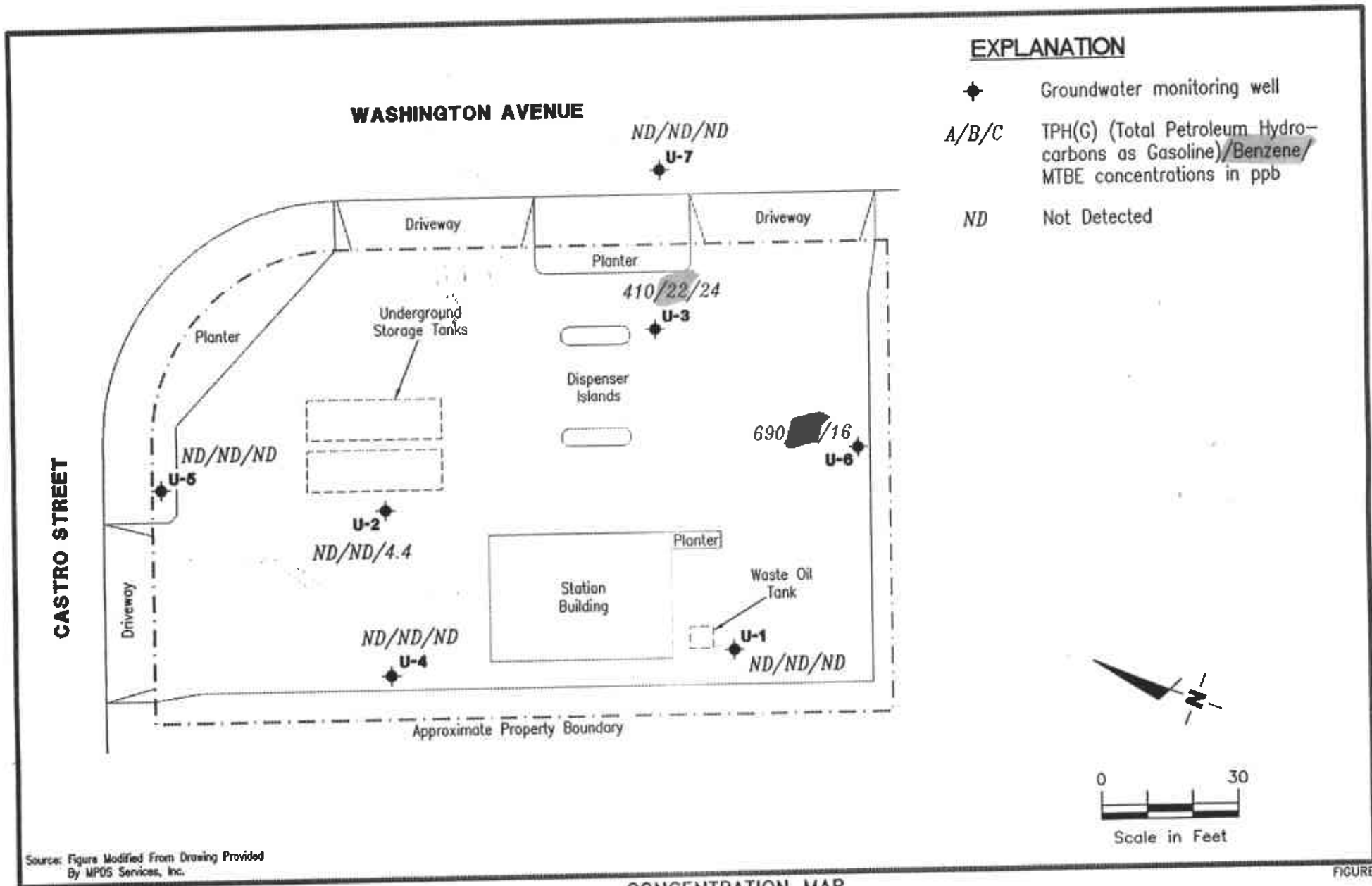
FIGURE  
**1**

JOB NUMBER  
180107

REVIEWED BY

DATE  
March 9, 1998

REVISED DATE



**Gettler - Ryan Inc.**

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

**CONCENTRATION MAP**  
Tosco (Unocal) Service Station No. 5430  
1935 Washington Avenue  
San Leandro, California

FIGURE  
**2**

JOB NUMBER  
180107

REVIEWED BY

DATE  
March 9, 1998

REVISED DATE

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
 Tosco (Unocal) Service Station #5430  
 1935 Washington Avenue  
 San Leandro, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	TPH(D) ←	TPH(G)	B	T	E	X	MTBE	1,2-DCB	1,2-DCA →	
													ppb
U-1	08/13/93 <sup>1</sup>			50 <sup>2</sup>	310	0.84	ND	2.6	1.0	--	--	--	
	12/16/93 <sup>1</sup>			130 <sup>3</sup>	ND	ND	ND	ND	ND	--	--	--	
	03/25/94 <sup>1</sup>			57 <sup>3</sup>	58	0.63	0.79	ND	0.65	--	--	--	
	06/19/94 <sup>1</sup>			61 <sup>3</sup>	51	ND	1.4	ND	2.7	--	ND	7.4	
	09/15/94 <sup>1</sup>			83 <sup>3</sup>	ND	0.50	0.85	ND	0.77	--	ND	9.5	
	12/06/94 <sup>1</sup>			ND	ND	ND	ND	ND	ND	--	ND	5.8	
	03/14/95			71 <sup>3</sup>	380	20	ND	ND	10	--	--	--	
	06/20/95			170 <sup>3</sup>	500	50	ND	ND	4.4	--	--	--	
	09/18/95			72	57	1.2	0.75	0.57	2.2	-- <sup>6</sup>	--	--	
	12/14/95			ND	ND	0.72	1.4	1.2	3.6	--	ND	3.8	
	03/06/96			ND	96	4.5	ND	ND	3.7	ND	--	--	
	56.09	06/04/96	27.43	28.66	170 <sup>3</sup>	410	48	ND	3.4	7.9	ND	--	--
		09/06/96	30.25	25.84	ND	ND	ND	ND	ND	ND	ND	--	--
03/08/97		26.03	30.06	--	ND	ND	ND	ND	ND	ND	ND	43	
09/04/97		31.56	24.53	--	ND	ND	ND	ND	ND	ND	ND	4.5	
03/09/98		20.63	35.46	--	ND	ND	ND	ND	ND	ND	ND	ND	
U-2	08/13/93			--	1,400	ND	ND	ND	ND	--	--	--	
	12/16/93			--	330	1.7	ND	11	8.5	--	--	--	
	03/25/94			--	130	0.70	0.78	0.65	0.64	--	ND	11	
	(D) 03/25/94	--	--	--	--	--	--	--	--	--	ND	ND	
	06/19/94			--	180 <sup>4</sup>	ND	ND	ND	0.86	--	ND	0.54	
	09/15/94			--	1,000 <sup>5</sup>	44	ND	ND	ND	--	ND	0.66	
	12/06/94			--	250	19	ND	ND	ND	--	ND	ND	
	03/14/95			--	89	ND	ND	ND	1.2	--	--	--	
	06/20/95			--	ND	ND	0.58	ND	1.7	--	--	--	
	09/18/95			--	ND	ND	ND	ND	0.85	-- <sup>6</sup>	--	--	
	12/14/95			--	ND	ND	0.89	ND	2.0	-- <sup>7</sup>	ND	ND	
	03/06/96			--	ND	ND	ND	ND	ND	80	--	--	
	55.29	06/04/96	26.03	29.26	--	ND	ND	ND	ND	ND	110	--	--

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
Tosco (Unocal) Service Station #5430  
1935 Washington Avenue  
San Leandro, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	TPH(D) ←	TPH(G)	B	T	E	X	MTBE	1,2-DCB	1,2-DCA →	
													<i>ppb</i>
U-2 (cont)	09/06/96	29.18	26.11	--	ND	ND	ND	ND	ND	ND	--	--	
	03/08/97	24.64	30.65	--	ND	ND	ND	ND	ND	42	--	--	
	09/04/97	30.59	24.70	--	ND	ND	ND	ND	ND	46	--	--	
	03/09/98	19.22	36.07	--	ND	ND	ND	ND	ND	4.4	--	--	
U-3	08/13/93			--	23,000	1,000	ND	1,700	1,600	--	--	--	
	12/16/93			--	15,000	570	ND	940	670	--	--	--	
	03/25/94			--	18,000	560	40	1,000	770	--	ND	480	
	06/19/94			--	17,000	580	ND	1,300	90	--	ND	410	
	09/15/94			--	12,000	370	ND	970	610	--	ND	420	
	12/06/94			--	17,000	390	ND	990	560	--	ND	430	
	03/14/95			--	13,000	860	120	1,300	1,700	--	--	--	
	06/20/95			--	9,800	590	ND	800	1,000	--	--	--	
	09/18/95			--	9,800	600	ND	1,000	760	-- <sup>6</sup>	--	--	
	12/14/95			--	10,000	520	ND	920	630	-- <sup>7</sup>	ND	240	
	03/06/96			--	19,000	1,400	ND	1,800	3,000	73	--	--	
	55.23	06/04/96	26.00	29.23	--	8,800	510	ND	600	830	ND	--	--
		09/06/96	29.06	26.17	--	15,000	360	20	540	450	ND	--	--
	03/08/97	24.65	30.58	--	3,500	310	ND	230	630	ND	ND	100	
	09/04/97	30.44	24.79	--	700	27	ND	48	34	ND	ND	160	
	03/09/98	19.20	36.03	--	410	22	1.2	ND <sup>9</sup>	6.1	24	ND	4.4	
U-4	03/14/95			--	490	3.2	2.1	0.79	1.2	--	ND	ND	
	06/20/95			--	ND	ND	ND	ND	1.5	--	--	--	
	09/18/95			--	ND	ND	ND	ND	ND	-- <sup>6</sup>	--	--	
	12/14/95			--	ND	ND	0.59	ND	0.79	-- <sup>7</sup>	ND	ND	
	03/06/96			--	ND	ND	ND	ND	0.62	50	--	--	
55.39	06/04/96	26.19	29.20	--	ND	ND	ND	ND	ND	290	--	--	
	09/06/96	29.32	26.07	--	ND	ND	ND	ND	ND	ND	--	--	
	03/08/97	24.79	30.60	--	ND	ND	ND	ND	ND	ND	--	--	
	09/04/97	30.71	24.68	--	ND	ND	ND	ND	ND	18	--	--	
	03/09/98	19.37	36.02	--	ND	ND	ND	ND	ND	ND	--	--	

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
Tosco (Unocal) Service Station #5430  
1935 Washington Avenue  
San Leandro, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	←-----ppb----->									
				TPH(D)	TPH(G)	B	T	E	X	MTBE	1,2-DCB	1,2-DCA	
U-5	03/14/95			--	ND	ND	ND	ND	ND	1.2	--	ND	ND
	06/20/95			--	ND	ND	ND	ND	ND	1.6	--	--	--
	09/18/95			--	ND	ND	ND	ND	ND	0.66	--	--	--
	12/14/95			--	ND	ND	ND	ND	ND	ND	--	ND	ND
	03/06/96			--	ND	ND	ND	ND	ND	ND	ND	--	--
54.18	06/04/96	24.91	29.27	--	ND	ND	ND	ND	ND	ND	ND	--	--
	09/06/96	28.06	26.12	--	ND	ND	ND	ND	ND	ND	ND	--	--
	03/08/97	23.49	30.69	--	ND	ND	ND	ND	ND	ND	ND	--	--
	09/04/97	29.46	24.72	--	ND	ND	ND	ND	ND	ND	ND	--	--
	03/09/98	18.10	36.08	--	ND	ND	ND	ND	ND	ND	ND	--	--
U-6	03/14/95			--	14,000	170	36	790	1,500	--	--	ND	210
	06/20/95			--	8,500	170	11	950	1,300	--	--	--	--
	09/18/95			--	9,500	260	ND	1,400	1,800	-- <sup>6</sup>	--	--	--
	12/14/95			--	15,000	240	ND	1,400	1,700	-- <sup>7</sup>	--	ND	370
	03/06/96			--	2,400	54	ND	170	250	ND	--	--	--
55.36	06/04/96	26.52	28.84	--	4,600	83	ND	400	520	46	--	--	--
	09/06/96	29.41	25.95	--	12,000	180	6.4	690	600	95	--	--	--
	03/08/97	25.25	30.11	--	2,000	180	ND	96	290	ND	--	--	--
	09/04/97	30.75	24.61	--	680	17	ND	52	39	ND	--	--	--
	03/09/98	19.84	35.52	--	690	41	8.5	3.2	140	16	--	--	--
U-7	03/14/95			--	ND	ND	ND	ND	ND	--	--	ND	ND
	06/20/95			--	ND	ND	ND	ND	ND	--	--	--	--
	09/18/95			--	ND	ND	ND	ND	ND	--	--	--	--
	12/14/95			--	ND	ND	ND	ND	0.88	--	--	ND	ND
	03/06/96			--	ND	ND	ND	ND	ND	ND	--	--	--
55.05	06/04/96	25.67	29.38	--	ND	ND	ND	ND	ND	ND	--	--	--
	09/06/96	28.75	26.30	--	ND	ND	ND	ND	ND	ND	--	--	--
	03/08/97	24.33	30.72	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
	09/04/97 <sup>b</sup>	30.16	24.89	--	ND	ND	ND	ND	ND	ND	ND	ND	ND
	03/09/98	18.91	36.14	--	ND	ND	ND	ND	ND	ND	ND	ND	ND

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
 Tosco (Unocal) Service Station #5430  
 1935 Washington Avenue  
 San Leandro, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (ft.)	TPH(D)	TPH(G)	B	T	E	X	MTBE	1,2-DCB	1,2-DCA
				←-----ppb-----→								
<b>Trip Blank</b>												
TB-LB	03/09/98	--	--	--	ND	ND	0.53	ND	ND	ND	--	--

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
Tosco (Unocal) Service Station #5430  
1935 Washington Avenue  
San Leandro, California

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**EXPLANATIONS:**

Groundwater monitoring data and analytical results prior to March 9, 1998, were provided by MPDS Services, Inc.

TOC = Top of Casing

DTW = Depth to Water

(ft.) = Feet

GWE = Groundwater Elevation

TPH(D) = Total Petroleum Hydrocarbons as Diesel

TPH(G) = Total Petroleum Hydrocarbons as Gasoline

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes

MTBE = Methyl tertiary butyl ether

1,2-DCB = 1,2-Dichlorobenzene

1,2-DCA = 1,2-Dichloroethane

ppb = Parts per billion

ND = Not Detected

-- = Not Measured/Not Analyzed

(D) = Duplicate

\* TOC elevations were surveyed March 1995, based on benchmark provided by City of San Leandro, City Engineers Office, Datum 1929, USGS adjusted.

<sup>1</sup> Total Oil and Grease was ND.

<sup>2</sup> Not a typical diesel pattern; lower boiling hydrocarbons in the boiling range of stoddard calculated as diesel.

<sup>3</sup> Laboratory report indicates that the hydrocarbons detected did not appear to be diesel.

<sup>4</sup> Laboratory report indicates that the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.

<sup>5</sup> Laboratory report indicates that the hydrocarbons detected did not appear to be gasoline.

<sup>6</sup> Laboratory has potentially identified the presence of MTBE at reportable levels in the groundwater sample collected from this well.

<sup>7</sup> 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.

<sup>8</sup> Carbon tetrachloride was detected at a concentration of 1.3 ppb.

<sup>9</sup> Detection limit raised. Refer to analytical results.

Note: All EPA Method 8010 constituents were ND, except as indicated above.

*Depth to water and groundwater elevation history will be updated in future reports.*

## 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 # 5430  
Address: 1935 Washington Ave.  
City: San Leandro

Job#: 180107  
Date: 3-8-98  
Sampler: Joe

Well ID U-1

Well Condition: O.K.

Well Diameter 2 in.

Hydrocarbon Thickness: \_\_\_\_\_ in. Amount Bailed (product/water): \_\_\_\_\_ (gal.)

Total Depth 39.60 ft.

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

Depth to Water 20.63 ft.

18.91 X VF 0.17 = 3.22 X 3 (case volume) = Estimated Purge Volume: 10 (gal.)

Purge Equipment: Disposable Bailer  
Bailer  
Stack  
Suction  
Grundfos  
Other: \_\_\_\_\_

Sampling Equipment: Disposable Bailer  
Bailer  
Pressure Bailer  
Grab Sample  
Other: \_\_\_\_\_

Starting Time: 11:07  
Sampling Time: 11:35 A.M.  
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 $\mu\text{hos/cm}/100$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>11:17</u>	<u>3.5</u>	<u>6.86</u>	<u>7.19</u>	<u>69.2</u>	_____	_____	_____
<u>11:21</u>	<u>7</u>	<u>7.10</u>	<u>7.27</u>	<u>69.3</u>	_____	_____	_____
<u>11:25</u>	<u>10</u>	<u>7.14</u>	<u>7.24</u>	<u>69.5</u>	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

### LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-1</u>	<u>3 VOA</u>	<u>Y</u>	<u>HCC</u>	<u>seg.</u>	<u>TPHG, BTEX, WBC</u>
<u>"</u>	<u>2 VOA</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>8010</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/  
Facility # 5430 Job#: 180107  
Address: 7935 Washington Ave. Date: 3-9-98  
City: San Leandro Sampler: Joe

Well ID U-2 Well Condition: O.K.  
Well Diameter 2 in. Hydrocarbon Amount Bailed  
Thickness: \_\_\_\_\_ in. (product/water): \_\_\_\_\_ (gal.)  
Total Depth 39.27 ft. Volume 2" = 0.17 3" = 0.38 4" = 0.66  
Depth to Water 19.22 ft. Factor (VF) 6" = 1.50 12" = 5.80

20.05 X VF 0.17 = 3.41 X 3 (case volume) = Estimated Purge Volume: 11 (gal.)

Purge Equipment: Disposable Bailer  
Bailer  
Stack  
Suction  
Grundfos  
Other: \_\_\_\_\_  
Sampling Equipment: Disposable Bailer  
Bailer  
Pressure Bailer  
Grab Sample  
Other: \_\_\_\_\_

Starting Time: 11:46 Weather Conditions: clear  
Sampling Time: 12:11 p.m. 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 $\mu\text{mhos/cm} \times 100$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>11:53</u>	<u>3.5</u>	<u>7.30</u>	<u>6.56</u>	<u>69.7</u>			
<u>11:58</u>	<u>7</u>	<u>7.37</u>	<u>6.51</u>	<u>70.0</u>			
<u>12:01</u>	<u>11</u>	<u>7.37</u>	<u>6.48</u>	<u>70.2</u>			

### LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-2</u>	<u>3 vop</u>	<u>Y</u>	<u>HCC</u>	<u>Seq.</u>	<u>TPHC, BTEA, MTB</u>

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/  
Facility # 5430

Job#: 180107

Address: 1935 Washington Ave.

Date: 3-8-98

City: San Leandro

Sampler: Joe

Well ID U-3

Well Condition: 0.1c

Well Diameter 2 in.

Hydrocarbon  
Thickness: \_\_\_\_\_ in. (product/water): \_\_\_\_\_ (gal.)

Total Depth 38.53 ft.

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

Depth to Water 19.20 ft.

19.33 X VF 0.17 = 3.29 X 3 (case volume) = Estimated Purge Volume: 10 (gal.)

Purge  
Equipment: Disposable Bailer  
Bailer  
Stack  
~~Suction~~  
Grundfos  
Other: \_\_\_\_\_

Sampling  
Equipment: Disposable Bailer  
Bailer  
Pressure Bailer  
Grab Sample  
Other: \_\_\_\_\_

Starting Time: 12:33

Weather Conditions: Clear

Sampling Time: 1:02 P.M.

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 $\mu\text{mhos/cm}$	Temperature $^{\circ}\text{C}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>12:40</u>	<u>3.5</u>	<u>7.50</u>	<u>5.11</u>	<u>70.6</u>	_____	_____	_____
<u>12:43</u>	<u>7</u>	<u>7.39</u>	<u>4.96</u>	<u>70.1</u>	_____	_____	_____
<u>12:47</u>	<u>10</u>	<u>7.44</u>	<u>4.94</u>	<u>70.5</u>	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

### LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-3</u>	<u>3V0A</u>	<u>Y</u>	<u>HCL</u>	<u>Seq.</u>	<u>TPHC, BTEX, WBE</u>
<u>11</u>	<u>2V0A</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>2010</u>
_____	_____	_____	_____	_____	_____

COMMENTS: \_\_\_\_\_

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/  
Facility # 5430  
Address: 1935 Washington Ave.  
City: San Leandro

Job#: 180107  
Date: 3-8-98  
Sampler: Joe

Well ID U-4

Well Condition: O.K.

Well Diameter 2 in.

Hydrocarbon Amount Bailed  
Thickness: \_\_\_\_\_ in. (product/water): \_\_\_\_\_ (gal.)

Total Depth 39.03 ft.

Depth to Water 19.37 ft.

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

19.66 x VF 0.17 = 3.34 x 3 (case volume) = Estimated Purge Volume: 10 (gal.)

Purge Equipment: Disposable Bailer  
Bailer  
Stack  
Suction  
Grundfos  
Other: \_\_\_\_\_

Sampling Equipment: Disposable Bailer  
Bailer  
Pressure Bailer  
Grab Sample  
Other: \_\_\_\_\_

Starting Time: 1:53  
Sampling Time: 2:22 P.M.  
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 $\mu\text{mhos/cm}$ <small>X<sub>200</sub></small>	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>2:03</u>	<u>3.5</u>	<u>7.17</u>	<u>8.16</u>	<u>70.5</u>	_____	_____	_____
<u>2:07</u>	<u>7</u>	<u>7.48</u>	<u>7.63</u>	<u>70.6</u>	_____	_____	_____
<u>2:10</u>	<u>10</u>	<u>7.54</u>	<u>7.66</u>	<u>70.5</u>	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

### LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-4</u>	<u>3 Vol A</u>	<u>Y</u>	<u>HCC</u>	<u>Seq.</u>	<u>TPHC, PTEO, M TAE</u>

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility # 5430 Job#: 180107  
 Address: 1935 Washington Ave. Date: 3-8-98  
 City: San Leandro Sampler: Jac

Well ID U-5 Well Condition: OK  
 Well Diameter 2 in. Hydrocarbon Amount Bailed  
 Thickness: \_\_\_\_\_ in. (product/water): \_\_\_\_\_ (gal.)  
 Total Depth 38.51 ft.  
 Depth to Water 18.10 ft.

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

20.41 X VF 0.17 3.47 X 3 (case volume) = Estimated Purge Volume: 11 (gal.)

Purge Equipment: Disposable Bailer  
 Bailer Stack  
~~Suction~~  
 Grundfos  
 Other: \_\_\_\_\_

Sampling Equipment: Disposable Bailer  
 Bailer  
 Pressure Bailer  
 Grab Sample  
 Other: \_\_\_\_\_

Starting Time: 1:15 Weather Conditions: Clear  
 Sampling Time: 1:42 P.M. 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 $\mu\text{mhos/cm} \times W$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>1:22</u>	<u>3.5</u>	<u>7.36</u>	<u>8.27</u>	<u>69.8</u>	_____	_____	_____
<u>1:27</u>	<u>7</u>	<u>7.26</u>	<u>8.32</u>	<u>70.6</u>	_____	_____	_____
<u>1:31</u>	<u>11</u>	<u>7.24</u>	<u>8.35</u>	<u>70.3</u>	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

### LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-5</u>	<u>3 Vol A</u>	<u>Y</u>	<u>HCC</u>	<u>Seq.</u>	<u>TPHG, B, TSD, W, TSC</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/  
Facility # 5430  
Address: 1935 Washington Ave.  
City: San Leandro

Job#: 180107  
Date: 3-9-98  
Sampler: Joc

Well ID U-6

Well Condition: O.K.

Well Diameter 2 in.

Hydrocarbon Thickness: \_\_\_\_\_ in. Amount Bailed (product/water): \_\_\_\_\_ (gal.)

Total Depth 40.00 ft.

Depth to Water 19.84 ft.

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

20.16 X VF 0.17 = 3.43 X 3 (case volume) = Estimated Purge Volume: 11 (gal.)

Purge Equipment: Disposable Bailer  
Bailer  
Stack  
Suction  
Grundfos  
Other: \_\_\_\_\_

Sampling Equipment: Disposable Bailer  
Bailer  
Pressure Bailer  
Grab Sample  
Other: \_\_\_\_\_

Starting Time: 10:30  
Sampling Time: 10:55 A.M.  
Purging Flow Rate: 1.1 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 $\mu\text{mhos/cm} \times 100$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>10:37</u>	<u>3.5</u>	<u>7.85</u>	<u>5.11</u>	<u>70.1</u>	_____	_____	_____
<u>10:41</u>	<u>7</u>	<u>7.63</u>	<u>4.67</u>	<u>70.6</u>	_____	_____	_____
<u>10:45</u>	<u>11</u>	<u>7.60</u>	<u>4.60</u>	<u>71.0</u>	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-6</u>	<u>3V0A</u>	<u>Y</u>	<u>HCC</u>	<u>Seq.</u>	<u>TPHC, BTEX, MTBE</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/  
Facility # 5430  
Address: 1935 Washington Ave.  
City: San Leandro

Job#: 180107  
Date: 3-8-98  
Sampler: Joe

Well ID U-7  
Well Diameter 2 in.  
Total Depth 37.78 ft.  
Depth to Water 18.91 ft.

Well Condition: OK

Hydrocarbon Thickness:	Amount Bailed (product/water):		
	2" = 0.17	3" = 0.38	4" = 0.66
Volume Factor (VF)	6" = 1.50	12" = 5.80	

18.87 X VF 3.21 = \_\_\_\_\_ X 3 (case volume) = Estimated Purge Volume: 10 (gal.)

Purge Equipment:  Disposable Bailer  
 Bailer  
 Stack  
 Suction  
 Grundfos  
Other: \_\_\_\_\_

Sampling Equipment:  Disposable Bailer  
 Bailer  
 Pressure Bailer  
 Grab Sample  
Other: \_\_\_\_\_

Starting Time: 9:45  
Sampling Time: 10:15 A.M.  
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 $\mu\text{mhos/cm}$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>9:58</u>	<u>3.5</u>	<u>7.49</u>	<u>9.12</u>	<u>71.2</u>	_____	_____	_____
<u>10:01</u>	<u>7</u>	<u>7.18</u>	<u>8.86</u>	<u>71.0</u>	_____	_____	_____
<u>10:04</u>	<u>10</u>	<u>7.11</u>	<u>8.85</u>	<u>70.8</u>	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____

### LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>U-7</u>	<u>3 VOA</u>	<u>Y</u>	<u>HCL</u>	<u>Seq.</u>	<u>TPHC, BTEX, MTBE</u>
<u>"</u>	<u>2 VOA</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>2010</u>
_____	_____	_____	_____	_____	_____

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



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

Facility Number UNOCAL SS#5430  
 Facility Address 1935 WASHINGTON AVE. SAN LEANDRO, CA  
 Consultant Project Number 180107.85  
 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  
 (Phone) 510-2772321  
 Laboratory Name Sequoia Analytical  
 Laboratory Release Number \_\_\_\_\_  
 Samples Collected by (Name) JOE AJEMIAN  
 Collection Date 3-8-98  
 Signature [Signature]

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type C = Grab G = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analytes To Be Performed											DO NOT BILL TB-LB ANALYSIS			
								TPH Gas + STEK w/MTBE (8016)	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)	Remarks						
TB-LB	01	1	W	-	-	HCL	Y	✓														
U-1	02	5	W	G	11:35 AM			✓				✓										
U-2	03	3	W	-	12:11 PM			✓														
U-3	04	5	W	-	1:02 PM			✓				✓										
U-4	05	3	W	-	2:22 PM		X	✓														
U-5	06	3	W	-	1:42 PM			✓														
U-6	07	3	W	-	10:55 AM			✓														
U-7	08	5	W	-	10:15 AM			✓				✓										

Relinquished By (Signature) <u>[Signature]</u>	Organization G-R Inc.	Date/Time 3-8-98 4:00 PM	Received By (Signature) <u>[Signature]</u>	Organization	Date/Time	Turn Around Time (Circle Choice) 24 Hrs. 48 Hrs. 5 Days 10 Days <u>As Contracted</u>
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time	
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature) <u>[Signature]</u>	Organization	Date/Time 3/9/98 1600	





RECEIVED

Gettler Ryan/Geostrategies  
6747 Sierra Court Suite J  
Dublin, CA 94568

Client Proj. ID: Unocal SS#5430, 180107.85  
Sample Descript: TB-LB  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9803574-01

Sampled: 03/09/98  
Received: 03/09/98

Attention: Deanna Harding

Analyzed: 03/17/98  
Reported: 03/24/98

QC Batch Number: GC031797BTEX09A  
Instrument ID: GCHP9

GENERAL CONTRACTORS

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
<b>Toluene</b>	<b>0.50</b>	<b>0.53</b>
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	103

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

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#5430, 180107.85 Sample Descript: U-1 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9803574-02	Sampled: 03/09/98 Received: 03/09/98 Analyzed: 03/17/98 Reported: 03/24/98
Attention: Deanna Harding		

QC Batch Number: GC031798BTEX09A  
Instrument ID: GCHP9

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	103

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

**SEQUOIA ANALYTICAL - ELAP #1271**

  
Mike Gregory  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#5430, 180107.85 Sample Descript: U-1 Matrix: LIQUID Analysis Method: EPA 8010 Lab Number: 9803574-02	Sampled: 03/09/98 Received: 03/09/98  Analyzed: 03/15/98 Reported: 03/24/98
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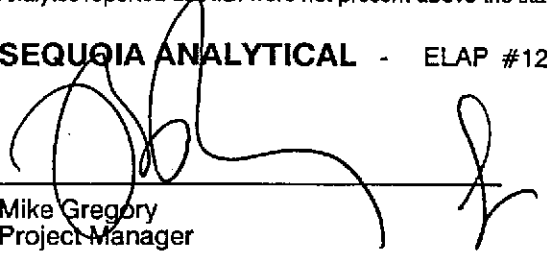
QC Batch Number: GC031798801009A  
Instrument ID: GCHP09

**Halogenated Volatile Organics (EPA 8010)**

Analyte	Detection Limit ug/L	Sample Results ug/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.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-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.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
1-Chloro-2-fluorobenzene	70                      130	84

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

**SEQUOIA ANALYTICAL** - ELAP #1210

  
Mike Gregory  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568 Attention: Deanna Harding	Client Proj. ID: Unocal SS#5430, 180107.85 Sample Descript: U-2 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9803574-03	Sampled: 03/09/98 Received: 03/09/98 Analyzed: 03/17/98 Reported: 03/24/98
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QC Batch Number: GC031798BTEX09A  
Instrument ID: GCHP9

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	4.4
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	104

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

**SEQUOIA ANALYTICAL - ELAP #1271**

Mike Gregory  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#5430, 180107.85 Sample Descript: U-3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9803574-04	Sampled: 03/09/98 Received: 03/09/98  Analyzed: 03/17/98 Reported: 03/24/98
Attention: Deanna Harding		

QC Batch Number: GC031798BTEX09A  
Instrument ID: GCHP9

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

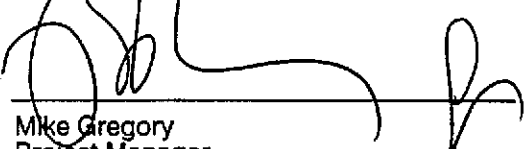
Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	100	410
Methyl t-Butyl Ether	5.0	24
Benzene	1.0	22
Toluene	1.0	1.2
Ethyl Benzene	1.0	N.D.
Xylenes (Total)	1.0	6.1
Chromatogram Pattern:		Gas

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	140 Q

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

**SEQUOIA ANALYTICAL - ELAP #1271**

  
Mike Gregory  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#5430, 180107.85 Sample Descript: U-3 Matrix: LIQUID Analysis Method: EPA 8010 Lab Number: 9803574-04	Sampled: 03/09/98 Received: 03/09/98  Analyzed: 03/15/98 Reported: 03/24/98
Attention: Deanna Harding		

QC Batch Number: GC031798801009A  
Instrument ID: GCHP09

**Halogenated Volatile Organics (EPA 8010)**

Analyte	Detection Limit ug/L	Sample Results ug/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.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
<b>1,2-Dichloroethane</b>	<b>0.50</b>	<b>4.4</b>
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.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
1-Chloro-2-fluorobenzene	70                      130	81

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Mike Gregory  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#5430, 180107.85 Sample Descript: U-4 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9803574-05	Sampled: 03/09/98 Received: 03/09/98 Analyzed: 03/17/98 Reported: 03/24/98
Attention: Deanna Harding		

QC Batch Number: GC031798BTEX09A  
Instrument ID: GCHP9

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	107

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

**SEQUOIA ANALYTICAL - ELAP #1271**

  
Mike Gregory  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#5430, 180107.85 Sample Descript: U-5 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9803574-06	Sampled: 03/09/98 Received: 03/09/98 Analyzed: 03/17/98 Reported: 03/24/98
Attention: Deanna Harding		

QC Batch Number: GC031798BTEX09A  
Instrument ID: GCHP9

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70                      130	116

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

**SEQUOIA ANALYTICAL - ELAP #1271**

Mike Gregory  
Project Manager





Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568 Attention: Deanna Harding	Client Proj. ID: Unocal SS#5430, 180107.85 Sample Descript: U-6 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9803574-07	Sampled: 03/09/98 Received: 03/09/98 Analyzed: 03/17/98 Reported: 03/24/98
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QC Batch Number: GC031798BTEX02A  
Instrument ID: GCHP2

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	690
Methyl t-Butyl Ether	2.5	16
Benzene	0.50	41
Toluene	0.50	8.5
Ethyl Benzene	0.50	3.2
Xylenes (Total)	0.50	140
Chromatogram Pattern:		Gas

Surrogates	Control Limits %	% Recovery
Trifluorotoluene	70 130	143 Q

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

**SEQUOIA ANALYTICAL** - ELAP #1271

Mike Gregory  
Project Manager



Gettler Ryan/Geostrategies  
6747 Sierra Court Suite J  
Dublin, CA 94568

Client Proj. ID: Unocal SS#5430, 180107.85  
Sample Descript: U-7  
Matrix: LIQUID  
Analysis Method: 8015Mod/8020  
Lab Number: 9803574-08

Sampled: 03/09/98  
Received: 03/09/98  
Analyzed: 03/17/98  
Reported: 03/24/98

Attention: Deanna Harding

QC Batch Number: GC031798BTEX02A  
Instrument ID: GCHP2

**Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE**

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	115

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

**SEQUOIA ANALYTICAL - ELAP #1271**

Mike Gregory  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#5430, 180107.85 Sample Descript: U-7 Matrix: LIQUID Analysis Method: EPA 8010 Lab Number: 9803574-08	Sampled: 03/09/98 Received: 03/09/98 Analyzed: 03/15/98 Reported: 03/24/98
Attention: Deanna Harding		

QC Batch Number: GC031798801009A  
Instrument ID: GCHP09

**Halogenated Volatile Organics (EPA 8010)**

Analyte	Detection Limit ug/L	Sample Results ug/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.
2-Chloroethylvinyl ether	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-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.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
1-Chloro-2-fluorobenzene	70 130	79

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

**SEQUOIA ANALYTICAL** - ELAP #1210

  
Mike Gregory  
Project Manager



Sequoia  
Analytical

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

Client Proj. ID: Unocal SS#5430, 180107.85

Received: 03/09/98

Lab Proj. ID: 9803574

Reported: 03/24/98

### LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 10 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

  
Mike Gregory  
Project Manager



# Sequoia Analytical

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Gettler Ryan/Geostrategies  
6747 Sierra Court, Ste J  
Dublin, CA 94568  
Attention: Deanna Harding

Client Project ID: Unocal SS#5430, 180107.85  
Matrix: Liquid

Work Order #: 9803574 -01-06

Reported: Apr 2, 1998

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC031798802009A	GC031798802009A	GC031798802009A	GC031798802009A	GC031798802009A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb
MS/MSD #:	8031193	8031193	8031193	8031193	8031193
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	3/17/98	3/17/98	3/17/98	3/17/98	3/17/98
Analyzed Date:	3/17/98	3/17/98	3/17/98	3/17/98	3/17/98
Instrument I.D.#:	HP9	HP9	HP9	HP9	HP9
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	370 µg/L
Result:	19	20	20	60	340
MS % Recovery:	95	100	100	100	92
Dup. Result:	20	20	20	63	350
MSD % Recov.:	100	100	100	105	95
RPD:	5.1	0.0	0.0	4.9	2.9
RPD Limit:	0-20	0-20	0-20	0-20	0-50

LCS #:	LCS031798	LCS031798	LCS031798	LCS031798	LCS031798
Prepared Date:	3/17/98	3/17/98	3/17/98	3/17/98	3/17/98
Analyzed Date:	3/17/98	3/17/98	3/17/98	3/17/98	3/17/98
Instrument I.D.#:	HP9	HP9	HP9	HP9	HP9
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	370 µg/L
LCS Result:	20	21	21	64	350
LCS % Recov.:	100	105	105	107	95

MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

SEQUOIA ANALYTICAL  
Elap #1271

Mike Gregory  
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/Geostrategies  
6747 Sierra Court, Ste J  
Dublin, CA 94568  
Attention: Deanna Harding

Client Project ID: Unocal SS#5430, 180107.85  
Matrix: Liquid

Work Order #: 9803574-07-08

Reported: Apr 2, 1998

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC031798802002A	GC031798802002A	GC031798802002A	GC031798802002A	GC031798802002A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030

Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb
MS/MSD #:	8030888	8030888	8030888	8030888	8030888
Sample Conc.:	N.D.	0.50	N.D.	N.D.	N.D.
Prepared Date:	3/17/98	3/17/98	3/17/98	3/17/98	3/17/98
Analyzed Date:	3/17/98	3/17/98	3/17/98	3/17/98	3/17/98
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	330 µg/L
Result:	21	21	20	61	350
MS % Recovery:	105	103	100	102	106
Dup. Result:	20	20	20	60	390
MSD % Recov.:	100	98	100	100	118
RPD:	4.9	4.9	0.0	1.7	11
RPD Limit:	0-20	0-20	0-20	0-20	0-50

LCS #:	LCS031798	LCS031798	LCS031798	LCS031798	LCS031798
Prepared Date:	3/17/98	3/17/98	3/17/98	3/17/98	3/17/98
Analyzed Date:	3/17/98	3/17/98	3/17/98	3/17/98	3/17/98
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	330 µg/L
LCS Result:	20	20	21	62	380
LCS % Recov.:	100	100	105	103	115

MS/MSD	60-140	60-140	60-140	60-140	60-140
LCS	70-130	70-130	70-130	70-130	70-130
Control Limits					

**SEQUOIA ANALYTICAL**  
Elap #1271

Mike Gregory  
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

9803574.GET <2>



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Gettler Ryan/Geostrategies  
6747 Sierra Court, Ste J  
Dublin, CA 94568  
Attention: Deanna Harding

Client Project ID: Unocal SS#5430, 180107.85  
Matrix: Liquid

Work Order #: 9803574-02, 04, 08

Reported: Apr 2, 1998

## QUALITY CONTROL DATA REPORT

Analyte:	1,1-Dichloro-ethene	Trichloro-ethene	Chloro-Benzene
QC Batch#:	GC031798801009A	GC031798801009A	GC031798801009A
Analy. Method:	EPA 8010	EPA 8010	EPA 8010
Prep. Method:	EPA 5030	EPA 5030	EPA 5030

Analyst:	E. Cunanan	E. Cunanan	E. Cunanan
MS/MSD #:	980354806	980354806	980354806
Sample Conc.:	290	3500	N.D.
Prepared Date:	3/16/98	3/16/98	3/16/98
Analyzed Date:	3/17/98	3/17/98	3/17/98
Instrument I.D.#:	GCHP9	GCHP9	GCHP9
Conc. Spiked:	25 µg/L	25 µg/L	25 µg/L
Dilution Factor:	250	250	250
Result:	6300	7900	5700
MS % Recovery:	96	70	91
Dup. Result:	6400	7700	5600
MSD % Recov.:	98	67	90
RPD:	1.6	2.6	1.8
RPD Limit:	0-25	0-25	0-25

LCS #:	BLK031798	BLK031798	BLK031798
Prepared Date:	3/17/98	3/17/98	3/17/98
Analyzed Date:	3/17/98	3/17/98	3/17/98
Instrument I.D.#:	GCHP9	GCHP9	GCHP9
Conc. Spiked:	25 µg/L	25 µg/L	25 µg/L
LCS Result:	24	21	22
LCS % Recov.:	96	84	88

MS/MSD	60-140	60-140	60-140
LCS	65-135	70-130	70-130
Control Limits			

**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

SEQUOIA ANALYTICAL

Mike Gregory  
Project Manager

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