October 15, 2001 G-R #180107

TO:

Mr. David B. De Witt

Tosco Marketing Company

2000 Crow Canyon Place, Suite 400

San Ramon, California 94583

FROM:

Deanna L. Harding

Project Coordinator Gettler-Ryan Inc.

6747 Sierra Court, Suite J Dublin, California 94568 CC:

Mr. Tim Ripp

IT Corporation

1921 Ringwood Avenue San Jose, California 95131

RE: Tosco (Unocal) Service Station

#5430

1935 Washington Avenue San Leandro, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	October 4, 2001	Groundwater Monitoring and Sampling Report Second Semi-Annual - Event of September 4, 2001

COMMENTS:

This report is being sent to you for your review/comment, prior to being distributed on your behalf. If no comments are received by *October 29, 2001*, this report will be distributed to the following:

cc: Mr. Scott Seery, Alameda County Health Care Services, 1131 Harbor Bay Parkway, Alameda, CA 94501 Mr. Michael Bakaldin, City of San Leandro Fire Dept., 835 East 14th Street, San Leandro, CA 94577

Enclosure

trans/5430-dbd



1921 Ringwood Avenue San Jose, CA 95131-1721 Tel. 408.453.7300 Fax. 408.437.9526

4 Member of The IT Group



July 18, 2001 Project 311-038.1A

Mr. Chuck Headlee Regional Water Quality Control Board San Francisco Bay Region 1515 Clay Street, Suite 1400 Oakland, California 94612

Oakland, California 94612

Re: 76 Service Station 5430

Quarterly Summary Report

Second Quarter 2001

Dear Mr. Headlee:

As directed by Mr. David DeWitt of Tosco Marketing Company, IT Corporation (IT) 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) 453-7300.

Sincerely,

IT Corporation

Timothy L. Ripp Project Geologist

Enclosure

cc: Mr. David DeWitt, Tosco Marketing Company

Mr. Tom Peacock, Alameda County Environmental Health Care Services

1747

Quarterly Summary Report Second Quarter 2001

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. There are currently six on-site groundwater monitoring wells and one off-site groundwater monitoring well in use at the site. In July 1997, three off-site exploratory borings were drilled on the property to the south of the 76 station. Based on the findings of that investigation, the lateral extent of hydrocarbon impact to groundwater is considered delineated. The product dispensers and associated underground product piping were replaced in July and August 1998. The underground waste oil storage tank was also removed and replaced with an aboveground waste oil storage tank.

RECENT QUARTER ACTIVITIES

Semi-annual groundwater monitoring and sampling activities performed in March 2001 were reported in May 2001.

NEXT QUARTER ACTIVITIES

Semi-annual groundwater monitoring and sampling activities will be performed in September 2001.

CHARACTERIZATION/REMEDIAL STATUS

Soil contamination delineated? Yes. 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: IT Corporation

October 4, 2001 G-R Job #180107

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

RE: Second Semi-Annual Event of September 4, 2001

> Groundwater Monitoring & Sampling Report Tosco (Unocal) Service Station #5430

1935 Washington Avenue San Leandro, California

Dear Mr. De Witt:

This report documents the most recent groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R) at the referenced site. All field work was conducted in accordance with G-R Standard Operating Procedure - Groundwater Sampling (attached).

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. A Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

No. 7211

Sincerely,

FOR -Deanna L. Harding

Project Coordinator

David W. Herzog

Senior Geologist, R.G. No. 7211

Figure 1:

Potentiometric Map

Figure 2:

Table 1:

Concentration Map

Table 2:

Groundwater Monitoring Data and Analytical Results Groundwater Analytical Results - Oxygenate Compounds

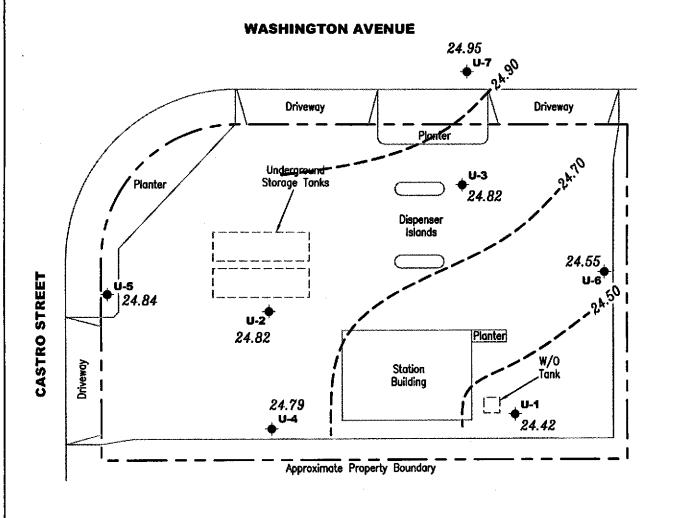
Attachments:

Standard Operating Procedure - Groundwater Sampling

Field Data Sheets

Chain of Custody Document and Laboratory Analytical Reports

5430.qml



EXPLANATION

Groundwater monitoring well

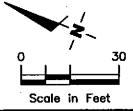
99.99 Groundwater elevation in feet referenced to Mean Sea Level (MSL)

Groundwater elevation contour, dashed where inferred.

D

Approximate groundwater flow direction at a gradient of 0.006 Ft./Ft.

REVISED DATE



Source: Figure modified from drawing provided by MPDS Services, Inc.



REVIEWED BY

POTENTIOMETRIC MAP

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

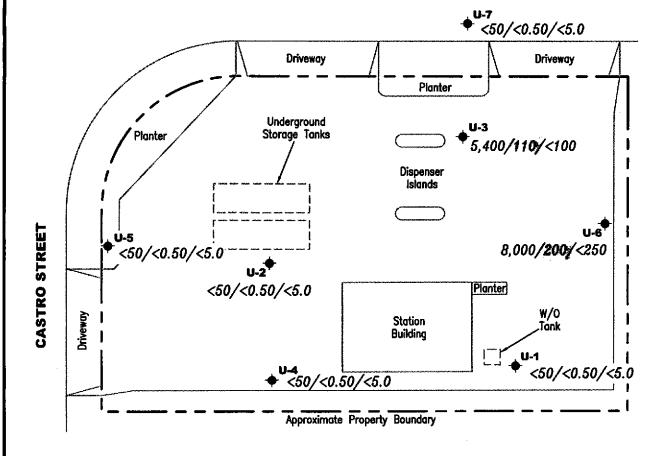
September 4, 2001

FIGURE

1

PROJECT NUMBER

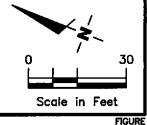
WASHINGTON AVENUE



EXPLANATION

◆ Groundwater monitoring well

A/B/C TPH(G) (Total Petroleum
Hydrocarbons as Gasoline)/
Benzene/MTBE concentrations
in ppb



Source: Figure modified from drawing provided by MPDS Services, Inc.



REVIEWED BY

CONCENTRATION MAP

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

REVISED DATE

DATE

September 4, 2001

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2

PROJECT NUMBER

180107

Table 1
Groundwater Monitoring Data and Analytical Results

The color of the	WELL ID/ TOC*	DATE	DTW	S.I.	GWE	TPH-D	TPH-G	В	T	E	X	MTBE	1,2-DCB	1,2-DCA
55.58 08/13/93¹ 31.60 20.0-40.0 24.98 50² 31.0 0.84 ND 2.6 1.0	100		(Je)	(JLDgs)	(JL)	(<i>ppo</i>)	(<i>PP0</i>)	(PPO)	(ppo)	(ppo)	(ppo)	(рро)	(<i>PPO)</i>	(ppo)
56.10 12/16/93 331.50 24.98	U-1													
12/16/93 33.19 22.91 1303 ND ND ND ND ND ND ND N		08/13/931	31.60	20.0-40.0	24.98	50 ²	310	0.84	ND	2.6	1.0			
01/13/94 33.06 23.04		09/07/93	31.60		24.98			••		••			•••	
02/09/94 32.70 23.40 .	56.10	12/16/93 ¹	33.19		22.91	130 ³	ND	ND	ND	ND	ND			
03/25/94 31.07 25.03 573 588 0.63 0.79 ND 0.65 05/18/94 31.76 24.34		01/13/94	33.06		23.04									
05/18/94 31.76 24.34		02/09/94	32.70		23.40	••								
06/19/94 32.26 23.84 613 51 ND 1.4 ND 2.7 ND 7.4		03/25/94	31.07		25.03	57 ³	58	0.63	0.79	ND	0.65			
07/27/94 33.07 23.03		05/18/94	31.76		24.34									
08/18/94 33.50 22.60		06/19/94 ¹	32.26		23.84	61 ³	51	ND	1.4	ND	2.7		ND	7.4
09/15/94		07/27/94	33.07		23.03	••								
10/11/94 33.25 22.85		08/18/94	33.50		22.60							••		
11/08/94 34.05 22.05 ND 5.8 56.09 03/14/95 31.29 24.81		09/15/941	33.93		22.17	83 ³	ND	0.50	0.85	ND	0.77		ND	9.5
12/06/94 ¹ 32.37 23.73 ND ND ND ND ND ND ND N		10/11/94	33.25		22.85									
01/10/95 31.29 24.81		11/08/94	34.05		22.05							••		
56.09 03/14/95 27.86 28.23 71 ³ 380 20 ND ND 10		12/06/94 ¹	32.37		23.73	ND	ND	ND	ND	ND	ND		ND	5.8
06/20/95 28.20 27.89 170³ 500 50 ND ND 4.4		01/10/95	31.29		24.81									
09/18/95 30.65 25.44 72.00 57 1.2 0.75 0.57 2.2 6 ND 3.8 ND ND 3.6 ND ND 3.8 03/06/96 26.53 29.56 ND 96 4.5 ND ND ND ND	56.09	03/14/95	27.86		28.23	71 ³	380	20	ND	ND	10			
12/14/95 32.20 23.89 ND ND 0.72 1.4 1.2 3.6 ND 3.8 03/06/96 26.53 29.56 ND 96 4.5 ND ND ND ND ND 06/04/96 27.43 28.66 170 ³ 410 48 ND 3.4 7.9 ND 09/06/96 30.25 25.84 ND		06/20/95	28.20		27.89	170 ³	500	50	ND	ND				
03/06/96 26.53 29.56 ND 96 4.5 ND ND 3.7 ND 06/04/96 27.43 28.66 170³ 410 48 ND 3.4 7.9 ND 09/06/96 30.25 25.84 ND		09/18/95	30.65		25.44	72.00	57	1.2	0.75	0.57	2.2	"		
06/04/96 27.43 28.66 170³ 410 48 ND 3.4 7.9 ND 09/06/96 30.25 25.84 ND ND <td></td> <td>12/14/95</td> <td>32.20</td> <td></td> <td>23.89</td> <td>ND</td> <td>ND</td> <td>0.72</td> <td>1.4</td> <td>1.2</td> <td></td> <td></td> <td>ND</td> <td>3.8</td>		12/14/95	32.20		23.89	ND	ND	0.72	1.4	1.2			ND	3.8
09/06/96 30.25 25.84 ND		03/06/96	26.53		29.56		96	4.5	ND					
03/08/97 26.03 30.06 ND ND <td></td> <td>06/04/96</td> <td>27.43</td> <td></td> <td>28.66</td> <td>170³</td> <td>410</td> <td>48</td> <td>ND</td> <td>3.4</td> <td></td> <td></td> <td></td> <td></td>		06/04/96	27.43		28.66	170 ³	410	48	ND	3.4				
09/04/97 31.56 24.53 ND ND <td></td> <td>09/06/96</td> <td>30.25</td> <td></td> <td>25.84</td> <td>ND</td> <td>ND</td> <td>ND</td> <td>ND</td> <td></td> <td></td> <td></td> <td></td> <td></td>		09/06/96	30.25		25.84	ND	ND	ND	ND					
03/09/98 20.63 35.46 ND		03/08/97	26.03		30.06		ND	ND	ND	ND				
09/01/98 27.82 28.27 ND 0.59 ND		09/04/97	31.56		24.53		ND	ND	ND	ND				
03/02/99 26.83 29.26 ND		03/09/98	20.63		35.46		ND	ND	ND					
03/02/7 20.03 27.00 ND ND ND ND ND ND		09/01/98	27.82		28.27		ND	0.59						
09/07/99 28.03 28.06 ND ND ND ND ND ND ND ND		03/02/99	26.83		29.26		ND	ND	ND					
		09/07/99	28.03		28.06		ND	ND	ND	ND	NĎ	ND	ND	ND

Table 1
Groundwater Monitoring Data and Analytical Results

						anoro, curre							
WELL ID/	DATE	DTW	S.I.	GWE	TPH-D	TPH-G	В	Т	E	X	MTBE	1,2-DCB	1,2-DCA
TOC*		(ft.)	(ft.bgs)	(ft.)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(pph)
U-i	03/09/00	25.50	20.0-40.0	30.59	••	ND	ND	ND	ND	ND	ND	ND	1.32
(cont)	09/11/0016	28.16		27.93		ND	ND	0.592	ND	ND	ND	ND ⁹	ND ⁹
	03/26/0117	27.02		29.07		ND	ND	ND	ND	ND	ND	ND	2.50
	09/04/01 ¹⁹	31.67		24.42		<50	<0.50	<0.50	<0.50	<0.50	<5.0	<0.50	2.4
U-2										•			
55.77	08/13/93	30.87	20.0-40.0	24.90		1,400	ND	ND	ND	ND			
	09/07/93	30.87		24.90			••	••	••				
55.27	12/16/93	32.19		23.08		330	1.7	ND	11	8.5			
	01/13/94	32.13		23.14									
	02/09/94	33.50		21,77									••
	03/25/94	30.09		25.18		130	0.70	0.78	0.65	0.64		ND	11
(D)	03/25/94					••						ND	ND
	05/18/94	30.73		24.54									
	06/19/94	31.31		23.96		180 ⁴	ND	ND	ND	0.86		ND	0.54
	07/27/94	32.12		23.15								-	
	08/18/94	32.50		22.77									- -
	09/15/94	33.00	•	22.27		1,000	44	ND	ND	ND		ND	0.66
	10/11/94	32.35		22.92									••
	11/08/94	33.09		22.18									
	12/06/94	31.44		23.83		250	19	ND	ND	ND		ND	ND
	01/10/95	30.25	•	25.02						••			
55.29	03/14/95	26.36		28.93		89	ND	ND	ND	1.2			
	06/20/95	26.74		28.55		ND	ND	0.58	ND	1.7			••
	09/18/95	29.65		25.64		ND	ND	ND	ND	0.85	⁶		
	12/14/95	31.10		24.19		ND	ND	0.89	ND	2.0	7 .	ND	ND
	03/06/96	25.17		30.12		ND	ND	ND	ND	ND	80		
	06/04/96	26.03		29.26		ND	ND	ND	ND	ND	110	••	
	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		

 Table 1

 Groundwater Monitoring Data and Analytical Results

WELL ID/	DATE	DTW	S.I.	GWE	TPH-D	TPH-G	В	T	E	X	MTBE	1,2-DCB	1,2-DCA
TOC*		(ft.)	(ft.bgs)	(ft.)	(ррв)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
U-2	03/09/98	19.22	20.0-40.0	36.07		ND	ND	ND	ND	ND	4.4		
(cont)	09/01/98	26.40		28.89	**	ND	ND	ND	ND	ND	25		
	03/02/99	25.48		29.81		ND	ND	ND	ND	ND	16		
	09/07/99	26.51		28.78		ND	ND	ND	ND	ND	20		
	03/09/00	23.95		31.34		ND	ND	ND	ND	ND	ND		
	09/11/00	26.75		28.54		ND	ND	0.635	ND	ND	ND		
	03/26/01	25.64		29.65		ND	ND	ND	ND	ND	ND		
	09/04/01	30.47		24.82		<50	<0.50	0.69	<0.50	<0.50	<5.0		
U-3													
55.66	08/13/93	30.70	20.0-40.0	24.96		23,000	1,000	ND	1,700	1,600	**		
0.7.00	09/07/93	30.70	20.0 40.0	24.96									
55.24	12/16/93	32.08		23.16		15,000	570	ND	940	670			
7	01/13/94	31.98		23.26									
	02/09/94	33.82		21.42					*-				
	03/25/94	30.03		25.21		18,000	560	40	1,000	7 70		ND	480
	05/18/94	30.66		24.58							••		
	06/19/94	31.19		24.05		17,000	580	ND	1,300	90	••	ND	410
	07/27/94	31.98		23.26									
	08/18/94	32.39		22.85									
	09/15/94	32.84		22.40		12,000	370	ND	970	610		ND	420
	10/11/94	32.20		23.04		,							
	11/08/94	33.01		22.23					*-		we-		
	12/06/94	31.34		23.90		17,000	390	ND	990	560		ND	430
	01/10/95	30.23	·	25.01		. 							
55.23	03/14/95	25.44		29.79	••	13,000	860	120	1,300	1,700	 '		
	06/20/95	26.70		28.53		9,800	590	ND	800	1,000			••
	09/18/95	29.55		25.68		9,800	600	ND	1,000	760	6	-	
	12/14/95	31.02		24.21		10,000	520	ND	920	630	7	ND	240
-	03/06/96	25.25		29.98		19,000	1,400	ND	1,800	3,000	73		
	06/04/96	26.00		29.23		8,800	510	ND	600	830	ND		'

Table 1
Groundwater Monitoring Data and Analytical Results

WELL ID/	DATE	DTW	S.I.	GWE	TPH-D	TPH-G	В	T	E	X	MTBE	1,2-DCB	1,2-DCA
TOC*		(ft.)	(ft.bgs)	(ft.)	(ppb)	(ppb)	(pph)	(ppb)	(ppb)	(ppb)	(ppb)	(pph)	(ppb)
U-3	09/06/96	29.06	20.0-40.0	26.17	••	15,000	360	20	540	450	ND		
(cont)	03/08/97	24.65	2010 1010	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 ⁹	6.1	24	ND	4.4
	09/01/98	26.33		28.90		ND	ND	ND	ND	ND	6.1	ND	ND
•	03/02/99	25.50		29.73		2,100	110	2.6	ND9	240	39	ND	6.7
	09/07/99 ¹³	27.63		27.60		2,400 ¹²	67	ND ⁹	150	150	ND ⁹	ND	1.1
	03/09/00	24.05		31.18		3,250 ¹²	143	ND ⁹	59.0	326	ND ⁹	ND ⁹	ND9
	09/11/00 ¹⁷	27.83	•	27.40		ND	ND	ND	ND	ND	ND	ND	1.17
	03/26/0117	25.75		29.48	· 	ND	ND	ND	ND	ND	ND	ND	ND
	09/04/0119	30.41		24.82		5,400 ¹⁵	110	<10	800	220	<100	<5.0	<5.0
U-4				***		400	2.0	2.1	0.70	1.2		ND	ND
55.39	03/14/95	26.52	25.0-40.0	28.87		490	3.2	2.1	0.79	1.2	••		
	06/20/95	26.90		28.49		ND	ND	ND	ND	1.5	6		
	09/18/95	29.79		25.60		ND	ND	ND	ND	ND 0.79	⁷	ND	ND
	12/14/95	31.23		24.16		ND	ND	0.59	ND ND	0.79	50		
	03/06/96	25.30		30.09		ND	ND	ND		ND	.50 290		
	06/04/96	26.19		29.20		ND	ND	ND	ND ND	ND ND	ND		
	09/06/96	29.32		26.07		ND	ND	ND ND	ND	ND ND	ND		
	03/08/97	24.79		30.60		ND	ND		ND ND	ND ND	18		
	09/04/97	30.71		24.68		ND	ND	ND ND	ND ND	ND	ND		
	03/09/98	19.37		36.02		ND	ND	ND ND	ND	ND ND	ND		
	09/01/98	26.56		28.83		. ND	ND	0.53	ND	0.79	4.9		
	03/02/99	25.62		29.77		110	0.89	0.55 ND	ND	ND	3.0		
	09/07/99	26.82		28.57		ND	ND		ND ND	1.05	ND		
	03/09/00	24.07		31.32		ND	ND	0.615		ND	ND	••	
	09/11/00	26.48		28.91		ND	ND	0.686	ND ND	ND ND	ND		
	03/26/01	25.69		29.70		ND	ND	ND	ND -0.50	<0.50	< 5.0		
	09/04/01	30.60		24.79		<50	< 0.50	<0.50	<0.50	<0.50	<210		

Table 1
Groundwater Monitoring Data and Analytical Results

WELL ID/	DATE	DTW	S.I.	GWE	TPH-D	TPH-G	В	T	E	X	MTBE	1,2-DCB	1,2-DCA
TOC*		(fi.)	(ft.bgs)	(ft.)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
U-5													
54.18	03/14/95	25.20	25.0-40.0	28.98		ND	ND	ND	ND	1.2		ND	ND
	06/20/95	25.60		28.58		ND	ND	ND	ND	1.6		, 	
	09/18/95	28.55		25.63		ND	ND	ND	ND	0.66			
	12/14/95	29.94		24.24		ND	ND	ND	ND	ND		ND	ND
	03/06/96	24.03		30.15		ND	ND	ND	ND	ND	ND		••
	06/04/96	24.91		29.27	••	ND	ND	ND	ND	ND	ND		
	09/06/96	28.06		26.12	••	ND	ND	ND	ND	ND	ND		
	03/08/97	23.49		30.69		ND	ND	ND	ND	ND	ND		
	09/04/97	29.46		24.72	- -	ND	ND	ND	ND	ND	ND		
	03/09/98	18.10		36.08		ND	ND	ND	ND	ND	ND		
	09/01/98	25.27		28.91		ND	ND	ND	ND	ND	ND		
	03/02/99	24.35		29.83		ND	ND	ND	ND	ND	ND		
	09/07/99	26.39		27.79		ND	ND	ND	ND	ND	ND		
	03/09/00	22.81		31.37		ND	ND	ND	ND	ND	ND		••
	09/11/00	25.36		28.82		ND	ND	0.640	ND	ND .	ND		
	03/26/01	24.55		29.63		ND	ND	ND	ND	ND	ND		
	09/04/01	29.34		24.84	•-	<50	<0.50	<0.50	<0.50	<0.50	<5.0	**	
U-6													
55.36	03/14/95	26.94	25.0-40.0	28.42		14,000	170	36	790	1,500		ND	210
33.30	06/20/95	27.15		28.21		8,500	170	11	950	1,300			••
	09/18/95	29.95		25.41	#6	9,500	260	ND	1,400	1,800	6		
	12/14/95	31.32		24.04		15,000	240	ND	1,400	1,700	7	ND	370
	03/06/96	25.71		29.65		2,400	54	ND	170	250	NĎ		
	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		
	09/01/98	INACCESSII	BLE (PAVED O	VER)									

Table~1 Groundwater Monitoring Data and Analytical Results

			 .										
WELL ID/	DATE	DTW	S.I.	GWE	TPH-D	TPH-G	В	Т	E	X	MTBE	1,2-DCB	1,2-DCA
TOC*		(ft.)	(ft.bgs)	(ft.)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(pph)	(ppb)	(ppb)
11.6	02/02/02							9					
U-6	03/02/99	25.95	25.0-40.0	29.41		3,900	240	ND ^a	650	430	45		
(cont)	09/07/99	28.19		27.17	**	32012	14	ND ⁹	5.2	ND ⁹	10		
	03/09/00	24.64		30.72		4,980 ¹²	193	ND ⁹	520	365	ND ⁹		
	09/11/00	28.35		27.01		538 ¹⁵	22.8	ND	13.8	3.11	ND		••
	10/13/00	29.67		25.69							/ND ¹⁸		
	03/26/01	26.88		28.48		16,400 ¹²	412	ND ⁹	2,010	1,010	ND^9		
	09/04/01	30.81		24.55		8,000 ¹⁵	200	<25	1,100	250	<250		
U-7													
55.05	03/14/95	26.13	25.0-40.0	28.92		ND	ND	ND	ND	ND		ND	ND
	06/20/95	26.38		28.67		ND	ND	ND	ND	ND			**
	09/18/95	29.21		25.84		ND	ND	ND	ND	ND			
	12/14/95	30.75		24.30	**	ND	ND	ND	ND	0.88		ND	ND
	03/06/96	25.10		29.95		ND	ND	ND	ND	ND	ND		••
	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
	09/04/978	30.16		24.89		ND	ND	ND	ND	ND	ND	ND	ND
	03/09/98	18.91		36.14		ND	ND	ND	ND	ND	ND	ND	ND
	09/01/9810	26.04		29.01		88	ND	ND	ND	ND	2.9	ND	ND
	03/02/99 ¹¹	25.30		29.75		ND	ND	ND	ND	ND	ND	ND	ND
	09/07/99	27.27		27.78		ND	ND	ND	ND	ND	ND	ND	ND
	03/09/00 ¹⁴	23.76		31.29		ND	ND	ND	ND	1.09	ND	ND	ND
	09/11/00 ¹⁷	27.19		27.86		ND	NĎ	ND	ND	ND	ND	ND	ND
	03/26/01 ¹⁷	25.61		29.44		ND	ND	ND	ND	ND	ND	ND	ND
	09/04/01 ²⁰	30.10		24.95	==	<50	< 0.50	< 0.50	< 0.50	<0.50	<5.0	<0.50	< 0.50

Table 1 Groundwater Monitoring Data and Analytical Results Tosco (Unocal) Service Station #5430

WELL ID/ TOC*	DATE	DTW (ft.)	S.L. (ft.bgs)	GWE (ft.)	TPH-D (ppb)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	1,2-DCB (ppb)	1,2-DCA (ppb)
Trip Blank													
TB-LB	03/09/98	••				ND	ND	0.53	ND	ND	ND		
	09/01/98					ND	ND	ND	ND	ND	5.0		
	03/02/99			••		ND	ND	ND	ND	ND	ND		
	09/07/99					ND	ND	ND	ND	ND	ND		
	03/09/00					ND	ND	ND	ND	ND	ND		
	09/11/00					ND	ND	ND	ND	ND	ND		
	10/13/00			_	·	ND	ND	ND	ND	ND	ND		
	03/26/01	**				ND	ND	ND	ND	ND	ND		
•	09/04/01					<50	< 0.50	< 0.50	< 0.50	< 0.50	<5.0		

Table 1

Groundwater Monitoring Data and Analytical Results

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

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to March 9, 1998, were compiled from reports prepared by MPDS Services, Inc.

TOC = Top of Casing

TPH-G = Total Petroleum Hydrocarbons as Gasoline

1,2-DCA = 1,2-Dichloroethane

DTW = Depth to Water

B = Benzene

(ppb) = Parts per billion

(ft.) = Feet

T = Toluene

ND = Not Detected

S.I. = Screen Interval

E = Ethylbenzene

-- = Not Measured/Not Analyzed

(ft.bgs) = Feet Below Ground Surface

X = Xylenes

(D) = Duplicate

GWE = Groundwater Elevation

MTBE = Methyl tertiary butyl ether

TPH-D = Total Petroleum Hydrocarbons as Diesel

1,2-DCB = 1,2-Dichlorobenzene

- * TOC elevations were surveyed March 1995, based on Benchmark provided by City of San Leandro, City Engineers Office, Datum 1929, USGS adjusted. Prior to December 16, 1993, the DTW measurements were taken from the top of well covers.
- Total Oil and Grease (TOG) was ND.
- Not a typical diesel pattern; lower boiling hydrocarbons in the boiling range of stoddard calculated as diesel.
- Laboratory report indicates the hydrocarbons detected did not appear to be diesel.
- Laboratory report indicates the hydrocarbons detected appeared to be a gasoline and non-gasoline mixture.
- 5 Laboratory report indicates the hydrocarbons detected did not appear to be gasoline.
- Laboratory has potentially identified the presence of MTBE at reportable levels in the groundwater sample collected from this well.
- 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.
- ⁸ Carbon tetrachloride was detected at a concentration of 1.3 ppb.
- 9 Detection limit raised. Refer to analytical reports.
- Carbon tetrachloride was detected at a concentration of 2.0 ppb, and Chloroform was detected at a concentration of 0.60 ppb.
- Carbon tetrachloride was detected at a concentration of 1.2 ppb.
- Laboratory report indicates gasoline C6-C12.
- Bromodichloromethane was detected at 1.4 ppb and Chloroform was detected at 31 ppb. All EPA Method 8010 reanalyzed by an alternate column or method to confirm the identification and/or concentration of these results.
- Laboratory report indicates Carbon tetrachloride was detected at 0.801 ppb.
- Laboratory report indicates weathered gasoline C6-C12.
- All other Volatile Organic Compounds (VOCs) by EPA Method 8010 were ND with a raised detection limit, except for Bromadichloromethane was detected at 3.58 ppb and Chloroform was detected at 75.2 ppb.
- All other VOCs by EPA Method 8010 were ND.
- MTBE by EPA Method 8260.
- All other VOCs by EPA Method 8021 were less than the reporting limit.
- All other VOCs by EPA Method 8021 were less than the reporting limit, except for Carbon tetrachloride was detected at 0.60 ppb.

Note: All EPA Method 8010/8021 constituents were ND, except as indicated above.

Table 2

Groundwater Analytical Results - Oxygenate Compounds

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

WELL ID	DATE	TBA (ppb)	MTBE (ppb)	DIPE (ppb)	ETBE (ppb)	TAME (ppb)	1,2-DCA (pph)	EDB (ppb)
U-6	10/13/00	ND	ND	ND	ND	ND	ND	ND

EXPLANATIONS:

TBA = Tertiary butyl alcohol

MTBE = Methyl tertiary butyl ether

DIPE = Di-isopropyl ether

ETBE = Ethyl tertiary butyl ether

TAME = Tertiary amyl methyl ether

1,2-DCA = 1,2-Dichloroethane

EDB = Ethylene Dibromide/1,2-Dibromoethane

(ppb) = Parts per billion

ND = Not Detected

ANALYTICAL METHOD:

EPA Method 8260 for Oxygenate Compounds

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 an 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, temperature, pH and electrical conductivity are measured. If purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or polyvinyl chloride bailers. The measurements are taken 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.

cility #	Washington Leandro, Co	AVé.	Job#: Date: Sample:	180107 91401 Westker		
Well ID	u-1_	Well Cond	tion:	k		
ell Diameter	2 in.	Hydrocarb Thickness		Amount Ba		<u>(Jagl.)</u>
otal Depth	39.65 #	Volume Factor (VI	2" = 0.17		4" = 12" = 5.80	0.66
epth to Water	31.67 x vi			lume) = Estimated Pu	orge Volume:	S (gal.)
Purge quipment:	Disposable Bailer Bailer Stack Suction Grundfos Other:	_	Sampling Equipment:	Disposable Ba Bailer Pressure Baile Grab Sample Other:		
Starting Time: Sampling Time: Purging Flow Rat	1240 1305	_ Wat n. Sed	ther Conditions er Color: iment Descripti	6rn. ion: <u>S</u> ; 1+		
Did well de-wate	or?	_ lf ye	es; Time:	<u>. </u>		
Time	Volume pH (gaL)	Conductive probability	m 15	/m/m/1 \	ORP (mV)	Alkalinitj (ppm)
12.50	7.81. 7 764	106	9 69	0	<u> </u>	
12.50	4.5 7.60	108	 	<u>. c</u>		
			· · · · ·		-	
		LABORAT	ORY INFORMA	TION LABORATORY	ANAL	YSES
SAMPLE ID U-1	5 x VDA VIAL	Y	Her	SEQUOLA	(+ 8010	

lient/ acility #_Tosc ddress: <u>193</u> ity:San	o# 5430 5 Washingfor Leandro, Co	. Ave .	Job#: Date: Sample	<u>18010</u> <u>91401</u> er: <u>Vextke</u>		
Well ID Vell Diameter Otal Depth Depth to Water	2 in. 39.25 n. 30.4>n.	Hydro Thicks Volum Factor	carbon ness:	6* = 1.50	water):	- 0.66
Purge Equipment:	Disposable Bailer Bailer Stack Suction Grundfos Other:	F <u>8:17</u>	Sampling Equipment:	•	Bailer	7,3 (gal.)
Starting Time: Sampling Time: Purging Flow Rat Did well de-wate	/025 /045 de: (ap	•	Weather Conditio Water Color: —— Sediment Descrip If yes; Time: —	otion:	Odor:_^-	
	Volume pH (gal.) 1.0 7.85 3 7.66 4.5 2.59	μσπ1 	hos/cm	erature D.G. (mg		Alkalinity (ppm)
	CONTAINS	LABOI REFRIG.	RATORY INFORM	ATION LABORATOR	y ANA	ALYSES
SAMPLE ID U-2	3 x VDA VIAL	Y	HCL	SEQUELA	TPHGIBTI	EK MTOE
COMMENTS: .						

acility # 7050	5 Washington	o Ave			1401		
ity: <u>San</u>	Leandre, C	٥	_ s	ampler: 🔟	Partker_		<u>.</u>
Well ID	U-3_		Condition:	OR			
Vell Diameter	2 in.		ness:). 5 ~ in.	Amount Baild	<u>):</u>	loal.)
Total Depth Depth to Water	38.50 1	Volu Fact	or (VF)	2" = 0.17 6" = 1	3" = 0.38 .50	4" = 12" = 5.80	0.66
	\$.09 x	r <u>8:17</u>	_ <u>).37</u> x3	(case volume) =	Estimated Purg	ge Volume: <u>4</u>	<u></u>
Purge Equipment:	Disposable Bailer Bailer Stack Suction Grundfos Other:	_	Samp Equip	ment: Di Bi Pi	sposable Bail aller ressure Bailer rab Sample	er	
Starting Time: Sampling Time: Purging Flow Ra	1320	_	Weather Colo Water Colo Sediment I	4	Uea	Odor mil	ત ક
Did well de-wate		_		ne:	Volume	e:	
7.000	Volume pH (gal.)	,and	ductivity hos/cm	Temperature F. 70./	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
1336 1336	1.5 3 7.3 7.3 7.3	←	060 064	69.1			,
		LABO	RATORY IN	FORMATION			
SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV.	TYPE: LA	BORATORY	TPHG BTE	
U-3	S X VDA VIAL	7	Hec			+ 80/0	
	ļ						
	<u>.l</u>						

Client/ Facility #	sco# 5	430		_	Job#:		80107		<u>_</u>
Addross: 19	35 Wa	shinoti	on Ale.		Date:		401		
City:Sa	n Lean	dro, C	<u>Ca.</u>		Sample	er: _ <i>L/</i> c	ertkes		
Well ID	<u>u</u> .	4	Well	Condition	: _2	k_		· ···	
Well Diameter		2 <u>in</u>	•	ocarbon kness:	0.00	ممت	Amount Ba		legl_
Total Depth		OVn.		ume	2" - 0.1		3* = 0.38		- 0.66
Depth to Water		60,	· ·	tor (VF)			· · · · · · · · · · · · · · · · · · ·	. <u></u> .	
		.42 x	vf <u>8:17</u>	-1.43	X 3 (case v	elume) =	Estimated Pu	irge Volume: _	4-5 lost
Purge Equipment:	Dispose Bailer Stack Suction Grundf Other:	05	<u> </u>		mpling uipment:	Bail Pre Gra	posable Ba er ssure Baile ab Sample		
Starting Time: Sampling Time: Purging Flow R		00 20	prn.	Water Co	Condition blor: t Descript	dia	lear	Odor: ND	
Did well de-wa		ne		If yes;	Time:		Volum	ne:	losi.)
Time	Volume (gal.)	pН	μπι	iuctivity hos/cm	Temper F	ı	D.O. (mg/ L)	ORP (mV)	Alkalinity (ppm)
1102	1.5	7.73	$\frac{3}{2} - \frac{7}{2}$.2+	<u>68.</u>	7 3			
1106	4.5	7.5	1 - 3	40	68	.3			
		· 						· · .	. <u></u>
				· · · · · · · · · · · · · · · · · · ·	,			-	
<u> </u>			LABOI	RATORY	NFORMA	TION		ABIA	Vese
SAMPLE ID		NTAINER	REFRIG.		V. TYPE		RATORY	TPHG 8TE	LYSES
4-4	3 × v	DA VIAL	4	He	<u> </u>	.,,,,,		1.1.4.01018	, 174196
	 -	<u></u>							
		·					<u> </u>		
COMMENTS:				·				·	
COMMEN 12:								- 	
									

Address 19 5	co# 5430 35 Washing Leandre	ton Ne.	Job Date San		80107 1401 Certkes		
Well ID	U-5	_ Well	Condition: .	OK			
Well Diameter Total Depth Depth to Water	2 38.48, 29.34.	- va	ocarbon kness:	0.17	Amount Bai {product/wate 3* = 0.38	or):	- 0.66
Purge Equipment:	Disposable Bail Bailer Stack Suction Grundfos Other:		Sampling Equipme	nt: Dis Bai Pro Gr	Estimated Pul sposable Bai iler essure Bailer ab Sample	ler	S. (C) (gal.)
	1/35 1)55 te: 1 er? nc	<u> </u>	Weather Condi Water Color: _ Sediment Desc If yes; Time:	ription: _	<u> </u>	Odor:_ <i>n</i> \odo	
1) 37 1) 39 1) 41	Volume pH (gal.) 7.5 7.5 7.5 7.5	Con	ductivity Te	68.9 68.4	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
SAMPLE ID	(#) - CONTAINE		RATORY INFOF	E LAB	ORATORY		LYSES
4-5	3 x VDA VIA		Нес	550	RUOTA	TPHG BTE	* /MTOE

					$0 \sim 10^{-4}$,	
lient/ acility #Tose	co# 5430		Job i		80107		
ddress: 193	5 Washingto	n Ave.	Date		401		
itv: کها	5 Washingto Leandre, C	<u>.</u>	Sam	pler:/	ertkei	 	
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				<u> </u>	<u></u>		
Well ID	<u> U-6</u>	Well (Condition: -	OK			
Well Diameter		Hydro	carbon ness:	oo in.	Amount Baild		(Jed.)
Total Depth	39.95	Volu		0.17 6" = 1.1	3" = 0.38 60	4° 12" = 5.80	= 0.66
Depth to Water	30.81	I see					
	9.14 x	vf <u>8:17</u>	X 3 (car	se volume) =	Estimated Purp	ge Volume: 🗀	5, 0 (onl.)
Purge	Disposable Bailer		Sampling Equipme		posable Ball	er	•
Equipment:	Bailer Stack	•		Bai	ler ssure Bailer		
	Suction Grundfos			Gra	ab Sample		
Company Times	Other:	· · · · · · · · · · · · · · · · · · ·	Weather Condi	Other:	dia		
Starting Time: Sampling Time: Purging Flow Rat			Water Color: _ Sediment Desc	tions:	dia SIT	Oden 7 ((m3/d)
Sampling Time:	Other:		Water Color: _	tions:	dia SIT	و ديو دي	(gal
Sampling Time: Purging Flow Rat Did well de-wate	Other:	Conc	Water Color: _ Sediment Desc If yes: Time: luctivity Te hos/cm	tions:	dia SIT	Oden 7 ((gal Alkalinity (ppm)
Sampling Time: Purging Flow Rat Did well de-wate	Other:	Cond	Water Color: _ Sediment Desc If yes: Time: luctivity Te hos/cm	ription:	Volume D.O.	Oden / (Alkalinity
Sampling Time: Purging Flow Rate Did well de-wate Time 1407	Other:	Cond	Water Color: _ Sediment Desc If yes: Time: iuctivity Te hos/cm 134	tions:	Volume D.O.	Oden / (Alkalinity
Sampling Time: Purging Flow Rat Did well de-wate Time	Other:	Cond	Water Color: _ Sediment Desc If yes: Time: luctivity Te hos/cm	ription:	Volume D.O.	Oden / (Alkalinity
Sampling Time: Purging Flow Rate Did well de-wate Time 1407	Other:	Cond	Water Color: _ Sediment Desc If yes: Time: iuctivity Te hos/cm 134	ription:	Volume D.O.	Oden / (Alkalinity
Sampling Time: Purging Flow Rate Did well de-wate Time 1407	Other:	Cond	Water Color: _ Sediment Desc If yes: Time: iuctivity Te hos/cm 134	tions: gra gra cription: mperature 69.9 69.6	Volume D.O.	Oden / (Alkalinity
Sampling Time: Purging Flow Rate Did well de-wate Time 1407	Other:	Conce pund	Water Color: _ Sediment Description If yes; Time: Inctivity Technos/cm 134 145 150 RATORY INFOR	tions: gra ription: mperature 69.9 69.6	Volume D.O. (mg/L)	Orp (mV)	Alkalinity (ppm)
Sampling Time: Purging Flow Rate Did well de-wate Time 1407	Other:	Conce produced to the concentration of the concentr	Water Color: _ Sediment Description If yes; Time: Inctivity Technology I J S D RATORY INFOF PRESERV. TYP	tions: gradient grad	Volume D.O. (mg/L)	Orp (mV)	Alkalinity (ppm)
Sampling Time: Purging Flow Rate Did well de-wate Time 1407 1407 1406	Other:	Conduction of the conduction o	Water Color: _ Sediment Description If yes; Time: Inctivity Technos/cm 134 145 150 RATORY INFOR	tions: gradient grad	Volume D.O. (mg/L)	Orp (mV)	Alkalinity (ppm)
Sampling Time: Purging Flow Rate Did well de-wate Time 1407 1406 SAMPLE ID	Other:	Conce produced to the concentration of the concentr	Water Color: _ Sediment Description If yes; Time: Inctivity Technology I J S D RATORY INFOF PRESERV. TYP	tions: gradient grad	Volume D.O. (mg/L)	Orp (mV)	Alkalinity (ppm)
Sampling Time: Purging Flow Rate Did well de-wate Time 1407 1406 SAMPLE ID	Other:	Conce produced to the concentration of the concentr	Water Color: _ Sediment Description If yes; Time: Inctivity Technology I J S D RATORY INFOF PRESERV. TYP	tions: gradient grad	Volume D.O. (mg/L)	Orp (mV)	Alkalinity (ppm)

9/97-Reldet.fm

acility #_705	co# 5430	A	Job#:	1801 9140			
.ddress: <u>19 3</u>	5 Washingto	n Ave.	Date:				
ity:Sar	5 Washingto Leandre, C	<u>a</u>	. Sample	r: Vart			
Well ID	U-7_	Well Co	ndition:	ok_			
Vell Diameter		Hydroca Thickne	<i>F3</i> . E 29	Amo	unt Bailed		<u>(041)</u>
otal Depth	37.76 tr 30:10 tr	Volume Factor	2" = 0.17	6" = 1.50	= 0.38 12'	4" = ' = 5.80	0.66
Depth to Water		r 8:17 =	X 3 (case vo	olume) = Estim	ated Purge	Volume:	F 0 (0ml.)
Purge Equipment:	Disposable Bailer Bailer Stack Suction Grundfos Other:	_	Sampling Equipment:	Bailer			
	1215 1235 te:i ar		eather Conditions ater Color: ediment Descript yes; Time:	100: 50%		dor: clia	(oak
Time	Volume pH (gal.)	Conduc prohos	vem 4 69	١	D.O. mg/L)	ORP (mV)	Alkalinity (ppm)
12.18	1.6 4 7.76		50 be	9 6 — –			
		LABORA	TORY INFORMA	TION	······································	ANALY	
SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORAT SEQUO		PHG BTEX	
4-7	5 x VDA VIAL	4	Нес			+ 8010	
	1	1					

																<u></u> U	<u> [uii</u>	1-0	1-1	<u> /uə</u>	DUY IN	JUVIU
	 		Foolii	ty Numbe	r UN	OCAL SS#	5430						(Conlact	(Name)	M	· De	<u> ۱</u>	Deu	77.10		
			Fooilli	ly Address	1935	WASHING'	<u> </u>	Æ S	AN L	EANDR	o, c	-			(Phone)		<u>125)</u>	277	<u> 238</u>	4	<u> </u>	
1						180107.8					<u> </u>			_	Seg		Ana.	Lytic	al		-	
TOSC	0	•				-Ryan Inc					0/50	- L	abarator	y Releas	e Numb	er	1500	10.	, 7	50	jian	
Touce Marketing (2000 Crow Caryon	PL, Stat. 400	1				Court, S			ublir	ı,_CA	9456	т. s	emples :	Collecte	d by (N 9)41	om•) (⊘ /	1/00	<u>. 1 /(_R</u>	<u>. </u>	<u>/</u>	100	
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	<u> </u>	<u></u>	1 _	(PI	hone) <u>) 11</u>	0-551-75 <u>:</u>)(Fox	Number)210-	-331-	7000	_ <u> </u>			7		->-				DO NOT	n T T T
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Ž E	Sample Numb	8	≺υ			<u>}</u>	or No	875X W.		\$	할	٤	ě	5	23					1		
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Sample Number	8 .	Number	N Kottk 1 1 of t	e de	IFm•	• фитр	1	TPH Gas +	TPH Dissel (B015)	Oil and Gra (\$520)	Purpeable Halocarbora (8010)	Purgeable (8020)	Purgedble Organics (8240)	Extractable Organica (8270)	Metals Cd.Cr.Pb.Zn,Ni (ICAP or AA)	8010					Remarks	•
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4-3	04	5	~	7	1343	પ	4	X		<u> </u>		ļ	<u> </u>	<u> </u>	<u> </u>	X		 	 	-		
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Matt he	141		1 *	-R Inc		1/4/01			Nen		De la	_			$\overline{}$	461					4 Hru. 9 Maa	
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																- Art				I .	Doye	
Reilingulehed By	(Signature)		Org	ponization		Date/Time	R●	oleved F	or Lobe	oratory	By (Sign	ature)			Det	ø/Time		f		Yu C	ontracted	

1551 Industrial Road San Carlos, CA 94070 (650) 232-9600 FAX (650) 232-9612 www.sequoialabs.com

19 September, 2001

Deanna Harding Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J

GETTLER-RYAN INC. GENERAL CONTRACTORS

RE: Tosco(1)

Dublin, CA 94568

Sequoia Report: L109010

Enclosed are the results of analyses for samples received by the laboratory on 09/04/01 18:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Sporya K. Pelt

Latonya Pelt Project Manager

CA ELAP Certificate #2360



1551 Industrial Road San Carlos CA 94070 (650) 232-9600 FAX (650) 232-9612 www.sequoialabs.com

Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Unocal SS#5430, San Leandro, CA

Project Manager: Deanna Harding

Reported: 09/19/01 07:28

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-LB	L109010-01	Water	09/04/01 00:00	09/04/01 18:05
U-I	L109010-02	Water	09/04/01 13:05	09/04/01 18:05
U-2	L109010-03	Water	09/04/01 10:43	09/04/01 18:05
U-3	L109010-04	Water	09/04/01 13:43	09/04/01 18:05
U-4	L109010-05	Water	09/04/01 11:20	09/04/01 18:05
U-5	L109010-06	Water	09/04/01 11:55	09/04/01 18:05
U-6	L109010-07	Water	09/04/01 14:20	09/04/01 18:05
U-7	L109010-08	Water	09/04/01 12:35	09/04/01 18:05

Sequoia Analytical - San Carlos

Gotonya K. Pett

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Gettler-Ryan/Geostrategies(1)

Project: Tosco(1)

Project Manager: Deanna Harding

Project Number: Unocal SS#5430, San Leandro, CA

Reported: 09/19/01 07:28

6747 Sierra Court, Suite J Dublin CA, 94568

> Total Purgeable Hydrocarbon (C6-C12) by EPA 8015M and BTEX/MTBE by EPA 8021B Sequoia Analytical - San Carlos

	360	quota An	alytica	- San C	, aj jus				
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Note
TB-LB (L109010-01) Water S	ampled: 09/04/01 00:00	Received: (09/04/01	18:05					
Purgeable Hydrocarbons as Gaso	line ND	50	ug/l	1	1090038	09/12/01	09/12/01	DHS LUFT	
Benzene	ND	0.50	77	tr	tr .	н	11	11	
Toluene	ND	0.50	"	**	11	"	M	n	
Ethylbenzene	ND	0.50	н	н	n	**	H	H	
Xylenes (total)	ND	0.50	n	н	H	77		π	
Methyl tert-butyl ether	ND	5.0	H	н	u		tt	*	
Surrogate: a,a,a-Trifluorotoluene	!	104 %	70-	130	H	**	"		
U-1 (L109010-02) Water Sam	pled: 09/04/01 13:05 R	eceived: 09/(04/01 18:	05	<u> </u>				
Purgeable Hydrocarbons as Gaso	line ND	50	ug/l	ì	1090038	09/12/01	09/13/01	DHS LUFT	
Benzene	ND	0.50	**	Ħ	н	•	₩	*	
Toluene	ND	0.50	**	Ħ	•	**			
Ethylbenzene	ND	0.50	H	**	₩	h	11	11	
Xylenes (total)	ND	0.50	H	n	н	н		h	
Methyl tert-butyl ether	ND	5.0	N	Ħ	11		n	D	
Surrogate: a,a,a-Trifluorotoluene	· · · · · ·	105 %	70	-130	н	**	•	"	
U-2 (L109010-03) Water Sam	pled: 09/04/01 10:43 R	eceived: 09/(04/01 18:	05			· / ·		
Purgeable Hydrocarbons as Gaso		50	ug/l	1	1090038	09/12/01	09/13/01	DHS LUFT	
Benzene	ND	0.50	н	n		n	n	Ħ	
Toluene	0.69	0.50	11	•	11	*	Ħ		
Ethylbenzene	ND	0.50	п	**	н	u	tr	17	
Xylenes (total)	ND	0.50	h	а	It	н	Ħ	11	
Methyl tert-butyl ether	ND	5.0		н	-		н	н	
Surrogate: a,a,a-Trifluorotoluene	7	109 %	70	-130	**	77	п	Ħ	



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J

Dublin CA, 94568

Project: Tosco(1)

Project Number: Unocal SS#5430, San Leandro, CA

Project Manager: Deanna Harding

Reported: 09/19/01 07:28

Total Purgeable Hydrocarbon (C6-C12) by EPA 8015M and BTEX/MTBE by EPA 8021B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
U-3 (L109010-04) Water Sampled: 09	9/04/01 13:43	Received: 09/0	4/01 18:0	05	·				
Purgeable Hydrocarbons as Gasoline	5400	1000	ug/l	20	1090041	09/13/01	09/13/01	DHS LUFT	P-02
Benzene	110	10	н	"	u,	17		н	
Toluene	ND	10	n	n	**	19	11	R	
Ethylbenzene	800	10	н	н	H	н	n	н	
Xylenes (total)	220	10	H	Ħ	п	н	**	*	
Methyl tert-butyl ether	ND	100	н	н	ii .	н	π		
Surrogate: a,a,a-Trifluorotoluene		85.0 %	70-	130	r	"	*	n	
U-4 (L109010-05) Water Sampled: 05	9/04/01 11:20	Received: 09/0	04/01 18:0	05					
Purgeable Hydrocarbons as Gasoline	ND	50	ug/l	3	1090038	09/12/01	09/13/01	DHS LUFT	
Benzene	ND	0.50	77	ħ	11	H	n	11	
Toluene	ND	0.50		**	н	70	*	н	
Ethylbenzene	ND	0.50		li	H	•	n	н	
Xylenes (total)	ND	0.50	11	H	II .	11	н	н	
Methyl tert-butyl ether	ND	5.0	н	"	•	Ħ	h	17	
Surrogate: a,a,a-Trifluorotoluene		102 %	70-	-130	"	Ħ	n	"	
U-5 (L109010-06) Water Sampled: 09	9/04/01 11:55	Received: 09/0	04/01 18:	05					
Purgeable Hydrocarbons as Gasoline	ND	50	ug/l	1	1090041	09/13/01	09/13/01	DHS LUFT	
Benzene	ND	0.50	H	*	h	**	#	91	
Toluene	ND	0.50	н	**	H	Ħ	Ħ	tı	
Ethylbenzene	ND	0.50	P	п	**		II.	11	
Xylenes (total)	ND	0.50	•	н	-	w	*	H	
Methyl tert-butyl ether	ND	5.0	*	н		Ħ	n	H	
Surrogate: a,a,a-Trifluorotoluene		110%	70-	-130	,,	"	"	**	



Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J

Project: Tosco(1)

Project Number: Unocal SS#5430, San Leandro, CA

Reported: 09/19/01 07:28

Dublin CA, 94568

Project Manager: Deanna Harding

Total Purgeable Hydrocarbon (C6-C12) by EPA 8015M and BTEX/MTBE by EPA 8021B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
U-6 (L109010-07) Water Sampled: 09	/04/01 14:20	Received: 09/0	4/01 18:0	05			<u></u>		
Purgeable Hydrocarbons as Gasoline	8000	2500	սջ/I	50	1090041	09/13/01	09/14/01	DHS LUFT	P-02
Benzene	200	25	*	н	Ħ	ŧŧ	*	n	
Toluene	ND	25	#	н	π	77	u	H	
Ethylbenzene	1100	25	-	n	#	•	11	Ħ	
Xylenes (total)	250	25	*	н	=	u	н	11	
Methyl tert-butyl ether	ND	250	н	Ħ	H	10	и	n	
Surrogate: a,a,a-Trifluorotoluene		98.0 %	70-	130	**	n	n	"	
U-7 (L109010-08) Water Sampled: 09	/04/01 12:35	Received: 09/0	4/01 18:	05			, , , , ,		
Purgeable Hydrocarbons as Gasoline	ND	50	ug/l	1	1090042	09/13/01	09/14/01	DHS LUFT	
Benzene	ND	0.50		**	H	•	**	n	
Toluene	ND	0.50	н	**	*	u	11	n	
Ethylbenzene	ND	0.50	н	п	*	11	h	#	
Xylenes (total)	ND	0.50	и	H	*	H	Ħ	n	
Methyl tert-butyl ether	ND	5.0	br .	. н	**	н			
Surrogate: a,a,a-Trifluorotoluene		88.8 %	70-	130	"	п	"	#	



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J

Dublin CA, 94568

Project: Tosco(1)

Project Number: Unocal SS#5430, San Leandro, CA

Project Manager: Deanna Harding

Reported: 09/19/01 07:28

Volatile Organic Compounds by EPA Method 8021B

Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
U-1 (L109010-02) Water	Sampled: 09/04/01 13:05	Received: 09/0	4/01 18:0)5					
Freon 113	ND	1.0	ug/1]	1090047	09/13/01	09/13/01	EPA 8021B	
Bromodichloromethane	ND	0.50	*	н	n	H	(4		
Bromoform	ND	0.50	n	u	**	н	•	*	
Bromomethane	ND	1.0	#	n	Ħ	P	"	0	
Carbon tetrachloride	ND	0.50	11	*	u	#1	Ħ	И	
Chlorobenzene	ND	0.50	n	**	H	. 17	H	н	
Chloroethane	ND	1.0	н	Ħ	н	н	#	tr	
Chloroform	ND	0.50	u	n	**	"	-	*	
Chloromethane	ND	1.0	tr .	n		77	11	#	
Dibromochloromethane	ND	0.50	*	п	Ħ	H	и	n	
1,2-Dibromoethane (EDB)	ND	0.50	*	**	11	**	н	H	
1.3-Dichlorobenzene	ND	0.50	*	u	н	n	**	•	
1,4-Dichlorobenzene	ND	0.50	**	11	п	н	Ħ	P	
1,2-Dichlorobenzene	ND	0.50	11	н	Ħ	u	**	Ħ	
1,1-Dichloroethane	ND	0.50	н		₩	*	11	H	
1,2-Dichloroethane	2.4	0.50	н		*	11	н	¥.	
1,1-Dichloroethene	ND	0.50	n	•	**	n		₩	
cis-1,2-Dichloroethene	ND	0.50	77	H	H	н	**	•	
trans-1,2-Dichloroethene	ND	0.50		**	Ħ	n	n	n	
1,2-Dichloropropane	ND	0.50	n	и		Ħ	11	H	
cis-1,3-Dichloropropene	ND	0.50		н	•	u	n		
trans-1,3-Dichloropropene	ND	0.50			•	н	n		
Methylene chloride	ND	5.0	н	**	п	Ħ	#	*	
1,1,2,2-Tetrachloroethane	ND	0.50	н	₩	n	n	u	Ħ	
Tetrachloroethene	ND	0.50	Ħ		n	n	11	п	
1,1,1-Trichloroethane	ND	0.50	#	н	n	ч	Ħ	Ħ	
1,1,2-Trichloroethane	ND	0.50	**	Ħ	*	19	*	•	
Trichloroethene	ND	0.50		н	**	н	u		
Trichlorofluoromethane	ND	0.50		н	**	H	Ä		
Vinyl chloride	ND	1.0		н		n	*	*	
Surrogate: 1-Chloro-2-fluor		88.0 %	70	-130	"	Ir	n.	u	



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J

Dublin CA, 94568

Project: Tosco(1)

Project Number: Unocal SS#5430, San Leandro, CA

Project Manager: Deanna Harding

Reported: 09/19/01 07:28

Volatile Organic Compounds by EPA Method 8021B

Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
U-3 (L109010-04) Water S	Sampled: 09/04/01 13:43	Received: 09/0	4/01 18:	05					
Freon 113	ND	10	ug/l	10	1090047	09/14/01	09/14/01	EPA 8021B	
Bromodichloromethane	ND	5.0	11	Ħ	**	•	h	*	
Bromoform	ND	5.0	**	. 0	11	n	Ħ	*	
Bromomethane	ND	10	н	11	11	11	•	Ħ	
Carbon tetrachloride	ND	5.0	h	н	"	H		и	
Chlorobenzene	ND	5.0	ш	II	#	D	Ħ	Ħ	
Chloroethane	ND	10	w	Ħ	•	Ħ	н	#	
Chloroform	ND	5.0	WT .	•		**	•	n	
Chloromethane	ND	10	n	**	it	н	₩	n	
Dibromochloromethane	ND	5.0	*	11	ħ	Ħ	**	п	
1,2-Dibromoethane (EDB)	ND	5.0	п	н		"	н		
1,3-Dichlorobenzene	ND	5.0	Ħ		*	*	ч	•	
1.4-Dichlorobenzene	ND	5.0	n	n	n	"	*	n	
2-Dichlorobenzene	ND	5.0	н	77	11	н	n	н	
i.1-Dichloroethane	ND	5.0	**		n	Ħ	ti	H .	
1,2-Dichloroethane	ND	5.0	n	n	n	•	It	W	
1,1-Dichloroethene	ND	5.0	Ħ	n	*	*	•	h	
cis-1,2-Dichloroethene	ND	5.0	п	Ħ		Ħ	*	"	
trans-1,2-Dichloroethene	ND	5.0	H	=	11	H	,,	Ħ	
1,2-Dichloropropane	ND	5.0		n	н		Ħ	H	
cis-1,3-Dichloropropene	ND	5.0	*	11	*		11	•	
trans-1,3-Dichloropropene	ND	5.0	n	н	Ħ	Ħ	•	Ħ	
Methylene chloride	ND	50	11	m	n	п	•	н	
1,1,2,2-Tetrachloroethane	ND	5.0	Ħ	•	н	11	M	•	
Tetrachloroethene	ND		B	n	H	π	n	•	
1,1,1-Trichloroethane	ND		*	11	n	H	*	n	
1,1,2-Trichloroethane	ND		-	Ħ	*	n	**	н	
Trichloroethene	ND		n	III	n	Ħ	M	H.	
Trichlorofluoromethane	ND			m	11	n	н	n	
Vinyl chloride	ND		"	n	н		P		
Surrogate: 1-Chloro-2-fluoro		82.8 %	70	D-130	**	"	#	"	





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Unocal SS#5430, San Leandro, CA

Project Manager: Deanna Harding

Reported: 09/19/01 07:28

Volatile Organic Compounds by EPA Method 8021B Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Aпalyzed	Method	Notes
U-7 (L109010-08) Water	Sampled: 09/04/01 12:35	Received: 09/0	4/01 18:0)5					
Freon 113	ND	1.0	ug/l	1	1090047	09/14/01	09/14/01	EPA 8021B	
Bromodichloromethane	ND	0.50	n	•	•	n	n	и	
Bromoform	ND	0.50	n	**	•	11	₩	n	
Bromomethane	ND	1.0	H	**	11	n	•	•	
Carbon tetrachloride	0.60	0.50	Ħ	н	H	H	11	•	
Chlorobenzene	ND	0.50	**	n	н		Ħ	*	
Chloroethane	ND	1.0	h	#	**	*		11	
Chloroform	ND	0.50	н	n	п	u	H*	n	
Chloromethane	ND	1.0	n		•	11	*	Ħ	
Dibromochloromethane	ND	0.50	n	*	*	11	*	n	
1,2-Dibromoethane (EDB)	ND	0.50	n	ħ	•	H	11	Ħ	
1,3-Dichlorobenzene	ND	0.50	•	n	п	•	#	•	
1,4-Dichlorobenzene	ND	0.50	₩	**	ti	*	Ħ	*	
1,2-Dichlorobenzene	ND	0.50	**	11	н	Ħ	н	n	
1,1-Dichloroethane	ND	0.50	TP	н	н		u u	11	
1,2-Dichloroethane	ND	0.50	**	н		11		п	
1,1-Dichloroethene	ND	0.50	tr	H		н	•	н	
cis-1,2-Dichloroethene	ND	0.50		Ħ	tt t	H	•	H	
trans-1,2-Dichloroethene	ND	0.50	10		"	*	ŧı	"	
1,2-Dichloropropane	ND	0.50	11	•	91	*		m	
cis-1,3-Dichloropropene	ND	0.50	11		Ħ	Ħ	11	Ħ	
trans-1,3-Dichloropropene	ND	0.50	n	41	н		n	•	
Methylene chloride	ND	5.0	n	**	H	**	N	11	
1,1,2,2-Tetrachloroethane	ND	0.50	н	4	P.	11	**	h	
Tetrachloroethene	ND	0.50	*	"		N	7	n	
1,1,1-Trichloroethane	ND	0.50	н	11	n	N	*		*
1,1,2-Trichloroethane	ND	0.50	ħ	В	**	D	u	n	
Trichloroethene	ND	0.50	н	n	77	*	*		
Trichlorofluoromethane	ND	0.50	н	**	*		"	n	
Vinyl chloride	ND	1.0	19	ч	ħ	n	11	n	
Surrogate: 1-Chloro-2-fluo	robenzene	88.1 %	70-	130	"	"	"	"	



Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Unocal SS#5430, San Leandro, CA

Project Manager: Deanna Harding

Reported: 09/19/01 07:28

Total Purgeable Hydrocarbon (C6-C12) by EPA 8015M and BTEX/MTBE by EPA 8021B - Quality Control Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1090038 - EPA 5030B (P/T)										
Blank (1090038-BLK1)				Prepared	& Analyze	ed: 09/12/0)1			
Purgeable Hydrocarbons as Gasoline	ND	50	ug/l							
Benzene	ND	0.50	н							
Toluene	ND	0.50	H							
Ethylbenzene	ND	0.50	Ħ							
Xylenes (total)	ND	0.50	*							
Methyl tert-butyl ether	ND	5.0	IF							
Surrogate: a,a,a-Trifluorotoluene	9.53		п	10.0		95,3	70-130			
LCS (1090038-BS1)				Prepared	& Analyze	ed: 09/12/)1			
Benzene	7.88	0.50	ug/I	10.0		78.8	70-130			
Toluene	7.80	0.50	*	10.0		78.0	70-130			
Ethylbenzene	8.05	0.50	n	10.0		80.5	70-130			
Nylenes (total)	24.3	0.50		30.0		81.0	70-130			
Surrogate: a,a,a-Trifluorotoluene	11.1		"	10.0	•	111	70-130			
LCS (1090038-BS2)				Prepared	& Analyz	ed: 09/12/	01			
Purgeable Hydrocarbons as Gasoline	250	50	ug/l	250		100	70-130			
Surrogate: a,a,a-Triftuorotoluene	12.4		*	10.0		124	70-130			
Matrix Spike (1090038-MS1)	So	orce: L10900	Prepared & Analyzed: 09/12/01							
Purgeable Hydrocarbons as Gasoline	247	50	ug/l	250	ND	98.8	60-140			
Surrogate: a,a,a-Trifluorotoluene	11.0		0	10.0		110	70-130		•	-
Matrix Spike Dup (1090038-MSD1)	So	urce: L10900	1-08	Prepared	& Analyz	ed: 09/12/	01		·· = ·	
Purgeable Hydrocarbons as Gasoline	258	50	ug/l	250	ND	103	60-140	4.36	25	
Surrogate: a,a,a-Trifluorotoluene	10.8		"	10.0		108	70-130			





Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568

Project: Tosco(1)

Project Number: Unocal SS#5430, San Leandro, CA

Project Manager: Deanna Harding

Reported: 09/19/01 07:28

Total Purgeable Hydrocarbon (C6-C12) by EPA 8015M and BTEX/MTBE by EPA 8021B - Quality Control Sequoia Analytical - San Carlos

Arrahma	Result	Reporting	1 lmits	Spike	Source	0/BEC	%REC	DDD	RPD	Nlas
Analyte	Resuit	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch 1090041 - EPA 5030B (P/T)					==					
Blank (1090041-BLK1)				Prepared	& Analyz	ed: 09/13/	01			
Purgeable Hydrocarbons as Gasoline	ND	50	ug/l							
Benzene	ND	0.50	*							
Toluene	ND	0.50	11							
Ethylbenzene	ND	0.50	Ħ							
Xylenes (total)	ND	0.50	*							
Methyl tert-butyl ether	ND	5.0	Ħ							
Surrogate: a,a,a-Trifluorotoluene	8.64		"	10.0		86.4	70-130			
LCS (1090041-BS1)				Prepared	& Analyz	ed: 09/13/	01			
Benzene	8.22	0.50	ug/l	10.0		82.2	70-130			
Toluene	8.22	0.50	11	10.0		82.2	70-130			
Ethylbenzene	8.43	0.50	н	10.0		84.3	70-130			
Xylenes (total)	26.0	0.50	н	30.0		86.7	70-130			
Surrogate: a,a,a-Trifluorotoluene	10.7		"	10.0		107	70-130			
LCS (1090041-BS2)				Prepared	& Analyz	ed: 09/13/	01			
Purgeable Hydrocarbons as Gasoline	264	50	ug/l	250		106	70-130			
Surrogate: a,a,a-Trifluorotoluene	10.7		n	10.0		107	70-130			
Matrix Spike (1090041-MS1)	So	urce: L10901	2-02	Prepared	& Analyz	ed: 09/13/	' 01			
Benzene	9.61	0.50	ug/l	10.0	ND	96.1	60-140	•		
Toluene	9.59	0.50	н	10.0	ND	95.9	60-140			
Ethylbenzene	10.1	0.50	**	10.0	ND	101	60-140			
Xylenes (total)	30.6	0.50	п	30.0	ND	102	60-140			
Surrogate: a,a,a-Trifluorotoluene	10.4		n	10.0	*	104	70-130	·		
Matrix Spike Dup (1090041-MSD1)	Source: L109012-02			Prepared	& Analyz	ed: 09/13/	/01			
Benzene	10.3	0.50	ug/l	10.0	ND	103	60-140	6.93	25	
Toluene	10.3	0.50	11	10.0	ND	103	60-140	7.14	25	
Ethylbenzene	10.6	0.50	10	10.0	ND	106	60-140	4.83	25	
Xylenes (total)	32.4	0.50	,,	30.0	ND	108	60-140	5.71	25	
Surrogate: a,a,a-Trifluorotoluene	11.0		"	10.0		110	70-130		- · ·-	



Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Unocal SS#5430, San Leandro, CA

Project Manager: Deanna Harding

Reported: 09/19/01 07:28

Total Purgeable Hydrocarbon (C6-C12) by EPA 8015M and BTEX/MTBE by EPA 8021B - Quality Control Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1090042 - EPA 5030B (P/T)		<u> </u>								
Blank (1090042-BLK1)				Prepared	& Analyze	d: 09/13/	01	-		
Purgeable Hydrocarbons as Gasoline	ND	50	ug/l							
Benzene	ND	0.50	Ħ							
Toluene	ND	0.50	H							
Ethylbenzene	ND	0.50	h							
Xylenes (total)	ND	0.50	**							
Methyl tert-butyl ether	ND	5.0	U							
Surrogate: a,a,a-Trifluorotoluene	9.36		n	10.0		93.6	70-130			
LCS (1090042-BS1)				Prepared	& Analyzo	ed: 09/13/	01			
Benzene	8.43	0.50	ug/l	10,0		84.3	70-130			
Toluene	8.44	0.50	н	10.0		84.4	70-130			
Ethylbenzene	8.69	0.50	**	10.0		86.9	70-130			
Xylenes (total)	25.7	0.50	₩.	30.0		85.7	70-130			
Surrogate: a,a,a-Trifluorotoluene	9.01		"	10.0		90.1	70-130			
LCS (1090042-BS2)				Prepared	& Analyz	ed: 09/13/	01			
Purgeable Hydrocarbons as Gasoline	254	50	ug/l	250		102	70-130			
Surrogate: a,a,a-Trifluorotoluene	9.96		"	10.0		99.6	70-130			
Matrix Spike (1090042-MS1)	So	urce: L10901	1-02	Prepared	& Analyz	ed: 09/13/	01			
Benzene	9.73	0.50	ug/l	10.0	ND	97.3	60-140			•
Toluene	9.86	0.50	**	10.0	ND	98.6	60-140			
Ethylbenzene	10.0	0.50	11	10.0	ND	100	60-140			
Xylenes (total)	29.8	0.50	H	30.0	ND	99.3	60-140			
Surrogate: a,a,a-Trifluorotoluene	9.04		#	10.0		90.4	70-130			
Matrix Spike Dup (1090042-MSD1)	Source: L109011-02			Prepared	& Analyz	ed: 09/13/	01			·
Benzene	8.39	0.50	ug/l	10.0	ND	83.9	60-140	14.8	25	
Toluene	8.50	0.50	11	10.0	ND	85.0	60-140	14.8	25	
Ethylbenzene	8.70	0.50	ч	10.0	ND	87.0	60-140	13.9	25	
Xylenes (total)	25.6	0.50	"	30.0	ND	85.3	60-140	15.2	25	
Surrogate: a,a,a-Trifluorotoluene	8.50		"	10.0		85.0	70-130			



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Unocal SS#5430, San Leandro, CA

Project Manager: Deanna Harding

Reported: 09/19/01 07:28

Volatile Organic Compounds by EPA Method 8021B - Quality Control Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1090047 - EPA 5030B (P/T)										
Blank (1090047-BLK1)				Prepared	& Analyze	ed: 09/13/0)1			
Freon 113	ND	1.0	ug/l					,		
Bromodichloromethane	ND	0.50	41							
Bromoform	ND	0.50								
Bromomethane	ND	1.0	n							
Carbon tetrachloride	ND	0.50	Ħ							
Chlorobenzene	ND	0.50	P							
Chloroethane	ND	1.0	17							
Chloroform	ND	0.50	n							
Chloromethane	ND	1.0	n							
Dibromochloromethane	ND	0.50	11							
1,2-Dibromoethane (EDB)	ND	0.50	44							
1,3-Dichlorobenzene	ND	0.50	Ħ							
1,4-Dichlorobenzene	ND	0.50	n.							
1,2-Dichlorobenzene	ND	0.50	н							
1,1-Dichloroethane	ND	0.50	н							
,2-Dichloroethane	ND	0.50	н							
1,1-Dichloroethene	ND	0.50	н							
cis-1,2-Dichloroethene	ND	0.50	H							
rans-1,2-Dichloroethene	ND	0.50	II.							
1,2-Dichloropropane	ND	0.50	**							
cis-1,3-Dichloropropene	ND	0.50	#							
trans-1,3-Dichloropropene	ND	0.50	11				•			
Methylene chloride	ИD	5.0	#1							
1,1,2,2-Tetrachloroethane	ND	0.50	π							
Tetrachloroethene	ND	0.50	#							
1,1,1-Trichloroethane	ND	0.50								
1,1,2-Trichloroethane	ND	0.50	0							
Prichloroethene	ND	0.50	н							
Frichlorofluoromethane	ND	0.50								
Vinyl chloride	ND	1.0	e						•	
Benzene	ND	0.50	*							
Ethylbenzene	ND	0.50	н							
Toluene	ND	0.50								
Total Xylenes	ND	0.50	*							
Surrogate: 1-Chloro-2-fluorobenzene	8.23		п	10.0		82.3	70-130			



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J

Dublin CA, 94568

Project: Tosco(1)

Project Number: Unocal SS#5430, San Leandro, CA

Project Manager: Deanna Harding

Reported: 09/19/01 07:28

Volatile Organic Compounds by EPA Method 8021B - Quality Control Sequoia Analytical - San Carlos

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1090047 - EPA 5030B (P/T)										
Blank (1090047-BLK2)				Prepared	& Analyzo	ed: 09/14/0)1			
Freon 113	ND	1.0	ug/l							
Bromodichloromethane	ND	0.50	77							
Bromoform	ND	0.50	#							
3romomethane	ND	1.0	п							
Carbon tetrachloride	ND	0.50	•							
Chlorobenzene	ND	0.50	u							
Chloroethane	ND	1.0	11							
Chloroform	ND	0.50	Ħ							
Chloromethane	ND	1.0	Ħ							
Dibromochloromethane	ND	0.50	и							
1,2-Dibromoethane (EDB)	ND	0.50	Ħ							
,3-Dichlorobenzene	ND	0.50	Ħ							
,4-Dichlorobenzene	ND	0.50	H							
,2-Dichlorobenzene	ND	0.50	0							
,1-Dichloroethane	ND	0.50								
,2-Dichloroethane	ND	0.50	я							
,1-Dichloroethene	ND	0.50	•							
is-1,2-Dichloroethene	ND	0.50	*							
rans-1,2-Dichloroethene	ND	0.50								
,2-Dichloropropane	ND	0.50	**							
is-1,3-Dichloropropene	ND	0.50	#							
rans-1,3-Dichloropropene	ND	0.50	н							
Methylene chloride	ND	5.0	Ħ							
,1,2,2-Tetrachloroethane	ND	0.50	Ħ							
Tetrachloroethene	ND	0.50	n							
,1,1-Trichloroethane	ND	0.50	н							
,1,2-Trichloroethane	ND	0.50	н							
Prichloroethene	ND	0.50	н							
richlorofluoromethane	ND	0.50	н						•	
/inyl chloride	ND	1.0						-		
Benzene	ND	0.50								
Ethylbenzene	ND	0.50	*							
Foluene	ND	0.50								
Total Xylenes	ND	0.50	*							
Surrogate: 1-Chloro-2-fluorobenzene	8.78			10.0		87.8	70-130			



Gettler-Ryan/Geostrategies(1) 6747 Sierra Court, Suite J Dublin CA, 94568 Project: Tosco(1)

Project Number: Unocal SS#5430, San Leandro, CA

Project Manager: Deanna Harding

Reported: 09/19/01 07:28

Volatile Organic Compounds by EPA Method 8021B - Quality Control Sequoia Analytical - San Carlos

Batch 1090047 - EPA 5030B (P/T)	Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chlorobenzene 10.3 0.50 ug/l 10.0 103 70-130 1,1-Dichloroethene 9.83 0.50 " 10.0 98.3 70-130 17-chloroethene 9.83 0.50 " 10.0 98.3 70-130 17-chloroethene 9.83 0.50 " 10.0 98.3 70-130 17-chloroethene 11.0 0.50 " 10.0 100 70-130 17-chloroethene 10.9 0.50 " 10.0 100 70-130 17-chloroethene 10.9 0.50 " 10.0 100 70-130 17-chloroethene 10.0 0.50 " 10.0 100 70-130 112	Batch 1090047 - EPA 5030B (P/T)	,									
1,1-Dichloroethene	LCS (1090047-BS1)			•	Prepared	& Analyz	ed: 09/13/	01			
Trichloroethene 9.83 0.50 " 10.0 98.3 70-130 Benzene 11.0 0.50 " 10.0 110 70-130 Toluene 10.9 0.50 " 10.0 109 70-130 Surrogate: 1-Chloro-2-fluorobenzene 10.1 " 10.0 101 70-130 LCS (109047-BS2) Prepared & Analyzed: 09/14/01 Chlorobenzene 11.4 0.50 ug/l 10.0 114 70-130 Trichloroethene 10.0 0.50 " 10.0 100 70-130 Trichloroethene 11.2 0.50 " 10.0 100 70-130 Trichloroethene 11.2 0.50 " 10.0 112 70-130 Toluene 11.2 0.50 " 10.0 97.5 70-130 Matrix Spike (1090047-MS1) Source: L109010-02 Prepared & Analyzed: 09/13/01 Chloroethene 9.62 0.50 ug/l 10.0 ND 96.2	Chlorobenzene	10.3	0.50	ug/l	10.0		103	70-130			
Benzene	1,1-Dichloroethene	9.83	0.50	Ħ	10.0		98.3	70-130			
Toluene 10.9 0.50 " 10.0 109 70-130 Surrogate: 1-Chloro-2-fluorobenzene 10.1 " 10.0 101 70-130 LCS (1090047-BS2) Prepared & Analyzed: 09/14/01 Chlorobenzene 11.4 0.50 ug/l 10.0 114 70-130 1,1-Dichloroethene 10.0 0.50 " 10.0 100 70-130 Trichloroethene 10.0 0.50 " 10.0 100 70-130 Benzene 11.2 0.50 " 10.0 112 70-130 Toluene 11.2 0.50 " 10.0 112 70-130 Surrogate: 1-Chloro-2-fluorobenzene 9.75 " 10.0 112 70-130 Matrix Spike (1090047-MS1) Source: L109010-02 Prepared & Analyzed: 09/13/01 Chlorobenzene 9.62 0.50 ug/l 10.0 ND 96.2 60-140 1,1-Dichloroethene 7.44 0.50 " 10.0 ND 96.2 60-140 Surrogate: 1-Chloro-2-fluorobenzene 10.3 " 10.0 ND 74.4 60-140 Matrix Spike Dup (1090047-MSD1) Source: L109010-02 Prepared & Analyzed: 09/13/01 Chlorobenzene 9.03 0.50 ug/l 10.0 ND 90.3 60-140 6.33 25 1,1-Dichloroethene 8.22 0.50 " 10.0 ND 90.3 60-140 6.33 25 1,1-Dichloroethene 8.22 0.50 " 10.0 ND 90.3 60-140 0.122 25 Trichloroethene 7.60 0.50 " 10.0 ND 76.0 60-140 0.122 25 Trichloroethene 7.60 0.50 " 10.0 ND 76.0 60-140 0.122 25	Trichloroethene	9.83	0.50		10.0		98.3	70-130			
No. 10.0 101 70-130 10.0 101 70-130 10.0 101 70-130 1.0 10.0 101 70-130 1.0	Benzene	11.0	0.50	•	10.0		110	70-130			
Chiorobenzene	Toluene	10.9	0.50	Ħ	10.0		109	70-130			
Chlorobenzene	Surrogate: 1-Chloro-2-fluorobenzene	10.1		P	10.0		101	70-130			•
1,1-Dichloroethene 10.0 0.50 " 10.0 100 70-130 Trichloroethene 10.0 0.50 " 10.0 100 70-130 Benzene 11.2 0.50 " 10.0 112 70-130 Toluene 11.2 0.50 " 10.0 112 70-130 Surrogate: 1-Chloro-2-fluorobenzene 9.75 " 10.0 97.5 70-130 Matrix Spike (1090047-MS1) Source: L109010-02 Prepared & Analyzed: 09/13/01 Chloroethene 9.62 0.50 ug/l 10.0 ND 96.2 60-140 1,1-Dichloroethene 8.23 0.50 " 10.0 ND 82.3 60-140 Trichloroethene 7.44 0.50 " 10.0 ND 74.4 60-140 Surrogate: 1-Chloro-2-fluorobenzene 10.3 " 10.0 ND 74.4 60-140 Surrogate: 1-Chloro-2-fluorobenzene 9.03 0.50 ug/l 10.0 ND 90.3 60-140 6.33 25 1,1-Dichloroethene 8.22 0.50 " 10.0 ND 90.3 60-140 6.33 25 Trichloroethene 7.60 0.50 " 10.0 ND 76.0 60-140 0.122 25 Trichloroethene 7.60 0.50 " 10.0 ND 76.0 60-140 2.13 25	LCS (1090047-BS2)				Prepared	& Analyz	ed: 09/14/	01			
Trichloroethene 10.0 0.50 " 10.0 100 70-130 Benzene 11.2 0.50 " 10.0 112 70-130 Toluene 11.2 0.50 " 10.0 112 70-130 Surrogate: 1-Chloro-2-fluorobenzene 9.75 " 10.0 97.5 70-130 Surrogate: 1-Chloro-2-fluorobenzene 9.62 0.50 ug/l 10.0 ND 96.2 60-140 1,1-Dichloroethene 9.62 0.50 " 10.0 ND 82.3 60-140 Trichloroethene 7.44 0.50 " 10.0 ND 74.4 60-140 Surrogate: 1-Chloro-2-fluorobenzene 10.3 " 10.0 ND 74.4 60-140 Surrogate: 1-Chloro-2-fluorobenzene 10.3 " 10.0 ND 74.4 60-140 Surrogate: 1-Chloro-2-fluorobenzene 9.03 0.50 ug/l 10.0 ND 90.3 60-140 6.33 25 1,1-Dichloroethene 8.22 0.50 " 10.0 ND 82.2 60-140 0.122 25 Trichloroethene 7.60 0.50 " 10.0 ND 76.0 60-140 2.13 25	Chlorobenzene	11.4	0.50	ug/l	10.0		114	70-130			
Benzene	1,1-Dichloroethene	10.0	0.50	n	10.0		100	70-130			
Toluene 11.2 0.50 " 10.0 112 70-130 Surrogate: 1-Chloro-2-fluorobenzene 9.75 " 10.0 97.5 70-130 Matrix Spike (1090047-MS1) Source: L109010-02 Prepared & Analyzed: 09/13/01 Chlorobenzene 9.62 0.50 ug/l 10.0 ND 96.2 60-140 1,1-Dichloroethene 8.23 0.50 " 10.0 ND 82.3 60-140 Trichloroethene 7.44 0.50 " 10.0 ND 74.4 60-140 Surrogate: 1-Chloro-2-fluorobenzene 10.3 " 10.0 ND 74.4 60-140 Surrogate: 1-Chloro-2-fluorobenzene 10.3 " 10.0 ND 74.4 60-140 Chlorobenzene 9.03 0.50 ug/l 10.0 ND 90.3 60-140 6.33 25 1,1-Dichloroethene 8.22 0.50 " 10.0 ND 90.3 60-140 0.122 25 Trichloroethene 7.60 0.50 " 10.0 ND 76.0 60-140 2.13 25	Trichloroethene	10.0	0.50	Ħ	10.0		100	70-130			
Surrogate: 1-Chloro-2-fluorobenzene 9.75 " 10.0 97.5 70-130 Matrix Spike (1090047-MS1) Source: L109010-02 Prepared & Analyzed: 09/13/01 Chlorobenzene 9.62 0.50 ug/l 10.0 ND 96.2 60-140 1,1-Dichloroethene 8.23 0.50 " 10.0 ND 74.4 60-140 Trichloroethene 7.44 0.50 " 10.0 ND 74.4 60-140 Surrogate: 1-Chloro-2-fluorobenzene 10.3 " 10.0 ND 70-130 Matrix Spike Dup (1090047-MSD1) Source: L109010-02 Prepared & Analyzed: 09/13/01 Chlorobenzene 9.03 0.50 ug/l 10.0 ND 90.3 60-140 6.33 25 1,1-Dichloroethene 8.22 0.50 " 10.0 ND 82.2 60-140 0.122 25 Trichloroethene 7.60 0.50 " 10.0 ND 76.0 60-140 2.13 25	Benzene	11.2	0.50		10.0		112	70-130			
Matrix Spike (1090047-MS1) Source: L109010-02 Prepared & Analyzed: 09/13/01 Chlorobenzene 9.62 0.50 ug/l 10.0 ND 96.2 60-140 1,1-Dichloroethene 8.23 0.50 " 10.0 ND 82.3 60-140 Trichloroethene 7.44 0.50 " 10.0 ND 74.4 60-140 Surrogate: 1-Chloro-2-fluorobenzene 10.3 " 10.0 ND 70-130 Matrix Spike Dup (1090047-MSD1) Source: L109010-02 Prepared & Analyzed: 09/13/01 O9/13/01 Chlorobenzene 9.03 0.50 ug/l 10.0 ND 90.3 60-140 6.33 25 1,1-Dichloroethene 8.22 0.50 " 10.0 ND 82.2 60-140 0.122 25 Trichloroethene 7.60 0.50 " 10.0 ND 76.0 60-140 2.13 25	Toluene	11.2	0.50	#	10.0		112	70-130			
Chlorobenzene 9.62 0.50 ug/l 10.0 ND 96.2 60-140 1,1-Dichloroethene 8.23 0.50 " 10.0 ND 82.3 60-140 Trichloroethene 7.44 0.50 " 10.0 ND 74.4 60-140 Surrogate: 1-Chloro-2-fluorobenzene 10.3 " 10.0 ND 74.4 60-140 Matrix Spike Dup (1090047-MSD1) Source: L109010-02 Prepared & Analyzed: 09/13/01 Chlorobenzene 9.03 0.50 ug/l 10.0 ND 90.3 60-140 6.33 25 1,1-Dichloroethene 8.22 0.50 " 10.0 ND 82.2 60-140 0.122 25 Trichloroethene 7.60 0.50 " 10.0 ND 76.0 60-140 2.13 25	Surrogate: 1-Chloro-2-fluorobenzene	9.75	• • • • • • • • • • • • • • • • • • • •	"	10.0		97.5	70-130			
1,1-Dichloroethene 8.23 0.50 " 10.0 ND 82.3 60-140 Trichloroethene 7.44 0.50 " 10.0 ND 74.4 60-140 Surrogate: 1-Chloro-2-fluorobenzene 10.3 " 10.0 ND 70-130 Matrix Spike Dup (1090047-MSD1) Source: L109010-02 Prepared & Analyzed: 09/13/01 Chlorobenzene 9.03 0.50 ug/1 10.0 ND 90.3 60-140 6.33 25 1,1-Dichloroethene 8.22 0.50 " 10.0 ND 82.2 60-140 0.122 25 Trichloroethene 7.60 0.50 " 10.0 ND 76.0 60-140 2.13 25	Matrix Spike (1090047-MS1)	Sc	ource: L1090	10-02	Prepared	& Analyz	ed: 09/13/				
Trichloroethene 7.44 0.50 " 10.0 ND 74.4 60-140 Surrogate: 1-Chloro-2-fluorobenzene 10.3 " 10.0 ND 74.4 60-140 Matrix Spike Dup (1090047-MSD1) Source: L109010-02 Prepared & Analyzed: 09/13/01 Chlorobenzene 9.03 0.50 ug/l 10.0 ND 90.3 60-140 6.33 25 1,1-Dichloroethene 8.22 0.50 " 10.0 ND 82.2 60-140 0.122 25 Trichloroethene 7.60 0.50 " 10.0 ND 76.0 60-140 2.13 25	Chlorobenzene	9.62	0.50	ug/l	10.0	ND	96.2	60-140			
Surrogate: 1-Chloro-2-fluorobenzene 10.3 " 10.0 103 70-130 Matrix Spike Dup (1090047-MSD1) Source: L109010-02 Prepared & Analyzed: 09/13/01 Chlorobenzene 9.03 0.50 ug/l 10.0 ND 90.3 60-140 6.33 25 1,1-Dichloroethene 8.22 0.50 " 10.0 ND 82.2 60-140 0.122 25 Trichloroethene 7.60 0.50 " 10.0 ND 76.0 60-140 2.13 25	1,1-Dichloroethene	8.23	0.50	11	10.0	ND	82.3	60-140			
Matrix Spike Dup (1090047-MSD1) Source: L109010-02 Prepared & Analyzed: 09/13/01 Chlorobenzene 9.03 0.50 ug/l 10.0 ND 90.3 60-140 6.33 25 1,1-Dichloroethene 8.22 0.50 " 10.0 ND 82.2 60-140 0.122 25 Trichloroethene 7.60 0.50 " 10.0 ND 76.0 60-140 2.13 25	Trichloroethene	7.44	0.50	19	10.0	ND	74,4	60-140			
Chlorobenzene 9.03 0.50 ug/l 10.0 ND 90.3 60-140 6.33 25 1,1-Dichloroethene 8.22 0.50 " 10.0 ND 82.2 60-140 0.122 25 Trichloroethene 7.60 0.50 " 10.0 ND 76.0 60-140 2.13 25	Surrogate: 1-Chloro-2-fluorobenzene	10.3		n	10.0		103	70-130			•
1,1-Dichloroethene 8.22 0.50 " 10.0 ND 82.2 60-140 0.122 25 Trichloroethene 7.60 0.50 " 10.0 ND 76.0 60-140 2.13 25	Matrix Spike Dup (1090047-MSD1)	Source: L109010-02		Prepared	& Analyz	ed: 09/13	/01				
Trichloroethene 7.60 0.50 " 10.0 ND 76.0 60-140 2.13 25	Chlorobenzene	9.03	0.50	ug/l	10.0	ND	90.3	60-140	6.33	25	
	1,1-Dichloroethene	8.22	0.50	#	10.0	ND	82.2	60-140	0.122	25	
Surrogate: 1-Chloro-2-fluorobenzene 8.77 " 10.0 87.7 70-130	Trichloroethene	7.60	0.50	-	10.0	ND	76.0	60-140	2.13	25	
· · · · · · · · · · · · · · · · · · ·	Surrogate: 1-Chloro-2-sluorobenzene	8.77		11	10.0		87.7	70-130			



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Gettler-Ryan/Geostrategies(1)

6747 Sierra Court, Suite J

Dublin CA, 94568

Project: Tosco(1)

Project Number: Unocal SS#5430, San Leandro, CA

Project Manager: Deanna Harding

Reported:

09/19/01 07:28

Notes and Definitions

P-02 Chromatogram Pattern: Weathered Gasoline C6-C12

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference