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Alameda County
Environmental Health

25548733 X

TRANGELYES

March 8, 2000 G-R Job #180041

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

RE:

Annual 2000 Groundwater Monitoring & Sampling Report

Tosco (Unocal) Service Station #5487

28250 Hesperian Boulevard

Hayward, California

Dear Mr. De Witt:

This report documents the annual groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On February 4, 2000, field personnel monitored seven wells (MW-1 through MW-7) and sampled three wells (MW-5, MW-6 and MW-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

gist, R.G. No. 55//

Figure 1: Figure 2:

Potentiometric Map

Table 1:

Concentration Map

Attachments:

Groundwater Monitoring Data and Analytical Results
Standard Operating Procedure - Groundwater Sampling

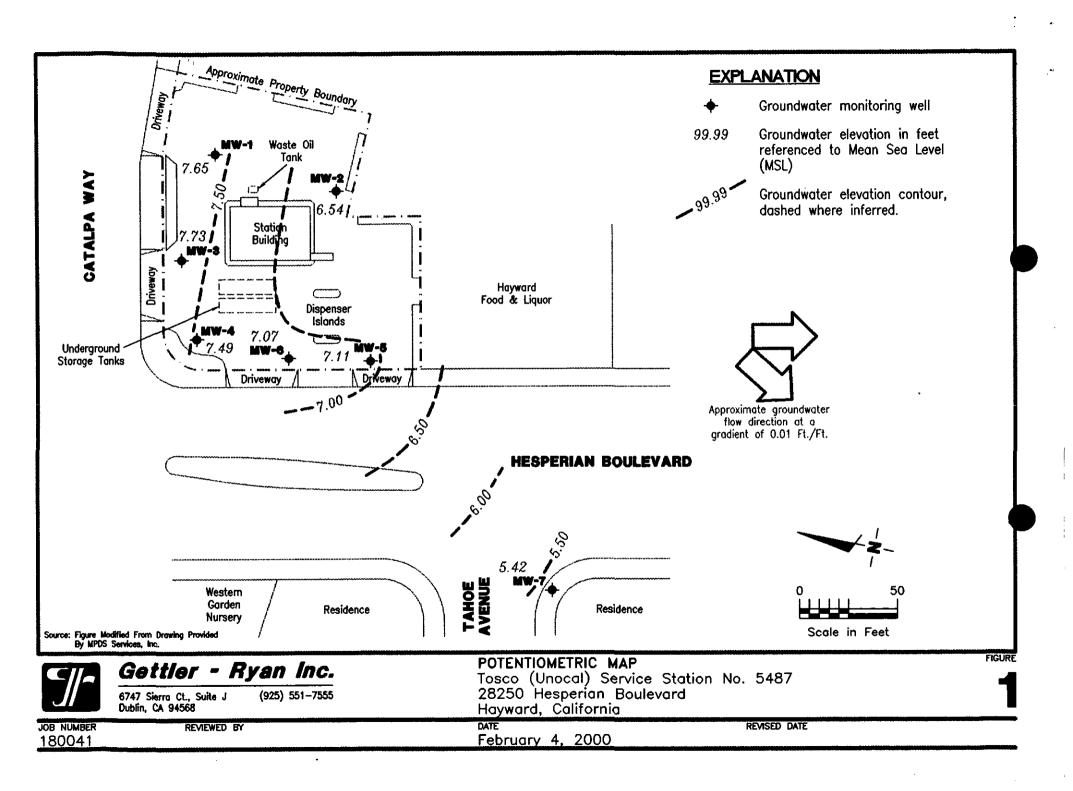
Field Data Sheets

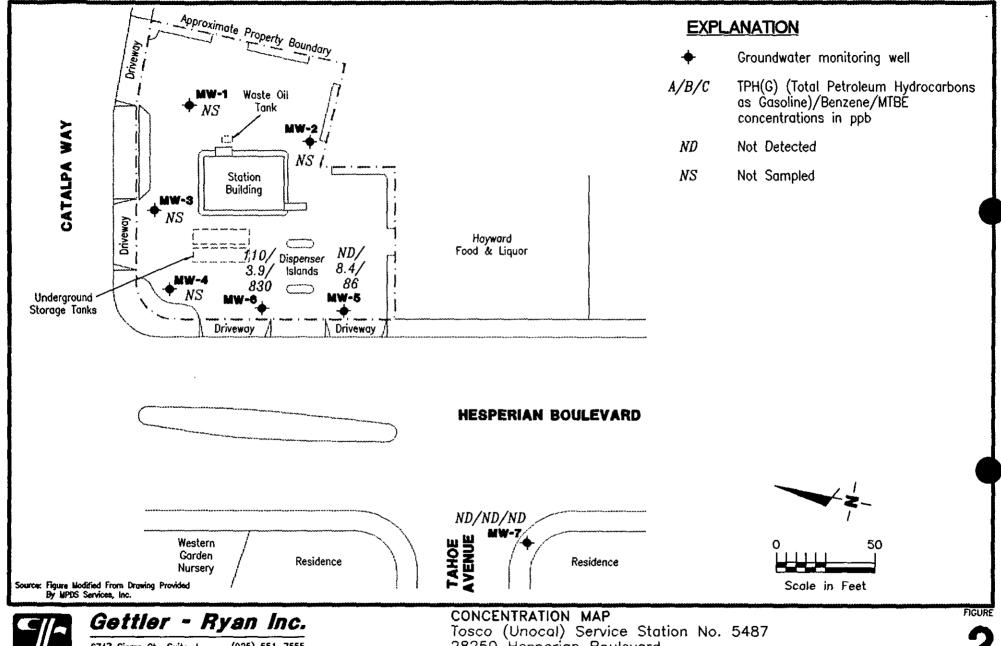
Chain of Custody Document and Laboratory Analytical Reports

No. 5577

FOF CALIFO

5487.qml





JOB NUMBER

6747 Sierra Ct., Suite J Dublin, CA 94568

(925) 551-7555

Tosco (Unocal) Service Station No. 5487 28250 Hesperian Boulevard Hayward, California

DATE

February 4, 2000

180041

REVIEWED BY

REVISED DATE

Table 1
Groundwater Monitoring Data and Analytical Results

				Hayward, C	alifornia				
Well ID/	Date		GWE	TPH(G)	В	T	E	X	MTBE
TOC*		(ft.)	(msl)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
3.5777									
MW-1	o a rocal								
	04/26/891			ND	2.1	ND	ND	ND	
	08/16/89 ²			ND	ND	ND	ND	ND	
	11/14/891			ND	ND	ND	ND	ND	
	02/16/90 ¹			ND	ND	ND	ND	ND	
	05/16/90 ¹			ND	ND	ND	ND	ND	
	08/29/901			ND	ND	ND	ND	0.74	
	11/15/90 ¹			ND	ND	ND	ND	ND	
	02/11/911			ND	ND	ND	ND	ND	
	05/10/91			ND	ND	ND	ND	ND	
	, 08/02/91			ND	ND	ND	ND	ND	
	11/07/91			ND	ND	ND	ND	ND	
	08/04/92			ND	ND	ND	ND	ND	
12.57	05/03/93	6.87	5.70						
	08/05/93	7.49	5.08	ND	ND	ND	ND	ND	
11.73	11/05/93	6.98	4.75						
	02/07/94	6.26	5.47					- -	
	05/02/94	6.27	5.46						
	08/02/94	6.89	4.84	ND	ND	ND	ND	ND	
	11/02/94	7.07	4.66						
	02/01/95	5.17	6.56						
	05/02/95	5.65	6.08						
	08/03/95	6.21	5.52	ND	ND	ND	ND	ND	
	11/06/95	6.80	4.93						
	02/02/96	3.88	7.85	SAMPLED ANNUA	ALLY			~-	
	02/07/97	4.63	7.10	SAMPLING DISCO				_ _	
	02/09/98	2.70	9.03						
	02/02/99	5.42	6.31	- -					
	02/04/00	4.08	7.65				_		
	52, 6 I	•••	1.00				_		
MW-2	,								•
	04/26/89 ¹			ND	ND	ND	ND	ND	
	08/16/89 ²			ND	ND	ND	ND	ND	
	11/14/89 ¹			ND	ND	ND	ND	ND	
	02/16/90			ND	ND	ND	ND	ND	

Table 1
Groundwater Monitoring Data and Analytical Results

				Hayward, C	California				
Well ID/	Date	DTW	GWE	TPH(G)	В	T	E	X	MTBE
TOC*		(ft.)	(msl)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
MW-2	05/16/90 ¹			ND	ND	ND	ND	ND	
(cont)	08/29/90			ND	ND	ND	ND	ND	
	11/15/90			ND	ND	ND	ND	ND	
	02/11/91			ND	ND	ND	ND	ND	
	05/10/91			ND	ND	ND	ND	ND	
	08/02/91			ND	ND	ND	ND	ND	
	11/07/91			ND	ND	ND	ND	ND	
	08/04/92			ND	ND	ND	ND	ND	
12.89	05/03/93	7.30	5.59						
	08/05/93	7.97	4.92	ND	ND	ND	ND	ND	
12.58	11/05/93	7.97	4.61						
	02/07/94	7.09	5.49						
	05/02/94	7.23	5.35						
	08/02/94	7.87	4.71	ND	ND	ND	ND	ND	
	11/02/94	7.98	4.60						
	02/01/95	6.13	6.45						
	05/02/95	7.04	5.54						
	08/03/95	7.19	5.39	ND	ND	ND	ND	ND	
	11/06/95	7.80	4.78						
	02/02/96	5.91	6.67	SAMPLED ANNU					
	02/07/97	5.65	6.93	SAMPLING DISC	ONTINUED				
	02/09/98	3.63	8.95						
	02/02/99	6.36	6.22						
	02/04/00	6.04	6.54	-					
MW-3	0.4.9.4.001					1775		N.T.	
	04/26/89 ¹			ND	ND	ND	ND	ND	
	08/16/89			ND	ND	ND	ND	ND	
	11/14/89			ND	ND	ND	ND	ND	
	02/16/90			ND	ND	ND	ND	ND	
	05/16/90			ND	, ND	ND	ND	ND	
	08/29/90			ND	ND	0.52	ND	ND	
	11/15/90			ND	ND	ND	ND	ND	
	02/11/91			ND	ND	ND	ND	ND	
	05/10/91			ND	ND	ND	ND	ND	

Table 1
Groundwater Monitoring Data and Analytical Results

Eliza and the contract of the				Hayward,					
Well ID/	Date	DTW	GWE	TPH(G)	В	T	E	X	MTBE
TOC*		(ft.)	(msl)	(ppb)	(ррв)	(ppb)	(ppb)	(ppb)	(ppb)
) for a	00/03/04				. Th) III		
MW-3	08/02/91			ND	ND	ND	ND	ND	
(cont)	11/07/91			ND	ND	ND	ND	ND	
	08/04/92			ND	ND	ND	ND	ND	
12.46	05/03/93	6.82	5.64						
	08/05/93	7.50	4.96						
11.99	11/05/93	7.35	4.64						
	02/07/94	6.58	5.41						
	05/02/94	6.62	5.37					-~	
	08/02/94	7.24	4.75	ND	ND	ND	ND	ND	
	11/02/94	7.42	4,57						
	02/01/95	5.55	6.44					-~	
	05/02/95	5.70	6.29						==
	08/03/95	6.59	5.40	ND	ND	ND	ND	ND	
	11/06/95	7.20	4.79						·
	02/02/96	4.08	7.91 S	AMPLED ANN	UALLY				
	02/07/97	5.04	6.95 S	AMPLING DISC	CONTINUED				
	02/09/98	3.11	8.88						
	02/02/99	5.69	6.30			- -			
	02/04/00	4.26	7.73		_				
MW-4									
	04/26/89 ¹			ND	0.33	ND	ND	ND	
	08/16/89	- -	4-	ND	ND	ND	ND	ND	
	11/14/89			ND	ND	ND	ND	ND	
	02/16/90			ND	. ND	ND	ND	ND	
	05/16/90			ND	ND	ND	ND	ND	
	08/29/90	J-		ND	ND	ND	ND	ND	
	11/15/90			ND	ND	ND	ND	ND	
	02/11/91			ND	ND	ND	ND	ND	
	05/10/91			ND	ND	ND	ND	ND	
	08/02/91		~-	ND	ND	ND	ND		
	00/02/01			ND	MD	ND	עא	ND	

Table 1
Groundwater Monitoring Data and Analytical Results

				Hayward, <u>C</u>	alifornia				
Well ID/	Date	DTW	GWE	TPH(G)	В	T	E	X	MTBE
TOC*		(ft.)	(msl)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
MW-4	11/07/91			ND	ND	ND	ND	ND	
(cont)	08/04/92			ND	ND	ND	ND	ND	c=
12.09	05/03/93	6.60	5.49						
	08/05/93	7.28	4.81	ND	ND	ND	ND	ND	
11.58	11/05/93	7.07	4.51						
	02/07/94	6.21	5.37			•			
	05/02/94	6.32	5.26						
	08/02/94	6.95	4.63	ND	ND	ND	ND	ND	
	11/02/94	7.13	4.45	SAMPLED ANNU	ALLY				~-
	02/01/95	5.23	6.35						
	05/02/95	5.43	6.15						
	08/03/95	6.33	5.25	ND	ND	ND	ND	ND	
	11/06/95	6.90	4.68						
	02/02/96	3.71	7.87						
	02/07/97	4.46	7.12	SAMPLING DISC	ONTINUED				
	02/09/98	2.55	9.03						
	02/02/99	5.37	6.21						
	02/04/00	4.09	7.49						~
10115									
MW-5	04/26/89 ¹			ND	ND	ND	ND	ND	
	08/16/89			4,400	1,400	84	200	950	
	08/31/89		 	910	120	7.1	50	53	
	11/14/89	~ -		73	4.7	0.97	2.9	16	
	02/16/90			ND	ND	ND	ND	ND	
	05/16/90	~ -		1,100	310	2.8	70	110	
	08/29/90			ND	0.70	ND	0.57	1.1	
	11/15/90			ND	ND	ND	ND	0.47	
		ye **	**	58	23	ND	2.9	1.3	
	02/11/91			ND	ND	ND	ND	ND	
	05/10/91			100	43	0.33	12	5.2	
	08/02/91			700	43 43	1.7	29	24	
	11/07/91		-		43 20	ND	4.4	4.7	
	02/05/92	<u></u>		120		0.48	4.4 9.0	6.8	
	05/05/92			170	45 12	0.48 ND	9.0 4.5	6.9	
	08/04/92			80	13	ND	4.3	0.9	

Table 1
Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) service Station #5487

28250 Hesperian Boulevard Hayward, California

				Hayward, Cal					
Well ID/	Date	DTW	GWE	TPH(G)	В	T	E	X	MTBE
TOC*		(ft.)	(msl)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
,									
MW-5	11/05/92		- -	120	16	ND	3.5	3.0	
(cont)	02/02/93	. 		77 ³	5.0	ND	1.2	1.3	
11.18	05/03/93	6.16	5.02	260	3 <i>5</i>	ND	2.3	3.1	
	08/05/93	6.97	4.21	530	210	0.62	54	44	
10.79	11/05/93	6.81	3.98	110	12	ND	2.3	2.3	
	02/07/94	5.70	5.09	180	22	ND	6.4	5.9	
	05/02/94	5.96	4.83	170 ³	38	0.73	8.5	8.4	
	08/02/94	6.68	4.11	59	16	ND	2.4	3.1	
	11/02/94	6.86	3.93	450	73	1.6	6.2	11	
	02/01/95	4.85	5.94	170	11	ND	2.4	3.9	
	05/02/95	4.95	5.84	ND	7.5	0.51	1.2	1.6	
	08/03/95	6.03	4.76	ND	12	ND	0.70	ND	
	11/06/95	6.70	4.09	160	80	ND	7.4	10	120
	02/02/96	3.50	7.29	64	20	ND	3.9	6.1	150
	02/07/97	4.26	6.53	85	16	0.56	1.7	3.8	250
	02/09/98	2.29	8.50	220	54	ND	3.2	5.9	230
	02/02/99	5.07	5.72	61 ⁶	19	ND	1.3	2.1	110
	02/04/00	3.68	7.11	ND	8.4	ND	ND	ND	86
				7.0 0		7.0	25	110	
MW-6	08/04/92			540	12	7.9	35	110	
	11/05/92			300	16	2.3	14	14	
	02/02/93			400 ³	66	5.5	32	13	
11.47	05/03/93		5.19	520	47	2.6	33	48	
	08/05/93		4.42	230	25	1.6	12	29	
11.18	11/05/93		4.16	100	1.8	ND	0.79	2.2	
	02/07/94		5.18	1,100	130	14	13	130	
	05/02/94		5.00	440 ³	20	4.2	11	26	
	08/02/94		4.30	220	13	1.0	12	28	
	11/02/94		4.13	840	30	2.5	26	<i>5</i> 7	
	02/01/95		6.14	340	26	0.77	2.6	7.0	
	05/02/95		6.18	ND	5.7	ND	0.81	1.1	
	08/03/95		4.92	ND	0.76	ND	ND	ND	
	11/06/95	6.87	4.31	210	17	0.66	14	37	130
	02/02/96	3.64	7.54	300	51	0.65	30	18	280
	02/07/97	4.41	6.77	66	5.8	1.2	2.1	6.6	450

Table 1 **Groundwater Monitoring Data and Analytical Results**

Tosco (Unocal) service Station #5487 28250 Hesperian Boulevard Hayward California

	Hayward, Camornia
Well ID/ Date DTW TOC* (ft.)	
	<u>.</u>

Well ID/	Date	DTW	GWE	TPH(G)	В	T	E	X	MTBE
TOC*		(ft.)	(msl)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)	(ppb)
MW-6	02/09/98	2.51	8.67	ND^5	1.0	ND ⁵	ND ⁵	ND⁵	450
		5.14	6.04	ND	2.6	ND	1.0	2.9	490
(cont)	02/02/99 02/04/00	4.11	7.07	1107	3.9	ND ⁵	ND ⁵	ND ⁵	830
MW-7				MD	NID	ND	ND	ND	ND
	07/30/96			ND	ND		ND ND	ND ND	ND
9.39	02/07/97	3.75	5.64	ND	ND	ND			
	02/09/98	1.69	7.70	ND	ND	ND	ND	ND	ND
	02/02/99	4.14	5.25	ND	ND	ND	ND	ND	ND
	02/04/00	3.97	5.42	ND	ND	ND	ND	ND	ND
MWD ⁴	05/10/91	**		ND	ND	ND	ND	ND	
Trip Blank									NTO
TB-LB	02/09/98			ND	ND	ND	ND	ND	, ND
	02/02/99			ND	ND	ND	ND	ND	ND
	02/04/00		-	ND	ND	ND	ND	ND	ND

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #5487 28250 Hesperian Boulevard Hayward, California

EXPLANATIONS:

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

TOC = Top of Casing elevation

B = Benzene

ppb = Parts per billion

DTW = Depth to Water

T = Toluene

ppm = Parts per million

(ft.) = Feet

E = Ethylbenzene

ND = Not Detected

GWE = Groundwater Elevation

X = Xvlenes

-- = Not Measured/Not Analyzed

msl = Relative to mean sea level

MTBE = Methyl tertiary butyl ether

TOG = Total Oil and Grease

TPH(D) = Total Petroleum Hydrocarbons as Diesel TPH(G) = Total Petroleum Hydrocarbons as Gasoline

- * Prior to November 5, 1993, the elevations of the <u>Top of Well Covers</u> have been surveyed relative to Mean Sea Level (msl), per the City of Hayward Benchmark (Elevation = 10.97 feet, msl). TOC elevations are relative to Mean Sea Level (msl), per the City of Hayward Benchmark (Elevation = 10.97 feet msl).
- TPH(D), TOG and all EPA Method 8010 constituents were ND.
- TOG for the samples collected from MW-1 and MW-2 were 23 ppm and 7.4 ppm, respectively. TPH(D) and all EPA Method 8010 constituents were ND for both samples.
- Laboratory report indicates that the hydrocarbons detected appear to be a gasoline and non-gasoline mixture.
- MWD was a quality assurance duplicate water sample collected from well MW-5.
- Detection limit raised. Refer to analytical reports.
- Laboratory report indicates unidentified hydrocarbons C6-C12.
- Laboratory report indicates gasoline C6-C12.

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 flexidip 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.

ELL MONITORING/SAMPLING FIELD DATA SHEET

Client/ 180041 Facility # 5487 Job#: Address: 28250 Hespecian Blvd. 2-4-00 Date: City: Hayward Sampler: mw-1 Well ID Well Condition: Well Diameter Hydrocarbon Amount Bailed Thickness: (product/water): (Gallons) 27.16 Total Depth Volume 3" = 0.38 4" = 0.66 Factor (VF) 6 = 1.50 $12^{-} = 5.80$ Depth to Water X VF 0.17 = X 3 (case volume) = Estimated Purge Volume: Purge Disposable Bailer Sampling Visposable Bailer _ Equipment: Bailer Equipment: Bailer Stack Suction Pressure Bailer Grundfos Grab Sample Other: _ Other: ____ Cloudy Weather Conditions: Starting Time: Water Color: ____ Odor: _ Sampling Time: Sediment Description: ___ No Ne Purging Flow Rate: _ qpm, Volume: _ If yes; Time: Did well de-water? (.lsp) Conductivity (OTemperature pН p.o. ORP Alkalinity Time Volume anhas/cm Y (mg/L)(ppm) (gal.) (my)LABORATORY/INFORMATION LABORATORY PRESERV TYPE / REFRIG. SAMPLE ID CONTAINER **ANALYSES** SEQUOIA mw-HCC TPH(G)/btex/mtbe 3 40 A COMMENTS: MA . AA





Client/ Facility #54	87	· · <u></u>	Job#	18004		
Address: 282	250 Hesperi	en Blv	Date:	2-4-0	a D	_
				oler: Joc		
City: Tradi	ward		Sam	ner		
Well ID		Well	Condition:).k.		
Well Diameter	2 in	•	rocarbon kness:	Amount :	* ***	(Gallons)
Total Depth	23.75 h		M1033.		38 4" = (
Depth to Water	· 6.04 to	1 = 1	tor (VF)	6 = 1.50		
	x	vF <u>0.17</u>	≖ X 3 (case	volume) = Estimated (uge Volume:	<u>(gal.)</u>
Purge Equipment:	Disposable Bailer Bailer Stack Suction Grundfos Other:	·	Sampling Equipment	Bailer Pressure Bai Grab Sample Other:	ler	
Starting Time: Sampling Time: Purging Flow Rat	te:		Water Color:	ons: <u>Cloud</u>	Odor:	
Did well de-wate	er? <u>/ </u>		If yes; Time: _	Volu	me:	("iso)
	Volume pH (gal.)	Cond	ductivity ((NTemp			Akalinity (ppm)
//	 /	-		·	-/	
4	<i>f</i>	<u> </u>				
SAMPLE ID	(#) - CONTAINER	LABOR REFRIG.	ATORY INFORMA PRESERV. TYPE 📝	•	ANALYSES	•
MW -	3 vo A	Y	HCC.	SEQUOIA	TPH(G)/btex/mtbe	· ————————————————————————————————————
		<u> </u>		l	<u> </u>	
COMMENTS: _	M. only					
	ľ					

LL MONITORING/SAMPLING FIELD DATA SHEET

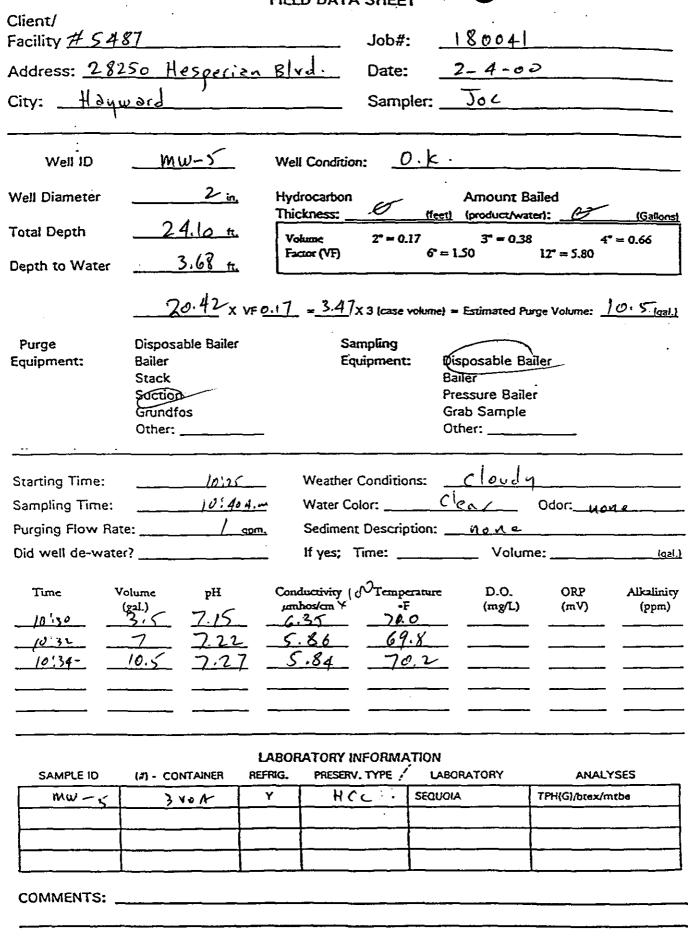
Client/ Facility <u>#54</u>	87		Job#:	180041		_
	250 Hesperiz	n Blvd.	Date:	2-4-0	ð	
	ward			r: Joc		
City:						
Well ID	mw-3	Well Condition	on: <u>0</u> .	k ·		
Well Diameter	2 in.	Hydrocarbon Thickness:		Amount B		(C-11)
Total Depth	24.35 tc	Volume		3° = 0.38		(Gaflons) = 0.66
Depth to Water	4,26 m	Factor (VF)			12" = 5.80	
	x v	f <u>0.17</u> =	X 3 (case voi	ume) = Estimated Pt	arge Volume:	(gal.)
Purge	Disposable Bailer		ampling			•
Equipment:	Bailer Stank	Ec	quipment:	Disposable Bailer	ailer	
	Stack Suction			Pressure Baile	er	
	Grundfos	ditramore.		Grab Sample		
	Other:	- /		Other:		
Starting Time: Sampling Time: Purging Flow Rate Did well de-wate		Water Co	olor:	cloud. Clea on: Nove	Odor:	(gzl.)
old well de-wate						
	Volume pH (gal.)	Conductivity (√Temperat	nure D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
	_			/		
	\overline{Z}					
	/ 	/				
SAMPLE ID	(#) - CONTAINER 8	LABORATORY I	NFORMATI	ON LABORATORY	ANALY	,ccc
NW-	3 VO A	Y HO	<i>/</i>	EQUOIA /	TPH(G)/btex/m	
- /	7 10/9	- 		/	, ., ., ., .,	
	 			<i>J</i>		
COMMENTS: _	Mionly					

FIELD DATA SHEET



Client/ Facility <u># 54</u>	87		Job#:	180041	· !	
		elvd.		2-4-0		
	250 Hesperian	DIVA.				
City: Hay	n 9.cg		Sampler	Joc		
Well ID	-mw-4	Well Condition	n: <u>O</u> .	<u>k</u> .	 -—	
Well Diameter	2 in.	Hydrocarbon Thickness:		Amount E		10 -11)
Total Depth	24.55 tc	Volume	2- = 0.17			(Gallons) = 0.66
Depth to Water	4.09 1	Factor (VF)		6 = 1.50	12" = 5.80	
	x vғ <u>о</u>	.17 =	X 3 (case volu	me! = Estimated P	'urge Volume:	(gal.)
Purge	Disposable Bailer	Sa	ımpling			
Equipment:	Bailer	Ec	uipment:	Disposable B	lailer	
	Stack Suction			Bailer Pressure Bail	er .	or the same of
	Grundfos			Grab Sample		
	Other:			Other:		
<u> </u>					···	
Starting Time:	,	Weather	Conditions:	cloud	u	
-			olor:	21/	Odor:	
Sampling Time:						,
Purging Flow Rat			/	ń: <u>Иоле</u>		 -
Did well de-wate	·?	If yes;	lime: /	Volut	me:	(.lspl
Time V	/-II	Conductivity (N-/	ure D.O.	ORP	Allesies
	olume pH	rupos/cu &	•F	(mg/Jz)	(mV)	Alkalinity (ppm) /
			/	— — /		
		/		/		
<u>-</u>	/			/	-	/
	/			/		 ,
				/		
				<u> </u>	/	
SAMPLE ID	(#) - CONTAINER BEF	(BORATORY I	. 1	ON LABORATORY	ANAL	rses
mu-	3 VOA Y	, H	` /se	AIOUD	TPH(G)/btex/n	ntbe
			· /		V	
(1	
<u></u>					<u> </u>	
COMMENTS: 1	Minace					

ELL MONITORING/SAMPLING FIELD DATA SHEET



FIELD DATA SHEET



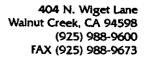
Client/ Facility # 54	87		Job#	: <u> </u>	80041		
•	250 Hespeci	an Rly	d Date:	2	- 4-0	0	
	ward			oler:			
Well ID	mw-6	Wel	l Condition:).k.			
Well Diameter	2 in.		Irocarbon		Amount B		(Callana)
Total Depth	17.78 t		жиезз.		3° = 0.38		(Gallons) = 0.66
Depth to Water	. 4.11 tc.		ctor (VF)			12" = 5.80	
	13.67 x	vF 0.17	_2.32_X3 (case	volume) = 1	Estimated Pt	ırge Volume: _	7 (qai.)
Purge Equipment:	Disposable Bailer Bailer Stack Suction Grundfos Other:		Sampling Equipment	Bail Pres Gra	posable Balle er ssure Balle b Sample er:	er	•
Sampling Time: Purging Flow Rat	te:/_	com.	Weather Condition Water Color: Sediment Descrip	C l _e	none	Odor:	ONE
Did well de-wate	er?		If yes; Time: _		Volun	ne:	(Jsp)
18:06	Volume pH (gal.) 2.5 7.4' 5 7.46		5.11 71.	, <u>L</u>	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
10:08-	<u> </u>	<u> </u>	5.12 70	<u></u>			
			RATORY INFORMA				
SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE /		ATORY	ANAL' TPH(G)/btex/r	 -
mw-6	3 VO A		HCC .	Sedoola		1 Ph(G)(otax)	ntoe
COMMENTS:	-		<u> </u>	±- <u>-</u> -		I	

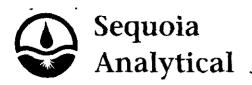
ELL MONITORING/SAMPLING FIELD DATA SHEET

Client/ Facility #54	87	···	Joi	b#: _	180041		
Address: 282	250 Hespeci	en Bl	vd. Da	te: _	2-4-0	۵	
City: Hay	w ard		Sa		Joc		
: Well ID	mw-7	Wei	Il Condition:	0.k			
Well Diameter	2 in,	_	irocarbon		Amount E		-
Total Depth	19.10 4		CATIESS;	(iee	1 (product/wa 3" = 0.3		(Gallons)
Depth to Water	3.97 tt	- L	ctor (VF)			12 = 5.80	
	15.13 x	vF 0.17	= <u>257</u> x3 le	ase volume)	= Estimated P	urge Volume: _	7 (gal.)
Purge Equipment:	Disposable Bailer Bailer Stack Soction Grundfos Other:		Samplin Equipme	ent: (E F (pisposable Bailer Pressure Baile Grab Sample Other:	er	•
Starting Time: Sampling Time: Purging Flow Rai	211	TO A.M	Weather Cond Water Color: _ Sediment Desc		lear	Odor: n e	o da
	er?		If yes; Time:				
	Volume pH (gal.) 7.82	μ απ 	ductivity (1 ⁰ Te hos/an Y	69.9	D.O. (mg/L)		
9:42	5 7.70 \$ 7.65			70.4			
SAMPLE ID	(#) - CONTAINER	LABOF REFRIG.	ATORY INFOR		ORATORY	ANAL	YSES
mw-7	3 40 A	Y	HCC:			TPH(G)/btex/r	
			 	 			
COMMENTS: _		·				·	
							
						_	

			Con	Faoi	lilly Num Uly Addre roject Nu	282	NOCAL SS 50 Hesper 18004	ian	Blvd.	, HAY	WARD	CA	-			(Phone)(925)	277-2	2384	T	11 (\$ mps.85) 1 - 1 (\$ a	\$1.1 ·	
TOSCO Consultant Name Gettler-Ry						-Ryan In)	G-R Ir	16.)				Leberatory Name Sequoia Analytical Leberatory Release Number WOOZ/38								138	gd ()		
	Trace Badarda) Company	Address 6747 Sierra Court, Suite J. Dublin, CA 94568 Samples Collected by (Nome) 505																					
	Trace Barbelle 2008 Crow Carps San Rateus, Cal	in Ft., Std. 408 Aprillo 94843	,											Collection Date 2-4-00								e differe		
	****		İ		(F	hone) <u>.¶</u> 2	<u>r-551-75</u>	5_(Fo	x Numbe	1)925	-551-	7888		Signature		<u> </u>	\mathcal{L}	em					li i	
•	!	,		8					1			-	•	Analye	•• To t	e Perfo	med					DO NOT	BILL	
		18 g 1	Ę	GAercoal Gercoal	ą,		g		3			g	3		0.							TB-LB 'AN	<u>ALYSIS</u>	
	Sample Number	Leb Sample Manb	Number of Contains	Matter S = Soll A = /	Type G = Grab C = Composite D = Discrete	•FI	Sample Preservation	load (Yee or No)	TPH Gat STEX WANTER	TPH Diesed (8015)	Oil and Gream (5520)	Purpeable Halocarbo (8010)	Purgeable Aromatic (8020)	Pury-able Organica (8240)	Extractable Organica (8270)	Metals Cd.O.Po.Zn.Ni (RCVP or 'AN)						Remorks		
Ĩ	TB-LB	OIA	VOA	w	6-	_	# (Υ	- V	<u> </u>				- 					1.			, i și	. <u>į</u>	
	MW-5	OZA-C	-	,	/	9:50	,	1	1		 	1		1					1			1 5 2	t _i ·	
•	wh-e	03	//		/	10:20	/		1-	 				 -	<u> </u>				1	<u> </u>	1	1.14	j.,:	
 I		04 1	11		7	10:40	,	,	1-	-				 		-			1		1	i iya		
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_		Quiz-			nizolion R Inc	. 2	2-4-00			colved By (Signature)			- [Organization		Dote/Time			Turn Around Time (Circle Cholee)					
	Relinguished By	(Signature)		Orgo Se	inization 4. An	0	ole/Ilme 1572	O Re	Received By (Signature)				-	Organization			/Ilme				8	Hre. Doye		
	Relinquished By	(Signature)		Orga	nization	D	ate/Ilme	1				y (Signali	L	uc		Date Z/	470	0			/	Daye		

origin or ousious necon





17 February, 2000

Deanna L. Harding Gettler Ryan, Inc. - Dublin 6747 Sierra Court Suite J Dublin, CA 94568

RE: Unocal

Enclosed are the results of analyses for samples received by the laboratory on 04-Feb-00 15:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

✓ Alan B. Kemp

Laboratory Director



Gettler Ryan, Inc. - Dublin 6747 Sierra Court Suite J Dublin CA, 94568 Project: Unocal

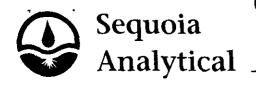
Project Number: Unocal # 5487 Project Manager: Deanna L. Harding Reported: 17-Feb-00 08:06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
TB-LB	W002138-01	Water	04-Feb-00 00:00	04-Feb-00 15:20
MW-5	W002138-02	Water	04-Feb-00 09:50	04-Feb-00 15:20
MW -6	W002138-03	Water	04-Feb-00 10:20	04-Feb-00 15:20
MW-7	W002138-04	Water	04-Feb-00 10:40	04-Feb-00 15:20

Sequoia Analytical - Walnut Creek

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Gettler Ryan, Inc. - Dublin 6747 Sierra Court Suite J

Dublin CA, 94568

Project: Unocal

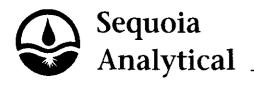
Project Number: Unocal # 5487 Project Manager: Deanna L. Harding Reported: 17-Feb-00 08:06

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT Sequoia Analytical - Walnut Creek

Алаlyte	R Result	eporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
TB-LB (W002138-01) Water	Sampled: 04-Feb-00 00:00			-00 15:20					
Purgeable Hydrocarbons	ND	50	ug/l	1	0B09002	09-Feb-00	09-Feb-00	EPA	<u></u>
Benzene	ND	0.50	11	tt	* '	10	tt	8015M/8020	
Toluene	ND	0.50	**	п	'n	н	н	н	
Ethylbenzene	ND	0.50	n	••	tt	u	**	11	
Xylenes (total)	ND	0.50	11	п	"	n	n	tt	
Methyl tert-butyl ether	ND	2.5	Ħ	**	10	11	n	u	
Surrogate: a,a,a-Trifluorotolue	ne	110 %	70-	130	"	"	"	"	
MW-5 (W002138-02) Water	Sampled: 04-Feb-00 09:50	Received	l: 04-Feb	-00 15:20				•	
Purgeable Hydrocarbons	ND	50	ug/l	·1	0B09002	09-Feb-00	09-Feb-00	EPA	
Benzene	8.4	0.50	11	11	"	н	19	8015M/8020	
Toluene	ND	0.50	•		n	"	**	17	
Ethylbenzene	ND	0.50	H	II	••	11	n	n	
Xylenes (total)	ND	0.50	19	"	11	10	11	rr	
Methyl tert-butyl ether	. 86	2.5	li .	ห		**	11	"	
Surrogate: a,a,a-Trifluorotolue	ne	108 %	70-	130	"	"	В	н	 .
MW-6 (W002138-03) Water	Sampled: 04-Feb-00 10:20	Received	1: 04-Feb	-00 15:20					P-01
Purgeable Hydrocarbons	110	100	ug/l	2	0B14003	14-Feb-00	14-Feb-00	EPA	
Benzene	3.9	1.0	n	n	Ir	11	*	8015M/8020	
Toluene	ND	1.0	"	H.	Į.		H	n	
Ethylbenzene	ND	1.0	Ħ	91	11	11	n	n	
Xylenes (total)	ND	1.0	"	**	**	ır	n	**	
Methyl tert-butyl ether	830	5.0	н	11	11	H	n	Ħ	
Surrogate: a,a,a-Trifluorotolue	me	85.7%	70-	130	"	"	"	n	

Sequoia Analytical - Walnut Creek

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Gettler Ryan, Inc. - Dublin

Project: Unocal

6747 Sierra Court Suite J Dublin CA, 94568 Project Number: Unocal # 5487 Project Manager: Deanna L. Harding **Reported:** 17-Feb-00 08:06

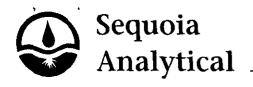
Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT

Sequoia Analytical - Walnut Creek

Analyte	R Result	eporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-7 (W002138-04) Water	Sampled: 04-Feb-00 10:40	Received	l: 04-Feb-	00 15:20	· ···				
Purgeable Hydrocarbons	ND	50	ug/l	1	0B09003	09-Feb-00	09-Feb-00	EPA	· · · · · · · · · · · · · · · · · · ·
Benzene	ND	0.50	11	**	"	**	10	8015M/8020	
Toluene	ND	0.50	II	11	11	11	n	н	
Ethylbenzene	ND	0.50	11	Ħ	11	п	H	91	
Xylenes (total)	ND	0.50	11	**	n	ft	**	11	
Methyl tert-butyl ether	ND	2.5	41	•	н	u '	**	19	
Surrogate: a,a,a-Trifluorotolu	ene	96.7%	70-1	30	"	"	"	"	

Sequoia Analytical - Walnut Creek

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Gettler Ryan, Inc. - Dublin

6747 Sierra Court Suite J

Dublin CA, 94568

Project: Unocal

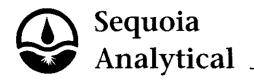
Project Number: Unocal # 5487 Project Manager: Deanna L. Harding Reported: 17-Feb-00 08:06

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control Sequoia Analytical - Walnut Creek

Analyte		Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Note
Batch 0B09002;	Prepared 09-Feb-00	Using E	PA 5030B [I	?/T]							
Blank (0B09002-BI											
Purgeable Hydrocarbo	ns	ND	50	սց/1							
Benzene		ND	0.50	11							
Toluene		ND	0.50								
Ethylbenzene		ND	0.50	**							
Xylenes (total)		ND	0.50	**							
Methyl tert-hutyl ether		ND	2.5	•						•	
Surrogate: a,a,a-Triflu	orotoluene	35.0		"	30.0		117	70-130			·- ·-
LCS (0B09002-BS1)										
Benzene		21.8	0.50	ug/l	20.0		109	70-130			
Toluene		21.6	0.50	**	20.0		108	70-130			
Ethylbenzene		22.3	0.50	117	20.0		111	70-130			
Xylenes (total)		67.2	0.50	11	60.0		112	70-130			
Surrogate: a,a,a-Trifh	orotoluene	29.4		"	30.0		98.0	70-130			
LCS Dup (0B09002	2-BSD1)										
Benzene		23.2	0.50	ug/l	20.0	 \	116	70-130	6.22	20	
Toluene		23.0	0.50	••	20.0		115	70-130	6.28	20	
Ethylbenzene		23.8	0.50	Ħ	20.0		119	70-130	6.51	20	
Xylenes (total)		70.8	0.50	n	60.0		118	70-130	5.22	20	
Surrogate: a,a,a-Trifh	Iorotoluene	32.1	 	"	30.0	· ·	107	70-130			· <u>-</u>
Batch 0B09003;	Prepared 09-Feb-00	Using F	EPA 5030B [P/Tj							
Blank (0B09003-B									· ,		
Purgeable Hydrocarbo	ns	ND	50	ug/l							_
Вепгеле		ND	0.50	**							
Toluene		ND	0.50	н							
Ethylbenzene		ND	0.50	PF							
Xylenes (total)		ND	0,50	H							
Methyl tert-hutyl ethe	•	ND	2.5	**							
Surrogate: a,a,a-Trifh	-4.1	29.7			30.0		99.0	70-130			

Sequoia Analytical - Walnut Creek

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Gettler Ryan, Inc. - Dublin 6747 Sierra Court Suite J Dublin CA, 94568 Project: Unocal

Project Number: Unocal # 5487 Project Manager: Deanna L. Harding **Reported:** 17-Feb-00 08:06

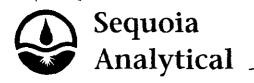
Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control Sequoia Analytical - Walnut Creek

Analyte		Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0B09003:	Prepared 09-Feb-00	Using E	PA 5030B [I	P/T]							
LCS (0B09003-BS1))										
Benzene		22.4	0.50	ug/l	20.0		112	70-130			,
Toluene		22.7	0.50	**	20.0		114	70-130			
Ethylbenzene		22.9	0.50	**	20.0		114	70-130			
Xylenes (total)		66.0	0.50	**	60,0		110	70-130			
Surrogate: a,a,a-Triflu	orotoluene	28.9		п	30.0		96.3	70-130			
Matrix Spike (0B09	003-MS1)					Source: V	W002138-	04			
Benzene	· · · · · · · · · · · · · · · · · · ·	20.5	0.50	ug/l	20.0	ND	103	70-130			
Toluene		20.7	0.50	11	20.0	ND	104	70-130			
Ethylbenzene		20.7	0.50	"	20.0	ND	104	70-130			
Xylenes (total)		59.9	0.50	II.	60.0	ND	99.8	70-130			-
Surrogate: a,a,a-Triflu	orotoluene	27.5		"	30.0		91.7	70-130			
Matrix Spike Dup (0B09003-MSD1)					Source: V	W002138-	04			
Велгее		22.4	0.50	ug/l	20.0	ND	112	70-130	8.86	20	
Toluene		22.6	0.50	41	20.0	ND	113	70-130	8.78	20	
Ethylbenzene		22.3	0.50	11	20.0	ND	111	70-130	7.44	20	
Xylenes (total)		63.2	0.50	II	60.0	ND	105	70-130	5.36	20	
Surrogate: a.a.a-Triflu	orotoluene	29.8		"	30.0		99,3	70-130			-
Batch 0B14003:	Prepared 14-Feb-00	Using E	PA 5030B	P/ T]							
Blank (0B14003-BI											
Purgeable Hydrocarbor	ns	ND	50	ug/l							
Benzene		ND	0.50	#1							
Toluene		ND	0.50	н							
Ethylbenzene		ND	0.50	н							
Xylenes (total)		ND	0.50	tt							
Methyl tert-butyl ether		ND	2.5	*1							
Surrogate: a.a.a-Triflu	orotoluene	30.3		"	30.0		101	70-130			

Sequoia Analytical - Walnut Creek

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Gettler Ryan, Inc. - Dublin

6747 Sierra Court Suite J

Dublin CA, 94568

Project: Unocal

Project Number: Unocal # 5487

Project Manager: Deanna L. Harding

Reported:

17-Feb-00 08:06

Total Purgeable Hydrocarbons (C6-C12), BTEX and MTBE by DHS LUFT - Quality Control Sequoia Analytical - Walnut Creek

Analyte		Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 0B14003:	Prepared 14-Feb-00	Using E	PA 5030B []	P/ T]							
LCS (0B14003-BS1)										
Benzene	,	21.7	0.50	ug/l	20.0		109	70-130			
Toluene	•	21.9	0,50	u	20.0		109	70-130			
Ethylbenzene		21.9	0.50	н	20.0		109	70-130			
Xylenes (total)		63.2	0.50	n	60.0		105	70-130			
Surrogate: a,a,a-Triflu	orotoluene	30.1		"	30.0		100	70-130			
LCS Dup (0B14003	B-BSD1)										
Benzene		21.4	0.50	ug/l	20.0		107	70-130	1.39	20	
Toluene		21.7	0.50	u	20.0		109	70-130	0.917	20	
Ethylbenzene		21.7	0.50	п	20.0		109	70-130	0.917	20	
Xylenes (total)		62.9	0.50	13	60.0		105	70-130	0.476	20	
Surrogate: a,a,a-Triflu	iorotoluene	28.7		"	30.0		95.7	70-130			

Sequoia Analytical - Walnut Creek

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Gettler Ryan, Inc. - Dublin

6747 Sierra Court Suite J Dublin CA, 94568 Project: Unocal

Project Number: Unocal # 5487 Project Manager: Deanna L. Harding Reported: 17-Feb-00 08:06

Notes and Definitions

P-01 Chromatogram Pattern: 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

Sequoia Analytical - Walnut Creek

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