GETTLER-RYAN INC.

TRANSMITTAL

#3693

TO: Ms. Cynthia Chapman
Alameda County Health Care Services
1131 Harbor Bay Parkway
Alameda, California 94502

DATE: May 15, 1998
G-R #: 180067

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

RE: Tosco (Unocal) SS #3135
845 - 66th Street
Oakland, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	April 12, 1998	Groundwater Monitoring and Sampling Report Annual 1998-Event of February 5, 1998.

COMMENTS:

At the request of Tosco Marketing Company, we are providing you a copy of the above referenced report. The site is monitored and sampled on an annual basis in February. If you have questions please contact the Tosco Project Manager, Ms. Tina R. Berry at (925) 277-2321.

Enclosure

cc: Mr. Doug Lee, Gettler-Ryan Inc., Dublin, CA 945680

agency/3135trb.qmt

GETTLER-RYAN INC.

April 12, 1998
G-R Job #180067

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

RE: Annual 1998 Groundwater Monitoring & Sampling Report
Tosco (Unocal) Service Station #3135
845 66th Avenue
Oakland, California

Dear Ms. Berry:

This report documents the annual groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On February 5, 1998, field personnel monitored and sampled eight wells (MW-1 through MW-3, MW-5, MW-6 and MW-8 through MW-10) at the above referenced site. Two wells (MW-4 and MW-7) were inaccessible (paved over).

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,

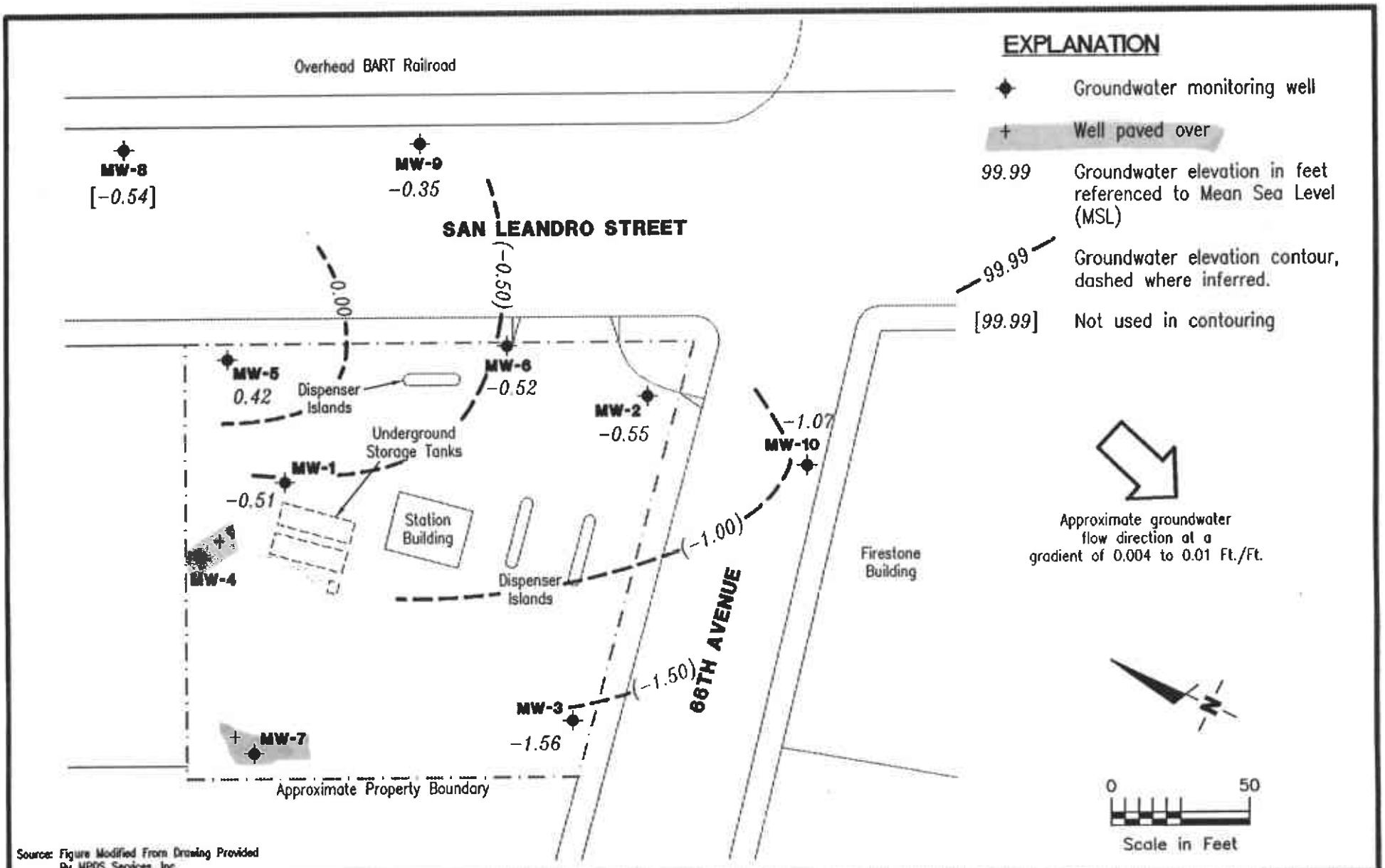
Deanna L. Harding
Project Coordinator

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

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

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

3135.qml



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

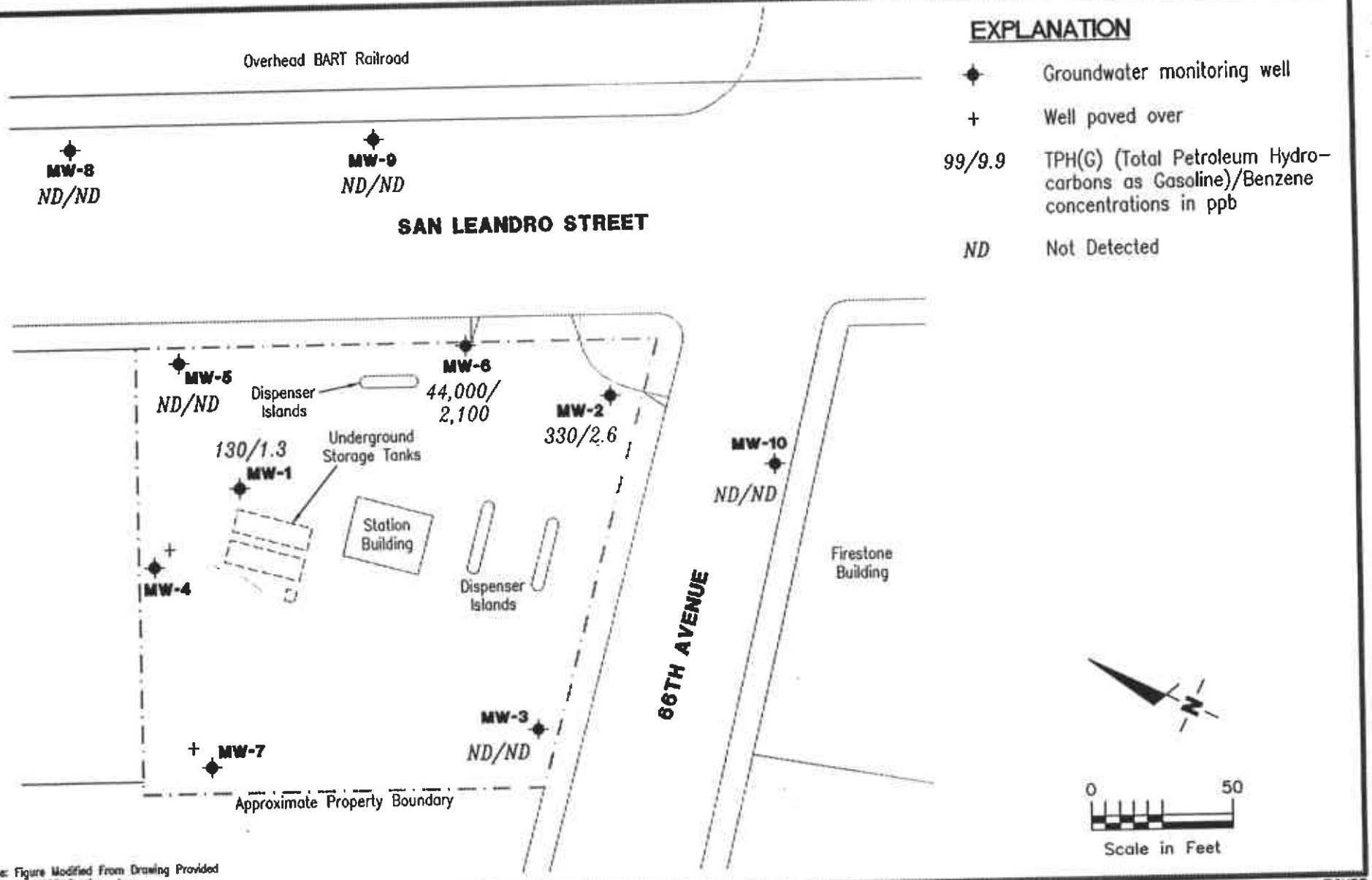
Gettler - Ryan Inc.

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

POTENTIOMETRIC MAP
Unocal Service Station No. 3135
845 66th Avenue
Oakland, California

FIGURE 1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
180067		February 5, 1998	



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

FIGURE 2

Gettler - Ryan Inc.

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

CONCENTRATION MAP
Unocal Service Station No. 3135
845 66th Avenue
Oakland, California

JOB NUMBER 180067

REVIEWED BY

DATE February 5, 1998

REVISED DATE

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #3135

845 66th Avenue

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(D)	TPH(G)	B	T	E	X	MTBE
				<---ppb--->						
MW-1	05/11/90			--	22,000	590	42	1,200	3,600	--
	08/28/90			--	1,700	140	1.4	180	150	--
(D)	08/28/90			--	2,600	180	3	810	270	--
	11/26/90			--	2,900	160	2.3	330	320	--
	02/21/91			690	26,000	280	39	1,200	1,900	--
	08/05/91			200	1,200	95	6.2	230	80	--
	11/05/91			260	4,900	80	ND	150	160	--
	02/07/92			ND	220	2.1	ND	10	16	--
	05/05/92			120	310	5.7	ND	7.1	15	--
	08/03/92			220[4]	980	22	0.69	77	82	--
	11/03/92			400[4]	1,100	28	ND	80	78	--
	02/03/93			ND	94[7]	ND	ND	1.4	1.6	--
	05/17/93			490[5]	960[7]	39	ND	57	60	--
	08/13/93			170[5]	860	3.5	ND	17	20	--
	11/11/93			160[5]	930	7.3	ND	25	19	--
	02/10/94			ND	170[6]	0.9	2.3	ND	ND	--
	05/05/94			ND	96[6]	ND	ND	ND	ND	--
	08/02/94			130[5]	700	13	0.62	2	3.6	--
	11/07/94			270[4]	890	16	ND	31	21	--
	02/01/95			ND	120	1.7	ND	ND	ND	--
	05/02/95			120[4]	460	14	ND	14	13	--
4.99	08/01/95	7.70	-2.71	86[4]	190	4	ND	3.7	2	--
	11/01/95	9.08	-4.09	190[5]	160	2.5	ND	0.82	0.57	280
	02/01/96	6.22	-1.23	90[4]	240	8.7	2	ND	0.66	250
	02/04/97	8.48	-3.49	--	120[6]	0.58	ND	ND	ND	150
	02/05/98	**5.50**	**-0.51**	**--**	**130**	**1.3**	**ND**	**2.7**	**11**	**220**
MW-2	05/11/90			--	65,000	3,300	3,300	4,100	12,000	--
	08/28/90[1]			3,100	27,000	2,600	1,300	1,900	3,000	--
	11/26/90[1]			3,800	15,000	1,600	450	1,100	2,100	--
	02/21/91[1]			7,000	3,400	160	61	200	490	--

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #3135
845 66th Avenue
Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(D)	TPH(G)	B	T	E	X	MTBE
				<----------	ppb	----------				---------->
MW-2	08/05/91[1]			4,200	33,000	2,900	190	3,400	7,900	--
(cont)	11/05/91[2]			3,900	110,000	4,200	200	3,400	8,600	--
	02/07/92[1]			2,300	11,000	1,400	30	1,900	1,400	--
	05/05/92[1]			4,600	26,000	2,300	110	2,700	6,900	--
	08/03/92[1]			3,300[5]	37,000	4,500	480	3,300	9,700	--
	11/03/92[1]			9,600[4]	40,000	5,600	130	3,000	6,100	--
	02/03/93[1]			3,900[4]	9,300	780	68	830	1,200	--
	05/17/93			5,500[5]	46,000	4,400	510	2,900	9,900	--
	08/13/93			2,800[5]	44,000	5,100	600	2,900	8,500	--
	11/11/93			7,000[5]	36,000	4,800	970	3,000	8,100	--
	02/10/94			2,000[5]	12,000	1,000	17	880	940	--
	05/05/94			3,100[5]	36,000	3,200	670	2,700	9,600	--
	08/02/94			8,500[4]	32,000	2,400	2,200	2,900	12,000	--
	11/07/94			3,100[5]	49,000	1,700	2,000	3,000	10,000	--
	02/01/95			1,800[4]	9,300	300	210	630	2,600	--
	05/02/95			2,300[5]	5,600	150	ND	150	180	--
3.57	08/01/95	6.16	-2.59	2,900[4]	13,000	700	140	1,400	5,500	--
	11/01/95	7.30	-3.73	4,100[4]	18,000	490	110	1,300	4,600	190
	02/01/96	4.57	-1.00	5,500[4]	22,000	470	77	1,400	5,900	ND
	02/04/97	7.10	-3.53	--	100[6]	ND	0.89	ND	ND	81
	02/05/98	**4.12**	**-0.55**	**--**	**330**	**2.6**	**2.6**	**17**	**58**	**5.5**
MW-3	5/11/90			--	ND	ND	ND	ND	ND	
	08/28/90			--	ND	ND	ND	ND	0.7	--
	11/26/90			--	ND	ND	ND	ND	ND	--
	02/21/91			--	ND	ND	ND	ND	0.64	--
	08/05/91			63	ND	ND	ND	ND	ND	--
	11/05/91			ND	31	ND	ND	ND	0.65	--
	02/07/92			ND	ND	ND	ND	ND	ND	--
	05/05/92			56	ND	ND	ND	0.43	1.8	--

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #3135
845 66th Avenue
Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(D)	TPH(G)	B	T	E	X	MTBE
				<			ppb			>
MW-3	08/03/92			58	ND	ND	ND	ND	ND	--
(cont)	11/03/92			52[4]	ND	ND	ND	ND	ND	--
	02/03/93			ND	ND	ND	ND	ND	ND	--
	05/17/93			53	ND	ND	ND	ND	ND	--
	08/13/93			ND	ND	ND	ND	ND	ND	--
	11/11/93			51	ND	ND	ND	ND	ND	--
	02/10/94			50[5]	ND	ND	ND	ND	0.84	--
	05/05/94			66	62[6]	ND	ND	ND	ND	--
	08/02/94			76	150[6]	ND	ND	ND	ND	--
	11/07/94			ND	94[6]	ND	ND	ND	ND	--
	02/01/95			ND	100[6]	ND	ND	ND	ND	--
	05/02/95			56	360[6]	ND	ND	ND	ND	--
3.12	08/01/95	5.10	-1.98	ND	ND	ND	ND	ND	ND	--
	11/01/95	6.65	-3.53	200[4]	ND	ND	ND	ND	ND	200
	02/01/96	4.29	-1.17	160[4]	ND	ND	ND	ND	ND	190
	02/04/97	6.43	-3.31	--	ND	ND	ND	ND	ND	ND
	02/05/98	**4.68**	**-1.56**	--	**ND**	**ND**	**ND**	**ND**	**ND**	**490**
MW-4	08/28/90			--	62,000	810	72	4,400	4,600	--
	11/26/90			--	49,000	360	36	3,800	11,000	--
	02/21/91			4,100	33,000	210	21	3,800	12,000	--
	08/05/91			6,200	37,000	310	70	3,600	9,700	--
	11/05/91			7,700	140,000	320	ND	4,800	13,000	--
	02/07/92			2,300	8,100	24	4.9	1,800	3,200	--
	05/05/92			3,200	15,000	82	12	2,000	5,600	--
	08/03/92			2,400[4]	24,000	61	ND	2,100	5,400	--
	11/03/92			8,300[4]	36,000	69	ND	3,000	7,400	--
	02/03/93			720[5]	370	2.6	ND	1.2	53	--
	05/17/93			3,100[4]	2,500	ND	ND	170	410	--
	08/13/93			2,000[5]	19,000	ND	ND	1,600	4,100	--
	11/11/93			4,000[4]	16,000	110	12	1,800	3,800	--

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #3135

845 66th Avenue

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(D)	TPH(G)	B	T	E	X	MTBE
				<--------	ppb	--------				-------->
MW-4	02/10/94			170[4]	830	3.5	1.4	36	80	--
(cont)	05/05/94			2,000[5]	6,900	17	ND	480	1,300	--
	08/02/94			2,500[5]	17,000	38	ND	1,800	4,300	--
	11/07/94			2,200[4]	20,000	84	17	1,500	3,000	--
	02/01/95			ND	ND	ND	ND	ND	ND	--
	05/02/95			2,500[4]	5,400	36	ND	130	710	--
4.93	08/01/95	7.78	-2.85	3,400[4]	7,900	21	ND	210	860	--
	11/01/95	9.16	-4.23	3,300[4]	4,900	12	ND	190	710	210
	02/01/96	4.64	0.29	ND	91	2.7	ND	1.2	6.8	7.8
	02/04/97	8.65	-3.72	--	130[6]	0.58	ND	ND	ND	150
	02/05/98	**Paved Over**	**--**	**--**	**--**	**--**	**--**	**--**	**--**	**--**
MW-5	08/28/90			--	ND	ND	ND	ND	1.2	--
	11/26/90			--	ND	ND	ND	ND	ND	--
	02/21/91			--	56	ND	ND	ND	4.7	--
	08/05/91			ND	ND	ND	ND	ND	ND	--
	11/05/91			ND	ND	ND	ND	ND	ND	--
	02/07/92			ND	ND	ND	ND	0.36	0.94	--
	05/05/92			72	ND	ND	ND	0.42	1.4	--
	08/03/92			ND	ND	ND	ND	ND	ND	--
	11/03/92			ND	ND	ND	ND	ND	ND	--
	02/03/93			ND	ND	ND	ND	ND	ND	--
	05/17/93			ND	ND	ND	ND	ND	ND	--
	08/13/93			ND	ND	ND	ND	ND	ND	--
	11/11/93			ND	ND	ND	ND	ND	ND	--
	02/10/94			ND	ND	ND	ND	ND	0.59	--
	05/05/94			SAMPLED SEMI-ANNUALLY		--	--	--	--	--
	08/02/94			ND	ND	ND	ND	ND	ND	--
	11/07/94			--	--	--	--	--	--	--
	02/01/95			ND	ND	ND	ND	ND	ND	--
	05/02/95			--	--	--	--	--	--	--
4.27	08/01/95	7.00	-2.73	ND	ND	ND	ND	ND	ND	--

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #3135

845 66th Avenue

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(D)	TPH(G)	B	T	E	X	MTBE
				<----------		ppb				---------->
MW-5	11/01/95	8.40	-4.13	--	--	--	--	--	--	--
(cont)	02/01/96	5.45	-1.18	ND	ND	ND	ND	ND	ND	0.72
	02/04/97	7.82	-3.55	--	ND	ND	ND	ND	ND	ND
	02/05/98	**3.85**	**0.42**	**--**	**ND**	**ND**	**ND**	**ND**	**ND**	**490**
MW-6	08/28/90[3]			1,000	12,000	1,700	1,400	230	2,100	--
	11/26/90[1]			320	4,800	1,000	200	340	650	--
(D)	11/26/90			--	4,000	800	120	250	440	--
	02/21/91[1]			160	750	77	14	23	140	--
	08/05/91[1]			130	860	130	11	92	150	--
	11/05/91[1]			300	7,100	200	ND	190	580	--
	02/07/92[1]			ND	180	22	0.68	22	20	--
	05/05/92[1]			47	ND	ND	ND	ND	1.3	--
	08/03/92			170[4]	1,100	180	1.1	62	78	--
	11/03/92			220[4]	920	45	0.76	12	110	--
	02/03/93[1]			ND	ND	1.2	ND	ND	ND	--
	05/17/93			1,400[4]	4,900	890	46	210	530	--
	08/13/93			440[5]	2,300	330	ND	95	40	--
	11/11/93			650[5]	3,000	470	ND	220	270	--
	02/10/94			ND	ND	3.5	ND	1.5	ND	--
	05/05/94			630[5]	2,600	430	99	24	420	--
	08/02/94			2,400[5]	28,000	2,200	940	1,600	7,500	--
	11/07/94			770[4]	23,000	3,800	970	1,400	4,700	--
	02/01/95			2,700[5]	55,000	7,700	9,100	4,500	20,000	--
	05/02/95			3,600[5]	59,000	4,700	4,400	4,000	18,000	--
4.03	08/01/95	6.76	-2.73	2,800[4]	23,000	1,400	510	940	7,300	--
	11/01/95	8.10	-4.07	4,300[4]	24,000	1,100	200	1,900	6,000	170
	02/01/96	5.09	-1.06	3,700[4]	58,000	2,700	1,800	4,200	17,000	ND
	02/04/97	7.61	-3.58	--	95[6]	ND	1.0	ND	ND	96
	02/05/98	**4.55**	**-0.52**	**--**	**44,000**	**2,100**	**1,600**	**5,200**	**20,000**	**2,800**

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #3135

845 66th Avenue

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(D)	TPH(G)	B	T	E	X	MTBE
				<--------		ppb				-------->
MW-7	05/17/93			ND	ND	ND	ND	ND	ND	--
	08/13/93			ND	ND	ND	ND	ND	ND	--
	11/11/93			66	ND	ND	ND	ND	ND	--
	02/10/94			ND	ND	ND	ND	ND	ND	--
	05/05/94			SAMPLED SEMI-ANNUALLY		--	--	--	--	--
	08/02/94			ND	ND	ND	ND	ND	0.63	--
	11/07/94			--	--	--	--	--	--	--
	02/01/95			ND	ND	ND	ND	ND	ND	--
	05/02/95			--	--	--	--	--	--	--
4.42	08/01/95	7.62	-3.20	ND	ND	ND	ND	ND	ND	--
	11/01/95	8.58	-4.16	--	--	--	--	--	--	--
	02/01/96	5.77	-1.35	96[4]	ND	ND	ND	ND	ND	1.4
	02/04/97	7.64	-3.22	--	ND	ND	ND	ND	ND	ND
	02/05/98	**Paved Over**	--	--	--	--	--	--	--	--
MW-8	11/03/92			ND	ND	ND	ND	ND	ND	--
	02/03/93			ND	ND	ND	ND	ND	ND	--
	05/17/93			ND	ND	ND	ND	ND	ND	--
	08/13/93			ND	ND	ND	ND	ND	ND	--
	11/11/93			ND	ND	ND	ND	ND	ND	--
	02/10/94			ND	ND	ND	ND	ND	ND	--
	05/05/94			SAMPLED SEMI-ANNUALLY		--	--	--	--	--
	08/02/94			ND	ND	ND	ND	ND	ND	--
	11/07/94			--	--	--	--	--	--	--
	02/01/95			ND	ND	ND	ND	ND	ND	--
	05/02/95			--	--	--	--	--	--	--
4.43	08/01/95	7.11	-2.68	ND	ND	ND	ND	ND	ND	--
	11/01/95	8.98	-4.55	--	--	--	--	--	--	--
	02/01/96	5.52	-1.09	110[4]	ND	ND	ND	ND	ND	1.3
	02/04/97	8.07	-3.64	--	ND	ND	ND	ND	ND	ND
	02/05/98	**4.97**	**-0.54**	--	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #3135

845 66th Avenue

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(D)	TPH(G)	B	T	E	X	MTBE
				<----------ppb---------->						
MW-9	11/03/92			ND	ND	ND	ND	ND	ND	--
	02/03/93			ND	ND	ND	ND	ND	ND	--
	05/17/93			ND	ND	ND	ND	ND	ND	--
	08/13/93			ND	ND	ND	ND	ND	ND	--
	11/11/93			ND	ND	ND	ND	ND	ND	--
	02/10/94			ND	ND	ND	ND	ND	ND	--
	05/05/94			SAMPLED SEMI-ANNUALLY		--	--	--	--	--
	08/02/94			ND	ND	ND	ND	ND	ND	--
	11/07/94			--	--	--	--	--	--	--
	02/01/95			65[4]	ND	ND	ND	ND	ND	--
	05/02/95			--	--	--	--	--	--	--
4.60	08/01/95	7.30	-2.70	ND	ND	ND	ND	ND	ND	--
	11/01/95	8.66	-4.06	--	--	--	--	--	--	--
	02/01/96	5.14	-0.54	76[4]	ND	ND	ND	ND	ND	ND
	02/04/97	8.12	-3.52	--	ND	ND	ND	ND	ND	ND
	02/05/98	**4.95**	**-0.35**	**--**	**ND**	**ND**	**ND**	**ND**	**ND**	**ND**
MW-10	11/03/92			160[4]	740	11	2.1	32	56	--
	02/03/93			ND	1,200[6]	ND	ND	ND	ND	--
	05/17/93			ND	1,200[6]	ND	ND	ND	ND	--
	08/13/93			97[5]	1,500[7]	ND	ND	41	21	--
	11/11/93			88[5]	1,600[6]	ND	ND	ND	ND	--
	02/10/94			71	1,480[6]	ND	ND	ND	ND	--
	05/05/94			55	1,000[6]	ND	ND	ND	ND	--
	08/02/94			110	95[6]	ND	ND	ND	ND	--
	11/07/94			120[5]	1,100[6]	ND	ND	ND	ND	--
	02/01/95			72[4]	560[6]	ND	ND	ND	ND	--
	05/02/95			99	840[6]	ND	ND	ND	9.5	--
2.69	08/01/95	5.79	-3.10	260	ND	ND	ND	ND	ND	--
	11/01/95	6.95	-4.26	280	ND	ND	ND	ND	ND	830

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #3135

845 66th Avenue

Oakland, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	TPH(D)	TPH(G)	B	T	E	X	MTBE
				<----------ppb---------->						
MW-10	02/01/96	4.31	-1.62	320[4]	ND	ND	ND	ND	ND	1,300
(cont)	02/04/97	6.59	-3.90	--	ND	ND	ND	ND	ND	ND
	02/05/98	**3.76**	**-1.07**	--	ND	ND	ND	ND	ND	500
	2/99									620 / 8020
MWD (D)(MW6)	02/21/91			--	740	74	12	33	140	--
Trip Blank										
TB-LB	**02/05/98**	--	--	--	ND	ND	ND	ND	ND	ND

Table 1

Groundwater Monitoring Data and Analytical Results

Tosco (Unocal) Service Station #3135
845 66th Avenue
Oakland, California

EXPLANATIONS:

Groundwater monitoring data and laboratory analytical results prior to February 5, 1998, were compiled from reports prepared by MPDS Services, Inc.

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

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

(D) = Duplicate
ppb = Parts per billion
ppm = Parts per million
ND = Not Detected
-- = Not Measured/Not Analyzed
TOG = Total Oil and Grease

* TOC elevations are relative to Mean Sea Level (msl), per the City of Oakland Benchmark No. 3881 (Elevation = 4.72 feet msl).

1 TOG was ND.

2 TOG was detected at a concentration of 78 ppb.

3 TOG was detected at a concentration of 16 ppb.

4 Laboratory report indicates the hydrocarbons detected did not appear to be diesel.

5 Laboratory report indicates the hydrocarbons detected appeared to be a diesel and non-diesel mixture.

6 Laboratory report indicates the hydrocarbons detected did not appear to be gasoline.

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

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

STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. Prior to sample collection, the type of analysis to be performed is determined. Loss prevention of volatile compounds is controlled and sample preservation for subsequent analysis is maintained.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using a MMC flexi-dip interface probe or equivalent. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, static water level measurements are collected with the interface probe and are also recorded in the field notes.

After water levels are collected and prior to sampling, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, suction, Grundfos), or polyvinyl chloride bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging. Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used when possible. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

As requested by Tosco Marketing Company, the purge water and decontamination water generated during sampling activities is transported to Tosco - San Francisco Area Refinery, located in Rodeo, California.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 3135 Job#: 180067

Address: 845 66th Ave Date: 2-5-98

City: Oakland Sampler: Joe

Well ID MW-1 Well Condition: See comments below

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 22.67 ft.

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

Depth to Water 5.50 ft.

17.17 X VF 0.17 = 2.92 X 3 (case volume) = Estimated Purge Volume: 9 (gal.)

Purge Equipment: Disposable Bailer / Bailer / Stack / Suction / ~~Grundfos~~ / Other: ____

Sampling Equipment: ~~Disposable Bailer~~ / ~~Bailer~~ / Pressure Bailer / Grab Sample / Other: ____

Starting Time: 2:20 Weather Conditions: Rainy windy

Sampling Time: 2:45 p.m. Water Color: clear Odor: faint

Purging Flow Rate: 1 gpm. Sediment Description: None

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

Time	Volume (gal.)	pH	Conductivity µmhos/cm X/~~00~~	Temperature ~~C~~ F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
2:25	0	7.36	3.87	71.2			
2:28	3	7.26	3.76	70.8			
2:31	6	7.14	3.70	71.5			
2:35	9	7.14	3.69	71.6			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-1	3 VOA	Y	HCL	SEQ.	TPHG, BTEX, MTBE

COMMENTS: Well christy box is below grade. Entire box needs to be raised 1" - 1.5".

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 3135 Job#: 180067

Address: 845 66th Ave. Date: 2-5-98

City: Oakland Sampler: Joe

Well ID MW-2 Well Condition: Fairly good compared to other wells.

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 22.52 ft.

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

Depth to Water 4.12 ft.

18.4 X VF 0.17 = 3.13 X 3 (case volume) = Estimated Purge Volume: 9.5 (gal.)

Purge Equipment: Disposable Bailer; Bailer; Stack; Suction; Grundfos; Other: ____

Sampling Equipment: Disposable Bailer; ~~Bailer~~; Pressure Bailer; Grab Sample; Other: ____

Starting Time: 1:42 Weather Conditions: Rainy

Sampling Time: 2:12 PM Water Color: clear Odor: Faint

Purging Flow Rate: 1 gpm. Sediment Description: None

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

Time	Volume (gal.)	pH	Conductivity µmhos/cm x100	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
1:47	2	7.12	3.22	69.5			
1:50	3	7.10	3.26	70.6			
1:55	6	7.08	3.34	70.8			
1:58	9.5	7.06	3.40	71.0			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-2	3x0A	Y	HCL	SEQ.	TPHG, BTEX, MTBE

COMMENTS: New Padlock

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 3135 Job#: 180067

Address: 845 66th Ave Date: 2-5-98

City: Oakland Sampler: Joe

Well ID MW-3 Well Condition: See Comments.

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 21.70 ft.

Depth to Water 4.68 ft.

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

17.02 X VF 0.17 = 2.89 X 3 (case volume) = Estimated Purge Volume: 9 (gal.)

Purge Equipment: Disposable Bailer / Bailer / Stack / (Suction) / Grundfos / Other: ____

Sampling Equipment: (Disposable Bailer) / Bailer / Pressure Bailer / Grab Sample / Other: ____

Starting Time: 8:35 Weather Conditions: Sporadic rain

Sampling Time: 9:10 A.M Water Color: Semi-clear Odor: None

Purging Flow Rate: 3.0 gpm Sediment Description: None

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

Time	Volume (gal.)	pH	Conductivity µmhos/cm (X)	Temperature °C (F)	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
8:47	0	7.58	4.29	70.2			
8:50	3	7.25	4.36	70.8			
8:53	6	7.28	4.35	71.3			
8:57	9	7.30	4.38	71.9			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-3	3 VOA	Y	HCl	SEQ.	TPHG, BTEX, MTBE

COMMENTS: Christy box is below grade. It was sampled when there was the rain slowed down a bit.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 3135 Job#: 180067

Address: 845 66th Ave. Date: 2-5-98

City: Oakland Sampler: Joe

Well ID mw-4 Well Condition: Paved-over

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth ____ ft.

Depth to Water ____ ft.

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

____ X VF 0.17 = ____ X 3 (case volume) = Estimated Purge Volume: ____ (gal.)

Purge Equipment: Disposable Bailer / Bailer / Stack / Suction / Grundfos / Other: ____

Sampling Equipment: Disposable Bailer / Bailer / Pressure Bailer / Grab Sample / Other: ____

Starting Time: ____ Weather Conditions: ____

Sampling Time: ____ Water Color: ____ Odor: ____

Purging Flow Rate: ____ gpm Sediment Description: ____

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

Time	Volume (gal.)	pH	Conductivity µmhos/cm	Temperature °C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES

COMMENTS: This well is partially visible and is embedded in the hardened asphalt. It's also below grade and should be elevated 1"-2" above ground.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 3135 Job#: 180067

Address: 845 66th Ave Date: 2-5-98

City: Oakland Sampler: Joe

Well ID MW-5 Well Condition: See comments below.

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 25.98 ft.

Depth to Water 3.85 ft.

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

22.13 X VF 0.17 = 3.76 X 3 (case volume) = Estimated Purge Volume: 12 (gal.)

Purge Equipment: Disposable Bailer, Bailer, Stack, ~~Suction~~, ~~Grundfos~~, Other: ____

Sampling Equipment: (Disposable Bailer), Bailer, Pressure Bailer, Grab Sample, Other: ____

Starting Time: 9:30 Weather Conditions: Slow rain

Sampling Time: 10:00 A.M. Water Color: Clear Odor: None

Purging Flow Rate: 1 gpm. Sediment Description: None

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

Time	Volume (gal.)	pH	Conductivity µmhos/cm	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
9:36	0	7.95	4.86	70.9			
9:40	4	7.38	4.67	71.2			
9:44	8	7.35	4.61	71.3			
9:48	12	7.35	4.64	71.4			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-5	3 VOA	Y	HCL	SEQ.	TPHG, BTEX, MTBE

COMMENTS: This well is below grade and surface water has created a puddle around its box. Needs to be raised above grade. All surface and christy box water was removed before commencing any work on this well.

9/97-fieldat.frm

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 3135 Job#: 180067

Address: 845 66th Ave. Date: 2-5-98

City: Oakland Sampler: Joe

Well ID MW-6 Well Condition: See comments below.

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 25.80 ft.

Depth to Water 4.55 ft.

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

21.25 X VF 0.17 = 3.61 X 3 (case volume) = Estimated Purge Volume: 11 (gal.)

Purge Equipment: Disposable Bailer; Bailer; Stack; Suction; Grundfos; Other: ____

Sampling Equipment: Disposable Bailer; Bailer; Pressure Bailer; Grab Sample; Other: ____

Starting Time: 1:05 Weather Conditions: raining

Sampling Time: 1:30 P.M. Water Color: clear Odor: None

Purging Flow Rate: 0.9 gpm. Sediment Description: None

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

Time	Volume (gal.)	pH	Conductivity µmhos/cm/MΩ	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
1:10	0	8.02	5.13	69.5			
1:14	3.5	7.67	5.12	70.0			
1:18	7	7.55	5.14	70.3			
1:22	11	7.45	5.18	70.0			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-6	3 VOA	Y	HCL	SEQ.	TPHG, BTEX, MTBE

COMMENTS: This well christy box has a good grade. However, the cover is the wrong kind: it has a 0.5" hole in the middle that may allow surface water to drain into it. New padlock.

9/97-fieldat.frm

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 3135 Job#: 480067

Address: 845 66th Ave Date: 2-5-97

City: Oakland Sampler: JDa

Well ID mw-7 Well Condition: Paved-over

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth ____ ft.

Depth to Water ____ ft.

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

____ X VF ____ = ____ X 3 (case volume) = Estimated Purge Volume: ____ (gal.)

Purge Equipment: Disposable Bailer, Bailer, Stack, Suction, Grundfos, Other: ____

Sampling Equipment: Disposable Bailer, Bailer, Pressure Bailer, Grab Sample, Other: ____

Starting Time: ____ Weather Conditions: ____

Sampling Time: ____ Water Color: ____ Odor: ____

Purging Flow Rate: ____ gpm. Sediment Description: ____

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

Time	Volume (gal.)	pH	Conductivity µmhos/cm	Temperature °C	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES

COMMENTS: This well looks completely paved-over. The location on the site plan and the ~~sunken~~ evenly sunken pavement tells me that this is mw-7.

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 3135 Job#: 180067

Address: 845 66th Ave Date: 2-5-98

City: Oakland Sampler: Joe

Well ID MW-8 Well Condition: O.K

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 23.09 ft.

Depth to Water 4.97 ft.

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

18.12 X VF 0.17 = 3.08 X 3 (case volume) = Estimated Purge Volume: 9.5 (gal.)

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

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

Starting Time: 11:30 Weather Conditions: rainy

Sampling Time: 11:53 A.M Water Color: Clear Odor: None

Purging Flow Rate: 0.4 gpm Sediment Description: None

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

Time	Volume (gal.)	pH	Conductivity µmhos/cm X1000	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
11:34	3	7.06	5.98	71.5			
11:38	6	7.18	6.02	70.7			
11:42	9	7.19	6.05	70.6			
11:45	9.5	7.24	6.06	70.5			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-8	3 VOA	Y	HCL	SEQ.	TPHG, BTEX, MTBE

COMMENTS: ____

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 3135 Job#: 180067

Address: 845 66th Ave. Date: 2-5-98

City: Oakland Sampler: Joe

Well ID MW-9 Well Condition: O.K

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 23.08 ft.

Depth to Water 4.95 ft.

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

18.13 X VF 0.17 = 3.06 X 3 (case volume) = Estimated Purge Volume: 9.5 (gal.)

Purge Equipment: Disposable Bailer; Bailer; Stack; Suction; Grundfos; Other: ____

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

Starting Time: 12:10 Weather Conditions: rain, wind

Sampling Time: 12:37 p.m. Water Color: clear Odor: None

Purging Flow Rate: 0.9 gpm. Sediment Description: None

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

Time	Volume (gal.)	pH	Conductivity µmhos/cm	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
12:15	0	7.44	5.29	70.9			
12:18	3	7.30	5.32	71.0			
12:22	6	7.30	5.36	71.0			
12:25	9.5	7.31	5.30	70.8			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-9	3 VOA	Y	HCL	SEQ.	TPHG, BTEX, MTBE

COMMENTS: ____

WELL MONITORING/SAMPLING
FIELD DATA SHEET

Client/
Facility # 3135 Job#: 180067

Address: 845 66th Ave. Date: 2-5-98

City: Oakland Sampler: Joe

Well ID MW-10 Well Condition: See below.

Well Diameter 2 in. Hydrocarbon Thickness: ____ in. Amount Bailed (product/water): ____ (gal.)

Total Depth 23.07 ft.

Depth to Water 3.76 ft.

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

19.31 X VF 0.17 = 3.28 X 3 (case volume) = Estimated Purge Volume: 10 (gal.)

Purge Equipment: Disposable Bailer / Bailer / Stack / Suction / Grundfos / Other: ____

Sampling Equipment: Disposable Bailer / Bailer / Pressure Bailer / Grab Sample / Other: ____

Starting Time: 10:25 Weather Conditions: Rain

Sampling Time: 11:00 A.M. Water Color: Clear Odor: None

Purging Flow Rate: 0.9 gpm. Sediment Description: None

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

Time	Volume (gal.)	pH	Conductivity µmhos/cm x/oo	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
10:35	~~3.0~~	7.27	4.22	70.5			
10:38	3.5	7.14	3.95	69.5			
10:42	7	7.12	3.86	69.8			
10:45	10	7.12	3.87	70.3			

LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
MW-10	~~1 liter~~ 3 VOA	Y	HCl	SEQ.	TPHG, BTEX, MTBE

COMMENTS: Christy box cover is completely missing. Well is on very busy 66th Ave.; route of heavy duty trucks. This well is definitely a hazard for pedestrians and traffic. ~~Temporarily~~ Temporarily I filled it up with absorbent pads in the hope of mitigating the problem.

9/97-fieldst.frm

Chain-of-Custody-Record

TOSCO

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

Facility Number: UNOCAL SS# 3135
Facility Address: 845 66th Avenue, Oakland, CA
Consultant Project Number: 180067.85
Consultant Name: Gettler-Ryan Inc. (G-R Inc.)
Address: 6747 Sierra Court, Suite J, Dublin, CA 94568
Project Contact (Name): Deanna L. Harding
(Phone): 510-551-7555 (Fax Number): 510-551-7888

Contact (Name): Ms. Tina Berry
(Phone): (510) 277-2321
Laboratory Name: Sequoia Analytical
Laboratory Release Number:
Samples Collected by (Name): Joe Asemien
Collection Date: 2-5-98
Signature:

9802239

Analyses To Be Performed

9802239

DO NOT BILL TB-LB ANALYSIS

Sample Number	Lab Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	TPH Gas + BTEX w/MTBE (8020) (8015)	TPH Diesel (8015)	Oil and Grease (5520)	Purgeable Halocarbons (8010)	Purgeable Aromatics (8020)	Purgeable Organics (8240)	Extractable Organics (8270)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)	Remarks
TB-LB	1	1 VOA	W	—	—	HCL	Yes	✓								MW-4 + 7 were paved over, and were not sampled.
MW-1	2	3 VOA	W	G	2:45 P.M	"	"	✓								
MW-2	3	"	"	"	2:12 P.M	"	"	✓								
MW-3	4	"	"	"	9:10 A.M	"	"	✓								
~~MW-4~~		"	"	"		"	"	✓								
MW-5	5	"	"	"	10:50 A.M	"	"	✓								
MW-6	6	"	"	"	1:30 P.M	"	"	✓								
~~MW-7~~		"	"	"		"	"	✓								
MW-8	7	"	"	"	11:53 A.M	"	"	✓								
MW-9	8	"	"	"	12:37 P.M	"	"	✓								
MW-10	9	"	"	"	11:00 A.M	"	"	✓								

WC 1

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	G-R Inc.	2-5-98 4:10 P.M			
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)	21598	Date/Time 1610

Turn Around Time (Circle Choice)

24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted

Sequoia Analytical

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

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

Attention: Deanna Harding

Client Proj. ID: Unocal 3135, 180067.85
Sample Descript: TB-LB
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9802239-01

Sampled: 02/05/98
Received: 02/05/98
Analyzed: 02/10/98
Reported: 02/13/98

QC Batch Number: GC021098802002A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	97

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

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

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

Gettler Ryan/Geostrategies	Client Proj. ID: Unocal 3135, 180067.85	Sampled: 02/05/98
6747 Sierra Court Suite J	Sample Descript: MW-1	Received: 02/05/98
Dublin, CA 94568	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 02/10/98
Attention: Deanna Harding	Lab Number: 9802239-02	Reported: 02/13/98

QC Batch Number: GC021098802002A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	**50**	**130**
Methyl t-Butyl Ether	**2.5**	**220**
Benzene	**0.50**	**1.3**
Toluene	0.50	N.D.
Ethyl Benzene	**0.50**	**2.7**
Xylenes (Total)	**0.50**	**11**
Chromatogram Pattern:		**Gas**

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	130

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

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

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

Gettler Ryan/Geostrategies	Client Proj. ID: Unocal 3135, 180067.85	Sampled: 02/05/98
6747 Sierra Court Suite J	Sample Descript: MW-2	Received: 02/05/98
Dublin, CA 94568	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 02/10/98
Attention: Deanna Harding	Lab Number: 9802239-03	Reported: 02/13/98

QC Batch Number: GC021098802002A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	330
Methyl t-Butyl Ether	2.5	5.5
Benzene	0.50	2.6
Toluene	0.50	2.6
Ethyl Benzene	0.50	17
Xylenes (Total)	0.50	58
Chromatogram Pattern:		Gas

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	129

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

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

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

Gettler Ryan/Geostrategies	Client Proj. ID: Unocal 3135, 180067.85	Sampled: 02/05/98
6747 Sierra Court Suite J	Sample Descript: MW-3	Received: 02/05/98
Dublin, CA 94568	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 02/10/98
Attention: Deanna Harding	Lab Number: 9802239-04	Reported: 02/13/98

QC Batch Number: GC021098802002A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	**2.5**	**490**
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	117

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

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

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

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

Attention: Deanna Harding

Client Proj. ID: Unocal 3135, 180067.85
Sample Descript: MW-5
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9802239-05

Sampled: 02/05/98
Received: 02/05/98

Analyzed: 02/10/98
Reported: 02/13/98

QC Batch Number: GC021098802002A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	**2.5**	**490**
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	118

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

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

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

Gettler Ryan/Geostrategies	Client Proj. ID: Unocal 3135, 180067.85	Sampled: 02/05/98
6747 Sierra Court Suite J	Sample Descript: MW-6	Received: 02/05/98
Dublin, CA 94568	Matrix: LIQUID	
	Analysis Method: 8015Mod/8020	Analyzed: 02/10/98
Attention: Deanna Harding	Lab Number: 9802239-06	Reported: 02/13/98

QC Batch Number: GC021098802002A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	10000	44000
Methyl t-Butyl Ether	500	2800
Benzene	100	2100
Toluene	100	1600
Ethyl Benzene	100	5200
Xylenes (Total)	100	20000
Chromatogram Pattern:		Gas

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	122

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

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

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

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

Attention: Deanna Harding

Client Proj. ID: Unocal 3135, 180067.85
Sample Descript: MW-8
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9802239-07

Sampled: 02/05/98
Received: 02/05/98

Analyzed: 02/10/98
Reported: 02/13/98

QC Batch Number: GC021098802002A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	117

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

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

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

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

Attention: Deanna Harding

Client Proj. ID: Unocal 3135, 180067.85
Sample Descript: MW-9
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9802239-08

Sampled: 02/05/98
Received: 02/05/98

Analyzed: 02/10/98
Reported: 02/13/98

QC Batch Number: GC021098802002A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	115

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

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

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

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

Attention: Deanna Harding

Client Proj. ID: Unocal 3135, 180067.85
Sample Descript: MW-10
Matrix: LIQUID
Analysis Method: 8015Mod/8020
Lab Number: 9802239-09

Sampled: 02/05/98
Received: 02/05/98

Analyzed: 02/10/98
Reported: 02/13/98

QC Batch Number: GC021098802002A
Instrument ID: GCHP02

Total Purgeable Petroleum Hydrocarbons (TPPH) with BTEX and MTBE

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	**2.5**	**500**
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		

Surrogates	Control Limits %		% Recovery
Trifluorotoluene	70	130	118

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

SEQUOIA ANALYTICAL - ELAP #1271

Mike Gregory
Project Manager

Sequoia Analytical

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

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

Client Proj. ID: Unocal 3135, 180067.85

Lab Proj. ID: 9802239

Received: 02/05/98

Reported: 02/13/98

LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 12 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Mike Gregory
Project Manager

Sequoia Analytical

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

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

Client Project ID: Unocal 3135, 180067.85
Matrix: Liquid
Work Order #: 9802239 -01-09

Reported: Feb 25, 1998

QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	Gas
QC Batch#:	GC021098802002A	GC021098802002A	GC021098802002A	GC021098802002A	GC021098802002A
Analy. Method:	EPA 8020	EPA 8020	EPA 8020	EPA 8020	EPA 8015M
Prep. Method:	EPA 5030	EPA 5030	EPA 5030	EPA 5030	EPA 5030
Analyst:	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb	D. Newcomb
MS/MSD #:	8020411	8020411	8020411	8020411	8020411
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	2/10/98	2/10/98	2/10/98	2/10/98	2/10/98
Analyzed Date:	2/10/98	2/10/98	2/10/98	2/10/98	2/10/98
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	310 µg/L
Result:	22	22	22	66	300
MS % Recovery:	110	110	110	110	97
Dup. Result:	17	18	18	57	260
MSD % Recov.:	85	90	90	96	84
RPD:	26	20	20	15	14
RPD Limit:	0-20	0-20	0-20	0-20	0-50
LCS #:	LCS021098	LCS021098	LCS021098	LCS021098	LCS021098
Prepared Date:	2/10/98	2/10/98	2/10/98	2/10/98	2/10/98
Analyzed Date:	2/10/98	2/10/98	2/10/98	2/10/98	2/10/98
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	310 µg/L
LCS Result:	20	20	20	62	270
LCS % Recov.:	100	100	100	103	87
MS/MSD Control Limits	60-140	60-140	60-140	60-140	60-140
LCS Control Limits	70-130	70-130	70-130	70-130	70-130

SEQUOIA ANALYTICAL
Elap #1271

Mike Gregory
Project Manager

Please Note:
The LCS is a control sample of known, interferent-free matrix that is analyzed using the same reagents, preparation, and analytical methods employed for the samples. The matrix spike is an aliquot of sample fortified with known quantities of specific compounds and subjected to the entire analytical procedure. If the recovery of analytes from the matrix spike does not fall within specified control limits due to matrix interference, the LCS recovery is to be used to validate the batch.

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