



# GETTLER-RYAN Inc.

## TRANSMITTAL

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DEVE. OF ENV. SERVICES DEPT

Mike Bakaldin  
Gurss  
January 4, 1998  
G-R #:280036

TO: Mr. Robert A. Boust  
Unocal Corporation  
2121 N. California Blvd., Suite 250  
Walnut Creek, California 94596

CC: Mr. Greg Gurss  
Gettler-Ryan Inc.  
Rancho Cordova, California

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

RE: Former Unocal SS #2512  
1300 Davis Street  
San Leandro, California

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	December 21, 1998	Groundwater Monitoring and Sampling Report Fourth Quarter 1998 - Event of October 12, 1998

### 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 **January 14, 1998**, this report will be distributed to the following:

cc: Alameda County Health Care Services, 1131 Harbor Bay Parkway, Alameda, CA 94501  
City of San Leandro, Development Services, 835 E. 14th Street, San Leandro, CA 94577

Enclosure

agency/2512rab qmt



# GETTLER-RYAN INC.

December 21, 1998  
G-R Job #280036

Mr. Robert A. Boust  
Unocal - DBG/AMG  
2121 North California Boulevard, Suite 250  
Walnut Creek, California 94596

RE: Fourth Quarter 1998 Groundwater Monitoring & Sampling Report  
Former Unocal Service Station #2512  
1300 Davis Street  
San Leandro, California

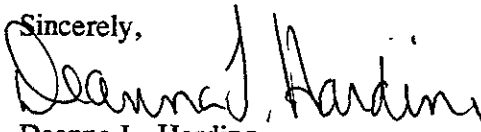
Dear Mr. Boust:


This report documents the quarterly groundwater monitoring and sampling event performed by Gettler-Ryan Inc. (G-R). On October 12, 1998, field personnel monitored and sampled four wells (MW-3, MW-7, MW-8, and MW-9) at the above referenced site.

Static groundwater levels were measured and all wells were checked for the presence of separate-phase hydrocarbons. Separate-phase hydrocarbons were not present in the wells. Static water level data and groundwater elevations are summarized in Table 1. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring wells as specified by G-R Standard Operating Procedure - Groundwater Sampling (attached). The field data sheets are also attached. The samples were analyzed by Sequoia Analytical. Analytical results are summarized in Tables 1 and 2. A Concentration Map is included as Figure 2. The chain of custody document and laboratory analytical reports are also attached.

Sincerely,

  
Deanna L. Harding  
Project Coordinator

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

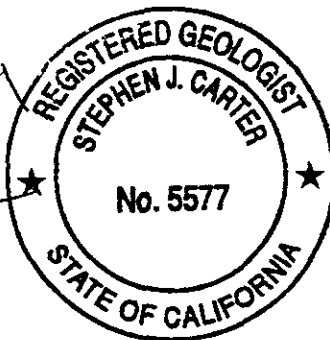
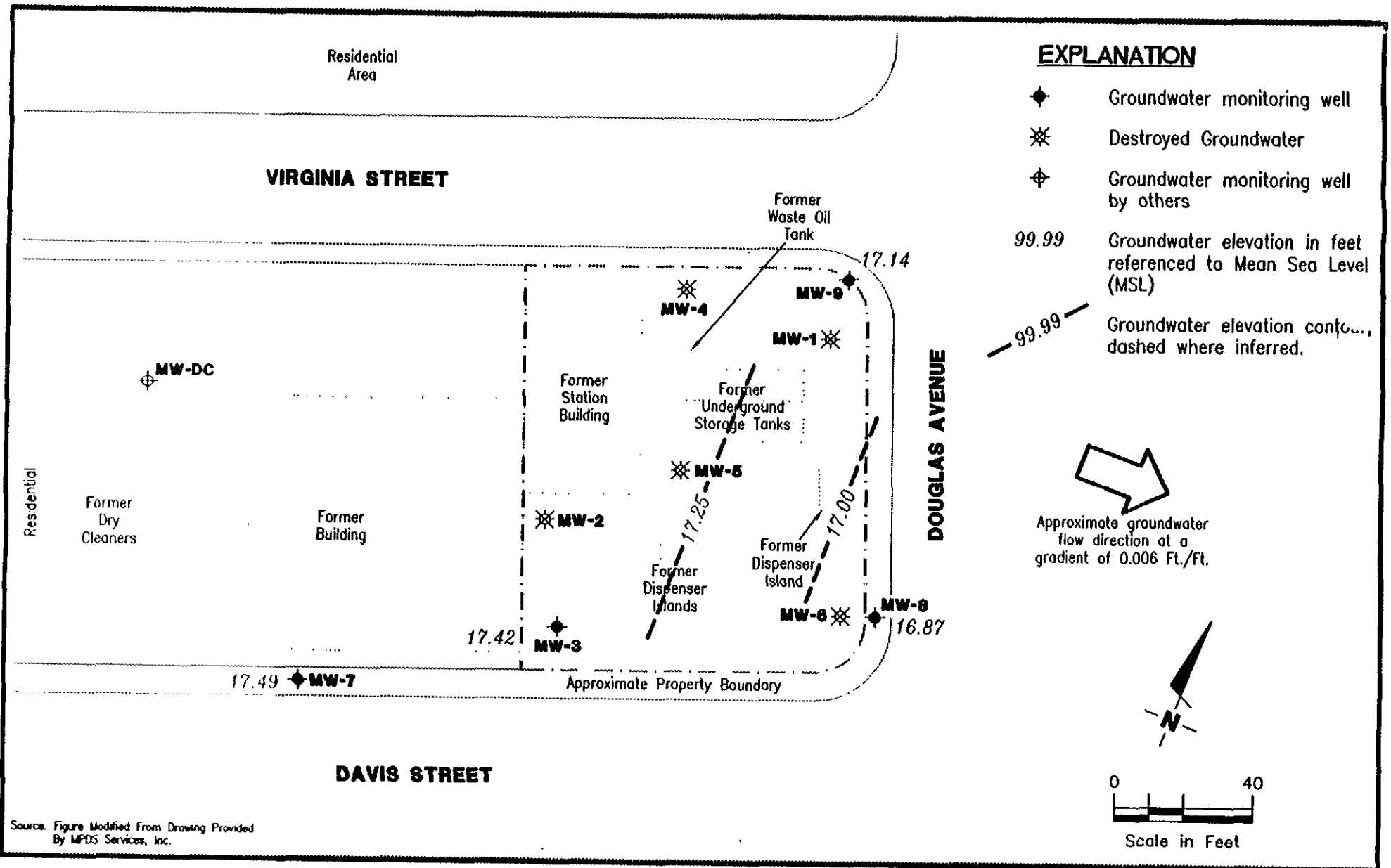


Figure 1: Potentiometric Map  
Figure 2: Concentration Map  
Table 1: Groundwater Monitoring Data and Analytical Results  
Table 2: Groundwater Analytical Results  
Attachments: Standard Operating Procedure - Groundwater Sampling  
Field Data Sheets  
Chain of Custody Document and Laboratory Analytical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

2512 qm1



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



**Gottler - Ryan Inc.**

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

**POTENTIOMETRIC MAP**

Former Unocal Service Station No. 2512  
1300 Davis Street  
San Leandro, California

FIGURE

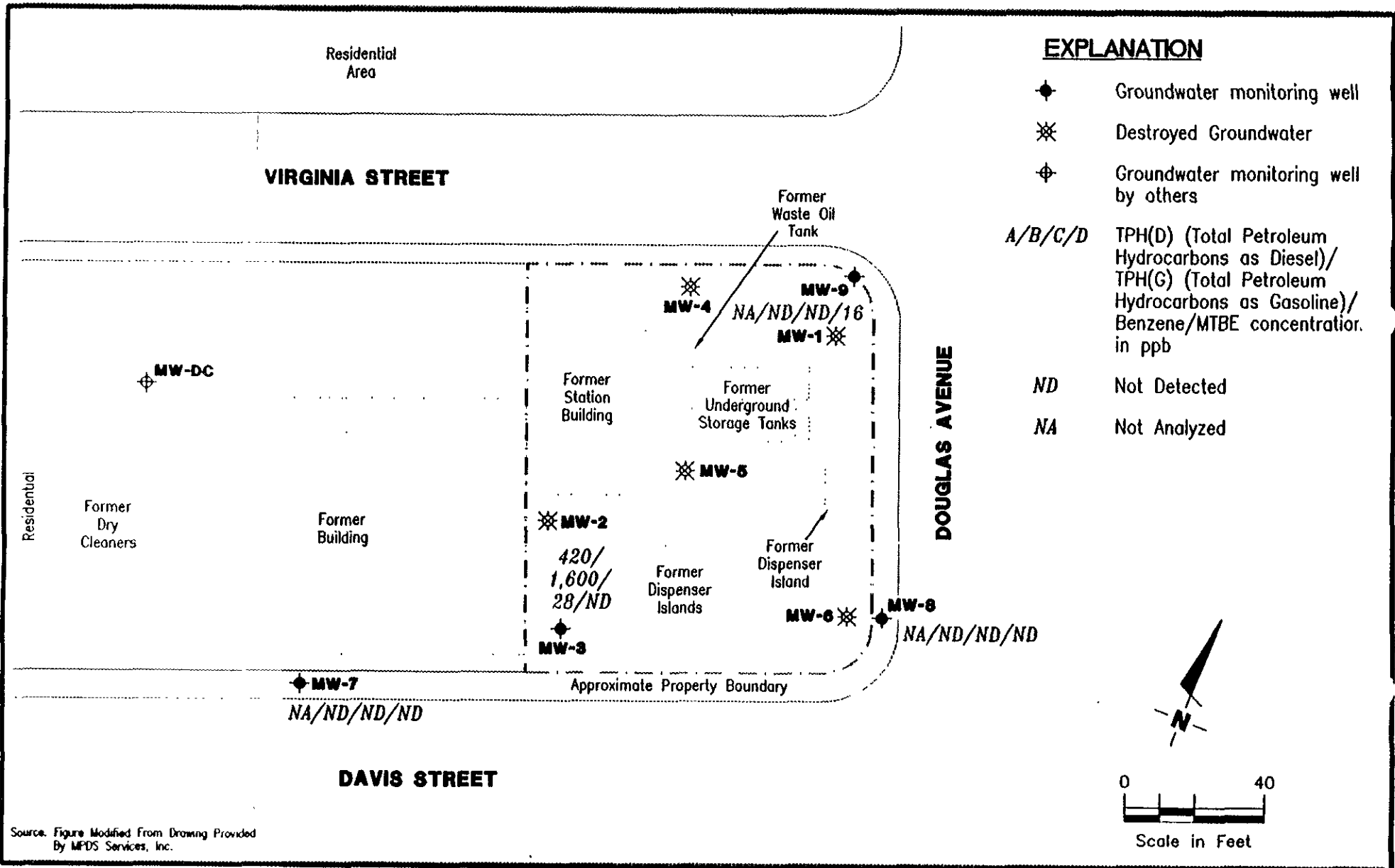
1

JOB NUMBER  
280036

REVIEWED BY

DATE  
October 12, 1998

REVISED DATE



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

**CONCENTRATION MAP**  
 Former Unocal Service Station No. 2512  
 1300 Davis Street  
 San Leandro, California

FIGURE

**2**

JOB NUMBER  
 280036

REVIEWED BY

DATE  
 October 12, 1998

REVISED DATE

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
Former Unocal Service Station #2512  
1300 Davis Street  
San Leandro, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product								
				Thickness (ft.)	TPH(D) (ppb)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppm)
MW-1	04/25/89	--	--	--	100	ND	0.31	ND	ND	ND	--	--
	08/10/89	--	--	--	ND	ND	ND	ND	ND	ND	--	ND
	11/21/89	--	--	--	ND	ND	ND	ND	ND	ND	--	8.9
	02/23/90	--	--	--	ND	ND	ND	ND	ND	ND	--	ND
	05/10/90	--	--	--	ND	ND	ND	ND	ND	ND	--	ND
	08/09/90	--	--	--	ND	ND	ND	ND	ND	ND	--	ND
	11/06/90	--	--	--	ND	ND	ND	ND	ND	ND	--	ND
	02/04/91	--	--	--	ND	ND	ND	0.31	ND	0.62	--	ND
	05/24/91	--	--	--	--	ND	ND	ND	ND	ND	--	ND
	08/15/91	--	--	--	--	--	--	--	--	--	--	--
100.00	09/18/91	17.88	82.12	0.00	--	--	--	--	--	--	--	--
	10/15/91	18.17	81.83	0.00	--	--	--	--	--	--	--	--
	11/19/91	17.48	82.52	0.00	--	--	--	--	--	--	--	--
32 69	02/27/92	15.36	17.33	0.00	--	--	--	--	--	--	--	--
	03/27/92	15.53	17.16	0.00	--	--	--	--	--	--	--	--
	04/27/92	15.68	17.01	0.00	--	--	--	--	--	--	--	--
	05/26/92	15.90	16.79	0.00	--	--	--	--	--	--	--	--
	06/23/92	16.25	16.44	0.00	--	--	--	--	--	--	--	--
	07/24/92	16.54	16.15	0.00	--	--	--	--	--	--	--	--
	10/30/92	16.58	16.11	0.00	--	--	--	--	--	--	--	--
	06/09/94	15.22	--	0.00	--	580 <sup>1</sup>	ND	ND	ND	ND	--	--
	09/08/94	15.81	--	0.00	--	160 <sup>2</sup>	ND	1.6	ND	3.1	--	--
	01/25/95	DESTROYED	--	--	--	--	--	--	--	--	--	--
MW-2	04/25/89	--	--	--	ND	32	0.35	ND	ND	ND	--	--
	08/10/89	--	--	--	ND	ND	ND	0.39	ND	ND	--	ND
	11/21/89	--	--	--	ND	48	ND	0.51	ND	ND	--	1.6
	02/23/90	--	--	--	ND	44	ND	ND	ND	ND	--	ND
	05/10/90	--	--	--	ND	43	ND	1	ND	ND	--	ND
	08/09/90	--	--	--	ND	ND	ND	ND	ND	ND	--	ND
	11/06/90	--	--	--	ND	ND	ND	0.42	ND	1.4	--	ND
	02/04/91	--	--	--	ND	ND	ND	0.38	ND	0.87	--	ND
	05/24/91	--	--	--	--	ND	1.5	ND	ND	ND	--	ND
	08/15/91	--	--	--	--	ND	ND	ND	ND	ND	--	ND
100 32	09/18/91	18.48	81.84	0.00	--	--	--	--	--	--	--	--

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
Former Unocal Service Station #2512  
1300 Davis Street  
San Leandro, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product								
				Thickness (ft.)	TPH(D) (ppb)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppm)
MW-2	10/15/91	18.75	81.57	0.00	--	--	--	--	--	--	--	--
(cont)	11/19/91	18.01	82.31	0.00	--	220	2.5	8.4	2.4	14	--	--
33 04	02/27/92	15.40	17.64	0.00	--	330	12	12	10	93	--	--
	03/27/92	15.61	17.43	0.00	--	--	--	--	--	--	--	--
	04/27/92	15.96	17.08	0.00	--	--	--	--	--	--	--	--
	05/26/92	16.30	16.74	0.00	--	2,900	8.8	9.3	54	36	--	--
	06/23/92	16.76	16.28	0.00	--	--	--	--	--	--	--	--
	07/24/92	16.66	-- <sup>12</sup>	0.00	--	--	--	--	--	--	--	--
	10/30/92	17.38	-- <sup>12</sup>	0.00	--	1,200 <sup>1</sup>	ND	ND	ND	ND	--	--
	06/09/94	15.48	--	0.00	--	1,900 <sup>2</sup>	6.7	ND	66	ND	--	--
	09/08/94	16.22	--	0.00	--	3,000 <sup>1</sup>	ND	ND	ND	17	--	--
	01/25/95	DESTROYED	--	--	--	--	--	--	--	--	--	--
MW-3	04/25/89	--	--	--	5,700	56	ND	ND	0.31	0.49	--	--
	08/10/89	--	--	--	860	3,200	73	140	35	240	--	ND
	11/21/89	--	--	--	110	1,900	ND	ND	ND	ND	--	3.8
	02/23/90	--	--	--	350	ND	0.32	ND	ND	ND	--	1.3
	05/10/90	--	--	--	850	6,200	94	460	160	540	--	2.8
	08/09/90	--	--	--	500	1,900	56	140	140	31	--	ND
	11/06/90	--	--	--	940	16,000	820	1,500	2,200	770	--	ND
	02/04/91	--	--	--	NOT SAMPLED DUE TO A TRACE OF FREE PRODUCT						--	--
	05/24/91	--	--	--	2,000	23,000	940	3,400	590	2,600	--	ND
	08/15/91	--	--	--	NOT SAMPLED DUE TO A TRACE OF FREE PRODUCT						--	--
100 03	09/04/91	17.97	82.08***	0.03	--	--	--	--	--	--	--	--
	09/18/91	18.38	81.73***	0.10	--	--	--	--	--	--	--	--
	10/02/91	18.50	81.65***	0.16	--	--	--	--	--	--	--	--
	10/15/91	18.59	81.62***	0.24	--	--	--	--	--	--	--	--
	11/05/91	17.75	82.49***	0.27	--	--	--	--	--	--	--	--
	11/19/91	17.87	82.36***	0.26	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT						--	--
32.73	02/27/92	14.98	17.82**	0.09	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT						--	--
	03/12/92	14.94	17.79	0.00	--	--	--	--	--	--	--	--
	03/27/92	15.12	17.61	0.00	--	--	--	--	--	--	--	--
	04/13/92	15.17	17.56	0.00	--	--	--	--	--	--	--	--
	04/27/92	15.58	17.17**	0.02	--	--	--	--	--	--	--	--
	05/11/92	15.84	16.92**	0.04	--	--	--	--	--	--	--	--

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
Former Unocal Service Station #2512  
1300 Davis Street  
San Leandro, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product								
				Thickness (ft.)	TPH(D) (ppb)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppm)
MW-3	05/26/92	16.06	16.76**	0.12	2,400,000	1,300,000	5,100	66,000	20,000	160,000	--	880
(cont)	06/09/92	16.29	16.46**	0.03	--	--	--	--	--	--	--	--
	06/23/92	16.52	16.26**	0.06	--	--	--	--	--	--	--	--
	07/06/92	16.60	16.24**	0.14	--	--	--	--	--	--	--	--
	07/24/92	INACCESSIBLE	--	--	--	--	--	--	--	--	--	--
	10/30/92	17.08	-- <sup>12</sup>	0.07	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT						--	--
	06/09/94	14.74	--	0.00	17,000 <sup>3</sup>	69,000	1,300	7,100	1,900	11,000	--	--
	09/08/94	15.54	--	Sheen	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT						--	--
32 02	10/05/95	14.86	17.16	0.00	--	--	--	--	--	--	--	--
	10/21/95	14.98	17.04	0.00	5,900 <sup>3</sup>	50,000	250	4,200	1,700	18,000	-- <sup>5</sup>	--
	01/24/96	13.15	18.87	0.00	5,300 <sup>3</sup>	100,000	950	3,300	2,500	16,000	-- <sup>6</sup>	--
	04/23/96	13.11	18.91	0.00	4,900 <sup>3</sup>	50,000	430	1,700	1,600	7,600	ND	--
	07/25/96	14.40	17.62	0.00	2,400 <sup>4</sup>	17,000	170	ND	650	3,300	240	--
	10/25/96	15.33	16.69	0.00	3,700 <sup>4</sup>	26,000	420	1,100	1,800	6,400	340	--
	01/28/97	11.55	20.47	0.00	3,900 <sup>3</sup>	32,000	230	1,000	1,000	4,500	ND	--
	04/16/97	12.05	19.97	0.00	3,100 <sup>3</sup>	12,000	76	ND	330	1,600	ND	--
	07/21/97	15.17	16.85	0.00	2,400 <sup>3</sup>	10,000	82	28	430	1,400	76	--
	10/20/97	15.41	16.61	Sheen	2,900 <sup>4</sup>	12,000	200	540	1,400	4,600	210	--
	01/21/98 <sup>10</sup>	11.59	20.43	0.00	3,700 <sup>7</sup>	25,000	170	640	1,200	4,800	ND <sup>8</sup>	--
	04/17/98 <sup>10</sup>	12.46	19.56	0.00	3,400	25,000	980	1,400	5,800	ND <sup>8</sup>	ND <sup>8</sup>	--
	07/14/98 <sup>10</sup>	13.43	18.59	0.00	1,100 <sup>11</sup>	6,200	76	ND <sup>8</sup>	550	810	ND <sup>8</sup>	--
	10/12/98 <sup>10</sup>	14.60	17.42	0.00	420 <sup>13</sup>	1,600	28	ND <sup>8</sup>	28	81	ND <sup>8</sup>	--
MW-4	08/29/89	--	--	--	120	ND	ND	ND	ND	ND	--	ND
	11/21/89	--	--	--	ND	ND	ND	ND	ND	ND	--	ND
	02/23/90	--	--	--	ND	ND	ND	ND	ND	ND	--	ND
	05/10/90	--	--	--	88	54	ND	2	ND	0.37	--	ND
	08/09/90	--	--	--	ND	ND	ND	ND	ND	ND	--	ND
	11/06/90	--	--	--	ND	ND	ND	0.36	ND	0.98	--	ND
	02/04/91	--	--	--	ND	ND	ND	0.72	ND	1.1	--	ND
	05/24/91	--	--	--	ND	ND	0.64	ND	ND	ND	--	ND
	08/15/91	--	--	--	ND	ND	ND	ND	ND	ND	--	ND
99 66	09/18/91	17.67	81.99	0.00	--	--	--	--	--	--	--	--

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
Former Unocal Service Station #2512  
1300 Davis Street  
San Leandro, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product								
				Thickness (ft.)	TPH(D) (ppb)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppm)
MW-4	10/15/91	17.95	81.71	0.00	--	--	--	--	--	--	--	--
(cont)	11/19/91	17.25	82.41	0.00	ND	ND	ND	ND	ND	ND	--	--
32 38	02/27/92	14.96	17.42	0.00	ND	43	ND	1	0.37	2.5	--	--
	03/27/92	15.01	17.37	0.00	--	--	--	--	--	--	--	--
	04/27/92	15.37	17.01	0.00	--	--	--	--	--	--	--	--
	05/26/92	15.62	16.76	0.00	ND	120	0.59	0.82	ND	1.9	--	--
	06/23/92	16.02	16.36	0.00	--	--	--	--	--	--	--	--
	07/24/92	16.10	-- <sup>12</sup>	0.00	--	--	--	--	--	--	--	--
	10/30/92	INACCESSIBLE	--	--	--	--	--	--	--	--	--	--
	06/09/94	15.08	--	0.00	ND	780 <sup>1</sup>	ND	ND	ND	ND	--	--
	09/08/94	15.72	--	0.00	ND	300 <sup>1</sup>	ND	ND	ND	ND	--	--
	01/25/95	DESTROYED	--	--	--	--	--	--	--	--	--	--
MW-5	08/29/89	--	--	--	100	ND	ND	0.94	0.3	ND	--	ND
	11/21/89	--	--	--	70	ND	ND	ND	ND	ND	--	ND
	02/23/90	--	--	--	ND	ND	ND	ND	ND	ND	--	ND
	05/10/90	--	--	--	83	ND	ND	ND	ND	0.31	--	ND
	08/09/90	--	--	--	ND	ND	ND	ND	ND	ND	--	ND
	11/06/90	--	--	--	ND	ND	ND	ND	ND	ND	--	ND
	02/04/91	--	--	--	ND	ND	ND	0.35	ND	ND	--	ND
	05/24/91	--	--	--	ND	ND	ND	ND	ND	ND	--	ND
100 32	09/18/91	18.30	82.02	0.00	--	--	--	--	--	--	--	--
	10/15/91	18.59	81.73	0.00	--	--	--	--	--	--	--	--
	11/19/91	17.87	82.45	0.00	--	--	--	--	--	--	--	--
33 02	02/27/92	15.50	17.52	0.00	--	--	--	--	--	--	--	--
	03/27/92	15.68	17.34	0.00	--	--	--	--	--	--	--	--
	04/27/92	15.96	17.06	0.00	--	--	--	--	--	--	--	--
	05/26/92	16.22	16.80	0.00	--	--	--	--	--	--	--	--
	06/23/92	16.63	16.39	0.00	--	--	--	--	--	--	--	--
	07/24/92	16.73	-- <sup>12</sup>	0.00	--	--	--	--	--	--	--	--
	10/30/92	INACCESSIBLE	--	0.00	--	--	--	--	--	--	--	--
	06/09/94	INACCESSIBLE	--	--	--	--	--	--	--	--	--	--
	09/08/94	INACCESSIBLE	--	--	--	--	--	--	--	--	--	--
	01/25/95	DESTROYED	--	--	--	--	--	--	--	--	--	--



**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
Former Unocal Service Station #2512  
1300 Davis Street  
San Leandro, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product									
				Thickness (ft.)	TPH(D) (ppb)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppm)	
MW-6	08/29/89	--	--	--	ND	ND	ND	ND	ND	ND	ND	--	ND
	11/21/89	--	--	--	ND	ND	ND	ND	ND	ND	ND	--	ND
	02/23/90	--	--	--	ND	ND	ND	ND	ND	ND	ND	--	ND
	05/10/90	--	--	--	ND	ND	ND	1.2	ND	ND	ND	--	ND
	08/09/90	--	--	--	ND	ND	ND	ND	ND	ND	ND	--	ND
	11/06/90	--	--	--	ND	ND	1.6	0.35	ND	ND	ND	--	ND
	02/04/91	--	--	--	ND	ND	ND	ND	ND	ND	ND	--	ND
	05/24/91	--	--	--	--	ND	ND	ND	ND	ND	ND	--	ND
	08/15/91	--	--	--	--	ND	ND	ND	ND	ND	ND	--	ND
100.50	09/18/91	18.34	82.16	0.00	--	--	--	--	--	--	--	--	--
	10/15/91	18.65	81.85	0.00	--	--	--	--	--	--	--	--	--
	11/19/91	17.94	82.56	0.00	--	ND	ND	ND	ND	ND	--	--	--
33 19	02/27/92	15.70	17.49	0.00	--	ND	3.2	ND	ND	3.8	--	--	--
	03/27/92	15.56	17.63	0.00	--	--	--	--	--	--	--	--	--
	04/27/92	16.07	17.12	0.00	--	--	--	--	--	--	--	--	--
	05/26/92	16.34	16.85	0.00	--	ND	ND	ND	ND	0.65	--	--	--
	06/23/92	16.70	16.49	0.00	--	--	--	--	--	--	--	--	--
	07/24/92	17.00	16.19	0.00	--	--	--	--	--	--	--	--	--
	10/30/92	17.07	16.12	0.00	--	ND	ND	ND	ND	ND	--	--	--
	06/09/94	INACCESSIBLE	--	--	--	--	--	--	--	--	--	--	--
	09/08/94	INACCESSIBLE	--	--	--	--	--	--	--	--	--	--	--
	01/25/95	DE-STROYED	--	--	--	--	--	--	--	--	--	--	--
MW-7	32 09	02/27/92	15.12	16.97	0.00	--	38	ND	0.97	0.69	4	--	--
		03/27/92	14.26	17.83	0.00	--	--	--	--	--	--	--	--
		04/27/92	14.86	17.23	0.00	--	--	--	--	--	--	--	--
		05/26/92	15.30	16.79	0.00	--	ND	ND	ND	ND	0.6	--	--
		06/23/92	15.80	16.29	0.00	--	--	--	--	--	--	--	--
		07/24/92	16.26	15.83	0.00	--	--	--	--	--	--	--	--
		10/30/92	16.31	15.78	0.00	--	ND	ND	ND	ND	ND	--	--
		06/09/94	14.43	--	0.00	--	610 <sup>1</sup>	ND	ND	ND	ND	--	--
		09/08/94	15.32	--	0.00	--	ND	ND	1.3	ND	1.6	--	--
		31.71	10/21/95	14.74	16.97	0.00	--	ND	ND	ND	ND	ND	--
01/24/96	12.50		19.21	0.00	--	ND	ND	ND	ND	ND	--	--	

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
Former Unocal Service Station #2512  
1300 Davis Street  
San Leandro, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product								
				Thickness (ft.)	TPH(D) (ppb)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppm)
MW-7 (cont)	04/23/96	12.48	19.23	0.00	--	220	ND	0.62	0.88	5.4	ND	--
	07/25/96	14.30	17.41	0.00	--	ND	ND	ND	ND	ND	ND	--
	10/25/96	15.13	16.58	0.00	--	ND	ND	ND	ND	ND	ND	--
	01/28/97	10.41	21.30	0.00	--	ND	ND	ND	ND	ND	ND	--
	04/16/97	12.12	19.59	0.00	--	ND	ND	ND	ND	ND	ND	--
	07/21/97	15.01	16.70	0.00	--	ND	ND	ND	ND	ND	ND	--
	10/20/97	15.18	16.53	0.00	--	ND	ND	ND	ND	ND	ND	--
	01/21/98	10.46	21.25	0.00	--	ND	ND	ND	ND	ND	ND	--
	04/17/98	11.57	20.14	0.00	--	ND	ND	ND	ND	ND	ND	--
	07/14/98	13.10	18.61	0.00	--	ND	ND	ND	ND	ND	ND	--
	10/12/98	<b>14.22</b>	<b>17.49</b>	<b>0.00</b>	--	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	--
MW-8 32 73	10/05/95	15.56	17.17	0.00	--	--	--	--	--	--	--	--
	10/21/95	15.65	17.08	0.00	--	ND	ND	ND	ND	ND	--	--
	01/24/96	14.51	18.22	0.00	--	ND	ND	ND	ND	ND	--	--
	04/23/96	15.70	17.03	0.00	--	ND	ND	ND	ND	ND	ND	--
	07/25/96	15.10	17.63	0.00	--	ND	ND	ND	ND	ND	ND	--
	10/25/96	15.96	16.77	0.00	--	ND	ND	ND	ND	ND	ND	--
	01/28/97	13.86	18.87	0.00	--	ND	ND	ND	ND	ND	ND	--
	04/16/97	12.74	19.99	0.00	--	ND	ND	ND	ND	ND	ND	--
	07/21/97	15.71	17.02	0.00	--	ND	ND	ND	ND	ND	ND	--
	10/20/97	15.98	16.75	0.00	--	ND	ND	ND	ND	ND	ND	--
	01/21/98	14.20	18.53	0.00	--	ND	ND	ND	ND	ND	ND	--
	04/17/98	14.40	18.33	0.00	--	ND	ND	ND	ND	ND	ND	--
	07/14/98	14.85	17.88	0.00	--	ND	ND	ND	ND	ND	ND	--
	10/12/98	<b>15.86</b>	<b>16.87</b>	<b>0.00</b>	--	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	<b>ND</b>	--
MW-9 32 33	10/05/95	15.27	17.06	0.00	--	--	--	--	--	--	--	--
	10/21/95	15.59	16.74	0.00	--	ND	ND	ND	ND	ND	-- <sup>5</sup>	--
	01/24/96	14.28	18.05	0.00	--	ND	ND	ND	ND	ND	-- <sup>6</sup>	--
	04/23/96	14.60	17.73	0.00	--	ND	ND	ND	ND	ND	ND	--
	07/25/96	15.05	17.28	0.00	--	ND	ND	ND	ND	ND	ND	--

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
Former Unocal Service Station #2512  
1300 Davis Street  
San Leandro, California

Well ID/ TOC*	Date	DTW (ft.)	GWE (msl)	Product Thickness (ft.)	TPH(D) (ppb)	TPH(G) (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	MTBE (ppb)	TOG (ppm)
MW-9	10/25/96	15.66	16.67	0.00	--	ND	ND	ND	ND	ND	180	--
(cont)	01/28/97	13.76	18.57	0.00	--	ND	ND	ND	ND	ND	75	--
	04/16/97	12.66	19.67	0.00	--	ND	ND	ND	ND	ND	ND	--
	07/21/97	15.44	16.89	0.00	--	ND	ND	ND	ND	ND	ND	--
	10/20/97	15.67	16.66	0.00	--	ND	ND	ND	ND	ND	100	--
	01/21/98	13.97	18.36	0.00	--	ND	ND	ND	ND	ND	140	--
	04/17/98	14.38	17.95	0.00	--	56 <sup>9</sup>	ND	ND	ND	ND	18	--
	07/14/98	14.87	17.46	0.00	--	ND	ND	ND	ND	ND	6.6	--
	10/12/98	15.19	17.14	0.00	--	ND	ND	ND	ND	ND	16	--
<b>Trip Blank</b>												
TB-LB	01/21/98	--	--	--	--	ND	ND	ND	ND	ND	ND	--
	04/17/98	--	--	--	--	ND	ND	ND	ND	ND	ND	--
	07/14/98	--	--	--	--	ND	ND	ND	ND	ND	ND	--
	10/12/98	--	--	--	--	ND	ND	ND	ND	ND	ND	--

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
Former Unocal Service Station #2512  
1300 Davis Street  
San Leandro, California

**EXPLANATIONS:**

Groundwater monitoring data and laboratory results prior to January 21, 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

TOG = Total Oil & Grease

MTBE = Methyl tertiary butyl ether

ppb = Parts per billion

ppm = Parts per million

ND = Not Detected

-- = Not Measured/Not Analyzed

\* TOC elevations are relative to msl, per East Bay MUD Benchmark DAVIS FREE #2 - San Leandro 1952 (Elevation = 32.02 feet msl). Prior to October 5, 1993, the DTW measurements were taken from top of well covers. Prior to February 27, 1992, the DTW measurements were surveyed assuming well cover MW-1 100 feet as datum.

\*\* Groundwater elevation corrected due to presence of free product; correction factor [(TOC-DTW) + (Product Thickness x 0.75)].

\*\*\* Groundwater elevation corrected due to presence of free product; correction factor [(TOC-DTW) + (Product Thickness x 0.77)].

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

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

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

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

5 Laboratory has potentially identified the presence of MTBE at reportable levels in the sample collected from this well.

6 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. Free product was detected in well MW 3; however, a water sample was collected and analyzed to determine if the product was predominantly hydrocarbon based.

7 Laboratory report indicates unidentified hydrocarbons C9-C24.

8 Detection limit raised Refer to analytical results.

9 Laboratory report indicates unidentified hydrocarbons C6-C12.

10 Purged additional 100 gallons from well after sampling.

11 Laboratory report indicates unidentified hydrocarbons <C14.

12 Christy box for this well was damaged during tank removal and soil excavation at the site; therefore, GWE could not be accurately determined.

13 Laboratory report indicates a non diesel mix <C17.

**Table 2**  
**Groundwater Analytical Results**  
Former Unocal Service Station #2512  
1300 Davis Street  
San Leandro, California

Well ID	Date	PCE (ppb)	1,1-DCA (ppb)	1,1,1-TCA (ppb)	Chloro- methane (ppb)	1,1-DCE (ppb)	1,2-DCB (ppb)	TCE (ppb)
MW-1	04/25/89	3.3	ND	ND	ND	ND	ND	0.55
	11/06/90	4.8	ND	ND	ND	ND	ND	ND
	05/24/91	4.6	ND	ND	ND	ND	ND	ND
	06/09/94	1.0	ND	ND	ND	ND	ND	ND
	09/08/94	1.2	ND	ND	ND	ND	ND	ND
	01/25/95	DESTROYED	--	--	--	--	--	--
	MW-2	04/25/89	0.68	ND	ND	ND	ND	ND
11/06/90		ND	ND	ND	ND	ND	ND	ND
05/24/91		ND	ND	ND	ND	ND	ND	ND
08/15/91		ND	ND	ND	ND	ND	ND	ND
11/19/91		ND	ND	ND	ND	ND	ND	ND
02/27/92		ND	ND	ND	ND	ND	ND	ND
05/26/92		ND	ND	ND	ND	ND	ND	ND
10/30/92		ND	ND	ND	ND	ND	ND	ND
06/09/94		ND	ND	ND	ND	ND	ND	ND
09/08/94		ND	ND	ND	ND	ND	ND	ND
01/25/95		DESTROYED	--	--	--	--	--	--
MW-3	04/25/89	1.0	ND	ND	ND	ND	ND	ND
	11/06/90	ND	ND	ND	ND	ND	ND	ND
	05/24/91	ND	ND	ND	ND	ND	ND	ND
	08/15/91	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--	--
	11/19/91	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--	--
	02/27/92	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--	--
	05/26/92	ND	ND	ND	ND	ND	ND	ND
	10/30/92	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--	--
	06/09/94	ND	ND	ND	ND	ND	ND	ND
	09/08/94	NOT SAMPLED DUE TO THE PRESENCE OF FREE PRODUCT				--	--	--
	10/21/95	ND	ND	ND	ND	ND	ND	ND
	01/24/96	ND	ND	ND	ND	ND	ND	ND
	04/23/96	ND	ND	ND	ND	ND	ND	ND
07/25/96	ND	ND	ND	ND	ND	ND	ND	

**Table 2**  
**Groundwater Analytical Results**  
Former Unocal Service Station #2512  
1300 Davis Street  
San Leandro, California

Well ID	Date	PCE (ppb)	1,1-DCA (ppb)	1,1,1-TCA (ppb)	Chloro- methane (ppb)	1,1-DCE (ppb)	1,2-DCB (ppb)	TCE (ppb)
MW-3 (cont)	10/25/96	ND	ND	ND	ND	ND	ND	ND
	01/28/97	ND	ND	ND	ND	ND	ND	ND
	04/16/97	ND	ND	ND	ND	ND	ND	ND
	07/21/97	ND	ND	ND	ND	ND	ND	ND
	10/20/97	ND	ND	ND	ND	ND	ND	ND
	01/21/98	ND	ND	ND	ND	ND	ND	ND
	04/17/98	ND	ND	ND	ND	ND	ND	ND
	07/14/98	0.55	ND	ND	ND	ND	ND	ND
	10/12/98	0.51	ND	ND	ND	ND	ND	ND
MW-4	11/06/90	2.9	ND	ND	ND	ND	ND	ND
	05/24/91	4.1	2.5	3.9	ND	ND	ND	ND
	08/15/91	3.6	ND	ND	ND	ND	ND	ND
	11/19/91	3.4	ND	ND	ND	ND	ND	ND
	02/27/92	3.5	6	ND	ND	ND	ND	ND
	05/26/92	2.4	13	3.5	ND	0.83	ND	ND
	10/30/92	INACCESSIBLE	--	--	--	--	--	--
	06/09/94	2.8	8.8	0.83	ND	0.51	ND	0.70
	09/08/94 <sup>1</sup>	1.8	ND	ND	ND	ND	ND	0.60
	01/25/95	DESTROYED	--	--	--	--	--	--
MW-5	11/06/90	0.7	ND	ND	ND	ND	ND	ND
	05/24/91	0.89	ND	ND	ND	ND	ND	ND
	06/09/94	INACCESSIBLE	--	--	--	--	--	--
	09/08/94	INACCESSIBLE	--	--	--	--	--	--
	01/25/95	DESTROYED	--	--	--	--	--	--
MW-6	11/06/90	1.2	ND	ND	ND	ND	ND	ND
	05/24/91	0.88	ND	ND	5.6	ND	ND	ND
	08/15/91	1.2	ND	ND	ND	ND	ND	ND
	11/19/91	1.3	ND	ND	ND	ND	ND	ND
	02/27/92	1.5	ND	ND	ND	ND	1.6	ND

**Table 2**  
**Groundwater Analytical Results**  
Former Unocal Service Station #2512  
1300 Davis Street  
San Leandro, California

Well ID	Date	PCE (ppb)	1,1-DCA (ppb)	1,1,1-TCA (ppb)	Chloro- methane (ppb)	1,1-DCE (ppb)	1,2-DCB (ppb)	TCE (ppb)
MW-6	05/26/92	1.1	ND	ND	ND	ND	1.7	ND
(cont)	10/30/92	1.2	ND	ND	ND	ND	ND	ND
	06/09/94	INACCESSIBLE	--	--	--	--	--	--
	09/08/94	INACCESSIBLE	--	--	--	--	--	--
	01/25/95	DESTROYED	--	--	--	--	--	--
MW-7	02/27/92	2.4	ND	ND	ND	ND	ND	ND
	05/26/92	2.2	ND	ND	ND	ND	ND	ND
	10/30/92	2.2	ND	ND	ND	ND	ND	ND
	06/09/94	0.67	ND	ND	ND	ND	ND	ND
	09/08/94	0.76	ND	ND	ND	ND	ND	ND
	10/21/95	ND	ND	ND	ND	ND	ND	ND
	01/24/96	1.2	ND	ND	ND	ND	ND	ND
	04/23/96	0.84	ND	ND	ND	ND	ND	ND
	07/25/96	1.7	ND	ND	ND	ND	ND	ND
	10/25/96 <sup>2</sup>	1.2	ND	ND	ND	ND	ND	ND
	01/28/97	1.4	ND	ND	ND	ND	ND	ND
	04/19/97	0.75	ND	ND	ND	ND	ND	ND
	07/21/97	1.5	ND	ND	ND	ND	ND	ND
	10/20/97	1.5	ND	ND	ND	ND	ND	ND
	01/21/98	1.2	ND	ND	ND	ND	ND	ND
	04/17/98	0.76	ND	ND	ND	ND	ND	ND
	07/14/98	1.4	ND	ND	ND	ND	ND	ND
	10/12/98	1.4	ND	ND	ND	ND	ND	ND
MW-8	10/21/95	ND	ND	ND	ND	ND	ND	ND
	01/24/96	0.74	ND	ND	ND	ND	ND	ND
	04/23/96	1.1	ND	ND	ND	ND	ND	ND
	07/25/96	1.1	ND	ND	ND	ND	ND	ND
	10/25/96	0.90	ND	ND	ND	ND	ND	ND
	01/28/97	0.96	ND	ND	ND	ND	ND	ND
	04/16/97	0.51	ND	ND	ND	ND	ND	ND
	07/21/97	ND	ND	ND	ND	ND	ND	ND

**Table 2**  
**Groundwater Analytical Results**  
Former Unocal Service Station #2512  
1300 Davis Street  
San Leandro, California

Well ID	Date	PCE (ppb)	1,1-DCA (ppb)	1,1,1-TCA (ppb)	Chloro- methane (ppb)	1,1-DCE (ppb)	1,2-DCB (ppb)	TCE (ppb)
MW-8 (cont)	10/20/97	1.1	ND	ND	ND	ND	ND	ND
	01/21/98	0.77	ND	ND	ND	ND	ND	ND
	04/17/98	ND	ND	ND	ND	ND	ND	ND
	07/14/98	1.3	ND	ND	ND	ND	ND	ND
	10/12/98	1.5	ND	ND	ND	ND	ND	ND
MW-9	10/21/95	17	1.0	ND	ND	ND	ND	ND
	01/24/96	17	2.2	ND	ND	ND	ND	0.64
	04/23/96	71	ND	ND	ND	ND	ND	ND
	07/25/96	1.0	ND	ND	ND	ND	ND	ND
	10/25/96	80	ND	ND	ND	ND	ND	ND
	01/28/97	39	ND	ND	ND	ND	ND	ND
	04/16/97	0.51	ND	ND	ND	ND	ND	ND
	07/21/97	7.5	ND	ND	ND	ND	ND	ND
	10/20/97	47	ND	ND	ND	ND	ND	ND
	01/21/98	22	0.73	ND	ND	ND	ND	0.50
	04/17/98	120	ND	ND	ND	ND	ND	ND
	07/14/98	110	ND	ND	ND	ND	ND	0.72
	10/12/98	46	ND	ND	ND	ND	ND	ND

**EXPLANATIONS:**

Groundwater analytical results prior to January 21, 1998, were compiled from reports prepared by MPDS Services, Inc.

PCE = Tetrachloroethene

TCE = Trichloroethene

1,1-DCA = 1,1-Dichloroethane

ppb = Parts per billion

1,1,1-TCA = 1,1,1-Trichloroethane

-- = Not Analyzed

1,1-DCE = 1,1-Dichloroethene

ND = Not Detected

1,2-DCB = 1,2-Dichlorobenzene

<sup>1</sup> 1,2-Dichloroethane (1,2-DCA) was detected at a concentration of 4.8 ppb.

<sup>2</sup> Chloroform was detected at a concentration of 1.7 ppb.

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



## STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

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

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

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

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

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

A laboratory supplied trip blank accompanies each sampling set. For sampling sets greater than 20 samples, 5% trip blanks are included. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

As requested by Unocal Corporation, 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 H 2512 Job#: 280036  
Address: 1300 Davis St. Date: 10-12-98  
City: San Leandro Sampler: Soc

Well ID MW-3 Well Condition: o.k.  
Well Diameter 2 in. Hydrocarbon Amount Bailed  
Thickness: 0 (feet) (product/water): \_\_\_\_\_ (Gallons)  
Total Depth 33.29 ft.  
Depth to Water 14.60 ft.

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

18.69 x VF 0.17 = 3.18 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: 10:58 Weather Conditions: clear  
Sampling Time: 11:22 A.M. Water Color: clear Odor: yes  
Purging Flow Rate: \_\_\_\_\_ gpm. Sediment Description: none  
Did well de-water? \_\_\_\_\_ If yes; Time: \_\_\_\_\_ Volume: \_\_\_\_\_ (gal.)

Time	Volume (gal.)	pH	Conductivity $\mu\text{mhos/cm}$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>11:08</u>	<u>3.5</u>	<u>7.16</u>	<u>2.87</u>	<u>69.7</u>			
<u>11:11</u>	<u>7</u>	<u>7.10</u>	<u>3.05</u>	<u>70.0</u>			
<u>11:13</u>	<u>10</u>	<u>7.12</u>	<u>3.10</u>	<u>69.9</u>			

### LABORATORY INFORMATION

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-3</u>	<u>3 v0A</u>	<u>Y</u>	<u>HCL</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>
<u>"</u>	<u>2 v0A</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>8010</u>
<u>"</u>	<u>1 Ams.</u>	<u>"</u>	<u>-</u>	<u>"</u>	<u>TPHD</u>

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

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/Facility # 2512 Job#: 280036  
 Address: 1300 Davis St. Date: 10-12-99  
 City: San Leandro Sampler: Joc

Well ID MW-7 Well Condition: o.k.  
 Well Diameter 2 in. Hydrocarbon Amount Bailed  
 Thickness: 0 (feet) (product/water): \_\_\_\_\_ (Gallons)  
 Total Depth 29.70 ft.  
 Depth to Water 14.22 ft.

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

15.48 x VF 0.17 = 2.63 x 3 (case volume) = Estimated Purge Volume: 8 (gal.)

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

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

Starting Time: 9:55 Weather Conditions: clear  
 Sampling Time: 10:17 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, $\mu\text{mhos/cm} \times 10^3$	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>10:03</u>	<u>3</u>	<u>7.55</u>	<u>5.48</u>	<u>71.0</u>			
<u>10:06</u>	<u>5</u>	<u>7.42</u>	<u>5.95</u>	<u>69.7</u>			
<u>10:07</u>	<u>8</u>	<u>7.36</u>	<u>6.02</u>	<u>69.8</u>			

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-7</u>	<u>3 v o A</u>	<u>Y</u>	<u>HCC</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>
<u>''</u>	<u>2 v o A</u>	<u>''</u>	<u>''</u>	<u>''</u>	<u>8010</u>

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

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/Facility #2512 Job#: 280036  
 Address: 1300 Davis St. Date: 10-12-98  
 City: San Leandro Sampler: Jo

Well ID MW-8 Well Condition: OK  
 Well Diameter 2 in. Hydrocarbon Thickness: 0 (feet) Amount Bailed (product/water): (Gallons)  
 Total Depth 29.93 ft.  
 Depth to Water 15.86 ft.

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

14.07 x VF 0.17 = 2.39 x 3 (case volume) = Estimated Purge Volume: 7.5 (gal.)

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

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

Starting Time: 9:15 Weather Conditions: clear  
 Sampling Time: 9:41 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 $\mu\text{mhos/cm} \times 1.10$	Temperature °F	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>9:27</u>	<u>2.5</u>	<u>7.67</u>	<u>6.12</u>	<u>71.0</u>			
<u>9:30</u>	<u>5</u>	<u>7.22</u>	<u>6.15</u>	<u>71.2</u>			
<u>9:32</u>	<u>7.5</u>	<u>7.26</u>	<u>6.18</u>	<u>70.6</u>			

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-8</u>	<u>3V0A</u>	<u>Y</u>	<u>HCC</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>
<u> </u>	<u>2V0A</u>	<u> </u>	<u> </u>	<u> </u>	<u>8010</u>

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

**WELL MONITORING/SAMPLING  
FIELD DATA SHEET**

Client/  
Facility #2512 Job#: 280036  
Address: 1300 Davis St. Date: 10-12-98  
City: San Leandro Sampler: Jo

Well ID MW-9 Well Condition: o.k  
Well Diameter 2 in. Hydrocarbon Amount Bailed  
Thickness: 0 (feet) (product/water): \_\_\_\_\_ (Gallons)  
Total Depth 30.00 ft. Volume 2" = 0.17 3" = 0.38 4" = 0.66  
Depth to Water 15.19 ft. Factor (VF) 6" = 1.50 12" = 5.80

14.81 x VF 0.17 = 2.52 x 3 (case volume) = Estimated Purge Volume: 8 (gal.)

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

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

Starting Time: 10:32 Weather Conditions: clear  
Sampling Time: 10:53 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 $\mu\text{mhos/cm}^2$	Temperature $^{\circ}\text{F}$	D.O. (mg/L)	ORP (mV)	Alkalinity (ppm)
<u>10:40</u>	<u>3</u>	<u>7.70</u>	<u>8.02</u>	<u>71.2</u>			
<u>10:42</u>	<u>5</u>	<u>7.30</u>	<u>7.51</u>	<u>70.6</u>			
<u>10:45</u>	<u>8</u>	<u>7.34</u>	<u>7.42</u>	<u>71.1</u>			

**LABORATORY INFORMATION**

SAMPLE ID	(#) - CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-9</u>	<u>3 VOA</u>	<u>Y</u>	<u>HCC</u>	<u>SEQUOIA</u>	<u>TPH(G)/btex/mtbe</u>
<u>"</u>	<u>2 VOA</u>	<u>"</u>	<u>"</u>	<u>"</u>	<u>8010</u>

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

Consultant Company: Gettier Ryan Inc. JOB # 280036 Project Name: Former Unocal SS # 2512  
 Address: 6747 Sierra Court Ste. J UNOCAL Project Manager: Mr. Bob Beust  
 City: Dublin State: CA Zip Code: 94568 AFE #:  
 Telephone: (925) 551-7555 FAX #: (925) 551-7899 Site #, City, State: 1300 Davis Street, San Leandro, CA  
 Report To: Deanna L. Harding Sampler: QC Data:  Level D (Standard)  Level C  Level B  Level A

Turnaround  10 Work Days  5 Work Days  3 Work Days  
 Time:  2 Work Days  1 Work Day  2-8 Hours  
 CODE:  Misc.  Detect.  Eval.  Remed.  Demol.  Closure

Drinking Water  
 Waste Water  
 Other  
 Analyses Requested: 9810907

Client Sample I.D.	Date/Time Sampled	Matrix Desc.	# of Cont.	Cont. Type	Laboratory Sample #	Analyses Requested										Comments		
						TPH	BTEX	MTHX	8010	TPHD								
1. TB	10-12-98	W	1	VOA	01	✓												
2. MW-3	" 11:27 A.M.	"	5	VOA Amb.	02	✓	✓	✓										
3. MW-7	" 10:17 A.M.	"	5	VOA	03	✓	✓											
4. MW-8	" 9:41 A.M.	"	5	VOA	04	✓	✓											
5. MW-9	" 10:53 A.M.	"	5	VOA	05	✓	✓											
6.																		
7.																		
8.																		
9.																		
10.																		

Relinquished By: <u>[Signature]</u>	Date: <u>10-12-98</u>	Time: <u>2:00 P.M.</u>	Received By: <u>[Signature]</u>	Date: _____	Time: _____
Relinquished By: _____	Date: _____	Time: _____	Received By: <u>[Signature]</u>	Date: _____	Time: _____
Relinquished By: _____	Date: _____	Time: _____	Received By Lab: <u>[Signature]</u>	Date: <u>10/12/98</u>	Time: <u>1400</u>

Were Samples Received in Good Condition?  Yes  No     
 Samples on Ice?  Yes  No     
 Method of Shipment \_\_\_\_\_     
 Page \_\_\_ of \_\_\_

To be completed upon receipt of report:  
 1) Were the analyses requested on the Chain of Custody reported?  Yes  No If no, what analyses are still needed? \_\_\_\_\_  
 2) Was the report issued within the requested turnaround time?  Yes  No If no, what was the turnaround time? \_\_\_\_\_  
 Approved by: \_\_\_\_\_ Signature: \_\_\_\_\_ Company: \_\_\_\_\_ Date: \_\_\_\_\_



**Sequoia  
Analytical**

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(650) 364-9600 FAX (650) 364-9233  
(925) 988-9600 FAX (925) 988-9673  
(916) 921-9600 FAX (916) 921-0100  
(707) 792-1865 FAX (707) 792-0342

Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#2512 Sample Descript: TB Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9810907-01	Sampled: 10/12/98 Received: 10/12/98 Analyzed: 10/19/98 Reported: 10/30/98
Attention: Deanna Harding		

Instrument ID: HP2

**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:		N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	89

RECEIVED  
OCT 30 1998  
10:00 AM  
GRIFFIN & ASSOCIATES  
ANALYTICAL LABORATORY

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

SEQUOIA ANALYTICAL - ELAP #1271

  
Tod Granicher  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#2512 Sample Descript: MW-3 Matrix: LIQUID Analysis Method: EPA 8015 Mod Lab Number: 9810907-02	Sampled: 10/12/98 Received: 10/12/98 Extracted: 10/15/98 Analyzed: 10/22/98 Reported: 10/30/98
Attention: Deanna Harding		

Instrument ID: HP3

**Total Extractable Petroleum Hydrocarbons (TEPH)**

Analyte	Detection Limit ug/L	Sample Results ug/L
TEPH as Diesel Chromatogram Pattern: Non Diesel Mix	50	420 Diesel < C17
Surrogates	Control Limits %	% Recovery
n-Pentacosane (C25)	50 150	155 Q

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

**SEQUOIA ANALYTICAL** - ELAP #1271

  
Tod Granicher  
Project Manager





Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568 Attention: Deanna Harding	Client Proj. ID: Unocal SS#2512 Sample Descript: MW-3 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9810907-02	Sampled: 10/12/98 Received: 10/12/98 Analyzed: 10/19/98 Reported: 10/30/98
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Instrument ID: HP2

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	500	1600
Methyl t-Butyl Ether	25	N.D.
Benzene	5.0	28
Toluene	5.0	N.D.
Ethyl Benzene	5.0	28
Xylenes (Total)	5.0	81
Chromatogram Pattern:		Gasoline
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	96

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

SEQUOIA ANALYTICAL - ELAP #1271

  
Tod Granicher  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#2512 Sample Descript: MW-7 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9810907-03	Sampled: 10/12/98 Received: 10/12/98  Analyzed: 10/19/98 Reported: 10/30/98
Attention: Deanna Harding		


Instrument ID: HP2

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	97

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

**SEQUOIA ANALYTICAL** - ELAP #1271

  
Tod Granicher  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#2512 Sample Descript: MW-8 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9810907-04	Sampled: 10/12/98 Received: 10/12/98 Analyzed: 10/19/98 Reported: 10/30/98
Attention: Deanna Harding		


Instrument ID: HP2

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

Analyte	Detection Limit ug/L	Sample Results ug/L
TPPH as Gas	50	N.D.
Methyl t-Butyl Ether	2.5	N.D.
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	100

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

**SEQUOIA ANALYTICAL** - ELAP #1271

  
\_\_\_\_\_  
Tod Granicher  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568 Attention: Deanna Harding	Client Proj. ID: Unocal SS#2512 Sample Descript: MW-9 Matrix: LIQUID Analysis Method: 8015Mod/8020 Lab Number: 9810907-05	Sampled: 10/12/98 Received: 10/12/98 Analyzed: 10/19/98 Reported: 10/30/98
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Instrument ID: HP2

**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	16
Benzene	0.50	N.D.
Toluene	0.50	N.D.
Ethyl Benzene	0.50	N.D.
Xylenes (Total)	0.50	N.D.
Chromatogram Pattern:		
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
Trifluorotoluene	70 130	99

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

SEQUOIA ANALYTICAL - ELAP #1271

  
\_\_\_\_\_  
Tod Granicher  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#2512 Sample Descript: MW-3 Matrix: LIQUID Analysis Method: EPA 8010 Lab Number: 9810907-02	Sampled: 10/12/98 Received: 10/12/98  Analyzed: 10/16/98 Reported: 10/30/98
Attention: Deanna Harding		

QC Batch Number: GC101698OVOA29A  
Instrument ID: GCHP29

**Halogenated Volatile Organics (EPA 8010)**

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon Tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
<b>Tetrachloroethene</b>	<b>0.50</b>	<b>0.51</b>
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
1-Chloro-3-fluorobenzene	70 130	90

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

SEQUOIA ANALYTICAL - ELAP #1210

Tod Granicher  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#2512 Sample Descript: MW-7 Matrix: LIQUID Analysis Method: EPA 8010 Lab Number: 9810907-03	Sampled: 10/12/98 Received: 10/12/98  Analyzed: 10/16/98 Reported: 10/30/98
Attention: Deanna Harding		

QC Batch Number: GC101598OVOA29A  
Instrument ID: GCHP29

**Halogenated Volatile Organics (EPA 8010)**

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon Tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	0.50	N.D.
1,1,2,2-Tetrachloroethane	5.0	N.D.
<b>Tetrachloroethene</b>	0.50	N.D.
1,1,1-Trichloroethane	0.50	1.4
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
1-Chloro-3-fluorobenzene	70 130	110

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

SEQUOIA ANALYTICAL - ELAP #1210

Tod Granicher  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#2512 Sample Descript: MW-8 Matrix: LIQUID Analysis Method: EPA 8010 Lab Number: 9810907-04	Sampled: 10/12/98 Received: 10/12/98  Analyzed: 10/16/98 Reported: 10/30/98
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QC Batch Number: GC101598OVOA29A  
Instrument ID: GCHP29

**Halogenated Volatile Organics (EPA 8010)**

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	0.50	N.D.
Bromoform	0.50	N.D.
Bromomethane	1.0	N.D.
Carbon Tetrachloride	0.50	N.D.
Chlorobenzene	0.50	N.D.
Chloroethane	1.0	N.D.
Chloroform	0.50	N.D.
Chloromethane	1.0	N.D.
Dibromochloromethane	0.50	N.D.
1,2-Dichlorobenzene	0.50	N.D.
1,3-Dichlorobenzene	0.50	N.D.
1,4-Dichlorobenzene	0.50	N.D.
1,1-Dichloroethane	0.50	N.D.
1,2-Dichloroethane	0.50	N.D.
1,1-Dichloroethene	0.50	N.D.
cis-1,2-Dichloroethene	0.50	N.D.
trans-1,2-Dichloroethene	0.50	N.D.
1,2-Dichloropropane	0.50	N.D.
cis-1,3-Dichloropropene	0.50	N.D.
trans-1,3-Dichloropropene	0.50	N.D.
Methylene chloride	5.0	N.D.
1,1,2,2-Tetrachloroethane	0.50	N.D.
<b>Tetrachloroethene</b>	<b>0.50</b>	<b>1.5</b>
1,1,1-Trichloroethane	0.50	N.D.
1,1,2-Trichloroethane	0.50	N.D.
Trichloroethene	0.50	N.D.
Trichlorofluoromethane	0.50	N.D.
Vinyl chloride	1.0	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
1-Chloro-3-fluorobenzene	70 130	113

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

SEQUOIA ANALYTICAL - ELAP #1210

Tod Granicher  
Project Manager



Gettler Ryan/Geostrategies 6747 Sierra Court Suite J Dublin, CA 94568	Client Proj. ID: Unocal SS#2512 Sample Descript: MW-9 Matrix: LIQUID Analysis Method: EPA 8010 Lab Number: 9810907-05	Sampled: 10/12/98 Received: 10/12/98  Analyzed: 10/16/98 Reported: 10/30/98
Attention: Deanna Harding		
QC Batch Number: GC101698OVOA29A		
Instrument ID: GCHP29		

**Halogenated Volatile Organics (EPA 8010)**

Analyte	Detection Limit ug/L	Sample Results ug/L
Bromodichloromethane	2.5	N.D.
Bromoform	2.5	N.D.
Bromomethane	5.0	N.D.
Carbon Tetrachloride	2.5	N.D.
Chlorobenzene	2.5	N.D.
Chloroethane	5.0	N.D.
Chloroform	2.5	N.D.
Chloromethane	5.0	N.D.
Dibromochloromethane	2.5	N.D.
1,2-Dichlorobenzene	2.5	N.D.
1,3-Dichlorobenzene	2.5	N.D.
1,4-Dichlorobenzene	2.5	N.D.
1,1-Dichloroethane	2.5	N.D.
1,2-Dichloroethane	2.5	N.D.
1,1-Dichloroethene	2.5	N.D.
cis-1,2-Dichloroethene	2.5	N.D.
trans-1,2-Dichloroethene	2.5	N.D.
1,2-Dichloropropane	2.5	N.D.
cis-1,3-Dichloropropene	2.5	N.D.
trans-1,3-Dichloropropene	2.5	N.D.
Methylene chloride	25	N.D.
1,1,2,2-Tetrachloroethane	2.5	N.D.
<b>Tetrachloroethene</b>	2.5	N.D.
1,1,1-Trichloroethane	2.5	46
1,1,2-Trichloroethane	2.5	N.D.
Trichloroethene	2.5	N.D.
Trichlorofluoromethane	2.5	N.D.
Vinyl chloride	5.0	N.D.
<b>Surrogates</b>	<b>Control Limits %</b>	<b>% Recovery</b>
1-Chloro-3-fluorobenzene	70 130	99

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

**SEQUOIA ANALYTICAL** - ELAP #1210

Tod Granicher  
Project Manager





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

Client Project ID: Unocal SS#2512

QC Sample Group: 9810907

Reported: Nov 3, 1998

**QUALITY CONTROL DATA REPORT**

<b>Matrix:</b>	Liquid					
<b>Method:</b>	EPA 8010/8020, 601/602					
<b>Analyst:</b>	B. ALI					
<b>ANALYTE</b>	1,1-DCE	TCE	Chlorobenzene	Benzene	Toluene	Chlorobenzene

QC Batch #: GC1016980VOA29A

<b>Sample No.:</b>	9810574-01					
<b>Date Prepared:</b>	10/14/98	10/14/98	10/14/98	10/14/98	10/14/98	10/14/98
<b>Date Analyzed:</b>	10/14/98	10/14/98	10/14/98	10/14/98	10/14/98	10/14/98
<b>Instrument I.D.#:</b>	GCHP_29	GCHP_29	GCHP_29	GCHP_29	GCHP_29	GCHP_29
<b>Sample Conc., ug/L:</b>	N.D.	0.6	N.D.	N.D.	N.D.	N.D.
<b>Conc. Spiked, ug/L:</b>	25	25	25	25	25	25
<b>Matrix Spike, ug/L:</b>	25	22	27	25	25	25
<b>% Recovery:</b>	100	86	108	100	100	100
<b>Matrix Spike Duplicate, ug/L:</b>	25	23	20	21	21	21
<b>% Recovery:</b>	100	90	80	84	84	84
<b>Relative % Difference:</b>	0.0	4.5	30	17	17	17
<b>RPD Control Limits:</b>	0-50	0-50	0-50	0-50	0-50	0-50

LCS Batch#: VWLCS101698

<b>Date Prepared:</b>	10/16/98	10/16/98	10/16/98	10/16/98	10/16/98	10/16/98
<b>Date Analyzed:</b>	10/16/98	10/16/98	10/16/98	10/16/98	10/16/98	10/16/98
<b>Instrument I.D.#:</b>	GCHP_29	GCHP_29	GCHP_29	GCHP_29	GCHP_29	GCHP_29
<b>Conc. Spiked, ug/L:</b>	25	25	25	25	25	25
<b>Recovery, ug/L:</b>	25	23	21	25	25	25
<b>LCS % Recovery:</b>	100	92	84	100	100	100

Percent Recovery Control Limits:

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

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met

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.

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Project Manager



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

Client Project ID: Unocal SS#2512

QC Sample Group: 9810907

Reported: Nov 3, 1998

## QUALITY CONTROL DATA REPORT

Matrix: Liquid  
Method: EPA 8010/8020, 601/602  
Analyst: L. Kim

ANALYTE	1,1-DCE	TCE	Chlorobenzene	Benzene	Toluene	Chlorobenzene
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QC Batch #: GC101598VOA29A

Sample No.: 9810574-01

Date Prepared:	10/14/98	10/14/98	10/14/98	10/14/98	10/14/98	10/14/98
Date Analyzed:	10/14/98	10/14/98	10/14/98	10/14/98	10/14/98	10/14/98
Instrument I.D.#:	gchp29	gchp29	gchp29	gchp29	gchp29	gchp29
Sample Conc., ug/L:	N.D.	0.6	N.D.	N.D.	N.D.	N.D.
Conc. Spiked, ug/L:	25	25	25	25	25	25
Matrix Spike, ug/L:	25	22	27	25	25	25
% Recovery:	100	86	108	100	100	100
Matrix						
Spike Duplicate, ug/L:	25	23	20	21	21	21
% Recovery:	100	90	80	84	84	84
Relative % Difference:	0.0	4.5	30	17	17	17
RPD Control Limits:	0-50	0-50	0-50	0-50	0-50	0-50

LCS Batch#: LCS101598A

Date Prepared:	10/15/98	10/15/98	10/15/98	10/15/98	10/15/98	10/15/98
Date Analyzed:	10/15/98	10/15/98	10/15/98	10/15/98	10/15/98	10/15/98
Instrument I.D.#:	gchp29	gchp29	gchp29	gchp29	gchp29	gchp29
Conc. Spiked, ug/L:	25	25	25	25	25	25
Recovery, ug/L:	28	21	22	25	24	24
LCS % Recovery:	112	84	88	100	96	96

Percent Recovery Control Limits:

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

Quality Assurance Statement: All standard operating procedures and quality control requirements have been met.

Please Note:

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

Client Project ID: Unocal SS#2512  
Matrix: Liquid

Work Order #: 9810907 01-05

Reported: Nov 3, 1998

## QUALITY CONTROL DATA REPORT

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	BTEX as TPH
QC Batch#:	GC101998802004A	GC101998802004A	GC101998802004A	GC101998802004A	GC101998802004A
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 #:	8100971	8100971	8100971	8100971	8100971
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/19/98	10/19/98	10/19/98	10/19/98	10/19/98
Analyzed Date:	10/19/98	10/19/98	10/19/98	10/19/98	10/19/98
Instrument I.D.#:	HP4	HP4	HP4	HP4	HP4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	340 µg/L
Result:	21	18	19	65	360
MS % Recovery:	105	90	95	108	106
Dup. Result:	19	16	18	58	300
MSD % Recov.:	95	80	90	97	88
RPD:	10	12	5.4	11	18
RPD Limit:	0-20	0-20	0-20	0-20	0-50

LCS #:	LCS101998	LCS101998	LCS101998	LCS101998	LCS101998
Prepared Date:	10/19/98	10/19/98	10/19/98	10/19/98	10/19/98
Analyzed Date:	10/19/98	10/19/98	10/19/98	10/19/98	10/19/98
Instrument I.D.#:	HP4	HP4	HP4	HP4	HP4
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	340 µg/L
LCS Result:	20	17	18	62	320
LCS % Recov.:	100	85	90	103	94

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

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SEQUOIA ANALYTICAL  
ELAP #1271

Tod Granicher  
Project Manager

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

9810907.GET <1>



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

Client Project ID: Unocal SS#2512  
Matrix: Liquid

Work Order #: 9810907 01-05

Reported: Nov 3, 1998

**QUALITY CONTROL DATA REPORT**

Analyte:	Benzene	Toluene	Ethyl Benzene	Xylenes	BTEX as TPH
QC Batch#:	GC101998802002A	GC101998802002A	GC101998802002A	GC101998802002A	GC101998802002A
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 #:	8101016	8101016	8101016	8101016	8101016
Sample Conc.:	N.D.	N.D.	N.D.	N.D.	N.D.
Prepared Date:	10/19/98	10/19/98	10/19/98	10/19/98	10/19/98
Analyzed Date:	10/19/98	10/19/98	10/19/98	10/19/98	10/19/98
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	450 µg/L
Result:	16	16	17	56	420
MS % Recovery:	80	80	85	93	93
Dup. Result:	16	17	17	57	420
MSD % Recov.:	80	85	85	95	93
RPD:	0.0	6.1	0.0	1.8	0.0
RPD Limit:	0-20	0-20	0-20	0-20	0-50

LCS #:	LCS101998	LCS101998	LCS101998	LCS101998	LCS101998
Prepared Date:	10/19/98	10/19/98	10/19/98	10/19/98	10/19/98
Analyzed Date:	10/19/98	10/19/98	10/19/98	10/19/98	10/19/98
Instrument I.D.#:	HP2	HP2	HP2	HP2	HP2
Conc. Spiked:	20 µg/L	20 µg/L	20 µg/L	60 µg/L	450 µg/L
LCS Result:	18	18	19	61	420
LCS % Recov.:	90	90	95	102	93

MS/MSD LCS Control Limits	70-130	70-130	70-130	70-130	60-140
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SEQUOIA ANALYTICAL  
ELAP #1271

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

9810907 GET <2>



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

Client Project ID: Unocal SS#2512  
Matrix: Liquid

Work Order #: 9810907 01-05

Reported: Nov 3, 1998

**QUALITY CONTROL DATA REPORT**

<b>Analyte:</b>	Diesel
<b>QC Batch#:</b>	SP1015988015EXA
<b>Analy. Method:</b>	EPA 8015
<b>Prep. Method:</b>	EPA 3510

**Analyst:** K. Grubb  
**MS/MSD #:** BLK101598  
**Sample Conc.:** N.D.  
**Prepared Date:** 10/15/98  
**Analyzed Date:** 10/19/98  
**Instrument I.D.#:** HP3B  
**Conc. Spiked:** 500 µg/L

**Result:** 370  
**MS % Recovery:** 74

**Dup. Result:** 360  
**MSD % Recov.:** 72

**RPD:** 2.7  
**RPD Limit:** 0-50

LCS #:	LCS101598	LCS101598
<b>Prepared Date:</b>	10/15/98	10/15/98
<b>Analyzed Date:</b>	10/19/98	10/19/98
<b>Instrument I.D.#:</b>	HP3B	HP3B
<b>Conc. Spiked:</b>	500 µg/L	500 µg/L
<b>LCS Result:</b>	340	350
<b>LCS % Recov.:</b>	68	70

<b>MS/MSD</b>	50-150	50-150
<b>LCS</b>	60-140	60-140
<b>Control Limits</b>		

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Client Proj. ID: Unocal SS#2512  
Lab Proj. ID: 9810907

Received: 10/12/98  
Reported: 10/30/98

### LABORATORY NARRATIVE

In order to properly interpret this report, it must be reproduced in its entirety. This report contains a total of 11 pages including the laboratory narrative, sample results, quality control, and related documents as required (cover page, COC, raw data, etc.).

SEQUOIA ANALYTICAL

Tod Granicher  
Project Manager