



20479

April 18, 2003

Alameda County
MAY 05 2003
Environmental Health

QUARTERLY GROUNDWATER MONITORING REPORT
MARCH 2003 GROUNDWATER SAMPLING
at
Lim Family Property
250 8th Street
Oakland, California

Submitted by:
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(925) 820-9391

1.0 INTRODUCTION

This report outlines the methods and findings of Aqua Science Engineers, Inc. (ASE)'s quarterly groundwater monitoring at the Lim family property located at 250 8th Street in Oakland, California (*Figures 1 and 2*).

2.0 GROUNDWATER FLOW DIRECTION AND GRADIENT

On March 25, 2003, ASE measured the depth to water in each site well using an electric water level sounder. The surface of the groundwater was also checked for the presence of free-floating hydrocarbons or sheen. Monitoring well MW-3 contained 1.14-feet of free-floating hydrocarbons this quarter. Groundwater elevation data is presented in Table One.

A groundwater elevation (potentiometric surface) contour map is shown as Figure 2. The groundwater flow direction at the site is generally to the south with a gradient of 0.0056 feet/foot during this quarterly sampling period. The gradient and flow direction is consistent with previous findings.

3.0 MONITORING WELL SAMPLING

On March 25, 2003, ASE collected groundwater samples from monitoring wells MW-1, MW-2, and MW-4 through MW-7 for analysis. Monitoring well MW-3 was not sampled due to the presence of free-floating hydrocarbons at the time of sampling.

Prior to sampling, the wells were purged of three well casing volumes of groundwater using dedicated polyethylene bailers. The pH, temperature, and conductivity of the purge water were monitored during evacuation, and samples were not collected until these parameters stabilized. Samples were collected from each well using dedicated polyethylene bailers. The groundwater samples to be analyzed for volatile compounds were decanted from the bailers into 40-ml volatile organic analysis (VOA) vials, preserved with hydrochloric acid, sealed without headspace and labeled. The samples to be analyzed for extractable range hydrocarbons were contained in 1-liter amber glass bottles. All samples were stored on ice for transport to Kiff Analytical, LLC, (KIFF) of Davis, California under appropriate chain of custody documentation.

Well sampling purge water was contained in a sealed and labeled 55-gallon steel drum for temporary storage until off-site disposal can be arranged. See Appendix A for copies of the well sampling field logs.

4.0 ANALYTICAL RESULTS FOR GROUNDWATER

All groundwater samples were analyzed by KIFF for total petroleum hydrocarbons as diesel (TPH-D) by modified EPA Method 3510/8015M, total petroleum hydrocarbons as gasoline (TPH-G), benzene, toluene, ethyl benzene, total xylenes (collectively known as BTEX), lead scavengers, and methyl tertiary butyl ether (MTBE) by EPA Method 8260B. The groundwater samples collected from monitoring wells MW-2 and MW-4 through MW-7 were also analyzed for oil and grease (O&G) by EPA Method 1664. The analytical results are tabulated in Tables Two and Three, and copies of the certified analytical report and chain of custody form are included in Appendix B.

5.0 CONCLUSIONS

Monitoring well MW-3 contained 1.14-feet of free-floating hydrocarbons this quarter. Overall, the hydrocarbon concentrations are consistent with previous analytical results and remain elevated in downgradient monitoring wells MW-2, MW-3, MW-4, and MW-7. The TPH-G and BTEX concentrations in groundwater samples collected from monitoring wells MW-2, MW-4, and MW-7 exceeded Risk Based Screening Levels (RBSLs) for those compounds as presented in the "Application of Risk-Based Screening Levels and Decision Making to Sites with Impacted Soil and Groundwater" document prepared by the California Regional Water Quality Control Board, San Francisco Bay Region dated December 2001.

6.0 RECOMMENDATIONS

ASE has prepared and submitted a corrective action plan (CAP) dated August 26, 2002 to the Alameda County Health Care Services Agency (ACHCSA) and is awaiting approval of ASE's selection of remediation technology for the site. In the meantime, ASE recommends continued groundwater monitoring on a quarterly basis. The next groundwater sampling is scheduled for June 2003. ASE will also continue periodic product bailing from monitoring well MW-3 during the next quarter.

7.0 REPORT LIMITATIONS

The results presented in this report represent conditions at the time of the groundwater sampling, at the specific locations where the samples were collected, and for the specific parameters analyzed by the laboratory. It does not fully characterize the site for contamination resulting from unknown sources, or for parameters not analyzed by the laboratory. All of the laboratory work cited in this report was prepared under the direction of an independent CAL-EPA certified laboratory. The independent laboratory is solely responsible for the contents and conclusions of the chemical analysis data.

Aqua Science Engineers appreciates the opportunity to assist The Lim Family with their environmental needs. Should you have any questions or comments, please feel free to call us at (925) 820-9391.

Respectfully submitted,

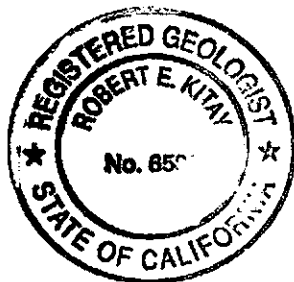
AQUA SCIENCE ENGINEERS, INC.



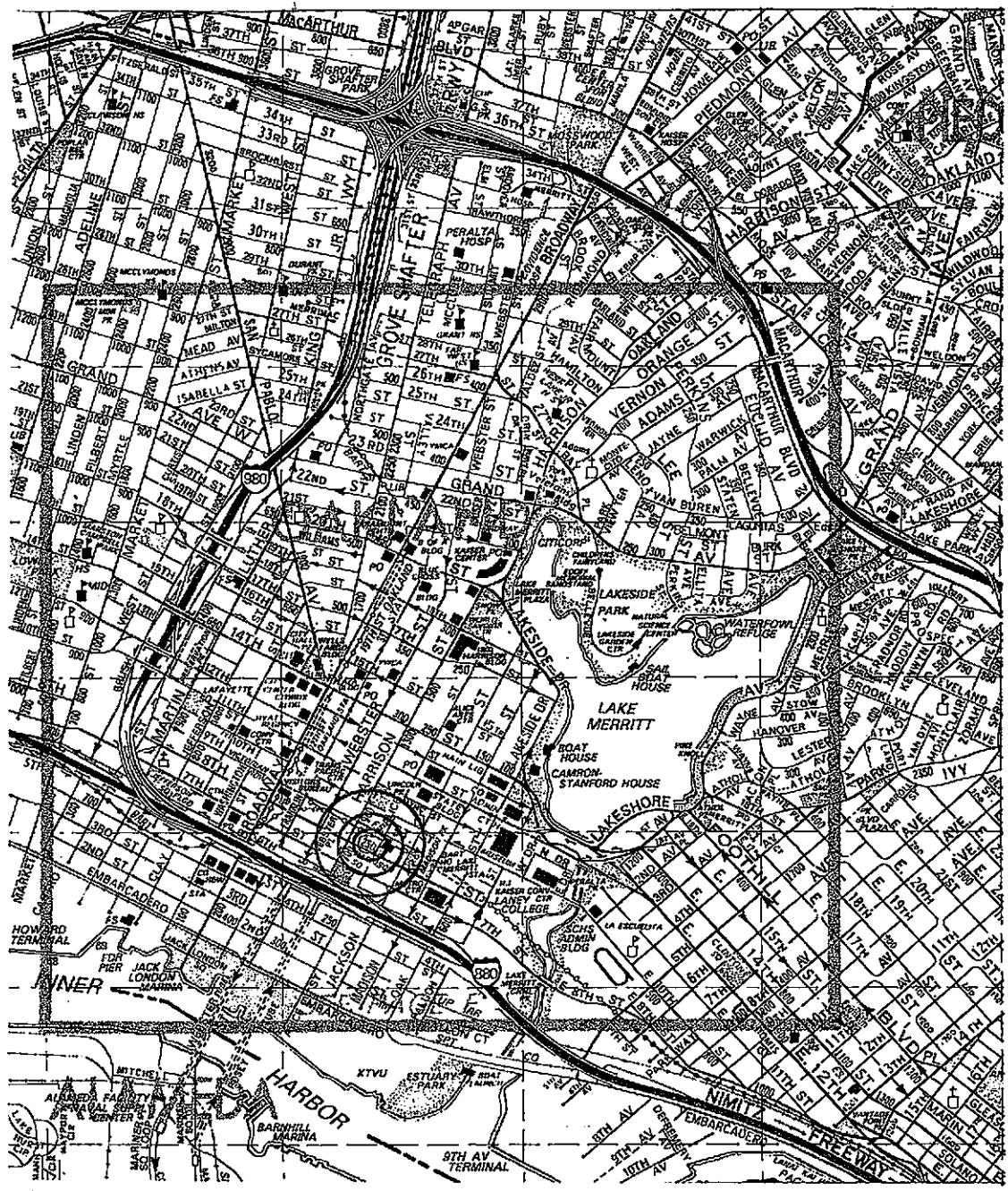
Erik H. Paddleford
Associate Geologist



Robert E. Kitay, R.G., R.E.A.
Senior Geologist



Attachments: Figures 1 and 2
Appendices A and B



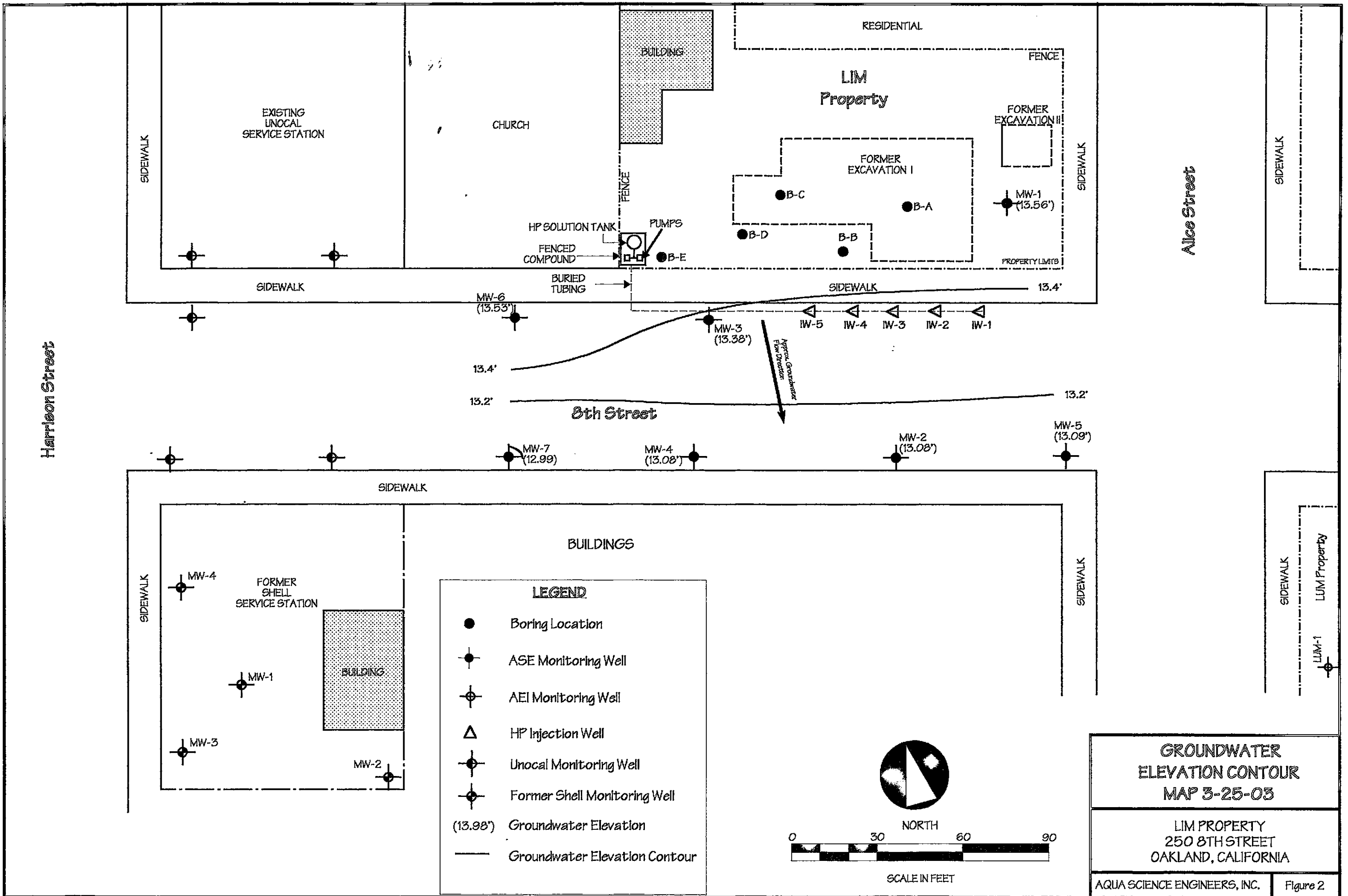
SITE LOCATION MAP

Lim Property
250 8th Street
Oakland, California

Aqua Science Engineers

Figure 1

BASE: The Thomas Guide, Alameda and Contra Costa
Counties Street Guide & Directory, 1990



Harrison Street

Alice Street

8th Street

EXISTING UNOCAL SERVICE STATION

CHURCH

BUILDING

RESIDENTIAL

LIM Property

FORMER EXCAVATION II

FORMER EXCAVATION I

MW-1 (13.56')

HP SOLUTION TANK
FENCED COMPOUND
PUMPS
B-E

B-C

B-A

B-D

B-B

PROPERTY LIMITS

SIDEWALK

BURIED TUBING

SIDEWALK

SIDEWALK

SIDEWALK

MW-6 (13.53')

MW-3 (13.38')

IW-5 IW-4 IW-3 IW-2 IW-1

13.4'

13.2'

13.2'

MW-4

MW-1

MW-7 (12.99')

MW-4 (13.08')

MW-2 (13.08')

MW-5 (13.09')

SIDEWALK

BUILDINGS

SIDEWALK

MW-4

FORMER SHELL SERVICE STATION

BUILDING

MW-1

MW-3

MW-2

SIDEWALK

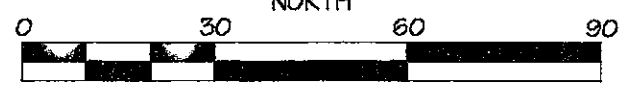
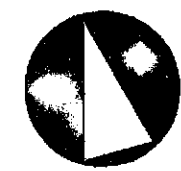
SIDEWALK

LUM-1

LUM-1

LEGEND

- Boring Location
- ⊕ ASE Monitoring Well
- ⊕ AEI Monitoring Well
- △ HP Injection Well
- ⊕ Unocal Monitoring Well
- ⊕ Former Shell Monitoring Well
- (13.98') Groundwater Elevation
- Groundwater Elevation Contour



SCALE IN FEET

TABLE ONE
 Groundwater Elevation Data
 Lim Family Property
 250 8th Street
 Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)
MW-1	01/30/95	25.51	16.21		9.30
	04/12/95		15.71		9.80
	07/14/95		16.71		8.80
	10/17/95		17.72		7.79
	01/12/96		18.03		7.48
	07/25/96		16.82		8.69
	01/06/97		15.60		9.91
	07/08/97		17.31		8.20
	01/26/98		15.21		10.30
	07/23/98		15.38		10.13
	01/05/99		16.82		8.69
	07/13/99		15.89		9.62
	01/12/00		17.44		8.07
	04/24/00		16.37		9.14
	07/20/00	16.30		9.21	
	10/24/00	17.25		8.26	
	01/18/01	17.29		8.22	
	04/05/01	15.88		9.63	
	07/17/01	16.54		8.97	
	10/25/01	16.89		8.62	
	01/21/02	14.92		10.59	
	04/11/02	14.02		11.49	
	06/11/02	29.72	15.33		14.39
	09/17/02		15.96		13.76
	12/18/02		16.14		13.58
03/25/03	16.16			13.56	

TABLE ONE
 Groundwater Elevation Data
 Lim Family Property
 250 8th Street
 Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)
MW-2	01/30/95	23.99	15.02		8.97
	04/12/95		14.75		9.24
	07/14/95		16.02		7.97
	10/17/95		16.94		7.05
	01/12/96		17.05		6.94
	07/25/96		16.02		7.97
	01/06/97		14.34		9.65
	07/08/97		16.52		7.47
	01/26/98		14.10		9.89
	07/23/98		14.70		9.29
	01/05/99		16.01		7.98
	07/13/99		15.40		8.59
	01/12/00		16.76		7.23
	04/24/00		15.67		8.32
	07/20/00		15.70		8.29
	10/24/00	16.56		7.43	
	01/18/01	16.47		7.52	
	04/05/01	15.88		8.11	
	07/17/01	15.35		8.64	
	10/25/01	15.63		8.36	
	01/21/02	13.55		10.44	
	04/11/02	13.74		10.25	
	06/11/02	28.19	14.06		14.13
	09/17/02		14.67		13.52
	12/18/02		14.88		13.31
	03/25/03		15.11		13.08

TABLE ONE
 Groundwater Elevation Data
 Lim Family Property
 250 8th Street
 Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)
MW-3	01/12/00	24.25	16.68	0.01	7.58*
	04/24/00		15.58	0.15	8.79*
	07/20/00		16.01	0.41	8.57*
	10/24/00		16.95	0.21	7.47*
	01/18/01		16.63	0.21	7.79*
	04/05/01		15.16	0.23	9.27*
	07/17/01		15.92	0.39	8.64*
	10/25/01		16.26	0.38	8.29*
	01/21/02	28.58	14.08	0.16	10.30*
	04/11/02		14.59	0.54	10.09*
	06/11/02		15.16	0.90	14.14*
	09/17/02		16.04	1.24	13.53*
	10/01/02		16.14	1.23	13.42*
	10/25/02		15.80	0.60	13.26*
	11/12/02		15.87	0.47	13.09*
	12/18/02		15.42	0.47	13.54*
03/25/03	16.11	1.14	13.38*		
MW-4	01/12/00	23.71	17.24		6.47
	04/24/00		16.18		7.53
	07/20/00		16.18		7.53
	10/24/00		17.03		6.68
	01/18/01		16.87		6.84
	04/05/01		15.28		8.43
	07/17/01		15.92		7.79
	10/25/01		16.23		7.48
	01/21/01	14.14		9.57	
	04/11/02	14.43		9.28	
	06/11/02	28.61	14.72		13.89
	09/17/02		15.29		13.32
	12/18/02		15.20		13.41
	03/25/03		15.53		13.08

TABLE ONE
 Groundwater Elevation Data
 Lim Family Property
 250 8th Street
 Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)
MW-5	06/11/02	28.40	14.23		14.17
	09/17/02		14.80		13.60
	12/18/02		15.08		13.32
	03/25/03		15.31		13.09
MW-6	06/11/02	29.20	14.95		14.25
	09/17/02		15.47		13.73
	12/18/02		15.43		13.77
	03/25/03		15.67		13.53
MW-7	06/11/02	28.95	15.19		13.76
	09/17/02		15.73		13.22
	12/18/02		NOT MEASURED - CAR PARKED OVER WELL		
	03/25/03		15.96		12.99
IW-1	07/13/99	24.05	14.75		9.30
	06/11/02	28.33			
IW-2	07/13/99	24.21	15.10		9.11
	06/11/02	28.50			
IW-3	07/13/99	23.93	15.00		8.93
	06/11/02	28.14			
IW-4	07/13/99	23.83	Unknown		Unknown
	06/11/02	28.24			

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 Groundwater Elevation Data
 Lim Family Property
 250 8th Street
 Oakland, CA

Well I.D.	Date of Measurement	Top of Casing Elevation (msl)	Depth to Water (feet)	Product Thickness (feet)	Groundwater Elevation (msl)
IW-5	07/13/99	24.00	15.50	1.00	9.55*
	07/23/99		15.52	1.05	9.32*
	08/03/99		15.58	0.64	8.93*
	08/17/99		15.62	0.86	9.07*
	08/27/99		15.92	0.77	8.70*
	09/10/99		15.82	0.56	8.63*
	09/24/99		15.57	0.26	8.64*
	10/08/99		15.56	0.23	8.62*
	11/02/99		15.59	0.22	8.59*
	11/19/99		15.64	0.07	8.42*
	12/16/99		16.12	0.64	8.39*
	01/12/00		16.54	0.28	7.68*
	06/11/02	28.32			

Notes:

* = Adjusted for the presence of free-floating oil by the equation: Top of Casing Elevation - Depth to Water + (0.8 x Floating Hydrocarbon Thickness) = Groundwater Elevation (Adjusted).

Top of casing elevations resurveyed by Mid Coast Engineers on 6/27/02 and 7/11/02.

TABLE TWO
 Summary of Chemical Analysis of Groundwater Samples
 Petroleum Hydrocarbon Concentrations
 All results are in parts per billion

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<u>MW-1</u>							
01/30/95	740	200	3	5	1	4	--
04/12/95	400	500	<0.5	<0.5	3	<2	--
07/14/95	520	400	1	<0.5	2	3	--
10/17/95	400	200	0.5	1	3	<2	--
01/12/96	120	890	<0.5	<0.5	<0.5	<1.0	<2.0
07/08/96	320	300	0.52	2.7	1.2	2.3	<5.0
01/06/97	110	75	<0.5	0.68	<0.5	<0.5	<5.0
07/08/97	380	290	<0.5	1.5	1.4	1.9	<5.0
01/26/98	<50	<50	<0.5	<0.5	<0.5	<0.5	<5.0
07/23/98	190	<50	0.54	2.8	2	1.8	<5.0
01/05/99	200	<50	1.8	1.6	3.3	<0.5	<5.0
07/13/99	340	<50	<0.5	<0.5	2.6	<0.5	<5.0
01/12/00	300	1,000	22	36	5.5	24	<5.0
04/24/00	360	280*	<0.5	<0.5	<0.5	2.1	<5.0
07/20/00	290	150*	1.8	<0.5	<0.5	<0.5	<5.0
10/24/00	170**	280*	<0.5	<0.5	<0.5	<0.5	<5.0
01/18/01	170**	150*	<0.5	<0.5	<0.5	2.1	<5.0
04/05/01	350**	190*	<0.5	<0.5	<0.5	<0.5	<5.0
07/17/01	310	570	<0.5	<0.5	<0.5	<0.5	<5.0
10/25/01	250	260	<0.5	<0.5	<0.5	<0.5	<5.0
01/22/02	200	250	<0.5	<0.5	<0.5	<0.5	<5.0
04/11/02	260	300	<0.5	<0.5	<0.5	<0.5	<5.0
06/11/02	270	330	<0.5	<0.5	<0.5	<0.5	<5.0
09/17/02	320	1,700	<0.5	<0.5	<0.5	<0.5	<5.0
12/18/02	170	320	<0.5	<0.5	<0.5	<0.5	<5.0
03/25/03	320	<500	<0.5	<0.5	<0.5	<0.5	<5.0

TABLE TWO
 Summary of Chemical Analysis of Groundwater Samples
 Petroleum Hydrocarbon Concentrations
 All results are in parts per billion

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<u>MW-2</u>							
01/30/95	88,000	800	19,000	18,000	2,400	10,000	--
04/12/95	110,000	990	21,000	28,000	2,800	14,000	--
07/14/95	120,000	5,000	20,000	25,000	3,200	15,000	--
10/17/95	190,000	4,000	15,000	26,000	4,900	23,000	--
01/12/96	32,000	2,600	10,000	8,000	1,100	4,800	< 2
07/08/96	110,000	2,500	20,000	18,000	2,500	12,000	< 500
01/06/97	230,000	37,000	11,000	19,000	4,300	20,000	< 1,200
07/08/97	91,000	35,000	16,000	20,000	2,700	13,000	< 1,000
01/26/98	50,000	11,000	12,000	12,000	1,600	6,700	< 250
07/23/98	50,000	8,100#	11,000	8,300	1,800	7,000	1,100
01/05/99	50,000	7,600#	12,000	12,000	2,300	9,600	1,300
07/13/99	73,000	8,500	11,000	13,000	2,200	9,800	< 500
01/12/00	63,000	11,000	10,000	12,000	1,800	7,800	< 500
04/24/00	76,000	23,000*	7,100	14,000	2,000	9,400	< 500
07/20/00	68,000	5,300#	11,000	14,000	2,300	11,000	< 1,000
10/24/00	48,000	6,400*	11,000	9,400	1,500	7,300	< 500
01/18/01	37,000	4,600*	6,900	5,600	1,200	5,300	< 500
04/05/01	59,000	4,600*	7,100	9,800	1,600	7,600	< 500
07/17/01	90,000	< 10,000	9,200	14,000	2,700	11,000	< 50
10/25/01	79,000	< 3,800	9,200	14,000	2,400	11,000	< 50
01/22/02	76,000	< 2,300	7,000	13,000	2,200	9,600	< 50
04/11/02	76,000	< 1,500	7,800	11,000	2,900	12,000	< 50
06/11/02	72,000	< 2,500	7,300	9,600	2,500	12,000	< 50
09/17/02	52,000	< 3,000	5,000	5,400	2,100	9,100	< 20
12/18/02	46,000	< 6,000	2,900	3,000	1,800	7,600	22
03/25/03	87,000	< 8,000	7,900	9,300	2,900	12,000	< 50

TABLE TWO
 Summary of Chemical Analysis of Groundwater Samples
 Petroleum Hydrocarbon Concentrations
 All results are in parts per billion

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<u>MW-3</u>							
01/12/00	140,000	13,000*	22,000	19,000	2,400	11,000	< 500
04/24/00	240,000	700,000*	33,000/ 35,000	52,000/ 87,000	5,700/ 18,000	28,000/ 84,000	< 5,000
07/20/00	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
10/24/00	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
01/18/01	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
04/05/01	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
07/17/01	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
10/25/01	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
01/22/02	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
04/11/02	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
06/11/02	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
09/17/02	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
12/18/02	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
03/25/03	NOT SAMPLED DUE TO FREE-FLOATING HYDROCARBONS						
<u>MW-4</u>							
01/12/00	99,000	7,900*	16,000	20,000	2,100	12,000	< 2,500
04/24/00	54,000	44,000*	3,400/ 4,500	13,000/ 20,000	1,800/ 2,800	8,800/ 14,000	< 1,300
07/20/00	8,000	3,500	9,200/ 11,000	20,000 22,000	2,500 3,400	12,000/ 13,000	< 1,000
10/24/00	98,000	8,000*	21,000	29,000	2,700	15,000	< 1,000
01/18/01	91,000	12,000	17,000/ 15,000	21,000/ 21,000	2,500/ 2,800	13,000/ 11,000	< 1,000 < 5,000
04/05/01	88,000	7,500*	6,900/ 3,200	18,000/ 9,000	2,500/ 1,300	12,000/ 6,400	< 1,000 < 500
07/17/01	95,000	< 3,000	8,000	16,000	2,900	11,000	49
10/25/01	89,000	< 2,200	9,300	18,000	2,400	12,000	66
01/22/02	80,000	< 2,300	4,600	15,000	2,500	11,000	< 50
04/11/02	90,000	< 900	6,600	18,000	2,800	12,000	55
06/25/02	110,000	< 3,000	10,000	20,000	2,900	13,000	< 100
09/17/02	110,000	< 3,000	9,600	21,000	2,800	13,000	< 100
12/18/02	97,000	< 4,000	8,000	20,000	2,600	12,000	< 50
03/25/03	97,000	< 7,500	7,600	22,000	2,500	12,000	< 100

TABLE TWO
 Summary of Chemical Analysis of Groundwater Samples
 Petroleum Hydrocarbon Concentrations
 All results are in parts per billion

Well/ Date Sampled	TPH Gasoline	TPH Diesel	Benzene	Toluene	Ethyl- benzene	Total Xylenes	MTBE
<u>MW-5</u>							
06/11/02	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	28
09/17/02	< 50	110	< 0.5	< 0.5	< 0.5	< 0.5	4.8
12/18/02	< 50	140	< 0.5	< 0.5	< 0.5	< 0.5	1.8
03/25/03	< 50	130	< 0.5	< 0.5	< 0.5	< 0.5	7.4
<u>MW-6</u>							
06/11/02	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	1.2
09/17/02	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	1.0
12/18/02	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	0.90
03/25/03	< 50	< 50	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0
<u>MW-7</u>							
06/25/02	38,000	< 2,000	890	5,100	1,200	5,200	< 20
09/17/02	26,000	< 2,000	590	3,600	880	4,000	< 20
12/18/02	NOT SAMPLED - CAR PARKED OVER WELL						
03/25/03	39,000	< 2,900	410	7,700	1,000	6,400	< 5.0
RBSL	500	640	46	130	290	13	1,800

Notes:

- * = Hydrocarbons reported are in the early diesel range, and do not match the laboratory standard.
- ** = Hydrocarbons reported do not match the laboratory gasoline standard.
- # = Estimated concentration reported due to overlapping fuel patterns.
- / = Results separated by a slash represent results from two different laboratory methods (8020/8260).
- Non-detectable concentrations noted by the less than sign (<) followed by the detection limit.
- Most recent data in bold.

RBSL is the California Regional Water Quality Control Board, San Francisco Bay Region Risk-Based Screening Level for Groundwater where groundwater is not a current or potential source of drinking water.

TABLE THREE
Groundwater Analytical Results
Oil & Grease and Volatile Organic Compounds
 All results are in parts per billion

Date Sampled & Compound Analyzed	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
<u>7/8/1997</u>							
Hydrocarbon Oil and Grease	-	<1,000	-	-	-	-	-
Tetrachloroethane (PCE)	0.9	<0.5	-	-	-	-	-
Other VOCs	<0.5 - <3	<0.5 - <3	-	-	-	-	-
<u>1/26/1998</u>							
Hydrocarbon Oil and Grease	-	<1,000	-	-	-	-	-
Trichloroethene	0.7	<5.0	-	-	-	-	-
Tetrachloroethene	10	<5.0	-	-	-	-	-
1,2-Dichloroethane	<0.5	11	-	-	-	-	-
Other VOCs	<0.5 - <50	<0.5 - <50	-	-	-	-	-
<u>7/23/1998</u>							
Hydrocarbon Oil and Grease	-	<1,000	-	-	-	-	-
Tetrachloroethene	4	4.6	-	-	-	-	-
1,2-Dichloroethane	<2	9.9	-	-	-	-	-
Other VOCs	<2 - <10	<0.5 - <5.0	-	-	-	-	-
<u>1/5/1999</u>							
Hydrocarbon Oil and Grease	-	<1,000	-	-	-	-	-
Tetrachloroethene	5.1	<50	-	-	-	-	-
Trichloroethene	0.52	<50	-	-	-	-	-
1,1,2,2-Tetrachloroethane	0.58	<50	-	-	-	-	-
Chloroform	8.2	<50	-	-	-	-	-
Other VOCs	<0.5 - <5	<50 - <500	-	-	-	-	-
<u>7/13/1999</u>							
Hydrocarbon Oil and Grease	-	<1,000	-	-	-	-	-
Tetrachloroethene	1.5	0.68	-	-	-	-	-
Chloroform	4.6	<50	-	-	-	-	-
1,2-Dichloroethane	<0.50	7.7	-	-	-	-	-
Other VOCs	<0.5 - <5	<0.5 - <500	-	-	-	-	-
<u>1/12/2000</u>							
Hydrocarbon Oil and Grease	-	<1,000	<1,000	<1,000	-	-	-
Tetrachloroethene	0.8	<1.0	<100	<50	-	-	-
Chloroform	3.2	<1.0	<100	<50	-	-	-
1,2-Dichloroethane	<0.50	8.8	120	140	-	-	-
Acetone	-	-	25,000	6,400	-	-	-
Naphthalene	-	-	550	540	-	-	-
Isopropylbenzene	-	-	120	89	-	-	-
Other VOCs	<0.5 - <5.0	<1.0 - <4.0	<100 - <10,000	<50 - <5,000	-	-	-

TABLE THREE
Groundwater Analytical Results
Oil & Grease and Volatile Organic Compounds
 All results are in parts per billion

Date Sampled & Compound Analyzed	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
<u>4/24/2000</u>							
Hydrocarbon Oil and Grease	-	<1,000	4,100	<1,000	-	-	-
1,2-Dichloroethane	<0.5	5.9	<1,000	<250	-	-	-
Naphthalene	-	-	3,800	590	-	-	-
Isopropylbenzene	-	-	1,200	<250	-	-	-
Other VOCs	<0.5 - <5.0	<5.0 - <20	1,000 - <100,000	<250 - <25,000	-	-	-
<u>7/20/2000</u>							
Hydrocarbon Oil and Grease	-	<1,000		<1,000	-	-	-
Tetrachloroethene	0.59	<5.0	FREE	<200	-	-	-
Chloroform	2.1	<5.0	PRODUCT	<200	-	-	-
1,2-Dichloroethane	<0.5	6.7	---	<200	-	-	-
Acetone	-	-	NOT	<20,000	-	-	-
Naphthalene	-	-	SAMPLED	730	-	-	-
Other VOCs	<0.5 - <20	<5.0 - <20		<250 - <20,000	-	-	-
<u>10/24/2000</u>							
Hydrocarbon Oil and Grease	-	<1,000	FREE	<1,000	-	-	-
Tetrachloroethene	<0.5	<5.0	---	<250	-	-	-
Chloroform	1.0	<5.0	NOT	<250	-	-	-
Other VOCs	<0.5 - <20	<5.0 - <20	SAMPLED	<250 - <25,000	-	-	-
<u>1/18/2001</u>							
Hydrocarbon Oil and Grease	-	2,100	FREE	1,300	-	-	-
Tetrachloroethene	1.3	<5.0	---	<250	-	-	-
Chloroform	6.4	<5.0	NOT	<250	-	-	-
Other VOCs	<0.5 - <20	<5.0 - <20	SAMPLED	<250 - <25,000	-	-	-
<u>4/5/2001</u>							
Hydrocarbon Oil and Grease	-	<1.0	FREE	1,100.0	-	-	-
Tetrachloroethene	<0.5	1.1	PRODUCT	<50	-	-	-
1,2 dichloroethane	<0.5	4.6	---	<50	-	-	-
Trichloroethene	<0.5	0.58	NOT	<50	-	-	-
Naphthalene	-	-	---	320	-	-	-
Other VOCs	<0.5 - <2.0	<5.0 - <20	SAMPLED	<50 - <5,000	-	-	-
<u>7/17/2001</u>							
Hydrocarbon Oil and Grease	-	<500	FREE	<500	-	-	-
Tetrachloroethene	-	-	PRODUCT	-	-	-	-
1,2 dichloroethane	<0.5	<50	---	69.0	-	-	-
Trichloroethene	-	-	NOT	-	-	-	-
Naphthalene	-	-	---	-	-	-	-
Other VOCs	-	-	SAMPLED	-	-	-	-

TABLE THREE
Groundwater Analytical Results
Oil & Grease and Volatile Organic Compounds
 All results are in parts per billion

Date Sampled & Compound Analyzed	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7
<u>10/25/2001</u>							
Hydrocarbon Oil and Grease	-	< 5,000	FREE	< 5,000	-	-	-
1,2 dichloroethane	-	< 50	PRODUCT	72	-	-	-
1,2 dibromoethane	-	< 50	NOT	< 50	-	-	-
Other VOCs	-	-	SAMPLED	---	-	-	-
<u>1/22/2002</u>							
Hydrocarbon Oil and Grease	-	< 5,000	FREE	< 5,000	-	-	-
1,2 dichloroethane	-	< 50	PRODUCT	< 50	-	-	-
1,2 dibromoethane	-	< 50	NOT	< 50	-	-	-
Other VOCs	-	-	SAMPLED	---	-	-	-
<u>6/11/2002</u>							
Oil and Grease	-	1,100	FREE	-	< 1,000	< 1,000	-
1,2 dichloroethane	-	< 50	PRODUCT	-	< 0.5	< 0.5	-
1,2 dibromoethane	-	< 50	NOT	-	< 0.5	< 0.5	-
Other VOCs	-	-	SAMPLED	-	-	-	-
<u>6/25/2002</u>							
Oil and Grease	-	-	FREE	1,400	-	-	< 1,000
1,2 dichloroethane	-	-	PRODUCT	< 100	-	-	< 20
1,2 dibromoethane	-	-	NOT	< 100	-	-	< 20
Other VOCs	-	-	SAMPLED	-	-	-	-
<u>9/17/2002</u>							
Oil and Grease	-	< 1,000	FREE	< 1,000	< 1,000	< 1,000	< 1,000
1,2 dichloroethane	-	< 20	PRODUCT	< 100	< 0.50	< 0.50	< 20
1,2 dibromoethane	-	< 20	NOT	< 100	< 0.50	< 0.50	< 20
Other VOCs	-	-	SAMPLED	-	-	-	-
<u>12/18/2002</u>							
Oil and Grease	-	1,200	FREE	< 1,000	< 1,000	< 1,000	CAR PARKED
1,2 dichloroethane	-	< 10	PRODUCT	< 50	< 0.50	< 0.50	OVER WELL
1,2 dibromoethane	-	< 10	NOT	< 50	< 0.50	< 0.50	NOT
Other VOCs	-	-	SAMPLED	-	-	-	SAMPLED
<u>3/25/2003</u>							
Oil and Grease	-	< 1,000	FREE	< 1,000	< 1,000	< 1,000	< 1,000
1,2 dichloroethane	-	< 50	PRODUCT	< 100	< 0.50	< 0.50	< 2.5
1,2 dibromoethane	-	< 50	NOT	< 100	< 0.50	< 0.50	< 2.5
Other VOCs	-	-	SAMPLED	-	-	-	-

APPENDIX A

Well Sampling Field Log



WELL SAMPLING FIELD LOG

Project Name and Address: Lim
 Job #: 2808 Date of sampling: 3/25/03
 Well Name: MW-1 Sampled by: ep
 Total depth of well (feet): 26.78 Well diameter (inches): 2
 Depth to water before sampling (feet): 16.16
 Thickness of floating product if any: -
 Depth of well casing in water (feet): 10.62
 Number of gallons per well casing volume (gallons): 1.7
 Number of well casing volumes to be removed: 3
 Req'd volume of groundwater to be purged before sampling (gallons): 5
 Equipment used to purge the well: bailer
 Time Evacuation Began: 1030 Time Evacuation Finished: 1045
 Approximate volume of groundwater purged: 5
 Did the well go dry?: no After how many gallons: -
 Time samples were collected: 1055
 Depth to water at time of sampling: -
 Percent recovery at time of sampling: -
 Samples collected with: bailer
 Sample color: clear/brown Odor: none
 Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>67.2</u>	<u>6.76</u>	<u>804</u>
<u>2</u>	<u>67.1</u>	<u>6.78</u>	<u>802</u>
<u>3</u>	<u>67.0</u>	<u>6.79</u>	<u>800</u>

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	ICcd?	Analysis
<u>MW-1</u>	<u>5</u>	<u>40 ml VOA</u>	<u>x</u>	<u>x</u>	



WELL SAMPLING FIELD LOG

Project Name and Address: Lim
 Job #: 2808 Date of sampling: 3/25/03
 Well Name: MW-2 Sampled by: ap
 Total depth of well (feet): 26.78 Well diameter (inches): 2
 Depth to water before sampling (feet): 15.11
 Thickness of floating product if any: -
 Depth of well casing in water (feet): 11.67
 Number of gallons per well casing volume (gallons): 1.86
 Number of well casing volumes to be removed: 3
 Req'd volume of groundwater to be purged before sampling (gallons): 5.6
 Equipment used to purge the well: bailer
 Time Evacuation Began: 8:55 Time Evacuation Finished: 9:10
 Approximate volume of groundwater purged: 5.5
 Did the well go dry?: no After how many gallons: -
 Time samples were collected: 9:20
 Depth to water at time of sampling: -
 Percent recovery at time of sampling: -
 Samples collected with: bailer
 Sample color: clear/gray Odor: moderate
 Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>66.1</u>	<u>6.69</u>	<u>910</u>
<u>2</u>	<u>66.0</u>	<u>6.68</u>	<u>927</u>
<u>3</u>	<u>65.9</u>	<u>6.67</u>	<u>937</u>

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-2</u>	<u>5</u>	<u>40 ml VOA</u>	<u>X</u>	<u>X</u>	
	<u>1</u>	<u>1 liter amber</u>		<u>X</u>	



WELL SAMPLING FIELD LOG

Project Name and Address: Lim
Job #: 2808 Date of sampling: 3/25/03
Well Name: MW-3 Sampled by: CP
Total depth of well (feet): _____ Well diameter (inches): 2
Depth to water before sampling (feet): 14.97 16.11
Thickness of floating product if any: _____
Depth of well casing in water (feet): _____
Number of gallons per well casing volume (gallons): _____
Number of well casing volumes to be removed: _____
Req'd volume of groundwater to be purged before sampling (gallons): _____
Equipment used to purge the well: _____
Time Evacuation Began: _____ Time Evacuation Finished: _____
Approximate volume of groundwater purged: _____
Did the well go dry?: _____ After how many gallons: _____
Time samples were collected: _____
Depth to water at time of sampling: _____
Percent recovery at time of sampling: _____
Samples collected with: _____
Sample color: _____ Odor: _____
Description of sediment in sample: _____

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

SAMPLES COLLECTED



WELL SAMPLING FIELD LOG

Project Name and Address: Lim
 Job #: 2808 Date of sampling: 3/25/03
 Well Name: MW-4 Sampled by: ep
 Total depth of well (feet): 21.80 Well diameter (inches): _____
 Depth to water before sampling (feet): 15.53
 Thickness of floating product if any: -
 Depth of well casing in water (feet): 6.27
 Number of gallons per well casing volume (gallons): 1
 Number of well casing volumes to be removed: 3
 Req'd volume of groundwater to be purged before sampling (gallons): 3
 Equipment used to purge the well: bailler
 Time Evacuation Began: 930 Time Evacuation Finished: 945
 Approximate volume of groundwater purged: 3
 Did the well go dry?: no After how many gallons: -
 Time samples were collected: 950
 Depth to water at time of sampling: -
 Percent recovery at time of sampling: -
 Samples collected with: bailler
 Sample color: clear / gray Odor: moderate
 Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>65.7</u>	<u>6.88</u>	<u>734</u>
<u>2</u>	<u>65.4</u>	<u>6.98</u>	<u>730</u>
<u>3</u>	<u>64.9</u>	<u>7.01</u>	<u>728</u>
_____	_____	_____	_____
_____	_____	_____	_____

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-4</u>	<u>5</u>	<u>40 ml vial</u>	<u>X</u>	<u>X</u>	
	<u>1</u>	<u>1 liter amber</u>		<u>X</u>	
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____



WELL SAMPLING FIELD LOG

Project Name and Address: Lim
 Job #: 2808 Date of sampling: 3/25/03
 Well Name: MW-5 Sampled by: ep
 Total depth of well (feet): 29.58 Well diameter (inches): 2
 Depth to water before sampling (feet): 15.31
 Thickness of floating product if any: -
 Depth of well casing in water (feet): 14.27
 Number of gallons per well casing volume (gallons): 2.3
 Number of well casing volumes to be removed: 3
 Req'd volume of groundwater to be purged before sampling (gallons): 6.8
 Equipment used to purge the well: bauler
 Time Evacuation Began: 820 Time Evacuation Finished: 835
 Approximate volume of groundwater purged: -
 Did the well go dry?: no After how many gallons: -
 Time samples were collected: 845
 Depth to water at time of sampling: -
 Percent recovery at time of sampling: -
 Samples collected with: bauler
 Sample color: clear/brown Odor: none
 Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>64.5</u>	<u>6.67</u>	<u>725</u>
<u>2</u>	<u>64.3</u>	<u>6.66</u>	<u>720</u>
<u>3</u>	<u>64.2</u>	<u>6.66</u>	<u>717</u>

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-5</u>	<u>5</u>	<u>40 ml VOA</u>	<u>x</u>	<u>x</u>	
	<u>1</u>	<u>1 liter amber</u>		<u>x</u>	



WELL SAMPLING FIELD LOG

Project Name and Address: Lin
 Job #: 2808 Date of sampling: 3/25/03
 Well Name: MW-6 Sampled by: ep
 Total depth of well (feet): 29.48 Well diameter (inches): 2
 Depth to water before sampling (feet): 15.67
 Thickness of floating product if any: -
 Depth of well casing in water (feet): 13.81
 Number of gallons per well casing volume (gallons): 2.2
 Number of well casing volumes to be removed: 3
 Req'd volume of groundwater to be purged before sampling (gallons): 6.5
 Equipment used to purge the well: bailer
 Time Evacuation Began: 715 Time Evacuation Finished: 730
 Approximate volume of groundwater purged: 6.5
 Did the well go dry?: no After how many gallons: -
 Time samples were collected: 735
 Depth to water at time of sampling: -
 Percent recovery at time of sampling: -
 Samples collected with: bailer
 Sample color: clear/brown Odor: none
 Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>62.2</u>	<u>7.01</u>	<u>439</u>
<u>2</u>	<u>62.5</u>	<u>6.64</u>	<u>374</u>
<u>3</u>	<u>62.7</u>	<u>6.22</u>	<u>346</u>

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	ICcd?	Analysis
<u>MW-6</u>	<u>5</u>	<u>40 ml WAA</u>	<u>x</u>	<u>x</u>	
	<u>1</u>	<u>1 liter amber</u>		<u>x</u>	



WELL SAMPLING FIELD LOG

Project Name and Address: Lim
 Job #: 2808 Date of sampling: 3/25
 Well Name: MW-7 Sampled by: ef
 Total depth of well (feet): 29.41 Well diameter (inches): 2
 Depth to water before sampling (feet): 15.96
 Thickness of floating product if any: -
 Depth of well casing in water (feet): 13.45
 Number of gallons per well casing volume (gallons): 2.2
 Number of well casing volumes to be removed: 3
 Req'd volume of groundwater to be purged before sampling (gallons): 6.5
 Equipment used to purge the well: bailer
 Time Evacuation Began: 7:45 Time Evacuation Finished: 8:00
 Approximate volume of groundwater purged: 6.5
 Did the well go dry?: no After how many gallons: -
 Time samples were collected: 8:10
 Depth to water at time of sampling: -
 Percent recovery at time of sampling: -
 Samples collected with: bailer
 Sample color: clear/grey Odor: moderate
 Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>62.6</u>	<u>6.33</u>	<u>590</u>
<u>2</u>	<u>62.7</u>	<u>6.31</u>	<u>584</u>
<u>3</u>	<u>62.8</u>	<u>6.30</u>	<u>579</u>

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-7</u>	<u>5</u>	<u>40ml VOA</u>	<u>x</u>	<u>x</u>	
	<u>1</u>	<u>1 liter amber</u>		<u>x</u>	

APPENDIX B

Certified Analytical Report
and
Chain of Custody Documentation



Report Number : 32411

Date : 04/03/2003

Erik Paddleford
Aqua Science Engineers, Inc.
208 West El Pintado Rd.
Danville, CA 94526

Subject : 6 Water Samples
Project Name : Lim Property
Project Number : 2808

Dear Mr. Paddleford,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed.

Kiff Analytical is certified by the State of California (# 2236). If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,



Joel Kiff




Report Number : 32411

Date : 04/03/2003

Subject : 6 Water Samples
Project Name : Lim Property
Project Number : 2808

Case Narrative

The Method Reporting Limit for TPH as Diesel is increased due to interference from Gasoline-Range Hydrocarbons for samples MW-1, MW-2, MW-4 and MW-7.

Approved By:  _____
Joel Kiff

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800



Report Number : 32411

Date : 04/03/2003

Project Name : **Lim Property**

Project Number : **2808**

Sample : **MW-1**

Matrix : Water

Lab Number : 32411-01

Sample Date :03/25/2003

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	03/28/2003
TPH as Gasoline	320	50	ug/L	EPA 8260B	03/28/2003
Toluene - d8 (Surr)	99.5		% Recovery	EPA 8260B	03/28/2003
4-Bromofluorobenzene (Surr)	100		% Recovery	EPA 8260B	03/28/2003
TPH as Diesel	< 500	500	ug/L	M EPA 8015	03/28/2003

Approved By:  Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 32411

Date : 04/03/2003

Project Name : **Lim Property**

Project Number : **2808**

Sample : **MW-2**

Matrix : Water

Lab Number : 32411-02

Sample Date :03/25/2003

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	7900	50	ug/L	EPA 8260B	03/31/2003
Toluene	9300	50	ug/L	EPA 8260B	03/31/2003
Ethylbenzene	2900	50	ug/L	EPA 8260B	03/31/2003
Total Xylenes	12000	50	ug/L	EPA 8260B	03/31/2003
Methyl-t-butyl ether (MTBE)	< 50	50	ug/L	EPA 8260B	03/31/2003
TPH as Gasoline	87000	5000	ug/L	EPA 8260B	03/31/2003
1,2-Dichloroethane	< 50	50	ug/L	EPA 8260B	03/31/2003
1,2-Dibromoethane	< 50	50	ug/L	EPA 8260B	03/31/2003
4-Bromofluorobenzene (Surr)	106		% Recovery	EPA 8260B	03/31/2003
Dibromofluoromethane (Surr)	113		% Recovery	EPA 8260B	03/31/2003
1,2-Dichloroethane-d4 (Surr)	106		% Recovery	EPA 8260B	03/31/2003
TPH as Diesel	< 8000	8000	ug/L	M EPA 8015	03/28/2003

Approved By:  Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4500



Report Number : 32411

Date : 04/03/2003

Project Name : **Lim Property**

Project Number : **2808**

Sample : **MW-4**

Matrix : Water

Lab Number : 32411-03

Sample Date :03/25/2003

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	7600	100	ug/L	EPA 8260B	03/29/2003
Toluene	22000	100	ug/L	EPA 8260B	03/29/2003
Ethylbenzene	2500	100	ug/L	EPA 8260B	03/29/2003
Total Xylenes	12000	100	ug/L	EPA 8260B	03/29/2003
Methyl-t-butyl ether (MTBE)	< 100	100	ug/L	EPA 8260B	03/29/2003
TPH as Gasoline	97000	10000	ug/L	EPA 8260B	03/29/2003
1,2-Dichloroethane	< 100	100	ug/L	EPA 8260B	03/29/2003
1,2-Dibromoethane	< 100	100	ug/L	EPA 8260B	03/29/2003
4-Bromofluorobenzene (Surr)	91.9		% Recovery	EPA 8260B	03/29/2003
Dibromofluoromethane (Surr)	105		% Recovery	EPA 8260B	03/29/2003
1,2-Dichloroethane-d4 (Surr)	97.8		% Recovery	EPA 8260B	03/29/2003
TPH as Diesel	< 7500	7500	ug/L	M EPA 8015	03/28/2003

Approved By:  Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 32411

Date : 04/03/2003

Project Name : **Lim Property**

Project Number : **2808**

Sample : **MW-5**

Matrix : Water

Lab Number : 32411-04

Sample Date :03/25/2003

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Methyl-t-butyl ether (MTBE)	7.4	5.0	ug/L	EPA 8260B	03/28/2003
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/28/2003
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
4-Bromofluorobenzene (Surr)	81.5		% Recovery	EPA 8260B	03/28/2003
Dibromofluoromethane (Surr)	105		% Recovery	EPA 8260B	03/28/2003
1,2-Dichloroethane-d4 (Surr)	104		% Recovery	EPA 8260B	03/28/2003
TPH as Diesel	130	50	ug/L	M EPA 8015	03/28/2003

Approved By:  Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 32411

Date : 04/03/2003

Project Name : **Lim Property**

Project Number : **2808**

Sample : **MW-6**

Matrix : Water

Lab Number : 32411-05

Sample Date :03/25/2003

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	03/28/2003
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/28/2003
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
4-Bromofluorobenzene (Surr)	97.9		% Recovery	EPA 8260B	03/28/2003
Dibromofluoromethane (Surr)	112		% Recovery	EPA 8260B	03/28/2003
1,2-Dichloroethane-d4 (Surr)	107		% Recovery	EPA 8260B	03/28/2003
TPH as Diesel	< 50	50	ug/L	M EPA 8015	03/28/2003

Approved By:  Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800



Report Number : 32411

Date : 04/03/2003

Project Name : **Lim Property**

Project Number : **2808**

Sample : **MW-7**

Matrix : **Water**

Lab Number : **32411-06**

Sample Date : **03/25/2003**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	410	2.5	ug/L	EPA 8260B	03/30/2003
Toluene	7700	50	ug/L	EPA 8260B	03/29/2003
Ethylbenzene	1000	2.5	ug/L	EPA 8260B	03/30/2003
Total Xylenes	6400	50	ug/L	EPA 8260B	03/29/2003
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	03/30/2003
TPH as Gasoline	39000	5000	ug/L	EPA 8260B	03/29/2003
1,2-Dichloroethane	< 2.5	2.5	ug/L	EPA 8260B	03/30/2003
1,2-Dibromoethane	< 2.5	2.5	ug/L	EPA 8260B	03/30/2003
4-Bromofluorobenzene (Surr)	108		% Recovery	EPA 8260B	03/30/2003
Dibromofluoromethane (Surr)	113		% Recovery	EPA 8260B	03/30/2003
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	03/30/2003
TPH as Diesel	< 2900	2900	ug/L	M EPA 8015	03/28/2003

Approved By:  Joel Kiff

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800

Report Number : 32411

Date : 04/03/2003

QC Report : Method Blank Data

Project Name : **Lim Property**

Project Number : **2808**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
TPH as Diesel	< 50	50	ug/L	M EPA 8015	03/27/2003
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/29/2003
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/29/2003
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/29/2003
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/29/2003
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	03/29/2003
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/29/2003
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	03/29/2003
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	03/29/2003
4-Bromofluorobenzene (Surr)	99.0		%	EPA 8260B	03/29/2003
Dibromofluoromethane (Surr)	97.6		%	EPA 8260B	03/29/2003
1,2-Dichloroethane-d4 (Surr)	98.1		%	EPA 8260B	03/29/2003
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	03/28/2003
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/28/2003
Toluene - d8 (Surr)	103		%	EPA 8260B	03/28/2003
4-Bromofluorobenzene (Surr)	96.7		%	EPA 8260B	03/28/2003

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	03/28/2003
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/28/2003
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
4-Bromofluorobenzene (Surr)	97.3		%	EPA 8260B	03/28/2003
Dibromofluoromethane (Surr)	111		%	EPA 8260B	03/28/2003
1,2-Dichloroethane-d4 (Surr)	107		%	EPA 8260B	03/28/2003
Benzene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Toluene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
Methyl-t-butyl ether (MTBE)	< 5.0	5.0	ug/L	EPA 8260B	03/28/2003
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	03/28/2003
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	03/28/2003
4-Bromofluorobenzene (Surr)	80.9		%	EPA 8260B	03/28/2003
Dibromofluoromethane (Surr)	106		%	EPA 8260B	03/28/2003
1,2-Dichloroethane-d4 (Surr)	102		%	EPA 8260B	03/28/2003

Approved By: Joel Kiff

Report Number : 32411

Date : 04/03/2003

QC Report : Matrix Spike/ Matrix Spike Duplicate

Project Name : **Lim Property**

Project Number : **2808**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
TPH as Diesel	Blank	<50	1000	1000	968	1050	ug/L	M EPA 8015	3/27/03	96.8	105	8.12	70-130	25
Benzene	32416-01	<0.50	40.1	40.1	41.3	41.0	ug/L	EPA 8260B	3/29/03	103	102	0.876	70-130	25
Toluene	32416-01	0.81	40.1	40.1	40.6	40.2	ug/L	EPA 8260B	3/29/03	99.2	98.2	1.04	70-130	25
Tert-Butanol	32416-01	<5.0	200	200	195	200	ug/L	EPA 8260B	3/29/03	97.4	100	2.74	70-130	25
Methyl-t-Butyl Ether	32416-01	3.0	40.1	40.1	44.9	44.6	ug/L	EPA 8260B	3/29/03	105	104	0.791	70-130	25
Benzene	32415-08	3.1	40.0	40.0	42.3	41.7	ug/L	EPA 8260B	3/28/03	97.9	96.4	1.54	70-130	25
Toluene	32415-08	<0.50	40.0	40.0	38.9	38.4	ug/L	EPA 8260B	3/28/03	97.2	95.9	1.35	70-130	25
Tert-Butanol	32415-08	11	200	200	214	222	ug/L	EPA 8260B	3/28/03	101	106	3.96	70-130	25
Methyl-t-Butyl Ether	32415-08	<0.50	40.0	40.0	43.5	42.8	ug/L	EPA 8260B	3/28/03	109	107	1.60	70-130	25
Benzene	32412-02	1.6	40.0	40.0	41.2	40.3	ug/L	EPA 8260B	3/28/03	99.2	96.7	2.50	70-130	25
Toluene	32412-02	<0.50	40.0	40.0	38.5	37.5	ug/L	EPA 8260B	3/28/03	96.3	93.8	2.60	70-130	25
Tert-Butanol	32412-02	<5.0	200	200	214	212	ug/L	EPA 8260B	3/28/03	107	106	1.01	70-130	25
Methyl-t-Butyl Ether	32412-02	<0.50	40.0	40.0	43.3	43.1	ug/L	EPA 8260B	3/28/03	108	108	0.440	70-130	25
Benzene	32411-04	<0.50	40.0	40.0	45.8	45.2	ug/L	EPA 8260B	3/28/03	114	113	1.30	70-130	25
Toluene	32411-04	<0.50	40.0	40.0	44.3	43.9	ug/L	EPA 8260B	3/28/03	111	110	0.884	70-130	25
Tert-Butanol	32411-04	<5.0	200	200	222	217	ug/L	EPA 8260B	3/28/03	111	108	2.37	70-130	25
Methyl-t-Butyl Ether	32411-04	7.4	40.0	40.0	46.4	46.1	ug/L	EPA 8260B	3/28/03	97.4	96.8	0.618	70-130	25

Approved By:  Joel Kiff

KIFF ANALYTICAL, LLC

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800

Report Number : 32411

Date : 04/03/2003

QC Report : Laboratory Control Sample (LCS)

Project Name : **Lim Property**

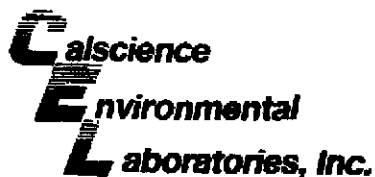
Project Number : **2808**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Benzene	40.0	ug/L	EPA 8260B	3/29/03	104	70-130
Toluene	40.0	ug/L	EPA 8260B	3/29/03	100	70-130
Tert-Butanol	200	ug/L	EPA 8260B	3/29/03	100	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	3/29/03	102	70-130
Benzene	40.0	ug/L	EPA 8260B	3/28/03	103	70-130
Toluene	40.0	ug/L	EPA 8260B	3/28/03	94.6	70-130
Tert-Butanol	200	ug/L	EPA 8260B	3/28/03	107	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	3/28/03	110	70-130
Benzene	40.0	ug/L	EPA 8260B	3/28/03	99.0	70-130
Toluene	40.0	ug/L	EPA 8260B	3/28/03	95.4	70-130
Tert-Butanol	200	ug/L	EPA 8260B	3/28/03	103	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	3/28/03	107	70-130
Benzene	40.0	ug/L	EPA 8260B	3/28/03	118	70-130
Toluene	40.0	ug/L	EPA 8260B	3/28/03	112	70-130
Tert-Butanol	200	ug/L	EPA 8260B	3/28/03	108	70-130
Methyl-t-Butyl Ether	40.0	ug/L	EPA 8260B	3/28/03	97.3	70-130

KIFF ANALYTICAL, LLC

Approved By:  Joel Kiff

2795 2nd St, Suite 300 Davis, CA 95616 530-297-4800



April 01, 2003

Joel Kiff
Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-8593

Subject: **Calscience Work Order No.: 03-03-1774**
Client Reference: **Lim Property**


Dear Client:

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received 3/28/03 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The original report of any subcontracted analysis is provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

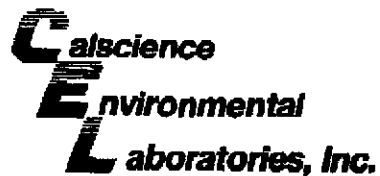
If you have any questions regarding this report, please do not hesitate to contact the undersigned.

Sincerely,


Calscience Environmental
Laboratories, Inc.
Stephen Nowak
Project Manager


Michael J. Crisostomo
Quality Assurance Manager





ANALYTICAL REPORT

Kiff Analytical
2795 2nd Street, Suite 300
Davis, CA 95616-6593

Date Received: 03/28/03
Work Order No: 03-03-1774
Preparation: N/A
Method: EPA 413.1

Project: Lim Property

Page 1 of 1

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-3	03-03-1774-1	03/25/03	Aqueous	N/A	03/31/03	303310GB1

Parameter	Result	RL	DF	Qual	Units
Oil and Grease	ND	1.0	1		mg/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-4	03-03-1774-2	03/25/03	Aqueous	N/A	03/31/03	303310GB1

Parameter	Result	RL	DF	Qual	Units
Oil and Grease	ND	1.0	1		mg/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-5	03-03-1774-3	03/25/03	Aqueous	N/A	03/31/03	303310GB1

Parameter	Result	RL	DF	Qual	Units
Oil and Grease	ND	1.0	1		mg/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-6	03-03-1774-4	03/25/03	Aqueous	N/A	03/31/03	303310GB1

Parameter	Result	RL	DF	Qual	Units
Oil and Grease	ND	1.0	1		mg/L

Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
MW-7	03-03-1774-5	03/25/03	Aqueous	N/A	03/31/03	303310GB1

Parameter	Result	RL	DF	Qual	Units
Oil and Grease	ND	1.0	1		mg/L

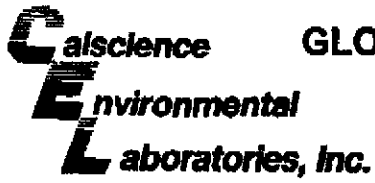
Client Sample Number	Lab Sample Number	Date Collected	Matrix	Date Prepared	Date Analyzed	QC Batch ID
Method Blank	03-03-087-1-339		Aqueous	N/A	03/31/03	303310GB1

Parameter	Result	RL	DF	Qual	Units
Oil and Grease	ND	1.0	1		mg/L

Note: Sample volume was insufficient for duplicate analysis.

RL - Reporting Limit DF - Dilution Factor Qual - Qualifiers

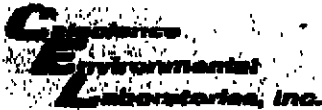
7440 Lincoln Way, Garden Grove, CA 92841-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501



GLOSSARY OF TERMS AND QUALIFIERS

Work Order Number: 03-03-1774

<u>Qualifier</u>	<u>Definition</u>
ND	Not detected at indicated reporting limit.



WORK ORDER #: 03-03-1774

Cooler 1 of 1

SAMPLE RECEIPT FORM

CLIENT: KIFF

DATE: 3/2/03

TEMPERATURE - SAMPLES RECEIVED BY:

CALSCIENCE COURIER:

- Chilled, cooler with temperature blank provided.
- Chilled, cooler without temperature blank.
- Chilled and placed in cooler with wet ice.
- Ambient and placed in cooler with wet ice.
- Ambient temperature.
- °C Temperature blank.

LABORATORY (Other than Calscience Courier):

- 2 °C Temperature blank.
- °C IR thermometer.
- Ambient temperature.

Initial: NC

CUSTODY SEAL INTACT:

Sample(s): _____ Cooler: No (Not Intact): _____ Not Applicable (N/A): _____

Initial: NC

SAMPLE CONDITION:

	Yes	No	N/A
Chain-Of-Custody document(s) received with samples.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container label(s) consistent with custody papers.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Sample container(s) intact and good condition.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Correct containers for analyses requested.....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Proper preservation noted on sample label(s).....	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
VOA vial(s) free of headspace.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Tedlar bag(s) free of condensation.....	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Initial: NC

COMMENTS:



2795 Second Street, Suite 300
 Davis, CA 95616
 Lab: 530.297.4800
 Fax: 530.297.4808

Cal Science Environmental
 7440 Lincoln Way
 Garden Grove, CA 92841
 714-895-5494

Lab No. **1774**

Page 1 of 1

Project Contact (Hardcopy or PDF to):
 Joel Kiff

Company/Address:
 Kiff Analytical, LLC

Phone No.: **FAX No.:**

Project Number: 2808 **P.O. No.:** 32411

Project Name:
 Lim Property

Project Address:

Geotracker COELT EDD REPORT?
 ___ YES X NO

Sampling Company Log Code:

Global ID:

EDF Deliverable to (Email Address):

E-mail address:
 inbox@kiffanalytical.com

Chain-of-Custody Record and Analysis Request

Sample Designation	Sampling		Container				Preservative				Matrix		OIL & GREASE	Date Due	For Lab Use Only	
	Date	Time	Glass Jar	Poly	Amber	Sieve	HCl	HMOS	ICE	NONE	H2SO4	WATER				SOIL
MW-2	3/25/2003				1			X	X		X			X	X	
MW-4	3/25/2003				1			X	X		X			X	X	
MW-5	3/25/2003				1			X	X		X			X	X	
MW-6	3/25/2003				1			X	X		X			X	X	
MW-7	3/25/2003				1			X	X		X			X	X	

Relinquished by: <i>Diana Abalan</i>	Date 03/27/03	Time 1800	Received by:
Relinquished by:	Date	Time	Received by:
Relinquished by:	Date 3/27/03	Time 0100	Received by Laboratory: <i>[Signature]</i>

Remarks:

Bill to:

TOTAL P. 05

APR-02-2003 12:32

P. 05