



1585

August 7, 2001

AUG 14 2001

QUARTERLY GROUNDWATER MONITORING REPORT
JULY 2001 GROUNDWATER SAMPLING
at
Lim Family Property
250 8th Street
Oakland, California

◦ awaiting Fund approval for
on-site & off-site investigation + ~~SUE/AS~~ SUE/AS
Pilot test.

Submitted by:
AQUA SCIENCE ENGINEERS, INC.
208 W. El Pintado
Danville, CA 94526
(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 July 17, 2001, ASE associate geologist Erik Paddleford 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. No free-floating hydrocarbons or sheen was present on the water surface in monitoring wells MW-1, MW-2, and MW-4. Monitoring well MW-3 contained 0.39-feet of free-floating hydrocarbons. 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 southwest with a gradient of 0.0089 feet/foot during this quarterly sampling period. This groundwater flow direction and gradient are consistent with previous findings.

3.0 MONITORING WELL SAMPLING

On July 17, 2001, ASE associate geologist Erik Paddleford collected groundwater samples from monitoring wells MW-1, MW-2, and MW-4 for analysis. Monitoring well MW-3 was not sampled due to the presence of free-floating hydrocarbons. Prior to sampling, the remaining wells were purged of four 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 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 and left on-site for temporary storage until

off-site disposal can be arranged. See Appendix A for a copy 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 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 0.39-feet of free-floating hydrocarbons this quarter. Overall, the hydrocarbon concentrations increased slightly from the previous quarter's results, but remain consistent with historical data. Hydrocarbon concentrations still remain elevated in downgradient monitoring wells MW-2, MW-3, and MW-4. The BTEX concentrations in groundwater samples collected from monitoring wells MW-2 and MW-4 exceeded California Department of Health Services (DHS) maximum contaminant levels (MCLs) for drinking water. In addition, the MTBE and 1,2-dichloroethane (1,2-DCA) concentrations detected in groundwater samples collected from monitoring well MW-4 exceeded DHS MCLs for drinking water.

6.0 RECOMMENDATIONS

ASE anticipates performing the work outlined in ASE's February 2001 workplan during the next quarter. ASE is currently waiting for pre-approval of costs from the UST Cleanup Fund prior to implementing these tasks.

ASE recommends that passive hydrocarbon recovery skimmers be installed in monitoring well MW-3 and injection well IW-5 to assist in the recovery of free-floating hydrocarbons at the site.

7.0 REPORT LIMITATIONS

The results of this investigation 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,

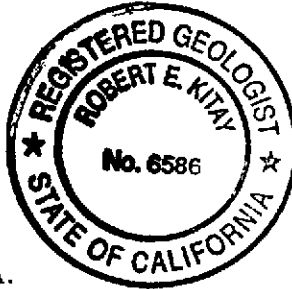
AQUA SCIENCE ENGINEERS, INC.



Erik H. Paddleford
Associate Geologist



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



Attachments: Figures 1 and 2
Appendices A and B

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		
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		

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	7.57
	04/24/00		15.58	0.15	8.55*
	07/20/00		16.01	0.41	7.64*
	10/24/00		16.95	0.21	7.13*
	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
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
IW-1	07/13/99	24.05	14.75		9.30
IW-2	07/13/99	24.21	15.10		9.11
IW-3	07/13/99	23.93	15.00		8.93
IW-4	07/13/99	23.83	Unknown		Unknown
IW-5	07/13/99	24.00	15.50	1.00	8.50*
	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*

Notes:

* = Adjusted for the presence of free-floating oil by the equation:

$$\text{Top of Casing Elevation} - \text{Depth to Water} + (0.8 \times \text{Floating Hydrocarbon Thickness}) = \text{Groundwater Elevation (Adjusted)}$$

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	<0.5

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

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/	52,000/	5,700/	28,000/	<5,000
			35,000	87,000	18,000	84,000	
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						
<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/	13,000/	1,800/	8,800/	<1,300
			4,500	20,000	2,800	14,000	
07/20/00	8,000	3,500	9,200/	20,000	2,500	12,000/	<1,000
			11,000	22,000	3,400	13,000	
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/	21,000/	2,500/	13,000/	<1,000
			15,000	21,000	2,800	11,000	<5,000
04/05/01	88,000	7,500*	6,900/	18,000/	2,500/	12,000/	<1,000
			3,200	9,000	1,300	6,400	<500
07/17/01	95,000	<3,000	8,000	16,000	2,900	11,000	49
DHS MCL	NE	NE	1	150	700	1,750	18
EPA	5030/	3550/	8020/	8020/	8020/	8020/	8020
METHOD	8015M	8015M	8260	8260	8260	8260	

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.

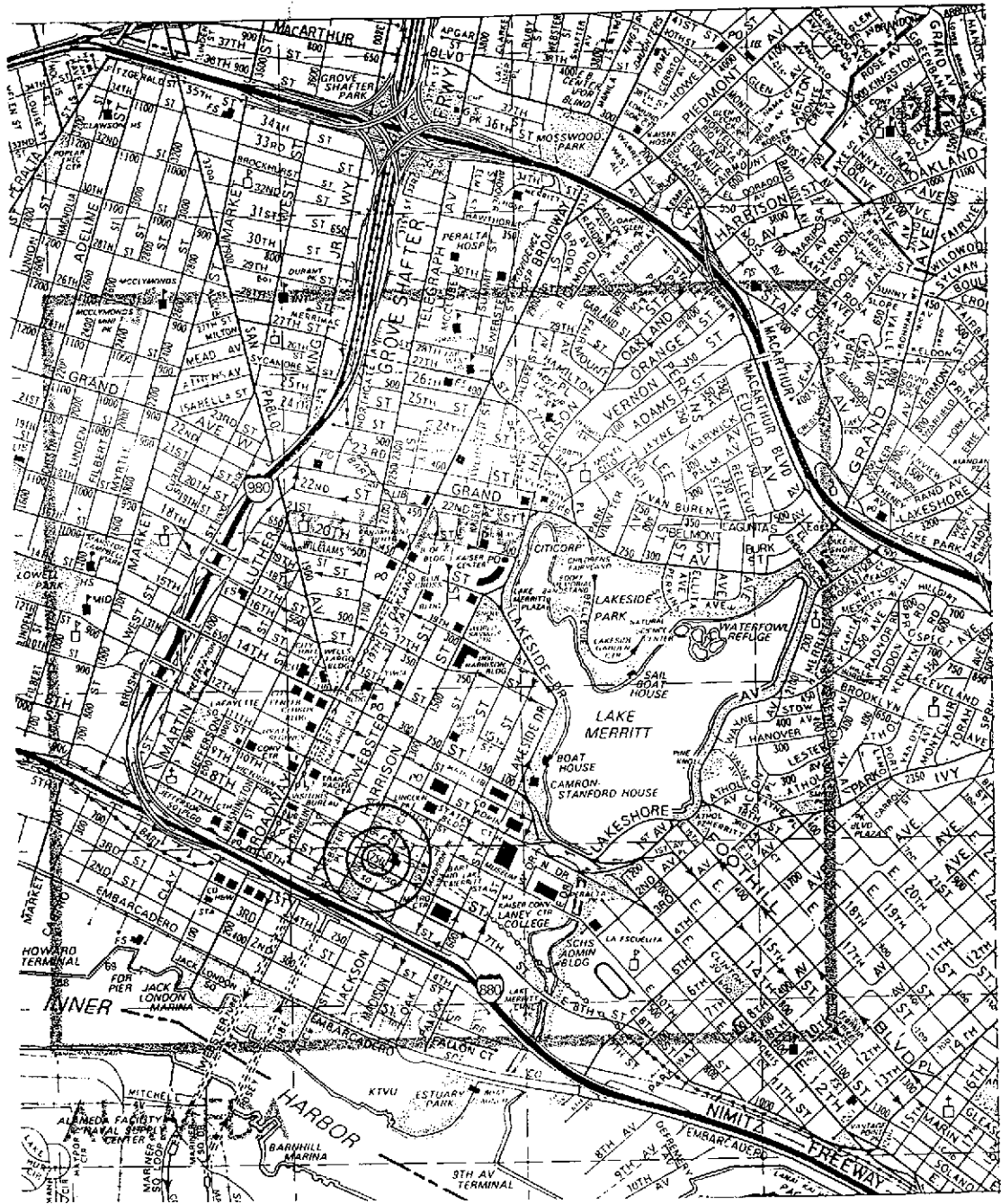
Most recent data in bold.

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
<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
<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	
Tetrachloroethene	<0.5	<5.0	PRODUCT	<1,000
Chloroform	1.0	<5.0	---	<250
Other VOCs	<0.5 - <20	<5.0 - <20	NOT	<250
			SAMPLED	<250 - <25,000
<u>1/18/2001</u>				
Hydrocarbon Oil and Grease	---	2,100	FREE	
Tetrachloroethene	1.3	<5.0	PRODUCT	1,300
Chloroform	6.4	<5.0	---	<250
Other VOCs	<0.5 - <20	<5.0 - <20	NOT	<250
			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	---



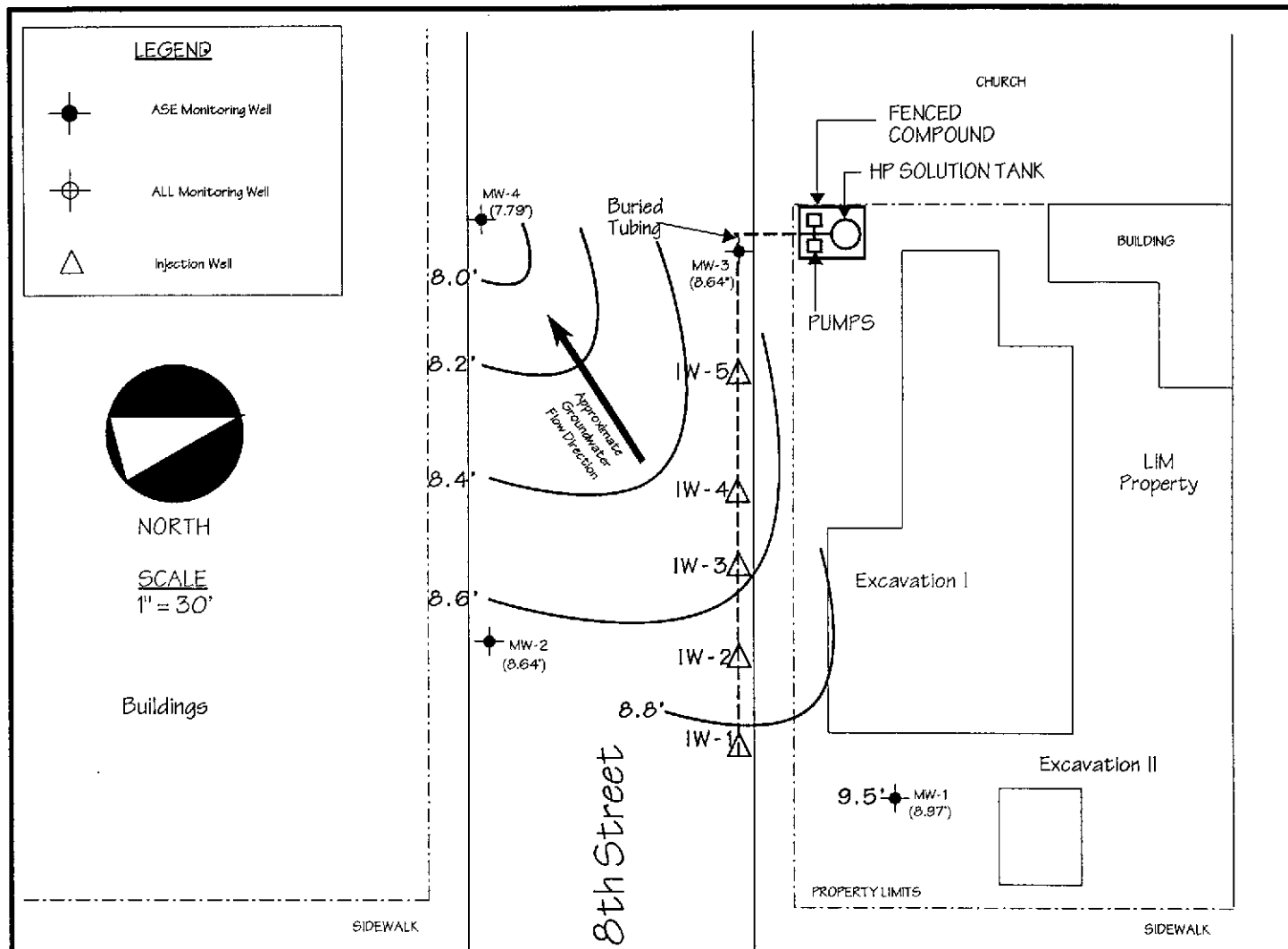
SITE LOCATION MAP

Lim Property
250 8th Street
Oakland, California

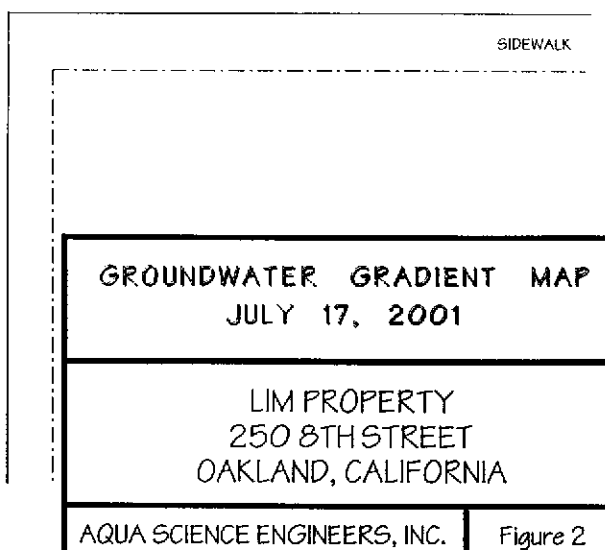
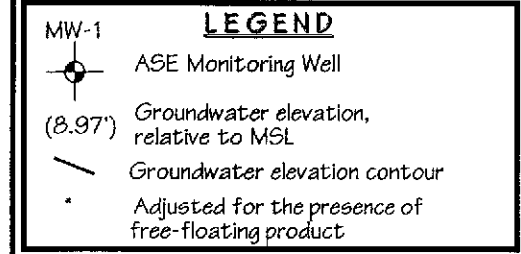
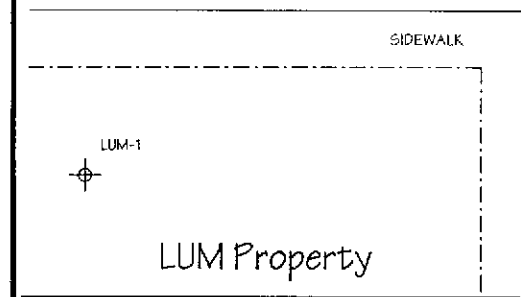
Aqua Science Engineers

Figure 1

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



Alice Street



APPENDIX A

Well Sampling Field Log



WELL SAMPLING FIELD LOG

Project Name and Address: Lim Property
 Job #: 2808 Date of sampling: 7/17/01
 Well Name: MW-1 Sampled by: EP
 Total depth of well (feet): 26.78 Well diameter (inches): 2
 Depth to water before sampling (feet): 16.54
 Thickness of floating product if any: -
 Depth of well casing in water (feet): 10.24
 Number of gallons per well casing volume (gallons): 1.74
 Number of well casing volumes to be removed: 4
 Req'd volume of groundwater to be purged before sampling (gallons): 6.96
 Equipment used to purge the well: bailer
 Time Evacuation Began: 1215 Time Evacuation Finished: 1235
 Approximate volume of groundwater purged: 7
 Did the well go dry?: NO After how many gallons: -
 Time samples were collected: 1245
 Depth to water at time of sampling: -
 Percent recovery at time of sampling: 790%
 Samples collected with: bailer
 Sample color: gray/clear Odor: none
 Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>70.6</u>	<u>6.81</u>	<u>770</u>
<u>2</u>	<u>70.4</u>	<u>6.86</u>	<u>760</u>
<u>3</u>	<u>71.0</u>	<u>6.80</u>	<u>758</u>
<u>4</u>	<u>71.1</u>	<u>6.80</u>	<u>758</u>

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-1</u>	<u>3</u>	<u>40 ml VOA</u>	<u>X</u>	<u>X</u>	
	<u>2</u>	<u>1 liter Amber</u>		<u>X</u>	



WELL SAMPLING FIELD LOG

Project Name and Address: Lim Property
 Job #: 2808 Date of sampling: 7/17/01
 Well Name: MW-2 Sampled by: EP
 Total depth of well (feet): 26.78 Well diameter (inches): 2
 Depth to water before sampling (feet): 15.8 15.35
 Thickness of floating product if any: -
 Depth of well casing in water (feet): 11.43
 Number of gallons per well casing volume (gallons): 1.94
 Number of well casing volumes to be removed: 4
 Req'd volume of groundwater to be purged before sampling (gallons): 7.7
 Equipment used to purge the well: bailer
 Time Evacuation Began: 1140 Time Evacuation Finished: 1200
 Approximate volume of groundwater purged: 8
 Did the well go dry?: NO After how many gallons: -
 Time samples were collected: 1205
 Depth to water at time of sampling: -
 Percent recovery at time of sampling: >90%
 Samples collected with: bailer
 Sample color: gray Odor: moderate HC odor
 Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>72.0</u>	<u>6.76</u>	<u>841</u>
<u>2</u>	<u>71.8</u>	<u>6.76</u>	<u>821</u>
<u>3</u>	<u>71.6</u>	<u>6.76</u>	<u>820</u>
<u>4</u>	<u>71.1</u>	<u>6.76</u>	<u>820</u>
<u>5</u>			

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-2</u>	<u>3</u>	<u>40 ml VOA</u>	<u>x</u>	<u>x</u>	
	<u>2</u>	<u>1 liter Amber</u>		<u>x</u>	



WELL SAMPLING FIELD LOG

Project Name and Address: Lim Property
Job #: 2808 Date of sampling: 7/17
Well Name: MW-3 Sampled by: EP
Total depth of well (feet): _____ Well diameter (inches): _____
Depth to water before sampling (feet): 15.53 15.92
Thickness of floating product if any: 0.39
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: _____

NOT SAMPLED

CHEMICAL DATA

<u>Volume Purged</u>	<u>Temp</u>	<u>pH</u>	<u>Conductivity</u>
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

SAMPLES COLLECTED

<u>Sample</u>	<u># of containers</u>	<u>Volume & type container</u>	<u>Pres</u>	<u>Iced?</u>	<u>Analysis</u>
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____



WELL SAMPLING FIELD LOG

Project Name and Address: Lim Property
 Job #: 2808 Date of sampling: 7/17/01
 Well Name: MW-4 Sampled by: EP
 Total depth of well (feet): 26.60 Well diameter (inches): 2
 Depth to water before sampling (feet): 15.92
 Thickness of floating product if any: _____
 Depth of well casing in water (feet): 10.68
 Number of gallons per well casing volume (gallons): 1.81
 Number of well casing volumes to be removed: 4
 Req'd volume of groundwater to be purged before sampling (gallons): 7.2
 Equipment used to purge the well: bailer
 Time Evacuation Began: 1105 Time Evacuation Finished: 1125
 Approximate volume of groundwater purged: 7.0
 Did the well go dry?: NO After how many gallons: -
 Time samples were collected: 1130
 Depth to water at time of sampling: -
 Percent recovery at time of sampling: 790%
 Samples collected with: bailer
 Sample color: green/gray Odor: slight HCL odor
 Description of sediment in sample: silt

CHEMICAL DATA

Volume Purged	Temp	pH	Conductivity
<u>1</u>	<u>73.4</u>	<u>6.77</u>	<u>812</u>
<u>2</u>	<u>72.1</u>	<u>6.79</u>	<u>791</u>
<u>3</u>	<u>70.5</u>	<u>6.81</u>	<u>774</u>
<u>4</u>	<u>69.2</u>	<u>6.82</u>	<u>766</u>

SAMPLES COLLECTED

Sample	# of containers	Volume & type container	Pres	Iced?	Analysis
<u>MW-4</u>	<u>3</u>	<u>40 ml VOA</u>	<u>X</u>	<u>X</u>	
	<u>2</u>	<u>1 liter Amber</u>		<u>X</u>	

APPENDIX B

Certified Analytical Report
and
Chain of Custody Documentation

** Should also include QC data.*



Report Number : 21321

Date : 7/25/2001

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

Subject : 3 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,

A handwritten signature in black ink that reads "Joel Kiff". The signature is written in a cursive style with a large initial "J".

Joel Kiff



Report Number : 21321

Date : 7/25/2001

Subject : 3 Water Samples
Project Name : Lim Property
Project Number : 2808

Case Narrative

The Method Reporting Limit for TPH as Diesel has been increased due to interference from Gasoline-Range Hydrocarbons for the following samples :

MW-4
MW-2

Approved By:  _____
Joel Kiff

720 Olive Drive, Suite D Davis, CA 95616 916-297-4800



Report Number : 21321

Date : 7/25/2001

Project Name : **Lim Property**

Project Number : **2808**

Sample : **MW-1**

Matrix : Water

Lab Number : 21321-01

Sample Date :7/17/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	< 0.50	0.50	ug/L	EPA 8260B	7/23/2001
Toluene	< 0.50	0.50	ug/L	EPA 8260B	7/23/2001
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	7/23/2001
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	7/23/2001
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	7/23/2001
TPH as Gasoline	310	50	ug/L	EPA 8260B	7/23/2001
1,2-Dichloroethane	< 0.50	0.50	ug/L	EPA 8260B	7/23/2001
1,2-Dibromoethane	< 0.50	0.50	ug/L	EPA 8260B	7/23/2001
Toluene - d8 (Surr)	98.5		% Recovery	EPA 8260B	7/23/2001
4-Bromofluorobenzene (Surr)	110		% Recovery	EPA 8260B	7/23/2001
Dibromofluoromethane (Surr)	111		% Recovery	EPA 8260B	7/23/2001
1,2-Dichloroethane-d4 (Surr)	101		% Recovery	EPA 8260B	7/23/2001
TPH as Diesel	570	50	ug/L	M EPA 8015	7/20/2001

Approved By:  Joel Kiff



Report Number : 21321

Date : 7/25/2001

Project Name : **Lim Property**

Project Number : **2808**


Sample : **MW-2**

Matrix : Water

Lab Number : 21321-02

Sample Date :7/17/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	9200	50	ug/L	EPA 8260B	7/20/2001
Toluene	14000	50	ug/L	EPA 8260B	7/20/2001
Ethylbenzene	2700	50	ug/L	EPA 8260B	7/20/2001
Total Xylenes	11000	50	ug/L	EPA 8260B	7/20/2001
Methyl-t-butyl ether (MTBE)	< 50	50	ug/L	EPA 8260B	7/20/2001
TPH as Gasoline	90000	5000	ug/L	EPA 8260B	7/20/2001
1,2-Dichloroethane	< 50	50	ug/L	EPA 8260B	7/20/2001
1,2-Dibromoethane	< 50	50	ug/L	EPA 8260B	7/20/2001
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	7/20/2001
4-Bromofluorobenzene (Surr)	104		% Recovery	EPA 8260B	7/20/2001
Dibromofluoromethane (Surr)	104		% Recovery	EPA 8260B	7/20/2001
1,2-Dichloroethane-d4 (Surr)	98.0		% Recovery	EPA 8260B	7/20/2001
TPH as Diesel	< 10000	10000	ug/L	M EPA 8015	7/20/2001

Approved By:  Joel Kiff



Report Number : 21321

Date : 7/25/2001

Project Name : **Lim Property**

Project Number : **2808**

Sample : **MW-4**

Matrix : Water

Lab Number : 21321-03

Sample Date : 7/17/2001

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Benzene	8000	50	ug/L	EPA 8260B	7/20/2001
Toluene	16000	50	ug/L	EPA 8260B	7/20/2001
Ethylbenzene	2900	10	ug/L	EPA 8260B	7/19/2001
Total Xylenes	11000	50	ug/L	EPA 8260B	7/20/2001
Methyl-t-butyl ether (MTBE)	49	10	ug/L	EPA 8260B	7/19/2001
TPH as Gasoline	95000	1000	ug/L	EPA 8260B	7/19/2001
1,2-Dichloroethane	69	10	ug/L	EPA 8260B	7/19/2001
1,2-Dibromoethane	< 10	10	ug/L	EPA 8260B	7/19/2001
Toluene - d8 (Surr)	99.5		% Recovery	EPA 8260B	7/19/2001
4-Bromofluorobenzene (Surr)	97.1		% Recovery	EPA 8260B	7/19/2001
Dibromofluoromethane (Surr)	100		% Recovery	EPA 8260B	7/19/2001
1,2-Dichloroethane-d4 (Surr)	103		% Recovery	EPA 8260B	7/19/2001
TPH as Diesel	< 3000	3000	ug/L	M EPA 8015	7/20/2001

Approved By:  Joel Kiff

Analysis Report: N-Hexane Extractable Material by EPA Method 1664

Client: Joel Kiff
 720 Olive Drive,
 Suite D
 Davis, CA 95616

Project No.: 2808
Contact: Joel Kiff
Phone: (530)297-4800

Project: Lim Property

Lab Contact: James Liang
Lab ID No.: T0116
Job No.: B40116
COC Log No.: 21321
Batch No.: E00950
Instrument ID: BA002
Analyst ID: ANHENG8
Matrix: WA

Date Sampled: 07/17/2001
Date Received: 07/19/2001
Date Extracted: 07/24/2001
Date Analyzed: 07/25/2001
Date Reported: 07/25/2001

ANALYTICAL RESULTS

Lab / Client ID Analyte	CAS No.	Results (mg/L)	Rep. Limit (mg/L)	Dilution (factor)
1A / MW-2 N-Hexane Extractable Material	N/A	ND	5.0	1.0
2A / MW-4 N-Hexane Extractable Material	N/A	ND	5.0	1.0

ND = Not detected at or above indicated Reporting Limit

2-1321

Aqua Science Engineers, Inc.
 208 W. El Pintado Road
 Danville, CA 94526
 (925) 820-9391
 FAX (925) 837-4853

Chain of Custody

PAGE 1 OF 1

SAMPLER (SIGNATURE) Sid Paddock (PHONE NO.) _____ PROJECT NAME Lim Property JOB NO. 2808
 ADDRESS 250 8th Street, Oakland, CA

ANALYSIS REQUEST					TPH-GAS / MTBE & DTEX (EPA 5030/8015-8020)	TPH-DIESEL (EPA 3510/8015)	TPH-DIESEL & MOTOR OIL (EPA 3510/8015)	PURGEABLE HALOCARBONS (EPA 601/8010)	VOLATILE ORGANICS (EPA 624/8240/8260)	SEMI-VOLATILE ORGANICS (EPA 625/8270)	OIL & GREASE (EPA 5520)	LIFT METALS (5) (EPA 6010+7000)	CAM 17 METALS (EPA 6010+7000)	PCBs & PESTICIDES (EPA 608/8080)	ORGANOPHOSPHORUS PESTICIDES (EPA 8140 EPA 608/8080)	FUEL OXYGENATES (EPA 8260)	Pb (TOTAL or DISSOLVED) (EPA 6010)	TPH-G/BTEX/5 OXY'S (EPA 8260)	TPH-G/BTEX/7 OXY'S / HYOCS (EPA 8260)	Lead Scavengers	COMPOSITE	
SPECIAL INSTRUCTIONS:	SAMPLE ID.	DATE	TIME	MATRIX																		NO. OF SAMPLES
<u>5 DAY TAT</u>	MW-1	7/17	1245	Water	5	X	X														X	
	MW-2	7/17	1205	↓	5	X	X				X										X	
	MW-4	7/17	1130	↓	5	X	X				X										X	

-01
-02
-03

RELINQUISHED BY: <u>Sid Paddock</u> 10:45 (signature) (time)	RECEIVED BY: _____ (signature) (time)	RELINQUISHED BY: _____ (signature) (time)	RECEIVED BY LABORATORY: <u>John Cuttle</u> 1045 (signature) (time)	COMMENTS:
<u>Sid Paddock</u> 7/17/01 (printed name) (date)	_____ (printed name) (date)	_____ (printed name) (date)	<u>JOHN CUTTLE</u> (printed name) (date) 07/18/01	TURN AROUND TIME STANDARD 24H 48H 72H
Company- <u>ASE</u>	Company- _____	Company- _____	Company- <u>KIFF ANALYTICAL</u>	OTHER: