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May 26, 2006

3888.02

Humboldt County Department of Health and Human Services
Division of Environmental Health
100 H Street, Suite 100
Eureka, California 95501

Attention: Mr. Mark Verhey, C.E.G.

Subject: Groundwater Monitoring Report; First Quarter 2006
Blue Lake Market, 410 Railroad Avenue, Blue Lake, California
LOP No. 12229; USTCF Claim No. 11658

Dear Mr. Verhey:

LACO ASSOCIATES (LACO) presents to the Humboldt County Division of Environmental Health (HCDEH) the results of groundwater monitoring for the first quarter of 2006 at 410 Railroad Avenue in Blue Lake, California. This report was prepared on behalf of Mr. Pat Folkins.

The following elements are included in this report:

- Introduction and site chronology
- Hydraulic gradient and hydrogeology
- Tabular summary and discussion of groundwater results
- Decay rates and monitoring and natural attenuation
- Recommendations and future work
- Location map, site map, and hydraulic gradient map

Please call if you have any questions or concerns.

Sincerely,
LACO ASSOCIATES

Caroline Levenda
Staff Geologist

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CJL:jg

Attachments

cc: Pat Folkins, Blue Lake Market

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GROUNDWATER MONITORING REPORT, FIRST QUARTER 2006

Blue Lake Market, 410 Railroad Avenue, Blue Lake, California

LOP No. 12229, USTCF Claim No. 11658, LACO Project No. 3888.02

INTRODUCTION

This report presents the cumulative results of groundwater monitoring conducted at the site since approximately 1995. Field activities associated with the first quarter monitoring event were performed on March 30, 2006 and April 4, 2006. Monitoring wells MW1, MW2, MW4, and MW5 were sampled on March 30, 2006. Monitoring well MW6 was installed on March 28, 2006 and sampled on April 4, 2006. On March 16, 2006, SHN Consulting and Engineering (SHN) of Eureka, California conducted the quarterly sampling event at the Blue Lake Belting and Leather Works site (BLBLW), located immediately up-gradient of the Blue Lake Market site. Please refer below to Table A for the current groundwater monitoring regime. Monitoring well sampling protocol is included in LACO's *Standard Operating Procedures,* on file at your office. A location and site map are provided as Figures 1 and 2, respectively. Groundwater monitoring data and laboratory analytical results from the concurrent sampling with the Blue Lake Market monitoring wells at BLBLW was provided by SHN and is included as Attachment 1.

Table A: Field Sampling Details for March 30, 2006 and April 4, 2006**

MONITORING WELL ID	SCREENED INTERVAL (feet)	DTW (feet)	PURGE METHOD	WATER QUALITY PARAMETERS	ORGANIC ANALYTICALS	SAMPLING SCHEDULE
MW1	5-15	5.90	DHP	ORP, DO	TPHg, BTEX, MTBE	Quarterly
MW2	4-14	7.19				
MW3*	5-15	7.65	DTW Only			
MW4	10-15	6.93	DHP	ORP, DO	TPHg, BTEX, MTBE	
MW5	10-15	6.07				
MW6**	5-15	8.04				

A key to abbreviations is provided in Attachment 2.

* Sampled by SHN on March 16, 2006.

**Sampled on April 4, 2006.

SITE CHRONOLOGY

- **1990:** One 550-gallon underground storage tank (UST) was removed from the site.
- **December 1994:** Three monitoring wells (MW1 through MW3) and five temporary borings (B1 through B5) were installed.
- **1994 to present:** Groundwater monitoring was conducted.

- **July 2001:** Five temporary soil borings (B6 through B10) were installed.
- **September 2005:** Four temporary borings (B11 through B14) and two monitoring wells (MW4 and MW5) were installed.
- **March 2006:** Monitoring well MW6 was installed.

HYDRAULIC GRADIENT AND HYDROGEOLOGY

Groundwater at the site is generally found between depths of approximately 4 and 14 feet. Site stratigraphy has been characterized by the presence of interbedded silty sands and silty gravels. Observed lithology is typical of fluvial and over-bank floodplain deposits. Powers Creek is located approximately 130 feet south-southeast of the former USTs, and Mad River is located approximately 2,000 feet south of the site. The local hydraulic gradient has historically been in the southern direction of groundwater flow towards Powers Creek and Mad River.

The hydraulic gradient for this monitoring event was calculated by the three-point method using monitoring wells MW103, MW104, and MW106. Monitoring wells MW1, MW2, and MW3, which are typically used to calculate the gradient at the site (historical Groundwater Monitoring Reports), were not used to calculate the gradient during this quarter because hydraulic head data were not collected on the same day for those three wells (Table 1). The potentiometric surface was generated using the hydraulic heads of the LACO and SHN monitoring wells and is presented in Figure 3 with the calculated gradient. Current and historical hydraulic head data are presented in Table 1, current and historical hydraulic gradients are presented in Table 2, and a copy of the field sampling data sheets is included as Attachment 3.

<u>Hydraulic gradient for March 16, 2006</u>
S50°E with a slope of 0.02 foot per foot

While the calculated hydraulic gradient is consistent with historical gradient data, the distribution of petroleum hydrocarbons across both sites suggests the dominant hydraulic gradient is in a more southerly direction (LACO 2005).

LABORATORY RESULTS

Laboratory analytical results from the first quarter sampling event are presented below in Table B. Current and historical groundwater analytical data are included in Table 1, copies of the field data sheets are presented as Attachment 3, and copies of the laboratory analytical reports for this reporting period are included as Attachment 4. Table 3 includes historical intrinsic parameters.

Table B: Analytical Results for March 30, 2006 and April 4, 2006**						
WELL	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)
MW1	1,900	9.3	1.6	4.1	3.8	ND<1.0
MW2	1,200	0.69	ND<0.50	8.0	17	ND<1.0
MW3	Not Sampled					
MW4	1,300	19	4.5	50	63	ND<1.0
MW5	3,700	110	22	97	154	ND<1.0
MW6**	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<3.0

**Sampled on April 4, 2006.

DISCUSSION OF GROUNDWATER RESULTS

Blue Lake Market

Historical groundwater analytical concentrations of total petroleum hydrocarbons as gasoline (TPHg) from the source and plume are decreasing (Charts 1 through 3) and yet generally remain above the North Coast Regional Water Quality Control Board's (NCRWQCB's) water quality objectives (WQOs) at monitoring wells MW1 through MW5. Historical groundwater concentrations at site monitoring wells are described below.

Current concentrations of TPHg in the groundwater sample collected from monitoring well MW1 remain within the same order of magnitude as when groundwater sampling was initiated in approximately 1995. However, TPHg concentrations have been increasing since March 2004 during similar hydrologic conditions as the current sampling event. Benzene concentrations have decreased an order of magnitude since sampling was initiated. Toluene, ethylbenzene, and total xylenes were detected below their respective NCRWQCB WQOs. Methyl tertiary butyl ether (MTBE) has been non-detect (ND) since August 1999.

Though slightly decreased, the concentration of TPHg in the groundwater sample collected from monitoring well MW2 remains within the same order of magnitude as previous sampling events conducted during the same time of year. Benzene, toluene, ethylbenzene, and xylenes (BTEX) concentrations have decreased by at least one order of magnitude since the December 2003 sampling event. MTBE has been ND since August 1999.

TPHg, benzene, ethylbenzene, and total xylenes were reported above their respective WQOs in the groundwater sample collected from monitoring well MW5 for this sampling event. Benzene and total xylenes increase by one order of magnitude since the previous sampling event. BTEX

concentrations appear to be an order of magnitude greater compared to upgradient monitoring well MW1 and downgradient monitoring well MW4.

TPHg, benzene, ethylbenzene, and total xylenes were reported above their respective WQOs in the groundwater sample collected from monitoring well MW4. Toluene was detected below the WQO of 42 μg/L. Due to an insufficient amount of water in the well to collect a sample during the December 2005 monitoring event, monitoring well MW4 was sampled for the first time during this monitoring event.

The laboratory results for the groundwater samples collected from monitoring well MW6, sampled for the first time during this monitoring event, were ND for TPHg and BTEX.

Comments from the laboratory case narrative are found in Attachment 4 and indicate that the TPHg pattern seen in monitoring wells MW4 and MW5 suggests a weathered and degraded gasoline plume.

Blue Lake Belting and Leather Works

Laboratory results from up-gradient BLBLW monitoring wells appear to be consistent within the range of results reported for historical monitoring events during periods of similar hydrologic conditions. However, TPHg concentrations slightly decreased in monitoring wells MW103, MW104, and MW105. Monitoring well MW106, which had unprecedented detected concentrations of TPHg and BTEX constituents during the previous monitoring event returned to within the historical concentrations during this monitoring event. Benzene and toluene were detected for the current sampling event below their respective WQOs. Based on the distribution of petroleum hydrocarbons between the two sites (LACO 2005), concentrations of TPHg in monitoring well MW106 likely came from the direction of monitoring well MW105. Laboratory analytical data for these monitoring wells are presented in Attachment 1. Historical data for these wells are presented in Table 1.

DECAY RATES AND MONITORED NATURAL ATTENUATION

Time-series plots of TPHg and benzene concentrations in monitoring wells MW1, MW2, and MW3 with exponential trend lines are included in Charts 1 through 3. The decay rates based on trendlines demonstrate that benzene is attenuating at a faster rate than TPHg at monitoring wells MW1 through MW3. The year that WQOs will be met for TPHg and benzene in monitoring wells MW1, MW2, and MW3 are illustrated on the charts. TPHg and benzene at monitoring well

MW1 may reach their respective WQOs approximately 17 years and 7 years from present, respectively. TPHg and benzene at monitoring well MW2 may reach their respective WQOs approximately 26 and 9 years from present, respectively. TPHg and benzene at monitoring well MW3 may reach their respective WQOs approximately 107 years and 77 years from present, respectively.

Additionally, decay rates were derived using the first order decay equation with constituent analytical results from similar hydrologic conditions (Table C). The first order decay equation used in the derivation of decay rates and WQO achievement dates is presented below.

$$\text{Concentration Final } (C_f) = \text{Concentration Initial } (C_i) * e^{\wedge(\text{-decay constant (-k)*time(t)})}$$

The WQO achievement dates for TPHg and benzene for monitoring wells MW1, MW2, and MW3 are included below in Table C.

Table C: Decay Rate Analysis Using The First Order Decay Equation And Sampling Results

Monitoring Well ID / Constituent	Concentration Final (CF) (µg/L)	CF Date	Concentration Initial (CI) (µg/L)	CI Date	Time (t) days between CF and CI	k = decay rate constant ($days^{-1}$)	Using Decay rate k; Obtain (t in days) to reach WQO	WQO TPHg (µg/L)	WQO Benzene (µg/L)	Year WQO reached
								50	1.0	
TPHg										
MW 1	1,900	3/30/2006	5,200	3/1/2000	2,220	-0.0005	8,021			2028
MW 2	1,200	3/30/2006	7,000	3/1/2000	2,220	-0.00079	4,001			2017
MW 3	6,500	3/16/2006	7,200	3/1/2000	2,206	-0.00005	104,985			2294
BENZENE										
MW 1	9	3/30/2006	270	3/1/2000	2,220	-0.0015	1,470			2010
MW 2	1	3/30/2006	9	3/1/2000	2,220	-0.0011	327			2007
MW 3	49	3/16/2006	64	3/1/2000	2,206	-0.00012	32,147			2094

Based on initial and final concentrations noted in Table C, TPHg and benzene concentrations are attenuating and may reach their respective WQOs within approximately 10 years at monitoring well MW2. However, TPHg decay at monitoring wells MW1 and MW3 are attenuating at rates that may reach the WQO beyond 10 years. Benzene appears to be decaying at a rate that may reach the WQO within the next 5 years at monitoring well MW1, where as benzene in monitoring well MW3 appears to be decaying at a rate that may reach the WQO beyond 25 years.

Table D, below, presents "fast" and "slow" degradation rates based on published xylene half-life data, to compare to observed degradation rates. Half-lives of TPHg are not available due to the

complex formulations of TPHg mixtures; however xylenes comprise between one and ten percent of typical gasoline formulations, and are approximately three percent of gasoline mixtures by average (ABB Environmental Services, Inc. 1990). LACO created a compilation of decay rates of TPHg, the sum of BTEX, ethylbenzene, and xylenes derived from a variety of impacted sites located in the vicinity of Eureka, California which are not currently or previously under active remediation, (Attachment 5). This compilation of data suggests that the ratio of TPHg decay rate to total xylenes decay rate is less variable than TPHg to ethylbenzene or TPHg to the sum of BTEX decay rate ratios. Xylene "fast" and "slow" half-lives for aqueous biodegradation under anaerobic conditions were obtained from Howard's Handbook of Environmental Degradation Rates (Howard 1991). The degradation rates of TPHg were derived using the first order decay equation presented above.

A comparison of decay rates for TPHg and benzene is included below in Table D.

Table D. Comparisons of Decay Rates (k) Days

MW ID	Analyticals	Trendlines	Literature*	
TPHg**		(Charts 1 - 3)	slow	fast
MW1	-0.0005	-0.0004	-0.001925	-0.00385
MW2	-0.00079	-0.0004	-0.001925	-0.00385
MW3	-0.00005	-0.0001	-0.001925	-0.00385
Benzene				
MW1	-0.0015	-0.0009	-0.00096	-0.0062
MW2	-0.0011	-0.0004	-0.00096	-0.0062
MW3	-0.00012	-0.0001	-0.00096	-0.0062

Notes:

*Decay rates derived from half-life values listed in "Handbook of Environmental Degradation Rates", Howard, P.H.; Boethling, R.S.; et al., 1991.

**Xylenes decay rates used as TPHg proxy as noted in the report

The decay rates calculated from the analytical results are lower than the results determined from the literature (Howard 1991). Also, decay rates based on the trendlines from historical concentrations are lower than the results determined from the literature (Howard 1991). However, these decay rates are representative of the overall trends at the site's monitoring wells located in the source and the plume.

RESPONSE TO COMMENTS FROM HCDEH LETTER DATED DECEMBER 22, 2005

This section presents LACO's response to the HCDEH's comments on the Groundwater Monitoring Report; Third Quarter 2005 dated October 13, 2005.

The HCDEH's comment: *On page 2, there is a comment stating the concentrations of TPHg in Monitoring well MW1 have remained consistent since sampling initiated at the site. Please explain your definition of consistent...*

LACO's response: The term consistent was used to describe analytical results that show little change over the history of the well or over seasonal periods. When concentrations are generally within the same order of magnitude compared to previous concentrations, they are considered to be consistent. Similarly, if concentrations show either a decreasing or increasing trend at a similar rate over the history of sampling at a monitoring well, this is also considered consistent. Overall, concentrations are described as consistent when they are within an order of magnitude from previous sampling events or during similar hydrologic conditions.

The HCDEH's comment: *Another comment on page 2 states concentrations of TPHg in MW2 have decreased since the sampling event of September 2004. Please correct this statement. In September 2004, MW2 recorded 2,600 ppb TPHg, and most recently MW2 recorded 3,200 ppb TPHg.*

LACO's response: The statement that concentrations of TPHg in monitoring well MW2 have decreased since September 2004 was in error. Concentrations at this well have elevated when compared to concentrations at similar hydrologic conditions of the year.

CONCLUSIONS AND RECOMMENDATIONS

- Overall, groundwater parameters, including laboratory analytical results, groundwater elevations, and hydraulic gradient, are consistent with that of previous monitoring events.
- As a result of recent installation of additional boring and monitoring wells at the site, LACO will submit a Report of Findings to be issued shortly.
- LACO recommends a limited Feasibility Study (FS) and Corrective Action Plan (CAP) to evaluate remedial options and determine appropriate and effective remediation techniques. The FS and CAP will also include and updated site conceptual model.
- The next quarterly groundwater monitoring event is scheduled for June 2006.

REFERENCES

Howard, Philip H., Handbook of Environmental Degradation Rates, 1991. pg. 111 and pg. 422. CRC Press LLC, Boca Raton, FL.

LACO. 2005. *Report of Findings: Boring and Monitoring Well Installation*; Blue Lake Market,

410 Railroad Avenue, Blue Lake California. LOP No. 12229 LACO No. 3888.02. November 28, 2005. 13 pages +Attachments.

Nyer, Evan K., In Situ Treatment Technology, 1996. pg. 10. CRC Press, Inc., Boca Raton, FL. ABB Environmental Services, Inc., 1990.

LIMITATIONS

LACO has exercised a standard of care equal to that generated for this industry to ensure that the information contained in this report is current and accurate. LACO disclaims any and all liability for any errors, omissions, or inaccuracies in the information and data presented in this report and/or any consequences arising there from, whether attributable to inadvertence or otherwise. LACO makes no representations or warranties of any kind including, but not limited to, any implied warranties with respect to the accuracy or interpretations of the data furnished. It is known that subsurface conditions may change with time and under anthropologic influences. LACO assumes no responsibility of any third party reliance on the data presented and that data generated for this report represents information gathered at that time and at the indicated locations. It should not be utilized by any third party to represent data for any other time or location. This report is valid solely for the purpose, site, and project described in this document. Any alteration, unauthorized distribution, or deviation from this description will invalidate this report.

LIST OF FIGURES, TABLES, CHARTS, AND ATTACHMENTS

Figure 1: Location Map
Figure 2: Site Map
Figure 3: Hydraulic Gradient Map (3/16/06)

Table 1: Monitoring Well Data and Groundwater Analytical Results
Table 2: Historic Hydraulic Gradient Data
Table 3: Intrinsic Parameters

Chart 1: TPHg and Benzene Groundwater Concentrations in Monitoring Well MW1
Chart 2: TPHg and Benzene Groundwater Concentrations in Monitoring Well MW2
Chart 3: TPHg and Benzene Groundwater Concentrations in Monitoring Well MW3

Attachment 1: SHN Field Data Sheets and Laboratory Report

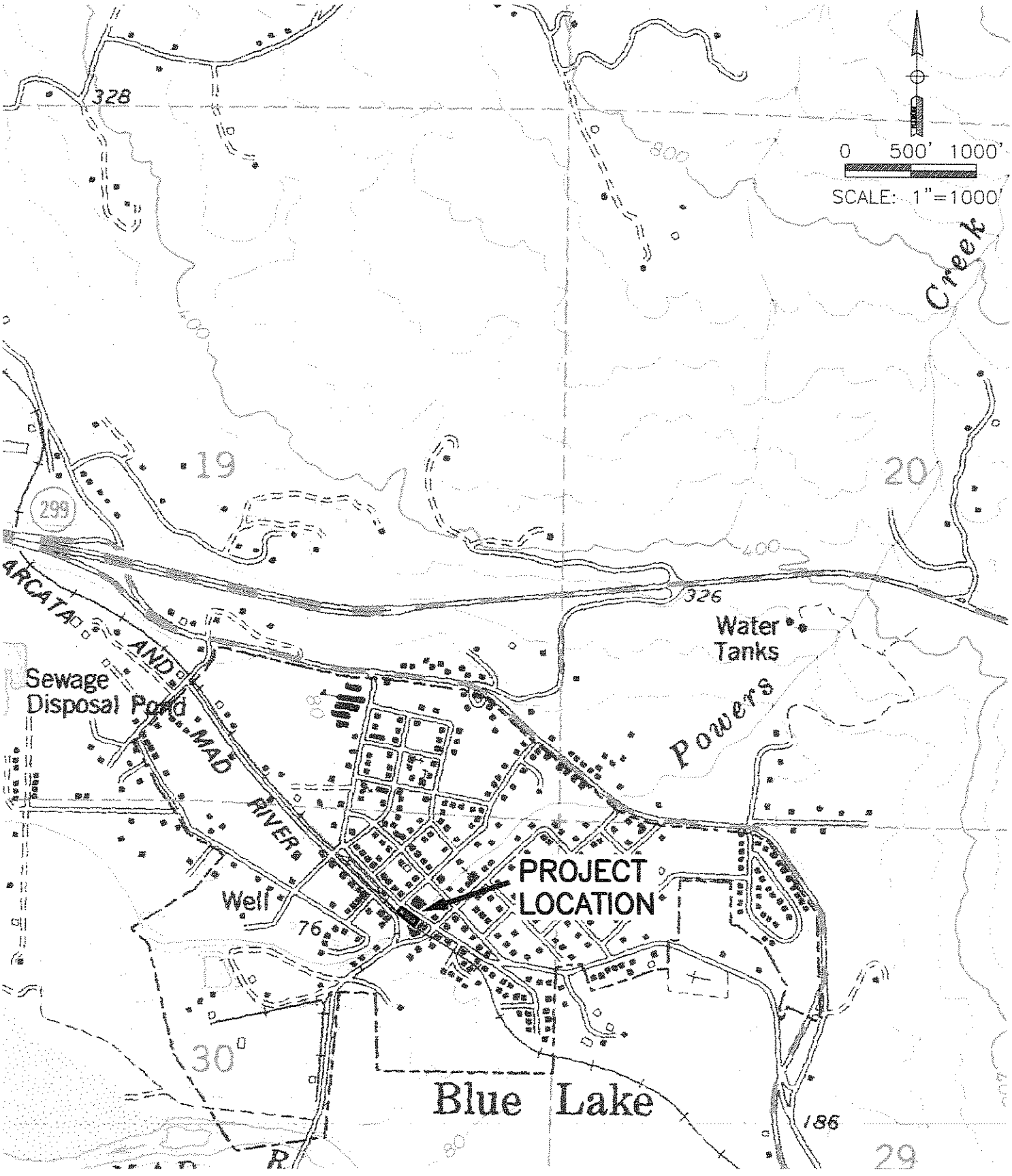
Attachment 2: Key to Abbreviations

Attachment 3: Groundwater Sampling Field Data Sheets

Attachment 4: Laboratory Analytical Report

Attachment 5: Total Xylenes as Proxy for TPHg

LACO ASSOCIATES CONSULTING ENGINEERS 21 W 4TH ST. EUREKA, CA 95501 (707)443-5054	PROJECT GROUNDWATER MONITORING REPORT	BY RJM	FIGURE 1
	CLIENT PAT FOLKINS	DATE 4/27/06	
	LOCATION BLUE LAKE MARKET	CHECK	JOB NO. 3888.02
	LOCATION MAP	SCALE 1"=1000'	



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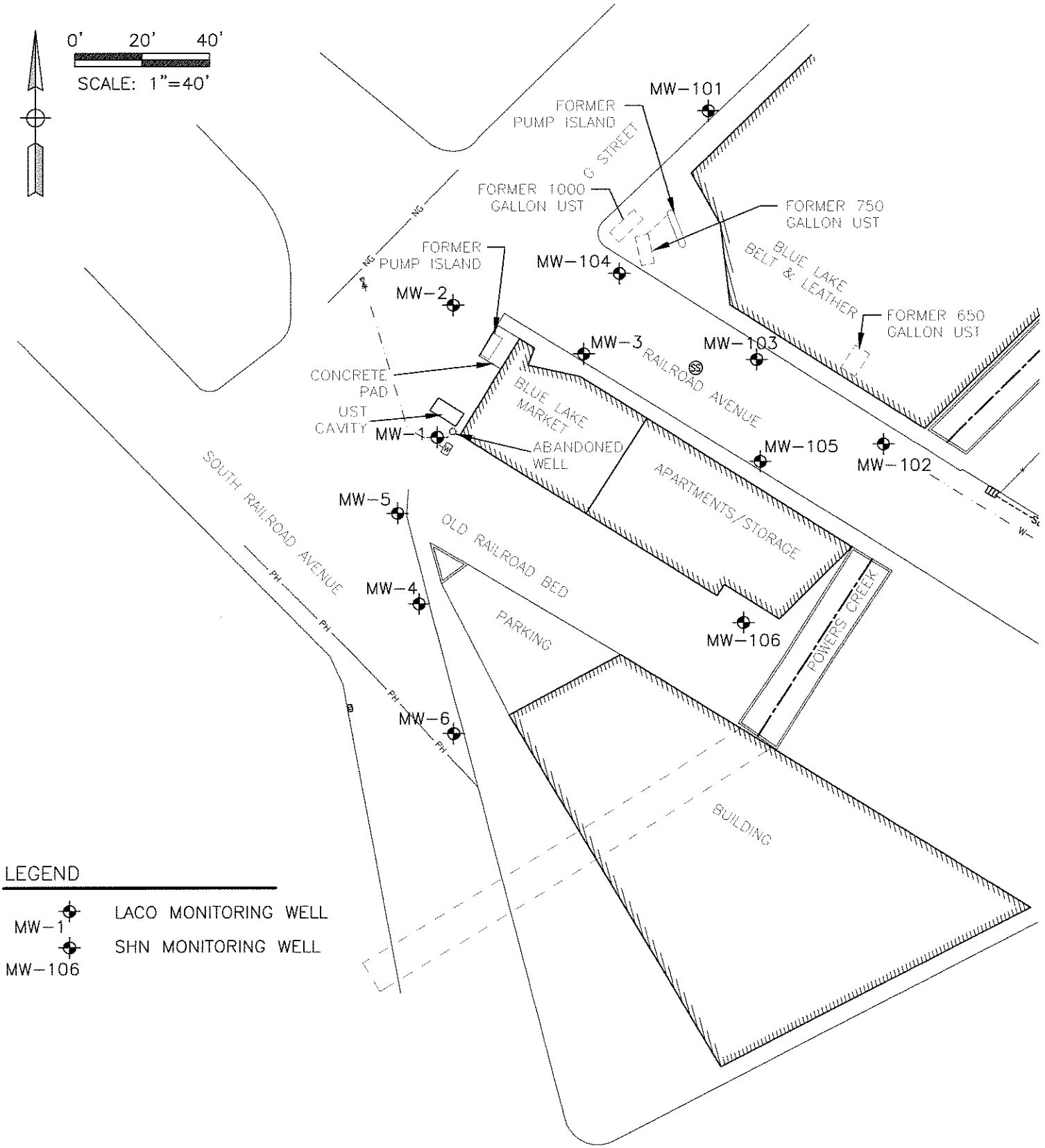
LACO ASSOCIATES CONSULTING ENGINEERS 21 W 4TH ST. EUREKA, CA 95501 (707)443-5054	PROJECT GROUNDWATER MONITORING REPORT	BY BAB	FIGURE 2
	CLIENT PAT FOLKINS	DATE 5/23/06	
	LOCATION BLUE LAKE MARKET	CHECK	JOB NO. 3888.02
	SITE MAP	SCALE 1"=40'	



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LACO ASSOCIATES CONSULTING ENGINEERS 21 W 4TH ST. EUREKA, CA 95501 (707)443-5054	PROJECT GROUNDWATER MONITORING REPORT	BY BAB	FIGURE 3
	CLIENT PAT FOLKINS	DATE 5/23/06	
	LOCATION BLUE LAKE MARKET	CHECK	JOB NO. 3888.02
	HYDRAULIC GRADIENT MAP (3/16/06)	SCALE 1"=40'	

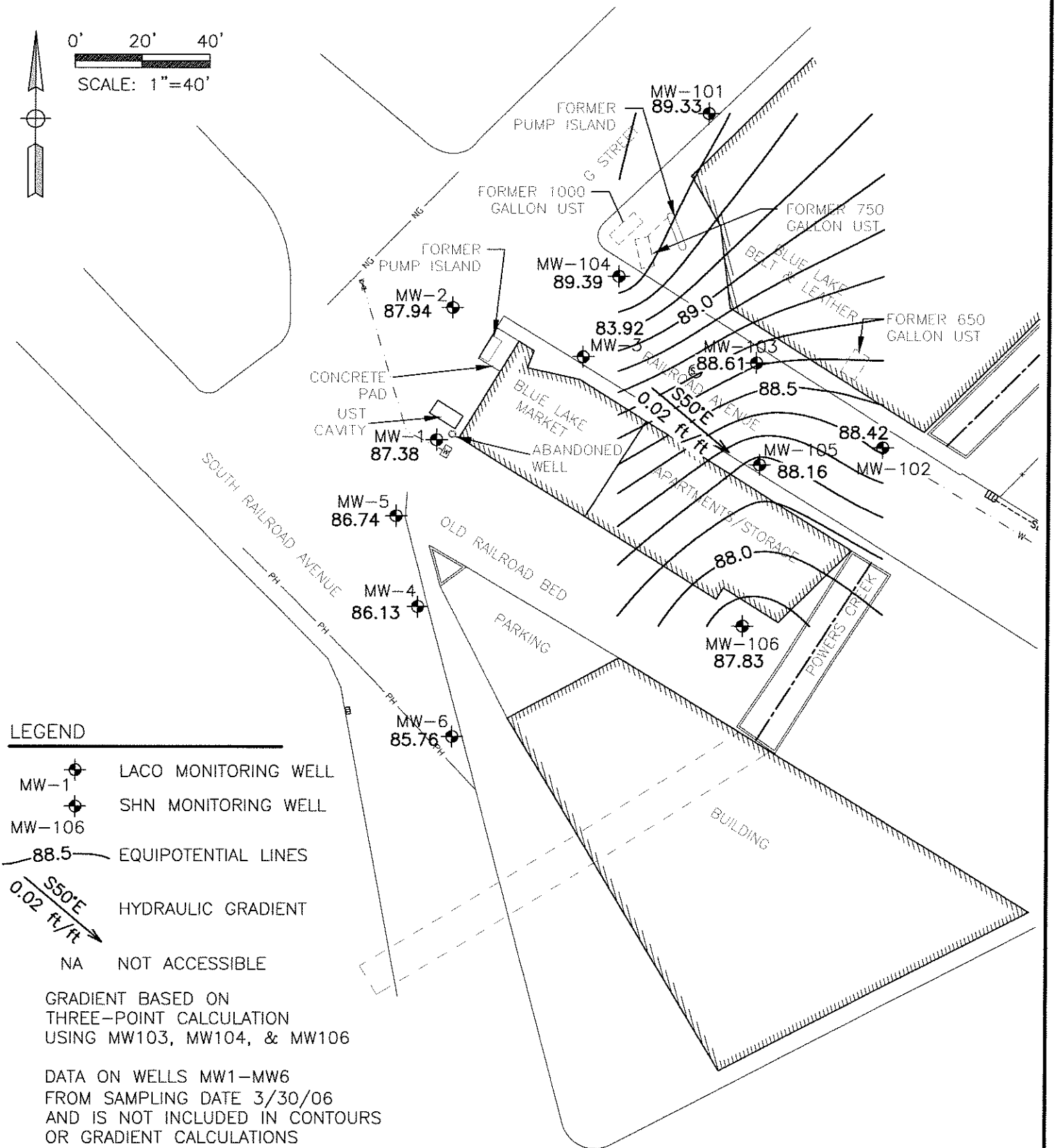

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TABLE 1: MONITORING WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Blue Lake Market, 410 Railroad Avenue, Blue Lake, CA
LOP No. 12229; LACO Project No. 3888.02

		Groundwater Measurements			Analytical Results						
WELL/	Sample Date	Well Head Elevation	Hydraulic Head	Depth to Water	TPHg	Benzene	Toluene	Ethylbenzene	Xylenes	MTBE	FOOT NOTES
		(feet NAVD-88)	(feet NAVD-88)	(feet)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	(ug/L)	
MW-1		(SCREENED 5-15 FEET BGS)									
	12/29/1994	93.28	88.27	5.01	---	---	---	---	---	---	
	1/12/1995		89.18	4.10	2,000	53	16	42	49	---	
	2/27/1995		87.05	6.23	---	---	---	---	---	---	
	3/22/1995		86.80	6.48	---	---	---	---	---	---	
	4/12/1995		87.42	5.86	1,100	40	25	49	59	---	
	5/8/1995		86.94	6.34	---	---	---	---	---	---	
	6/6/1995		86.43	6.85	---	---	---	---	---	---	
	8/11/1995		82.82	10.46	---	---	---	---	---	---	
	10/31/1995		81.13	12.15	4,100	280	37	63	46	---	
	12/14/1995		88.52	4.76	---	---	---	---	---	---	
	1/15/1996		88.80	4.48	---	---	---	---	---	---	
	4/5/1996		87.62	5.66	4,200	180	180	230	370	ND <100	2
	8/2/1996		82.37	10.91	---	---	---	---	---	---	
	5/2/1997		87.22	6.06	3,900	170	50	120	105	ND <100	1,2
	8/15/1997		82.03	11.25	4,700	610	75	88	81	ND <100	1,2
	5/13/1998		86.54	6.74	810	25	5	33	16	ND <25	1,2
	5/14/1999		86.64	6.64	2,400	220	38	96	57	97	1
	8/10/1999		82.28	11.00	6,800	850	110	470	298	ND <200	1,2
	12/2/1999		88.23	5.05	320	41	4.2	15	4.9	ND<40	2
	3/1/2000		88.17	5.11	5,200	270	28	45	36	ND <80	1,2
	6/1/2000		86.64	6.64	5,300	330	85	250	183	ND <200	1,2,4
	9/13/2000		81.14	12.14	4,600	690	37	110	25	ND <140	1,2
	12/1/2000		82.00	7.45	7,900	410	53	210	79	ND<200	1,3
	3/1/2001		83.05	6.40	970	88	12	41	20	ND<50	1,2
	6/4/2001		80.39	9.06	3,700	210	17	160	49	ND<1.3	2
	9/7/2001		77.35	12.10	3,100	690	30	53	37	ND<1.0	1
	12/3/2001		84.96	4.49	71	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	1,4
	3/13/2002		84.52	4.93	420	11	ND<5.0	5.4	3.8	ND<27	1,2
	6/5/2002		81.00	8.45	2,400	63	32	49	39	ND<70	1,2
	9/3/2002		81.27	12.01	3,800	210	ND<70	29	ND<25	ND<110	1,2
	1/2/2003		88.72	4.56	400	ND<2.0	ND<4.0	ND<2.0	ND<0.50	ND<10	
	3/3/2003		---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<3.0	
	6/2/2003		86.63	6.65	1,300	43	ND<30	29	9.6	ND<30	2, 5, 6
	9/11/2003		81.80	11.48	1,400	69	ND<14	ND<15	ND<8.0	ND<50	2
	12/1/2003		87.74	5.54	1,500	38	ND<20	19	14	ND<80	2, 5, 6
	3/3/2004		87.60	5.68	160	ND<0.50	ND<0.50	0.54	ND<0.50	ND<1.0	8
	6/9/2004		84.78	8.50	1,500	21	ND<28	33	11	ND<60	5, 6
	9/2/2004		81.55	11.73	1,000	37	ND<18	ND<5.0	ND<3.0	ND<40	2, 11
	12/1/2004		86.70	6.58	330	4.9	ND<4.0	1.7	0.91	ND<14	2, 11
	3/1/2005		87.32	5.96	990	ND<10	ND<15	ND<15	ND<7.0	ND<35	
	6/1/2005		86.81	6.47	2,600	27	ND<30	18	10	ND<80	3,6,11
	9/1/2005		82.37	10.91	1,700	24	ND<25	ND<10	ND<10	ND<60	2, 6, 11
	12/1/2005		89.67	3.61	1,300	9.1	ND<15	3.4	2.4	ND<50	
	3/30/2006		87.38	5.90	1,900	9.3	1.6	4.1	3.8	ND<1.0	

TABLE 1: MONITORING WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Blue Lake Market, 410 Railroad Avenue, Blue Lake, CA
LOP No. 12229; LACO Project No. 3888.02

WELL/ Sample Date	Groundwater Measurements: Well Head Elevation (feet NAVD-88)	Hydraulic Head (feet NAVD-88)	Depth to Water (feet)	Analytical Results: TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	FOOT NOTES
MW-2	(SCREENED 4-14 FEET BGS)									
12/29/1994	95.13	89.00	6.13	---	---	---	---	---	---	
1/12/1995		90.05	5.08	10,000	14	290	250	1,670	---	
2/27/1995		87.63	7.50	---	---	---	---	---	---	
3/22/1995		87.55	7.58	---	---	---	---	---	---	
4/12/1995		88.13	7.00	1,400	1.0	36	24	310	---	
5/8/1995		87.68	7.45	---	---	---	---	---	---	
6/6/1995		87.19	7.94	---	---	---	---	---	---	
8/11/1995		83.57	11.56	---	---	---	---	---	---	
10/31/1995		82.25	12.88	---	---	---	---	---	---	
12/14/1995		89.18	5.95	---	---	---	---	---	---	
1/15/1996		89.15	5.98	---	---	---	---	---	---	
4/5/1996		88.31	6.82	5,500	7.3	85	92	720	ND <5.0	
8/2/1996		83.08	12.05	---	---	---	---	---	---	
5/2/1997		87.86	7.27	5,800	12	95	170	860	ND <50	2
8/15/1997		82.31	12.82	---	---	---	---	---	---	
5/13/1998		87.25	7.88	3,700	5.8	28	100	510	ND <25	1,2
5/14/1999		87.32	7.81	9,800	21	210	380	1,910	13	1
8/10/1999		82.59	12.54	2,400	15	40	67	306	ND <25	1,2
12/2/1999		88.93	6.20	14,000	33	110	560	2,290	ND<50	
3/1/2000		88.70	6.43	7,000	8.6	86	160	820	ND<30	1,3
6/1/2000		87.31	7.82	12,000	19	200	290	1,630	ND<30	1,3
9/13/2000		82.32	12.81	---	---	---	---	---	---	
12/1/2000		85.23	6.04	9,800	19	120	220	1,010	ND<30	1,2
3/1/2001		83.73	7.54	3,000	9	43	100	502	ND<30	3
6/4/2001		81.22	10.05	2,300	5	8.4	35	229.3	ND<1.3	2
9/7/2001		78.42	12.85	---	---	---	---	---	---	
12/3/2001		85.48	5.79	4,700	7.3	43	110	650	ND<1.0	1
3/13/2002		84.83	6.44	15,000	29	290	640	2,600	ND<70	1,2
6/5/2002		81.95	9.32	3,400	9.8	21	87	253	ND<11	1,2
9/3/2002		82.23	12.90	Insufficient water in the well to obtain a sample						
1/2/2003		89.35	5.78	12,000	ND<25	97	470	1,910	ND<150	
3/3/2003		87.76	7.37	270	ND<0.50	ND<5.5	2.4	12.3	ND<3.0	
6/2/2003			7.81	860	0.76	6.6	28.0	75.0	ND<3.0	5
9/11/2003		82.47	12.66	3,900	28	53	190	468	ND<35	2, 5
12/1/2003		88.02	7.11	6,700	14	62	330	1,130	ND<30	3, 5
3/3/2004		88.18	6.95	2,200	1.2	2.4	50	161	ND<1.0	5
6/9/2004		85.70	9.43	970	ND<3.0	ND<10	22	58	ND<3.0	2, 3, 5
9/2/2004		81.32	13.81	2,600	16	26	92	258	ND<30	3, 10
12/1/2004		87.25	7.88	2,200	5	15	110	291	ND<30	3, 5
3/1/2005		87.80	7.33	1,100	ND<2.0	10	19	55.9	ND<3.0	
6/1/2005		87.51	7.62	970	1.1	ND<15	9.0	21.1	ND<3.0	2,11
9/1/2005		82.80	12.33	3,200	19	57	130	410	ND<30	3, 5
12/1/2005		90.22	4.91	1,500	ND<5.0	6.9	63	167	ND<30	
3/30/2006		87.94	7.19	1,200	0.69	ND<0.50	8.0	17	ND<1.0	

TABLE 1: MONITORING WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Blue Lake Market, 410 Railroad Avenue, Blue Lake, CA
LOP No. 12229; LACO Project No 3888.02

WELL/ Date	Sample	Groundwater Measurements: Well Head Elevation (feet NAVD-88)	Hydraulic Head (feet NAVD-88)	Depth to Water (feet)	Analytical Results: TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	FOOT NOTES
MW-3		(SCREENED 5-15 FEET BGS)									
12/29/1994		95.45	88.50	6.95	---	---	---	---	---	---	
1/12/1995			89.22	6.23	21,000	130	590	170	770	---	
2/27/1995			88.47	6.98	---	---	---	---	---	---	
3/22/1995			88.37	7.08	---	---	---	---	---	---	
4/12/1995			87.82	7.63	14,000	130	430	360	2,080	---	
5/8/1995			87.45	8.00	---	---	---	---	---	---	
6/6/1995			86.93	8.52	---	---	---	---	---	---	
8/11/1995			83.02	12.43	---	---	---	---	---	---	
10/31/1995			81.43	14.02	---	---	---	---	---	---	
12/14/1995			88.73	6.72	---	---	---	---	---	---	
1/15/1996			88.93	6.52	---	---	---	---	---	---	
4/5/1996			88.15	7.30	11,000	120	330	260	980	ND <500	2
8/2/1996			82.57	12.88	---	---	---	---	---	---	
5/2/1997			87.48	7.97	7,600	46	110	79	459	ND <100	2
8/15/1997			82.02	13.43	7,600	160	440	160	630	ND <100	2
5/13/1998			87.00	8.45	9,100	76	280	280	1,390	ND <500	2
5/14/1999			87.09	8.36	5,200	74	160	180	640	140	
8/10/1999			82.26	13.19	14,000	130	310	130	510	ND <200	1,2
12/2/1999			88.16	7.29	6,400	87	340	200	810	ND <300	2
12/2/1999			Duplicate		5,200	80	260	210	710	ND <400	2
3/1/2000			88.20	7.25	7,200	64	390	180	730	ND <150	1,3
6/1/2000			87.09	8.36	7,100	73	330	170	630	ND <140	2
9/13/2000			81.52	13.93	---	---	---	---	---	---	
12/1/2000			83.54	8.07	13,000	79	290	230	720	ND<150	1,3
3/1/2001			83.43	8.18	8,500	78	330	200	680	ND<150	3
6/4/2001			80.70	10.91	4,800	14	14	68	103.4	ND<0.5	2
9/7/2001			77.41	14.20	---	---	---	---	---	---	
12/3/2001			84.83	6.78	9,900	24	52	210	454	ND<1.0	1
3/13/2002			84.28	7.33	---	---	---	---	---	---	
6/5/2002			81.38	10.23	8,100	28	ND<140	69	147	ND<250	1,2
9/3/2002			81.57	13.88	Insufficient water in the well to obtain a sample						
1/2/2003			88.50	6.95	23,000	390	2,700	810	4,000	ND<150	
3/3/2003			87.50	7.95	7,500	32	ND<180	62	415	ND<200	
6/2/2003			87.03	8.42	5,600	36	ND<110	86	180	ND<170	5, 6, 7
9/11/2003			82.04	13.41	9,900	230	210	120	680	ND<270	5, 6
12/1/2003			87.62	7.83	10,000	77	120	200	594	ND<400	5, 6
3/3/2004			87.84	7.61	4,500	7.5	12	48	206	ND<1.0	5
6/9/2004			85.06	10.39	4,800	ND<50	ND<100	55	89	ND<120	5, 6
9/2/2004			81.77	13.68	4,500	59	50	73	109	ND<140	5, 6

TABLE 1: MONITORING WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Blue Lake Market, 410 Railroad Avenue, Blue Lake, CA
LOP No. 12229; LACO Project No. 3888.02

WELL/ Sample Date	Groundwater Measurements: Well Head Elevation (feet NAVD-88)	Hydraulic Head (feet NAVD-88)	Depth to Water (feet)	Analytical Results: TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	FOOT NOTES
MW-3 (continued)										
12/1/2004		87.06	8.39	7,500	120	340	180	554	ND<300	3, 4, 5
3/1/2005		87.61	7.84	11,000	160	690	370	1,010	---	5
6/1/2005		87.36	8.09	Not sampled						
6/1/2005 *		87.38	8.07	10,000	120	480	340	820	---	--
9/1/2005		82.53	12.92	Not sampled						
9/1/2005 *		82.53	12.92	6,700	68	160	110	208	---	5
12/1/2005		---	---	Inaccessible						
12/5/2005*		88.14	7.31	14,000	180	1,600	480	1,900	---	
3/16/2006*		88.24	7.21	6,500	49	250	140	480	---	
3/30/2006		87.80	7.65	Not sampled						
MW-4	(SCREENED 10-15 FEET BGS)									
12/1/2005	93.06	---	Dry	Insufficient water in the well to obtain a sample						
3/30/2006		86.13	6.93	1,300	19	4.5	50	63	ND<1.0	
MW-5	(SCREENED 10-15 FEET BGS)									
12/1/2005	92.81	89.00	3.81	1,400	27	12	42	24	ND<25	
3/30/2006		86.74	6.07	3,700	110	22	97	154	ND<1.0	
MW-6	(SCREENED 5-15 FEET BGS)									
4/4/2006	93.80	85.76	8.04	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<3.0	
MW-101*	(SCREENED 5-15 FEET BGS)									
3/1/2001	96.31	88.72	7.59	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
6/4/2001		86.61	9.70	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
9/4/2001		82.67	13.64	---	---	---	---	---	---	
12/3/2001		90.47	5.84	160	ND<0.5	ND<4.0	ND<0.5	ND<0.5	ND<3.0	1,2
3/1/2002		89.13	7.18	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
6/5/2002		87.18	9.13	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
9/3/2002		82.65	13.66	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
12/2/2002		83.15	13.16	64	ND<0.5	ND<2.8	ND<0.5	ND<0.5	ND<3.0	
3/3/2003		88.93	7.38	ND<50	ND<0.5	ND<2.8	ND<0.5	ND<0.5	ND<3.0	
6/2/2003		88.50	7.81	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<3.0	
9/11/2003		---	---	---	---	---	---	---	---	
12/1/2003		89.00	7.31	50	ND<0.50	ND<1.4	ND<0.50	ND<0.50	---	2, 8, 9
3/3/2004		89.71	6.60	ND<50	ND<0.50	ND<1.4	ND<0.50	ND<0.50	---	
6/1/2004		88.37	7.94	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	
9/2/2004		82.91	13.40	90	ND<0.50	ND<3.0	ND<0.50	ND<0.50	---	2, 8
12/1/2004		88.35	7.96	No sample collected						
3/1/2005		88.51	7.80	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	12
6/1/2005		88.30	8.01	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	--
9/1/2005		---	DRY	No sample collected						
12/5/2005		89.26	7.05	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	--
3/16/2006		89.33	6.98	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<3.0	--

TABLE 1: MONITORING WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Blue Lake Market, 410 Railroad Avenue, Blue Lake, CA
LOP No 12229, LACO Project No. 3888 02

WELL/ Sample Date	Groundwater Measurements: Well Head Elevation (feet NAVD-88)	Hydraulic Head (feet NAVD-88)	Depth to Water (feet)	Analytical Results: TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	FOOT NOTES
MW-102*	(SCREENED 5-20 FEET BGS)									
3/1/2001	95.49	87.57	7.92	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
6/4/2001		85.06	10.43	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
9/4/2001		81.81	13.68	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
12/3/2001		88.66	6.83	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
3/1/2002		87.93	7.56	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
6/5/2002		85.62	9.87	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
9/3/2002		81.76	13.73	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
12/2/2002		82.28	13.21	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
3/3/2003		87.87	7.62	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
6/2/2003		87.47	8.02	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<3.0	
9/11/2003		---	---	---	---	---	---	---	---	
12/1/2003		87.84	7.65	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	9
3/3/2004		88.26	7.23	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	
6/1/2004		87.20	8.29	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	
9/2/2004		82.06	13.43	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	
12/1/2004		87.47	8.02	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	
3/1/2005		87.83	7.66	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	12
6/1/2005		87.69	7.80	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	--
9/1/2005		82.62	12.87	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	--
12/5/2005		88.26	7.23	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	--
3/16/2006		88.42	7.07	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<3.0	--
MW-103*	(SCREENED 6-19 FEET BGS)									
3/1/2001	95.92	87.71	8.21	**2,900**	**27**	**37**	**35**	**63**	ND<60	1,2
6/4/2001		85.21	10.71	**3,200**	**42**	ND<80	**16**	**30.4**	ND<30	1,2
9/4/2001		81.93	13.99	**1,300**	**18**	ND<40	**8**	**5.4**	ND<32	1, 2
12/3/2001		88.93	6.99	**5,700**	**150**	**160**	**95**	**219**	ND<150	1,2
3/1/2002		88.03	7.89	**5,700**	**100**	**170**	**83**	**380**	ND<150	2
6/5/2002		85.71	10.21	**3,900**	**25**	ND<110	**35**	**50**	ND<80	1,2
9/3/2002		81.86	14.06	**1,600**	**21**	ND<35	**11**	**7.0**	ND<30	1,2
12/2/2002		82.42	13.50	**5,700**	**280**	**110**	**190**	**336**	ND<120	
3/3/2003		87.95	7.97	**4,400**	**47**	ND<200	**74**	**229**	---	
6/2/2003		87.54	8.38	**2,400**	**14**	ND<70	**15**	**17.3**	ND<30	3, 5, 6
9/11/2003		---	---	---	---	---	---	---	---	
12/1/2003		87.99	7.93	**3,500**	**49**	ND<90	**48**	**58.6**	---	8
3/3/2004		88.38	7.54	**5,800**	**100**	**160**	**130**	**343**	---	
6/1/2004		87.32	8.60	**2,100**	**15**	ND<110	**32**	**40**	---	
9/2/2004		82.19	13.73	**1,800**	**36**	**18**	**24**	**28.8**	---	5
12/1/2004		87.60	8.32	**2,400**	**42**	**40**	**41**	**47.4**	---	5
3/1/2005		88.01	7.91	**3,700**	**58**	**82**	**67**	**125**	---	5
6/1/2005		87.83	8.09	**2,700**	**33**	**47**	**46**	**79**	---	--
9/1/2005		82.80	13.12	**7,400**	**130**	**110**	**230**	**446**	---	5
12/5/2005		88.48	7.44	**3,900**	**70**	**81**	**87**	**156**	---	--
3/16/2006		88.61	7.31	**2,600**	**23**	**26**	**36**	**30**	ND<3.0	--

TABLE 1: MONITORING WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Blue Lake Market, 410 Railroad Avenue, Blue Lake, CA
LOP No 12229; LACO Project No 3888 02

WELL/ Sample Date	Groundwater Measurements: Well Head Elevation (feet NAVD-88)	Hydraulic Head (feet NAVD-88)	Depth to Water (feet)	Analytical Results: TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	FOOT NOTES
MW-104*	(SCREENED 5-17 FEET BGS)									
6/4/2001	96.19	86.25	9.94	17,000	260	320	40	1,510	ND<300	2
9/4/2001		82.52	13.67	9,800	120	ND<200	330	546	ND<400	2
12/3/2001		90.04	6.15	33,000	870	520	1,600	4,650	ND<900	1,2
3/1/2002		88.84	7.35	20,000	400	450	930	2,480	ND<650	2
6/5/2002		86.79	9.40	21,000	370	880	890	2,610	ND<600	2
9/3/2002		82.39	13.80	7,400	100	ND<200	270	361	ND<150	1,2
12/2/2002		83.18	13.01	13,000	260	210	630	1,191	ND<320	
3/3/2003		88.68	7.51	20,000	430	560	950	2,330	---	
6/2/2003		88.26	7.93	26,000	540	1,100	1,300	3,630	ND<600	6
9/11/2003		---	---	---	---	---	---	---	---	
12/1/2003		88.83	7.36	25,000	760	520	1,300	2,700	---	5
3/3/2004		89.43	6.76	21,000	400	460	1,000	2,010	---	
6/1/2004		88.14	8.05	26,000	500	680	1,200	2,420	---	
9/2/2004		82.90	13.29	3,700	55	49	140	168	---	5
12/1/2004		88.18	8.01	16,000	430	480	990	2,090	---	4, 5
3/1/2005		88.68	7.51	17,000	200	350	590	1,280	---	5
6/1/2005		88.47	7.72	13,000	130	230	490	1,010	---	--
9/1/2005		83.51	12.68	8,300	63	88	270	519	---	5
12/5/2005		89.40	6.79	10,000	59	100	580	553	---	--
3/16/2006		89.39	6.80	7,400	43	75	130	267	ND<160	--
MW-105*	(SCREENED 5-15 FEET BGS)									
6/4/2001	95.33	84.76	10.57	430	ND<0.5	ND<7.0	ND<1.2	ND<0.5	ND<3.0	1,2
9/4/2001		81.48	13.85	650	ND<4.0	ND<9.0	ND<1.5	ND<1.2	ND<13	1,2
12/3/2001		88.49	6.84	4,700	11	ND<40	18	9	ND<100	1,2,4
3/1/2002		87.64	7.69	260	1.7	ND<6.0	ND<0.50	ND<0.50	ND<6.0	1,2
6/5/2002		85.32	10.01	140	ND<0.50	ND<3.0	ND<0.50	ND<0.50	ND<3.0	1,2
9/3/2002		81.42	13.91	360	ND<0.50	ND<10	ND<1.0	ND<1.0	ND<3.0	1,2
12/2/2002		81.94	13.39	680	6.0	ND<11	2.1	0.82	ND<13	
3/3/2003		87.58	7.75	280	ND<1.5	ND<5.5	ND<1.0	ND<1.0	---	
6/2/2003		87.16	8.17	210	ND<0.50	ND<5.5	ND<0.50	ND<0.50	ND<3.0	2, 5
9/11/2003		---	---	---	---	---	---	---	---	
12/1/2003		87.57	7.76	1,500	ND<5.0	ND<40	3.8	1.60	---	2, 8
3/3/2004		87.98	7.35	390	ND<2.0	ND<17	0.93	0.53	---	
6/1/2004		86.89	8.44	210	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	
9/2/2004		81.72	13.61	210	ND<0.50	ND<9.0	ND<0.50	ND<0.50	---	2, 8
12/1/2004		87.18	8.15	590	ND<2.0	ND<18	1.3	0.73	---	2, 6, 8
3/1/2005		87.57	7.76	680	ND<2.5	ND<30	ND<2.0	ND<1.5	---	2, 6, 8
6/1/2005		87.39	7.94	510	1.7	9.8	0.50	0.57	---	--
9/1/2005		82.28	13.05	470	8.2	ND<15	3.6	2.15	---	6,11
12/5/2005		88.02	7.31	2,600	7.2	ND<70	8.3	4.6	---	--
3/16/2006		88.16	7.17	1,800	3.5	ND<60	6.7	3.3	ND<15	--

TABLE 1: MONITORING WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Blue Lake Market, 410 Railroad Avenue, Blue Lake, CA
LOP No. 12229; LACO Project No 3888 02

WELL/ Sample Date	Groundwater Measurements: Well Head Elevation (feet NAVD-88)	Hydraulic Head (feet NAVD-88)	Depth to Water (feet)	Analytical Results: TPHg (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	MTBE (ug/L)	FOOT NOTES
MW-106*	(SCREENED 5-15 FEET BGS)									
3/1/2001	92.88	86.97	5.91	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
6/4/2001		84.43	8.45	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
9/4/2001		80.96	11.92	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
12/3/2001		87.92	4.96	ND<50	ND<0.5	ND<1.5	ND<0.5	ND<0.5	ND<3.0	2
3/1/2002		87.29	5.59	ND<50	**0.74**	ND<0.50	ND<0.50	ND<0.50	ND<3.0	
6/5/2002		84.97	7.91	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
9/3/2002		80.89	11.99	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
12/2/2002		81.45	11.43	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
3/3/2003		87.24	5.64	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<3.0	
6/2/2003		86.84	6.04	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<3.0	
9/11/2003		---	---	---	---	---	---	---	---	
12/1/2003		87.17	5.71	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	9
3/3/2004		87.64	5.24	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	
6/1/2004		86.61	6.27	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	
9/2/2004		81.23	11.65	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	
12/1/2004		86.90	5.98	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	
3/1/2005		87.26	5.62	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	12
6/1/2005		87.09	5.79	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	--
9/1/2005		81.85	11.03	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	---	--
12/5/2005		87.74	5.14	**110**	**4.4**	**3.7**	**1.6**	**1.1**	---	
3/16/2006		87.83	5.05	ND<50	**0.85**	**0.58**	ND<0.50	ND<0.50	ND<3.0	--
OBS-1	(SCREENED 5-10 FEET BGS)									
	89.45	82.49	6.96	---	---	---	---	---	---	---
OBS-2	(SCREENED 5-10 FEET BGS)									
	91.29	83.78	7.51	---	---	---	---	---	---	---

Reference NAVD 88. Elevations established 7/29/02 by R. Smith, LS using Caltrans HPGN monument "D CA 01 RB" North Arcata at Giuntoli & Hwy 101
* Hydraulic head data and laboratory analytical results are provided by SHN.
A key to abbreviations is provided as Attachment 2.

TABLE 2: HISTORICAL HYDRAULIC GRADIENT DATA
Blue Lake Market, 410 Railroad Avenue, Blue Lake, CA
LOP No. 12229; LACO Project No. 3888.02

Date	Flow Direction	Gradient Slope
12/29/1994	SSE	1.90%
1/12/1995	SSE	9.50%
2/27/1995	SW	3.40%
3/22/1995	SW	3.50%
4/12/1995	S	1.90%
5/8/1995	SSW	2.00%
6/6/1995	SSW	2.10%
8/11/1995	SSE	3.10%
10/31/1995	SSE	3.50%
12/14/1995	SSE	2.10%
1/15/1996	SSE	1.00%
4/5/1996	SSW	1.90%
8/2/1996	SSE	2.20%
5/2/1997	S	1.90%
8/15/1997	S	0.80%
5/13/1998	S	1.90%
5/14/1999	SSW	1.60%
8/10/1999	SSE	0.90%
12/2/1999	SSW	1.90%
3/1/2000	S	1.52%
6/1/2000	SSW	1.59%
9/14/2000	S	3.07%
12/1/2000	SE	8.30%
3/1/2001	SW	1.20%
6/4/2001	SW	2.10%
9/7/2001	SW	2.50%
12/3/2001	S	2.00%
3/13/2002	SW	1.60%
6/5/2002	SW	1.70%
9/3/2002	SE	2.61%
1/2/2003	SE	2.30%
3/3/2003	---	---
6/2/2003	S3E	1.80%
9/11/2003	S14E	1.80%
12/1/2003	S42E	1.29%
12/1/2003	S22E	1.20%
3/3/2004	S11E	1.45%
6/9/2004	S17E	1.69%
9/2/2004	N52W	1.19%
12/1/2004	S2W	1.58%
3/1/2005	S1E	1.27%
6/1/2005	S12W	2.37%
9/1/2005	S15E	1.2%
12/5/2005	S62E	0.01 ft/ft
3/16/2006	S50E*	0.02

Notes:

*Hydraulic gradient calculated using the three-point method and SHN monitoring wells MW103, MW104, and MW106

TABLE 3: INTRINSIC PARAMETERS
Blue Lake Market, 410 Railroad Avenue, Blue Lake, CA
LOP No. 12229; LACO No. 3888.02

Well	pH	Temperature (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
MW1					
6/2/2003	---	---	---	-11	0.00
9/11/2003	---	---	---	3	0.42
12/1/2003	---	---	184	65	3.23
3/3/2004	---	---	---	86	1.00
6/9/2004	---	---	218	-7	0.43
9/2/2004	---	---	257	-63	4.16
12/1/2004	---	---	173	56	0.7
3/1/2005	---	---	---	-30	0.47
6/1/2005	---	---	---	-49	0.43
9/1/2005	---	---	---	42	0.89
12/1/2005	---	---	---	24	0.46
3/30/2006	---	---	---	Ur	0.79
MW2					
6/2/2003	---	---	---	67	0.00
3/3/2004	---	---	---	89	0.56
6/9/2004	---	---	98	-78	0.42
9/2/2004	---	---	---	---	---
12/1/2004	---	---	122	-6	0.69
3/1/2005	---	---	---	-17	0.49
6/1/2005	---	---	---	-31	0.30
9/1/2005	---	---	---	-5	0.77
12/1/2005	---	---	---	17	0.48
3/30/2006	---	---	---	-72	0.47
MW3					
6/2/2003	---	---	---	13	0.00
12/1/2003	---	---	94	26	2.23
3/3/2004	---	---	---	32	0.55
6/9/2004	---	---	112	Ur	0.64
9/2/2004	---	---	123	-57	3.89
12/1/2004	---	---	145	-60	0.61
MW4					
12/1/2005			Dry		
3/30/2006	---	---	---	Ur	1.15
MW5					
12/1/2005	---	---	---	-36	0.72
3/30/2006	---	---	---	Ur	110
MW6					
4/4/2006	---	---	---	94	2.16

CHART 1. TPHG AND BENZENE GROUNDWATER CONCENTRATIONS IN MONITORING WELL MW1
Blue Lake Market, 410 Railroad Avenue, Blue Lake, CA
LOP No. 12229; LACO No. 3888.02

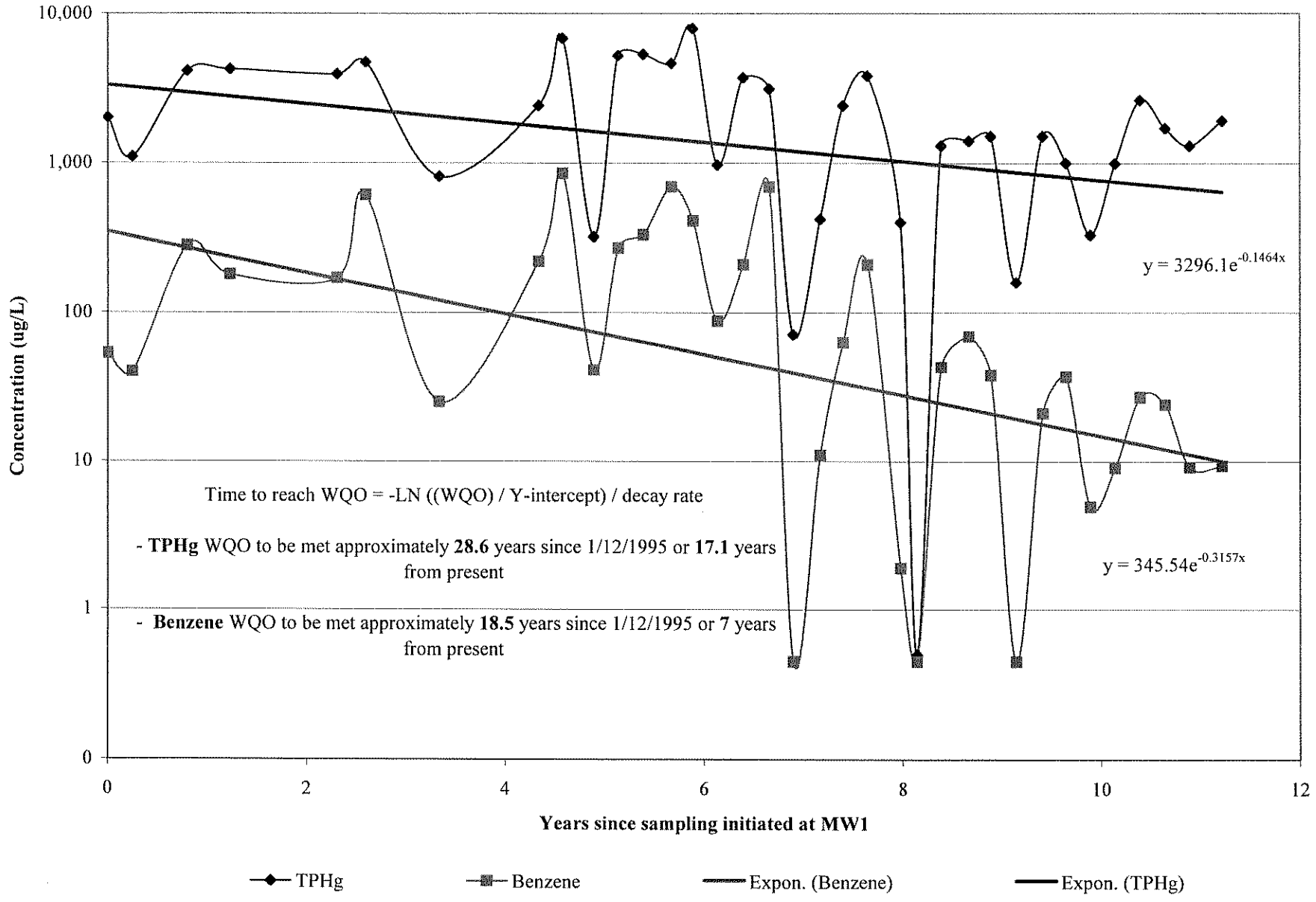


CHART 2. TPHG AND BENZENE GROUNDWATER CONCENTRATIONS IN MONITORING WELL MW2
Blue Lake Market, 410 Railroad Avenue, Blue Lake, CA
LOP No. 12229, LACO Project No. 3888.02

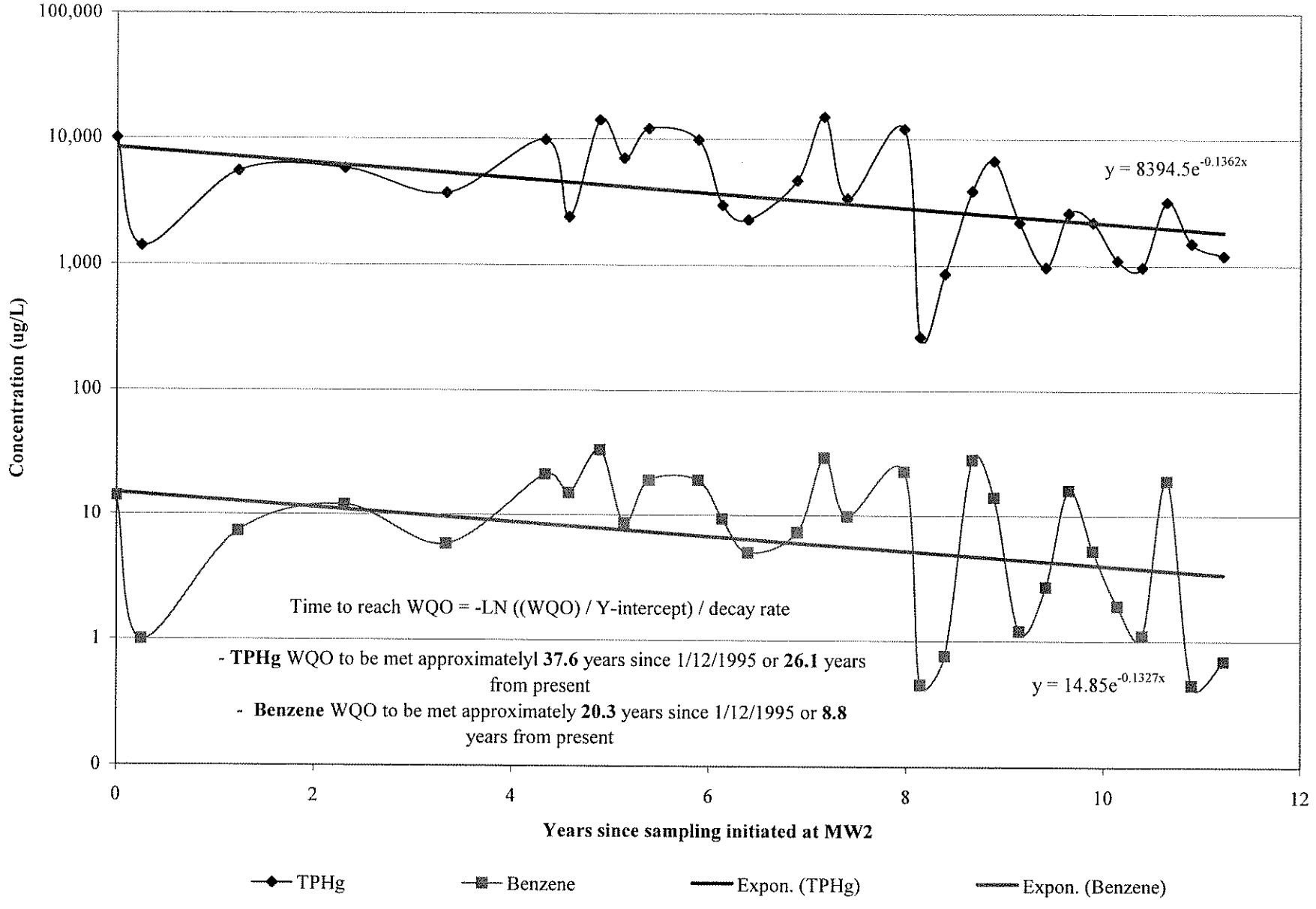
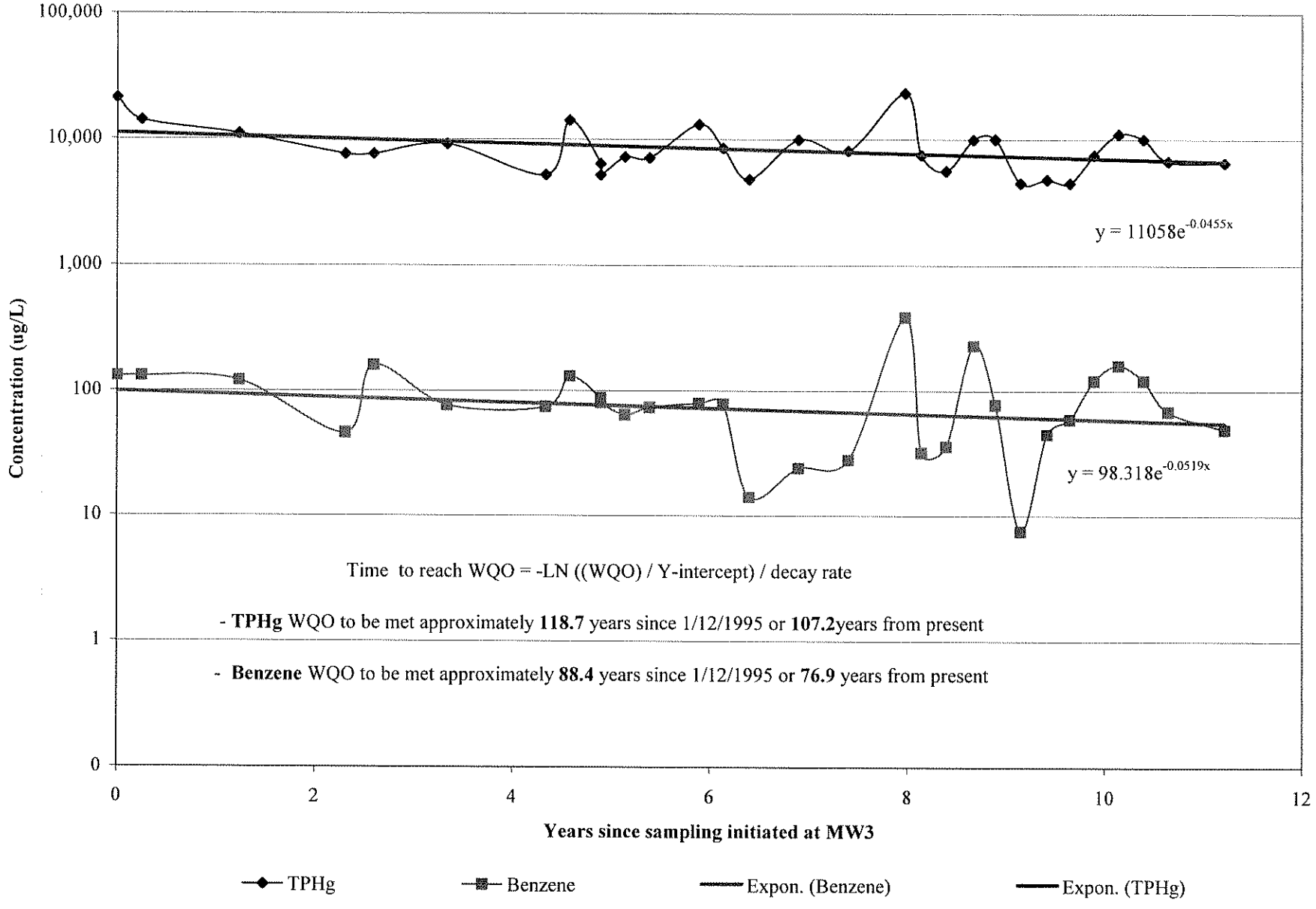


CHART 3. TPHG AND BENZENE GROUNDWATER CONCENTRATIONS IN MONITORING WELL MW3
Blue Lake Market, 410 Railroad Avenue, Blue Lake, CA
LOP No. 12229; LACO No. 3888.02



Attachment 1

SHN CONSULTING ENGINEERS & GEOLOGISTS, INC.
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RECEIVED
LACO ASSOCIATES
APR 03 2006
BY:

Fax Cover Sheet

Reference: 097309
Date: 4-3-06
To: Caroline Leverada
Company: LACO Assoc.
Fax #: 707-443-0563
From: AARON Meady
SHN Consulting Engineers & Geologists, Inc.
Fax #: 707/441-8877
Subject: 1st Qtr BLBLW field notes
No. Pages Total: 11

Caroline,

Here the 1st Qtr data field notes. Just send me your date when you get it. Thanks.

See you Tuesday night

Aaron

The contents of this document may be sensitive. If you have received this fax by mistake, if you have any questions, or if you did not receive all pages of the fax, please telephone 707/441-8855.

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DAILY FIELD REPORT

JOB NO 097309
Page of

PROJECT NAME: Blue Lake Belting & Leather	CLIENT/OWNER: Charles Huntzinger	DAILY FIELD REPORT SEQUENCE NO
GENERAL LOCATION OF WORK: Blue Lake Ca.	OWNER/CLIENT REPRESENTATIVE: Charles Huntzinger	DATE: 3/16/06 / DAY OF WEEK: Thur
TYPE OF WORK: Sampling	WEATHER: Rain	PROJECT ENGINEER/ SUPERVISOR: Mike Foget
SOURCE & DESCRIPTION OF FILL MATERIAL	KEY PERSONS CONTACTED	TECHNICIAN: Dustin Tibbets

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

0905 On site. Open up all wells taking water levels and DO readings.
1240 Purging MW-106 with a disposable bailer. All purge water was caught in 5gal. buckets.
1325 Sampled MW-106 with it's bailer. Locked up well. MW-106
1338 Purging MW-101 with a disposable bailer. All purge water was caught in 5gal. buckets.
1410 Sampled MW-101 with it's bailer. Locked up well. MW-101
1415 Purging MW-102 with a disposable bailer. All purge water was caught in 5gal. buckets.
1445 Sampled MW-102 with it's bailer. Locked up well. MW-102
1457 Purging MW-105 with a disposable bailer. All purge water was caught in 5gal. buckets.
1525 Sampled MW-105 with it's bailer. ~~All purge water was caught in 5gal. buckets.~~ Locked up well. MW-105
1534 Purging MW-103 with a disposable bailer. All purge water was caught in 5gal. buckets.
1605 Sampled MW-103 with it's bailer. Locked up well. MW-103
1610 Clean and loaded up.
1625 Off site.
0912 3/17/06 On site, set up.
0928 Purging MW-3 with a disposable bailer. All purge water was caught in 5gal. buckets.
0955 Sampled MW-3 with it's bailer. Locked up well. MW-3
1006 Purging MW-104 with a disposable bailer. All purge water was caught in 5gal. buckets.
1035 Sampled MW-104 with it's bailer. Locked up well. MW-104
1047 Taking readings from Ozone system.
1112 Off site. Note: All purge and decon water was ~~caught~~ transported to SHN's P.W.S.T. located at 812 W Wabash Ave. 74 gal. total.

COPY GIVEN TO:

REPORTED BY: Dustin Tibbets

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DAILY FIELD REPORT

JOB NO 097309
Page of

PROJECT NAME: Blue Lake Belting & Leather	CLIENT/OWNER: Charles Huntzinger	DAILY FIELD REPORT SEQUENCE NO	
GENERAL LOCATION OF WORK: Blue Lake Ca.	OWNER/CLIENT REPRESENTATIVE: Charles Huntzinger	DATE: 3/16-17/06	DAY OF WEEK: Thur - Fri
TYPE OF WORK: Sampling	WEATHER: Rain	PROJECT ENGINEER/ SUPERVISOR: Mike Foget	
SOURCE & DESCRIPTION OF FILL MATERIAL	KEY PERSONS CONTACTED	TECHNICIAN	

DESCRIBE EQUIPMENT USED FOR HAULING, SPREADING, WATERING, CONDITIONING, & COMPACTING

	Purge	Sampled
MW-101	Yes	Yes
MW-102	↓	↓
MW-103	↓	↓
MW-104	↓	↓
MW-105	↓	↓
MW-106	↓	↓
MW-3	↓	↓

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REPORTED BY: Dustin Sillet

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Groundwater Elevations

Job No.: 097309 Name: Dustin Tibbets

Client: CHARLES HUNTZINGER Date: 3/16/06

Location: BLUE LAKE, CA Weather: Rain

Sample Location	Time of Reading	Top of Casing Elevation (feet)	Depth To Water (feet)	Water Surface Elevation (feet)
MW101	1004	92.27	6.98	85.29
MW-102	1005	91.19	7.07	84.12
MW-103	1037	91.57	7.31	84.26
MW-104	1039	91.48	6.80	84.68
MW-105	1036	91.32	7.17	84.15
MW-106	1002	88.88	5.05	83.83
MW-3	1041	91.63	7.21	84.42
OBS-1	1042	89.45	6.96	82.49
OBS-2	1045	91.29	7.51	83.78

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Water Sampling Data Sheet

Project Name: Blue Lake Belting & Leather
Date/Time: 3/16/06
Project No.: 097309
Sampler Name: Dustin Tibbets
Location: Blue Lake Ca.
Sample Type: Water
Well #: MW-106
Weather: Rain
Hydrocarbon Thickness/Depth (feet):
Key Needed: Dolphin

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
15.00	-	5.05	=	9.95	x	.163	=	1.59 X 3 = 4.78

Time	11.7 DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°F)	pH	Water Removed (gal)	Comments
1105	1.26						0 gal.	
1250		200	186				.25 gal	
1255				128	53.8°	5.97	1.75 gal.	
1300	No flow			118	52.8°	6.31	3.5 gal.	
1304	thru cell			115		6.43	5 gal	
1308				117	53.5°	6.50	6.5 gal.	
1314				115	53.3°	6.61	8 gal.	

Purge Method: Bailer
Total Volume Removed: 8 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-106	3	HCL	NCL	TPHg/BTEX

Well Condition:

Remarks:

Recharge to 4.70 at sample time - 1325

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Water Sampling Data Sheet

Project Name: Blue Lake Belting + Leather
Date/Time: 3/16/06
Project No.: 097309
Sampler Name: Dustin Tibbots
Location: Blue Lake Ca.
Sample Type: Water
Well #: MW-101
Weather: Rain
Hydrocarbon Thickness/Depth (feet):
Key Needed: Dolphin

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
13.00	-	6.98	=	6.02	x	.163	=	.96 X 3 = 2.89

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°F)	pH	Water Removed (gal)	Comments
~~1143~~ 1122	~~3.02~~ 5.39						0 gal.	
1341		20	164				.25 gal.	
1344				129	54.7°	5.93	1 gal	
1347	No flow			136	54.8°	6.19	2 gal	
1351	thru cell			135	54.9°	6.34	3 gal.	
1354				130	55.2°	6.41	4 gal.	
1357				135	55.1°	6.50	5 gal.	

Purge Method: Bailer
Total Volume Removed: 5 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-101	3	HCL	NCL	TPHG/BTEX

Well Condition:

Remarks:

Recharge to 6.55 at sample time. - 1410

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Water Sampling Data Sheet

Project Name: Blue Lake Belting & Leather
Date/Time: 3/16/06
Project No.: 097309
Sampler Name: Destin Tibbets
Location: Blue Lake Ca.
Sample Type: Water
Well #: MW-102
Weather: Rain
Hydrocarbon Thickness/Depth (feet):
Key Needed: Dolphin

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
19.50	-	7.07	=	12.43	x	.163	=	1.99 x 3 = 5.97

Time	15.4 DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°F)	pH	Water Removed (gal)	Comments
1113	302						0 gal.	
1423		20	172				.25 gal.	
1427				107	54.1°	6.55	2 gal.	
1431	No flow			107	54.1°	6.58	4 gal.	
1436	thru cell			106	54.1°	6.64	6 gal.	

Purge Method: Bailer
Total Volume Removed: 6 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-102	3	HCL	NCL	TPHG/BTEX

Well Condition:

Remarks:

Recharge to 6.65 at sample time. - 1445

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Water Sampling Data Sheet

Project Name: Blue Lake Belting + Leather
Date/Time: 3/16/06
Project No.: 097309
Sampler Name: Dustin Tibbets
Location: Blue Lake Ca.
Sample Type: Water
Well #: MW-105
Weather: Rain
Hydrocarbon Thickness/Depth (feet):
Key Needed: Delphin

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
15.10	-	7.17	=	7.93	x	.163	=	1.27 x 3 = 3.81

Time	12.46 DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°F)	pH	Water Removed (gal)	Comments
1139	1.25						0 gal.	
1457		95	-78				.25 gal.	
1501				230	55.1°	6.22	1.5 gal	
1505	No flow			236	55.2°	8.*	2.75 gal.	
1511	thru cell			224	55.2°	6.52	4 gal.	
1515				215	55.2°	6.57	5.25 gal.	

Purge Method: Bailer
Total Volume Removed: 5.25 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-105	3	HCL	NCL	TPHg/BTEX

Well Condition:

* Remarks: Ph is sticking
Recharge to : at sample time.- 1525

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Water Sampling Data Sheet

Project Name: Blue Lake Belting + Leather
Date/Time: 3/16/06
Project No.: 097309
Sampler Name: Dustin Tibbetts
Location: Blue Lake Ca.
Sample Type: Water
Well #: MW-103
Weather: Rain
Hydrocarbon Thickness/Depth (feet):
Key Needed: Dolphin

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
18.65	-	7.31	=	11.34	x	~~.163~~ .653	=	7.41 X 3 = 22.22

Time	H.T. DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°F)	pH	Water Removed (gal)	Comments
1132	1.39						0 gal.	
1541		25	-31				25 gal.	
1546				100	55.3°	6.65	8 gal.	
1551	No flow			104	57.1°	6.59	15 gal.	
1556	thru cell			115	57.2°	6.61	22.5 gal.	

Purge Method: Bailer
Total Volume Removed: 22.5 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-103	3	HCL	NCL	TPHG/BTEX

Well Condition:

Remarks:

Recharge to 6.68 at sample time. - 16.05

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Water Sampling Data Sheet

Project Name: Blue Lake Belting & Leather
Date/Time: 3/[redacted] 3/13/06
Project No.: 097309
Sampler Name: Dustin Tibbets
Location: Blue Lake Ca.
Sample Type: Water
Well #: MW-3
Weather: Rain
Hydrocarbon Thickness/Depth (feet):
Key Needed: Delphin

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
14.70	-	7.21	=	7.49	x	.163	=	1.20 X 3 = 3.60

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°F)	pH	Water Removed (gal)	Comments
1143	1.27						0 gal.	
0930		25	-16				.25 gal.	
0933				141	55.6°	6.20	1.25 gal	
0936	No flow			143	56.8°	6.35	2.5 gal	
0941	thru cell			143	55.9°	6.48	3.75 gal	
0945				138	56.6°	6.43	5 gal.	

Purge Method: Bailer
Total Volume Removed: 5 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-3	3	HCL	NCL	TPHg/BTEX

Well Condition:

Remarks:

Recharge to 6.90 at sample time. - 0955

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Water Sampling Data Sheet

Project Name: Blue Lake Belting & Leather
Date/Time: 3/16/06
Project No.: 097309
Sampler Name: Dustin Tibbets
Location: Blue Lake Ca.
Sample Type: Water
Well #: MW-104
Weather: Rain
Hydrocarbon Thickness/Depth (feet):
Key Needed: Dolphin

Total Well Depth (feet)	-	Initial Depth to Water (feet)	=	Height of Water Column (feet)	x	0.163 gal/ft (2-inch well) / 0.653 gal/ft (4-inch well)	=	1 Casing Volume (gal)
16.55	-	6.80	=	9.75	x	.653	=	6.37 X 3 = 19.10

Time	DO (ppm)	CO_2 (ppm)	ORP (mV)	EC (uS/cm)	Temp (°F)	pH	Water Removed (gal)	Comments
1151	9.10						0 gal.	
1010		15	109				~~25 gal.~~	100 gal.
1015				127	58.2°	6.92	6 gal.	
1019	No flow			131	58.3°	6.82	8 gal	
1026	thru cell			133	58.4°	6.83	20 gal.	

Purge Method: Bailer
Total Volume Removed: 20 (gal)

Laboratory Information

Sample ID	# & Type of Containers	Preservative / Type	Laboratory	Analyses
MW-104	3	HCL	NCL	TPHG/BTEX

Well Condition:

Remarks:

Recharge to 7.23 at sample time. - 1035

NORTH COAST LABORATORIES LTD.

March 24, 2006

SHN Consulting Engineers and Geologists
812 West Wabash Avenue
Eureka, CA 95501

Order No.: 0603471
Invoice No.: 57119
PO No.:
ELAP No. 1247-Expires July 2006

Attn: Mike Foget

RE: 097309 Blue Lake Belting and Leather

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	MW-106
02A	MW-101
03A	MW-102
04A	MW-105
05A	MW-103
06A	MW-3
07A	MW-104

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Laboratory Supervisor(s) | QA Unit | Jesse G. Chaney, Jr. Laboratory Director

5680 West End Road • Arcata California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Printed on Recycled Paper

CLIENT: SHN Consulting Engineers and Geologists
Project: 097309 Blue Lake Belting and Leather
Lab Order: 0603471

CASE NARRATIVE

TPH as Gasoline:
Samples MW-105, MW-103, MW-3 and MW-104 appear to be similar to gasoline but certain peak ratios are not that of a fresh gasoline standard. The reported results represent the amount of material in the gasoline range.

BTEX:
Some reporting limits were raised for sample MW-105 due to matrix interference.

Samples MW-105, MW-3 and MW-104 were diluted and the reporting limits were raised additionally due to matrix interference.

Sample MW-103 was reported as ND with a dilution for MTBE due to matrix interference.

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Date: 24-Mar-06
WorkOrder: 0603471

ANALYTICAL REPORT

Client Sample ID: MW-106 **Received:** 3/17/06 **Collected:** 3/16/06 13:25
Lab ID: 0603471-01A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		3/23/06
Benzene	0.85	0.50	µg/L	1.0		3/23/06
Toluene	0.58	0.50	µg/L	1.0		3/23/06
Ethylbenzene	ND	0.50	µg/L	1.0		3/23/06
m,p-Xylene	ND	0.50	µg/L	1.0		3/23/06
o-Xylene	ND	0.50	µg/L	1.0		3/23/06
Surrogate: Cis-1,2-Dichloroethylene	83.8	85-115	% Rec	1.0		3/23/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		3/23/06

Client Sample ID: MW-101 **Received:** 3/17/06 **Collected:** 3/16/06 14:10
Lab ID: 0603471-02A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		3/23/06
Benzene	ND	0.50	µg/L	1.0		3/23/06
Toluene	ND	0.50	µg/L	1.0		3/23/06
Ethylbenzene	ND	0.50	µg/L	1.0		3/23/06
m,p-Xylene	ND	0.50	µg/L	1.0		3/23/06
o-Xylene	ND	0.50	µg/L	1.0		3/23/06
Surrogate: Cis-1,2-Dichloroethylene	96.2	85-115	% Rec	1.0		3/23/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		3/23/06

Date: 24-Mar-06
WorkOrder: 0603471

ANALYTICAL REPORT

Client Sample ID: MW-102 **Received:** 3/17/06 **Collected:** 3/16/06 14:45
Lab ID: 0603471-03A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		3/23/06
Benzene	ND	0.50	µg/L	1.0		3/23/06
Toluene	ND	0.50	µg/L	1.0		3/23/06
Ethylbenzene	ND	0.50	µg/L	1.0		3/23/06
m,p-Xylene	ND	0.50	µg/L	1.0		3/23/06
o-Xylene	ND	0.50	µg/L	1.0		3/23/06
Surrogate: Cis-1,2-Dichloroethylene	86.5	85-115	% Rec	1.0		3/23/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		3/23/06

Client Sample ID: MW-105 **Received:** 3/17/06 **Collected:** 3/16/06 15:25
Lab ID: 0603471-04A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	15	µg/L	1.0		3/23/06
Benzene	3.5	0.50	µg/L	1.0		3/23/06
Toluene	ND	60	µg/L	20		3/23/06
Ethylbenzene	6.7	0.50	µg/L	1.0		3/23/06
m,p-Xylene	2.3	0.50	µg/L	1.0		3/23/06
o-Xylene	1.0	0.50	µg/L	1.0		3/23/06
Surrogate: Cis-1,2-Dichloroethylene	98.9	85-115	% Rec	20		3/23/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	1,800	50	µg/L	1.0		3/23/06

Date: 24-Mar-06
WorkOrder: 0603471

ANALYTICAL REPORT

Client Sample ID: MW-103 **Received:** 3/17/06 **Collected:** 3/16/06 16:05
Lab ID: 0603471-05A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	30	µg/L	10		3/23/06
Benzene	23	5.0	µg/L	10		3/23/06
Toluene	26	5.0	µg/L	10		3/23/06
Ethylbenzene	36	5.0	µg/L	10		3/23/06
m,p-Xylene	21	5.0	µg/L	10		3/23/06
o-Xylene	9.1	5.0	µg/L	10		3/23/06
Surrogate: Cis-1,2-Dichloroethylene	111	85-115	% Rec	10		3/23/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	2,600	500	µg/L	10		3/23/06

Client Sample ID: MW-3 **Received:** 3/17/06 **Collected:** 3/17/06 9:55
Lab ID: 0603471-06A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	100	µg/L	10		3/24/06
Benzene	49	5.0	µg/L	10		3/24/06
Toluene	250	50	µg/L	100		3/23/06
Ethylbenzene	140	50	µg/L	100		3/23/06
m,p-Xylene	360	50	µg/L	100		3/23/06
o-Xylene	120	50	µg/L	100		3/23/06
Surrogate: Cis-1,2-Dichloroethylene	101	85-115	% Rec	100		3/23/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	6,500	500	µg/L	10		3/24/06

Date: 24-Mar-06
WorkOrder: 0603471

ANALYTICAL REPORT

Client Sample ID: MW-104 **Received:** 3/17/06 **Collected:** 3/17/06 10:35
Lab ID: 0603471-07A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	160	µg/L	10		3/23/06
Benzene	43	5.0	µg/L	10		3/23/06
Toluene	75	5.0	µg/L	10		3/23/06
Ethylbenzene	130	50	µg/L	100		3/23/06
m,p-Xylene	230	50	µg/L	100		3/23/06
o-Xylene	37	5.0	µg/L	10		3/23/06
Surrogate: Cis-1,2-Dichloroethylene	107	85-115	% Rec	100		3/23/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	7,400	500	µg/L	10		3/23/06

North Coast Laboratories, Ltd.

Date: 24-Mar-06

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 0603471
Project: 097309 Blue Lake Belting and Leather

QC SUMMARY REPORT

Method Blank

Sample ID: **MB-3/22/06** Batch ID: **R40465** Test Code: **BTXEW** Units: **µg/L** Analysis Date: **3/23/06 3:58:09 AM** Prep Date:
Client ID: Run ID: **ORGC8_060322C** SeqNo: **581393**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	ND	3.0									
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
m,p-Xylene	ND	0.50									
o-Xylene	ND	0.50									
Cis-1,2-Dichloroethylene	0.944	0.10	1.00	0	94.4%	85	115	0			

Sample ID: **MB-3/22/06** Batch ID: **R40463** Test Code: **TPHCGW** Units: **µg/L** Analysis Date: **3/23/06 3:58:09 AM** Prep Date:
Client ID: Run ID: **ORGC8_060322B** SeqNo: **581343**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	ND	50									

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

North Coast Laboratories, Ltd.

Date: 24-Mar-06

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 0603471
Project: 097309 Blue Lake Belting and Leather

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID: **LCS-06185** Batch ID: **R40465** Test Code: **BTXEW** Units: **µg/L** Analysis Date: **3/22/06 11:56:11 PM** Prep Date:
Client ID: Run ID: **ORGC8_060322C** SeqNo: **581390**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	39.26	3.0	40.0	0	98.2%	85	115	0			
Benzene	4.782	0.50	5.00	0	95.6%	85	115	0			
Toluene	5.049	0.50	5.00	0	101%	85	115	0			
Ethylbenzene	5.004	0.50	5.00	0	100%	85	115	0			
m,p-Xylene	10.08	0.50	10.0	0	101%	85	115	0			
o-Xylene	5.140	0.50	5.00	0	103%	85	115	0			
Cis-1,2-Dichloroethylene	1.08	0.10	1.00	0	107%	85	115	0			

Sample ID: **LCSD-06185** Batch ID: **R40465** Test Code: **BTXEW** Units: **µg/L** Analysis Date: **3/23/06 12:30:49 AM** Prep Date:
Client ID: Run ID: **ORGC8_060322C** SeqNo: **581391**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	38.59	3.0	40.0	0	96.5%	85	115	39.3	1.71%	15	
Benzene	4.687	0.50	5.00	0	93.7%	85	115	4.78	2.00%	15	
Toluene	4.857	0.50	5.00	0	97.1%	85	115	5.05	3.89%	15	
Ethylbenzene	4.901	0.50	5.00	0	98.0%	85	115	5.00	2.10%	15	
m,p-Xylene	9.892	0.50	10.0	0	98.9%	85	115	10.1	1.88%	15	
o-Xylene	5.048	0.50	5.00	0	101%	85	115	5.14	1.80%	15	
Cis-1,2-Dichloroethylene	1.15	0.10	1.00	0	115%	85	115	1.08	6.55%	15	

Sample ID: **LCS-06186** Batch ID: **R40463** Test Code: **TPHCGW** Units: **µg/L** Analysis Date: **3/23/06 1:40:05 AM** Prep Date:
Client ID: Run ID: **ORGC8_060322B** SeqNo: **581340**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	510.8	50	500	0	102%	85	115	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: SHN Consulting Engineers and Geologists
Work Order: 0603471
Project: 097309 Blue Lake Belting and Leather

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID: **LCSD-06186** Batch ID: **R40463** Test Code: **TPHCGW** Units: **µg/L** Analysis Date: **3/23/06 2:14:37 AM** Prep Date:

Client ID: Run ID: **ORGC8_060322B** SeqNo: **581341**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	502.0	50	500	0	100%	85	115	511	1.75%	15	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

NORTH COAST LABORATORIES LTD.
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707-822-4649 Fax 707-822-6831

Chain of Custody

#0603471

LABORATORY NUMBER:

Attention: Mike Foget
Results & Invoice to: SHN
Address: 812 West Wabash Avenue
Eureka, CA 95501
Phone: 441-8855
Copies of Report to:
Sampler (Sign & Print): Dusti Sibbet

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☑ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☐ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION
Project Number: 097309
Project Name: Blue lake Belting & leather
Purchase Order Number:

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	CONTAINER	PRESERVATIVE	ANALYSIS: TPHd/BTEX
	MW-106	3/16/06	1325	SW	9	b	✓
	MW-101	↓	1410	↓	↓	↓	↓
	MW-102	↓	1445	↓	↓	↓	↓
	MW-105	↓	1525	↓	↓	↓	↓
	MW-103	↓	1605	↓	↓	↓	↓
	MW-3	3/17/06	0955	↓	↓	↓	↓
	MW-104	↓	1035	↓	↓	↓	↓

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
EDF
Cold intact

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
Dusti Sibbet	3/17/06 1120	Kelly Thompson	3/17/06 1120

SAMPLE DISPOSAL
☐ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

Attachment 2

KEY TO ABBREVIATIONS
Blue Lake Market, 410 Railroad Avenue, Blue Lake
LOP No. 12229; LACO Project No. 3888.02

KEY TO ABBREVIATIONS		
AL	--	action limit; a non-enforceable California drinking water standard; shown in parentheses.
BTEX	--	Benzene; Toluene; Ethylbenzene; m,p- and o- Xylenes
CO_2	--	Carbon dioxide
COC	--	Chain of custody
CRWQCB	--	California Regional Water Quality Control Board
DHP	--	Down-hole-pump (submersible pump)
DIPE	--	Di-isopropyl Ether
DO	--	Dissolved Oxygen
DTW	--	Depth-to-Water
ECw	--	Electrical Conductivity in water
ETBE	--	Ethyl Tertiary Butyl Ether
FP	--	Free Product
MCL	--	Maximum contaminant level, an enforceable California drinking water standard.
MTBE	--	Methyl Tertiary Butyl Ether
ND<50	--	non-detect at reporting limits shown
NOT ACTIVE	--	Sample not analyzed for parameter during current sampling event
ORP	--	Oxidation Reduction Potential
PCE	--	Perchloroethene same as tetrachloroethene
pH	--	Potential of hydrogen
SGC	--	Silica gel cleanup
T	--	Temperature
TAME	--	Tertiary Amyl Methyl Ether
TBA	--	Tetiary Butyl Alcohol
TBF	--	Tertiary Butyl Formate
Tot	--	Taste and odor threshold, a non-enforceable California drinking water standard.
TPHg	--	Total Petroleum Hydrocarbons as Gasoline
µg/L	--	Micro grams per liter (parts per billion)
---	--	Not analyzed or not available

Note: Not all abbreviations in this key are used in this report.

[1] The laboratory noted that the sample did not have typical pattern of fresh gasoline.
All gasoline results reported represent the amount of material in the gasoline range of molecular weights only.

[2] The laboratory noted that some reporting limits was raised due to matrix interference.

[3] The laboratory noted that some results were reported ND with a dilution due to matrix interference.

[4] The laboratory noted that the surrogate for the sample was above the upper acceptance limit due to matrix interference.

[5] The laboratory noted that the sample is similar to gasoline but certain peak ratios are not that of a fresh gasoline standard.
The reported results represent the amount of material in the gasoline range.

[6] The laboratory noted that the sample was diluted and the reporting limits were raised additionally due to matrix interference.

[7] The laboratory noted that the surrogate for the sample could not be quantified due to a large amount of early eluting material.

[8] The laboratory noted that the sample did not present a peak pattern consistent with that of gasoline.
The reported results represent the amount of meterial in the gasoline range.

[9] The laboratory noted that the surrogate for the sample was reported as not quantifiable (NQ) due to an auto-injector malfunction.

[10] The laboratory noted that the sample was initially analyzed within the 14 day holding time, and additional dilutions for some analtyes were required and were analyzed 1 day outside of the holding time.

[11] The laboratory noted that the sample includes the reported gasoline components in addition to other peaks in the gasoline range.

[12] The laboratory noted that the surrogate recoveries were below the lower acceptance limits for the sample. The response of the reporting limit standard was such that the analytes would have been detected even with the low recoveries; therefore the data were accepted.

Attachment 3

LACO ASSOCIATES
CONSULTING ENGINEERS
21 West Fourth Street, Eureka, CA 95501
TEL 707.443.5054
FAX 707.443.0553

Project Name: BLUE LAKE MARKET
Project No.: 3888.01 2
Date: 3-30-06
Golbal ID No.: T0602300170
PM: CSM

Tech: RLD
Mob/Demob time: 30/150
Travel time: 1.0
Time on site: 10:15
Time off site: 1:15
Mileage: 34

WELL No.:	MW1		MW2		MW4		MW5		MW3	
DIAMETER (in)	2.0		2.0		1.5		1.5		2.0	
SCREENED INTERVAL (ft)	5-15		4-14		10-15		10-15		5-15	
DEPTH TO WATER (ft)	5.90		7.19		6.93		6.07		7.65	
	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
FIELD INTRINSICS: pH										
FIELD INTRINSICS: TEMP (°C)										
FIELD INTRINSICS: Ecw (µmohs)										
FIELD INTRINSICS: ORP (mV)	-95	UR	-97	-72	-94	UR	UR	UR		
FIELD INTRINSICS: DO (mg/L)	2.31	0.79	1.75	0.47	1.78	1.15	2.28	110		
FIELD INTRINSICS: OTHER (units)	—		—		—		—			
PURGE: TIME	12:29	12:35	12:03	12:11	11:23	11:31	11:43	11:51		
PURGE: METHOD (DHP/CB/B)	DHP		DHP		DHP		DHP			
PURGE: RATE (Lpm)	0.25		0.25		0.19		0.19			
PURGE: VOLUME (L)	1.5		2.0		1.5		1.5			
PURGE: COLOR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLOUDY CLEAR	CLOUDY CLEAR		
PURGE: ODOR	LIGHT RUBBER LIGHT FUEL LIGHT SULFUR		LIGHT RUBBER MED SULFUR		LIGHT FUEL MED SULFUR		MED-SULFUR LIGHT FUEL			
PURGE: INTAKE DEPTH (FEET)	10.0		10.5		12.5		12.5			
SAMPLE: TIME	12:37		12:13		11:33		11:53			
SAMPLE: METHOD (DHP/CB/B)	DHP		DHP		DHP		DHP			
SAMPLE: ANALYTES	TPHg/BTEX		TPHg/BTEX		TPHg/BTEX		TPHg/BTEX		MEASURE ONLY	
SAMPLE: TOTAL DRAWDOWN (FEET)	0.53		0.31		0.06		—			
SAMPLE: REMARKS	NEW LOCKING CAP 2"		—		—		—			
WELL CONDITION	LOCKING CAP STRIPPED ~~GOOD~~		GOOD		GOOD		GOOD		GOOD	
WASTE DRUMS										

DEPTH MEASUREMENTS ARE REFERENCED TO TOP OF CASING

DHP=DOWN HOLE PUMP CB=CHECK BALL B=BAILER FD=FIELD DUPLICATE MB=METHOD BLANK FF=FIELD FILTERED

LACO ASSOCIATES
CONSULTING ENGINEERS

21 West Fourth Street, Eureka, CA 95501
TEL 707.443.5054
FAX 707.443.0553

Project Name: BLUE LAKE MARKET
Project No.: 3888.01

Tech: RLD
Date: 3-30-06

WELL ID:	METER ACCURACY RANGE				
MW5	+/- 0.2 pH	+/- 0.5 °C	+/- 20 µmohs	+/- 2 mv	+/- 0.3 mg/L
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
11:45	—	—	—	ur	1.41
11:47	—	—	—	ur	1.30
11:49	—	—	—	ur	1.18
11:51	—	—	—	ur	1.10

WELL ID: MW4

TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
11:25	—	—	—	ur	1.64
11:27	—	—	—	ur	1.54
11:29	—	—	—	ur	1.33
11:31	—	—	—	ur	1.15

WELL ID: MW2

TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
12:05	—	—	—	-81	0.91
12:07	—	—	—	-72	0.96
12:09	—	—	—	-71	0.46
12:11	—	—	—	-72	0.47

WELL ID: MW1

TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
12:31	—	—	—	ur	1.25
12:33	—	—	—	ur	1.14
12:35	—	—	—	ur	0.79

WELL ID: —

TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)

WELL ID: —

TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)

LACO ASSOCIATES
CONSULTING ENGINEERS

21 West Fourth Street, Eureka, CA 95501
TEL 707.443.5054
FAX 707.443.0553

Project Name: BLUE LAKE MARKET

Project No.: 3888.01

Tech: RLD

Date: 3-30-06

WELL ID: MW1		WELL ID: MW2		WELL ID: MW3		WELL ID: MW4		WELL ID: MW5		WELL ID:	
TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)
10:20	5.90	10:25	7.19	10:30	7.65	10:40	6.93	10:50	6.07		
11:00	5.90	11:05	7.19	10:55	7.65	11:10	6.93	11:15	6.07		

WELL ID:		WELL ID:		WELL ID:		WELL ID:		WELL ID:		WELL ID:	
TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)

WELL ID:		WELL ID:		WELL ID:		WELL ID:		WELL ID:		WELL ID:	
TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER:

Attention: PAT FOLKINS
Results & Invoice to:
Address: 2020 ARDAGH COURT
EUREKA, CA 95503
Phone:
Copies of Report to: Christine Manhart-LACO
Sampler (Sign & Print): RLD

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☑ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☑ Verbal ☐ By:
Final Report: FAX ☐ Verbal ☐ By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number: 3888.01
Project Name: BLUE LAKE MARKET
Purchase Order Number: task 3035

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	ANALYSIS	CONTAINER	PRESERVATIVE
	3888-MW1-W	3-30-06	AM	GW	TPHg/BTEX	3	9	b
	3888-MW2-W	↓	↑	↓		3		
	3888-MW4-W		↕			3		
	3888-MW5-W		↓			3		
	3888-QCTB-W	↓	PM	↓		1		

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

GEOTRACKER

Cold, intact

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
	3/30/06		3/30/06 1445

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

LACO ASSOCIATES
CONSULTING ENGINEERS
21 West Fourth Street, Eureka, CA 95501
TEL 707.443.5054
FAX 707.443.0553

Project Name: BLUE LAKE MARKET
Project No.: 3888.02
Date: 4-4-06
Golbal ID No.: T0602300170
PM: CSM

Tech: RLD
Mob/Demob time: .25/.25
Travel time: 1.0
Time on site: 11:15
Time off site: 12:45
Mileage: 34

WELL No.:	MW1		MW2		MW4		MW5		MW6	
DIAMETER (in)	2.0		2.0		1.5		1.5		1.5	
SCREENED INTERVAL (ft)	5-15		4-14		10-15		10-15		5-15	
DEPTH TO WATER (ft)	—		—		—		—		8.04	
	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
FIELD INTRINSICS: pH										
FIELD INTRINSICS: TEMP (°C)										
FIELD INTRINSICS: Ecw (µmohs)										
FIELD INTRINSICS: ORP (mV)									89	94
FIELD INTRINSICS: DO (mg/L)									4.16	2.16
FIELD INTRINSICS: OTHER (units)									—	
PURGE: TIME									11:17	11:25
PURGE: METHOD (DHP/CB/B)									DHP	
PURGE: RATE (Lpm)									0.25	
PURGE: VOLUME (L)									2.0	
PURGE: COLOR									CLOUDY CLEAR	TANISH BROWN
PURGE: ODOR									NONE	
PURGE: INTAKE DEPTH (FEET)									10.0	
SAMPLE: TIME									11:27	
SAMPLE: METHOD (DHP/CB/B)									DHP	
SAMPLE: ANALYTES	TPHg/BTEX/MTBE		TPHg/BTEX/MTBE		TPHg/BTEX/MTBE		TPHg/BTEX/MTBE		TPHg/BTEX/MTBE	
SAMPLE: TOTAL DRAWDOWN (FEET)									0.02	
SAMPLE: REMARKS									TRIED TO GET BIT OUT OF WELL. UNSUCCESSFUL	
WELL CONDITION	—		—		—		—		GOOD	
WASTE DRUMS	4 DOT DRUMS ONSITE 2 - PURGE WATER 2 - SOIL									

DEPTH MEASUREMENTS ARE REFERENCED TO TOP OF CASING

DHP=DOWN HOLE PUMP CB=CHECK BALL B=BAILER FD=FIELD DUPLICATE MB=METHOD BLANK FF=FIELD FILTERED

LACO ASSOCIATES
CONSULTING ENGINEERS
21 West Fourth Street, Eureka, CA 95501
TEL 707.443.5054
FAX 707.443.0553

Project Name: BLUE LAKE MARKET
Project No.: 3888.02
Date:
Golbal ID No.: T0602300170
PM: CSM

Tech: RLD
Mob/Demob time: .25/.25
Travel time: 1.0
Time on site: 11:15
Time off site: 12:45
Mileage: 34

WELL No.:	MW3				
DIAMETER (in)	2.0				
SCREENED INTERVAL (ft)	5-15				
DEPTH TO WATER (ft)					

		INITIAL	FINAL								
DEPTH MEASUREMENTS ARE REFERENCED TO TOP OF CASING	FIELD INTRINSICS	pH									
		TEMP (°C)									
		Ecw (µmohs)									
		ORP (mV)									
		DO (mg/L)									
		OTHER (units)									
	PURGE	TIME									
		METHOD (DHP/CB/B)									
		RATE (Lpm)									
		VOLUME (L)									
		COLOR									
		ODOR									
		INTAKE DEPTH (FEET)									
	SAMPLE	TIME									
		METHOD (DHP/CB/B)									
		ANALYTES	MEASURE ONLY								
		TOTAL DRAWDOWN (FEET)									
		REMARKS									
WELL CONDITION											
WASTE DRUMS											

DHP=DOWN HOLE PUMP CB=CHECK BALL B=BAILER FD=FIELD DUPLICATE MB=METHOD BLANK FF=FIELD FILTERED

LACO ASSOCIATES
CONSULTING ENGINEERS

21 West Fourth Street, Eureka, CA 95501
TEL 707.443.5054
FAX 707.443.0553

Project Name: BLUE LAKE MARKET
Project No.: 3889.02

Tech: RLD
Date: 4-4-06

WELL ID:	METER ACCURACY RANGE				
MW6	+/- 0.2 pH	+/- 0.5 °C	+/- 20 µmohs	+/- 2 mv	+/- 0.3 mg/L
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
11:19	—	—	—	89	3.03
11:21	—	—	—	90	2.87
11:23	—	—	—	93	2.50
11:25	—	—	—	94	2.16

WELL ID: —					
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)

WELL ID: —					
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)

WELL ID: —					
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)

WELL ID: —					
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)

WELL ID: —					
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)

WELL ID: —					
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)

LACO ASSOCIATES
CONSULTING ENGINEERS

21 West Fourth Street, Eureka, CA 95501
TEL 707.443.5054
FAX 707.443.0553

Project Name: BLUE LAKE MARKET

Project No.: 3838.02

Tech: RLD

Date: 4-4-06

WELL ID: MW6		WELL ID:		WELL ID:		WELL ID:		WELL ID:		WELL ID:	
TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)
11:00	8.04										
11:10	8.04										

WELL ID:		WELL ID:		WELL ID:		WELL ID:		WELL ID:		WELL ID:	
TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)

WELL ID:		WELL ID:		WELL ID:		WELL ID:		WELL ID:		WELL ID:	
TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)

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5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER:

Attention: PAT FOLKINS
Results & Invoice to:
Address: 2020 ARDAGH COURT
EUREKA, CA 95503
Phone:
Copies of Report to: Christine Manhart-LACO
Sampler (Sign & Print): RLD

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☑ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☑ Verbal ☐ By:
Final Report: FAX ☐ Verbal ☐ By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number: 3888.02
Project Name: BLUE LAKE MARKET
Purchase Order Number: task 3035

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	PRESERVATIVE	CONTAINER	ANALYSIS: TPHg/BTEX/MTBE
		4-4-06	AM	GW	b	9	
	3888-MW6-W						3
	3888-QCTB-W						1

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

GEOTRACKER

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

Attachment 4

NORTH COAST LABORATORIES LTD.

April 17, 2006

Pvt. cust. paying on pickup

,

Attn: Pat Folkins

RE: 3888.01 Blue Lake Market

Order No.: 0603777
Invoice No.: 57622
PO No.: 3035
ELAP No. 1247-Expires July 2006

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	3888-MW1-W
02A	3888-MW-2-W
03A	3888-MW-4-W
04A	3888-MW-5-W
05A	3888-QCTB-W

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Callun Blackstone — Laboratory Supervisor(s)

T. Sherman — QA Unit

Jesse G. Chaney, Jr.
Laboratory Director

5680 West End Road • Arcata California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Printed on Recycled Paper

North Coast Laboratories, Ltd. **Date:** *17-Apr-06*

CLIENT: Pvt. cust. paying on pickup
Project: 3888.01 Blue Lake Market
Lab Order: 0603777

CASE NARRATIVE

Gasoline Components/Additives:
Samples 3888-MW-4-W and 3888-MW-5-W appear to be similar to gasoline but certain peak ratios are not that of a fresh gasoline standard. The reported results represent the amount of material in the gasoline range.

The gasoline values for samples 3888-MW-1-W and 3888-MW-2-W include the reported gasoline components and additives in addition to other peaks in the gasoline range.

NORTH COAST LABORATORIES
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Date: 17-Apr-06
WorkOrder: 0603777

ANALYTICAL REPORT

Client Sample ID: 3888-MW1-W **Received:** 3/30/06 **Collected:** 3/30/06 0:00
Lab ID: 0603777-01A

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1.0		4/13/06
Benzene	9.3	0.50	µg/L	1.0		4/13/06
Toluene	1.6	0.50	µg/L	1.0		4/13/06
Ethylbenzene	4.1	0.50	µg/L	1.0		4/13/06
m,p-Xylene	3.2	0.50	µg/L	1.0		4/13/06
o-Xylene	0.64	0.50	µg/L	1.0		4/13/06
Surrogate: 1,4-Dichlorobenzene-d4	88.7	80.8-139	% Rec	1.0		4/13/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	1,900	50	µg/L	1.0		4/13/06

Client Sample ID: 3888-MW-2-W **Received:** 3/30/06 **Collected:** 3/30/06 0:00
Lab ID: 0603777-02A

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1.0		4/13/06
Benzene	0.69	0.50	µg/L	1.0		4/13/06
Toluene	ND	0.50	µg/L	1.0		4/13/06
Ethylbenzene	8.0	0.50	µg/L	1.0		4/13/06
m,p-Xylene	15	0.50	µg/L	1.0		4/13/06
o-Xylene	2.1	0.50	µg/L	1.0		4/13/06
Surrogate: 1,4-Dichlorobenzene-d4	96.1	80.8-139	% Rec	1.0		4/13/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	1,200	50	µg/L	1.0		4/13/06

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Printed on Recycled Paper

Date: 17-Apr-06
WorkOrder: 0603777

ANALYTICAL REPORT

Client Sample ID: 3888-MW-4-W **Received:** 3/30/06 **Collected:** 3/30/06 0:00
Lab ID: 0603777-03A

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1.0		4/13/06
Benzene	19	0.50	µg/L	1.0		4/13/06
Toluene	4.5	0.50	µg/L	1.0		4/13/06
Ethylbenzene	50	0.50	µg/L	1.0		4/13/06
m,p-Xylene	58	0.50	µg/L	1.0		4/13/06
o-Xylene	5.1	0.50	µg/L	1.0		4/13/06
Surrogate: 1,4-Dichlorobenzene-d4	93.1	80.8-139	% Rec	1.0		4/13/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	1,300	50	µg/L	1.0		4/13/06

Client Sample ID: 3888-MW-5-W **Received:** 3/30/06 **Collected:** 3/30/06 0:00
Lab ID: 0603777-04A

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1.0		4/13/06
Benzene	110	25	µg/L	50		4/13/06
Toluene	22	0.50	µg/L	1.0		4/13/06
Ethylbenzene	97	25	µg/L	50		4/13/06
m,p-Xylene	140	0.50	µg/L	1.0		4/13/06
o-Xylene	14	0.50	µg/L	1.0		4/13/06
Surrogate: 1,4-Dichlorobenzene-d4	91.1	80.8-139	% Rec	1.0		4/13/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	3,700	50	µg/L	1.0		4/13/06

NORTH COAST LABORATORIES
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Printed on Recycled Paper

Date: 17-Apr-06
WorkOrder: 0603777

ANALYTICAL REPORT

Client Sample ID: 3888-QCTB-W **Received:** 3/30/06 **Collected:** 3/30/06 0:00
Lab ID: 0603777-05A

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1.0		4/13/06
Benzene	ND	0.50	µg/L	1.0		4/13/06
Toluene	ND	0.50	µg/L	1.0		4/13/06
Ethylbenzene	ND	0.50	µg/L	1.0		4/13/06
m,p-Xylene	ND	0.50	µg/L	1.0		4/13/06
o-Xylene	ND	0.50	µg/L	1.0		4/13/06
Surrogate: 1,4-Dichlorobenzene-d4	98.6	80.8-139	% Rec	1.0		4/13/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	ND	50	µg/L	1.0		4/13/06

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North Coast Laboratories, Ltd.

Date: 17-Apr-06

CLIENT: Pvt. cust. paying on pickup
Work Order: 0603777
Project: 3888.01 Blue Lake Market

QC SUMMARY REPORT

Method Blank

Sample ID **MB-4/12/06** Batch ID: **R40806** Test Code: **8260OXYW** Units: **µg/L** Analysis Date **4/13/06 1:22:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_060412A** SeqNo: **586131**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	1.0									
Benzene	ND	0.50									
Toluene	0.08988	0.50									J
Ethylbenzene	ND	0.50									
m,p-Xylene	0.3296	0.50									J
o-Xylene	ND	0.50									
1,4-Dichlorobenzene-d4	0.969	0.10	1.00	0	96.9%	81	139	0			

Sample ID **MB-4/12/06** Batch ID: **R40811** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **4/13/06 1:22:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_060412B** SeqNo: **586226**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	28.07	50									J

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

North Coast Laboratories, Ltd.

Date: 17-Apr-06

CLIENT: Pvt. cust. paying on pickup
Work Order: 0603777
Project: 3888.01 Blue Lake Market

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS-06227** Batch ID: **R40806** Test Code: **8260OXYW** Units: **µg/L** Analysis Date **4/12/06 11:40:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_060412A** SeqNo: **586130**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	18.42	1.0	20.0	0	92.1%	80	120	0			
Benzene	19.44	0.50	20.0	0	97.2%	78	117	0			
Toluene	19.96	0.50	20.0	0	99.8%	80	120	0			
Ethylbenzene	19.33	0.50	20.0	0	96.7%	80	120	0			
m,p-Xylene	40.11	0.50	40.0	0	100%	80	120	0			
o-Xylene	21.18	0.50	20.0	0	106%	80	120	0			
1,4-Dichlorobenzene-d4	1.00	0.10	1.00	0	100%	81	139	0			

Sample ID **LCSD-06227** Batch ID: **R40806** Test Code: **8260OXYW** Units: **µg/L** Analysis Date **4/13/06 6:03:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_060412A** SeqNo: **586141**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	17.20	1.0	20.0	0	86.0%	80	120	18.4	6.87%	20	
Benzene	19.29	0.50	20.0	0	96.4%	78	117	19.4	0.800%	20	
Toluene	20.20	0.50	20.0	0	101%	80	120	20.0	1.21%	20	
Ethylbenzene	19.04	0.50	20.0	0	95.2%	80	120	19.3	1.54%	20	
m,p-Xylene	39.71	0.50	40.0	0	99.3%	80	120	40.1	0.999%	20	
o-Xylene	20.18	0.50	20.0	0	101%	80	120	21.2	4.84%	20	
1,4-Dichlorobenzene-d4	1.04	0.10	1.00	0	104%	81	139	1.00	3.56%	20	

Sample ID **LCS-06228** Batch ID: **R40811** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **4/13/06 12:31:00 PM** Prep Date
Client ID: Run ID: **ORGCMS3_060412B** SeqNo: **586225**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	973.6	50	1,000	0	97.4%	80	120	0			

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Pvt. cust. paying on pickup
Work Order: 0603777
Project: 3888.01 Blue Lake Market

QC SUMMARY REPORT
Laboratory Control Spike Duplicate

Sample ID **LCSD-06228** Batch ID: **R40811** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **4/13/06 6:28:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_060412B** SeqNo: **586234**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	948.8	50	1,000	0	94.9%	80	120	974	2.58%	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

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Chain of Custody

#0603777

LABORATORY NUMBER:

Attention: PAT FOLKINS
Results & Invoice to:
Address: 2020 ARDAGH COURT
EUREKA, CA 95503
Phone:
Copies of Report to: Christine Manhart-LACO
Sampler (Sign & Print): RLD

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☑ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☑ Verbal ☐ By:
Final Report: FAX ☐ Verbal ☐ By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number: 3888.01
Project Name: BLUE LAKE MARKET
Purchase Order Number: task 3035

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	ANALYSIS	CONTAINER	PRESERVATIVE	SAMPLE CONDITION/SPECIAL INSTRUCTIONS
	3888-MW1-W	3-30-06	AM	GW	TPHg/BTEX	3	b	GEOTRACKER
	3888-MW2-W	↓	↑	↓		3		
	3888-MW4-W					3		
	3888-MW5-W		↓			3		
	3888-QCTB-W	↓	PM	↓		1		

Cold, intact

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
	3/30/06		3/30/06 1445

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST
LABORATORIES LTD.

April 18, 2006

Pvt. cust. paying on pickup

Order No.: 0604104
Invoice No.: 57659
PO No.: TASK 3035
ELAP No. 1247-Expires July 2006

Attn: Pat Folkins

RE: 3888.02, BLUE LAKE MARKET

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	3888-MW6-W
02A	3888-QCTB-W

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Colleen Blackstone
Laboratory Supervisor(s)

QA Unit

Jesse G. Chaney, Jr.
Laboratory Director

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North Coast Laboratories, Ltd. **Date:** *20-Apr-06*

CLIENT: Pvt. cust. paying on pickup
Project: 3888.02, BLUE LAKE MARKET
Lab Order: 0604104

CASE NARRATIVE

BTEX:
The relative percent difference (RPD) for the laboratory control samples was above the acceptance limit for the surrogate, cis-1,2-dichloroethylene. This indicates that the results could be variable. Since there were no detectable levels of analytes in the samples, the data were accepted.

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Date: 20-Apr-06
WorkOrder: 0604104

ANALYTICAL REPORT

Client Sample ID: 3888-MW6-W **Received:** 4/6/06 **Collected:** 4/4/06 0:00
Lab ID: 0604104-01A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		4/17/06
Benzene	ND	0.50	µg/L	1.0		4/17/06
Toluene	ND	0.50	µg/L	1.0		4/17/06
Ethylbenzene	ND	0.50	µg/L	1.0		4/17/06
m,p-Xylene	ND	0.50	µg/L	1.0		4/17/06
o-Xylene	ND	0.50	µg/L	1.0		4/17/06
Surrogate: Cis-1,2-Dichloroethylene	101	85-115	% Rec	1.0		4/17/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		4/17/06

Client Sample ID: 3888-QCTB-W **Received:** 4/6/06 **Collected:** 4/4/06 0:00
Lab ID: 0604104-02A

Test Name: BTEX **Reference:** EPA 5030/EPA 8021B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
MTBE	ND	3.0	µg/L	1.0		4/16/06
Benzene	ND	0.50	µg/L	1.0		4/16/06
Toluene	ND	0.50	µg/L	1.0		4/16/06
Ethylbenzene	ND	0.50	µg/L	1.0		4/16/06
m,p-Xylene	ND	0.50	µg/L	1.0		4/16/06
o-Xylene	ND	0.50	µg/L	1.0		4/16/06
Surrogate: Cis-1,2-Dichloroethylene	89.7	85-115	% Rec	1.0		4/16/06

Test Name: TPH as Gasoline **Reference:** EPA 5030/GCFID(LUFT)/EPA 8015B

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gas (C6-C14)	ND	50	µg/L	1.0		4/16/06

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North Coast Laboratories, Ltd.

Date: 18-Apr-06

CLIENT: Pvt. cust. paying on pickup
Work Order: 0604104
Project: 3888.02, BLUE LAKE MARKET

QC SUMMARY REPORT

Method Blank

Sample ID **MB-4/16/06** Batch ID: **R40840** Test Code: **BTXEW** Units: **µg/L** Analysis Date **4/16/06 5:26:16 PM** Prep Date
Client ID: Run ID: **ORGC8_060416B** SeqNo: **586642**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	ND	3.0									
Benzene	ND	0.50									
Toluene	0.09431	0.50									J
Ethylbenzene	ND	0.50									
m,p-Xylene	0.1996	0.50									J
o-Xylene	ND	0.50									
Cis-1,2-Dichloroethylene	0.890	0.10	1.00	0	89.0%	85	115	0			

Sample ID **MB-4/16/06** Batch ID: **R40839** Test Code: **TPHCGW** Units: **µg/L** Analysis Date **4/16/06 5:26:16 PM** Prep Date
Client ID: Run ID: **ORGC8_060416A** SeqNo: **586618**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	ND	50									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

North Coast Laboratories, Ltd.

Date: 18-Apr-06

CLIENT: Pvt. cust. paying on pickup
Work Order: 0604104
Project: 3888.02, BLUE LAKE MARKET

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS-06233** Batch ID: **R40840** Test Code: **BTXEW** Units: **µg/L** Analysis Date **4/16/06 2:32:45 PM** Prep Date
Client ID: Run ID: **ORGC8_060416B** SeqNo: **586640**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	39.87	3.0	40.0	0	99.7%	85	115	0			
Benzene	4.893	0.50	5.00	0	97.9%	85	115	0			
Toluene	4.949	0.50	5.00	0	99.0%	85	115	0			
Ethylbenzene	5.012	0.50	5.00	0	100%	85	115	0			
m,p-Xylene	10.04	0.50	10.0	0	100%	85	115	0			
o-Xylene	4.946	0.50	5.00	0	98.9%	85	115	0			
Cis-1,2-Dichloroethylene	1.14	0.10	1.00	0	114%	85	115	0			

Sample ID **LCSD-06233** Batch ID: **R40840** Test Code: **BTXEW** Units: **µg/L** Analysis Date **4/16/06 3:07:47 PM** Prep Date
Client ID: Run ID: **ORGC8_060416B** SeqNo: **586641**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
MTBE	42.44	3.0	40.0	0	106%	85	115	39.9	6.25%	15	
Benzene	4.960	0.50	5.00	0	99.2%	85	115	4.89	1.37%	15	
Toluene	5.009	0.50	5.00	0	100%	85	115	4.95	1.19%	15	
Ethylbenzene	5.052	0.50	5.00	0	101%	85	115	5.01	0.786%	15	
m,p-Xylene	10.17	0.50	10.0	0	102%	85	115	10.0	1.25%	15	
o-Xylene	5.117	0.50	5.00	0	102%	85	115	4.95	3.39%	15	
Cis-1,2-Dichloroethylene	1.16	0.10	1.00	0	116%	85	115	1.14	1.67%	15	S

Sample ID **LCS-06234** Batch ID: **R40839** Test Code: **TPHCGW** Units: **µg/L** Analysis Date **4/16/06 3:42:31 PM** Prep Date
Client ID: Run ID: **ORGC8_060416A** SeqNo: **586616**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	529.0	50	500	0	106%	85	115	0			

Qualifiers: ND - Not Detected at the Reporting Limit; S - Spike Recovery outside accepted recovery limits; B - Analyte detected in the associated Method Blank; J - Analyte detected below quantitation limits; R - RPD outside accepted recovery limits

CLIENT: Pvt. cust. paying on pickup
Work Order: 0604104
Project: 3888.02, BLUE LAKE MARKET

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID **LCSD-06234** Batch ID: **R40839** Test Code: **TPHCGW** Units: **µg/L** Analysis Date **4/16/06 4:17:13 PM** Prep Date

Client ID: Run ID: **ORGC8_060416A** SeqNo: **586617**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gas (C6-C14)	525.4	50	500	0	105%	85	115	529	0.673%	15	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

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Chain of Custody

LABORATORY NUMBER: 0604104

Attention: PAT FOLKINS
Results & Invoice to:
Address: 2020 ARDAGH COURT
EUREKA, CA 95503
Phone:
Copies of Report to: Christine Manhart-LACO
Sampler (Sign & Print): RLD

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☑ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☑ Verbal ☐ By:
Final Report: FAX ☐ Verbal ☐ By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number: 3888.02
Project Name: BLUE LAKE MARKET
Purchase Order Number: task 3035

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	CONTAINER	PRESERVATIVE	ANALYSIS: TPHg/BTEX/MTBE
		4-4-06	AM	GW	9	b	
	3888-MW6-W						3
	3888-QCTB-W						1

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

GEOTRACKER

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
STEVE DAVIS	4-6-06 1402	NCL	4-6-06 1403

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

Attachment 5

ATTACHMENT 5: Total Xylenes as a Proxy for TPHg
Blue Lake Market, 410 Railroad Avenue, Blue Lake, CA
LOP No. 12229; LACO No. 3888.02

Using Total Xylenes as a proxy for TPHg

Kd = Cs/Cw

Kd = Koc*foc Koc for Total Xylenes varies, literature based values range from **220 for m-xylene**, 590 for p-xylene, and **700 for xylenes**
sources: **(ABB Environmental Services, Inc.,1990)**, and TPH Criteria Working Group Series (Amherst Sci. Publishing, 1997)

foc= 0.001

TPHg Kd =	0.22	l/g
	0.59	l/g
	0.7	l/g
100 µg/g =	455	µg/L
100 µg/g =	169	µg/L
100 µg/g =	143	µg/L

Xylenes slow anaerobic biodegradation rate = 8640 hours (Howard et al, 1991) 360 days 0.99 years 0.0019 decay rate (day^{-1})

today µg/L =	**71**	=	**50**	µg/L in	**1**	year
today µg/L =	**355**	=	**50**	µg/L in	**5**	years
today µg/L =	**711**	=	**50**	µg/L in	**10**	years
today µg/L =	**1422**	=	**50**	µg/L in	**20**	years

today µg/g = **313** = **1422** µg/L which will decay to 50 µg/L in 20 years using **Kd = 0.22**

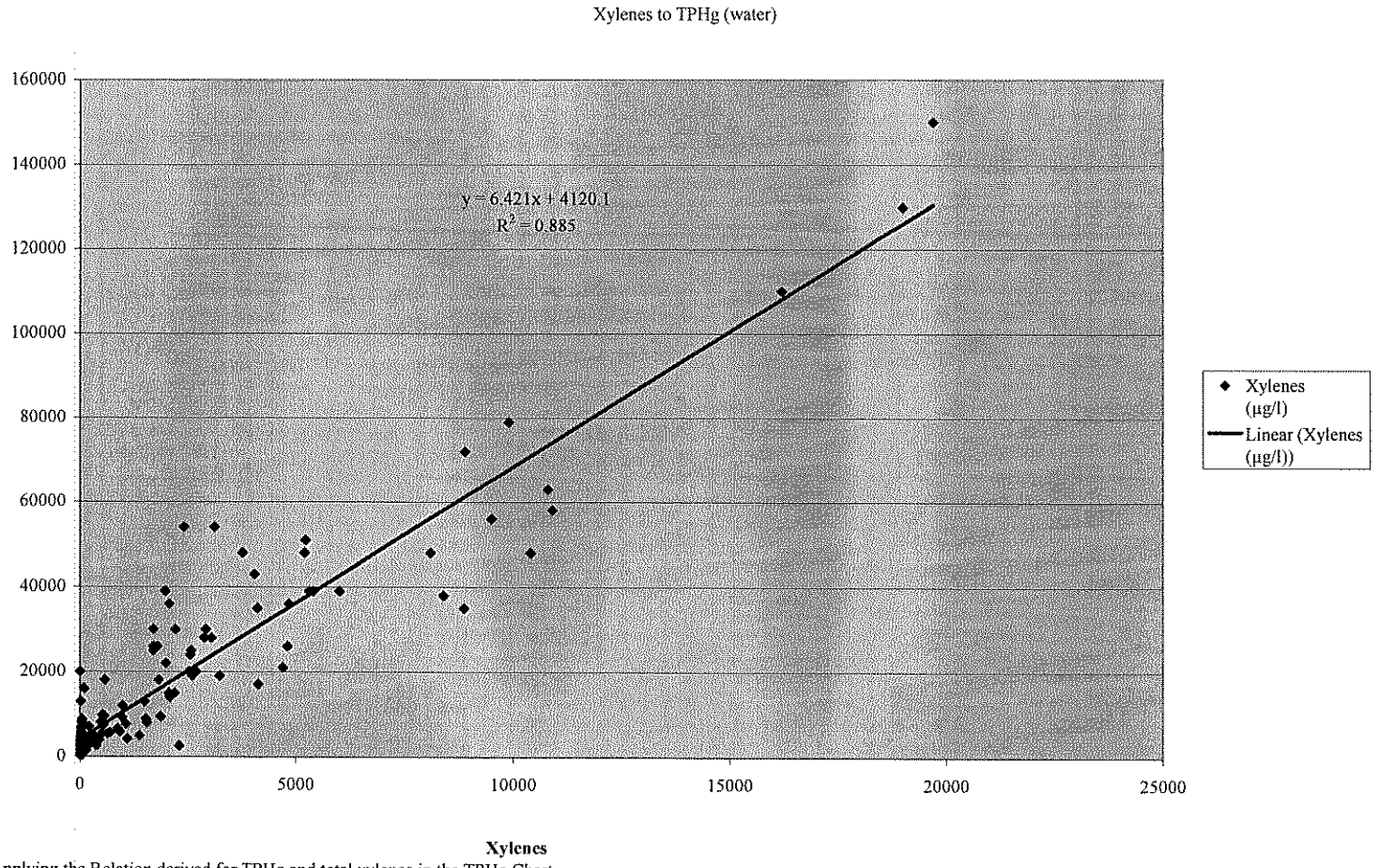
today µg/g = **839** = **1422** µg/L which will decay to 50 µg/L in 20 years using **Kd = 0.59**

today µg/g = **995** = **1422** µg/L which will decay to 50 µg/L in 20 years using **Kd = 0.7**

ATTACHMENT 5: Total Xylenes as a Proxy for TPHg
Blue Lake Market, 410 Railroad Avenue, Blue Lake, CA
LOP No. 12229; LACO No. 3888.02

Why Total Xylenes?
Xylenes comprise between 1 and 10% of typical gasoline formulations, and are approximately 3% of gasoline mixtures by average (ABB Environmental Services, Inc.,1990).
The solubility of xylenes is 175 mg/L, a mid-range value for many components of gasoline (ABB Environmental Services, Inc.,1990)
A compilation of decay rates of TPHg, sum of BTEX, ethylbenzene, and xylenes derived for a variety of BTEX impacted sites, not currently or previously under active remediation, located around Eureka, California (South Broadway Rocket, Harris Texaco, and Myrtle Beacon) suggests that the ratio of TPHg decay rate to total xylenes decay rate is less variable than TPHg to ethylbenzene or TPHg to Sum of BTEX decay rate ratios.
Total Xylenes concentrations are readily available data, as opposed to other gasoline components that may also be useful as TPHg proxies (n-hexane and n-pentane)

From the relation on the Xylenes to TPHg Chart the equation for the linear trend line is $Y = 6.421x+4126.1$ with a corresponding R^2 value of 0.885

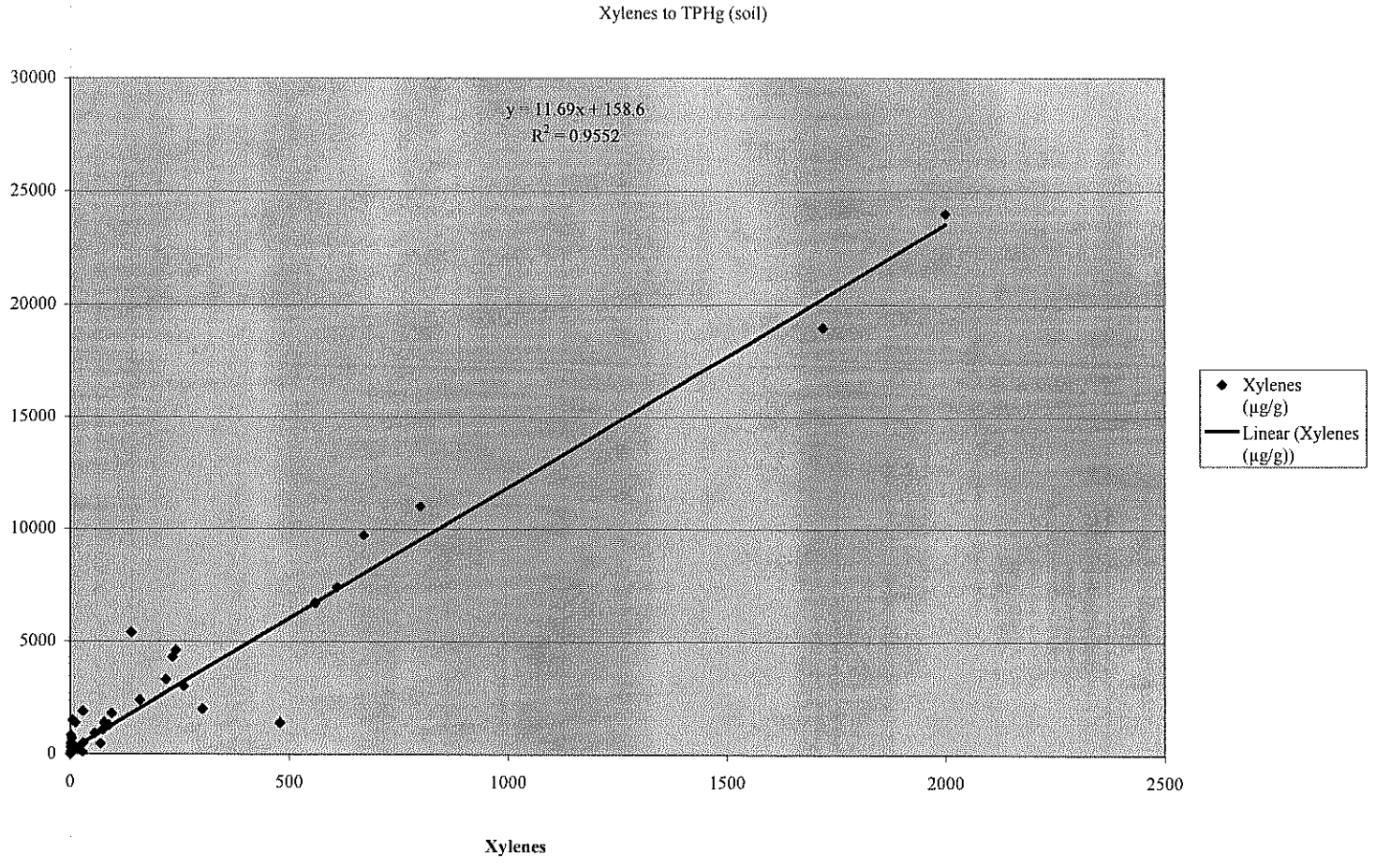


Applying the Relation derived for TPHg and total xylenes in the TPHg Chart....

If Xylenes concentrations (µg/L) are **1422** Then TPHg concentrations (µg/L) will be approximately equal to **13257**

ATTACHMENT 5: Total Xylenes as a Proxy for TPHg
Blue Lake Market, 410 Railroad Avenue, Blue Lake, CA
LOP No. 12229; LACO No. 3888.02

From the relation on the Xylenes to TPHg Chart the equation for the linear trend line is Y = 11.69x+158.6 with a corresponding R^2 value of 0.9552



If Xylenes concentrations (µg/g) are	**313**	Then TPHg concentrations (µg/g) will be approximately equal to	**3818**
If Xylenes concentrations (µg/g) are	**839**	Then TPHg concentrations (µg/g) will be approximately equal to	**9967**
If Xylenes concentrations (µg/g) are	**995**	Then TPHg concentrations (µg/g) will be approximately equal to	**11790**