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September 7, 2005

4731.01

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

Attention: Mr. Mark Verhey

Subject: Groundwater Monitoring Report; Third Quarter 2005
Varsity Ice Cream; 1732 Second Street, Eureka, California
LOP No. 12688

Dear Mr. Verhey:

LACO ASSOCIATES (LACO) presents to the Humboldt County Division of Environmental Health (HCDEH) the results of groundwater monitoring for the third quarter of 2005 for the above-referenced site. This report has been prepared on behalf of Mr. Jim Ely.

Please call (707) 443-5054 if you have any questions or concerns.

Sincerely,
LACO ASSOCIATES

Caroline Levenda
Staff Geologist

Timothy D. Nelson
PG 7579, Exp. 5/31/07

PROFESSIONAL GEOLOGIST
TIMOTHY DOUGLAS NELSON
No. 7579
Exp. 05/31/07
STATE OF CALIFORNIA

cc: Jim Ely, Varsity Ice Cream

CJL:jg

Attachments

P:\4000\4731 Varsity Ice Cream\Submittals\Monitoring Reports\2005\3 Q 2005\4731 3Q05 GMR.doc

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GROUNDWATER MONITORING REPORT; THIRD QUARTER 2005

Varsity Ice Cream; 1732 Second Street, Eureka, California

LOP No. 12688; LACO Project No. 4731.01

INTRODUCTION

Field activities were conducted in accordance with generally accepted practices and standard operating procedures on August 3, 2005, at the Varsity Ice Cream facility (hereafter referred to as the site). Please refer to Table A below for the current groundwater monitoring sampling regime and to the *Standard Operating Procedures,* on file at your office, for sampling details. A location and site map are provided as Figures 1 and 2, respectively. A key to abbreviations is included as Attachment 1.

SITE CHRONOLOGY

1950 to 1970	The site was owned and operated by The Borden Company.
1968	A 550-gallon gasoline underground storage tank (UST) was last used on-site.
1970 to 1977	The site operated as Knudsen Dairy Products.
1978	Varsity Ice Cream took over operations at the site.
Nov. 1998	North Coast Environmental Construction (NEC) removed the 550-gallon UST and approximately 20 cubic yards of contaminated soil.
June 1999	Four hydropunch borings and discovery of groundwater contamination occurred.
Jan. 2001	Installation of four temporary soil borings and three monitoring wells were installed.
May 2001	LACO submitted *Subsurface Investigation Status Report Report of Findings: Boring and Monitoring Well Installation* to HCDEH.
Oct. 2002	Installation of two borings (B5 and B6) using direct push technology occurred.
Jan. 2004	Destruction of monitoring well MW3 by the pressure-grouting method occurred.
March 2004	Ten borings were installed at the site. Borings B7 and B9 were placed in the sewer trench, borings B11 through B14 were placed in the immediate vicinity of the former tank cavity, and borings B10, B15, and B16 were installed in the former pump dispenser.
Nov. 2004	Excavation and removal of approximately 604 tons of contaminated soil from the site occurred.
April 2004	Monitoring well MW3 was destroyed by the pressure-grouting method.

Dec. 2004 Monitoring well MW4 was installed and developed.

Table A: Sampling Details for August 3, 2005							
WELL	SCREENED INTERVAL (feet)	DTW (feet)	PURGE METHOD	WATER QUALITY PARAMETERS	ANALYTICALS		SAMPLING SCHEDULE
					ORGANICS	INORGANICS	
MW1	5-15	8.40	Not Sampled				DTW Only
MW2	5-15	8.25	Not Sampled				DTW Only
MW3	Destroyed						
MW4	5-15	8.52	DHP	ORP, DO	TPHg, TPHd, TPHmo, BTEX, MTBE, TBA, DIPE, ETBE, TAME	None	Quarterly

HYDROGEOLOGY

The Varsity Ice Cream facility is located on uplifts of Pleistocene marine terrace, approximately 35 feet above sea level, on the edge of Humboldt Bay. The site is comprised of silty sand, clayey sands, and poorly graded sands. The monitoring wells at this site have screen intervals of 5 to 15 feet below ground surface (bgs).

The hydraulic gradient for the August 3, 2005, sampling event was calculated using the three-point method in the area defined by monitoring wells MW1, MW2, and MW4.

- The hydraulic gradient on August 3, 2005, was calculated as 1.6 percent with a bearing of N18°E (Figure 3).

This gradient is similar to historic gradients at this site (Table 1). A hydraulic gradient map is included as Figure 3. Current and historic hydraulic head measurements for the monitoring wells are summarized in Table 2. Field data sheets are included as Attachment 2.

LABORATORY ANALYTICAL RESULTS

Groundwater analytical data from the current sampling event are included below in Table B. Current and historic groundwater analytical data are included in Table 2, and copies of the laboratory analytical reports for this reporting period are included as Attachment 3.

Table B: Analytical Results for August 3, 2005								
WELL	TPHg (µg/L)	TPHd (µg/L)	TPHmo (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Oil & Grease (mg/L)
MW1	DTW Only							
MW2	DTW Only							
MW3	Destroyed							
MW4	ND<50	ND<50	ND<170	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<0.50

EVALUATION OF GROUNDWATER ANALYTICAL RESULTS

Monitoring well MW4, installed in December 2004 as a replacement for monitoring well MW3, reported non-detectable concentrations for the previous and current sampling events.

As requested by the HCDEH in correspondence dated March 11, 2005, a groundwater sample from monitoring well MW4 was tested for oil and grease. The results from the laboratory indicated that oil and grease was not detected in monitoring well MW4. Due to the lack of analyte detections, and with the HCDEH concurrence, monitoring wells MW1 and MW2 have been removed from the sampling protocol. Analyte concentrations in groundwater are presented in Figure 4.

RECOMMENDATIONS

- The next sampling event is scheduled for October 2005.
- Laboratory results from monitoring well MW4 support the conclusions that the November 2004 excavation was successful in extracting the remaining vertical and lateral extent of the petroleum hydrocarbon-contaminated soil mass. LACO requests that the HCDEH issue a "No Further Action" status so that our client, Jim Ely, can receive regulatory closure.
- LACO is currently preparing a closure report for this site.

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 therefrom, 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. 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 locations indicated. It should not be utilized by any third party to represent data for any other time or location. It is known that site and subsurface environmental conditions can change with time and under anthropologic influences. 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, AND ATTACHMENTS

Figure 1: Location Map

Figure 2: Site Map

Figure 3: Hydraulic Gradient Map

Figure 4: Analyte Concentrations in Groundwater Map

Table 1: Historic Hydraulic Gradients

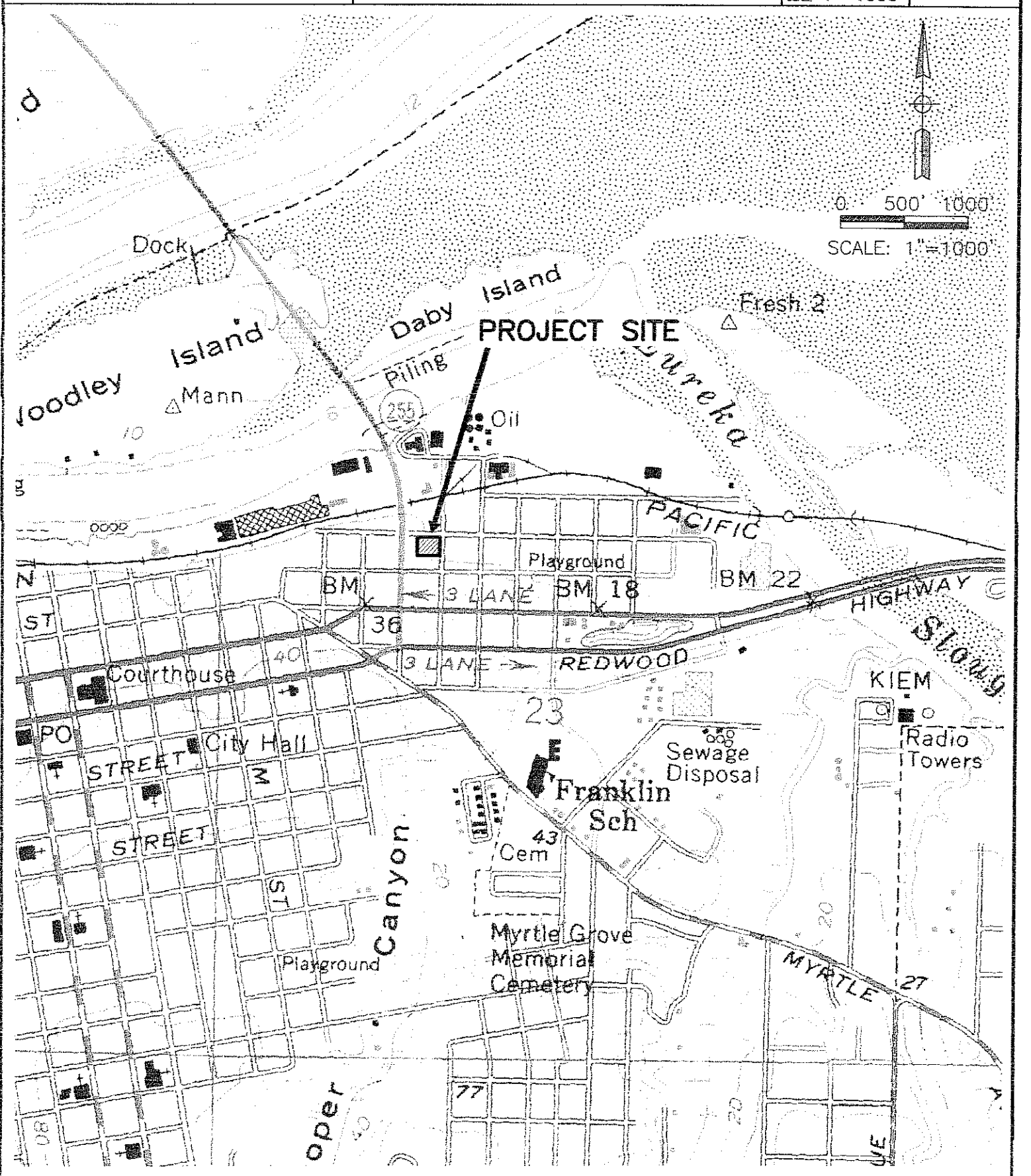
Table 2: Monitoring Well Data and Laboratory Analytical Results

Attachment 1: Key to Abbreviations

Attachment 2: Groundwater Sampling Field Data Sheets

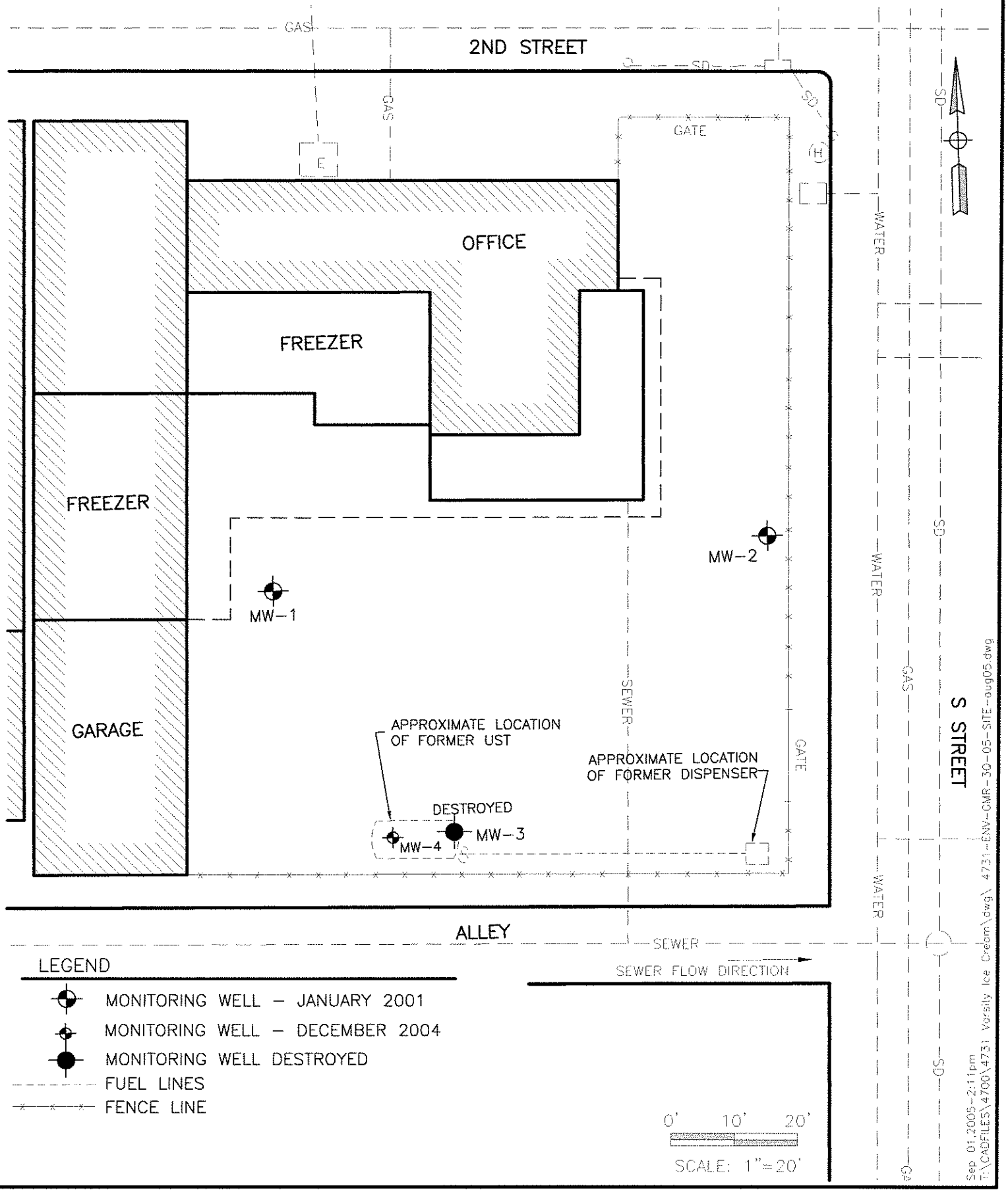
Attachment 3: Laboratory Analytical Reports

LACO ASSOCIATES CONSULTING ENGINEERS 21 W 4TH ST. EUREKA, CA 95501 (707)443-5054	PROJECT	GROUNDWATER MONITORING REPORT	BY	RJM	FIGURE
	CLIENT	VARSITY ICE CREAM	DATE	9/01/05	1
	LOCATION	1732 2nd STREET	CHECK		JOB NO.
		LOCATION MAP	SCALE	1"=1000'	4731.01

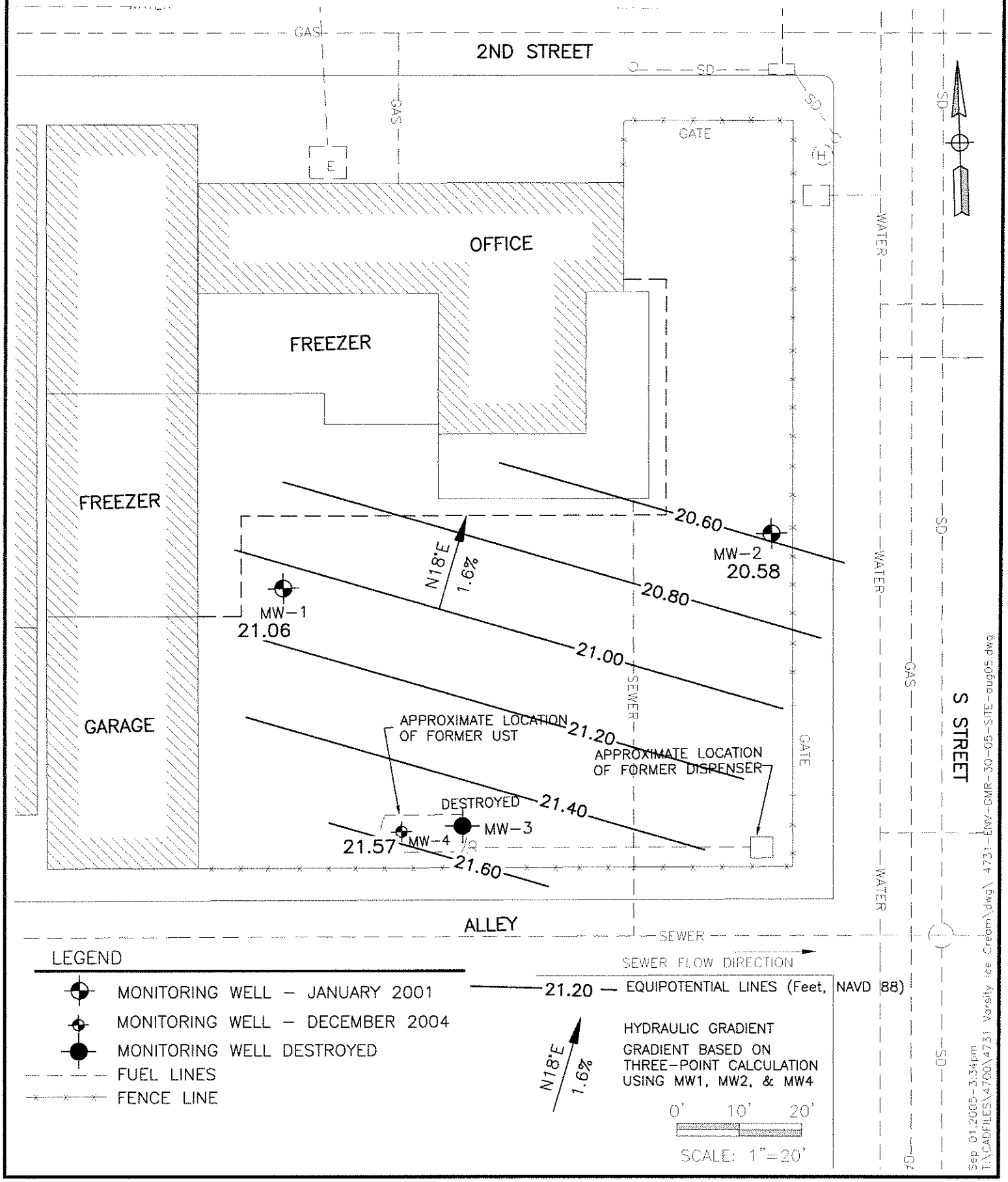


Sep 01,2005-1:58pm
T:\CADFILES\4700\4731 Varsity Ice Cream\dwg\ 4731-ENV-GMR-30-05-LOC-aug05.dwg

LACO ASSOCIATES CONSULTING ENGINEERS 21 W 4TH ST. EUREKA, CA 95501 (707)443-5054	PROJECT	GROUNDWATER MONITORING REPORT	BY	RJM	FIGURE
	CLIENT	VARSITY ICE CREAM	DATE	9/01/05	2
	LOCATION	1732 2nd STREET	CHECK		JOB NO.
		SITE MAP	SCALE	1"=20'	4731.01



LACO ASSOCIATES CONSULTING ENGINEERS 21 W 4TH ST. EUREKA, CA 95501 (707)443-5054	PROJECT	GROUNDWATER MONITORING REPORT	BY	RJM	FIGURE
	CLIENT	VARSITY ICE CREAM	DATE	9/01/05	3
	LOCATION	1732 2nd STREET	CHECK		JOB NO.
		HYDRAULIC GRADIENT MAP (8/03/05)	SCALE	1"=20'	4731.01



LACO ASSOCIATES CONSULTING ENGINEERS 21 W 4TH ST. EUREKA, CA 95501 (707)443-5054	PROJECT	GROUNDWATER MONITORING REPORT	BY	RJM	FIGURE
	CLIENT	VARSITY ICE CREAM	DATE	9/01/05	4
	LOCATION	1732 2nd STREET	CHECK		JOB NO.
		ANALYTE CONCENTRATIONS IN GROUNDWATER (8/03/05)	SCALE	1"=20'	4731.01

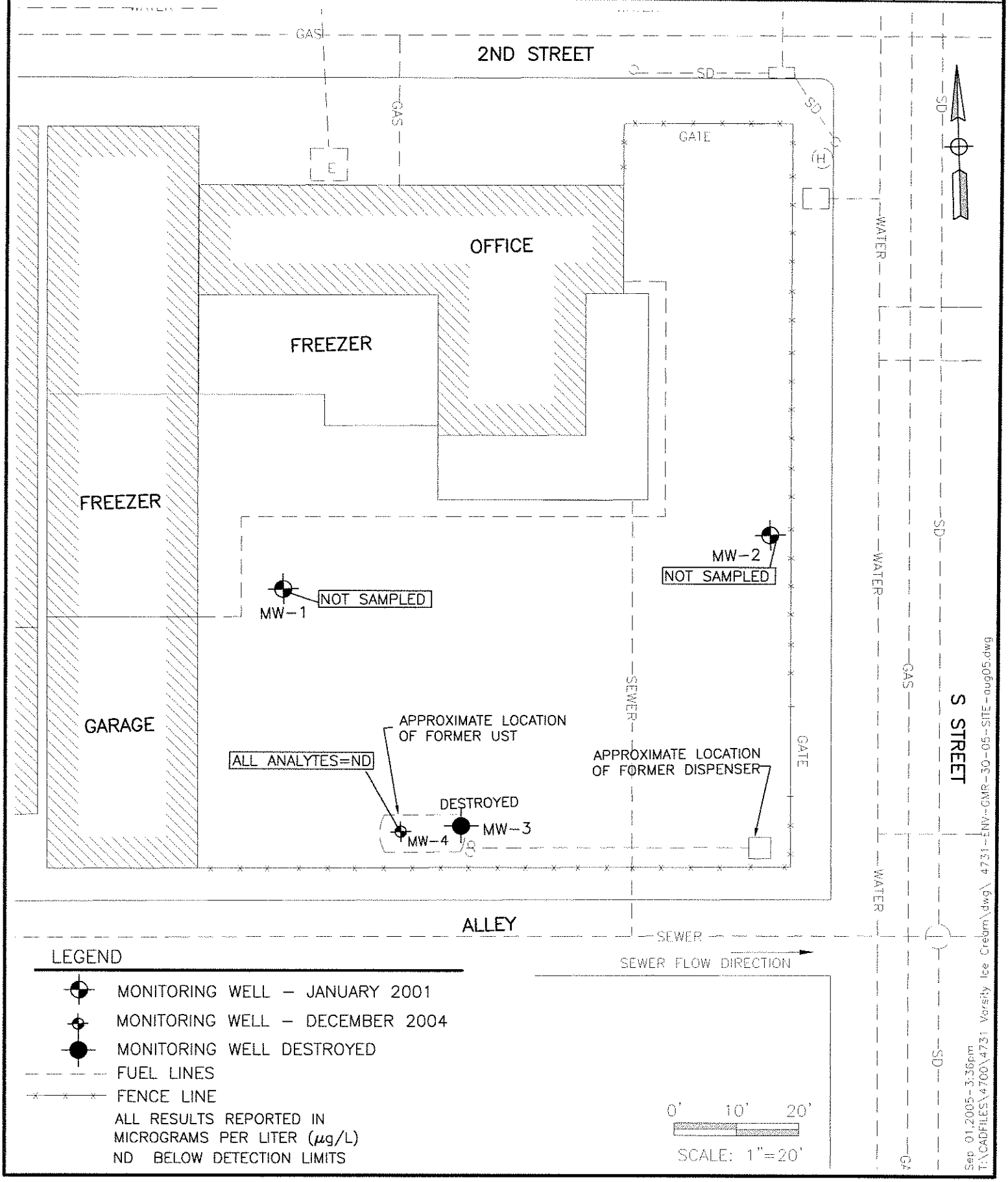


TABLE 1: HISTORIC HYDRAULIC GRADIENTS
Jim Ely/Varsity Ice Cream; LACO Project No. 4731.00
LOP No. 12688

Historic Hydraulic Gradient			
Date	Technician	Direction	Slope
2/14/2001	DBM	N6W	0.10%
2/22/2001	DBM	N6W	0.30%
3/13/2001	DBM	N6W	0.10%
5/17/2001	DBM	N6W	1.70%
8/24/2001	DBM	N7W	1.50%
9/19/2001	DBM	N16W	1.61%
10/18/2001	DBM	N19W	1.85%
11/30/2001	MCR	N15W	2.24%
12/7/2001	MCR	N29W	3.55%
1/22/2002	MCR	N30W	3.67%
2/25/2002	MCR	N3E	1.69%
5/16/2002	DBM	N9E	1.80%
8/20/2002	JES	S73W	3.71%
12/18/2002	JES	N45W	2.46%
2/24/2003	JES	N3E	1.60%
5/8/2003	MJG	N	1.64%
8/13/2003	MJG	N5E	1.69%
11/14/2003	MJG	N2E	1.48%
2/12/2004	MJG	N5W	1.50%
8/9/2004	SJD	Insuffiecient Data	
2/7/2005	SJD	N3E	1.9%
5/4/2005	SJD	N3E	1.9%
8/3/2005	RLD	N18E	1.6%

Well head elevation are based on a bench mark; PID #LV0559 from
National Geodetic Survey (NGS) data and established under supervision of a licensed surveyor.

TABLE 2: MONITORING WELL DATA AND LABORATORY ANALYTICAL RESULTS
Jim Ely/Varsity Ice Cream; LACO Project No. 4731.00
LOP No. 12688

WELL ID Date	Well Head Elevation (feet, NAVD88)	Depth to Water (feet, NAVD88)	Elevation (feet, NAVD88)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Oil and Grease
MW1	**29.46**									
2/14/2001		7.18	22.28	---	---	---	---	---	---	---
2/22/2001		6.75	22.71	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<10
3/13/2001		7.62	21.84	---	---	---	---	---	---	---
5/17/2001		8.38	21.08	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<10
8/24/2001		9.40	20.06	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	ND<10
9/19/2001		9.79	19.67	---	---	---	---	---	---	---
10/18/2001		10.19	19.27	---	---	---	---	---	---	---
11/30/2001		7.26	22.20	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	ND<0.010
12/7/2001		7.02	22.44	---	---	---	---	---	---	---
1/22/2002		6.58	22.88	---	---	---	---	---	---	---
2/25/2002		5.68	23.78	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	ND<10
5/16/2002		8.06	21.40	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
8/20/2002		9.27	20.19	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
12/18/2002		6.59	22.87	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
2/24/2003		6.45	23.01	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
5/8/2003		6.07	23.39	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
8/13/2003		9.10	20.36	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
11/14/2003		9.33	20.13	---	---	---	---	---	---	---
2/12/2004		6.65	22.81	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
8/9/2004		9.38	20.08	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
2/7/2005		7.28	22.18	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
5/4/2005		7.32	22.14	---	---	---	---	---	---	---
8/3/2005		8.40	21.06	---	---	---	---	---	---	---

TABLE 2: MONITORING WELL DATA AND LABORATORY ANALYTICAL RESULTS
Jim Ely/Varsity Ice Cream; LACO Project No. 4731.00
LOP No. 12688

WELL ID Date	Well Head Elevation (feet, NAVD88)	Depth to Water (feet, NAVD88)	Elevation (feet, NAVD88)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Oil and Grease
MW2	**28.83**									
2/14/2001		6.61	22.22	---	---	---	---	---	---	---
2/22/2001		6.29	22.54	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<10
3/13/2001		7.22	21.61	---	---	---	---	---	---	---
5/17/2001		8.19	20.64	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<10
8/24/2001		8.86	19.97	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<10
9/19/2001		9.05	19.78	---	---	---	---	---	---	---
10/18/2001		9.36	19.47	---	---	---	---	---	---	---
11/30/2001		6.50	22.33	ND <50	ND <0.50	ND <0.50	ND <0.50	**0.59**	ND<1.0	ND<0.010
12/7/2001		5.53	23.30	---	---	---	---	---	---	---
1/22/2002		4.99	23.84	---	---	---	---	---	---	---
2/25/2002		5.36	23.47	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	ND<10
5/16/2002		7.92	20.91	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
8/20/2002		5.75	23.08	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
12/18/2002		4.88	23.95	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
2/24/2003		6.11	22.72	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
5/8/2003		5.69	23.14	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
8/13/2003		8.83	20.00	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
11/14/2003		8.95	19.88	---	---	---	---	---	---	---
2/12/2004		6.25	22.58	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
8/9/2004		9.14	19.69	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
2/7/2005		6.85	21.98	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
5/4/2005		6.90	21.93	---	---	---	---	---	---	---
8/3/2005		8.25	20.58	---	---	---	---	---	---	---

TABLE 2: MONITORING WELL DATA AND LABORATORY ANALYTICAL RESULTS
Jim Ely/Varsity Ice Cream; LACO Project No. 4731.00
LOP No. 12688

WELL ID Date	Well Head Elevation (feet, NAVD88)	Depth to Water (feet, NAVD88)	Elevation (feet, NAVD88)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Oil and Grease
MW3	**29.67**									
2/14/2001		6.99	22.68	---	---	---	---	---	---	---
2/22/2001		5.85	23.82	**5,700**	ND <5.0	**81**	**51**	**420**	ND <5.0	ND<10
3/13/2001		7.37	22.30	---	---	---	---	---	---	---
5/17/2001		8.02	21.65	**25,000**	**33**	**1,300**	**520**	**4,300**	ND<13	**18**
8/24/2001		8.99	20.68	**20,000**	**18**	**730**	**410**	**3,600**	ND<1.0	ND<10
9/19/2001		9.30	20.37	---	---	---	---	---	---	---
10/18/2001		9.58	20.09	---	---	---	---	---	---	---
11/30/2001		6.50	23.17	**8,600**	**2.1**	**48**	**36**	**303**	ND<1.0	ND<0.010
12/7/2001		5.59	24.08	---	---	---	---	---	---	---
1/22/2002		5.09	24.58	---	---	---	---	---	---	---
2/25/2002		5.28	24.39	**4,100**	**0.69**	**11**	**19**	**67**	ND<1.0	ND<10
5/16/2002		7.69	21.98	**11,000**	**27**	**450**	**230**	**850**	ND<1.0	---
8/20/2002		8.90	20.77	**19,000**	**30**	**920**	**360**	**2,200**	ND<5.0	---
12/18/2002		5.66	24.01	**7,500**	**2.8**	**66**	**62**	**370**	ND<5.0	---
2/24/2003		6.09	23.58	**6,500**	**1.3**	**39**	**53**	**234**	ND<1.0	---
5/8/2003		5.67	24.00	**4,900**	ND<0.50	**12**	**23**	**70**	ND<1.0	---
8/13/2003		8.72	20.95	**11,000**	**23**	**450**	**200**	**940**	ND<1.0	---
11/14/2003		9.00	20.67	**15,000**	**10**	**290**	**210**	**970**	ND<1.0	---
2/12/2004		6.07	23.60	**5,700**	**1.3**	**20**	**39**	**129**	ND<1.0	---
3/3/2004		**Destroyed**								

TABLE 2: MONITORING WELL DATA AND LABORATORY ANALYTICAL RESULTS
Jim Ely/Varsity Ice Cream; LACO Project No. 4731.00
LOP No. 12688

WELL ID Date	Well Head Elevation (feet, NAVD88)	Depth to Water (feet, NAVD88)	Elevation (feet, NAVD88)	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Oil and Grease
MW4	**30.09**									
2/7/2005		7.16	22.93	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---
5/4/2005		7.20	22.89	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	ND <0.50
8/3/2005		8.52	21.57	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	ND <0.50
Travel Blank										
11/30/2001	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---
2/25/2002	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---
5/16/2002	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---
8/20/2002	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---
12/18/2002	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---
2/24/2003	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---
5/8/2003	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---
8/13/2003	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---
11/14/2003	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---
2/12/2004	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---
8/9/2004	---	---	---	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---
8/3/2005	---	---	---	ND <50	ND <0.50	ND <0.50	ND <0.50	ND <0.50	ND<1.0	---

NOTES:

Bold results indicate analyte detection

The reported xylenes concentrations are a total of m,p-xylene and o-xylene.

Groundwater elevation calculated by: Well elevation - Depth to groundwater.

ND = not detected at or above the method detection limit shown.

--- = not analyzed or available.

ug/l = micrograms per liter

TPHg = total petroleum hydrocarbons as gasoline

MTBE = Methyl tert-butyl ether

Attachment 1

KEY TO ABBREVIATIONS
Varsity Ice Cream, 1732 Second St. Eureka, CA
LACO No. 4731.01; LOP No. 12688

KEY TO ABBREVIATIONS	
Alk	-- Alkalinity
BTEX	-- Benzene; Toluene; Ethylbenzene; m,p- and o- Xylenes
CO_2	-- Carbon dioxide
COC	-- Chain of Custody or Contaminants of Concern
Cr	-- Chromium
DHP	-- Down-hole-pump (submersible pump)
DIPE	-- Di-isopropyl Ether
Dis	-- Dissolved
DO	-- Dissolved Oxygen
DTW	-- Depth-to-Water
ECw	-- Electrical Conductivity in water
ETBE	-- Ethyl Tertiary Butyl Ether
Fe	-- Iron
FP	-- Free Product
Mn	-- Manganese
MTBE	-- Methyl Tertiary Butyl Ether
N	-- Nitrogen
N/A	-- Not Applicable
NCRWQCB	-- North Coast Regional Water Quality Control Board
ND<50	-- non-detect at reporting limits shown
NS	-- Not Sampled
NO_3	-- Nitrate
NOT ACTIVE	-- Sample not analyzed for parameter during current sampling event
ORP	-- Oxidation Reduction Potential
P	-- Phosphorous
PCP/TCP	-- penta- tetra- tri- chlorophenols
pH	-- Potential of hydrogen
SGC	-- Silica gel cleanup
SO_4	-- Sulfate
T	-- Temperature
T&P	-- Tape and Paste
TAME	-- Tertiary Amyl Methyl Ether
TBA	-- Tetiary Butyl Alcohol
TBF	-- Tertiary Butyl Formate
TIC	-- Total Inorganic Carbon
TOC	-- Total Organic Carbon
Tot	-- Total
TPHd	-- Total Petroluem Hydrocarbons as Diesel
TPHg	-- Total Petroluem Hydrocarbons as Gasoline
TPHk	-- Total Petroluem Hydrocarbons as Kerosene
TPHmo	-- Total Petroluem Hydrocarbons as Motor Oil
TPHs	-- Total Petroluem Hydrocarbons as Solvent
WQO	-- Water Quality Objective
µg/L	-- Micro grams per liter (parts per billion)

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

Attachment 2

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

Project Name: Varsity Ice Cream
Project No.: 4731.01
Date: 8-03-05
Golbal ID No.: T0602300487
PM: TDN

Tech: RLD
Mob/Demob time: .25
Travel time: .25
Time on site: 1:00
Time off site: 2:00
Mileage: 54

WELL No.:	MW1		MW2		MW4					
DIAMETER (in)	2.00		2.00		2.00					
SCREENED INTERVAL (ft)	5 - 15		5 - 15		5 - 15					
DEPTH TO WATER (ft)	8.40		8.25		8.52					
	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)					-6	-32				
FIELD INTRINSICS: DO (mg/L)					0.84	0.24				
FIELD INTRINSICS: OTHER (units)					—					
PURGE: TIME					1:04	1:16				
PURGE: METHOD (DHP/CB/B)					DHP					
PURGE: RATE (Lpm)					0.20					
PURGE: VOLUME (L)					1.0					
PURGE: COLOR					CLOUDY	CLOUDY TAN				
PURGE: ODOR					NONE					
PURGE: INTAKE DEPTH (FEET)					12.0					
SAMPLE: TIME					1:18					
SAMPLE: METHOD (DHP/CB/B)					DHP					
SAMPLE: ANALYTES	DTW ONLY		DTW ONLY		8260 List 4; Total O/G EPA 1664 w/SGC					
SAMPLE: TOTAL DRAWDOWN (FEET)					—					
SAMPLE: REMARKS					—					
WELL CONDITION	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: VARSITY ICE CREAM
Project No.: 4731.01

Tech: RLD
Date: 8-03-05

WELL ID:	METER ACCURACY RANGE					WELL ID:					
MW4	+/- 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)
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)						
1:06				-8	1.21						
1:08				-11	0.84						
1:10				-18	0.55						
1:12				-28	0.30						
1:14				-30	0.25						
1:16				-32	0.24						

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

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

Project No.: 4731.01

Tech: RLD

Date: 8-03-05

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)
12:30	8.40	12:35	8.25	12:50	8.52						
12:40	8.40	12:45	8.25	1:00	8.52						

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: Jim Ely
Results & Invoice to: Varsity Ice Cream
Address: PO Box 56
Arcata, CA 95521
Phone:
Copies of Report to: LACO ASSOCIATES: Tim Nelson
Sampler (Sign & Print): SJD

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: 4731.01
Project Name: Varsity Ice Cream
Purchase Order Number: Task

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	8260 List 4 (ANALYSIS)	Total Oil/Grease w/SGC (ANALYSIS)	EPA 1664 (ANALYSIS)	CONTAINER	PRESERVATIVE
	4731-MW4-W	8-8-05	PM	GW	3	1		9	b
	4731-QCMB-W	↓	↓	↓	3				
	4731-QCFD-W				3				
	4731-QCTB-W				1			7	---

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 3

THIS ACCOUNT IS NOT PAID.

RECEIVED
LACO ASSOCIATES
AUG 1 9 2005
BY: JG

NORTH COAST LABORATORIES LTD.

August 18, 2005

DRG
TDN 8-19-05

Pvt. cust. paying on pickup

Order No.: 0508141
Invoice No.: 52162
PO No.:
ELAP No. 1247-Expires July 2006

Attn: Jim Ely-Varsity Ice Cream

RE: 4731.01, Varsity Ice Cream

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	4731-MW4-W
01D	4731-MW4-W
03A	4731-QCFD-W
04A	4731-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 (for SKD) T. Sh

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

Date: 18-Aug-05
WorkOrder: 0508141

ANALYTICAL REPORT

Client Sample ID: 4731-MW4-W **Received:** 8/4/05 **Collected:** 8/3/05 0:00
Lab ID: 0508141-01A

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		8/16/05
Benzene	ND	0.50	µg/L	1.0		8/16/05
Toluene	ND	0.50	µg/L	1.0		8/16/05
Ethylbenzene	ND	0.50	µg/L	1.0		8/16/05
m,p-Xylene	ND	0.50	µg/L	1.0		8/16/05
o-Xylene	ND	0.50	µg/L	1.0		8/16/05
Surrogate: 1,4-Dichlorobenzene-d4	102	80.8-139	% Rec	1.0		8/16/05

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		8/16/05

Client Sample ID: 4731-MW4-W **Received:** 8/4/05 **Collected:** 8/3/05 0:00
Lab ID: 0508141-01D

Test Name: Hexane Extractable Material **Reference:** EPA 1664

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Grease and Oil (TPH fraction)	ND	5.0	mg/L	1.0	8/15/05	8/16/05

Client Sample ID: 4731-QCFD-W **Received:** 8/4/05 **Collected:** 8/3/05 0:00
Lab ID: 0508141-03A

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		8/16/05
Benzene	ND	0.50	µg/L	1.0		8/16/05
Toluene	ND	0.50	µg/L	1.0		8/16/05
Ethylbenzene	ND	0.50	µg/L	1.0		8/16/05
m,p-Xylene	ND	0.50	µg/L	1.0		8/16/05
o-Xylene	ND	0.50	µg/L	1.0		8/16/05
Surrogate: 1,4-Dichlorobenzene-d4	102	80.8-139	% Rec	1.0		8/16/05

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		8/16/05

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Printed on Recycled Paper

Date: 18-Aug-05
WorkOrder: 0508141

ANALYTICAL REPORT

Client Sample ID: 4731-QCTB-W **Received:** 8/4/05 **Collected:** 8/3/05 0:00
Lab ID: 0508141-04A

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		8/16/05
Benzene	ND	0.50	µg/L	1.0		8/16/05
Toluene	ND	0.50	µg/L	1.0		8/16/05
Ethylbenzene	ND	0.50	µg/L	1.0		8/16/05
m,p-Xylene	ND	0.50	µg/L	1.0		8/16/05
o-Xylene	ND	0.50	µg/L	1.0		8/16/05
Surrogate: 1,4-Dichlorobenzene-d4	102	80.8-139	% Rec	1.0		8/16/05

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		8/16/05

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North Coast Laboratories, Ltd.

Date: 18-Aug-05

CLIENT: Pvt. cust. paying on pickup
Work Order: 0508141
Project: 4731.01, Varsity Ice Cream

QC SUMMARY REPORT

Method Blank

Sample ID **MBLK** Batch ID: **R36398** Test Code: **1664SGW** Units: **mg/L** Analysis Date **8/16/05** Prep Date **8/15/05**
Client ID: Run ID: **WC_050815E** SeqNo: **523819**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Grease and Oil (TPH fraction)	ND	5.0									

Sample ID **MB 081605** Batch ID: **R36437** Test Code: **8260OXYW** Units: **µg/L** Analysis Date **8/16/05 8:01:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_050816B** SeqNo: **524450**

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	ND	0.50									
Ethylbenzene	0.09818	0.50									J
m,p-Xylene	0.1791	0.50									J
o-Xylene	ND	0.50									
1,4-Dichlorobenzene-d4	1.01	0.10	1.00	0	101%	81	139	0			

Sample ID **MB 081605** Batch ID: **R36436** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **8/16/05 8:01:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_050816A** SeqNo: **524425**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	17.98	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: 18-Aug-05

CLIENT: Pvt. cust. paying on pickup
Work Order: 0508141
Project: 4731.01, Varsity Ice Cream

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS** Batch ID: **R36398** Test Code: **1664SGW** Units: **mg/L** Analysis Date **8/16/05** Prep Date **8/15/05**
Client ID: Run ID: **WC_050815E** SeqNo: **523820**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Grease and Oil (TPH fraction)	35.00	5.0	40.0	0	87.5%	66	114	0			

Sample ID **LCSD** Batch ID: **R36398** Test Code: **1664SGW** Units: **mg/L** Analysis Date **8/16/05** Prep Date **8/15/05**
Client ID: Run ID: **WC_050815E** SeqNo: **523821**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Grease and Oil (TPH fraction)	33.80	5.0	40.0	0	84.5%	66	114	35.0	3.49%	24	

Sample ID **LCS-05521** Batch ID: **R36437** Test Code: **8260OXYW** Units: **µg/L** Analysis Date **8/16/05 4:37:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_050816B** SeqNo: **524447**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	20.08	1.0	20.0	0	100%	80	120	0			
Benzene	20.42	0.50	20.0	0	102%	78	117	0			
Toluene	19.32	0.50	20.0	0	96.6%	80	120	0			
Ethylbenzene	18.74	0.50	20.0	0	93.7%	80	120	0			
m,p-Xylene	37.68	0.50	40.0	0	94.2%	80	120	0			
o-Xylene	18.46	0.50	20.0	0	92.3%	80	120	0			
1,4-Dichlorobenzene-d4	1.08	0.10	1.00	0	108%	81	139	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: 0508141
Project: 4731.01, Varsity Ice Cream

QC SUMMARY REPORT

Laboratory Control Spike Duplicate

Sample ID **LCSD-05521** Batch ID: **R36437** Test Code: **8260OXYW** Units: **µg/L** Analysis Date **8/16/05 5:02:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_050816B** SeqNo: **524448**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	19.99	1.0	20.0	0	99.9%	80	120	20.1	0.449%	20	
Benzene	20.32	0.50	20.0	0	102%	78	117	20.4	0.474%	20	
Toluene	19.17	0.50	20.0	0	95.8%	80	120	19.3	0.791%	20	
Ethylbenzene	18.53	0.50	20.0	0	92.6%	80	120	18.7	1.13%	20	
m,p-Xylene	37.45	0.50	40.0	0	93.6%	80	120	37.7	0.603%	20	
o-Xylene	18.12	0.50	20.0	0	90.6%	80	120	18.5	1.84%	20	
1,4-Dichlorobenzene-d4	1.07	0.10	1.00	0	107%	81	139	1.08	0.242%	20	

Sample ID **LCS-05515** Batch ID: **R36436** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **8/16/05 6:19:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_050816A** SeqNo: **524422**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	889.4	50	1,000	0	88.9%	80	120	0			

Sample ID **LCSD-05515** Batch ID: **R36436** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **8/16/05 6:44:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_050816A** SeqNo: **524423**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	879.4	50	1,000	0	87.9%	80	120	889	1.13%	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

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

Chain of Custody

0508141

LABORATORY NUMBER:

Attention: Jim Ely
Results & Invoice to: Varsity Ice Cream
Address: PO Box 56
Arcata, CA 95521
Phone:
Copies of Report to: LACO ASSOCIATES: Tim Nelson
Sampler (Sign & Print): ~~SJD~~ RED

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:

PROJECT INFORMATION
Project Number: 4731.01
Project Name: Varsity Ice Cream
Purchase Order Number: Task

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	ANALYSIS: 8260 List 4 (CONTAINER 9, PRESERVATIVE b)	ANALYSIS: Total Oil/Grease w/SGC (CONTAINER 7, PRESERVATIVE —)	ANALYSIS: EPA 1664	SAMPLE CONDITION/SPECIAL INSTRUCTIONS
	4731-MW4-W	8-3-05	PM	GW	3	1		GEOTRACKER
	~~4731-QCMB-W~~ received empty- Notified Steve				3			
	4731-QCFD-W				3			
	4731-QCTB-W	8/9/05			1			
								cooler temp = 4-9°C

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

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
STEVE DAVIS	8-4-05 1:55pm		8-4-05 1355

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