

20-313

# GREENSFELDER & ASSOCIATES

1548 Jacob Avenue, San Jose, CA 94501

Phone: (408) 267-6427

Cell: (510) 385-4308

Fax: (510) 522-6259

*Erin Chu*

## A REPORT DOCUMENTING GROUNDWATER SAMPLING OF MONITORING WELLS AND COLLECTION OF SOIL GRAB SAMPLES

**2415 MARINER SQUARE  
ALAMEDA, CALIFORNIA**

Prepared for

Mariner Square Associates  
Mariner Square Technical Committee  
2900 Main Street  
Alameda, CA 94501

*Todd DeFrate is project mgr. at Chevron/Texaco  
Bradt Bardsley (916) 638-2164*

*Sampling Performed January and March 2002*

# **GREENSFELDER & ASSOCIATES**

1548 Jacob Avenue, San Jose, CA 94501 Phone: (510) 385-4308 Fax: (510) 522-6259

## **A REPORT DOCUMENTING GROUNDWATER SAMPLING OF MONITORING WELLS AND COLLECTION OF SOIL GRAB SAMPLES**

**2415 MARINER SQUARE  
ALAMEDA, CALIFORNIA**

*Roger Greensfelder*

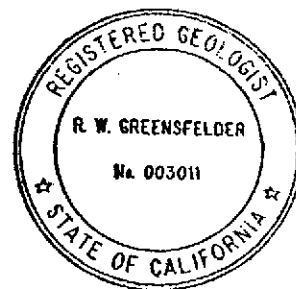
Roger Greensfelder PhD  
CA Registered Geologist # 3011

*4-10-02*  
April 10, 2002

*Helen Mawhinney*

Helen Mawhinney  
Senior Environmental Specialist

*4-10-02*  
April 10, 2002



## **TABLE OF CONTENTS**

### **1.0 INTRODUCTION**

### **2.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS**

#### **2.1 Soil Sampling and Analysis**

#### **2.2 Sampling and Analysis of Groundwater in Monitoring Wells**

### **3.0 SCOPE OF SERVICES**

#### **3.1 Soil Sampling**

#### **3.2 Development and Sampling of Groundwater Monitoring Wells**

#### **3.3 Soil Sample Analyses**

#### **3.4 Groundwater Sample Analyses**

### **4.0 RELEASE REPORTING**

## **APPENDIX A: TABLE AND FIGURES**

Table A-1. Groundwater analytical data, 1992-1998

Figure 1. Site Location Map

Figure 2. Locations of Groundwater Monitoring Wells and Collected Soil Samples

## **APPENDIX B: CHAIN OF CUSTODY and LABORATORY ANALYTICAL RESULTS**

## 1.0 INTRODUCTION

This report documents the sampling and analyses of water from six (6) groundwater monitoring wells on 11 January 2002 and on 19 March 2002, as well as the grab-sampling and analysis of three soil samples on 9 January 2002. The site location is shown in Figure 1.

## 2.0 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

Many investigations of soil and groundwater contamination have been conducted on this site, during the past decade. There has not been time to recount them for this report; however, a summary of groundwater analytical results for the years 1992 to 1998 for 18 monitoring wells is included in Appendix A. Figure 2 shows the locations of wells listed in Table A-1. This table indicates that, as of 1998, TPHg (total petroleum hydrocarbons as diesel) was still present in 15 of the monitoring wells, while TPHd (total petroleum hydrocarbons as diesel) was detected in only five wells; and TPHmo (total petroleum hydrocarbons as motor oil) was detected in only four wells. One or more of the four aromatics BTEX (benzene, toluene, ethylbenzene, and xylenes) were detected in nine wells in trace amounts (with benzene concentrations 0.5 to 1.0 ppb), and in somewhat larger concentrations (2 to 22 ppb) in three wells. MTBE was detected in four wells and VOCs only in one well (out of two tested). Vinyl chloride was not detected in any well.

## 3.0 SCOPE OF SERVICES

### 3.1 Soil Sampling

The scope of services for this project included the collection and analysis of three soil samples during site demolition/ construction using an onsite excavator. On January 9, 2002 samples were collected from that portion of the uppermost three-inches of soil constituting the most contaminated soil in the backhoe bucket, based on soil odor or discoloration. The samples were analyzed for total petroleum hydrocarbons as diesel fuel and motor oil, as well as total lead.

### 3.2 Well Development and Groundwater Sampling

The scope of services included purging, sampling and analysis of six wells (MWs 3, 4, 5, 6A, 9 and 10), although MW-4 could not be located and therefore was not sampled. MWs 5, 6A, 9 and 10 were sampled on 11 January 2002 and MW-3 was sampled on 19 March 2002. Locations of these wells are shown in Figure 2. The wells were purged by using a clean stainless steel bailer (1.0-inch diameter by 3.0-foot length). The purged water was placed in a DOT 17, 55-gallon drum for disposal labeled and contained pending receipt of laboratory results on groundwater samples. Disposal will conform to applicable hazardous waste requirements. Depths to water were gauged by using an electronic gauge prior to purging the well. At consistent intervals throughout the sampling event, groundwater parameters (pH, conductivity, and temperature) were monitored to evaluate stabilization of the well. Upon stabilization of these parameters a groundwater sample was collected. Depths to water and to bottom of well are shown in Table 1.

**Table 1. Depths of Wells and Depths to Water**

Well	DTW(FT)	DOW(FT)
MW-3	4.16	10.10
MW-5	4.02	11.03
MW-6A	4.24	10.48
MW-9	3.57	13.30
MW-10	5.84	10.21

DTW, DOW – depth to water, depth of well

Groundwater samples were collected using a clean disposable bailer, after purging the well with a clean stainless steel bailer. Collected water samples for each well were decanted into two one-liter amber bottles and two 40-ml volatile organics analysis vials (VOAs) to a positive meniscus, eliminating headspace. The groundwater samples were labeled with the date, sampler's name, project name, well number, and analysis required. The samples were then be placed in sealed plastic bags on ice within a cooler and maintained at temperature of 4 degrees Fahrenheit and then transported to a state certified analytical laboratory under chain of custody. Each sample's temperature was measured immediately upon receipt by the laboratory.

### 3.3 Soil Analytical Results

Soil samples collected for analysis were transported to a certified hazardous waste analytical laboratory and analyzed for the total petroleum hydrocarbons as diesel (TPHd) and as motor oil (TPHmo) using EPA Method 8015 M, both using silica gel recovery. In addition, total lead (EPA Method 6010) was analyzed. These results are given in Table 2.

**Table 2. Soil Analytical Results, 9 January 2002**

Sample #	TPHd	TPHmo	Total Lead
Units	mg/kg (ppm)		
1	<10	<50	5.8
2	120	550	250
3	20	130	85

### 3.4 Groundwater Analytical Results

Groundwater samples collected for analysis were transported to a certified hazardous waste analytical laboratory and analyzed for the total petroleum hydrocarbons as diesel (TPHd, using EPA Method 8015M), halogenated hydrocarbons (using EPA Method 8260B), and dissolved CAM-17 metals (EPA Methods 6000 and 7000 Series). HVOCs (halogenated volatile organics, EPA method 8260) were analyzed in samples from wells 6A and 9, and none of the analytes of this test were detected. Dissolved lead was analyzed in samples from MW-5 and MW-10. Results for TPHd, for dissolved lead, and for the eight metals detected (in the CAM-17 dissolved metals test) are presented in Table- 3. The metals are designated according to the standard nomenclature.

**Table 3. Groundwater Analytical Results**Sampled on 11 January 2002<sup>(1, 2)</sup>

Units µg/L (ppb)

MW#	TPHd	Lead (Pb)	Dissolved CAM-17 metals <sup>(3)</sup>							
			As	Ba	Co	Cr	Cu	Ni	Se	Va
3	<50	NDcam <sup>(4)</sup>	Not analyzed							
5	1,100	12.8								
6A	250	NDcam <sup>(4)</sup>	ND	109	1.69	1.67	2.26	6.35	1.31	ND
9	2,000	NDcam <sup>(4)</sup>	3.82	110	ND	1.60	24.6	6.15	1.03	1.46
10	330	ND	Not analyzed							

1 – MW-3 was sampled 19 March 2002

2 – MW-6A and MW-9 were analyzed for HVOCs and none were detected

3 – the other 9 metals in CAM-17 were not detected in MW-6A and -9

4 – NDcam<sup>(4)</sup> – tested non-detect in CAM17, ND-not detected in dissolved lead analysis

### 3.5 Summary and Recommendations

Excepting well MW-5, no known toxic chemicals or metallic ions at unusually high concentrations were observed in the wells tested for this report. The sample from MW-5, however, indicated total lead of 12.8 µg/L. It is understood that the lead agency, Alameda County, Department of Environmental Health Services, may require further sampling and reporting of monitoring wells on the site, although the scope of that effort has not yet been determined.

Total lead was detected in soil samples# 1, 2, and 3 at 5.8 ppm, 85 ppm, and 250 ppm respectively. These samples were collected within the proposed garden area. It is our recommendation that human exposure and health risk be evaluated.

### 4.0 RELEASE REPORTING

As requested, a copy of this report was forwarded to the Alameda County Department of Environmental Health Services, Hazardous Materials Division. This address is provided for your records.

County of Alameda  
Department of Environmental Health Services  
Hazardous Materials Division  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577  
Attn: Ms. Eva Chou  
Hazardous Materials Specialist

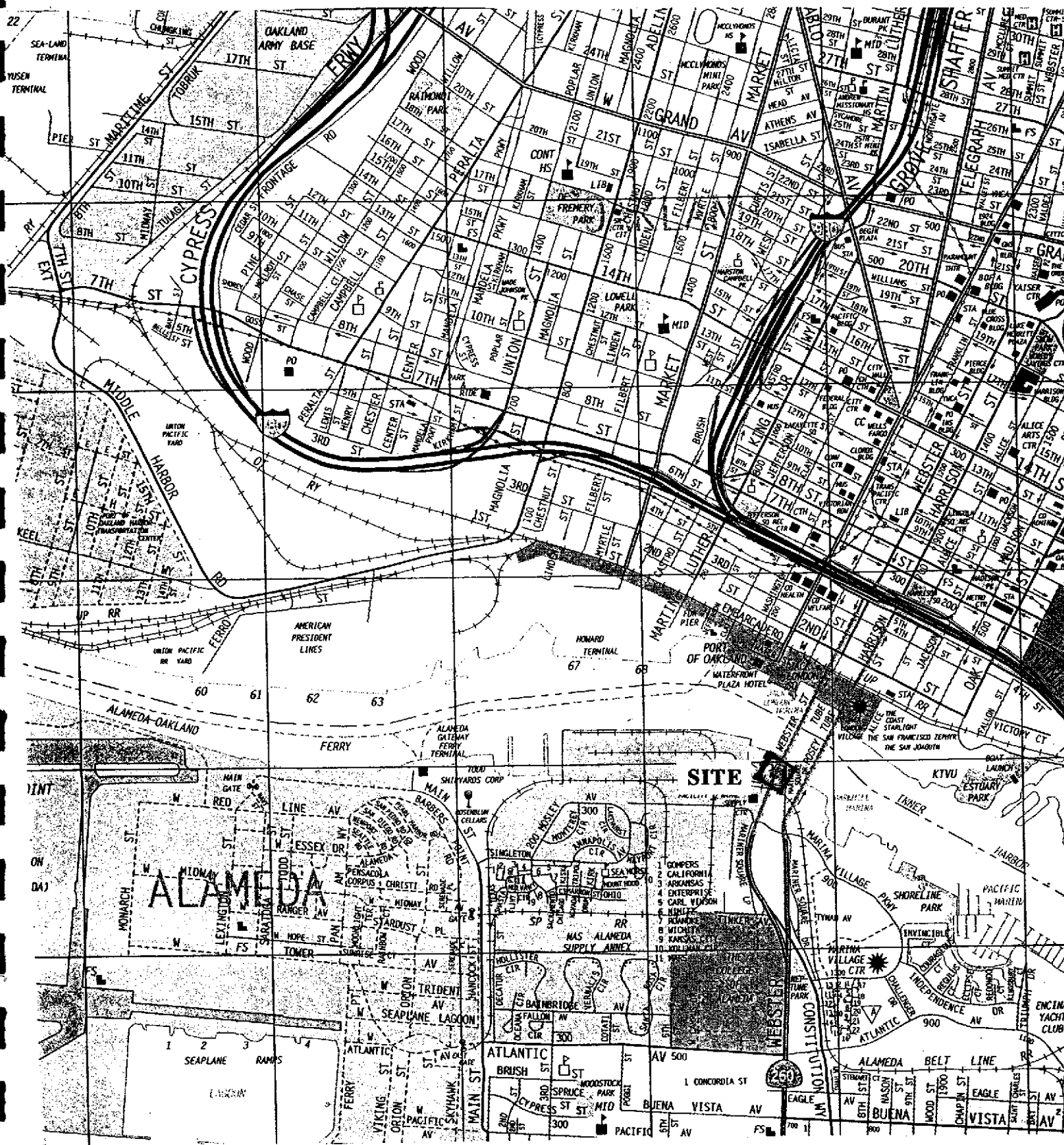
## **APPENDIX A**

### **FIGURES AND TABLE**

**Figure 1. Site Location Map**

**Figure 2. Locations of Groundwater Monitoring Wells and of Proposed Locations  
for Sampling Groundwater and Soil**

**Table A-1. Historical Analytical Results for 18 Groundwater Monitoring Wells**

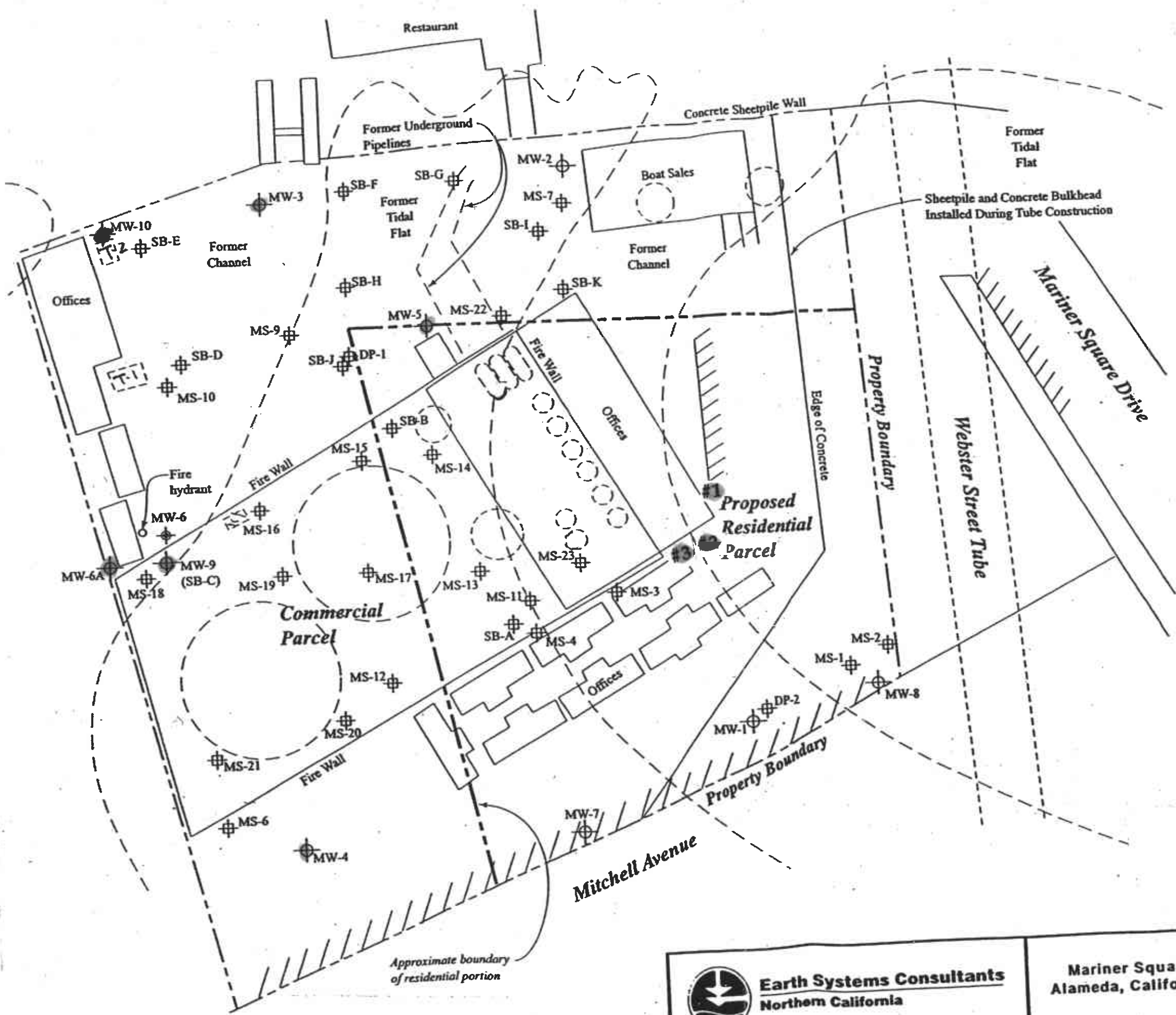


Greensfelder  
&  
Associates

Site:  
**2415 MARINER SQUARE**  
**ALAMEDA, CALIFORNIA**

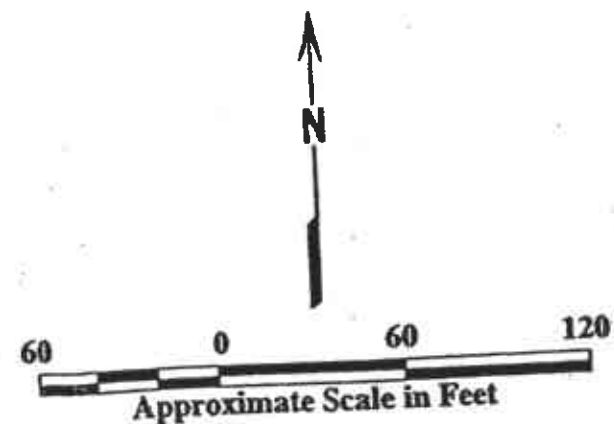
Figure 1.  
Site  
Location Map





# LEGEND

- Monitoring Well
- Destroyed Well
- Soil Boring
- Existing Structures
- Former above Ground Fuel Storage Tanks
- Former Underground Gasoline Storage Tank
- Former Tidal Channel (Radbruch, 1957)
- Approximate Property Boundary
- MS-22 Boring Sample Location
- DP-2 Boring Sample Location



**Earth Systems Consultants**  
Northern California

**Mariner Square**  
Alameda, California

## SOIL BORING & WELL LOCATIONS

Date: November 1999  
File No: NFE-4392-01

Figure 2

**TABLE 1**  
**HISTORICAL SOIL SAMPLE ANALYTICAL RESULTS - ORGANICS**  
**MARINER SQUARE, ALAMEDA, CALIFORNIA**

BORING/ WELL NUMBER	DEPTH (feet)	DATE	TPHg (ppm)	TPHd (ppm)	TPHmo (ppm)	TRPH (ppm)	OIL & GREASE (ppm)	BENZENE (ppm)	TOTAL TOLUENE (ppm)	ETHYL- BENZENE (ppm)	XYLENES (ppm)	MTBE (ppm)	VOCs (ppm)	VINYL CHLORIDE (ppb)	TOC (ppm)
MW6-N1	4.5	4/28/98	<1	<9	41	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
MW6-S1	3	4/28/98	<1	3,200	24,000	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
MW6-W1	3	4/28/98	<1	2,100	6,800	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
MW6-E1	3	4/28/98	<1	47	380	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
MW6-W2	3	5/4/98	<1	<1	<5	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
MW6-N2	3.5	5/4/98	<1	<1	<5	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
MW6-E2	3	5/4/98	<1	<1	8	-	-	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-
T1-5.5 (1)	5.5	8/6/97	350	230	8,900	-	-	<0.05	<0.10	0.3	0.71	<1.0	-	-	-
T2-4.5 (1)	4.5	8/6/97	0.550	10	12	-	-	<0.001	<0.002	<0.002	<0.004	<0.010	-	-	-
PL1-1	2.0	11/21/98	<1	590	1,600	-	-	<0.005	<0.005	<0.005	<0.005	<0.05	-	-	-
PL1-2	2.0	11/21/98	1,100	470	920	-	-	<1.0	<1.0	<1.0	1.7	<10	-	-	-
PL1-3	2.2	11/21/98	25	30	28	-	-	<0.05	0.065	0.087	0.17	<10	-	-	-
PL1-4	2.0	11/21/98	<1	15	24	-	-	<0.005	<0.005	<0.005	<0.005	<0.05	-	-	-
PL1-5	1.8	11/21/98	<1	<1	<1	-	-	<0.005	<0.005	<0.005	<0.005	<0.05	-	-	-
PL1-6	1.8	11/21/98	23	110	200	-	-	<0.05	0.07	0.077	0.85	<0.5	-	-	-
PL1-7	2.0	11/21/98	130	59	89	-	-	<0.5	<0.5	2.8	2	<5.0	-	-	-
PL2-1	2.3	11/21/98	<100	210	81	-	-	<0.5	0.54	1.1	<0.5	<5.0	-	-	-
PL2-2	2.2	11/21/98	8.3	28	46	-	-	<0.005	<0.005	<0.005	<0.005	<0.05	-	-	-
PL2-3	1.9	11/21/98	<1	<1	73	-	-	<0.005	<0.005	.0061	<0.005	<0.05	-	-	-
PL2-4	2.0	11/21/98	<1	<1	130	-	-	<0.005	<0.005	<0.005	<0.005	<0.05	-	-	-
PL2-5	2.0	11/21/98	150	1,000	1,400	-	-	<0.005	<0.005	<0.005	<0.005	<0.05	-	-	-

ppm Parts per million

ppb Parts per billion

< Analyte not detected at or above specified laboratory reporting limit.

- Not Analyzed

ND No analytes detected above laboratory reporting limits, reporting limits vary for each analyte

ND\* Analyte not detected, reporting limit not specified

TPHg Total Petroleum Hydrocarbons as gasoline

TPHd Total Petroleum Hydrocarbons as diesel

TPHmo Total Petroleum Hydrocarbons as motor oil

TRPH Total Recoverable Petroleum Hydrocarbons

VOCs Volatile Organic Compounds

TOC Total Organic Carbon

MTBE Methyl Tert-Butyl Ether

<p style="text-align: center;">TABLE 2 HISTORICAL GROUNDWATER ANALYTICAL RESULTS - ORGANICS and TDS MARINER SQUARE, ALAMEDA, CALIFORNIA</p>														
WELL NUMBER	DATE	TPHg (ppb)	TPHd (ppb)	TPHmo (ppb)	TPPH (ppm)	OIL & GREASE (ppb)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL- BENZENE (ppb)	TOTAL XYLENES (ppb)	MTBE (ppb)	VOCs (ppb)	VINYL CHLORIDE (ppb)	TDS (ppm)
MS-1	04/07/1992	-	-	-	<1	-	<5	<5	<5	<10	-	ND	-	-
MS-7	04/07/1992	-	-	-	<1	-	<5	<5	<5	<10	-	ND	-	-
MS-13	04/07/1992	-	-	-	23	-	<5	<5	<5	<10	-	ND	-	-
MS-18	04/07/1992	-	-	-	1,200	-	<50	<50	<50	<100	-	ND	-	-
MW-1	08/03/1992	-	580	<5000	-	-	<0.5	<0.5	<0.5	<0.5	-	-	-	-
	11/20/1992	<50	600	<5000	-	-	<0.5	<0.5	<0.5	<0.5	-	-	<2	-
	09/27/1994	<50	530	<50	-	-	<0.3	<0.3	<0.3	<0.3	-	-	-	-
	06/28/1996	<100	<50	<200(1)	-	-	<0.5	<1.0	<1.0	<2.0	-	-	<0.5	-
	10/31/1996	<100	93	<200	-	-	<0.5	<1.0	<1.0	<2.0	<10	-	<1.0	-
	09/30/1997	120	<50	<200	-	-	4.7	<1.0	3.7	21	<10	-	<0.8	-
	12/12/1997	<50	<50	<200	-	-	<0.5	<0.5	<0.5	<2.0	<5	-	<2	-
	02/18/1998	<50	<50	<200	-	-	1.5	0.6	1.8	8	<5	-	<2	-
	05/08/1998	<50	<50	<200	-	-	1.0	<0.5	0.7	5	<5	-	<2	-
MW-2	08/03/1992	-	2200	<5000	-	-	<0.5	6.5	3.2	5.3	-	-	-	-
	11/20/1992	340	2100	<5000	-	-	<0.5	<0.5	<0.5	2.4	-	-	<2	-
	09/26/1994	320	<50	240	-	-	<3.0	<3.0	<3.0	<3.0	-	-	-	-
	6/28/96 (2)	980	100 (3,4)	<200 (1)	-	-	0.5	<1.0	2.3	3.1	-	-	<0.5	-
	10/31/1996	220	180	<200	-	-	<0.5	<1.0	<1.0	<2.0	<10	-	<1.0	-
	09/30/1997	900	150 (3)	<200	-	-	0.8	<1.0	2	6.2	<10	-	<0.8	-
	12/12/1997	360	<50	<200	-	-	1.1	<0.5	2.2	3	<5	-	<2	-
	02/18/1998	90	<50	<200	-	-	<0.5	<0.5	1.1	2	<5	-	<2	-
	05/08/1998	170	<50	<200	-	-	<0.5	<0.5	1.7	3	<5	-	<2	-
MW-3	08/03/1992	-	1000	<5000	-	-	<0.5	1	<0.5	2.4	-	-	-	-
	11/20/1992	98	2000	<5000	-	-	<0.5	<0.5	0.9	1	-	-	<2	-
	09/27/1994	<50	720	<50	-	-	<3.0	<0.3	<0.3	<0.3	-	-	-	-
	06/28/1996	<100	120 (3)	<200 (1)	-	-	<0.5	<1.0	<1.0	<2.0	-	-	<0.5	-
	10/31/1996	<100	160	<200	-	-	<0.5	<1.0	<1.0	<2.0	<10	-	<1.0	-
	09/30/1997	<100	70 (8)	<200	-	-	0.8	<1.0	<1.0	3.3	<10	-	<0.8	-
	12/12/1997	80	<50	<200	-	-	0.7	<0.5	0.7	4	9	-	<2	-
	02/18/1998	60	<50	<200	-	-	<0.5	<0.5	<0.5	4	7	-	<2	-
	05/08/1998	<50	<50	<200	-	-	0.5	<0.5	0.5	4	<5	-	<2	-

TABLE 2 HISTORICAL GROUNDWATER ANALYTICAL RESULTS - ORGANICS and TDS MARINER SQUARE, ALAMEDA, CALIFORNIA														
WELL NUMBER	DATE	TPHg (ppb)	TPHd (ppb)	TPHmo (ppb)	TRPH (ppm)	OIL & GREASE (ppb)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL- BENZENE (ppb)	TOTAL XYLENES (ppb)	MTBE (ppb)	VOCs (ppb)	VINYL CHLORIDE (ppb)	TDS (ppm)
MW-4	8/2/92	-	1300	<5000	-	-	16	2.6	0.6	2.7	-	-	9.0	-
	11/20/1992	330	2400	<5000	-	-	31	5.2	0.7	2	-	-	13	-
	09/27/1994	<50	890	<50	-	-	12	0.43	<0.3	<0.3	-	-	8.0	580
	06/28/1996	180	170 (3,4)	<200 (1)	-	-	4	<1.0	<1.0	<2.0	-	-	2.5	-
	10/31/1996	110	330	<200	-	-	6.2	<1.0	<1.0	<2.0	<10	-	4.3	-
	09/30/1997	650	170 (3)	<200	-	-	3.9	<1.0	<1.0	<2.0	460	-	3.1	-
	12/12/1997	260	<50	<200	-	-	4.9	0.9	<0.5	<2.0	320	-	3	-
	02/18/1998	240	<50	<200	-	-	1.0	1.0	2.1	10	290	-	2	-
	05/08/1998	90	<50	<200	-	-	0.5	0.5	0.8	5	30	-	<2	-
	08/03/1992	-	2200	<5000	-	-	9	6	49	11	-	-	-	-
MW-5	08/05/1992	-	-	-	-	-	-	-	-	-	-	-	-	-
	11/20/1992	4800	1500	<5000	-	-	7.6	12	5.8	26	-	-	<2	-
	09/26/1994	3100	780	<500	-	-	7.9	11	8.7	14	-	-	-	-
	06/28/1996	5000	610 (3,4)	790 (1)	-	-	1.2	6.8	21	14	-	-	<0.5	-
	10/31/1996	6800	4900	860	-	-	20	5.9	15	19	<10	-	<1.0	-
	09/30/1997	9000	4100 (3)	520	-	-	35	5.3	36	32	12	-	<0.8	-
	12/12/1997	3400	90	<200	-	-	26	4.6	5.9	13	11	-	<2	-
	02/18/1998	3200	<50	<200	-	-	7.9	1.4	14	12	<5	-	<2	-
	05/08/1998	3900	<50	<200	-	-	8.0	22	19	10	<5	-	<2	-
	08/03/1992	-	2200	<5000	-	-	9	6	49	11	-	-	-	-
MW-6	9/27/94	1100	9900	3200	-	-	<3.0	<3.0	<3.0	<3.0	-	-	<1.0	-
	10/07/1994	Not Sampled - Sheen Present												
	10/14/1994													
	10/21/1994													
	10/25/1994													
	06/28/1996													
	10/31/1996													
	09/30/1997													
	12/12/1997	21000	1900000	43000	-	-	5	<0.5	8	19	<50	-	<2	-
	02/18/1998	70000	<50	<200	-	-	20	20	20	70	<100	-	<2	-
	04/28/1998	800	920	<200	-	-	<0.5	<0.5	<0.5	<2	<5	-	<2	-
MW-7	04/28/1998	Well Destroyed												
	09/27/1994	<250	1800	<250	-	-	<0.3	<0.3	<0.3	<0.3	-	-	<1.0	-
	06/28/1994	560	490 (3,4)	<200 (1)	-	-	0.6	<1.0	<1.0	2.7	-	-	<0.5	-
	10/31/1996	200	420	<200	-	-	1.1	<1.0	<1.0	<2.0	<10	-	<1.0	-
	09/30/1997	750	190 (3)	<200	-	-	8.1	5.3	<1.0	6.9	<10	-	<0.8	-
	12/12/1997	420	<50	<200	-	-	7.9	<0.5	<0.5	5	<5	-	<2	-
	02/18/1998	650	<50	<200	-	-	9.5	0.6	<0.5	6	16	-	<2	-
	05/08/1998	710	<50	<200	-	-	3.4	4.8	0.8	7	34	0.9 (5)	<2	-

TABLE 2 HISTORICAL GROUNDWATER ANALYTICAL RESULTS - ORGANICS and TDS MARINER SQUARE, ALAMEDA, CALIFORNIA														
WELL NUMBER	DATE	TPHg (ppb)	TPHd (ppb)	TPHmo (ppb)	TRPH (ppm)	OIL & GREASE (ppb)	BENZENE (ppb)	TOLUENE (ppb)	ETHYL-BENZENE (ppb)	TOTAL XYLENES (ppb)	MTBE (ppb)	VOCs (ppb)	VINYL CHLORIDE (ppb)	TDS (ppm)
MW-8	09/27/1994	<50	320	<50	-	-	<0.3	<0.3	<0.3	<0.3	-	-	-	4100
	06/28/1996	<100	58 (3)	<200 (1)	-	-	<0.5	<1.0	<1.0	<2.0	-	-	<0.5	-
	10/31/1996	<100	120	<200	-	-	<0.5	<1.0	<1.0	<2.0	<10	-	<1.0	-
	09/30/1997	110	70 (3)	<200	-	-	4.2	<1.0	3.4	16	<10	-	<0.8	-
	12/12/1997	<50	<50	<200	-	-	<0.5	<0.5	<0.5	<2.0	15	-	<2	-
	02/18/1998	<50	<50	<200	-	-	0.9	<0.5	0.8	3	<5	-	<2	-
	05/08/1998	<50	<50	<200	-	-	<0.5	<0.5	<0.5	<2.0	<5	-	<2	-
MW-9	09/26/1994	<500	2200	<500	-	-	<0.3	<0.3	<0.3	<0.3	-	-	<1.0	-
	06/28/1996	390	550 (3,4)	<200 (1)	-	-	5.2	<1.0	<1.0	<2.0	-	-	<0.5	-
	10/31/1996	300	590	720	-	-	5.9	<1.0	<1.0	<2.0	<10	-	<1.0	-
	09/30/1997	150	460 (3)	<200	-	-	0.6	<1.0	<1.0	2.7	<10	-	<0.8	-
	12/12/1997	180	<50	<200	-	-	<0.5	<0.5	<0.5	<2.0	<5	-	<2	-
	02/18/1998	100	<50	<200	-	-	<0.5	0.5	<0.5	<2.0	6	-	<2	-
	05/08/1998	70	130	<200	-	-	<0.5	<0.5	<0.5	<2.0	16	-	<2	-
HP-1	9/3/98	10,000 (6)	410,000	12,000	-	-	<0.5	18	8	63	<0.5	-	<5.0	-
HP-2	9/3/98	1,400 (6)	230,000	10,000	-	-	<0.5	4	2	24	<0.5	-	<5.0	-
HP-3	9/3/98	230 (6)	78,000	3,000	-	-	1.0	<0.5	<0.5	<1.0	<0.5	-	<5.0	-
T1-D	8/6/97	-	9,800	-	29	-	-	-	-	-	-	-	ND	-
T1-G	8/6/97	230 (6)	78,000	3,000	-	-	4.3	9	12	84	<0.5	-	ND	-

**Notes:**  
 TPHg Total Petroleum Hydrocarbons as gasoline  
 TPHd Total Petroleum Hydrocarbons as diesel  
 TPHmo Total Petroleum Hydrocarbons as motor oil  
 TRPH Total Recoverable Petroleum Hydrocarbons  
 MTBE Methyl Tert-butyl ether  
 VOCs Volatile Organic Compounds  
 TDS Total Dissolved Solids  
 ppb parts per billion  
 ppm parts per million  
 < Analyte not detected at or above stated detection limit  
 (1)

Lubricating oil can not be qualitatively identified by type of oil because of chromatographic likeness of different oil types. Due to non-volatility of certain oils, much of the oil present may never be quantified by this gas chromatographic method. Quantitation obtained for lubricating oil by this method should, therefore, be treated as an estimate. This method quantifies lubricating oil against 10-W-40 standards. For the most accurate analysis of lubricating oil, an infrared method is recommended.

- (2) Water sample also analyzed for Freon 113 by EPA Method 8010A. Results were below the detection limit of 1.0 µL.  
 (3) Qualitative identification is uncertain because the material present does not match laboratory standards.  
 (4) Quantitation uncertain due to matrix interferences  
 (5) Tetrachloroethene

**APPENDIX B**

**LABORATORY ANALYTICAL REPORTS**

**CHAINS OF CUSTODY**

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Charlene Morrow, M.S.  
Yelena Aravkina, M.S.  
Bradley T. Benson, B.S.  
Kurt Johnson, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
TEL: (206) 285-8282  
FAX: (206) 283-5044  
e-mail: fbi@isomedia.com

January 31, 2002

Helen Mawhinney, Project Manager  
Environmental Technical Services  
1548 Jacob Ave.  
San Jose, CA 95118

Dear Ms. Hawhinney:

Included are the results from the testing of material submitted on January 17, 2002 from your 2415 Mariner Sq. project. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

*Charlene Morrow*

Charlene Morrow  
Chemist

Enclosures  
NAA0131R.DOC

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on January 17, 2002 by Friedman & Bruya, Inc. from the Environmental Technical Services 2415 Mariner Sq. project.

Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Environmental Technical Services</u>
201101-01	#1
201101-02	#2
201101-03	#3
201101-04	MW-5
201101-05	MW-6A
201101-06	MW-9
201101-07	MW-10

All quality control requirements were acceptable.

Samples MW-6A and MW-9 were sent to North Creek Analytical for dissolved CAM 17 metals analysis, and samples MW-5 and MW-10 were sent for dissolved lead analysis. The reports generated by NCA will be forwarded to your office upon receipt.



Date of Report: 01/31/02  
Date Received: 01/17/02  
Project: 2415 Mariner Sq.  
Date Extracted: 01/23/02  
Date Analyzed: 01/24/02

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS  
AS DIESEL AND MOTOR OIL  
USING EPA METHOD 8015M  
Sample Extracts Passed Through a  
Silica Gel Column Prior to Analysis  
Results Reported as µg/g (ppm)**

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 51-153)
#1 201101-01	<10	<50	103
#2 201101-02	120	550	96
#3 201101-03	20	130	98
Method Blank	<10	<50	98

Date of Report: 01/31/02  
Date Received: 01/17/02  
Project: 2415 Mariner Sq.  
Date Extracted: 01/18/02  
Date Analyzed: 01/22/02

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING EPA METHOD 8015M**

**Samples Filtered Prior to Extraction  
Sample Extracts Passed Through a  
Silica Gel Column Prior to Analysis  
Results Reported as µg/L (ppb)**

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Surrogate</u> (% Recovery) (Limit 45-147)
MW-5 201101-04	1,100	114
MW-6A 201101-05	250	116
MW-9 201101-06	2,000	110
MW-10 201101-07	330	113
Method Blank	<50	111

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: MW-6A  
Date Received: 01/17/02  
Date Extracted: 01/18/02  
Date Analyzed: 01/18/02  
Matrix: Water  
Units: ug/L (ppb)

Client: Environmental Technical Services  
Project: 2415 Mariner Sq.  
Lab ID: 201101-05  
Data File: 011809.D  
Instrument: 5972 -Ins  
Operator: YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	98	89	111
1,2-Dichloroethane-d4	94	82	116
Toluene-d8	101	84	114
4-Bromofluorobenzene	101	85	127

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	Tetrachloroethene	<1
Chloromethane	<1	Dibromochloromethane	<1
Vinyl chloride	<1	1,2-Dibromoethane (EDB)	<1
Bromomethane	<1	Chlorobenzene	<1
Chloroethane	<1	Ethylbenzene	<1
Trichlorofluoromethane	<1	1,1,1,2-Tetrachloroethane	<1
Acetone	<10	m,p-Xylene	<1
1,1-Dichloroethene	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon Tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<1	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<1
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1
1,3-Dichloropropane	<1		

## ENVIRONMENTAL CHEMISTS

## Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: MW-9  
 Date Received: 01/17/02  
 Date Extracted: 01/18/02  
 Date Analyzed: 01/18/02  
 Matrix: Water  
 Units: ug/L (ppb)

Client: Environmental Technical Services  
 Project: 2415 Mariner Sq.  
 Lab ID: 201101-06  
 Data File: 011810.D  
 Instrument: 5972 -Ins  
 Operator: YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	103	89	111
1,2-Dichloroethane-d4	101	82	116
Toluene-d8	106	84	114
4-Bromofluorobenzene	103	85	127

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	Tetrachloroethene	<1
Chloromethane	<1	Dibromochloromethane	<1
Vinyl chloride	<1	1,2-Dibromoethane (EDB)	<1
Bromomethane	<1	Chlorobenzene	<1
Chloroethane	<1	Ethylbenzene	<1
Trichlorofluoromethane	<1	1,1,1,2-Tetrachloroethane	<1
Acetone	<10	m,p-Xylene	<1
1,1-Dichloroethene	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon Tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<1	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<1
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1
1,3-Dichloropropane	<1		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID: Method Blank  
 Date Received: Not Applicable  
 Date Extracted: 01/18/02  
 Date Analyzed: 01/18/02  
 Matrix: Water  
 Units: ug/L (ppb)

Client: Environmental Technical Services  
 Project: 2415 Mariner Sq.  
 Lab ID: 02-119 mb2  
 Data File: 011808.D  
 Instrument: 5972 -Ins  
 Operator: YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Dibromofluoromethane	99	89	111
1,2-Dichloroethane-d4	97	82	116
Toluene-d8	102	84	114
4-Bromofluorobenzene	105	85	127

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	Tetrachloroethene	<1
Chloromethane	<1	Dibromochloromethane	<1
Vinyl chloride	<1	1,2-Dibromoethane (EDB)	<1
Bromomethane	<1	Chlorobenzene	<1
Chloroethane	<1	Ethylbenzene	<1
Trichlorofluoromethane	<1	1,1,1,2-Tetrachloroethane	<1
Acetone	<10	m,p-Xylene	<1
1,1-Dichloroethene	<1	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
trans-1,2-Dichloroethene	<1	Isopropylbenzene	<1
1,1-Dichloroethane	<1	Bromoform	<1
2,2-Dichloropropane	<1	n-Propylbenzene	<1
cis-1,2-Dichloroethene	<1	Bromobenzene	<1
Chloroform	<1	1,3,5-Trimethylbenzene	<1
2-Butanone (MEK)	<10	1,1,2,2-Tetrachloroethane	<1
1,2-Dichloroethane (EDC)	<1	1,2,3-Trichloropropane	<1
1,1,1-Trichloroethane	<1	2-Chlorotoluene	<1
1,1-Dichloropropene	<1	4-Chlorotoluene	<1
Carbon Tetrachloride	<1	tert-Butylbenzene	<1
Benzene	<1	1,2,4-Trimethylbenzene	<1
Trichloroethene	<1	sec-Butylbenzene	<1
1,2-Dichloropropane	<1	p-Isopropyltoluene	<1
Bromodichloromethane	<1	1,3-Dichlorobenzene	<1
Dibromomethane	<1	1,4-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dichlorobenzene	<1
cis-1,3-Dichloropropene	<1	1,2-Dibromo-3-chloropropane	<1
Toluene	<1	1,2,4-Trichlorobenzene	<1
trans-1,3-Dichloropropene	<1	Hexachlorobutadiene	<1
1,1,2-Trichloroethane	<1	Naphthalene	<1
2-Hexanone	<10	1,2,3-Trichlorobenzene	<1
1,3-Dichloropropane	<1		

Date of Report: 01/31/02  
Date Received: 01/17/02  
Project: 2415 Mariner Sq.  
Date Extracted: 01/22/02  
Date Analyzed: 01/23/02

RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES  
FOR TOTAL METALS  
BY INDUCTIVELY COUPLED PLASMA (ICP)  
(METHOD 6010)

Results Reported as  $\mu\text{g/g}$  (ppm)

<u>Sample ID</u> Laboratory ID	<u>Total Lead</u>
#1 201101-01	5.8
#2 201101-02	250
#3 201101-03	85
Method Blank	<2.0

Date of Report: 01/31/02

Date Received: 01/17/02

Project: 2415 Mariner Sq.

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING EPA METHOD 8015M**

Laboratory Code: 201128-05 (Duplicate) Silica Gel

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Diesel	µg/g (ppm)	38	36	5

Laboratory Code: 201128-05 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel	µg/g (ppm)	500	38	119	124	60-187	4

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel	µg/g (ppm)	500	115	67-140

Date of Report: 01/31/02

Date Received: 01/17/02

Project: 2415 Mariner Sq.

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL  
USING EPA METHOD 8015M**

Laboratory Code: 201101-01 (Duplicate) Silica Gel

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
Motor Oil	µg/g (ppm)	<50	<50	nm

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Motor Oil	µg/g (ppm)	250	119	126	65-135	6

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.



**FRIEDMAN & BRUYA, INC.****ENVIRONMENTAL CHEMISTS**

Date of Report: 01/31/02

Date Received: 01/17/02

Project: 2415 Mariner Sq.

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF WATER  
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING EPA METHOD 8015M**

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel	µg/L (ppb)	5,000	112	114	58-142	2

## ENVIRONMENTAL CHEMISTS

Date of Report: 01/31/02

Date Received: 01/17/02

Project: 2415 Mariner Sq.

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER  
SAMPLES FOR VOLATILES BY EPA METHOD 8260B**

Laboratory Code: 201052-05 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference (Limit 20)
1,1-Dichloroethene	µg/L (ppb)	<1	<1	nm
Benzene	µg/L (ppb)	66	72	9
Trichloroethene	µg/L (ppb)	58	65	11
Toluene	µg/L (ppb)	22	24	9
Chlorobenzene	µg/L (ppb)	42	44	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
1,1-Dichloroethene	µg/L (ppb)	50	118	117	75-145	1
Benzene	µg/L (ppb)	50	107	106	81-123	1
Trichloroethene	µg/L (ppb)	50	110	108	63-130	2
Toluene	µg/L (ppb)	50	100	102	81-116	2
Chlorobenzene	µg/L (ppb)	50	97	100	85-116	3

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

**FRIEDMAN & BRUYA, INC.****ENVIRONMENTAL CHEMISTS**

Date of Report: 01/31/02  
Date Received: 01/17/02  
Project: 2415 Mariner Sq.

**QUALITY ASSURANCE RESULTS  
FROM TOTAL METALS BY  
INDUCTIVELY COUPLED PLASMA (ICP)  
(METHOD 6010)**

Laboratory Code: 201101-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	Relative Percent Difference	Acceptance Criteria
Lead	µg/g (ppm)	5.8	5.1	13	0-20

Laboratory Code: 201099-01&02&03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	% Recovery MS	% Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	µg/g (ppm)	100	20	90	77	50-150	16

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Lead	µg/g (ppm)	100	108	111	80-120	3



201101

1/11/02 1704 NEM

## Entech Analytical Labs, Inc.

3334 Victor Court  
Santa Clara, CA 95054(408) 588-0200  
(408) 588-0201 - Fax

## Chain of Custody / Analysis Request

Office 408 267 6427

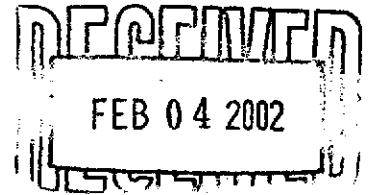
Attention to: <b>HELEN MAWHINNEY</b> (LHAM)		Phone No.: <b>4570</b> <b>cell 385 4308</b>		Purchase Order No.:		Send Invoice to (if Different)		Phone							
Company Name: <b>ETS (ETS)</b> <b>Environmental Technical Services</b>		Fax No.: <b>510 522 6259</b>		Project Number: <b>2415 Mariner Sq</b>		Company									
Mailing Address: <b>1548 JACOB AVE</b>		Project Name: <b>2415 Mariner Sq</b>		Billing Address (if Different)											
City: <b>SAN JOSE</b>		State: <b>CA</b>		Zip: <b>95118</b>		Project Location: <b>2415 Mariner Sq</b> <b>ATAMEDA, CA</b>		City: State Zip							
Sampler: <b>HELEN MAWHINNEY</b> (LHAM)		Turn Around Time: <input type="checkbox"/> Same Day <input type="checkbox"/> 24 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input checked="" type="checkbox"/> Standard		<div style="display: flex; justify-content: space-between;"> <div> Volatile Organics by GC/MS: <input type="checkbox"/> F113  Fuel Oxygenates by GC/MS: <input type="checkbox"/> 8240  MTBE by GC/MS: <input type="checkbox"/> 8260B  Pesticides: <input type="checkbox"/> 8081  Halogenated or Aromatic Volatiles: <input type="checkbox"/> 8018/8019  TPH as Gas: <input type="checkbox"/> 8020/8021  Base/Neutral Volatiles: <input type="checkbox"/> 8270  Fuel Scan: <input type="checkbox"/> 8270-SIMS  Diesel: <input type="checkbox"/> 8270-SIMS  W/ Silica Standard Cleanup <input type="checkbox"/>  W/ Silica Column Cleanup <input type="checkbox"/> </div> <div> <b>Disolved Lead</b>  <b>THM</b>  <b>Oil &amp; Grease</b>  <b>Halogenated</b>  <b>CAM 17 - 12/31/02</b>  <b>THM (8022)</b>  <b>Metals - Circle Below</b>  <b>Total</b> </div> </div>											
Date: <b>1-11-02</b>															
Order ID:		Sampling		Matrix		Composite		Grab		Containers		Preservative		Remarks	
Client ID	Laboratory No.	Date	Time												
MW-5	-04	1-11-02		W							5	WLL			
MW-6A	-05	1-11-02		W							5	WLL			
MW-9	-06	1-11-02		W							5	WLL			
MW-10	-07	1-11-02		W							5	WLL			
Relinquished by: <b>HELEN MAWHINNEY</b>		Received by: <b>ETS Eridox</b>		Date: <b>1-11-02</b>		Time: <b>19:35</b>		Special Instructions or Comments <b>Please filter water samples / IF dissolved</b> <b>Halogenated hydrocarbons 8260</b> <b>CAM 17 is possible</b> <b>concern individual</b> <b>dissolved lead 601</b>							
Relinquished by: <b>HELEN MAWHINNEY</b>		Received by: <b>ETS Eridox</b>		Date: <b>1-11-02</b>		Time: <b>19:35</b>									
Relinquished by: <b>HELEN MAWHINNEY</b>		Received by: <b>ETS Eridox</b>		Date: <b>1-11-02</b>		Time: <b>19:45</b>									
Relinquished by: <b>HELEN MAWHINNEY</b>		Received by: <b>ETS Eridox</b>		Date: <b>1-11-02</b>		Time: <b>19:45</b>									
Relinquished by:		Received by:		Date:		Time:		Metals: Al, As, Sb, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, K, Si, Ag, Na, 7 Se, Sr, Ti, Sn, Tl, V, Zn, W: CAM-17 <input type="checkbox"/> Plating <input type="checkbox"/> PPM-13 <input type="checkbox"/> LUFT-5 <input type="checkbox"/>							

☐ NPDES Detection Limits

Metals: Al, As, Sb, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, Pb, Mg, Mn, Hg, Mo, Ni, K, Si, Ag, Na, 7  
Se, Sr, Ti, Sn, Tl, V, Zn, W: CAM-17 ☐ Plating ☐ PPM-13 ☐ LUFT-5 ☐



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588



31 January 2002

Charlene Morrow  
Friedman & Bruya  
3012 16th Ave W  
Seattle, WA/USA 98119-2029

RE: Charlene Morrow

Enclosed are the results of analyses for samples received by the laboratory on 01/18/02 14:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanne Garthwaite  
Project Manager

Friedman & Bruya  
3012 16th Ave W  
Seattle WA/USA, 98119-2029

Project: Charlene Morrow  
Project Number: 201101  
Project Manager: Charlene Morrow

Reported:  
01/31/02 14:43

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-6A	B2A0398-01	Water	01/11/02 12:00	01/18/02 14:30
MW-9	B2A0398-02	Water	01/11/02 12:00	01/18/02 14:30

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

  
Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 1 of 7

Friedman & Bruya  
 3012 16th Ave W  
 Seattle WA/USA, 98119-2029

Project: Charlene Morrow  
 Project Number: 201101  
 Project Manager: Charlene Morrow

Reported:  
 01/31/02 14:43

**Dissolved Metals by EPA 6000/7000 Series Methods**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>MW-6A (B2A0398-01) Water Sampled: 01/11/02 12:00 Received: 01/18/02 14:30</b>									
Silver	ND	0.00100	mg/l	1	2A24014	01/24/02	01/24/02	EPA 6020	
Arsenic	ND	0.00100	"	"	"	"	"	"	
Barium	0.109	0.0100	"	"	"	"	"	"	
Beryllium	ND	0.00100	"	"	"	"	01/25/02	"	
Cadmium	ND	0.00100	"	"	"	"	01/24/02	"	
Cobalt	ND	0.00100	"	"	"	"	"	"	
Chromium	0.00167	0.00100	"	"	"	"	"	"	
Copper	0.00226	0.00100	"	"	"	"	"	"	
Mercury	ND	0.00100	"	"	2A30013	01/30/02	01/30/02	EPA 7470A	
Molybdenum	ND	0.00500	"	"	2A24014	01/24/02	01/24/02	EPA 6020	
Nickel	0.00635	0.00100	"	"	"	"	"	"	
Lead	ND	0.00100	"	"	"	"	"	"	
Antimony	ND	0.00100	"	"	"	"	"	"	
Selenium	0.00131	0.00100	"	"	"	"	"	"	
Thallium	ND	0.00100	"	"	"	"	"	"	
Vanadium	ND	0.00100	"	"	"	"	"	"	
Zinc	ND	0.0100	"	"	"	"	"	"	

**MW-9 (B2A0398-02) Water Sampled: 01/11/02 12:00 Received: 01/18/02 14:30**

Silver	ND	0.00100	mg/l	1	2A24014	01/24/02	01/24/02	EPA 6020	
Arsenic	0.00382	0.00100	"	"	"	"	"	"	
Barium	0.110	0.0100	"	"	"	"	"	"	
Beryllium	ND	0.00100	"	"	"	"	01/25/02	"	
Cadmium	ND	0.00100	"	"	"	"	01/24/02	"	
Cobalt	0.00169	0.00100	"	"	"	"	"	"	
Chromium	0.00160	0.00100	"	"	"	"	"	"	
Copper	0.0246	0.00100	"	"	"	"	"	"	
Mercury	ND	0.00100	"	"	2A30013	01/30/02	01/30/02	EPA 7470A	
Molybdenum	ND	0.00500	"	"	2A24014	01/24/02	01/24/02	EPA 6020	
Nickel	0.00615	0.00100	"	"	"	"	"	"	
Lead	ND	0.00100	"	"	"	"	"	"	
Antimony	ND	0.00100	"	"	"	"	"	"	
Selenium	0.00103	0.00100	"	"	"	"	"	"	
Thallium	ND	0.00100	"	"	"	"	"	"	
Vanadium	0.00146	0.00100	"	"	"	"	"	"	
Zinc	ND	0.0100	"	"	"	"	"	"	

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

  
 Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
 Environmental Laboratory Network

Page 2 of 7



Friedman & Bruya  
 3012 16th Ave W  
 Seattle WA/USA, 98119-2029

Project: Charlene Morrow  
 Project Number: 201101  
 Project Manager: Charlene Morrow

Reported:  
 01/31/02 14:43

**Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 2A24014: Prepared 01/24/02 Using EPA 3005A

**Blank (2A24014-BLK1)**

Antimony	ND	0.00100	mg/l
Arsenic	ND	0.00100	"
Barium	ND	0.0100	"
Beryllium	ND	0.00100	"
Cadmium	ND	0.00100	"
Chromium	ND	0.00100	"
Cobalt	ND	0.00100	"
Copper	ND	0.00100	"
Lead	ND	0.00100	"
Molybdenum	ND	0.00500	"
Nickel	ND	0.00100	"
Selenium	ND	0.00100	"
Silver	ND	0.00100	"
Thallium	ND	0.00100	"
Vanadium	ND	0.00100	"
Zinc	ND	0.0100	"

**LCS (2A24014-BS1)**

Antimony	0.197	0.00100	mg/l	0.200	98.5	80-120
Arsenic	0.194	0.00100	"	0.200	97.0	80-120
Barium	0.208	0.0100	"	0.200	104	80-120
Beryllium	0.202	0.00100	"	0.200	101	80-120
Cadmium	0.202	0.00100	"	0.200	101	80-120
Chromium	0.197	0.00100	"	0.200	98.5	80-120
Cobalt	0.202	0.00100	"	0.200	101	80-120
Copper	0.210	0.00100	"	0.200	105	80-120
Lead	0.198	0.00100	"	0.200	99.0	80-120
Molybdenum	0.193	0.00500	"	0.200	96.5	80-120
Nickel	0.206	0.00100	"	0.200	103	80-120
Selenium	0.189	0.00100	"	0.200	94.5	80-120
Silver	0.197	0.00100	"	0.200	98.5	77-120
Thallium	0.197	0.00100	"	0.200	98.5	80-120
Vanadium	0.194	0.00100	"	0.200	97.0	80-120
Zinc	0.208	0.0100	"	0.200	104	80-120

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

  
 Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
 Environmental Laboratory Network

Page 3 of 7

Friedman & Bruya  
 3012 16th Ave W  
 Seattle WA/USA, 98119-2029

Project: Charlene Morrow  
 Project Number: 201101  
 Project Manager: Charlene Morrow

Reported:  
 01/31/02 14:43

**Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch 2A24014: Prepared 01/24/02 Using EPA 3005A**

**LCS Dup (2A24014-BSD1)**

Antimony	0.200	0.00100	mg/l	0.200		100	80-120	1.51	20	
Arsenic	0.193	0.00100	"	0.200		96.5	80-120	0.517	20	
Barium	0.207	0.0100	"	0.200		104	80-120	0.482	20	
Beryllium	0.197	0.00100	"	0.200		98.5	80-120	2.51	20	
Cadmium	0.200	0.00100	"	0.200		100	80-120	0.995	20	
Chromium	0.196	0.00100	"	0.200		98.0	80-120	0.509	20	
Cobalt	0.200	0.00100	"	0.200		100	80-120	0.995	20	
Copper	0.210	0.00100	"	0.200		105	80-120	0.00	20	
Lead	0.198	0.00100	"	0.200		99.0	80-120	0.00	20	
Molybdenum	0.194	0.00500	"	0.200		97.0	80-120	0.517	20	
Nickel	0.206	0.00100	"	0.200		103	80-120	0.00	20	
Selenium	0.190	0.00100	"	0.200		95.0	80-120	0.528	20	
Silver	0.196	0.00100	"	0.200		98.0	77-120	0.509	20	
Thallium	0.198	0.00100	"	0.200		99.0	80-120	0.506	20	
Vanadium	0.194	0.00100	"	0.200		97.0	80-120	0.00	20	
Zinc	0.208	0.0100	"	0.200		104	80-120	0.00	20	

**Matrix Spike (2A24014-MS1)**

**Source: B2A0398-01**

Antimony	0.104	0.00100	mg/l	0.100	ND	103	47-150			
Arsenic	0.201	0.00100	"	0.200	ND	100	75-125			
Barium	0.317	0.0100	"	0.200	0.109	104	73-129			
Beryllium	0.206	0.00100	"	0.200	ND	103	75-125			
Cadmium	0.198	0.00100	"	0.200	ND	98.9	75-125			
Chromium	0.198	0.00100	"	0.200	0.00167	98.2	64-128			
Cobalt	0.200	0.00100	"	0.200	ND	99.6	75-125			
Copper	0.206	0.00100	"	0.200	0.00226	102	72-125			
Lead	0.201	0.00100	"	0.200	ND	100	75-125			
Molybdenum	0.102	0.00500	"	0.101	ND	99.8	52-150			
Nickel	0.209	0.00100	"	0.200	0.00635	101	72-125			
Selenium	0.195	0.00100	"	0.200	0.00131	96.8	73-125			
Silver	0.161	0.00100	"	0.200	ND	80.5	32-127			
Thallium	0.199	0.00100	"	0.200	ND	99.5	75-125			
Vanadium	0.198	0.00100	"	0.200	ND	98.6	75-129			
Zinc	0.216	0.0100	"	0.200	ND	103	68-125			

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

  
 Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
 Environmental Laboratory Network

Friedman & Bruya  
 3012 16th Ave W  
 Seattle WA/USA, 98119-2029

Project: Charlene Morrow  
 Project Number: 201101  
 Project Manager: Charlene Morrow

Reported:  
 01/31/02 14:43

**Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch 2A24014: Prepared 01/24/02 Using EPA 3005A**

**Matrix Spike Dup (2A24014-MSD1)**

**Source: B2A0398-01**

Antimony	0.100	0.00100	mg/l	0.100	ND	99.2	47-150	3.92	20	
Arsenic	0.196	0.00100	"	0.200	ND	97.7	75-125	2.52	20	
Barium	0.311	0.0100	"	0.200	0.109	101	73-129	1.91	20	
Beryllium	0.205	0.00100	"	0.200	ND	102	75-125	0.487	20	
Cadmium	0.192	0.00100	"	0.200	ND	95.9	75-125	3.08	20	
Chromium	0.193	0.00100	"	0.200	0.00167	95.7	64-128	2.56	20	
Cobalt	0.195	0.00100	"	0.200	ND	97.1	75-125	2.53	20	
Copper	0.202	0.00100	"	0.200	0.00226	99.9	72-125	1.96	20	
Lead	0.196	0.00100	"	0.200	ND	97.9	75-125	2.52	20	
Molybdenum	0.0998	0.00500	"	0.101	ND	97.6	52-150	2.18	20	
Nickel	0.203	0.00100	"	0.200	0.00635	98.3	72-125	2.91	20	
Selenium	0.191	0.00100	"	0.200	0.00131	94.8	73-125	2.07	20	
Silver	0.163	0.00100	"	0.200	ND	81.5	32-127	1.23	50	
Thallium	0.194	0.00100	"	0.200	ND	97.0	75-125	2.54	20	
Vanadium	0.194	0.00100	"	0.200	ND	96.6	75-129	2.04	20	
Zinc	0.214	0.0100	"	0.200	ND	102	68-125	0.930	20	

**Batch 2A30013: Prepared 01/30/02 Using EPA 7470A Diss**

**Blank (2A30013-BLK1)**

Mercury	ND	0.00100	mg/l							
---------	----	---------	------	--	--	--	--	--	--	--

**LCS (2A30013-BS1)**

Mercury	0.00484	0.00100	mg/l	0.00500		96.8	80-120			
---------	---------	---------	------	---------	--	------	--------	--	--	--

**LCS Dup (2A30013-BSD1)**

Mercury	0.00493	0.00100	mg/l	0.00500		98.6	80-120	1.84	20	
---------	---------	---------	------	---------	--	------	--------	------	----	--

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
 Environmental Laboratory Network

Page 5 of 7

Friedman & Bruya  
 3012 16th Ave W  
 Seattle WA/USA, 98119-2029

Project: Charlene Morrow  
 Project Number: 201101  
 Project Manager: Charlene Morrow

Reported:  
 01/31/02 14:43

**Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

**Batch 2A30013: Prepared 01/30/02 Using EPA 7470A Diss**

**Matrix Spike (2A30013-MS1)**

**Source: B2A0398-01**

Mercury	0.00487	0.000500	mg/l	0.00500	ND	97.4	70-130			
---------	---------	----------	------	---------	----	------	--------	--	--	--

**Matrix Spike Dup (2A30013-MSD1)**

**Source: B2A0398-01**

Mercury	0.00512	0.00100	mg/l	0.00500	ND	102	70-130	5.01	20	
---------	---------	---------	------	---------	----	-----	--------	------	----	--

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
 Environmental Laboratory Network

Page 6 of 7

Friedman & Bruya  
3012 16th Ave W  
Seattle WA/USA, 98119-2029

Project: Charlene Morrow  
Project Number: 201101  
Project Manager: Charlene Morrow

**Reported:**  
01/31/02 14:43

### Notes and Definitions

Q-30 This sample was laboratory filtered since it was not field filtered as is required by the methodology.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

Page 7 of 7

# SAMPLE CHAIN OF CUSTODY

02A0390

Send Report To Charlene Morrow  
 Company \_\_\_\_\_  
 Address \_\_\_\_\_  
 City, State, ZIP \_\_\_\_\_  
 Phone # \_\_\_\_\_ Fax # \_\_\_\_\_

SAMPLERS (signature)	
PROJECT NAME/NO. <u>201101</u>	PO # <u>C-957</u>
REMARKS <u>9 day TAT. Please email by 1-31</u>	

Page # 1 of 1

**TURNAROUND TIME**  
☐ Standard (2 Weeks)  
☐ RUSH  
 Rush charges authorized by: \_\_\_\_\_

**SAMPLE DISPOSAL**  
☐ Dispose after 30 days  
☐ Return samples  
☐ Will call with instructions

Sample ID	Lab ID	Date	Time	Sample Type	# of containers	ANALYSES REQUESTED										Notes
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	CAM 17 Metals	(Dissolved)			
MW-6A	-01	1-11-02		water	1							X				PLEASE
MW-9	-02	1-11-02		water	1							X				FILTER

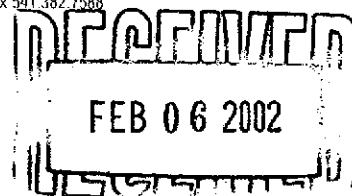
Friedman & Bruya, Inc.  
 3012 16th Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282  
 Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>Charlene Morrow</u>	<u>Charlene Morrow</u>	<u>F&amp;B</u>	<u>1-18-02</u>	<u>9:45 AM</u>
Received by: <u>[Signature]</u>	<u>BRE KUNIHARA</u>	<u>NCA</u>	<u>1-18-02</u>	<u>13:00</u>
Relinquished by: <u>[Signature]</u>	<u>"</u>	<u>"</u>	<u>1-18-02</u>	<u>14:30</u>
Received by: <u>[Signature]</u>	<u>[Signature]</u>	<u>NCA</u>	<u>1-18-02</u>	<u>14:30</u>

1/18/02



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588



4 February 2002

Charlene Morrow  
Friedman & Bruya  
2012 16th Ave W  
Seattle, WA/USA 98119-2029

RE: Charlene Morrow

Enclosed are the results of analyses for samples received by the laboratory on 01/28/02 16:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanne Garthwaite  
Project Manager

Friedman & Bruya  
3012 16th Ave W  
Seattle WA/USA, 98119-2029

Project: Charlene Morrow  
Project Number: 201101  
Project Manager: Charlene Morrow

Reported:  
02/04/02 09:43

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-5	B2A0578-01	Water	01/11/02 12:00	01/28/02 16:15
MW-10	B2A0578-02	Water	01/11/02 12:00	01/28/02 16:15

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Jeanne Garthwaite, Project Manager



Friedman & Bruya  
 3012 16th Ave W  
 Seattle WA/USA, 98119-2029

Project: Charlene Morrow  
 Project Number: 201101  
 Project Manager: Charlene Morrow

Reported:  
 02/04/02 09:43

**Dissolved Metals by EPA 6000/7000 Series Methods**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-5 (B2A0578-01) Water Sampled: 01/11/02 12:00 Received: 01/28/02 16:15									
Lead	0.0128	0.00100	mg/l	1	2A31030	01/31/02	02/01/02	EPA 6020	Q-30
MW-10 (B2A0578-02) Water Sampled: 01/11/02 12:00 Received: 01/28/02 16:15									
Lead	ND	0.00100	mg/l	1	2A31030	01/31/02	02/01/02	EPA 6020	Q-30

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
 Environmental Laboratory Network

Page 2 of 4

Friedman & Bruya  
 3012 16th Ave W  
 Seattle WA/USA, 98119-2029

Project: Charlene Morrow  
 Project Number: 201101  
 Project Manager: Charlene Morrow

Reported:  
 02/04/02 09:43

**Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2A31030: Prepared 01/31/02 Using EPA 3005A</b>										
<b>Blank (2A31030-BLK1)</b>										
Lead	ND	0.00100	mg/l							
<b>LCS (2A31030-BS1)</b>										
Lead	0.198	0.00100	mg/l	0.200		99.0	80-120			
<b>LCS Dup (2A31030-BSD1)</b>										
Lead	0.198	0.00100	mg/l	0.200		99.0	80-120	0.00	20	
<b>Matrix Spike (2A31030-MS1)</b>										
					<b>Source: B2A0578-01</b>					
Lead	0.218	0.00100	mg/l	0.200	0.0128	103	75-125			
<b>Matrix Spike Dup (2A31030-MSD1)</b>										
					<b>Source: B2A0578-01</b>					
Lead	0.215	0.00100	mg/l	0.200	0.0128	101	75-125	1.39	20	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

  
 Anne Garthwaite, Project Manager

North Creek Analytical, Inc.  
 Environmental Laboratory Network

Friedman & Bruya  
3012 16th Ave W  
Seattle WA/USA, 98119-2029

Project: Charlene Morrow  
Project Number: 201101  
Project Manager: Charlene Morrow

**Reported:**  
02/04/02 09:43

### Notes and Definitions

- Q-30 This sample was laboratory filtered since it was not field filtered as is required by the methodology.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Jeanne Garthwaite, Project Manager

# SAMPLE CHAIN OF CUSTODY

62A0578

Send Report To Charlene Morrow  
 Company \_\_\_\_\_  
 Address \_\_\_\_\_  
 City, State, ZIP \_\_\_\_\_  
 Phone # \_\_\_\_\_ Fax # \_\_\_\_\_

SAMPLERS (signature)	
PROJECT NAME/NO. 201101	PO #
REMARKS 8 day TAT. Please email by 2-7	

Page # 1 of 1

**TURNAROUND TIME**  
☐ Standard (2 Weeks)  
☐ RUSH  
 Rush charges authorized by: \_\_\_\_\_

**SAMPLE DISPOSAL**  
☐ Dispose after 30 days  
☐ Return samples  
☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED										Notes
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Dissolved Pb by 6020				
MW-5		1-11-02	?	water	1							X			01	PLEASE
MW-10		1-11-02	?	water	1							X			02	FILTER

Friedman & Bruya, Inc.  
 3012 16th Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282  
 Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>Charlene Morrow</u>	Charlene Morrow	FABI	1-28-02	10:45 am
Received by: <u>[Signature]</u>	Bile Kuni Holm	NCA	1-28-02	13:00
Relinquished by: <u>[Signature]</u>	" "	"	"	16:15
Received by: <u>[Signature]</u>	K. KACZOROWSKI	NCA	1-28-02	16:15

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

**CASE NARRATIVE**

This case narrative encompasses samples received on March 20, 2002 by Friedman & Bruya, Inc. from the Environmental Technical Services Mariner Square project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID  
203154-01

Environmental Technical Services  
MW-3

All quality control requirements were acceptable.

The sample was sent to North Creek Analytical for dissolved lead analysis. Review of the enclosed report indicates that all quality assurance was acceptable.

Date of Report: 04/02/02  
Date Received: 03/20/02  
Project: Mariner Square  
Date Extracted: 03/25/02  
Date Analyzed: 03/27/02

**RESULTS FROM THE ANALYSIS OF THE WATER SAMPLE  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING EPA METHOD 8015M**

**Samples Filtered Prior to Extraction  
Sample Extracts Passed Through a  
Silica Gel Column Prior to Analysis  
Results Reported as  $\mu\text{g/L}$  (ppb)**

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 45-147)
MW-3 203154-01	<50	77
Method Blank	<50	74

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/02

Date Received: 03/20/02

Project: Mariner Square

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF WATER  
SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING EPA METHOD 8015M**

Laboratory Code: Laboratory Control Sample			Silica Gel			
	Reporting	Spike	Percent	Percent	Acceptance	RPD
Analyte	Units	Level	Recovery	Recovery	Criteria	(Limit 20)
			LCS	LCSD		
Diesel	µg/L (ppb)	2,500	105	98	58-142	7



**Seattle** 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
**Spokane** East 11115 Montgomery, Suite B, Spokane, WA 99208-4776  
509.924.9200 fax 509.924.9290  
**Portland** 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
**Bend** 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

29 March 2002

Charlene Morrow  
Friedman & Bruya  
3012 16th Ave W  
Seattle, WA/USA 98119-2029

RE: Charlene Morrow

Enclosed are the results of analyses for samples received by the laboratory on 03/22/02 14:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jeanne Garthwaite  
Project Manager





Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Friedman & Bruya  
3012 16th Ave W  
Seattle WA/USA, 98119-2029

Project: Charlene Morrow  
Project Number: 203154  
Project Manager: Charlene Morrow

Reported:  
03/29/02 16:38

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-3	B2C0464-01	Water	03/19/02 12:00	03/22/02 14:45

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 1 of 4



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244  
425.420.9200 fax 425.420.9210  
Spokane East 11115 Montgomery, Suite B, Spokane, WA 99206-4776  
509.924.9200 fax 509.924.9290  
Portland 9405 SW Nimbus Avenue, Beaverton, OR 97008-7132  
503.906.9200 fax 503.906.9210  
Bend 20332 Empire Avenue, Suite F-1, Bend, OR 97701-5711  
541.383.9310 fax 541.382.7588

Friedman & Bruya  
3012 16th Ave W  
Seattle WA/USA, 98119-2029

Project: Charlene Morrow  
Project Number: 203154  
Project Manager: Charlene Morrow

Reported:  
03/29/02 16:38

**Dissolved Metals by EPA 6000/7000 Series Methods**

**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
MW-3 (B2C0464-01) Water Sampled: 03/19/02 12:00 Received: 03/22/02 14:45									
Lead	ND	0.00100	mg/l	1	2C25050	03/25/02	03/26/02	EPA 6020	Q-30

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
Environmental Laboratory Network

Page 2 of 4

Friedman & Bruya  
 3012 16th Ave W  
 Seattle WA/USA, 98119-2029

Project: Charlene Morrow  
 Project Number: 203154  
 Project Manager: Charlene Morrow

Reported:  
 03/29/02 16:38

**Dissolved Metals by EPA 6000/7000 Series Methods - Quality Control**  
**North Creek Analytical - Bothell**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
<b>Batch 2C25050: Prepared 03/25/02 Using EPA 3005A</b>										
<b>Blank (2C25050-BLK1)</b>										
Lead	ND	0.00100	mg/l							
<b>LCS (2C25050-BS1)</b>										
Lead	0.210	0.00100	mg/l	0.200		105	80-120			
<b>LCS Dup (2C25050-BSD1)</b>										
Lead	0.210	0.00100	mg/l	0.200		105	80-120	0.00	20	
<b>Matrix Spike (2C25050-MS1)</b>										
					<b>Source: B2C0438-01</b>					
Lead	0.196	0.00100	mg/l	0.200	ND	97.9	75-125			
<b>Matrix Spike Dup (2C25050-MSD1)</b>										
					<b>Source: B2C0438-01</b>					
Lead	0.195	0.00100	mg/l	0.200	ND	97.4	75-125	0.512	20	

North Creek Analytical - Bothell

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

*Jeanne Garthwaite*

Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.  
 Environmental Laboratory Network

Page 3 of 4

Friedman & Bruya  
3012 16th Ave W  
Seattle WA/USA, 98119-2029

Project: Charlene Morrow  
Project Number: 203154  
Project Manager: Charlene Morrow

Reported:  
03/29/02 16:38

### Notes and Definitions

Q-30 This sample was laboratory filtered since it was not field filtered as is required by the methodology.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

North Creek Analytical - Bothell

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*



Jeanne Garthwaite, Project Manager

**North Creek Analytical, Inc.**  
**Environmental Laboratory Network**

Page 4 of 4

# SAMPLE CHAIN OF CUSTODY

B2C0464

Send Report To Charlene Morrow

Company F&B

Address \_\_\_\_\_

City, State, ZIP \_\_\_\_\_

Phone # \_\_\_\_\_ Fax # \_\_\_\_\_

SAMPLERS (signature) \_\_\_\_\_

PROJECT NAME/NO.

203154

PO #

D-245

REMARKS \_\_\_\_\_

Page # 1 of 1

☒ TURNAROUND TIME

☒ Standard (2 Weeks)

☐ RUSH

Rush charges authorized by: \_\_\_\_\_

☒ SAMPLE DISPOSAL

☒ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED										Notes
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Dissolved Pb	by 6020			
MW-3		3-19-02		water	1							X		B2C0464-01		Please filter

Friedman & Bruya, Inc.  
3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

FORMS\CHECKIN\COC.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>Michelle Trivino Castals</u>	Michelle Trivino Castals	F&B	3/22/02	8:45 AM
Received by: <u>Robert Jones</u>	ROBERT JONES	NCA	3/22/02	11:00
Relinquished by: <u>Robert Jones</u>	ROBERT JONES	NCA	3/22/02	14:45
Received by: <u>P. O. Hume</u>	P. O. Hume	NCA	3/22/02	1445

Wh 12.2

$$\begin{array}{r} 135 \\ (408) \\ 267 \\ \times 6427 \\ \hline \end{array}$$

**(408) 588-0200**

**Santa Clara, CA 95054**

(408) 588-0201 - Fax 6427

## Chain of Custody / Analysis Request

Attention to: <b>Helen Mawhinney</b>		Phone No.: <b>408 267-0109</b> <b>510 385-4308</b>		Purchase Order No.:		Send Invoice to (if Different) <b>Mariner Square</b>		Phone																	
Company Name: <b>EIS</b>		Fax No.: <b>510 522 6259</b>		Project Number:		Company <b>Mariner Square Group / Alam Gate</b>																			
Mailing Address: <b>1548 JACOB Ave</b>				Project Name:		Billing Address (if Different) <b>2900 Main Street</b>																			
City: <b>San Jose, CA</b>		State: <b>CA</b>		Zip: <b>95118</b>		Project Location:		City: <b>Alameda CA</b>		State: <b>CA</b>		Zip: <b>94501</b>													
Sampler: <b>Helen Mawhinney</b>		Turn Around Time		Same Day <input type="checkbox"/> 24 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> Standard <input checked="" type="checkbox"/>		<div>Preservative</div> <div>Volatiles Organics by GC/MS: <input type="checkbox"/> F113 <input type="checkbox"/> <input type="checkbox"/> 824 <input type="checkbox"/> 820 <input type="checkbox"/> <input type="checkbox"/> 8260B <input type="checkbox"/> Fuel Organics by GC/MS: <input type="checkbox"/> 8260B <input type="checkbox"/> Pesticides: <input type="checkbox"/> 8061 <input type="checkbox"/> <input type="checkbox"/> PCBs: <input type="checkbox"/> 8082 <input type="checkbox"/> Halogenated or <input type="checkbox"/> 80118010 <input type="checkbox"/> Aromatics: <input type="checkbox"/> F113 <input type="checkbox"/> TPH by GC/MS: <input type="checkbox"/> 80118020 <input type="checkbox"/> F113 <input type="checkbox"/> TPH by GC/MS: <input type="checkbox"/> 8270 <input type="checkbox"/> 8270-SIMS <input type="checkbox"/> Base/Neutral/acid Organics: <input type="checkbox"/> 8270 <input type="checkbox"/> 8270-SIMS <input type="checkbox"/> Fuel Scan <input type="checkbox"/> Diels <input type="checkbox"/> <input type="checkbox"/> w/ Single Standard Cleanup <input type="checkbox"/> <input type="checkbox"/> w/ Single Column Cleanup <input type="checkbox"/> TPH <input type="checkbox"/> Oil &amp; Grease <input type="checkbox"/> TPM (502.2) <input type="checkbox"/> Metals - Circle Below <input type="checkbox"/> Total <input type="checkbox"/> Disposal <input type="checkbox"/></div>																			
Date: <b>3-19-02</b>		Order ID:		Sampling									Client ID		Laboratory No.		Date		Time		Matrix		Composite		Grab
<b>MW-3</b>		<b>01</b>		<b>3-19-02</b>		<b>3:00</b>																		* only 3 containers VAN'S NOT Sent. as per Helen M 3/20/02	
Relinquished by:		Received by:		Date:		Time:		<div>Special Instructions or Comments</div> <div><b>DO NOT SEND COBBLE BACK</b></div> <div><b>Filter all samples</b></div> <div><b>TPHd-silica gel clean up / Dissolved. Total Lead</b></div> <div>Metals: Al, As, Sb, Ba, Be, B, Cd, Ca, Cr, Co, Cu, Fe, <b>Pb</b>, Mg, Mn, Hg, Mo, Ni, K, Si, Ag, Na, Se, Sr, Ti, Sn, Tl, V, Zn, W: CAM-17 <input type="checkbox"/> Plating <input type="checkbox"/> PPM-13 <input type="checkbox"/> LUFT-5 <input type="checkbox"/></div>																	
Relinquished by:		Received by:		Date:		Time:																			
Relinquished by:		Received by:		Date:		Time:																			
Relinquished by:		Received by:		Date:		Time:																			