

GREENSFELDER & ASSOCIATES

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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

Sampling Performed January and March 2002

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Alameda County
Environmental Health

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**2415 MARINER SQUARE
ALAMEDA, CALIFORNIA**



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4-10-02
April 10, 2002



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April 10, 2002

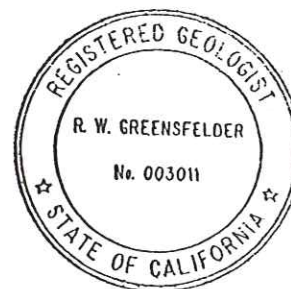


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1.0 INTRODUCTION

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^(1, 2)
 Units µg/L (ppb)

MW#	TPHd	Lead (Pb)	Dissolved CAM-17 metals ⁽³⁾							
			As	Ba	Co	Cr	Cu	Ni	Se	Va
3	<50	NDcam ⁽⁴⁾	Not analyzed							
5	1,100	12.8								
6A	250	NDcam ⁽⁴⁾	ND	109	1.69	1.67	2.26	6.35	1.31	ND
9	2,000	NDcam ⁽⁴⁾	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⁽⁴⁾ –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

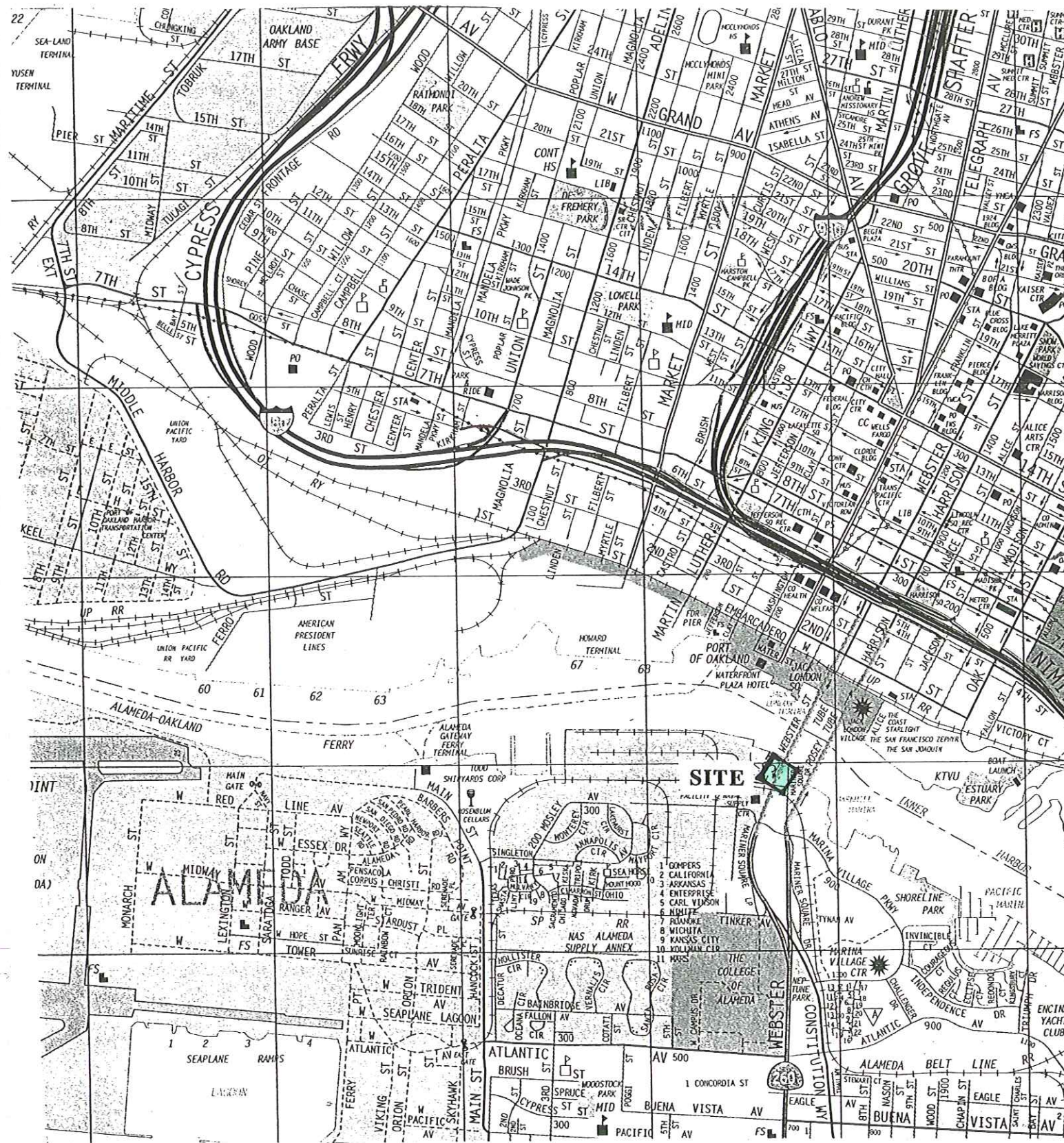
APPENDIX A

FIGURES AND TABLE

Figure 1. Site Location Map

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

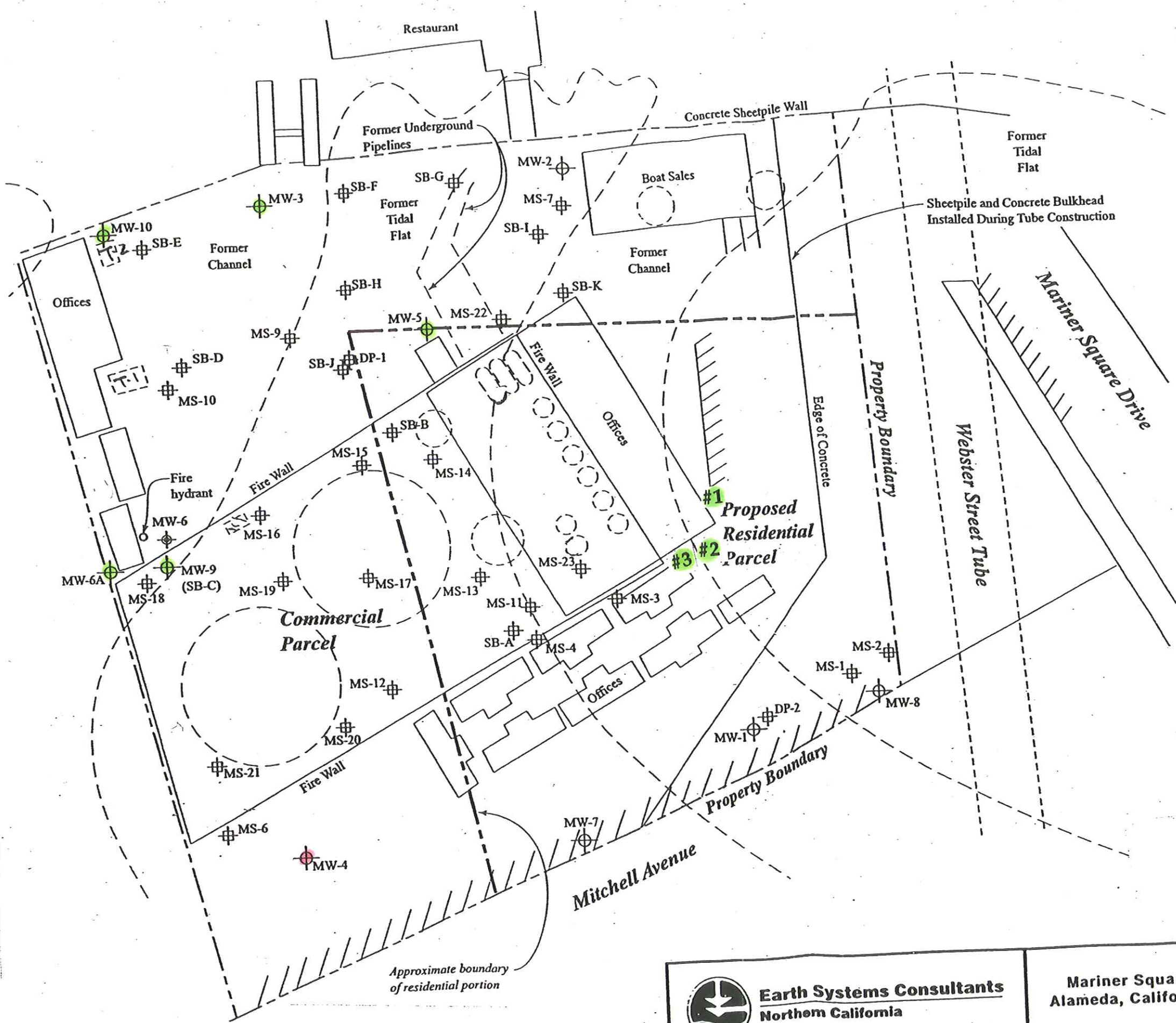
Table A-1. Historical Analytical Results for 18 Groundwater Monitoring Wells



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Site:
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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

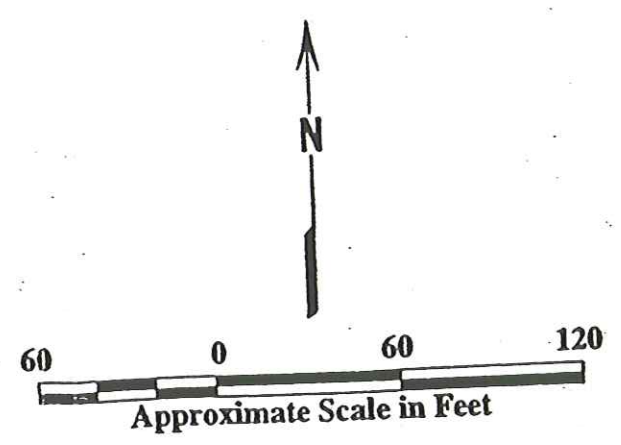


TABLE 1
HISTORICAL SOIL SAMPLE ANALYTICAL RESULTS - ORGANICS
MARINER SQUARE, ALAMEDA, CALIFORNIA

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)
T-1	5.0	12/17/90	ND*	-	-	-	-	ND*	ND*	ND*	0.0063	-	-	-	-
T-2	5.0	12/17/90	ND*	-	-	-	-	ND*	0.017	ND*	0.020	-	-	-	-
D-1	1.0	12/17/90	ND*	-	-	-	-	ND*	ND*	ND*	ND*	-	-	-	-
MS-1	4.0	4/7/92	-	-	-	<10	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-2	4.0	4/7/92	-	-	-	-	-	<0.005	<0.005	0.027	0.054	-	ND	-	-
MS-3	4.0	4/7/92	-	-	-	870	-	<0.005	<0.005	1.00	1.20	-	ND	-	-
MS-4	4.0	4/7/92	-	-	-	13,000	-	<0.50	<0.50	<0.005	<0.010	-	ND	-	-
MS-5	4.0	4/7/92	-	-	-	170	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-6	4.0	4/7/92	-	-	-	520	-	<0.10	<0.10	<0.10	<0.20	-	ND	-	-
MS-7	4.0	4/7/92	-	-	-	290	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-8	4.0	4/7/92	-	-	-	46	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-9	4.0	4/7/92	-	-	-	12	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-10	4.0	4/7/92	-	-	-	37	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-11	4.0	4/8/92	-	-	-	3,000	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-12	4.0	4/8/92	-	-	-	3,200	-	<0.10	<0.10	0.140	0.270	-	ND	-	-
MS-13	4.0	4/8/92	-	-	-	4,900	-	<0.10	<0.10	<0.10	<0.20	-	ND	-	-
MS-14	4.0	4/8/92	-	-	-	6,300	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-15	4.0	4/8/92	-	-	-	6,400	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-16	0.4	4/8/92	-	-	-	27	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-17	0.2	4/8/92	-	-	-	3,300	-	<0.50	<0.50	1.60	8.4	-	ND	-	-
MS-18	0.4	4/8/92	-	-	-	11,000	-	<0.20	<0.20	<0.20	<0.40	-	ND	-	-
MS-19	0.4	4/8/92	-	-	-	3,900	-	<0.10	<0.10	<0.10	<0.20	-	ND	-	-
MS-20	0.4	4/8/92	-	-	-	970	-	<0.005	<0.005	<0.005	<0.005	-	ND	-	-
MS-21	0.4	4/8/92	-	-	-	39	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-22	0.4	4/8/92	-	-	-	<10	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-23	0.3	4/8/92	-	-	-	6,200	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MW-1	7.0	7/22/92	-	<1	-	-	<50	<0.005	<0.005	<0.005	<0.005	-	ND	-	-
MW-2	6.0	7/22/92	-	40	-	-	66	<0.80	<0.80	21.0	10.0	-	ND	-	-
MW-3	4.5	7/22/92	-	<1	-	-	<50	<0.005	<0.005	<0.005	<0.005	-	ND	-	-
MW-4	4.0	7/22/92	-	<1	-	-	<50	<0.005	<0.005	<0.005	<0.005	-	ND	-	-
MW-5	4.5	7/22/92	-	220	-	-	<50	<0.40	0.50	1.6	1.4	-	ND	-	-
SB-A	1.5	9/15/94	-	-	-	-	-	<0.005	<0.0063	<0.005	<0.046	-	-	-	6,700
SB-A	5.5	9/15/94	-	-	-	-	-	<0.005	-	-	-	-	-	<10	960
SB-B	1.5	9/16/94	-	-	-	-	-	-	-	-	-	-	-	-	19,000
SB-B	4.5	9/16/94	-	-	-	-	-	-	-	-	-	-	-	-	<500
SB-C/MW-9	1.5	9/16/94	-	-	9,200	-	-	<0.005	13	5.8	<0.005	-	-	<20	4,000
SB-C/MW-9	5.5	9/16/94	-	-	-	-	-	-	-	-	-	-	-	-	<500
SB-D	4.5	9/16/94	<50	810	140	-	-	<0.050	<0.073	<0.050	1.380	-	-	-	-
SB-E	4.5	9/16/94	<10	<10	60	-	-	<0.005	0.019	<0.005	<0.005	-	-	-	-
MW-7	4.0	9/15/94	<30	<30	200	-	-	<0.005	0.014	<0.005	<0.005	-	-	<10	-

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	TPHmo	Total Petroleum Hydrocarbons as motor oil
ppb	Parts per billion	TRPH	Total Recoverable Petroleum Hydrocarbons
<	Analyte not detected at or above specified laboratory reporting limit.	VOCs	Volatile Organic Compounds
-	Not Analyzed	TOC	Total Organic Carbon
ND	No analytes detected above laboratory reporting limits, reporting limits vary for each analyte	MTBE	Methy Tert-Butyl Ether
ND*	Analyte not detected, reporting limit not specified		
TPHg	Total Petroleum Hydrocarbons as gasoline		
TPHd	Total Petroleum Hydrocarbons as diesel		

TABLE 2 HISTORICAL GROUNDWATER ANALYTICAL RESULTS - ORGANICS and TDS MARINER SQUARE, ALAMEDA, CALIFORNIA														
WELL NUMBER	DATE	TPH _g (ppb)	TPH _d (ppb)	TPH _{mo} (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)
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	-	-	<5	-
	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	-
MW-2	12/12/1997	<50	<50	<200	-	-	<0.5	<0.5	<0.5	<2.0	<5	-	<5	-
	02/18/1998	<50	<50	<200	-	-	1.5	0.6	1.8	8	<5	-	<5	-
	05/08/1998	<50	<50	<200	-	-	1.0	<0.5	0.7	5	<5	-	<5	-
	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	-	-	<5	-
	09/26/1994	320	<50	240	-	-	<0.0	<0.0	<0.0	<0.0	-	-	<0.5	-
MW-3	6/28/96 (2)	980	100 (3,4)	<200 (1)	-	-	0.5	<1.0	2.3	3.1	-	-	<1.0	-
	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	-	<5	-
	02/18/1998	90	<50	<200	-	-	<0.5	<0.5	1.1	2	<5	-	<5	-
	05/08/1998	170	<50	<200	-	-	<0.5	<0.5	1.7	3	<5	-	<5	-
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	-	-	<5	-
	09/27/1994	<50	720	<50	-	-	<0.0	<0.3	<0.3	<0.3	-	-	<0.5	-
	06/28/1996	<100	120 (3)	<200 (1)	-	-	<0.5	<1.0	<1.0	<2.0	-	-	<1.0	-
	10/31/1996	<100	160	<200	-	-	<0.5	<1.0	<1.0	<2.0	<10	-	<0.8	-
	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	-	<5	-
	02/18/1998	60	<50	<200	-	-	<0.5	<0.5	<0.5	4	7	-	<5	-
	05/08/1998	<50	<50	<200	-	-	0.5	<0.5	0.5	4	<5	-	<5	-

TABLE 2
HISTORICAL GROUNDWATER ANALYTICAL RESULTS - ORGANICS and TDS
MARINER SQUARE, ALAMEDA, CALIFORNIA

WELL NUMBER	DATE	TPH _g (ppb)	TPH _d (ppb)	TPH _{mo} (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	-
MW-5	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	-	-	-	-
	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	-
MW-6	10/31/1996	6800	4900	860	-	-	20	5.9	15	19	<10	-	<0.8	-
	09/30/1997	9000	4100 (3)	520	-	-	35	5.3	36	32	12	-	<2	-
	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	-
	9/27/94	1100	9900	3200	-	-	<3.0	<3.0	<3.0	<3.0	-	-	<1.0	-
	10/07/1994													
MW-7	10/14/1994													
	10/21/1994													
	10/25/1994													
	06/28/1996													
	10/31/1996													
	09/30/1997													
	12/12/1997													
MW-7	02/18/1998	21000	1900000	43000	-	-	5	<0.5	8	19	<50	-	<2	-
	04/28/1998	70000	<50	<200	-	-	20	20	20	70	<100	-	<2	-
	04/28/1998	800	920	<200	-	-	<0.5	<0.5	<0.5	<2	<5	-	<2	-
	04/28/1998													
	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	-
MW-7	09/30/1997	750	190 (3)	<200	-	-	8.1	5.3	<1.0	6.9	<5	-	<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	-

Not Sampled - Sheen Present

Well Destroyed

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	-	-	<0.5	4100
	06/28/1996	<100	58 (3)	<200 (1)	-	-	<0.5	<1.0	<1.0	<2.0	-	-	<1.0	-
	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	-	<0.8	-
MW-9	02/18/1998	<50	<50	<200	-	-	0.9	<0.5	0.8	3	<5	-	<0.8	-
	05/08/1998	<50	<50	<200	-	-	<0.5	<0.5	<0.5	<2.0	<5	-	<0.8	-
	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	-	<0.8	-
	02/18/1998	100	<50	<200	-	-	<0.5	0.5	<0.5	<2.0	6	-	<0.8	-
	05/08/1998	70	130	<200	-	-	<0.5	<0.5	<0.5	<2.0	16	-	<0.8	-
HP-1	9/3/98	10,000 (6)	410,000	12,000	-	-	<0.5	18	8	63	<0.5	-	<0.8	-
HP-2	9/3/98	1,400 (6)	230,000	10,000	-	-	<0.5	4	2	24	<0.5	-	<0.8	-
HP-3	9/3/98	230 (6)	78,000	3,000	-	-	1.0	<0.5	<0.5	<1.0	<0.5	-	<0.8	-
TI-D	8/6/97	-	9,800	-	29	-	-	-	<0.5	-	-	-	ND	-
TI-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 µ/L.

(3) Qualitative identification is uncertain because the material present does not match laboratory standards.

(4) Quantitation uncertain due to matrix interferences

(5) Tetrachloroethane

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)
T-1	5.0	12/17/90	ND*	-	-	-	-	ND*	ND*	ND*	0.0063	-	-	-	-
T-2	5.0	12/17/90	ND*	-	-	-	-	ND*	0.017	ND*	0.020	-	-	-	-
D-1	1.0	12/17/90	ND*	-	-	-	-	ND*	ND*	ND*	ND*	-	-	-	-
MS-1	4.0	4/7/92	-	-	-	<10	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-2	4.0	4/7/92	-	-	-	-	-	<0.005	<0.005	-	-	-	-	-	-
MS-3	4.0	4/7/92	-	-	-	870	-	<0.005	<0.005	0.027	0.054	-	ND	-	-
MS-4	4.0	4/7/92	-	-	-	13,000	-	<0.50	<0.50	1.00	1.20	-	ND	-	-
MS-5	4.0	4/7/92	-	-	-	170	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-6	4.0	4/7/92	-	-	-	520	-	<0.10	<0.10	<0.10	<0.20	-	ND	-	-
MS-7	4.0	4/7/92	-	-	-	290	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-8	4.0	4/7/92	-	-	-	46	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-9	4.0	4/7/92	-	-	-	12	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-10	4.0	4/7/92	-	-	-	37	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-11	4.0	4/8/92	-	-	-	3,000	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-12	4.0	4/8/92	-	-	-	3,200	-	<0.10	<0.10	0.140	0.270	-	ND	-	-
MS-13	4.0	4/8/92	-	-	-	4,900	-	<0.10	<0.10	<0.10	<0.20	-	ND	-	-
MS-14	4.0	4/8/92	-	-	-	6,300	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-15	4.0	4/8/92	-	-	-	6,400	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-16	0.4	4/8/92	-	-	-	27	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-17	0.2	4/8/92	-	-	-	3,300	-	<0.50	<0.50	1.60	8.4	-	ND	-	-
MS-18	0.4	4/8/92	-	-	-	11,000	-	<0.20	<0.20	<0.20	<0.40	-	ND	-	-
MS-19	0.4	4/8/92	-	-	-	3,900	-	<0.10	<0.10	<0.10	<0.20	-	ND	-	-
MS-20	0.4	4/8/92	-	-	-	970	-	<0.005	<0.005	<0.005	<0.005	-	ND	-	-
MS-21	0.4	4/8/92	-	-	-	39	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-22	0.4	4/8/92	-	-	-	<10	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MS-23	0.3	4/8/92	-	-	-	6,200	-	<0.005	<0.005	<0.005	<0.010	-	ND	-	-
MW-1	7.0	7/22/92	-	<1	-	-	<50	<0.005	<0.005	<0.005	<0.005	-	ND	-	-
MW-2	6.0	7/22/92	-	40	-	-	66	<0.80	<0.80	21.0	10.0	-	ND	-	-
MW-3	4.5	7/22/92	-	<1	-	-	<50	<0.005	<0.005	<0.005	<0.005	-	ND	-	-
MW-4	4.0	7/22/92	-	<1	-	-	<50	<0.005	<0.005	<0.005	<0.005	-	ND	-	-
MW-5	4.5	7/22/92	-	220	-	-	<50	<0.40	0.50	1.6	1.4	-	ND	-	-
SB-A	1.5	9/15/94	-	-	-	-	-	-	<0.0063	<0.005	<0.046	-	-	-	6,700
SB-A	5.5	9/15/94	-	-	-	-	-	<0.005	-	-	-	-	-	<10	960
SB-B	1.5	9/16/94	-	-	-	-	-	-	-	-	-	-	-	-	19,000
SB-B	4.5	9/16/94	-	-	-	-	-	-	13	5.8	<0.005	-	-	-	<500
SB-C/MW-9	1.5	9/16/94	-	-	9,200	-	-	<0.005	-	-	-	-	-	<20	4,000
SB-C/MW-9	5.5	9/16/94	-	-	-	-	-	-	-	-	-	-	-	-	<500
SB-D	4.5	9/16/94	<50	810	140	-	-	<0.050	<0.073	<0.050	1.380	-	-	-	-
SB-E	4.5	9/16/94	<10	<10	60	-	-	<0.005	0.019	<0.005	<0.005	-	-	-	-
MW-7	4.0	9/15/94	<30	<30	200	-	-	<0.005	0.014	<0.005	<0.005	-	-	<10	-

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
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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
Chemist

Enclosures
NAA0131R.DOC

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 ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	<u>Surrogate</u> (% Recovery) (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 ₁₀ -C ₂₅)	<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

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MW-6A	Client:	Environmental Technical Services
Date Received:	01/17/02	Project:	2415 Mariner Sq.
Date Extracted:	01/18/02	Lab ID:	201101-05
Date Analyzed:	01/18/02	Data File:	011809.D
Matrix:	Water	Instrument:	5972 -Ins
Units:	ug/L (ppb)	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		

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	MW-9	Client:	Environmental Technical Services
Date Received:	01/17/02	Project:	2415 Mariner Sq.
Date Extracted:	01/18/02	Lab ID:	201101-06
Date Analyzed:	01/18/02	Data File:	011810.D
Matrix:	Water	Instrument:	5972 -Ins
Units:	ug/L (ppb)	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		

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260B

Client Sample ID:	Method Blank	Client:	Environmental Technical Services
Date Received:	Not Applicable	Project:	2415 Mariner Sq.
Date Extracted:	01/18/02	Lab ID:	02-119 mb2
Date Analyzed:	01/18/02	Data File:	011808.D
Matrix:	Water	Instrument:	5972 -Ins
Units:	ug/L (ppb)	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 µg/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.

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

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.

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

A office 408 267 6427

30, 31, 41, 51, 61, 71, 81, 91, 101, 111, 121, 131, 141, 151, 161, 171, 181, 191, 201, 211, 221, 231, 241, 251, 261, 271, 281, 291, 301, 311, 321, 331, 341, 351, 361, 371, 381, 391, 401, 411, 421, 431, 441, 451, 461, 471, 481, 491, 501, 511, 521, 531, 541, 551, 561, 571, 581, 591, 601, 611, 621, 631, 641, 651, 661, 671, 681, 691, 701, 711, 721, 731, 741, 751, 761, 771, 781, 791, 801, 811, 821, 831, 841, 851, 861, 871, 881, 891, 901, 911, 921, 931, 941, 951, 961, 971, 981, 991, 1001, 1011, 1021, 1031, 1041, 1051, 1061, 1071, 1081, 1091, 1101, 1111, 1121, 1131, 1141, 1151, 1161, 1171, 1181, 1191, 1201, 1211, 1221, 1231, 1241, 1251, 1261, 1271, 1281, 1291, 1301, 1311, 1321, 1331, 1341, 1351, 1361, 1371, 1381, 1391, 1401, 1411, 1421, 1431, 1441, 1451, 1461, 1471, 1481, 1491, 1501, 1511, 1521, 1531, 1541, 1551, 1561, 1571, 1581, 1591, 1601, 1611, 1621, 1631, 1641, 1651, 1661, 1671, 1681, 1691, 1701, 1711, 1721, 1731, 1741, 1751, 1761, 1771, 1781, 1791, 1801, 1811, 1821, 1831, 1841, 1851, 1861, 1871, 1881, 1891, 1901, 1911, 1921, 1931, 1941, 1951, 1961, 1971, 1981, 1991, 2001, 2011, 2021, 2031, 2041, 2051, 2061, 2071, 2081, 2091, 2101, 2111, 2121, 2131, 2141, 2151, 2161, 2171, 2181, 2191, 2201, 2211, 2221, 2231, 2241, 2251, 2261, 2271, 2281, 2291, 2301, 2311, 2321, 2331, 2341, 2351, 2361, 2371, 2381, 2391, 2401, 2411, 2421, 2431, 2441, 2451, 2461, 2471, 2481, 2491, 2501, 2511, 2521, 2531, 2541, 2551, 2561, 2571, 2581, 2591, 2601, 2611, 2621, 2631, 2641, 2651, 2661, 2671, 2681, 2691, 2701, 2711, 2721, 2731, 2741, 2751, 2761, 2771, 2781, 2791, 2801, 2811, 2821, 2831, 2841, 2851, 2861, 2871, 2881, 2891, 2901, 2911, 2921, 2931, 2941, 2951, 2961, 2971, 2981, 2991, 3001, 3011, 3021, 3031, 3041, 3051, 3061, 3071, 3081, 3091, 3101, 3111, 3121, 3131, 3141, 3151, 3161, 3171, 3181, 3191, 3201, 3211, 3221, 3231, 3241, 3251, 3261, 3271, 3281, 3291, 3301, 3311, 3321, 3331, 3341, 3351, 3361, 3371, 3381, 3391, 3401, 3411, 3421, 3431, 3441, 3451, 3461, 3471, 3481, 3491, 3501, 3511, 3521, 3531, 3541, 3551, 3561, 3571, 3581, 3591, 3601, 3611, 3621, 3631, 3641, 3651, 3661, 3671, 3681, 3691, 3701, 3711, 3721, 3731, 3741, 3751, 3761, 3771, 3781, 3791, 3801, 3811, 3821, 3831, 3841, 3851, 3861, 3871, 3881, 3891, 3901, 3911, 3921, 3931, 3941, 3951, 3961, 3971, 3981, 3991, 4001, 4011, 4021, 4031, 4041, 4051, 4061, 4071, 4081, 4091, 4101, 4111, 4121, 4131, 4141, 4151, 4161, 4171, 4181, 4191, 4201, 4211, 4221, 4231, 4241, 4251, 4261, 4271, 4281, 4291, 4301, 4311, 4321, 4331, 4341, 4351, 4361, 4371, 4381, 4391, 4401, 4411, 4421, 4431, 4441, 4451, 4461, 4471, 4481, 4491, 4501, 4511, 4521, 4531, 4541, 4551, 4561, 4571, 4581, 4591, 4601, 4611, 4621, 4631, 4641, 4651, 4661, 4671, 4681, 4691, 4701, 4711, 4721, 4731, 4741, 4751, 4761, 4771, 4781, 4791, 4801, 4811, 4821, 4831, 4841, 4851, 4861, 4871, 4881, 4891, 4901, 4911, 4921, 4931, 4941, 4951, 4961, 4971, 4981, 4991, 5001, 5011, 5021, 5031, 5041, 5051, 5061, 5071, 5081, 5091, 5101, 5111, 5121, 5131, 5141, 5151, 5161, 5171, 5181, 5191, 5201, 5211, 5221, 5231, 5241, 5251, 5261, 5271, 5281, 5291, 5301, 5311, 5321, 5331, 5341, 5351, 5361, 5371, 5381, 5391, 5401, 5411, 5421, 5431, 5441, 5451, 5461, 5471, 5481, 5491, 5501, 5511, 5521, 5531, 5541, 5551, 5561, 5571, 5581, 5591, 5601, 5611, 5621, 5631, 5641, 5651, 5661, 5671, 5681, 5691, 5701, 5711, 5721, 5731, 5741, 5751, 5761, 5771, 5781, 5791, 5801, 5811, 5821, 5831, 5841, 5851, 5861, 5871, 5881, 5891, 5901, 5911, 5921, 5931, 5941, 5951, 5961, 5971, 5981, 5991, 6001, 6011, 6021, 6031, 6041, 6051, 6061, 6071, 6081, 6091, 6101, 6111, 6121, 6131, 6141, 6151, 6161, 6171, 6181, 6191, 6201, 6211, 6221, 6231, 6241, 6251, 6261, 6271, 6281, 6291, 6301, 6311, 6321, 6331, 6341, 6351, 6361, 6371, 6381, 6391, 6401, 6411, 6421, 6431, 6441, 6451, 6461, 6471, 6481, 6491, 6501, 6511, 6521, 6531, 6541, 6551, 6561, 6571, 6581, 6591, 6601, 6611, 6621, 6631, 6641, 6651, 6661, 6671, 6681, 6691, 6701, 6711, 6721, 6731, 6741, 6751, 6761, 6771, 6781, 6791, 6801, 6811, 6821, 6831, 6841, 6851, 6861, 6871, 6881, 6891, 6901, 6911, 6921, 6931, 6941, 6951, 6961, 6971, 6981, 6991, 7001, 701

Entech Analytical Labs, Inc.
3334 Victor Court
Santa Clara, CA 95054

(408) 588-0200
(408) 588-0201 - Fax

Chain of Custody / Analysis Request

Attention to:
HELEN MAWHINNEY (LHAM)
Company Name: ETS (ETS)
Environmental Technical Services
Mailing Address:
1548 JACOB AVE
City: SAN JOSE
State: CA
Zip: 95118

Phone No.: 408 267 6427
Fax No.: 510 522 6259

Purchase Order No.:
Project Number:
Project Name:
Project Location:
City:
State:
Zip:

Send Invoice to (if Different)
Company
Billing Address (if Different)
City:
State:
Zip:

Sampler:
HELEN MAWHINNEY (LHAM)
Date:
1-11-02

Turn Around Time:
Same Day ☐
24 Hour ☐
48 Hour ☐
72 Hour ☐
Standard ☒

Order ID:
Sampling:
Client ID
Laboratory No.
Date
Time
Matrix
Composite
Grab
Containers
Preservative

Volatiles Organics by GC/MS: Freon 113 ☐
624 ☐ 8240 ☐
Fuel Organics by 8250B ☐
MTBE by 8260B ☐
Pesticides 9091 ☐
Halogenated or Aromatic Volatiles: PCBs - 8082 ☐
601/6010 ☐
TPH as Gas/BTEX ☐
TPH as Gas/BTEX/MTBE ☐
8270 ☐
Basic/Neutral/Acid Organics
Fuel Scan
Diesel ☐
W/ Sil-gel Standard Cleanup ☐
W/ Sil-gel Column Cleanup ☐
TRH ☐
Oil & Grease ☐
Halogenated ☐
CAM 17 - 1750 ☐
THM (502-2) ☐
Metals - Circle Below
Total ☐
Disolved ☐

Remarks

Relinquished by:
HELEN MAWHINNEY
Received by:
ETS
Date:
1-11-02
Time:
19:35

Relinquished by:
HELEN MAWHINNEY
Received by:
ETS
Date:
1-17-02
Time:
11:45

Relinquished by:
HELEN MAWHINNEY
Received by:
ETS
Date:
1-17-02
Time:
11:45

Special Instructions or Comments
Please filter water samples / IF dissolved
Halogenated hydrocarbons 8260 / CAM 17 is possible
concentrations individual
dissolved lead 601
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, Tl, Sn, Ti, V, Zn, W: CAM-17 ☐ Plating ☐ PPM-13 ☐ LUFT-5 ☐

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
..IW-6A (B2A0398-01) 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	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	"	"	"	"	"	"	
..IW-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

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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										
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

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

anlyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC Limits	RPD	RPD Limit	Notes
Batch 2A24014: Prepared 01/24/02 Using EPA 3005A									
CS 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

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Jeanne Garthwaite, Project Manager

North Creek Analytical, Inc.
Environmental Laboratory Network



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541.383.9310 fax 541.382.7588

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	
Sodium	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

LCS Dup (2A30013-BSD1)			
Mercury	0.00493	0.00100	mg/l

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:
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, 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

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 # <u>1</u> of <u>1</u>
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

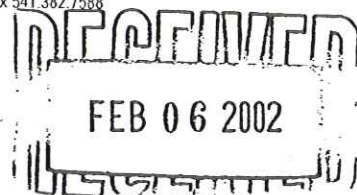
Friedman & Bruya, Inc.
 3012 16th Avenue West
 Seattle, WA 98119-2029
 Ph. (206) 285-8282
 Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <u>Charlene Morrow</u>	<u>Charlene Morrow</u>	<u>F&B</u>	<u>1-18-02</u>	<u>9:45 AM</u>
Received by: <u>[Signature]</u>	<u>Mike KUNITAKA</u>	<u>NCA</u>	<u>1-18-02</u>	<u>13:00</u>
Relinquished by: <u>[Signature]</u>	<u>K</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>

11/11/09



Seattle 11720 North Creek Pkwy N, Suite 400, Bothell, WA 98011-8244
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541.383.9310 fax 541.382.7588



February 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 01/28/02 16:15. 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
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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



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541.383.9310 fax 541.382.7588

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
IW-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, Project Manager

Friedman & Bruya
6012 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 Limits	RPD	RPD Limit	Notes
Batch 2A31030: Prepared 01/31/02 Using EPA 3005A									
Blank (2A31030-BLK1)									
Lead	ND	0.00100	mg/l						
LCS (2A31030-BS1)									
Lead	0.198	0.00100	mg/l	0.200		99.0 80-120			
LCS Dup (2A31030-BSD1)									
Lead	0.198	0.00100	mg/l	0.200		99.0 80-120	0.00	20	
Matrix Spike (2A31030-MS1)									
Lead	0.218	0.00100	mg/l	0.200	0.0128	103 75-125			
Matrix Spike Dup (2A31030-MSD1)									
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

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

North Creek Analytical, Inc.
Environmental Laboratory Network

Page 4 of 4

B2A0578

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

Page # 1 of 1

Rush charges authorized by:

☐ Will call with instructions

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: <i>Charlene Morrow</i>	Charlene Morrow	FBI	1-28-02	10:45 am
Received by: <i>Bile</i>	Bile Konik Holm	NCA	1-28-02	13:00
Relinquished by: <i>Bile</i>	" "	"	"	16:15
Received by: <i>K. Kaczorowski</i>	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 µg/L (ppb)**

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

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



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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
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541.383.9310 fax 541.382.7588

Friedman & Bruya	Project: Charlene Morrow	Reported:
3012 16th Ave W	Project Number: 203154	03/29/02 16:38
Seattle WA/USA, 98119-2029	Project Manager: Charlene Morrow	

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



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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	Project: Charlene Morrow	Reported:
3012 16th Ave W	Project Number: 203154	03/29/02 16:38
Seattle WA/USA, 98119-2029	Project Manager: Charlene Morrow	

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 Q-30									
Lead	ND	0.00100	mg/l	1	2C25050	03/25/02	03/26/02	EPA 6020	

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

Friedman & Bruya	Project: Charlene Morrow	
3012 16th Ave W	Project Number: 203154	Reported:
Seattle WA/USA, 98119-2029	Project Manager: Charlene Morrow	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

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 Costales</u>	Michelle Trivino Costales	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. Hall</u>	P. O. Hall	NCA	3/22/02	1445

Wh 12.2

[illegible]