PES Environmental, Inc.
Engineering & Environmental Services

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December 9, 1991

MP001B

Mr. Dennis Byrne
Alameda County Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621

LETTER REPORT
NADY SYSTEMS, INC. SITE
6707 BAY STREET
EMERYVILLE, CALIFORNIA

Dear Mr. Byrne:

This letter summarizes the results of PES Environmental, Inc.'s (PES') evaluation and investigation of site conditions in the vicinity of the former underground storage tanks at the Nady Systems, Inc. (Nady) site in Emeryville, California (Plate 1). The scope of work for this project included the following tasks:

(1) Review existing data for the site to assess the adequacy of site characterization;

(2) Visit the site to inspect the soil vapor and groundwater extraction and treatment systems and to evaluate the effectiveness and operational status of these systems;

(3) Drill two soil borings in the area of the former underground storage tanks (UST), and collect and submit four soil samples for chemical analysis to confirm the effectiveness of the vapor extraction system;

(4) Sample three monitoring wells in the area of the former underground tanks to evaluate current groundwater conditions; and

(5) Prepare this report.

The objective for performing these tasks was to evaluate existing data, to perform confirmation soil and groundwater sampling, and, based on the results of this investigation, offer recommendations to meet requirements for final site cleanup approval.

BACKGROUND

Site History

Historical aerial photographs indicate that the site was part of the San Francisco Bay prior to in-filling conducted in the 1940s and early 1950s. From then until approximately 1959, the actual site use is uncertain. Between 1959 and 1963, the existing building was constructed. The site was owned and occupied by Esselte Pendaflex who apparently required the use of several USTs. Esselte Pendaflex subsequently sold the property to MRCP Realty. MRCP Realty discovered the tanks in 1988 and the tanks were removed in the fall of 1989. The property was subsequently sold to Nady Systems, the current owner.

Previous Investigations

Several environmental investigations have been conducted at the site. LW Environmental Services submitted an Environmental Site Assessment-Phase II Subsurface Evaluation in September, 1989. In November, 1989 McLaren performed a Phase I Review of Documents and Verification of Groundwater Flow Direction for the site. SCS Engineers submitted an Environmental Assessment dated January 30, 1990, a Soil Vapor Recovery and Groundwater Remediation Systems plan in February, 1990 and an Interim Report One in February, 1991. A variety of other reports and correspondence, received by PES on June 10, 1990, were also reviewed. Data from these reports were evaluated, and where applicable, are summarized below.

HISTORICAL SITE CONDITIONS

The site houses an office building and a warehouse currently used for storage and packaging of electronics equipment.

Based on lithologic logs from onsite wells and borings, the site is underlain by fill and construction debris from the ground surface to an approximate depth of 10 to 20 feet. The fill is underlain by poorly graded sand and bay mud.

Onsite Soil Conditions

Soil contaminants previously detected by others in the former UST area consist of 4-methyl-2-pentanone (methyl isobutyl ketone, or MIBK) and oil and grease. Soil samples from MW-8 near the former underground tanks contained up to 8.3 ppm of MIBK.

High concentrations of total oil and grease were also detected in soils throughout the site. The concentrations ranged from 2,000 to 20,000 ppm in the area of the former underground tanks. The elevated concentrations were detected primarily at depths of 5 to 10 feet below

ground surface. The wide distribution of high oil and grease concentrations coupled with their depths in soil suggest that they were probably deposited during in-filling in the area. The regional presence of the oily soil was confirmed in a conversation with Dennis Byrne of the Alameda County Department of Environmental Health on August 5, 1991. In general, the individual compounds that are detected in a total oil and grease analysis are relatively immobile and are not readily transported in groundwater.

Onsite Groundwater Conditions

Based on the historical data provided, the direction of groundwater flow appears to be toward the west-northwest at an approximate gradient of 0.007 feet per foot. The flow direction is consistent with an expected migration direction toward the San Francisco Bay. Monitoring well locations are shown on Plate 1 and the chemical data described below are summarized in Table 2.

In the vicinity of the former USTs, volatile organic compounds (VOCs) were detected in groundwater, including MIBK, benzene, acetone, and 2-butanone. Well MW-8, located immediately downgradient from the former UST area, was the only well with detectable concentrations of these VOCs. Historically, no detectable concentrations of these compounds were found in wells MW-3, located immediately upgradient of the former USTs, and MW-1, approximately 50 feet downgradient, respectively. The concentrations of VOCs in the area of MW-8 suggest that the former tanks or associated piping were a probable source of contaminants. The lateral extent of groundwater contamination from the UST area appears to be limited.

REMEDIATION SYSTEMS

In September, 1990, SCS Engineers installed a soil vapor extraction and treatment system to remediate soils in the former UST area, and a groundwater extraction and treatment system to address groundwater contamination.

Soil Vapor Extraction and Treatment System

The soil vapor extraction and treatment system consists of two vapor extraction wells piped to a regenerative blower. Two passive recharge wells were installed to facilitate vapor movement through subsurface soils in the former UST area. The extracted vapors are directed through a particulate filter and a water knockout. The vapors are then treated by carbon adsorption in two 200-pound activated carbon canisters connected in series. Plate 4 presents a schematic flow diagram of the soil vapor system. The system was operated from July to February, 1991 and was reported by SCS to have reduced the total volatile organic vapor concentrations in soil to less than 10 ppm.

Groundwater Extraction and Treatment Systems

A groundwater extraction and treatment system was installed to remove and treat contaminated groundwater from well MW-8. Plate 5 presents a schematic diagram of the groundwater extraction and treatment system. The extraction system consists of a pneumatically operated pump system that discharges to three 200-pound activated carbon canisters connected in series. The canisters are equipped with sample ports to monitor treatment system performance. The discharge from the last canister flows through a totalizing flow meter and is then combined with the effluent from another groundwater treatment system prior to discharge to onsite landscaping.

The system was operated from October, 1990 to March, 1991 and based on the flow rate of the extraction system and the reported MIBK concentrations in extracted groundwater, PES estimates that approximately three pounds of MIBK were removed during operation of the groundwater remediation system.

CONFIRMATION SAMPLING

In order to confirm previous data and to evaluate current site soil and groundwater conditions, PES performed soil and groundwater sampling at the former UST area. The following sections describe the soil and groundwater sampling methodology, analytical program, and results of the analyses.

Soil Sampling Methodology

Two soil borings for this investigation were drilled on September 5, 1991 with a truck-mounted hollow-stem auger rig. Boreholes were advanced using a 3.75-inch I.D. hollow-stem auger. Discrete soil samples were collected during drilling at approximately 2.5-foot intervals. The samples were collected by driving a 2-inch-diameter split spoon sampler lined with stainless steel tubes through 18 inches of undisturbed soil. The samples were used for

lithologic description and screened for the presence of organic vapors using a photo ionization detector (PID). One tube from each sample was wrapped with aluminum foil, secured with vinyl caps, and taped to the stainless steel liner to prevent moisture and contaminant loss. Two samples from each boring were submitted to Anametrix Analytical Laboratory, a California State-certified laboratory, for chemical analysis. The samples were labeled to designate boring number, depth, and time, and were stored in a chilled, thermally insulated cooler until shipped to the laboratory for later chemical analysis.

Soil boring locations are shown on Plate 1, and lithologic logs are presented in Appendix A. Chain of custody records for soil samples are attached to the analytical results included in Appendix C.

Soil cuttings generated during drilling were stored onsite in 55-gallon drums until proper disposal is arranged.

Well Sampling Methodology

Groundwater levels were measured in MW-1, MW-3 and MW-8 prior to purging or sampling. Elevation of groundwater in these wells is shown on Plate 2. Groundwater samples were collected from wells MW-1, MW-3, and MW-8 on September 5, 1991. Prior to evacuation, the extraction pump was removed from MW-8, and biofouling residue appeared to be present on the pump and associated tubing. A minimum of three well volumes were evacuated from each well prior to sampling using a teflon bladder pump. Groundwater samples were collected in clean 40-milliliter glass vials with teflon caps. During pumping the discharge water was measured for pH, temperature, turbidity, and electrical conductivity. The samples were labeled to designate sample number, time and date collected, and analyses requested and were stored in a chilled, thermally insulated cooler until shipped to the laboratory for later chemical analysis. The information collected during the groundwater sampling event and the chain of custody records for groundwater samples are presented in Appendix C.

Well development water and sampling purge water is temporarily stored onsite in 55-gallon drums until proper disposal is arranged.

Drilling and Sampling Equipment Decontamination

To avoid cross contamination, all equipment used for drilling, soil and water sampling was decontaminated prior to each sampling event. Drilling equipment was cleaned onsite with a combination steam/high pressure wash system. Sampling spoons used repeatedly in the same boring were decontaminated by washing between sampling efforts with a non-phosphate soap and water solution with a potable water rinse. Water sampling equipment, including pumps, lines, and bailers, were cleaned offsite with combination steam/high pressure water wash.

Results of Soil Sample Analysis

The four soil samples collected from borings PB-1 and PB-2 were sent to Anametrix, a state-certified analytical laboratory. The soil samples were selected based on the results of field screening and analyzed for volatile organic compounds (VOCs) with an extended scan targeted for methyl isobutyl ketone (MIBK) by EPA Method 8240. No chemicals were detected above the method detection limit however; the results of chemical analyses indicate that only benzene and two dichlorobenzene isomers were detected at or below the method detection limit of 0.005 ppm. Analytical results are presented in Appendix B and are summarized in Table 1. (Note: Under some circumstances, analytical laboratories are technically able to quantify chemicals present at concentrations below the method detection limits; such is the case for the dichlorobenzene isomers reported for this investigation.)

Results of Groundwater Sample Analyses

Groundwater samples collected from wells MW-1, MW-3 and MW-8 were sent to Anametrix, a state-certified laboratory, and analyzed for VOCs with extended scan by EPA Method 8240. For quality assurance and quality control purposes, a blank was simultaneously analyzed by the laboratory for assessing potential external contamination of groundwater samples. Analysis of groundwater from MW-8 showed the presence of MIBK at 150 ppm. Groundwater from MW-1 showed the presence of benzene at 0.007 ppm, toluene at 0.008 ppm, and total xylenes at 0.003 ppm. No other compounds analyzed were detected above method detection limits. No chemicals were detected in the blank sample. Analytical results are presented in Appendix B, are summarized in Table 2 and shown on Plate 3.

CONCLUSIONS AND RECOMMENDATIONS

The soil vapor extraction system appears to have been effective in reducing concentrations of MIBK in the unsaturated soils in the vicinity of the former underground tanks. Since no contaminants were detected in soil samples collected from the former underground tank area in September, PES requests that the Alameda County Department of Environmental Health approve of no further action with respect to soil characterization or remediation in the former UST area. Furthermore, PES recommends formally abandoning the soil vapor extraction system, extraction wells, and passive recharge wells.

Groundwater in the area of the former underground tanks still contains detectable amounts of MIBK. No MIBK has ever been detected in any well other than MW-8. Traces of benzene, toluene and xylenes were detected in well MW-1 for the first time. Benzene has been detected previously in MW-8, but not in MW-1, and no toluene or xylenes have been detected in the vicinity of the former underground storage tanks. Due to the apparent lack of migration of the MIBK and sporadic low concentrations of benzene, toluene and xylenes, PES recommends that three additional quarters of groundwater monitoring data be collected to establish a reliable data base for future remedial planning, if any is required.

PES is pleased to have the opportunity to provide these services. If you have any questions regarding this report or proposal, please contact either of the undersigned.

Very truly yours,

PES ENVIRONMENTAL, INC.

Andrew A. Briefer, P.E.
Senior Engineer

William F Fryzell for

James D. Wilson
Principal Hydrogeologist

cc: James McClay (MRCP Realty)
Catherine Johnson (Landels, Ripley & Diamond)

Attachments:

Table 1	Summary of Analytical Results from Soil Samples, Nady Systems Site, Emeryville, California.
Table 2	Summary of Analytical Results from Groundwater Samples, Nady Systems Site, Emeryville, California
Plate 1	Well and Soil Boring Location Map, Nady Systems Site, 6707 Bay Street, Emeryville, California
Plate 2	Water Level Elevation Map, September 5, 1991, Nady Systems Site, 6707 Bay Street, Emeryville, California
Plate 3	Concentrations of Dissolved VOCs, September 5, 1991, Nady Systems Site, 6707 Bay Street, Emeryville, California
Plate 4	Schematic Diagram of Soil Vapor Extraction and Treatment System, Nady Systems Site, Emeryville, California

Plate 5	Schematic Diagram of Groundwater Extraction and Treatment System, Nady Systems Site, Emeryville, California
Appendix A	Lithologic Logs of Soil Borings PB-1 and PB-2
Appendix B	Soil and Groundwater Analytical Results
Appendix C	Groundwater Sampling Report and Chain of Custody Records

Table 1. Summary of Analytical Results from Soil Samples
Nady Systems, Inc. Site
Emeryville, California

Concentrations expressed in milligrams per kilogram or parts per million (ppm)

Soil Boring	Depth (ft bgs.)	Sampled By	Sample Date	TPH as Gasoline	TPH as Diesel	Oil and Grease	Benzene	Toluene	Ethyl-Benzene	Total Xylenes	4-Methyl-2-Pentanone	Vinyl Chloride	Trans 1,2-Dichloroethylene	1,3-Dichloro-benzene	1,4-Dichloro-benzene	Zinc	Lead	Copper
B-1		L&W Environmental	Jul-89															
	5.5			<10 (2)	12	845	NR	NR	NR	NR	NR	<0.030	<0.030	NR	NR	94	61	28
	10.5			<10	<10	<50	NR	NR	NR	NR	NR	<0.030	<0.030	NR	NR	5.4	3	4
	16.0			<10	63	1600	NR	NR	NR	NR	NR	<0.030	<0.030	NR	NR	8040	160	153
	20.5			<10	<10	80	NR	NR	NR	NR	NR	<0.030	<0.030	NR	NR	106	77	23
	25.5			<10	<10	95	NR	NR	NR	NR	NR	<0.030	<0.030	NR	NR	27	8	13
	30.5			<10	<10	<50	NR	NR	NR	NR	NR	<0.030	<0.030	NR	NR	15	4.5	7.4
B-3		L&W Environmental	Aug-89															
	5.0			<10	30	1845	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	12.0			<10	20	95	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	15.0			120	260	625	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	20.0			<10	<10	<20	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
	25.0			<10	<10	20	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
MW-8		SCS Engineers	Jan-90															
	5.0			<10	<10	2000	<0.010	<0.010	<0.010	<0.010	<0.030	<0.030	<0.010	<0.010	NR	75	<12	18
	10.0			<10	<10	20000	<0.100	<0.100	<0.100	<0.100	8.3	<0.030	<0.010	<0.100	NR	120	24	41
PB-1 (1)		PES Environmental	Sep-90															
	6.0			NA	NA	NA	<0.005 (2)	<0.005	<0.005	<0.005	<0.010	<0.010	<0.005	<0.005	0.002	NA	NA	NA
	8.5			NA	NA	NA	<0.005	<0.005	<0.005	<0.005	<0.010	<0.010	<0.005	0.003	0.004	NA	NA	NA
PB-2 (1)		PES Environmental	Sep-90															
	5.5			NA	NA	NA	<0.005	<0.005	<0.005	<0.005	<0.010	<0.010	<0.005	<0.005	<0.005	NA	NA	NA
	8.0			NA	NA	NA	0.005	<0.005	<0.005	<0.005	<0.010	<0.010	<0.005	0.004	0.004	NA	NA	NA

Notes:

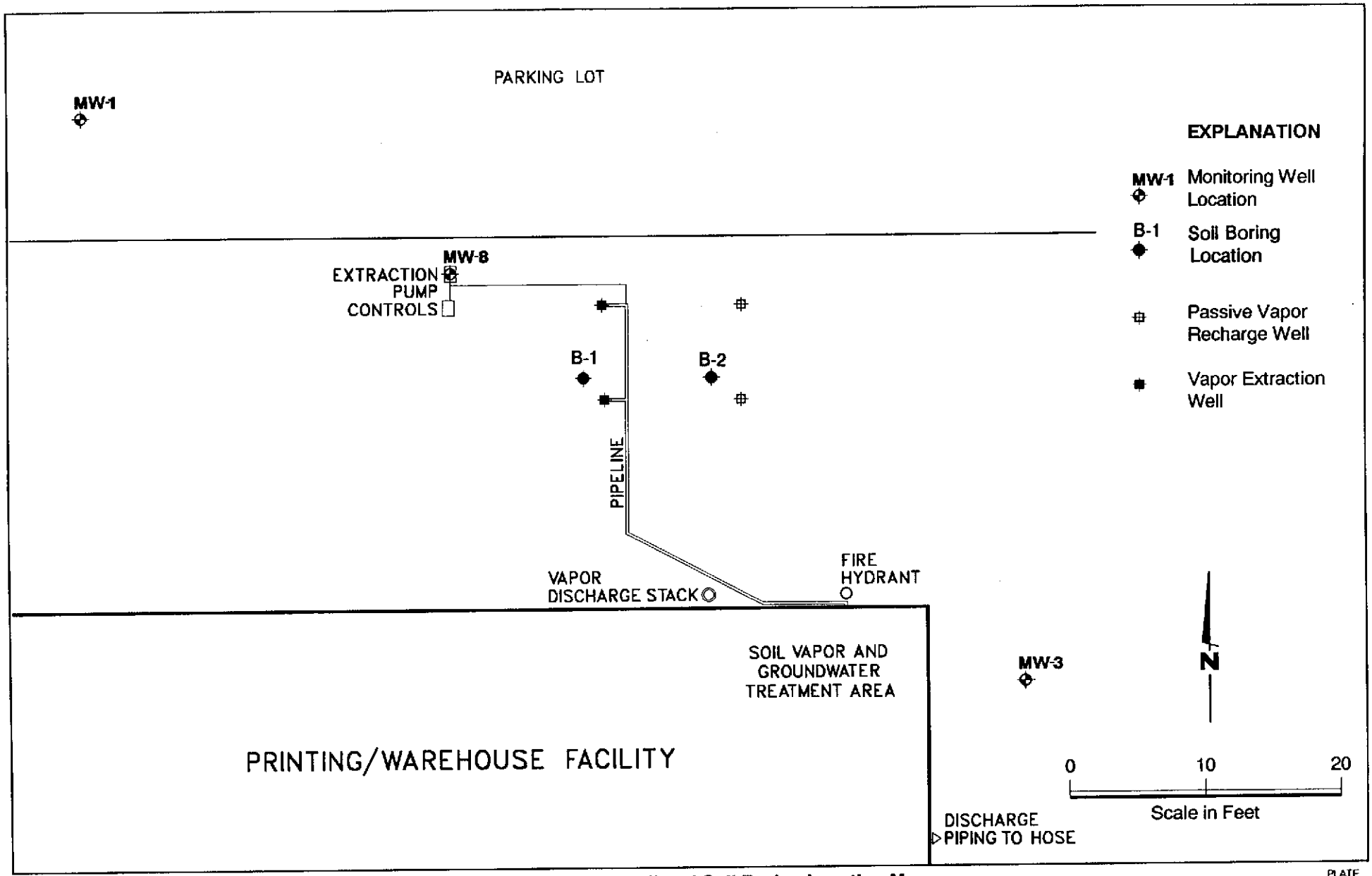
(1) Prefix "P" added to distinguish current soil boring data from earlier information.
(2) <10 = Compound not detected at indicated detection limit.
NR = Not reported.
<= Compound not detected at indicated detection limit.

Table 2. Summary of Analytical Results from Groundwater Samples
Nady Systems, Inc. Site, Emeryville, California

Concentrations expressed in milligrams per kilogram or parts per million (ppm)

WELL NUMBER	MW-1	MW-1	MW-1	MW-1	MW-3	MW-3	MW-3	MW-8	MW-8	MW-8
SAMPLING DATE	Jul-89	Sep-89	Jan-90	Sep-91	Sep-89	Jan-90	Sep-91	Jan-90	Dec-90	Sep-91
VOLATILE ORGANICS										
4-Methyl-2-Pentanone	NR	<0.020	<0.020	<0.010	<0.020	<0.020	<0.010	160	47	150
Vinyl Chloride	<0.0003	<0.04	<0.03	<0.010	<0.004	<0.03	<0.010	NR	<0.150	<10
Trans-1,2-Dichloroethene	<0.0003	<0.003	<0.003	<0.005	<0.003	<0.005	<0.005	NR	<0.025	<5
Acetone	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NR	3.2	<20
2-Butanone	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NR	10	<20
4-Methyl-2-Pentanone	<0.020	NR	<0.020	<0.010	NR	<0.020	<0.010	NR	130	150
Benzene	<0.002	<0.002	<0.003	0.007	<0.002	<0.005	<0.005	2.1	0.16	<5
Toluene	<0.002	<0.002	<0.003	0.008	<0.002	<0.005	<0.005	<0.025	<0.025	<5
Ethylbenzene	<0.003	<0.003	<0.003	<0.005	<0.003	<0.005	<0.005	<0.025	<0.025	<5
Xylene	<0.003	<0.003	<0.003	0.003	<0.003	<0.005	<0.005	<0.025	<0.025	<5
PETROLEUM HYDROCARBONS										
Total Petroleum Hydrocarbons	NR	<0.5	0.5		<0.5	0.6		103	106	NA
Oil and Grease	NR	<10	<10		<10	NR		NA	NA	NA
METALS										
Zinc	0.18	NA	0.18		NA	NA		NA	NA	NA
Lead	0.063	NA	0.063		NA	NA		NA	NA	NA
Copper	0.04	NA	0.04		NA	NA		NA	NA	NA

Notes:
NA = Not Analyzed
NR = Not Reported
<10= not detected at reported detection limit



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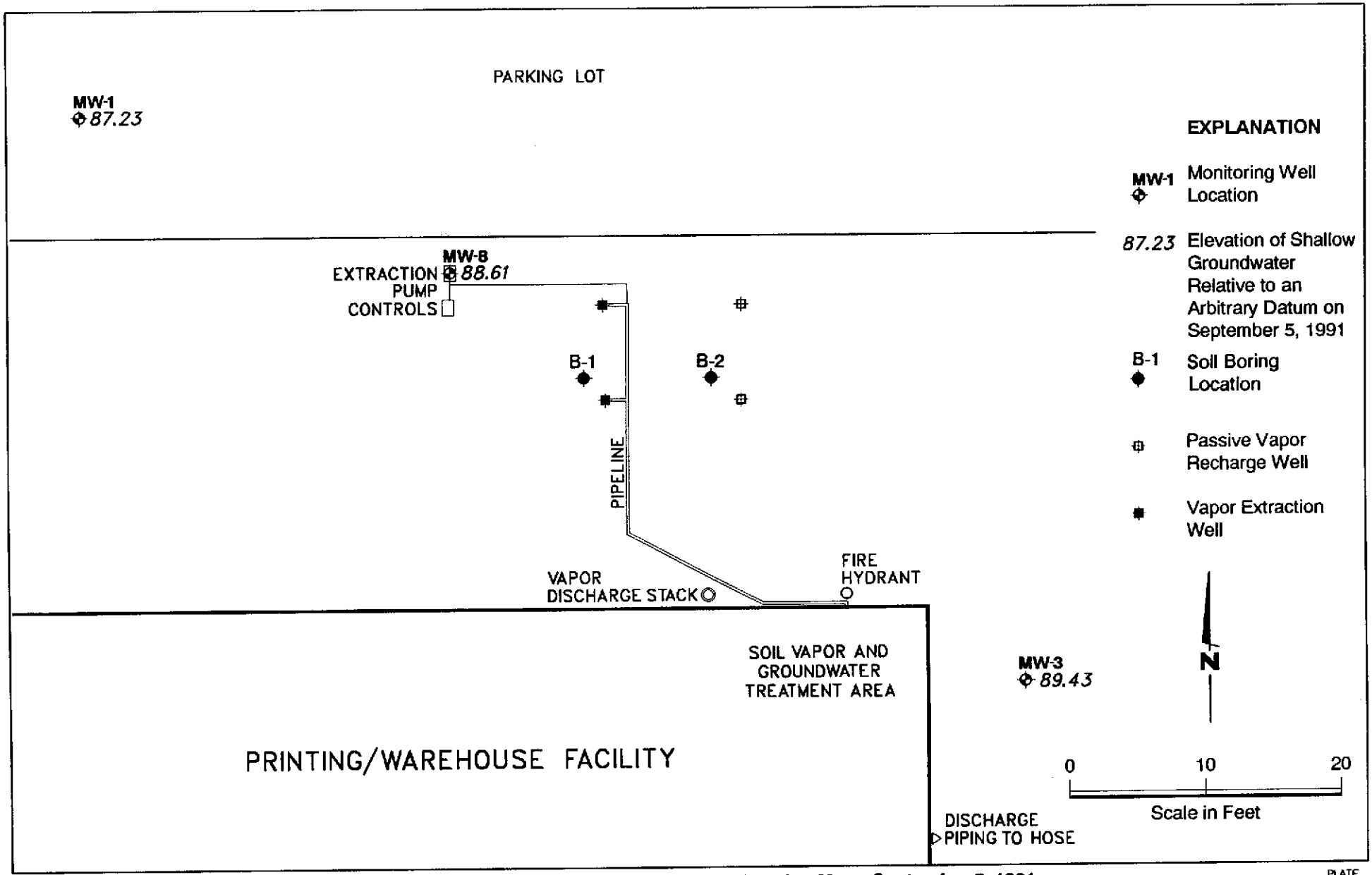
Well and Soil Boring Location Map
Nady Systems Site
6707 Bay Street
Emeryville, California

PLATE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
MP001B		11/91		



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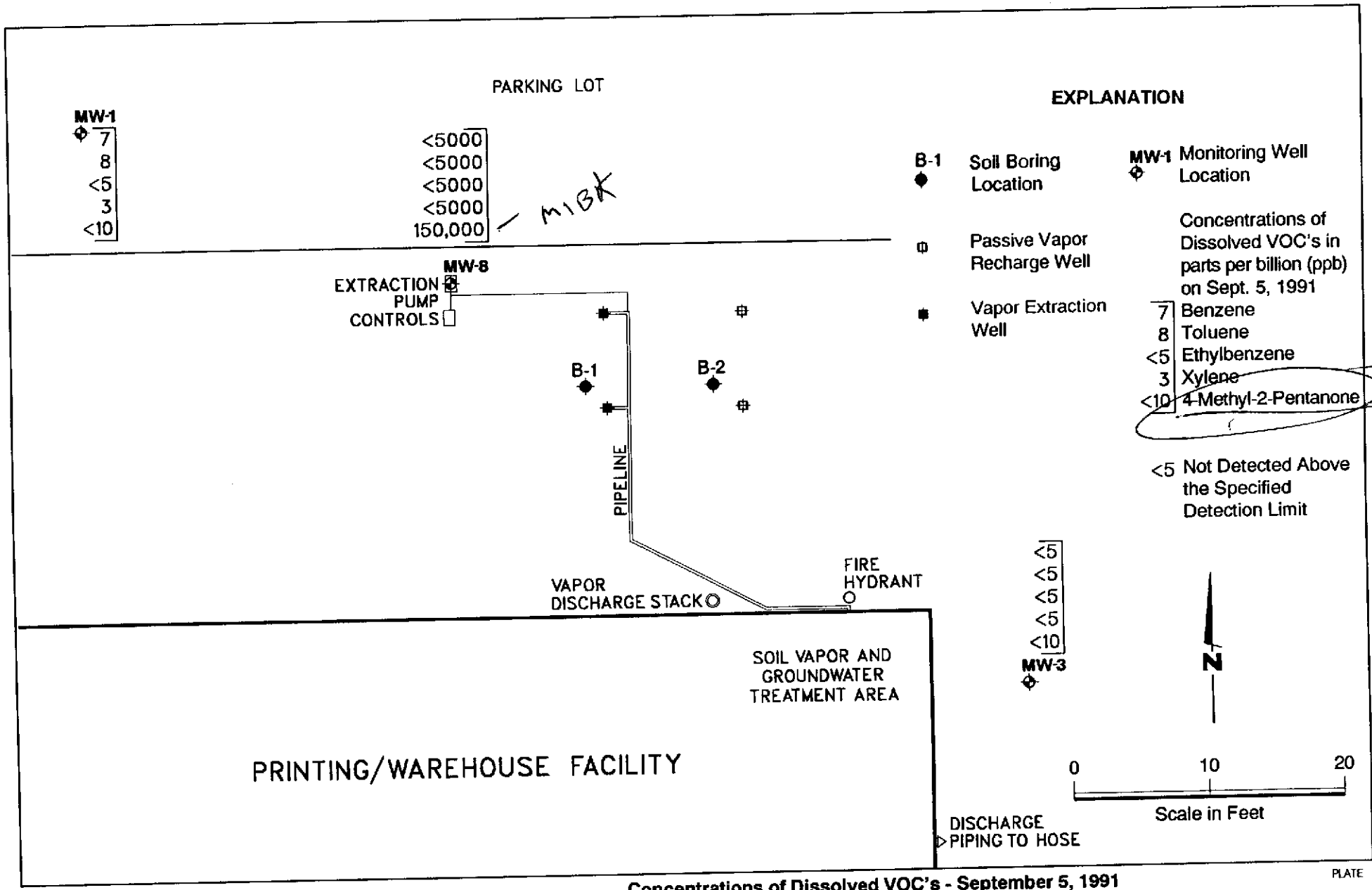
Water Level Elevation Map - September 5, 1991
Nady Systems Site
6707 Bay Street
Emeryville, California

PLATE
2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
MP001B		11/91		



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Concentrations of Dissolved VOC's - September 5, 1991
Nady Systems Site
6707 Bay Street
Emeryville, California

PLATE
3

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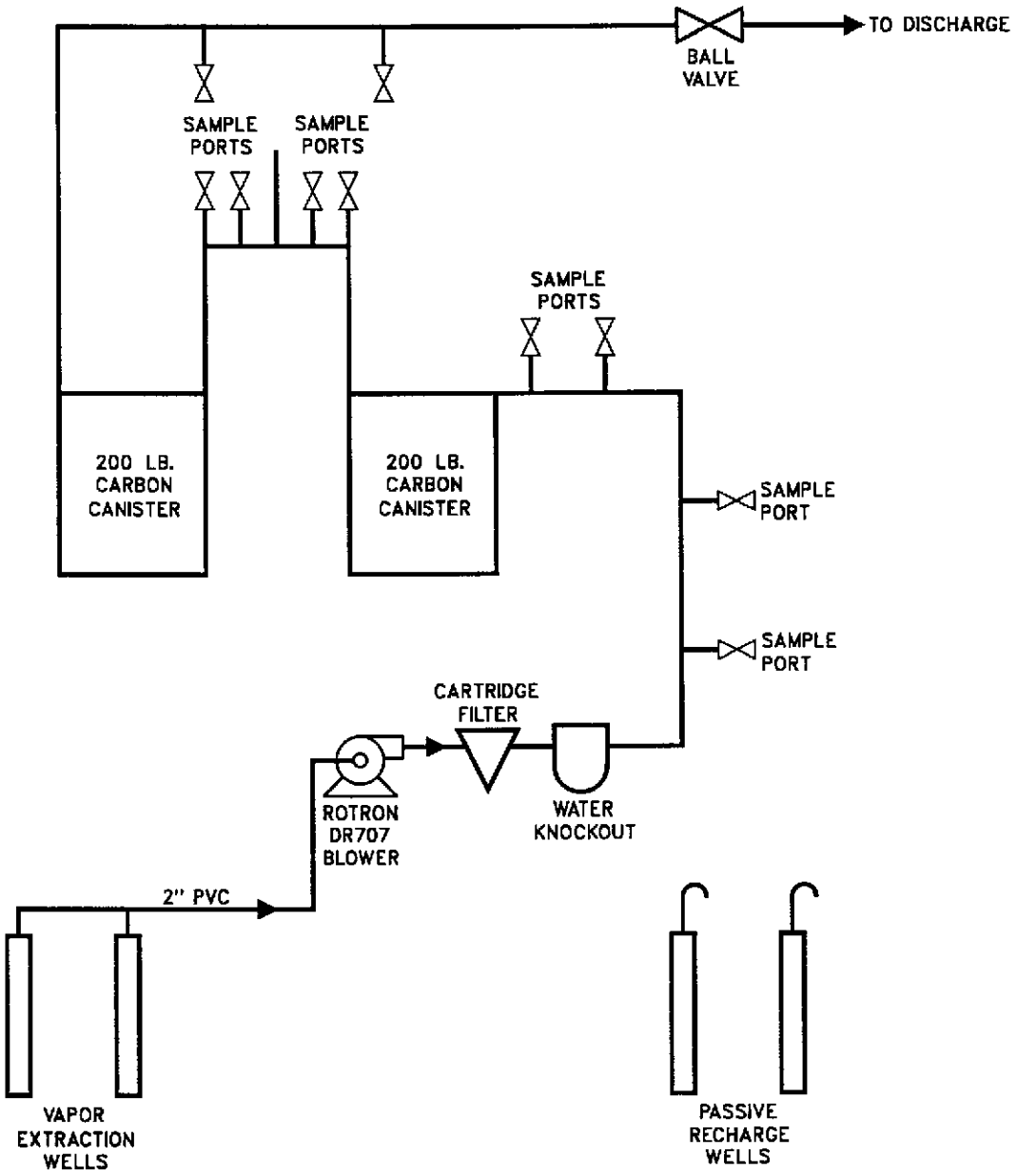

NOT TO SCALE

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Schematic Diagram of Soil Vapor Extraction and Treatment System
Nady Systems Site
Emeryville, California

PLATE
4

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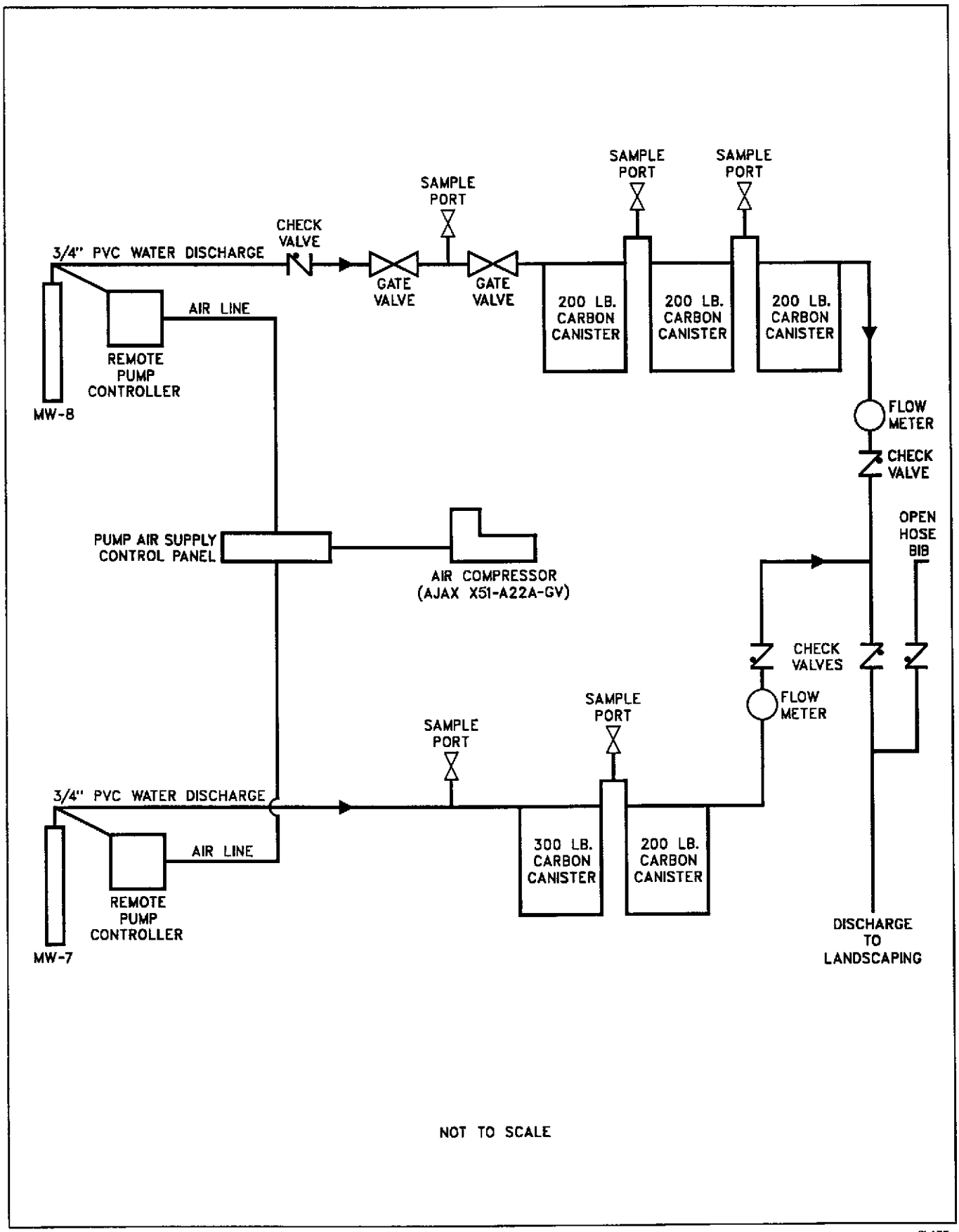

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Schematic Diagram of Groundwater Extraction and Treatment System
Nady Systems Site
Emeryville, California

PLATE
5

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
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APPENDIX A

Lithologic Logs of Soil Borings PB-1 and PB-2

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN GRAVELS WITH LITTLE OR NO FINES	GW		WELL GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
			GP		POORLY GRADED GRAVELS WITH OR WITHOUT SAND, LITTLE OR NO FINES
		GRAVELS WITH OVER 15% FINES	GM		SILTY GRAVELS, SILTY GRAVELS WITH SAND
			GC		CLAYEY GRAVELS, CLAYEY GRAVELS WITH SAND
	SANDS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LITTLE OR NO FINES	SW		WELL GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
			SP		POORLY GRADED SANDS WITH OR WITHOUT GRAVEL, LITTLE OR NO FINES
		SANDS WITH OVER 15% FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML		INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTS WITH SANDS AND GRAVELS
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY CLAYS WITH SANDS AND GRAVELS, LEAN CLAYS
			OL		ORGANIC SILTS OR CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH		INORGANIC SILTS, MICACEOUS OR DIATOMACIOUS, FINE SANDY OR SILTY SOILS, ELASTIC SILTS
			CH		INORGANIC CLAYS OF HIGH PLASTICITY, FAT CLAYS
			OH		ORGANIC SILTS OR CLAYS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS			PT		PEAT AND OTHER HIGHLY ORGANIC SOILS

Perm	- Permeability
Consol	- Consolidation
LL	- Liquid Limit (%)
PI	- Plastic Index (%)
G_s	- Specific Gravity
MA	- Particle Size Analysis
2.5 YR 6/2	- Soil Color according to Munsell Soil Color Charts (1975 Edition)
5 GY 5/2	- GSA Rock Color Chart

☐	- No Soil Sample Recovered
⊘	- Disturbed Soil Sample Recovered
■	- Sample Submitted for Laboratory Analysis
⊠	- Undisturbed Bulk or Classification Sample
▽	- First Encountered Ground Water Level
▼	- Piezometric Ground Water Level
Penetration	- Sample drive hammer weight - 140 pounds falling 30 inches. Blows required to drive sampler 6 inches are indicated on the logs

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Unified Soil Classification Chart
Nady Systems Site
Emeryville, California

PLATE
A-1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
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LOG OF BORING P.B-1

PID (PPM)	BLOWS/6"	DEPTH (FT)	SYMBOLS	MATERIALS DESCRIPTION
				BROWN POORLY GRADED SAND WITH CLAY (SP) loose, moist. (fill)
0	3 2 2			
0	2 1 3	5		VERY DARK BROWN SANDY SILT (ML) 10YR 2/2, loose, moist to saturated, 30-35% very fine-grained to fine-grained sand, trace medium-grained sand, trace fine gravel, Saturated: plastic and cardboard debris at 8.5 feet, no samples retained.
	2 3 3			
2.4	8 3 5	10		BLACK ELASTIC CLAY WITH SAND (CH) 2.5Y 2/0, medium stiff, moist, 10-15% very fine-grained to fine-grained sand, green mottling, wood debris.
0	2 4 6			BLACK POORLY GRADED SAND WITH SILT (SP) 2.5Y 2/0, loose, saturated, fine-grained to medium-grained sand.
10.4	3 4 4	15		*Bottom of Borehole at 16.5 feet.*
		20		
		25		
		30		

CLIENT	Nady Systems Site	DIAMETER OF HOLE	8 inches
LOCATION	6707 Bay Street, Emeryville, CA	TOTAL DEPTH OF HOLE	16.5 feet
JOB NUMBER	MP001B	TOP OF CASING ELEVATION	
GEOLOGIST/ENGINEER	J. Gill	DATE STARTED	9/5/91
DRILL RIG	Truck Mounted C-57	DATE COMPLETED	9/5/91

PLATE

A-2

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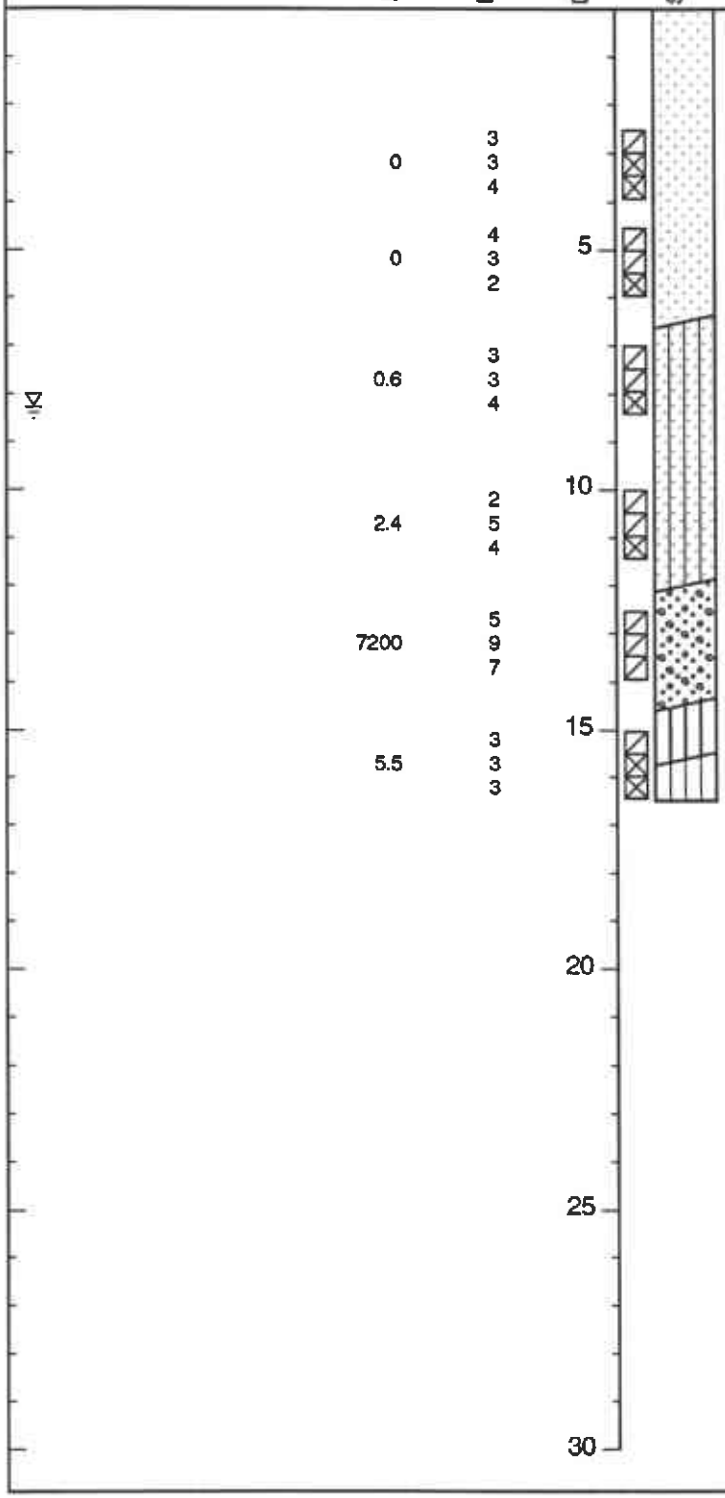
LOG OF BORING PB-2



MATERIALS DESCRIPTION

BROWN POORLY GRADED SAND WITH CLAY AND GRAVEL (SP) - loose, moist. (fill)

Cobbles or concrete debris at 7 feet.
VERY DARK GRAY TO BLACK SILTY SAND (SM) loose, saturated, fine-grained to coarse-grained sand, wood debris and concrete debris.

Driller noted cobbles at 11 feet.

BLACK SANDY GRAVEL WITH SILT (GW) 5Y 2.5/1, very loose, saturated.

DARK GREENISH GRAY SANDY ELASTIC SILT (MH) 5BG 4/1, soft, moist to saturated, 15-20% very fine-grained sand.
BLACK SILT WITH SAND (ML) 7.5YR 2/0, soft, moist, wood debris.

Bottom of Borehole at 16.5 feet.

CLIENT	Nady Systems Site	DIAMETER OF HOLE	8 inches
LOCATION	6707 Bay Street, Emeryville, CA	TOTAL DEPTH OF HOLE	16.5 feet
JOB NUMBER	MP001B	TOP OF CASING ELEVATION	
GEOLOGIST/ENGINEER	J. Gill	DATE STARTED	9/5/91
DRILL RIG	Truck Mounted C-57	DATE COMPLETED	9/5/91

PLATE
A-3

APPENDIX B

Soil and Groundwater Analytical Results

ANAMETRIX INC
Environmental & Analytical Chemistry
1961 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

REPORT

MR. ANDREW BRIEFER
PES ENVIRONMENTAL
P.O. BOX 1833
NOVATO, CA 94948

Workorder # : 9109033
Date Received : 09/05/91
Project ID : MPO01B
Purchase Order: N/A

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9109033- 1	B-1-3.5
9109033- 2	B-1-6.0
9109033- 3	B-1-8.5
9109033- 4	B-1-10.5
9109033- 5	B-1-11.0
9109033- 6	B-1-13.0
9109033- 7	B-2-3.5
9109033- 8	B-2-5.5
9109033- 9	B-2-8.0
9109033-10	B-2-11.0
9109033-11	B-2-16.0

This report consists of 9 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Sarah Schoen, Ph.D.
Laboratory Manager

9-23-91
Date

ANAMETRIX REPORT DESCRIPTION
GCMS

Organic Analysis Data Sheets (OADS)

OADS forms contain tabulated results for target compounds. The OADS are grouped by method and, within each method, organized sequentially in order of increasing Anametrix ID number.

Tentatively Identified Compounds (TICs)

TIC forms contain tabulated results for non-target compounds detected in GC/MS analyses. TICs must be requested at the time samples are submitted at Anametrix. TIC forms immediately follow the OADS form for each sample. If TICs are requested but not found, then TIC forms will not be included with the report.

Surrogate Recovery Summary (SRS)

SRS forms contain quality assurance data. An SRS form will be printed for each method, if the method requires surrogate compounds. They will list surrogate percent recoveries for all samples and any method blanks. Any surrogate recovery outside the established limits will be flagged with an "*", and the total number of surrogates outside the limits will be listed in the column labelled "Total Out".

Matrix Spike Recovery Form (MSR)

MSR forms contain quality assurance data. They summarize percent recovery and relative percent difference information for matrix spikes and matrix spike duplicates. This information is a statement of both accuracy and precision. Any percent recovery or relative percent difference outside established limits will be flagged with an "*", and the total number outside the limits will be listed at the bottom of the page. Not all reports will contain an MSR form.

Qualifiers

Anametrix uses several data qualifiers (Q) in it's report forms. These qualifiers give additional information on the compounds reported. They should help a data reviewer to verify the integrity of the analytical results. The following is a list of qualifiers and their meanings:

- U - Indicates that the compound was analyzed for, but was not detected at or above the specified reporting limit.
- B - Indicates that the compound was detected in the associated method blank.
- J - Indicates that the compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value. Tentatively identified compounds will always have a "J" qualifier because they are not included in the instrument calibration.
- E - Indicates that the amount reported exceeded the linear range of the instrument calibration.
- D - Indicates that the compound was detected in an analysis performed at a secondary dilution.
- A - Indicates that the tentatively identified compound is a suspected aldol condensation product. This is common in EPA Method 8270 soil analyses.

Absence of a qualifier indicates that the compound was detected at a concentration at or above the specified reporting limit.

REPORTING CONVENTIONS

- Due to a size limitation in our data processing step, only the first eight (8) characters of your project ID and sample ID will be printed on the report forms. However, the report cover letter and report summary pages display up to twenty (20) characters of your project and sample IDs.
- Amounts reported are gross values, i.e., not corrected for method blank contamination.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. ANDREW BRIEFER
PES ENVIRONMENTAL
P.O. BOX 1833
NOVATO, CA 94948

Workorder # : 9109033
Date Received : 09/05/91
Project ID : MP001B
Purchase Order: N/A
Department : GCMS
Sub-Department: GCMS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9109033- 2	B-1-6.0	SOIL	09/05/91	8240
9109033- 3	B-1-8.5	SOIL	09/05/91	8240
9109033- 8	B-2-5.5	SOIL	09/05/91	8240
9109033- 9	B-2-8.0	SOIL	09/05/91	8240

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. ANDREW BRIEFER
PES ENVIRONMENTAL
P.O. BOX 1833
NOVATO, CA 94948

Workorder # : 9109033
Date Received : 09/05/91
Project ID : MPO01B
Purchase Order: N/A
Department : GCMS
Sub-Department: GCMS

QA/QC SUMMARY :

- No QA/QC problems encountered.

Paul Gowan 9-23-91
Department Supervisor Date

Le-Le Yu 9-23-91
Chemist Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : MP001B
Sample ID : B-1-6.0
Matrix : SOIL
Date Sampled : 9/ 5/91
Date Analyzed : 9/19/91
Instrument ID : MSD2

Anametrix ID : 9109033-02
Analyst : LH
Supervisor : PG

Dilution Factor : 1.00
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
110-75-8	2-Chloroethylvinyl ether	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	2.	J
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : MP001B
Sample ID : B-1-8.5
Matrix : SOIL
Date Sampled : 9/ 5/91
Date Analyzed : 9/19/91
Instrument ID : MSD2

Anametrix ID : 9109033-03
Analyst : LJ
Supervisor : PG

Dilution Factor : 1.00
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
110-75-8	2-Chloroethylvinyl ether	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	3.	J
106-46-7	1,4-Dichlorobenzene	5.	4.	J
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : MP001B
Sample ID : B-2-5.5
Matrix : SOIL
Date Sampled : 9/ 5/91
Date Analyzed : 9/19/91
Instrument ID : MSD2

Anametrix ID : 9109033-08
Analyst : [illegible]
Supervisor : PG

Dilution Factor : 1.00
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
110-75-8	2-Chloroethylvinyl ether	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : MP001B
Sample ID : B-2-8.0
Matrix : SOIL
Date Sampled : 9/ 5/91
Date Analyzed : 9/19/91
Instrument ID : MSD2

Anametrix ID : 9109033-09
Analyst : LJ
Supervisor : PG

Dilution Factor : 1.00
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	5.	J
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
110-75-8	2-Chloroethylvinyl ether	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	4.	J
106-46-7	1,4-Dichlorobenzene	5.	4.	J
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID :
Sample ID : BLANK
Matrix : SOIL
Date Sampled : 0/ 0/ 0
Date Analyzed : 9/19/91
Instrument ID : MSD2

Anametrix ID : 0918B004
Analyst : [illegible]
Supervisor : PG

Dilution Factor : 1.00
Conc. Units : ug/Kg

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
110-75-8	2-Chloroethylvinyl ether	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

SURROGATE RECOVERY SUMMARY -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : MPOO1B
Matrix : SOLID

Anametrix ID : 9109033
Analyst : LY
Supervisor : PG

	SAMPLE ID	SU1	SU2	SU3	TOTAL OUT
1	BLANK	126	101	110	0
2	B-1-8.5	99	96	94	0
3	B-2-5.5	92	92	83	0
4	B-2-8.0	95	99	92	0
5	B-1-6.0	93	99	88	0
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

	QC LIMITS
SU1 = 1,2-Dichloroethane-d4	(73-130)
SU2 = Toluene-d8	(74-121)
SU3 = 1,4-Bromofluorobenzene	(70-124)

* Values outside of Anametrix QC limits

[redacted] BLAINE TECH SERVICES INC. [redacted] TULLY [redacted] AD., [redacted] E 505 [redacted]
SAN JOSE, CA 95122
(408) 995 5535

Update copy Faxed 9-9-91

CONDUCT ANALYSIS TO DETECT [redacted]

LAB [redacted]

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION L[IMITS] SET BY CALIFORNIA DHS AND

- ☐ EPA
- ☐ LIA
- ☐ OTHER
- ☐ RWQCB REGION

SPECIAL INSTRUCTIONS
Accept [illegible]

CHAIN OF CUSTODY PES ENVIRONMENTAL

CLIENT MRCP REALTY

SITE 6707 BAY ST
EMERYVILLE CA

	SAMPLE I.D.	MATRIX (S = SOIL, W = H2O)	CONTAINERS TOTAL		C = COMPOSITE ALL CONTAINERS	8240 w/EXTENDED ... TARGET FOR MIBK	MIBK	ARCHIVE UNTIL NOTIFIED				ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE
1	B-1 — 3.5	S	1	[illegible]											
2	B-1 - 6.0	S	1			X									
3	B-1 - 8.5	S	1			X									
4	B-1 - 10.5	S	1												
5	B-1 - 11.0	S	1												
6	B-1 - 13.0	S	1												
7	B-2 - 3.5	S	1												
8	B-2 - 5.5	S	1			X									
9	B-2 - 8.0	S	1			X									
10	B-2 - 11.0	S	1												
11	B-2 - 16.0	S	1												

SAMPLING COMPLETED DATE 9/5/91 TIME

SAMPLING PERFORMED BY JANE GILL

RESULTS NEEDED NO LATER THAN

	DATE	TIME		DATE	TIME
RELEASED BY Jane Gill	9/5/91	2:35	RECEIVED BY [signature]		
RELEASED BY			RECEIVED BY [signature]		
RELEASED BY			RECEIVED BY		

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #
BLAINE TECH	9/5/91		

[redacted] BLAINE TECH SERVICES INC. [redacted] 370 [redacted] RO[redacted] SUIT[redacted]
SAN JOSE, CA 95122
(408) 995 5535

BILL PES / SEND REPORT PES

CONDU[redacted]T ANAL[redacted]SIS TO [redacted]ECT

LAB ANA[redacted]ET[redacted]X [redacted] DHS # [redacted]

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND

- ☐ EPA
- ☐ LIA
- ☐ OTHER
- ☐ RWQCB REGION ______

CHAIN OF CUSTODY: PES ENVIRONMENTAL

CLIENT: [redacted] MRCP REALTY

SITE: 6707 BAY ST
EMERYVILLE CA
ATTN JANE GILL PES

SPECIAL INSTRUCTIONS: ~~IST~~
ARCHIVE UNTIL NOTIFIED FOR 8240 W/EXTENDED SCAN MIBK
STANDARD TURN AROUND TIME

	SAMPLE I.D.	MATRIX (S = SOIL, W = H2O)	CONTAINERS TOTAL	CONTAINERS	C = COMPOSITE ALL CONTAINERS	~~[illegible]~~	8240 W/EXTENDED SCAN	ARCHIVE UNTIL NOTIFIED	TARGET FOR MIBK	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
1	B-1- 3.5	S	1	SS TUBES			X			No headspace			
2	B-1- 6.0	S	1				X			Headspace			
3	B-1- 8.5	S	1				X			Headspace			
4	B-1- 10.5	S	1				X			No headspace			
5	B-1- 11.0	S	1				X			Headspace			
6	B-1- 13.0	S	1				X			No headspace			
7	B-2- 3.5	S	1				X			Headspace			
8	B-2- 5.5	S	1				X			↓			
9	B-2- 8.0	S	1				X			No headspace			
10	B-2- 11.0	S	1				X			Headspace			
11	B-2- 16.0	S	1				X			no headspace			

all samples cold!

SAMPLING COMPLETED — DATE: 9/5/91 — TIME:

SAMPLING PERFORMED BY: JANE GILL

RESULTS NEEDED NO LATER THAN:

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Jane Gill	9/5/91	2:35pm	Jeff Curtis	9 5 91	14:35
Jeff Curtis	9 5 91	16:10	[illegible]	090591	1610
[illegible]	0905				

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #
BLAINE TECH	9/5/91		

JDW

ANAMETRIX INC
Environmental & Analytical Chemistry
1961 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

REPORT

MS. JANE GILL
PES ENVIRONMENTAL
P.O. BOX 1833
NOVATO, CA 94948

Workorder # : 9109032
Date Received : 09/05/91
Project ID : MP001B
Purchase Order: N/A

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9109032- 1	MW1
9109032- 2	MW3
9109032- 3	MW8

This report consists of 10 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Sarah Schoen, Ph.D.
Laboratory Manager

9-19-91
Date

ANAMETRIX REPORT DESCRIPTION
GCMS

Organic Analysis Data Sheets (OADS)

OADS forms contain tabulated results for target compounds. The OADS are grouped by method and, within each method, organized sequentially in order of increasing Anametrix ID number.

Tentatively Identified Compounds (TICs)

TIC forms contain tabulated results for non-target compounds detected in GC/MS analyses. TICs must be requested at the time samples are submitted at Anametrix. TIC forms immediately follow the OADS form for each sample. If TICs are requested but not found, then TIC forms will not be included with the report.

Surrogate Recovery Summary (SRS)

SRS forms contain quality assurance data. An SRS form will be printed for each method, if the method requires surrogate compounds. They will list surrogate percent recoveries for all samples and any method blanks. Any surrogate recovery outside the established limits will be flagged with an "*", and the total number of surrogates outside the limits will be listed in the column labelled "Total Out".

Matrix Spike Recovery Form (MSR)

MSR forms contain quality assurance data. They summarize percent recovery and relative percent difference information for matrix spikes and matrix spike duplicates. This information is a statement of both accuracy and precision. Any percent recovery or relative percent difference outside established limits will be flagged with an "*", and the total number outside the limits will be listed at the bottom of the page. Not all reports will contain an MSR form.

Qualifiers

Anametrix uses several data qualifiers (Q) in it's report forms. These qualifiers give additional information on the compounds reported. They should help a data reviewer to verify the integrity of the analytical results. The following is a list of qualifiers and their meanings:

- U - Indicates that the compound was analyzed for, but was not detected at or above the specified reporting limit.
- B - Indicates that the compound was detected in the associated method blank.
- J - Indicates that the compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value. Tentatively identified compounds will always have a "J" qualifier because they are not included in the instrument calibration.
- E - Indicates that the amount reported exceeded the linear range of the instrument calibration.
- D - Indicates that the compound was detected in an analysis performed at a secondary dilution.
- A - Indicates that the tentatively identified compound is a suspected aldol condensation product. This is common in EPA Method 8270 soil analyses.

Absence of a qualifier indicates that the compound was detected at a concentration at or above the specified reporting limit.

REPORTING CONVENTIONS

- Due to a size limitation in our data processing step, only the first eight (8) characters of your project ID and sample ID will be printed on the report forms. However, the report cover letter and report summary pages display up to twenty (20) characters of your project and sample IDs.
- Amounts reported are gross values, i.e., not corrected for method blank contamination.

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. JANE GILL
PES ENVIRONMENTAL
P.O. BOX 1833
NOVATO, CA 94948

Workorder # : 9109032
Date Received : 09/05/91
Project ID : MP001B
Purchase Order: N/A
Department : GCMS
Sub-Department: GCMS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9109032- 1	MW1	WATER	09/05/91	8240
9109032- 2	MW3	WATER	09/05/91	8240
9109032- 3	MW8	WATER	09/05/91	8240

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MS. JANE GILL
PES ENVIRONMENTAL
P.O. BOX 1833
NOVATO, CA 94948

Workorder # : 9109032
Date Received : 09/05/91
Project ID : MP001B
Purchase Order: N/A
Department : GCMS
Sub-Department: GCMS

QA/QC SUMMARY :

- Tentatively Identified Compounds (TICs) were scanned for but were not detected in the EPA Method 8240 analysis of these samples.

Department Supervisor 9-19-91 Date

Chemist 9-19-91 Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : MP001B
Sample ID : MW1
Matrix : WATER
Date Sampled : 9/ 5/91
Date Analyzed : 9/18/91
Instrument ID : MSD2

Anametrix ID : 9109032-01
Analyst : LI
Supervisor : UM

Dilution Factor : 1.00
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	7.	
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
110-75-8	2-Chloroethylvinyl ether	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	8.	
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	3.	J
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : MP001B
Sample ID : MW3
Matrix : WATER
Date Sampled : 9/ 5/91
Date Analyzed : 9/19/91
Instrument ID : MSD2

Anametrix ID : 9109032-02
Analyst : LY
Supervisor : LY

Dilution Factor : 1.00
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
110-75-8	2-Chloroethylvinyl ether	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID	: MP001B	Anametrix ID	: 9109032-03
Sample ID	: MW8	Analyst	: MCT
Matrix	: WATER	Supervisor	: MH
Date Sampled	: 9/ 5/91		
Date Analyzed	: 9/19/91	Dilution Factor	: 1000.00
Instrument ID	: MSD1	Conc. Units	: ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10000.	ND	U
75-01-4	Vinyl chloride	10000.	ND	U
74-83-9	Bromomethane	10000.	ND	U
75-00-3	Chloroethane	10000.	ND	U
75-69-4	Trichlorofluoromethane	5000.	ND	U
75-35-4	1,1-Dichloroethene	5000.	ND	U
76-13-1	Trichlorotrifluoroethane	5000.	ND	U
67-64-1	Acetone	20000.	ND	U
75-15-0	Carbon disulfide	5000.	ND	U
75-09-2	Methylene chloride	5000.	ND	U
156-60-5	Trans-1,2-dichloroethene	5000.	ND	U
75-34-3	1,1-Dichloroethane	5000.	ND	U
156-59-2	Cis-1,2-dichloroethene	5000.	ND	U
78-93-3	2-Butanone	20000.	ND	U
67-66-3	Chloroform	5000.	ND	U
71-55-6	1,1,1-Trichloroethane	5000.	ND	U
56-23-5	Carbon tetrachloride	5000.	ND	U
108-05-4	Vinyl acetate	10000.	ND	U
71-43-2	Benzene	5000.	ND	U
107-06-2	1,2-Dichloroethane	5000.	ND	U
79-01-6	Trichloroethene	5000.	ND	U
78-87-5	1,2-Dichloropropane	5000.	ND	U
75-27-4	Bromodichloromethane	5000.	ND	U
110-75-8	2-Chloroethylvinyl ether	5000.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5000.	ND	U
108-10-1	4-Methyl-2-pentanone	10000.	150000.	
108-88-3	Toluene	5000.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5000.	ND	U
79-00-5	1,1,2-Trichloroethane	5000.	ND	U
127-18-4	Tetrachloroethene	5000.	ND	U
591-78-6	2-Hexanone	10000.	ND	U
124-48-1	Dibromochloromethane	5000.	ND	U
108-90-7	Chlorobenzene	5000.	ND	U
100-41-4	Ethylbenzene	5000.	ND	U
1330-20-7	Xylene (Total)	5000.	ND	U
100-42-5	Styrene	5000.	ND	U
75-25-2	Bromoform	5000.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5000.	ND	U
541-73-1	1,3-Dichlorobenzene	5000.	ND	U
106-46-7	1,4-Dichlorobenzene	5000.	ND	U
95-50-1	1,2-Dichlorobenzene	5000.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID :
Sample ID : BLANK
Matrix : WATER
Date Sampled : 0/ 0/ 0
Date Analyzed : 9/18/91
Instrument ID : MSD2

Anametrix ID : 0918B003
Analyst :
Supervisor :

Dilution Factor : 1.00
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
110-75-8	2-Chloroethylvinyl ether	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID :
Sample ID : BLANK
Matrix : WATER
Date Sampled : 0/ 0/ 0
Date Analyzed : 9/19/91
Instrument ID : MSD1

Anametrix ID : 0919B001
Analyst : MCT
Supervisor : [illegible]

Dilution Factor : 1.00
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
110-75-8	2-Chloroethylvinyl ether	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

SURROGATE RECOVERY SUMMARY -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : MP001B
Matrix : LIQUID

Anametrix ID : 9109032
Analyst : LT
Supervisor : WM

	SAMPLE ID	SU1	SU2	SU3	TOTAL OUT
1	BLANK	101	99	103	0
2	MW1	106	101	106	0
3	MW3	110	101	107	0
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					

	QC LIMITS
SU1 = 1,2-Dichloroethane-d4	(75-113)
SU2 = Toluene-d8	(83-110)
SU3 = 1,4-Bromofluorobenzene	(82-114)

* Values outside of Anametrix QC limits

SURROGATE RECOVERY SUMMARY -- EPA METHOD 624/8240
ANAMETRIX, INC. (408)432-8192

Project ID : MP001B
Matrix : LIQUID

Anametrix ID : 9109032
Analyst : MC
Supervisor : UM

	SAMPLE ID	SU1	SU2	SU3	TOTAL OUT
1	BLANK	99	100	113	0
2	MW8	104	98	106	0
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
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27					
28					
29					
30					

	QC LIMITS
SU1 = 1,2-Dichloroethane-d4	(75-113)
SU2 = Toluene-d8	(83-110)
SU3 = 1,4-Bromofluorobenzene	(82-114)

* Values outside of Anametrix QC limits

BLAINE TECH SERVICES INC.

1370 TULLY ROAD., SUITE 505
SAN JOSE, CA 95122
(408) 995 5535

PES

IS TT 9109032

LAB ANAMETRIX '1620 DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND

☐ EPA ☐ LIA ☐ OTHER ☒ RWQCB REGION 11

CHAIN OF CUSTODY 9109054

CLIENT PES / MIKE KEARTY

SITE 6767 BAY ST.
EMERYVILLE

Attn: Jane Gill

SPECIAL INSTRUCTIONS ~~RELEASE ONLY~~ PES Project # MP001B

ROUTINE
ALL VOAs HCl Pres.

SAMPLE I.D.	MATRIX S = SOIL W = H2O	CONTAINERS TOTAL		C = COMPOSITE ALL CONTAINERS	CONDUCT ANALYSIS TO DETECT: 8240 EXTENDED Scan	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
MW 1	W	3	VOAs		X				
MW 3	W	3	"		X				
MW 8	W	3	"		X				
						40 samples cold, w bubbles.			

SAMPLING COMPLETED DATE 9591 TIME 14:25

SAMPLING PERFORMED BY Jeff Curtis

RESULTS NEEDED NO LATER THAN ROUTINE

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Jeff Curtis	9591	16:10		09/5/91	1610

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #

APPENDIX C

Groundwater Sampling Report and Chain of Custody Records

BLAINE
TECH SERVICES INC.

1370 TULLY RD., SUITE 505
SAN JOSE, CA 95122
(408) 995-5535

September 25, 1991

PES Environmental, Inc.
P.O. Box 1833
Novato, CA 94947

Attn: Jane Gill

SITE:
MRCP Realty
6707 Bay Street
Emeryville, California

SAMPLING EVENT:
Evacuate and sample three wells

DATE:
September 9, 1991

GROUNDWATER SAMPLING REPORT 910905-A-1

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc. does not participate in the interpretation of analytical results or become involved with the marketing or installation of remedial systems.

This report deals with the groundwater well sampling performed by our firm in response to your request. Data collected in the course of our work at the site is presented in the TABLE OF WELL MONITORING DATA. This data was collected during our inspection, well evacuation, and sample collection. Measurements include the total depth of the well and depth to water. Water surfaces were further inspected for the presence of immiscibles. A series of electrical conductivity, pH, and temperature readings were obtained during well evacuation and at the time of sample collection. Recharge performance can be evaluated by comparing the anticipated three, four, or five case volume evacuation gallonage with the volume which could actually be purged.

TABLE OF WELL MONITORING DATA

Well I.D.	MW-1			MW-3			MW-8		
Date Sampled	09/05/91			09/05/91			09/05/91		
Well Diameter (in.)	4			2			4		
Total Well Depth (ft.)	29.76			24.17			19.0		
Depth To Water (ft.)	11.41			8.69			10.14		
Free Product (in.)	NONE			NONE			NONE		
Reason If Not Sampled	--			--			--		
1 Case Volume (gal.)	11.92			2.52			5.76		
Did Well Dewater?	NO			NO			NO		
Gallons Actually Evacuated	48			10.25			24		
Purging Device	MIDDLEBURG			MIDDLEBURG			BAILER		
Sampling Device	MIDDLEBURG			MIDDLEBURG			BAILER		
Time	12:56	13:30	14:20	12:10	12:16	12:23	10:20	10:46	11:05
Temperature (Fahrenheit)	65.1	64.4	64.3	66.8	65.2	65.4	65.1	65.2	65.7
pH	7.1	7.1	7.3	7.9	7.6	7.6	8.1	7.4	7.4
Conductivity (micromhos/cm)	10,800	11,600	12,000	1600	1800	1900	3000	2700	3100
Nephelometric Turbidity Units	8.4	>200	68	139	42	21	>200	>200	>200
BTS Chain of Custody	910905-A-1			910905-A-1			910905-A-1		
BTS Sample I.D.	MW-1			MW-3			MW-8		
DHS HMTL Laboratory	ANAMETRIX			ANAMETRIX			ANAMETRIX		
Analysis	EPA 8240 (EXTENDED SCAN)			EPA 8240 (EXTENDED SCAN)			EPA 8240 (EXTENDED SCAN)		

EQUIPMENT

Selection of Sampling Equipment

The determination of what apparatus is to be used on particular wells may be made by the property owner or the professional consultant directing the performance of the monitoring on the property owner's behalf. If no specific requirement is made known to us, our personnel will select equipment that will accomplish the work in the most efficient manner. Our personnel are equipped with a variety of sampling devices that include USGS/Middleburg pumps, down hole electric submersible pumps, air lift pumps, suction pumps, and bailers made of both Teflon and stainless steel.

Evacuation and Sampling Equipment Mechanics

When equipment is not selected by the client, the apparatus for well evacuation and sample collection is selected by our field personnel based on an evaluation of the field conditions. Four types of devices are commonly available for employment:

Bailers
High Volume Suction Pumps
Electric Submersible Pumps
USGS/Middleburg positive displacement sampling pumps

USGS/Middleburg pumps and Bailers were selected for the collection of samples at this site.

USGS/Middleburg Positive Displacement Sampling Pumps: USGS/Middleburg positive displacement sampling pumps are EPA approved pumps appropriate for use in wells down to two inches in diameter and depths up to several hundred feet. The pump contains a flexible Teflon bladder which is alternately allowed to fill with well water and then collapsed. Actuation of the pump is accomplished with compressed air supplied by a single hose to one side of the Teflon membrane. Water on the other side of the membrane is squeezed out of the pump and up a Teflon conductor pipe to the surface. Evacuation and sampling are accomplished as a continuum. The rate of water removal is relatively slow and loss of volatiles almost non-existent. There is only positive pressure on the water being sampled and there is no impeller cavitation or suction. The pumps can be placed at any location within the well, can draw water from the very bottom of the well case, and are virtually immune to the erosive effects of silt or lack of water which destroy other types of pumps.

Disadvantages associated with Middleburg pumps include their high cost, low flow rate, temperamental operation, and cleaning requirements which are both elaborate and time consuming.

Bailers: A bailer, in its simplest form, is a hollow tube which has been fitted with a check valve at the lower end. The device can be lowered into a well by means of a cord. When the bailer enters the water, the check valve opens and liquid flows into the interior of the bailer. The bottom check valve prevents water from escaping when the bailer is drawn up out of the well.

Two types of bailers are used in groundwater wells at sites where fuel hydrocarbons are of concern. The first type of bailer is made of a clear material such as acrylic plastic and is used to obtain a sample of the surface and the near surface liquids in order to detect the presence of visible or measurable fuel hydrocarbon floating on the surface. The second type of bailer is made of Teflon or stainless steel and is used as an evacuation and/or sampling device.

Bailers are inexpensive and relatively easy to clean. Because they are manually operated, variations in operator technique may have a greater influence than would be found with more automated sampling equipment. Also where fuel is involved, the bailer may include near surface contaminants that are not representative of water deeper in the well.

STANDARD PRACTICES

Evacuation

There are few accepted groundwater sampling protocols that do not call for the evacuation of at least three case volumes of water prior to sample collection, and there are situations where up to ten case volumes of evacuation may be requested. Different professional consultants may specify different levels of evacuation prior to sampling or may request that specific parameters be used to determine when to collect the sample. Our personnel use several standard instruments to record the changes in parameters as the well is evacuated. These instruments are used regardless of whether or not a specific volumetric standard has been called for. As a result, the consultant will always be provided with a record of the pH, EC, and temperature changes that occurred during the evacuation process. Additional information obtained with different types of instruments (such as dissolved oxygen and turbidity meters) can also be collected if requested in advance.

Effluent Materials

Groundwater well sampling protocols call for the evacuation of a sufficient volume of water from the well to insure that the sample is collected from water than has been newly drawn into the well from the surrounding geologic formation. The evacuation of this purge water creates a volume of effluent water which must be contained. Blaine Tech Service, Inc. will place this water in appropriate containers of the client's choice or bring new DOT 17 E drums to the site which are appropriate for the containment of the effluent materials. The determination of how to properly dispose of the effluent water must usually

await the results of laboratory analyses of the sample collected from the groundwater well. If that sample does not establish whether or not the effluent water is contaminated, or if effluent from more than one source has been combined in the same container, it may be necessary to conduct additional analyses on the effluent material.

Observations and Measurements

Included in the scope of work are routine measurements and investigative procedures which are intended to determine if the wells are suitable for evacuation and sampling. These include measurement (from the top of the well case) of the total depth of the well; the depth to water, and the thickness of any free product zone (FPZ) encountered. The presence of a significant free product zone may interfere with efforts to collect a water sample that accurately reflects the condition of groundwater lying below the FPZ. This interference is caused by adhesion of petroleum to any device being lowered through the FPZ and the likelihood that minute globules of petroleum may break free of the sampling device and be included in the sample. Accordingly, evaluation of analytical results from wells containing any amount of free petroleum should take into account the possibility that positive results have been skewed higher by such an inclusion. The decision to sample or not sample such wells is left to the discretion of our field personnel at the site and the consultant who establishes sampling guidelines based on the need for current information on groundwater conditions at the site.

Sampling Methodology

Samples were obtained by standardized sampling procedures that follow an evacuation and sample collection protocol. The sampling methodology conforms with State and Regional Water Quality Control Board standards and specifically adheres to EPA requirements for apparatus, sample containers and sample handling as specified in publication SW 846.

Sample Containers

Sample material is collected in specially prepared containers appropriate to the type of analyses intended. Our firm uses new sample containers of the type specified by either EPA or the RWQCB. Often times analytical laboratories wish to supply the sample containers because checks performed on these bottles are often part of a comprehensive laboratory QC program. In cases where the laboratory does not supply sample containers our personnel collect water samples in containers that are appropriate to the type of analytical procedure that the sample is to receive. For example, 40 ml volatile organic analysis vials (VOAs) are used when analysis for gasoline and similar light volatile compounds is intended. These containers are prepared according to EPA SW 846 and will usually contain a small amount of preservative when the analysis is for TPH as gasoline or EPA 602. Vials intended for EPA 601 analysis and EPA 624 GCMS procedures are not preserved. The closure of volatile organic analysis water sample containers is accomplished with an open headed (syringe accessible) plastic screw cap brought down on top of a Teflon faced septum which is used to seal the sample without headspace.

Water samples intended for semivolatile and nonvolatile analysis such as total oil and grease (TOG) and diesel (TPH HBF) are collected and transported in properly prepared new glass liter bottles. Dark amber glass is used in the manufacture of these bottles to

reduce any adverse effect on the sample by sunlight. Antimicrobial preservative may be added to the sample liquid if a prolonged holding time is expected prior to analysis. Closure is accomplished with a heavy plastic screw cap.

Groundwater well samples intended for metals analysis are transported in new plastic bottles and preserved with nitric acid. Our personnel can field filter the sample liquid prior to placing it in the sample container if instructed to perform this procedure.

Sample Handling Procedures

Water samples are collected in any of several appropriate devices such as bailers, Coliwasas, Middleburg sampling pumps etc. which are described in detail only as warranted by their employment at a given site. Sample liquid is decanted into new sample containers in a manner which reduces the loss of volatile constituents and follows the applicable EPA procedures for handling volatile organic and semi-volatile compounds. Only two variations from the EPA methods are generally employed. First, preservative is added to the sample container prior to addition of the sample liquid. We first discovered this method in bottles prepared by Stoner Laboratories in 1982. It was subsequently adopted by many northern California laboratories and environmental consulting firms as a practical means of reducing the time that a liquid is allowed to aerate prior to closure of the sampling container. Second, because tests have shown that the preservative readily mixes with sample liquid, glass stirring rods are not used to agitate the sample/preservative mixture.

Groundwater samples that are to receive metals analyses can be filtered prior to being placed in the plastic sample bottles that contain the nitric acid preservative. The filtration process employs new glass containers which are discarded and laboratory quality disposable filtering containers which are also discarded. A frequently used filtering procedure employs a vacuum pump to draw sample material through a 0.45 micron filter. The 0.45 micron pore size is standard, but the amount of filter available varies with the type of package selected. Filters are selected on the basis of the relative turbidity of the water sample. Samples which are relatively clean can be efficiently filtered with relatively inexpensive filters while very turbid water will require a very large filter with a high tolerance for sediments. One of many such filters our firm uses are the Nalgene Type A filters in which an upper and lower receptacle chamber are affixed to the filter. Sample material is poured into the upper chamber and a vacuum pump attached to the lower chamber. Simple actuation of the vacuum pump induces the flow of water through the filter and into the lower chamber. The sample is then decanted into the laboratory container and the filter assembly discarded.

Following collection, samples are promptly placed in an ice chest containing prefrozen blocks of an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

Sample Designations

All sample containers are identified with both a sampling event number and a discrete sample identification number. Please note that the sampling event number is the number that appears on our chain of custody. It is roughly equivalent to a job number, but applies only to work done on a particular day of the year rather than spanning several days as jobs and projects often do.

Chain of Custody

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under our standard chain of custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date, and signature of person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

Hazardous Materials Testing Laboratory

After completion of the field work, the sample containers were delivered to Anametrix, Inc. in San Jose, California. Anametrix, Inc. is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #151.

Personnel

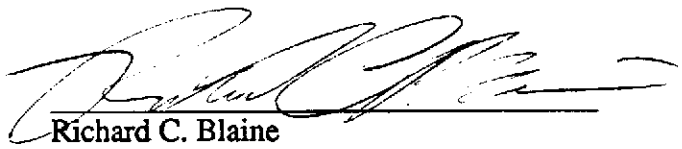
All Blaine Tech Services, Inc. personnel receive 29 CFR 1910.120(e)(2) training as soon after being hired as is practical. In addition, many of our personnel have additional certifications that include specialized training in level B supplied air apparatus and the supervision of employees working on hazardous materials sites. Employees are not sent to a site unless we are confident they can adhere to any site safety provisions in force at the site and unless we know that they can follow the written provisions of an SSP and the verbal directions of an SSO.

In general, employees sent to a site to perform groundwater well sampling will assume an OSHA level D (wet) environment exists unless otherwise informed. The use of gloves and double glove protocols protects both our employees and the integrity of the samples being collected. Additional protective gear and procedures for higher OSHA levels of protection are available.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site. Decontamination procedures include complete disassembly of the device to a point where a jet of steam cleaner water can be directed onto all the internal surfaces (this applies to the *inside* of the Teflon bladders of USGS/Middleburg pumps). Teflon conductor tubing is connected to the steam cleaner water outlet and water is run through the interior of the tubing for several minutes. The devices are then reassembled and actuated for a period of time as an additional measure. Blaine Tech Services, Inc. frequently modifies apparatus to allow complete disassembly and proper cleaning.

Please call if we can be of any further assistance.



Richard C. Blaine

RCB/lpn

attachments: chain of custody

BLAINE TECH SERVICES INC.

1370 TULLY ROAD., SUITE 505
SAN JOSE, CA 95122
(408) 995 5535

CHAIN OF CUSTODY 41090SA1

CLIENT PLS / MRCP REALTY

SITE 6707 BAY ST.
EMERYVILLE

C = COMPOSITE ALL CONTAINERS

CONDUCT ANALYSIS TO DETECT

LAB ANAMETRIX DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND

☐ EPA ☐ LIA ☐ OTHER ☒ RWQCB REGION 11

SPECIAL INSTRUCTIONS

~~RECEIVE 4°C~~

ROUTINE
ALL VOAs HCl PRESERVED

SAMPLE I.D.	MATRIX (S = SOIL, W = H2O)	CONTAINERS TOTAL		8240 EXTENDED SUITE	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
MW1	W	3	VOAs	X				
MW3	W	3	"	X				
MW8	W	3	"	X				
					all samples	cold,	no bubbles	

SAMPLING COMPLETED DATE 9591 TIME 14:25

SAMPLING PERFORMED BY J.M. Curtis

RESULTS NEEDED NO LATER THAN ROUTINE

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
J.M. Curtis	9591	16:10		090591	1610

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #	