HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

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Massachusetts
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April 1, 1998

98 APR -7

7-285.1

Mr. Larry Seto
Alameda County
Health Care Services Agency
Environmental Protection Division
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94502

Re: 2415 Mariner Square Drive, Alameda, California

Dear Mr. Seto:

Enclosed please find a copy of Hydro-Environmental Technologies, Inc.'s (HETI's) Quarterly Monitoring Report, First Quarter 1998 for sampling conducted on February 18, 1998 at the above-referenced site.

If you have any questions or require additional information, please feel free to call me at (510) 521-2684.

Sincerely,
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

Gary M. Pischke
Senior Geologist

enclosure

cc: Mr. John Beery, Mariner Square & Associates
Mr. Mike Grant, Union Pacific, Inc.
Mr. Jeff Smith, Phillips Petroleum Company
Mr. Glen Anderson, TRMI, Inc.

HYDRO
ENVIRONMENTAL
TECHNOLOGIES, INC.

QUARTERLY MONITORING REPORT, First Quarter 1998

2415 Mariner Square Drive
Alameda, California 94501

Sampling Date: February 18, 1998

Prepared for:

Mariner Square & Associates
2900 Main Street, Suite 100
Alameda, California 94501

Union Pacific Lines, Inc.
One Market Plaza
San Francisco, California

Phillips Petroleum Company
4th and Keeler Avenue
Bartlesville, Oklahoma 74004

Texaco, Inc.
10 Universal City Plaza, Suite 830
Universal City, California 91608-7812

Prepared by:

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.
2394 Mariner Square Drive, Suite 2
Alameda, CA 94501
HETI Job No. 7-285.1

April 1, 1998

HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

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1.0 INTRODUCTION

This report presents the results of work conducted in the First quarter of 1997 by Hydro-Environmental Technologies, Inc. (HETI) at 2415 Mariner Square Drive in Alameda, California (Figure 1). All work was performed in accordance with California State Water Resources Control Board and San Francisco Bay Regional Water Quality Control Board (SFRWQCB) recommended guidelines and procedures. A copy of HETI 's standard sampling protocols were submitted previously in HETI's Quarterly Monitoring Report, Fourth Quarter 1996 dated January 15, 1997.

2.0 BACKGROUND

The subject site is located in an area of commercial, light manufacturing and military usage immediately adjacent to and east of the Fleet Industrial Supply Center, Alameda Annex and south of the Oakland Inner Harbor. The site was reclaimed from marshlands in the late 1920's. Available maps indicate tidal channels were present in the former marshland covered by the site (Figure 2). In the past, the site was used for bulk fuel storage and distribution of refined oils, motor lubricants and fuel oils for use by ships until 1972.

Currently, the site is occupied by railroad boxcars which have been converted to offices, a restaurant and several buildings housing companies catering to the marine industry such as boat sales, storage, repairs, painting and sail manufacturing. The site no longer has bulk oils or fuel storage.

Proposed plans for the site include dividing the property into two parcels. A hotel and parking lot may be constructed on the eastern half parcel. A dry boat storage facility and parking would be constructed on the western half parcel. The western half parcel would include the existing monitoring wells and related environmental responsibility which would remain under Mariner Square and Associates.

The local geology consists primarily of clayey to silty sand (hydraulic fill) from approximately 7 to 17 feet below ground surface (bgs). Below the hydraulic fill, which was mechanically placed prior to the development of this portion of Alameda, the sediment consists of olive-grey sandy to silty clay with sand lenses, shells and organic matter from approximately 13 to 30 feet bgs (bay mud). Regional ground water flow is predominantly westerly, towards San Francisco Bay.

On November 25, 1991, AllWest Environmental, Inc. (AllWest) performed a Phase I Site Assessment of the property. AllWest recommended a soil and ground water investigation related to the fuel and oil storage, refining and distribution, and for contaminants related to boat maintenance, painting and repair. For complete details see AllWest's *Environmental Assessment* report dated December 3, 1991.

In April 1992, AllWest supervised the installation of 24 geoprobes and collecting and analyzing 23 soil samples and four ground water samples. Elevated concentrations of petroleum hydrocarbons were detected in 20 of the soil samples and two of the ground water samples with maximum concentrations of 13,000 parts per million (ppm) and 1,200 ppm, respectively. For complete details see AllWest's *Subsurface Investigation Report* dated May 1, 1992.

In 1992, Subsurface Consultants, Inc. (SCI) supervised the drilling of six soil borings and the installation of six two-inch diameter monitoring wells designated MW-1 through MW-6. Petroleum hydrocarbon concentrations were detected in all soil samples collected and analyzed from the soil borings (Subsurface Consultants, Inc., *Quarterly Groundwater Monitoring Report*, dated December 23, 1992).

On June 14, 1994, McLaren/Hart supervised the drilling of 13 soil borings, collecting and analyzing 28 soil samples and the installation of three four-inch diameter monitoring wells designated MW-7, MW-8, and MW-9. In the past, hydrocarbons were detected in ground water samples collected from wells MW-1 through MW-6, and vinyl chloride and Freon-113 were detected in ground water samples collected from wells MW-2 and MW-4 (McLaren/Hart, *Supplemental Site Investigation and Limited Feasibility Study Report*, dated March 31, 1995). All monitoring well locations are shown on Figure 2, the Site Plan.

On August 6, 1997, the two underground storage tanks were removed. Soil and ground water samples were collected by HETI from the tank excavations. Laboratory results indicated hydrocarbons were present in both soil and ground water (HETI, *Tank Removal Report*, dated November 5, 1997).

In a letter from Ms. Juliet Shin, Alameda County Health Care Services Agency (ACHCSA), dated December 26, 1995, the County required a minimum of four quarterly ground water monitoring events to delineate the plume and assure that migration is not occurring off-site or into the San Francisco Bay. Two monitoring events were performed in 1996.

In a subsequent letter and in the meeting of October 16, 1997, Ms. Juliet Shin, Mr. Larry Seto, and Ms. Madhulla Logan of the ACHCSA discussed the requirements for closure of the site. This Quarterly Monitoring Report presents the results of the third sampling event; the first event was the third quarter of 1997, as agreed by ACHCSA. One additional quarter of monitoring and sampling is required to fully evaluate the risk from hydrocarbons in ground water at the site.

Closure of the site may be possible using the Regional Board's evaluation of the risk assessment for the Ecological Protection Zone (EPZ), applicable to sites within 300 feet of waters of the San Francisco Bay, performed by the Consolidated Tenant Group at the San Francisco International Airport (SFIA). The sites at SFIA have similar conditions of fill over Bay Mud and hydrocarbon concentrations. The

Regional Board has used the EPZ levels for site cleanup and closure evaluation at SFIA and proposes to use them for other locations around the Bay Area.

3.0 FIELD ACTIVITIES

On February 18, 1998, the site monitoring wells were gauged for depth to first encountered ground water to the nearest hundredth of a foot using an electronic water sounder. Following gauging, all monitoring wells were purged of a minimum of three well volumes or purged dry while pH, temperature and conductivity measurements were monitored for stabilization. Separate phase hydrocarbons (SPH) of 0.55 feet were detected in well MW-6; however, the well was purged and sampled. A PetroTrap™ was installed in MW-6 on February 16, 1998. The unit is planned to reduce the SPH thickness.

Purged water was stored on-site in two 55-gallon DOT drums with tight fitting lids. Gauging and purging data are included in Table 1 and Appendix A.

Following recovery of the water levels to at least 80% of their static level, ground water samples were collected from the monitoring wells using dedicated polyethylene bailers. Samples were then labeled, documented on a chain-of-custody form, and stored in a chilled cooler for transport to the analytical laboratory.

Ground water samples were analyzed for the following:

- total petroleum hydrocarbons as diesel (TPHd), motor oil (TPHmo) and gasoline (TPHg) by GC-FID using EPA Method 3510 for extraction, and EPA 3630M for silica gel cleanup and filtration;
- benzene, toluene, ethylbenzene and total xylenes (BTEX), and methyl-tert butyl ether (MTBE) using EPA method 8020;
- polynuclear aromatics (PNAs) by EPA Method 8310; and
- vinyl chloride by EPA Method 8010.

The sample analyses were performed by American Environmental Network (AEN), a state of California DHS-certified laboratory located in Pleasant Hill, California.

4.0 RESULTS

4.1 Ground Water Elevation

On February 18, 1998, depth to first encountered ground water in the wells ranged between 2.38 to 3.96 feet below the top of the well casing. Depth to water measurements and calculated ground water elevations in the wells are presented on Table 1. The depth to water measurements and the wellhead elevation data were used to calculate ground water elevation contours. These contours are shown on

Figure 3, the Ground Water Contour Map. Figure 3 shows that ground water flows towards the southeast and east, with a ground water gradient of 0.69 to 0.77%.

4.2 Ground Water Sample Analytical Results

The analytical results indicated that dissolved TPHd was not present in the ground water samples collected from the nine wells sampled. TPHd was not detected above the laboratory method detection limit in any of the wells. The analytical results are summarized in Tables 1 and 2, and a copy of the laboratory report is included in Appendix B. TPHd was detected last quarter at 1,900 mg/L in MW-6; however, from this quarter's results, the value was non-detect with filtration and 100 mg/L without filtration.

TPHmo was not detected above the indicated laboratory method detection limit in the ground water samples collected from the nine wells.

TPHg was detected above the indicated laboratory method detection limit in the ground water samples collected from seven of the nine wells in concentrations ranging from 60 (MW-3) to 70,000 µg/L (MW-6). TPHg was not detected above the laboratory method detection limit in wells MW-1 and MW-8. These results are shown on Figure 4, the TPHg Isoconcentration Map.

Benzene was detected above the indicated laboratory method detection limit in the ground water samples collected from six of the nine wells in concentrations ranging from 0.9 (MW-8) to 20 µg/L (MW-6). These results are shown on Figure 5, the Benzene Isoconcentration Map. MTBE was detected above the indicated laboratory method detection limit in the ground water samples collected from four of the nine wells in concentrations ranging from 7 (MW-3) to 290 µg/L (MW-4).

Vinyl chloride was not detected above the indicated laboratory method detection limit in any of the wells sampled except well MW-4 with a concentration of 2 µg/L.

Concentrations of polynuclear aromatics (PNAs) were detected above the indicated laboratory method detection limits in the ground water samples collected from wells MW-1, MW-2, MW-5 and MW-6. These results are shown on Figure 6, The Polynuclear Aromatics Distribution Map.

The California Department of Health Services and the U.S. Environmental Protection Agency's (EPA) Drinking Water Standards, primary maximum contaminant levels (MCLs) for benzene are 1 µg/l and 5 µg/l, respectively. The state and federal MCLs for vinyl chloride are 0.5 µg/l and 2 µg/l, respectively. There are no state or federal MCLs for TPHd, TPHmo, or TPHg. The MCLs are listed on Tables 1 and 2.

As a comparison, the risk-based standards for TPHg, TPHd, BTEX and vinyl chloride from San Francisco International Airport are included on Table 1. The standard shown is for the EPZ, sites within 300 feet of waters of the San Francisco Bay.

The U.S. EPA National Ambient Water Quality Criteria for Saltwater Aquatic Life Protection are included in Table 2 for the evaluation of PNAs.

5.0 SUMMARY AND CONCLUSIONS

- The general ground water flow direction across the site is towards the southeast and east with an approximate ground water gradient ranging from 0.69% to 0.77%.

- TPHmo was not detected in any of the nine wells sampled. TPHd was not detected in any of the nine wells sampled. TPHg was detected in seven of the nine wells sampled.

- Benzene was detected in six of the nine wells sampled and exceeded the state MCL in five of the samples.

- Vinyl chloride was detected in one of the nine wells sampled and exceeded the state MCL and equaled the Federal MCL in that sample.

- PNAs were detected in four of the nine wells sampled.

- SPH was noted in well MW-6 at a thickness of 0.55 feet. Previously, SPH had been noted in well MW-6 ranging from a sheen to 0.39 feet. The well was purged and sampled this quarter. TPHg is the predominant constituent of the SPH in the well this quarter. TPHd and TPHmo were minor constituents of the SPH.

- A PetroTrap™ was installed in well MW-6. The passive trap will be used to reduce the SPH thickness in the well.

- The ground water flow direction and laboratory results from this sampling event are generally consistent with the results noted in the Quarterly Monitoring Report for the Fourth Quarter 1997, dated January 12, 1998.

HYDRO ENVIRONMENTAL TECHNOLOGIES, INC.

60 CERTIFICATION

This report was prepared under the supervision of a registered geologist. All statements, conclusions and recommendations are based solely upon field observations and analytical analyses performed by a state-certified laboratory related to the work performed by Hydro-Environmental Technologies, Inc.

It is possible that variations in the soil or ground water conditions exist beyond the points explored in this investigation. Also, site conditions are subject to change at some time in the future due to variations in rainfall, temperature, regional water usage, or other factors.

The service performed by Hydro-Environmental Technologies, Inc. has been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of our profession currently practicing under similar conditions in the area of the site. No other warranty, expressed or implied, is made.

Hydro-Environmental Technologies, Inc. includes in this report chemical analytical data from a state-certified laboratory. These analyses are performed according to procedures suggested by the U.S. EPA and the State of California. Hydro-Environmental Technologies, Inc. is not responsible for laboratory errors in procedure or result reporting.

Prepared by:

Gary Pischke, C.E.G.
Senior Geologist

REGISTERED GEOLOGIST
GARY PISCHKE
No. 1501
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

Reviewed by:

Michael Zimmerman, P.E.
Western Regional Manager

Table 1

GROUND WATER ELEVATONS AND SAMPLE ANALYTICAL RESULTS

Mariner Square & Associates
2415 Mariner Square Drive
Alameda, CA

Well I.D. #	Sample Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHd (µg/L)	TPHmo (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Vinyl Cl (µg/L)
MW-1	7/30/92	5.08	6.41	-1.33	--	--	--	--	--	--	--	--	--
(SCI)	7/31/92	5.08	6.41	-1.33	--	--	--	--	--	--	--	--	--
	8/3/92	5.08	6.50	-1.42	580	ND<5000	--	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	--
	8/5/92	5.08	6.50	-1.42	--	--	--	--	--	--	--	--	--
	11/20/92	5.08	6.23	-1.15	600	ND<5000	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	--	ND<2
	6/13/94	11.99	5.69	6.30	--	--	--	--	--	--	--	--	--
	9/27/94	11.99	5.64	6.35	530	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--
	10/25/94	11.99	5.86	6.13	--	--	--	--	--	--	--	--	--
	6/28/96	11.99	5.34	6.65	ND<50	ND<200 (1)	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<2.0	--	ND<0.5
	10/31/96	11.99	5.38	6.61	93	ND<200	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<2.0	ND<10	ND<1.0
	9/30/97	11.99	5.08	6.91	ND<50	ND<200	120	4.7	ND<1.0	3.7	21	ND<10	ND<0.8
	12/12/97	11.99	4.16	7.83	ND<50	ND<200	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<5	ND<2
	2/18/98	11.99	2.97	9.02	ND<50	ND<200	ND<50	1.5	0.6	1.8	8	ND<5	ND<2
MW-2	7/30/92	8.30	5.98	2.32	--	--	--	--	--	--	--	--	--
(SCI)	7/31/92	8.30	6.07	2.23	--	--	--	--	--	--	--	--	--
	8/3/92	8.30	6.11	2.19	2,200	ND<5000	--	ND<0.5	6.5	3.2	5.3	--	--
	8/5/92	8.30	6.18	2.12	--	--	--	--	--	--	--	--	--
	11/20/92	8.30	6.42	1.88	2,100	ND<5000	340	ND<0.5	ND<0.5	ND<0.5	2.4	--	ND<2
	6/13/94	15.21	5.92	9.29	--	--	--	--	--	--	--	--	--
	9/26/94	15.21	6.51	8.70	ND<50	240	320	ND<3.0	ND<3.0	ND<3.0	ND<3.0	--	--
	10/25/94	15.21	6.67	8.54	--	--	--	--	--	--	--	--	--
	6/28/96 (2)	15.21	5.68	9.53	100 (3,4)	ND<200 (1)	980	0.5	ND<1.0	2.3	3.1	--	ND<0.5
	10/31/96	15.21	6.37	8.84	180	ND<200	220	ND<0.5	ND<1.0	ND<1.0	ND<2.0	ND<10	ND<1.0
	9/30/97	15.21	6.17	9.04	150 (8)	ND<200	900	0.8	ND<1.0	2	6.2	ND<10	ND<0.8
	12/12/97	15.21	5.18	10.03	ND<50	ND<200	360	1.1	ND<0.5	2.2	3	ND<5	ND<2
	2/18/98	15.21	3.96	11.25	ND<50	ND<200	90	ND<0.5	ND<0.5	1.1	2	ND<5	ND<2

Table 1

GROUND WATER ELEVATONS AND SAMPLE ANALYTICAL RESULTS

Mariner Square & Associates
2415 Mariner Square Drive
Alameda, CA

Well I.D. #	Sample Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHd (µg/L)	TPHmo (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Vinyl Cl (µg/L)
MW-3	7/30/92	7.28	4.97	2.31	--	--	--	--	--	--	--	--	--
(SCI)	7/31/92	7.28	5.05	2.23	--	--	--	--	--	--	--	--	--
	8/3/92	7.28	4.43	2.85	1,000	ND<5000	--	ND<0.5	1	ND<0.5	2.4	--	--
	8/5/92	7.28	5.06	2.22	--	--	--	--	--	--	--	--	--
	11/20/92	7.28	5.27	2.01	2,000	ND<5000	98	ND<0.5	ND<0.5	0.9	1	--	ND<2
	6/13/94	14.19	4.91	9.28	--	--	--	--	--	--	--	--	--
	9/27/94	14.19	5.29	8.90	720	ND<50	ND<50	ND<3.0	ND<0.3	ND<0.3	ND<0.3	--	--
	10/25/94	14.19	5.42	8.77	--	--	--	--	--	--	--	--	--
	6/28/96	14.19	4.69	9.50	120 (3)	ND<200 (1)	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<2.0	--	ND<0.5
	10/31/96	14.19	5.24	8.95	160	ND<200	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<2.0	ND<10	ND<1.0
	9/30/97	14.19	5.04	9.15	70 (8)	ND<200	ND<100	0.8	ND<1.0	ND<1.0	3.3	ND<10	ND<0.8
	12/12/97	14.19	4.32	9.87	ND<50	ND<200	80	0.7	ND<0.5	0.7	4	9	ND<2
	2/18/98	14.19	2.97	11.22	ND<50	ND<200	60	ND<0.5	ND<0.5	ND<0.5	4	7	ND<2
MW-4	7/30/92	7.05	4.81	2.24	--	--	--	--	--	--	--	--	--
(SCI)	7/31/92	7.05	4.88	2.17	--	--	--	--	--	--	--	--	--
	8/5/92	7.05	4.96	2.09	1,300	ND<5000	--	16	2.6	0.6	2.7	--	9
	11/20/92	7.05	5.13	1.92	2,400	ND<5000	330	31	5.2	0.7	2	--	13
	6/13/94	13.95	4.50	9.45	--	--	--	--	--	--	--	--	--
	9/27/94	13.95	5.39	8.56	890	ND<50	ND<50	12	0.43	ND<0.3	ND<0.3	--	--
	10/25/94	13.95	5.55	8.40	--	--	--	--	--	--	--	--	--
	6/28/96	13.95	4.25	9.70	170 (3,4)	ND<200 (1)	180	4	ND<1.0	ND<1.0	ND<2.0	--	2.5
	10/31/96	13.95	5.05	8.90	330	ND<200	110	6.2	ND<1.0	ND<1.0	ND<2.0	ND<10	4.3
	9/30/97	13.95	4.73	9.22	170 (8)	ND<200	650	3.9	ND<1.0	ND<1.0	ND<2.0	460	3.1
	12/12/97	13.95	3.65	10.30	ND<50	ND<200	260	4.9	0.9	ND<0.5	ND<2.0	320	3
	2/18/98	13.95	2.38	11.57	ND<50	ND<200	240	7.9	1.1	2.1	10	290	2
MW-5	7/30/92	7.68	5.30	2.38	--	--	--	--	--	--	--	--	--

Table 1

GROUND WATER ELEVATONS AND SAMPLE ANALYTICAL RESULTS
Mariner Square & Associates
2415 Mariner Square Drive
Alameda, CA

Well I.D. #	Sample Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHd (µg/L)	TPHmo (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Vinyl Cl (µg/L)
(SCI)	7/31/92	7.68	5.42	2.26	--	--	--	--	--	--	--	--	--
MW-5	8/3/92	7.68	5.40	2.28	2,200	ND<5000	--	9	6	49	11	--	--
	8/5/92	7.68	5.47	2.21	--	--	--	--	--	--	--	--	--
	11/20/92	7.68	5.74	1.94	1,500	ND<5000	4,800	7.6	12	5.8	26	--	ND<2
	6/13/94	14.60	5.30	9.30	--	--	--	--	--	--	--	--	--
	9/26/94	14.60	5.82	8.78	780	ND<500	3,100	7.9	11	8.7	14	--	--
	10/25/94	14.60	5.95	8.65	--	--	--	--	--	--	--	--	--
	6/28/96	14.60	5.04	9.56	610 (3,4)	790 (1)	5,000	1.2	6.8	21	14	--	ND<0.5
	10/31/96	14.60	5.73	8.87	4,900	860	6,800	20	5.9	15	19	ND<10	ND<1.0
	9/30/97	14.60	5.45	9.15	4100 (8)	520	9,000	35	5.3	36	32	12	ND<0.8
	12/12/97	14.60	4.71	9.89	90	ND<200	3,400	26	4.6	5.9	13	11	ND<2
	2/18/98	14.60	3.10	11.50	ND<50	ND<200	3,200	7.9	1.4	14	12	ND<5	ND<2
MW-6	6/13/94	14.81	5.96	8.85	--	--	--	--	--	--	--	--	--
	9/27/94	14.81	5.90	8.91	9,900	3,200	1,100	ND<3.0	ND<3.0	ND<3.0	ND<3.0	--	--
	10/7/94	14.81	5.82	8.99	--	--	--	--	--	--	--	--	--
	10/14/94	14.81	5.89	8.92	--	--	--	--	--	--	--	--	--
	10/21/94	14.81	5.90	8.91	--	--	--	--	--	--	--	--	--
	10/25/94	14.81	5.99	8.82	--	--	--	--	--	--	--	--	--
	6/28/96	14.81	5.33	9.48	SPH (0.16')	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	10/31/96	14.81	5.17	9.64	SPH (0.02')	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	9/30/97	14.81	5.58	9.23	Sheen	--	--	--	--	--	--	--	--
SPH (0.39')	12/12/97	14.81	4.84	9.97	1,900,000	430,000	21,000	5	ND<0.5	8	19	ND<50	ND<2
SPH (0.55')	2/18/98	14.81	3.70	11.11	ND<50	ND<200	70,000	20	20	20	70	ND<100	ND<2
MW-7	9/27/94	13.61	5.95	7.66	1,800	ND<250	ND<250	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--
	10/25/94	13.61	6.09	7.52	--	--	--	--	--	--	--	--	--
	6/28/96	13.61	5.42	8.19	490 (3,4)	ND<200 (1)	560	0.6	ND<1.0	ND<1.0	2.7	--	ND<0.5

Table 1

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Mariner Square & Associates
2415 Mariner Square Drive
Alameda, CA

Well I.D. #	Sample Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHd (µg/L)	TPHmo (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Vinyl Cl (µg/L)
MW-7	10/31/96	13.61	5.90	7.71	420	ND<200	200	1.1	ND<1.0	ND<1.0	ND<2.0	ND<10	ND<1.0
	9/30/97	13.61	5.71	7.90	190 (8)	ND<200	750	8.1	5.3	ND<1.0	6.9	ND<10	ND<0.8
	12/12/97	13.61	4.58	9.03	ND<50	ND<200	420	7.9	ND<0.5	ND<0.5	5	ND<5	ND<2
	2/18/98	13.61	3.21	10.40	ND<50	ND<200	650	9.5	0.6	ND<0.5	6	16	ND<2
MW-8	9/27/94	12.64	6.06	6.58	320	ND<50	ND<50	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--
	10/25/94	12.64	6.26	6.38	--	--	--	--	--	--	--	--	--
	6/28/96	12.64	6.00	6.64	58 (3)	ND<200 (1)	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<2.0	--	ND<0.5
	10/31/96	12.64	5.85	6.79	120	ND<200	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<2.0	ND<10	ND<1.0
	9/30/97	12.64	5.60	7.04	70 (8)	ND<200	110	4.2	ND<1.0	3.4	16	ND<10	ND<0.8
	12/12/97	12.64	4.87	7.77	ND<50	ND<200	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<2.0	15	ND<2
	2/18/98	12.64	3.80	8.84	ND<50	ND<200	ND<50	0.9	ND<0.5	0.8	3	ND<5	ND<2
MW-9	9/26/94	14.92	5.88	9.04	2,200	ND<500	ND<500	ND<0.3	ND<0.3	ND<0.3	ND<0.3	--	--
	10/25/94	14.92	6.04	8.88	--	--	--	--	--	--	--	--	--
	6/28/96	14.92	5.14	9.78	550 (3,4)	ND<200 (1)	390	5.2	ND<1.0	ND<1.0	ND<2.0	--	ND<0.5
	10/31/96	14.92	6.37	8.55	590	720	300	5.9	ND<1.0	ND<1.0	ND<2.0	ND<10	ND<1.0
	9/30/97	14.92	5.59	9.33	460 (8)	ND<200	150	0.6	ND<1.0	ND<1.0	2.7	ND<10	ND<0.8
	12/12/97	14.92	4.53	10.39	ND<50	ND<200	180	ND<0.5	ND<0.5	ND<0.5	ND<2.0	ND<5	ND<2
	2/18/98	14.92	3.12	11.80	ND<50	ND<200	100	ND<0.5	0.5	ND<0.5	ND<2.0	6	ND<2
CA Primary MCL (5)					--	--	--	1	100 (7)	680	1,750	35 (7)	0.5
Federal Primary MCL (6)					--	--	--	5	1,000	700	10,000	--	2
Saltwater Ecological Protection Zone Tier 1 (SFIA)					100	--	100	71	43	5000	2,200	--	17
Saltwater Ecological Protection Zone 1997 (SFIA)					393	site specific	9,150	71	86	5000	2,200	--	17

Table 1

GROUND WATER ELEVATONS AND SAMPLE ANALYTICAL RESULTS
Mariner Square & Associates
2415 Mariner Square Drive
Alameda, CA

Well I.D. #	Sample Date	TOC (feet)	DTW (feet)	GWE (feet)	TPHd (µg/L)	TPHmo (µg/L)	TPHg (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)	Vinyl Cl (µg/L)

Notes:

TOC : Top of well casing referenced to mean sea level. Survey conducted by a state-licensed surveyor.
DTW : Depth to water.
GWE : Ground water elevation.
TPHg : Total petroleum hydrocarbons as gasoline by EPA Method 8015 (modified).
BTEX : Benzene, toluene, ethylbenzene and total xylenes by EPA Method 8020.
TPHd : Total petroleum hydrocarbons as diesel by EPA Method 8015 (modified).
TPHmo : Total Petroleum Hydrocarbons as lubricating oil by Cal LUFT manual DHS method with EPA 3630 (modified)- silica gel cleanup.
Vinyl Cl : Vinyl chloride by EPA Method 524.2.
µg/L : Micrograms per Liter.
--- : Not analyzed/sampled.
ND : Not detected above the indicated laboratory method detection limit.
(SPH) : Separate phase hydrocarbons - No sample collected.
(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 collected from MW-2 was analyzed for Freon 113 by EPA Method 8010A. Results were below the detection limit of 1.0 µg/L.
(3) : Qualitative identification is uncertain because the material present does not match laboratory standards.
(4) : Quantitation uncertain due to matrix interferences.
(5) : Drinking Water Standards, California Department of Health Services, Primary Maximum Contaminant Level (MCL).
(6) : Drinking Water Standards, U.S. Environmental Protection Agency, Primary Maximum Contaminant Level (MCL).
(7) : California State Action Level, Department of Health Services.
(8): Qualitative identification of diesel fuel is uncertain because the material present does not match laboratory standards.
SFIA San Francisco Internation Airport standards from Board Order 95-136 and modifications by Consolidated Tenant Group and Regional Board.
[ ] = The analytical result is greater than the CA Primary MCL value, or EPZ limit

Table 2

POLYNUCLEAR AROMATICS SAMPLE ANALYTICAL RESULTS

Mariner Square & Associates

2415 Mariner Square Drive

Alameda, CA

Well No.	Sample Date	Naph-thalene µg/L	Acenaph-thylene µg/L	Acenaph-thene µg/L	Fluorene µg/L	Phenan-threne µg/L	Anthra-cene µg/L	Fluoran-thene µg/L	Pyrene µg/L
MW-1	6/28/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	10/31/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	9/30/97	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	12/12/97	0.6	ND<1.0	ND<0.5	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
	2/18/98	2.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
MW-2	6/28/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	0.82	0.77
	10/31/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	9/30/97	ND<2.0	12.0	3.3	ND<2.0	ND<1.0	ND<1.0	1.0	1.1
	12/12/97	ND<0.5	ND<1.0	ND<0.5	ND<0.1	ND<0.1	ND<0.1	0.2	0.3
	2/18/98	ND<1.0	8.0	5.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
MW-3	6/28/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	10/31/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	9/30/97	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	12/12/97	0.6	ND<1.0	ND<0.5	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
	2/18/98	~~0.5~~ ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
MW-4	6/28/96	ND<2.0	2.5	2.3	ND<2.0	ND<1.0	ND<1.0	1.8	2.1
	10/31/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	0.92	1.6
	9/30/97	ND<2.0	ND<2.0	3.7	ND<2.0	ND<1.0	ND<1.0	1.5	1.9
	12/12/97	0.8	ND<1.0	ND<0.5	ND<0.1	ND<1.0	ND<0.1	0.4	0.4
	2/18/98	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
MW-5	6/28/96	2.0	96 (1)	3.0	ND<2.0	9.5	2.3	8.6	8.4
	10/31/96	ND<2.0	150	8.3	2.4	14	2.9	11	15
	9/30/97	2.6	100.0	11.0	5.0	16.0	3.9	15.0	16.0
	12/12/97	ND<0.5	ND<1.0	1.0	0.8	2.9	0.6	1.7	1.2
	2/18/98	ND<1.0	150.0	170.0	6.0	3.0	2.0	11.0	7.0

Table 2

POLYNUCLEAR AROMATICS SAMPLE ANALYTICAL RESULTS

Mariner Square & Associates

2415 Mariner Square Drive

Alameda, CA

Well No.	Sample Date	Naph-thalene µg/L	Acenaph-thylene µg/L	Acenaph-thene µg/L	Fluorene µg/L	Phenan-threne µg/L	Anthra-cene µg/L	Fluoran-thene µg/L	Pyrene µg/L
MW-6	6/28/96	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	10/31/96	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	9/30/97	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	12/12/97	ND<100	ND<200	ND<100	90.0	80.0	ND<20	250.0	40.0
	2/18/98	ND<20	ND<20	ND<20	ND<20	ND<20	ND<20	90.0	110.0
MW-7	6/28/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	10/31/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	9/30/97	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	12/12/97	1.0	ND<1.0	ND<0.5	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
	2/18/98	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
MW-8	6/28/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	10/31/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	9/30/97	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	ND<0.5
	12/12/97	0.6	ND<1.0	ND<0.5	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
	2/18/98	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
MW-9	6/28/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	0.73	ND<0.5
	10/31/96	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	0.69	1.10
	9/30/97	ND<2.0	ND<2.0	ND<2.0	ND<2.0	ND<1.0	ND<1.0	ND<0.5	0.56
	12/12/97	1.4	ND<1.0	ND<0.5	0.2	ND<0.1	0.2	0.6	0.3
	2/18/98	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
CA Primary MCLs (2)		--	--	--	--	--	--	--	--
EPA Primary MCLs (3)		--	--	--	--	--	--	--	--
EPA Saltwater Tox. (4)		2350.0	300.0	500.0	300.0	300.0	300.0	16.0	300.0

Table 2
POLYNUCLEAR AROMATICS SAMPLE ANALYTICAL RESULTS
Mariner Square & Associates
2415 Mariner Square Drive
Alameda, CA

Well No.	Sample Date	Benzo[a]-anthracene µg/L	Chrysene µg/L	Benzo[b]fluor-anthene µg/L	Benzo[k]fluor-anthene µg/L	Benzo[a]-pyrene µg/L	Dibenzo[a,h]-anthracene µg/L	Benzo[g,h,i]-perylene µg/L	Indeno[1,2,3-cd]-pyrene µg/L
MW-1	6/28/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	10/31/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/30/97	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	12/12/97	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
	2/18/98	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
MW-2	6/28/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	10/31/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/30/97	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	12/12/97	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
	2/18/98	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
MW-3	6/28/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	10/31/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/30/97	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	12/12/97	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
	2/18/98	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
MW-4	6/28/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	10/31/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/30/97	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	12/12/97	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
	2/18/98	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
MW-5	6/28/96	1.0	0.68	ND<0.5	ND<0.5	0.78	ND<0.5	0.57	ND<0.5
	10/31/96	1.9	1.8	0.51	ND<0.5	0.84	ND<0.5	ND<0.5	ND<0.5
	9/30/97	2.1	2.5	ND<0.5	ND<0.5	1.1	ND<0.5	ND<0.5	ND<0.5
	12/12/97	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
	2/18/98	1.0	2.0	ND<1.0	ND<1.0	1.0	ND<1.0	ND<1.0	ND<1.0

Table 2
POLYNUCLEAR AROMATICS SAMPLE ANALYTICAL RESULTS
Mariner Square & Associates
2415 Mariner Square Drive
Alameda, CA

Well No.	Sample Date	Benzo[a]-anthracene µg/L	Chrysene µg/L	Benzo[b]fluor-anthene µg/L	Benzo[k]fluor-anthene µg/L	Benzo[a]-pyrene µg/L	Dibenzo[a,h]-anthracene µg/L	Benzo[g,h,i]-perylene µg/L	Indeno[1,2,3-cd]-pyrene µg/L
MW-6	6/28/96	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	10/31/96	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	9/30/97	SPH	SPH	SPH	SPH	SPH	SPH	SPH	SPH
	12/12/97	25.0	ND<20	ND<20	ND<20	ND<20	ND<20	ND<20	ND<20
	2/18/98	ND<20	190.0	130.0	ND<20	70.0	62.0	23.0	ND<20
MW-7	6/28/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	10/31/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/30/97	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	12/12/97	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
	2/18/98	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
MW-8	6/28/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	10/31/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/30/97	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	12/12/97	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
	2/18/98	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
MW-9	6/28/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	10/31/96	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	9/30/97	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
	12/12/97	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1	ND<0.1
	2/18/98	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0	ND<1.0
CA Primary MCLs (2)		--	--	--	--	--	--	--	--
EPA Primary MCLs (3)		0.1	0.2	0.2	0.2	0.2	0.3	--	0.4
EPA Saltwater Tox. (4)		300.0	300.0	300.0	300.0	300.0	300.0	--	300.0

Table 2

POLYNUCLEAR AROMATICS SAMPLE ANALYTICAL RESULTS

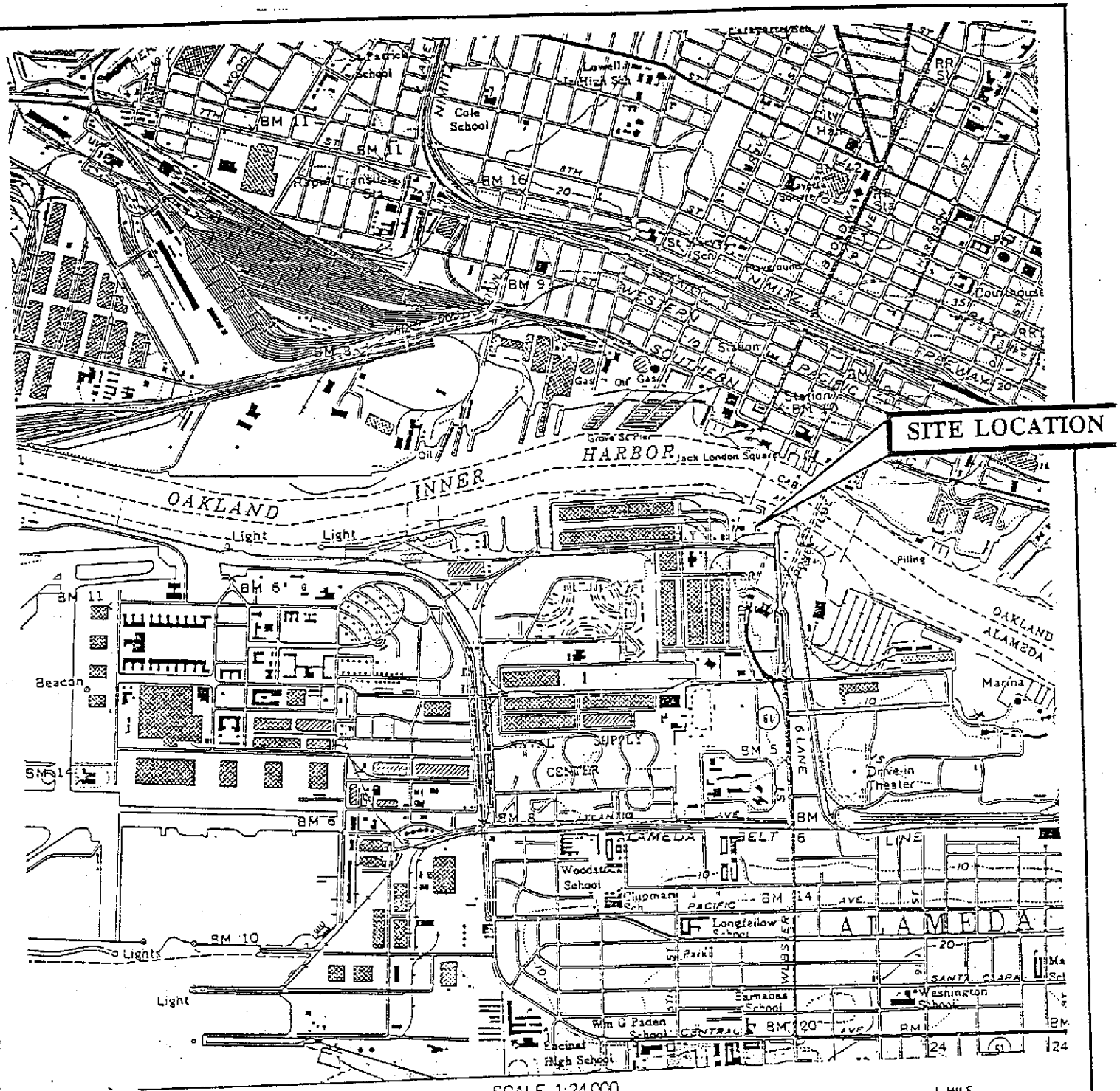
Mariner Square & Associates

2415 Mariner Square Drive

Alameda, CA

Notes:

Polynuclear Aromatics:	Polynuclear Aromatics by EPA Method 8310.
Well No. :	Well identification number used by HETI.
Date:	Date ground water sample was collected.
µg/L :	Micrograms per liter (ppb).
ND :	Not detected in concentrations exceeding the laboratory method detection limit.
(1) :	The qualitative identification for Acenaphthylene is uncertain due to matrix interferences.
(2) :	Drinking Water Standards, California Department of Health Services, Primary Maximum Contaminant Level (MCL).
(3) :	Drinking Water Standards, U.S. Environmental Protection Agency, Primary Maximum Contaminant Level (MCL).
(4) :	National Ambient Water Quality Criteria, U.S. Environmental Protection Agency, Saltwater Aquatic Life Protection, Additional Tox.
SPH :	Separate phase hydrocarbons - No sample collected.
	= The analytical result is greater than the MCL value.



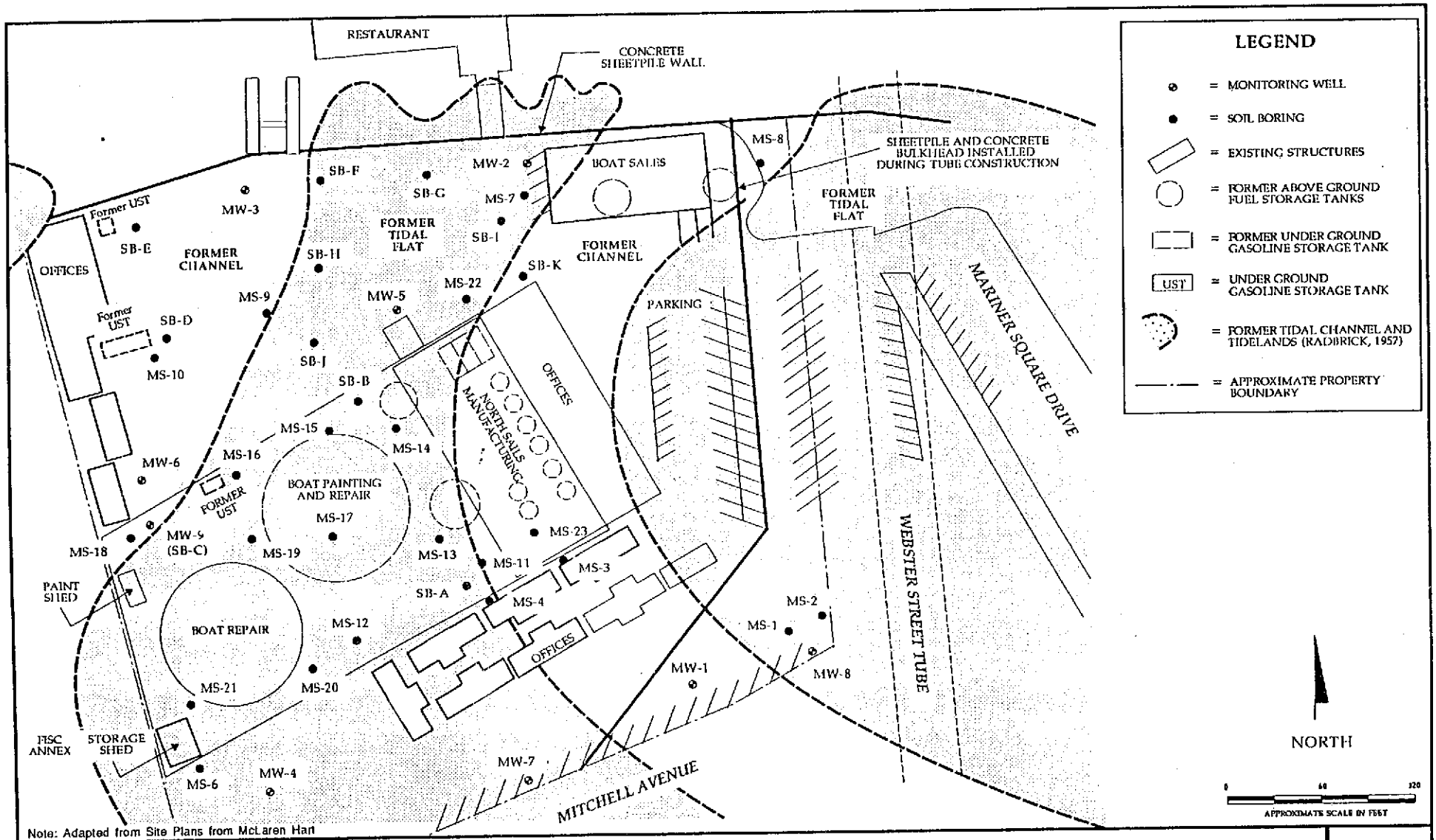
SOURCE: USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)
TITLED: OAKLAND WEST QUADRANGLE
PHOTOREVISED 1980

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

SITE LOCATION MAP
Mariner Square
2415 Mariner Square Drive
Alameda, California

Figure 1

7-285 11/96



Note: Adapted from Site Plans from McLaren Hart

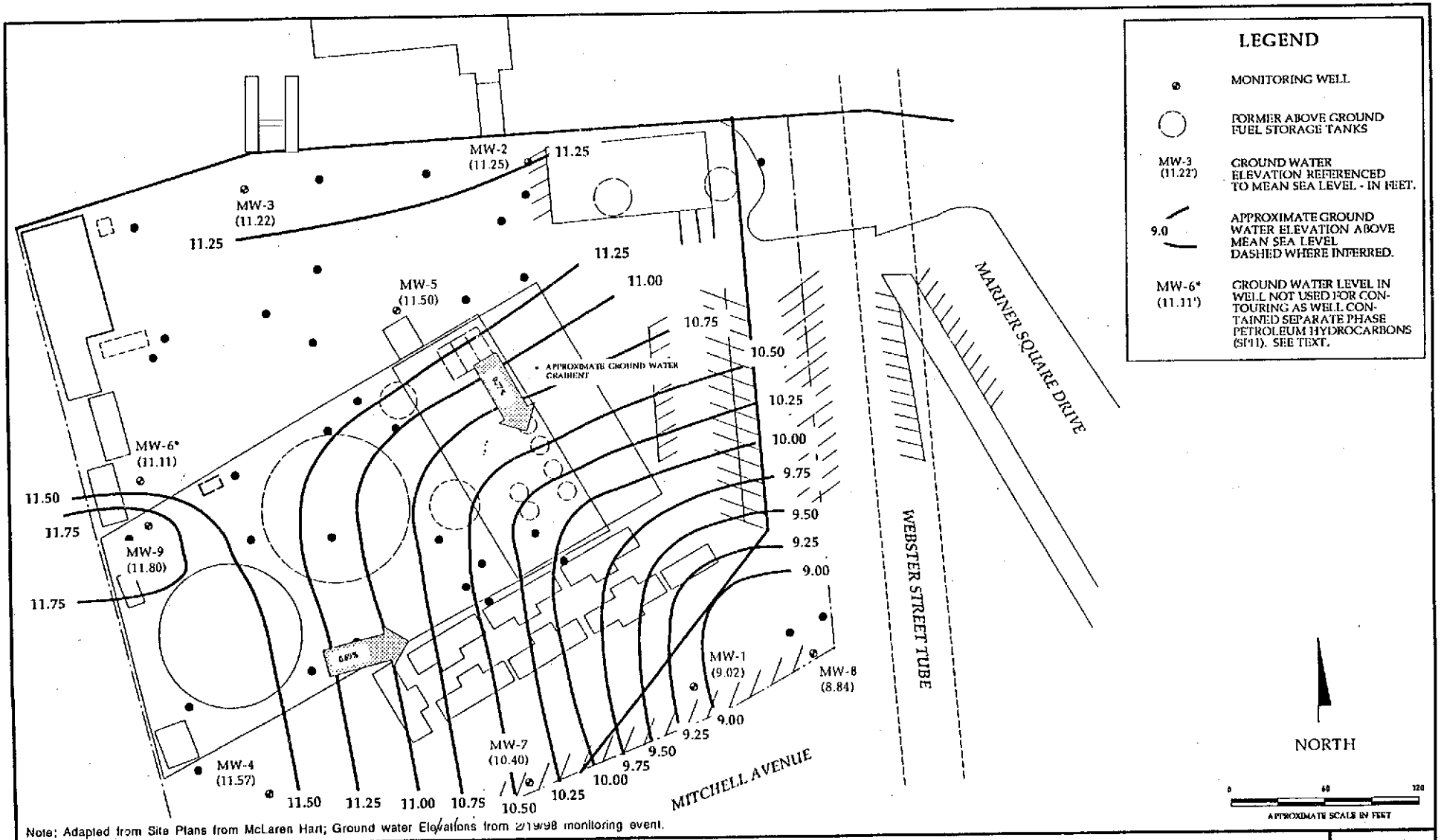
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

SITE PLAN

Mariner Square
2415 Mariner Square Drive
Alameda, California

Figure 2

7-285.1 11/97



Note: Adapted from Site Plans from McLaren Hart; Ground water Elevations from 2/19/98 monitoring event.

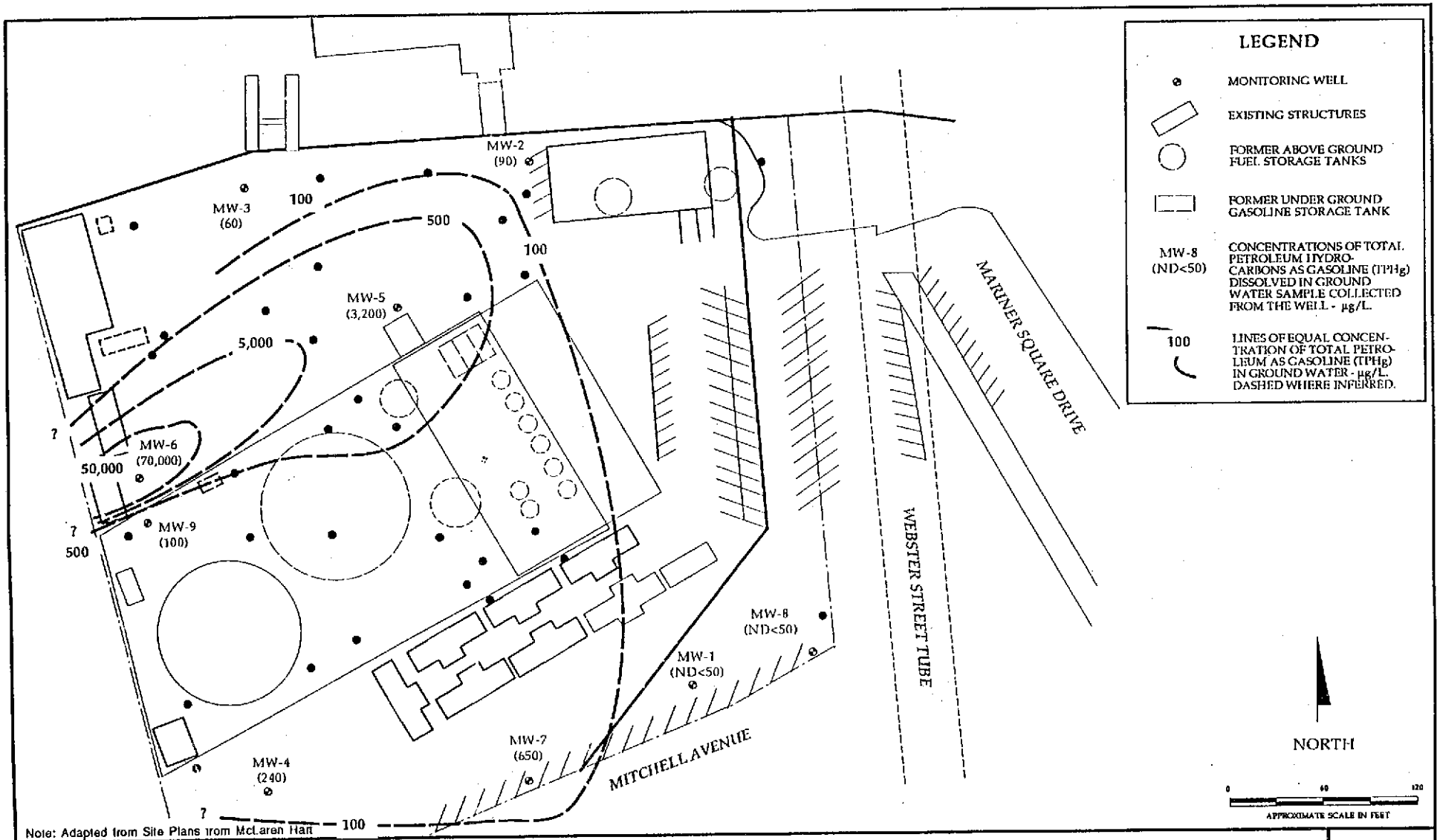
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

GROUND WATER CONTOUR MAP

Mariner Square
2415 Mariner Square Drive
Alameda, California

Figure 3

7-285.1 2/98



Note: Adapted from Site Plans from McLaren Hart

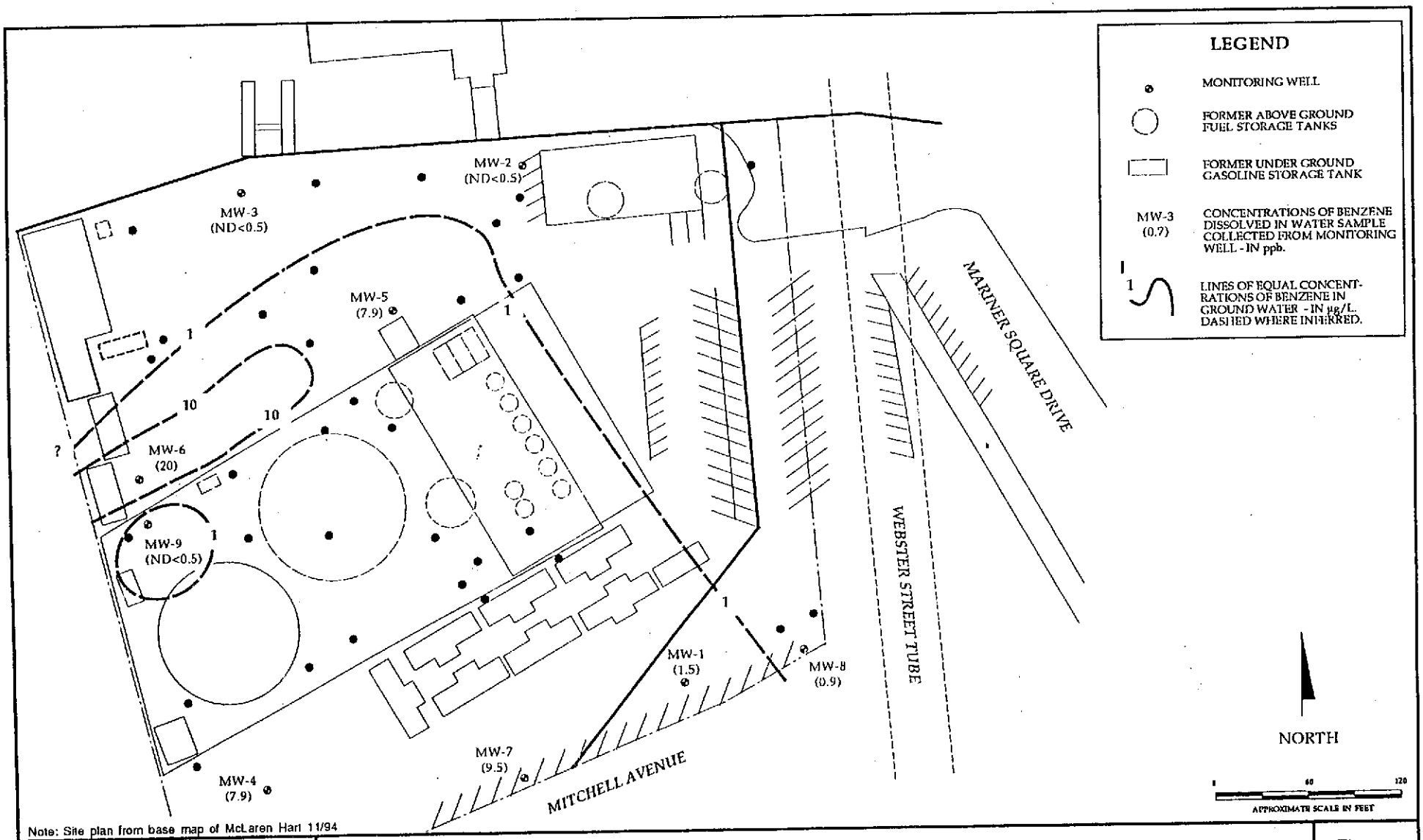
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

TPHg ISOCONCENTRATION MAP

Mariner Square
2415 Mariner Square Drive
Alameda, California

Figure 4

7-285.1 3/98



Note: Site plan from base map of McLaren Hart 11/94

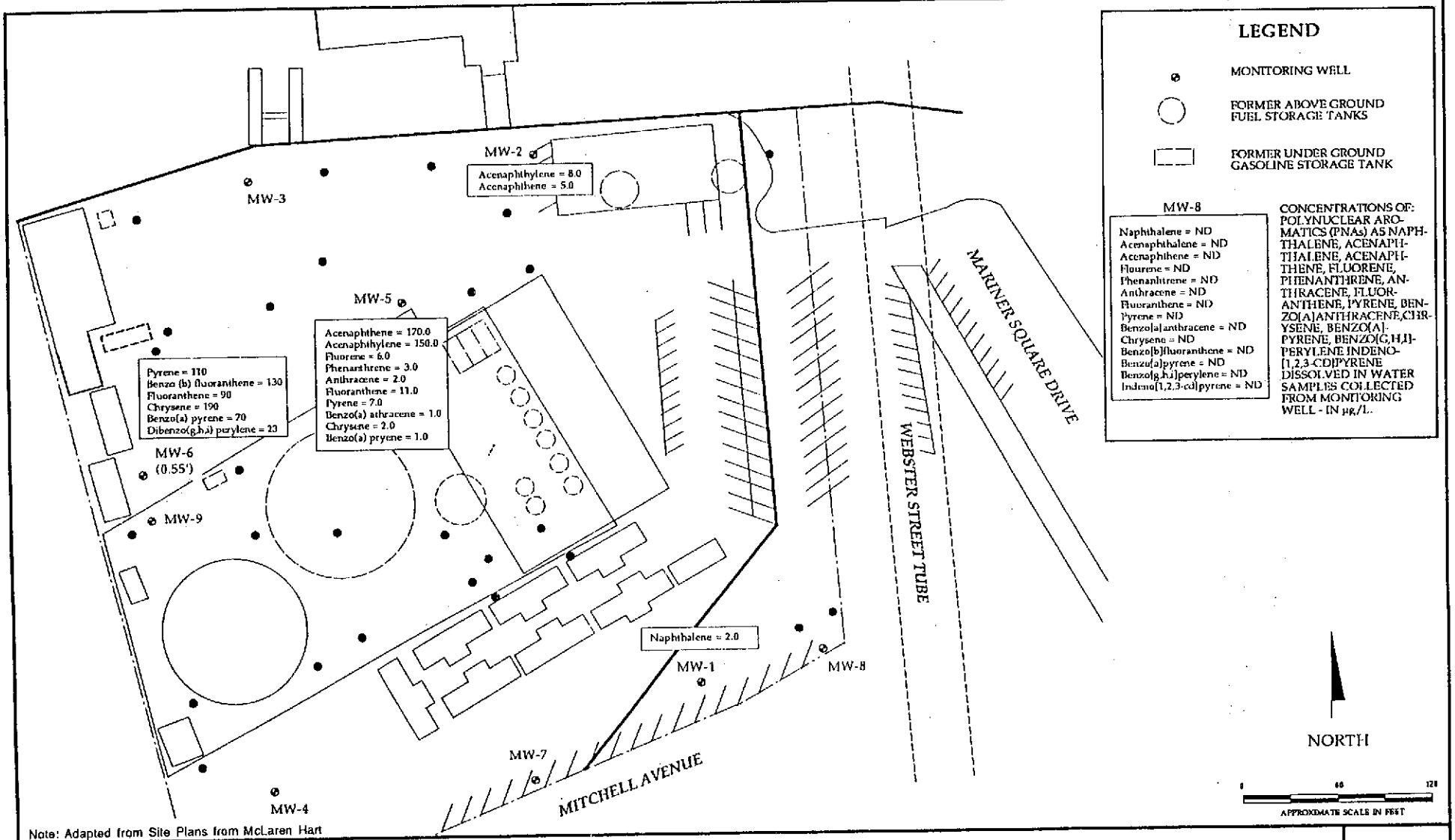
HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

BENZENE ISOCONCENTRATION MAP

Mariner Square
2415 Mariner Square Drive
Alameda, California

Figure 5

7-285.1 3/98



Note: Adapted from Site Plans from McLaren Hart

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

POLYNUCLEAR AROMATICS DISTRIBUTION MAP

Mariner Square
2415 Mariner Square Drive
Alameda, California

Figure 6

7-285.1 3/98

MONITORING WELL GAUGING DATA SHEET

GAUGED BY: Gary Pischke DATE: 2/18/98

GAUGED USING: MMC I/P, ORS I/P, (Solinst) (#1) #2, #3

Monitoring Well I.D.	Depth to Water (feet)	Depth to Bottom (feet)	Separate-phase hydrocarbons thickness (feet)	Replacements		Condition/ Comments
				Lock	Bailer	
MW-1	2.97	11.27	—	✓	✓	ok 2"
MW-2	3.96	13.60	—	✓	✓	~~covered by car~~ ok 2"
MW-3	2.97	10.85	—	✓	✓	ok 2"
MW-4	2.38	12.59	—	✓	✓	ok 2"
MW-5	3.10	12.02	—	✓	✓	ok 2"
MW-6	3.70	13.07	.55	✓	✓	Petrotrap - [illegible]
MW-7	3.21	13.31	—	✓	✓	ok 4"
MW-8	3.80	13.60	ϕ	—	✓	ok 4"
MW-9	3.12	13.10	ϕ	✓	✓	ok 4"

HYDRO-
ENVIRONMENTAL
TECHNOLOGIES, INC.

LOCATION: Mariner Square

Job N
2
SHE
of

PURGED/SAMPLED BY: Gary Pischke DATE: 2/18/98

GAUGING DATA:

Depth to bottom: 11.27 ft.

Depth to water: 2.97 ft.

Saturated Thickness: 8.30 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 1.3 gallons

volumes to purge x 3 vols.

*Total volume to purge = ~~3.9~~ 4 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer / (Submersible pump) / Suction lift pump / _____ (circle one)

Temp/Conductivity/pH Instrument: Corning

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
11:09a	0	—	—	—
11:11a	2	18.2	3.65	8.33
11:12a	4	16.9	1534	8.15
	Sample @ 11:14am.			

Color: clear-lt. brn Turbidity: slight

Recharge: good. SPP ϕ ft. Sheen ϕ

SAMPLING DATA:

Sampling method: (Dedicated bailer) / Disposable bailer

Sample for: (circle)

(TPHg/BTEX) METALS TOG (8010)

(TPHd) O-Pb TEL 8021

(TPH ext) Total Pb EDB 8240

601 602 Nitrates 8260

Other: Vinyl Cl., PNA's, MTBE

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-1

LOCATION: Mariner Square

Job # 7-28

SHEET 1 of

PURGED/SAMPLED BY: Gary Pischke DATE: 2/18/98

GAUGING DATA:

Depth to bottom: 13.60 ft.

Depth to water: 3.96 ft.

Saturated Thickness: 9.64 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 1.54 gallons

volumes to purge x 3 vols.

*Total volume to purge = 4.62 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer/ Submersible pump/ Suction lift pump/ _____ (circle one)

Temp/Conductivity/pH Instrument: Corning

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
3:40p	0	—	—	—
3:41p	2	16.6	1435	7.78
3:42	4.6	16.2	745	7.93
Sample @ 3:44pm				

Color: grey Turbidity: mod

Recharge: good SPP ~~4~~ ft. Sheen ~~4~~

SAMPLING DATA:

Sampling method: Dedicated bailer /Disposable bailer

Sample for: (circle)

TPHg/BTEX METALS TOG 5010

MTBE Cr-Pb TEL 8020

TPHd

TPH gro Total Pb EDB 8240

601 602 Nitrates 8260

Other: PNAs, Vinyl Chlorid

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-#2

LOCATION: Manner Square

Job No 7-285

SHEET 6 of 6

PURGED/SAMPLED BY: Gary Pischke DATE: 2/18/98

GAUGING DATA:

Depth to bottom: 10.85 ft.

Depth to water: 2.97 ft.

Saturated Thickness: 7.88 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 1.26 gallons

volumes to purge x 3 vols.

*Total volume to purge = 3.8 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer/ Submersible pump/ Suction lift pump/ _____ (circle one)

Temp/Conductivity/pH Instrument: Corning

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
12:42p	0	—	—	—
12:44p	2	18.1	3.22	7.83
12:45p	4	18.3	3.38	7.83
	Sample @ 12:45p.			

Color: grey Turbidity: mod

Recharge: good SPP ϕ ft. Sheen ϕ

SAMPLING DATA:

Sampling method: Dedicated bailer/Disposable bailer

Sample for: (circle)

8015/BTEX METALS TOG 5010

TPHd O-Pb TEL 8020

TPH mo Total Pb EDB 8240

601 602 Mtrxnes 8260

Other: PNAs, Diesel Cl, TTLC

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-3

LOCATION: Mariner Square

Job No 7-28

SHEET 3 of

PURGED/SAMPLED BY: Gary Pischke DATE: 2/18/98

GAUGING DATA:

Depth to bottom: 12.59 ft.

Depth to water: 2.38 ft.

Saturated Thickness: 10.21 ft.

Conversion	
diam	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 1.63 gallons

volumes to purge x 3 vols.

*Total volume to purge = 4.9 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer/ Submersible pump/ Suction lift pump/ _____ (circle one)

Temp/Conductivity/pH Instrument: Corning

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
1:24p	0	—	—	—
1:26p	2.5	18.4	3.70?	7.98
1:28p	5.0	17.3	1113	8.06
	Sample @ 1:30p.			

Color: Brown Turbidity: mod.

Recharge: good SPP ~~0~~ ft. Sheen ~~0~~

SAMPLING DATA:

Sampling method: Dedicated bailer /Disposable bailer

Sample for: (circle)

TPHg/BTEX MTBE METALS TOG 5520

TPHd O-Pb TEL 8020

TPH mo Total Pb EDB 8240

601 602 Nitrates 8250

Other PNAs, Vinyl Cl

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-4

LOCATION: Mariner Square

Job N 7-28

SHEE 4 of

PURGED/SAMPLED BY: Gay Pischke DATE: 2/18/98

GAUGING DATA:

Depth to bottom: 12.02 ft.

Depth to water: 3.10 ft.

Saturated Thickness: 8.92 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 1.42 gallons

volumes to purge x 3 vols.

*Total volume to purge = 4.28 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer/ Submersible pump/ Suction lift pump/ _____ (circle one)

Temp/Conductivity/pH Instrument: Corning

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
3:02p	0	—	—	—
3:04p	2.2	15.4	3.32	7.96
3:05p	4.3	14.5	11.56	8.10
	Sample @ 3:07pm			

Color: grey

Turbidity: mod.

slt. odor

Recharge: good

SPP 0 ft.

Sheen 0

SAMPLING DATA:

Sampling method: ~~Dedicated bailer~~ / Disposable bailer

Sample for: (circle)

TPHg/BTEX METALS TOG 5010

TPHd MTBE O-Pb TEL 8021

TPH mo Total Pb EDB 8240

601 Nitrates 8260

Other: PNAS, Vinyl Chlor

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # HW-25

LOCATION: Mariner Square

Job # 7-28

SHEET 25 of

PURGED/SAMPLED BY: Gary Pischke DATE: 2/18/98

GAUGING DATA:

Depth to bottom: 13.07 ft.

Depth to water: 3.70 ft.

Saturated Thickness: 9.37 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 1.5 gallons

volumes to purge x 3 vols.

*Total volume to purge = 4.5 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer/ (Submersible pump)/ Suction lift pump/ _____ (circle one)

Temp/Conductivity/pH Instrument: Corning

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
DTP 3.15 4:56p	0	—	—	—
4:58p	2.5	15.5	1567	7.89
.55 5:00p	4.5	15.3	993	7.99
	Sample @ 5:03pm			

check petroTrac empty. revise depth on PetroTrac

Color: brown Turbidity: mod. perchrop

Recharge: good. SPP .55 ft. Sheen —

SAMPLING DATA:

Sampling method: (Dedicated bailer)/Disposable bailer

Sample for: (circle)

(TPHg/BTEX) MTBE METALS TOG (8010)

(TPHd) C-Pb TEL 8021

(TPH mo) Total Pb EDB 8240

601 602 Nitrates 8260

Other: PNAs, Vinyl Cl.

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-6

LOCATION: Mariner Square

Job N 7-28

SHEE 6 of

PURGED/SAMPLED BY: Gary Pischke DATE: 2/18/98

GAUGING DATA:

Depth to bottom: 13.31 ft.

Depth to water: 3.21 ft.

Saturated Thickness: 10.10 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 6.6 gallons

volumes to purge x 3 vols.

*Total volume to purge = 19.7 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer/ Submersible pump/ Suction lift pump/ _____ (circle one)

Temp/Conductivity/pH Instrument: Corning

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
2:13p	0	—	—	—
2:15p	4	18.4	7.36	7.64
2:17p	8	17.6	4.62	7.85
2:20p	12.5	17.5	4.92	7.80
2:23p	16.5	17.3	5.16	7.79
2:25p	19.7	17.2	4.99	7.79
	Sample @ 2:27 pm.			

Color: Brown Turbidity: mod

Recharge: good SPP Ø ft. Sheen Ø

SAMPLING DATA:

Sampling method: Dedicated bailer / Disposable bailer

Sample for: (circle)

TPHg/BTEX MTBE METALS TOG 5010

TPHd O-Pb TEL 8022

Total Pb EDB 8240

601 602 Nitrates 8150

Other: PNAs, Vinyl Cl.

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-7

LOCATION: Mariner Square

Job No 7-285

SHEET 7 of

PURGED/SAMPLED BY: Gary Pischke DATE: 2/18/98

GAUGING DATA:

Depth to bottom: 13.6 ft.

Depth to water: 3.8 ft.

Saturated Thickness: 9.8 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 6.37 gallons

volumes to purge x 3 vols.

*Total volume to purge = 19 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer/ ~~Submersible pump~~/ Suction lift pump/ _____ (circle one)

Temp/Conductivity/pH Instrument: Corning

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
9:36a	0	—	—	—
9:40a	4	22.7	4.43?	8.57
9:42a	8	19.9	1587	8.55
9:45a	12.5	17.9	1845	8.52
9:47a	16.5	17.7	1831	8.48
9:49a	19	17.6	1914	8.45
	Sample @ 9:53am			

Color: clear Turbidity: low

Recharge: good SPP ϕ ft. Sheen ϕ

SAMPLING DATA:

Sampling method: Dedicated bailer / Disposable bailer

Sample for: (circle)

(TPHg/BTEX) METALS TOG (8010)

TPHd O-Pb TEL 8032

(TPH ext) Total Pb EDB 8240

601 602 Nitrates 8260

Other: PNAs Dmyl Cl MTBE

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-8

LOCATION: Mariner Square

Job No. 2-28

SHEET 8 of 8

PURGED/SAMPLED BY: Gary Pischke DATE: 2/18/98

GAUGING DATA:

Depth to bottom: 13.10 ft.

Depth to water: 3.12 ft.

Saturated Thickness: 9.98 ft.

Conversion	
diam.	gals/ft.
2 in.	x 0.16
4 in.	x 0.65
6 in.	x 1.44

Well casing volume 6.48 gallons

volumes to purge x 3 vols.

*Total volume to purge = 19.5 gallons

* unless chemical parameters do not stabilize

PURGING DATA:

Purge method: PVC bailer/ Submersible pump/ Suction lift pump/ _____ (circle one)

Temp/Conductivity/pH Instrument: Corning

Time	Volume (gallons)	Temp. (°F)	Conductivity (mS/cm)	pH
11:48a	0	—	—	—
11:51a	4	17.2	1065	8.05
11:53a	8	16.7	910	7.87
11:55a	12	16.8	854	7.83
11:57a	16	16.5	841	7.82
11:59a	19.5	16.8	892	7.83
	sample @ 12:02 p.m.			

Color: grey-brown Turbidity: mod.

Recharge: mod. SPP Ø ft. Sheen Ø

SAMPLING DATA:

Sampling method: Dedicated bailer / Disposable bailer

Sample for: (circle)

TPHg/BTEX METALS TOC 8010

MtBE O-Pb TEL 8022

TPH-d Total Pb EDB 8240

TPH mo 601 602 Nitrates 8260

Other: PNAs Vinyl Chloride

HYDRO-ENVIRONMENTAL TECHNOLOGIES, INC.

PURGE/SAMPLE DATA SHEET

WELL # MW-9

LOCATION: Mariner Square

Job No. 7-285.1

SHEET 9 of 9

RECEIVED MAR 1 1 1998

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

7-285.1
Qtr 1st 98
1/2

HYDRO ENVIRONMENTAL TECH
2394 MARINER SQUARE DR. STE 2
ALAMEDA, CA 94501

ATTN: GARY PISCHKE
CLIENT PROJ. ID: 7-285.1
CLIENT PROJ. NAME: MARINER SQUARE

REPORT DATE: 03/05/98

DATE(S) SAMPLED: 02/18/98

DATE RECEIVED: 02/19/98

AEN WORK ORDER: 9802233

PROJECT SUMMARY:

On February 19, 1998, this laboratory received 5 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. Portion for total organic carbon was subcontracted to a DOHS certified laboratory; subcontract report is included. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-1
AEN LAB NO: 9802233-01
AEN WORK ORDER: 9802233
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/05/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Sample Filtration	GFF 0.7 um	-		Filtr Date	02/20/98
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	1.5 *	0.5	ug/L	02/27/98
Toluene	108-88-3	0.6 *	0.5	ug/L	02/27/98
Ethylbenzene	100-41-4	1.8 *	0.5	ug/L	02/27/98
Xylenes, Total	1330-20-7	8 *	2	ug/L	02/27/98
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	02/27/98
Methyl t-Butyl Ether	1634-04-4	ND	5	ug/L	02/27/98
#Silica gel Cleanup	EPA 3630M	-		Cleanup	03/02/98
#Extraction for TPH	EPA 3510	-		Extrn Date	02/27/98
TPH as Diesel	GC-FID	ND	0.05	mg/L	03/02/98
TPH as Oil	GC-FID	ND	0.2	mg/L	03/02/98
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	ND	2	ug/L	03/03/98

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-2
AEN LAB NO: 9802233-02
AEN WORK ORDER: 9802233
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/05/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Sample Filtration	GFF 0.7 um	-		Filtr Date	02/20/98
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	02/26/98
Toluene	108-88-3	ND	0.5	ug/L	02/26/98
Ethylbenzene	100-41-4	1.1 *	0.5	ug/L	02/26/98
Xylenes, Total	1330-20-7	2 *	2	ug/L	02/26/98
Purgeable HCs as Gasoline	5030/GCFID	0.09 *	0.05	mg/L	02/26/98
Methyl t-Butyl Ether	1634-04-4	ND	5	ug/L	02/26/98
#Silica gel Cleanup	EPA 3630M	-		Cleanup	03/02/98
#Extraction for TPH	EPA 3510	-		Extrn Date	02/27/98
TPH as Diesel	GC-FID	ND	0.05	mg/L	03/02/98
TPH as Oil	GC-FID	ND	0.2	mg/L	03/02/98
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	ND	2	ug/L	03/03/98

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-3
AEN LAB NO: 9802233-03
AEN WORK ORDER: 9802233
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/05/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Sample Filtration	GFF 0.7 um	-		Filtr Date	02/20/98
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	02/26/98
Toluene	108-88-3	ND	0.5	ug/L	02/26/98
Ethylbenzene	100-41-4	ND	0.5	ug/L	02/26/98
Xylenes, Total	1330-20-7	4 *	2	ug/L	02/26/98
Purgeable HCs as Gasoline	5030/GCFID	0.06 *	0.05	mg/L	02/26/98
Methyl t-Butyl Ether	1634-04-4	7 *	5	ug/L	02/26/98
#Silica gel Cleanup	EPA 3630M	-		Cleanup	03/02/98
#Extraction for TPH	EPA 3510	-		Extrn Date	02/27/98
TPH as Diesel	GC-FID	ND	0.05	mg/L	03/02/98
TPH as Oil	GC-FID	ND	0.2	mg/L	03/02/98
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	ND	2	ug/L	03/03/98

MTBE included in gasoline result.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-4
AEN LAB NO: 9802233-04
AEN WORK ORDER: 9802233
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/05/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Sample Filtration	GFF 0.7 um	-		Filtr Date	02/20/98
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	7.9 *	0.5	ug/L	02/26/98
Toluene	108-88-3	1.1 *	0.5	ug/L	02/26/98
Ethylbenzene	100-41-4	2.1 *	0.5	ug/L	02/26/98
Xylenes, Total	1330-20-7	10 *	2	ug/L	02/26/98
Purgeable HCs as Gasoline	5030/GCFID	0.24 *	0.05	mg/L	02/26/98
Methyl t-Butyl Ether	1634-04-4	290 *	5	ug/L	02/26/98
#Silica gel Cleanup	EPA 3630M	-		Cleanup	03/02/98
#Extraction for TPH	EPA 3510	-		Extrn Date	02/27/98
TPH as Diesel	GC-FID	ND	0.05	mg/L	03/02/98
TPH as Oil	GC-FID	ND	0.2	mg/L	03/02/98
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	2 *	2	ug/L	03/03/98

MTBE included in gasoline result.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-5
AEN LAB NO: 9802233-05
AEN WORK ORDER: 9802233
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/05/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Sample Filtration	GFF 0.7 um	-		Filtr Date	02/20/98
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	7.9 *	0.5	ug/L	02/27/98
Toluene	108-88-3	1.4 *	0.5	ug/L	02/27/98
Ethylbenzene	100-41-4	14 *	0.5	ug/L	02/27/98
Xylenes, Total	1330-20-7	12 *	2	ug/L	02/27/98
Purgeable HCs as Gasoline	5030/GCFID	3.2 *	0.05	mg/L	02/27/98
Methyl t-Butyl Ether	1634-04-4	ND	5	ug/L	02/27/98
#Silica gel Cleanup	EPA 3630M	-		Cleanup	03/02/98
#Extraction for TPH	EPA 3510	-		Extrn Date	02/27/98
TPH as Diesel	GC-FID	ND	0.05	mg/L	03/02/98
TPH as Oil	GC-FID	ND	0.2	mg/L	03/02/98
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	ND	2	ug/L	03/03/98

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9802233
CLIENT PROJECT ID: 7-285.1

Quality Control and Project Summary

All laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spikes(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analyses.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behaviour, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrument performance.

D: Surrogates diluted out.

I: Interference.

!: Indicates result outside of established laboratory QC limits.

ANALYSIS: Extractable TPH

MATRIX: Water

METHOD BLANK SAMPLES

SAMPLE TYPE: Blank-Method/Media blank
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: BLKW-0227-1
PREPARED: 02/27/98
ANALYZED: 03/02/98

INSTR RUN: GC C\980227000000/1/
BATCH ID: DSLW022798-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		ND		0.05						
Motor Oil		ND		0.2						
n-Pentacosane	(surr)	97.4			100	97.4	60	130		

LABORATORY CONTROL SAMPLES

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: LCDW-0227-1
PREPARED: 02/27/98
ANALYZED: 03/02/98

INSTR RUN: GC C\980227000000/3/1
BATCH ID: DSLW022798-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		1.99	ND	0.05	2.00	99.5	60	130		
n-Pentacosane	(surr)	94.0	97.4		100	94.0	60	130		

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: LCSW-0227-1
PREPARED: 02/27/98
ANALYZED: 03/02/98

INSTR RUN: GC C\980227000000/2/1
BATCH ID: DSLW022798-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		1.88	ND	0.05	2.00	94.0	60	130		
n-Pentacosane	(surr)	94.9	97.4		100	94.9	60	130		

LABORATORY CONTROL DUPLICATES

SAMPLE TYPE: Laboratory Control Sample Duplicate
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: LCDW-0227-1
PREPARED: 02/27/98
ANALYZED: 03/02/98

INSTR RUN: GC C\980227000000/4/2
BATCH ID: DSLW022798-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		1.99	1.88	0.05					5.68	20
Motor Oil		ND	ND	0.2					0	
n-Pentacosane	(surr)	94.0	94.9		100	94.0	60	130		

SAMPLE SURROGATES

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: 9802233-01G
PREPARED: 02/27/98
ANALYZED: 03/02/98

INSTR RUN: GC C\980227000000/15/
BATCH ID: DSLW022798-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane	(surr)	97.5			100	97.5	60	130		

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:

LAB ID: 9802233-02G
PREPARED: 02/27/98
ANALYZED: 03/02/98

INSTR RUN: GC C\980227000000/16/
BATCH ID: DSLW022798-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane	(surr)	103.7			100	104	60	130		

ANALYSIS: Extractable TPH

MATRIX: Water

SAMPLE SURROGATES

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: 9802233-02G
PREPARED: 02/27/98
ANALYZED: 03/02/98
INSTR RUN: GC_C\980227000000/16/
BATCH ID: DSCW022798-1
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: 9802233-03G
PREPARED: 02/27/98
ANALYZED: 03/02/98
INSTR RUN: GC_C\980227000000/17/
BATCH ID: DSCW022798-1
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane (surr)	106.1			100	106	60	130		

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: 9802233-04G
PREPARED: 02/27/98
ANALYZED: 03/02/98
INSTR RUN: GC_C\980227000000/18/
BATCH ID: DSCW022798-1
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane (surr)	103.3			100	103	60	130		

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: 9802233-05G
PREPARED: 02/27/98
ANALYZED: 03/02/98
INSTR RUN: GC_C\980227000000/19/
BATCH ID: DSCW022798-1
DILUTION: 1.000000

ANALYTE	RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane (surr)	110.0			100	110	60	130		

QUALITY CONTROL DATA

METHOD: EPA 8010

AEN JOB NO: 9802233
INSTRUMENT: G
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery: Bromochloro-methane	Percent Recovery: 1-Bromo-3-chloro-propane
03/03/98	MW-1	01	84	92
03/03/98	MW-2	02	89	107
03/03/98	MW-3	03	91	103
03/03/98	MW-4	04	87	104
03/03/98	MW-5	05	88	96
QC Limits:			70-130	70-130

DATE ANALYZED: 03/02/98
SAMPLE SPIKED: LCS
INSTRUMENT: G

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits: Percent Recovery	QC Limits: RPD
1,1-Dichloroethene	25	83	8	70-130	20
Trichloroethene	25	97	3	70-130	20
Chlorobenzene	25	88	3	70-130	20

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9802233
INSTRUMENT: H
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
02/27/98	MW-1	01	101
02/26/98	MW-2	02	103
02/26/98	MW-3	03	101
02/26/98	MW-4	04	103
02/27/98	MW-5	05	102
QC Limits:			70-130

DATE ANALYZED: 02/26/98
SAMPLE SPIKED: LCS
INSTRUMENT: H

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	200	92	2	70-130	20
Toluene	200	92	1	70-130	20
Ethylbenzene	200	98	1	70-130	20
Total Xylenes	600	102	<1	70-130	20

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

*** END OF REPORT ***

American Environmental Network, Inc.
11 East Olive Road • Pensacola, FL 32514 • (850) 474-1001

SIGNATURE PAGE

Reviewed by: Linda Lotton
AEN Project Manager

Client:	AMERICAN ENVIRONMENTAL NETWORK (CA), INC. PLEASANT HILL, CALIFORNIA
Project Name:	7-285.1
Project Number:	9802233
Project Location:	N/S
Accession Number:	802398
Project Manager:	BILL SVOBODA
Sampled By:	N/S

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Analysis Report

Analysis: POLYNUCLEAR AROMATICS BY 8310

Accession:	802398
Client:	AMERICAN ENVIRONMENTAL NETWORK (CA), INC.
Project Number:	9802233
Project Name:	7-285.1
Project Location:	N/S
Department:	SEMI-VOLATILE FUELS

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - SINGLE"

Accession:	802398
Client:	AMERICAN ENVIRONMENTAL NETWORK (CA), INC.
Project Number:	9802233
Project Name:	7-285.1
Project Location:	N/S
Test:	POLYNUCLEAR AROMATICS BY 8310
Analysis Method:	8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method:	3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Matrix:	WATER
QC Level:	II

Lab Id:	001	Sample Date/Time:	18-FEB-98 N/S
Client Sample Id:	MW-1	Received Date:	20-FEB-98
Batch: PAW036		Extraction Date:	20-FEB-98
Blank: B	Dry Weight %: N/A	Analysis Date:	25-FEB-98

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	ND	1	
ACENAPHTHYLENE	UG/L	ND	1	
ANTHRACENE	UG/L	ND	1	
BENZO(a)ANTHRACENE	UG/L	ND	1	
BENZO(a)PYRENE	UG/L	ND	1	
BENZO(b)FLUORANTHENE	UG/L	ND	1	
BENZO(g,h,i)PERYLENE	UG/L	ND	1	
BENZO(k)FLUORANTHENE	UG/L	ND	1	
CHRYSENE	UG/L	ND	1	
DIBENZO(a,h)ANTHRACENE	UG/L	ND	1	
FLUORANTHENE	UG/L	ND	1	
FLUORENE	UG/L	ND	1	
INDENO(1,2,3-cd)PYRENE	UG/L	ND	1	
NAPHTHALENE	UG/L	2	1	
PHENANTHRENE	UG/L	ND	1	
PYRENE	UG/L	ND	1	
1-METHYLNAPHTHALENE	UG/L	ND	1	
2-METHYLNAPHTHALENE	UG/L	ND	1	
2-CHLOROANTHRACENE	%REC/SURR	81	28-138	
ANALYST	INITIALS	JO		

Comments:

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - SINGLE"

Accession:	802398
Client:	AMERICAN ENVIRONMENTAL NETWORK (CA), INC.
Project Number:	9802233
Project Name:	7-285.1
Project Location:	N/S
Test:	POLYNUCLEAR AROMATICS BY 8310
Analysis Method:	8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method:	3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Matrix:	WATER
QC Level:	II

Lab Id:	002	Sample Date/Time:	18-FEB-98 N/S
Client Sample Id:	MW-2	Received Date:	20-FEB-98
Batch: PAW036		Extraction Date:	20-FEB-98
Blank: B	Dry Weight %: N/A	Analysis Date:	25-FEB-98

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	5	1	
ACENAPHTHYLENE	UG/L	8	1	
ANTHRACENE	UG/L	ND	1	
BENZO(a)ANTHRACENE	UG/L	ND	1	
BENZO(a)PYRENE	UG/L	ND	1	
BENZO(b)FLUORANTHENE	UG/L	ND	1	
BENZO(g,h,i)PERYLENE	UG/L	ND	1	
BENZO(k)FLUORANTHENE	UG/L	ND	1	
CHRYSENE	UG/L	ND	1	
DIBENZO(a,h)ANTHRACENE	UG/L	ND	1	
FLUORANTHENE	UG/L	ND	1	
FLUORENE	UG/L	ND	1	
INDENO(1,2,3-cd)PYRENE	UG/L	ND	1	
NAPHTHALENE	UG/L	ND	1	
PHENANTHRENE	UG/L	ND	1	
PYRENE	UG/L	ND	1	
1-METHYLNAPHTHALENE	UG/L	ND	1	
2-METHYLNAPHTHALENE	UG/L	ND	1	
2-CHLOROANTHRACENE	%REC/SURR	82	28-138	
ANALYST	INITIALS	JO		

Comments:

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - SINGLE"

Accession: 802398
Client: AMERICAN ENVIRONMENTAL NETWORK (CA), INC.
Project Number: 9802233
Project Name: 7-285.1
Project Location: N/S
Test: POLYNUCLEAR AROMATICS BY 8310
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Matrix: WATER
QC Level: II

Lab Id: 003 Sample Date/Time: 18-FEB-98 N/S
Client Sample Id: MW-3 Received Date: 20-FEB-98

Batch: PAW036 Extraction Date: 20-FEB-98
Blank: B Dry Weight %: N/A Analysis Date: 26-FEB-98

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	ND	1	
ACENAPHTHYLENE	UG/L	ND	1	
ANTHRACENE	UG/L	ND	1	
BENZO(a)ANTHRACENE	UG/L	ND	1	
BENZO(a)PYRENE	UG/L	ND	1	
BENZO(b)FLUORANTHENE	UG/L	ND	1	
BENZO(g,h,i)PERYLENE	UG/L	ND	1	
BENZO(k)FLUORANTHENE	UG/L	ND	1	
CHRYSENE	UG/L	ND	1	
DIBENZO(a,h)ANTHRACENE	UG/L	ND	1	
FLUORANTHENE	UG/L	ND	1	
FLUORENE	UG/L	ND	1	
INDENO(1,2,3-cd)PYRENE	UG/L	ND	1	
NAPHTHALENE	UG/L	ND	1	
PHENANTHRENE	UG/L	ND	1	
PYRENE	UG/L	ND	1	
1-METHYLNAPHTHALENE	UG/L	ND	1	
2-METHYLNAPHTHALENE	UG/L	ND	1	
2-CHLOROANTHRACENE	%REC/SURR	90	28-138	
ANALYST	INITIALS	JO		

Comments:

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - SINGLE"

Accession:	802398
Client:	AMERICAN ENVIRONMENTAL NETWORK (CA), INC.
Project Number:	9802233
Project Name:	7-285.1
Project Location:	N/S
Test:	POLYNUCLEAR AROMATICS BY 8310
Analysis Method:	8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method:	3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Matrix:	WATER
QC Level:	II

Lab Id:	004		Sample Date/Time:	18-FEB-98 N/S
Client Sample Id:	MW-4		Received Date:	20-FEB-98
Batch: PAW036			Extraction Date:	20-FEB-98
Blank: B	Dry Weight %:	N/A	Analysis Date:	26-FEB-98

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	ND	1	
ACENAPHTHYLENE	UG/L	ND	1	
ANTHRACENE	UG/L	ND	1	
BENZO(a)ANTHRACENE	UG/L	ND	1	
BENZO(a)PYRENE	UG/L	ND	1	
BENZO(b)FLUORANTHENE	UG/L	ND	1	
BENZO(g,h,i)PERYLENE	UG/L	ND	1	
BENZO(k)FLUORANTHENE	UG/L	ND	1	
CHRYSENE	UG/L	ND	1	
DIBENZO(a,h)ANTHRACENE	UG/L	ND	1	
FLUORANTHENE	UG/L	ND	1	
FLUORENE	UG/L	ND	1	
INDENO(1,2,3-cd)PYRENE	UG/L	ND	1	
NAPHTHALENE	UG/L	ND	1	
PHENANTHRENE	UG/L	ND	1	
PYRENE	UG/L	ND	1	
1-METHYLNAPHTHALENE	UG/L	ND	1	
2-METHYLNAPHTHALENE	UG/L	ND	1	
2-CHLOROANTHRACENE	%REC/SURR	87	28-138	
ANALYST	INITIALS	JO		

Comments:

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - SINGLE"

Accession:	802398
Client:	AMERICAN ENVIRONMENTAL NETWORK (CA), INC.
Project Number:	9802233
Project Name:	7-285.1
Project Location:	N/S
Test:	POLYNUCLEAR AROMATICS BY 8310
Analysis Method:	8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method:	3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Matrix:	WATER
QC Level:	II

Lab Id:	005		Sample Date/Time:	18-FEB-98 N/S
Client Sample Id:	MW-5		Received Date:	20-FEB-98
Batch: PAW036			Extraction Date:	20-FEB-98
Blank: B	Dry Weight %:	N/A	Analysis Date:	26-FEB-98

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	170	1	
ACENAPHTHYLENE	UG/L	150	1	
ANTHRACENE	UG/L	2	1	
BENZO(a)ANTHRACENE	UG/L	1	1	
BENZO(a)PYRENE	UG/L	1	1	
BENZO(b)FLUORANTHENE	UG/L	ND	1	
BENZO(g,h,i)PERYLENE	UG/L	ND	1	
BENZO(k)FLUORANTHENE	UG/L	ND	1	
CHRYSENE	UG/L	2	1	
DIBENZO(a,h)ANTHRACENE	UG/L	ND	1	
FLUORANTHENE	UG/L	11	1	
FLUORENE	UG/L	6	1	
INDENO(1,2,3-cd)PYRENE	UG/L	ND	1	
NAPHTHALENE	UG/L	ND	1	
PHENANTHRENE	UG/L	3	1	
PYRENE	UG/L	7	1	
1-METHYLNAPHTHALENE	UG/L	ND	1	
2-METHYLNAPHTHALENE	UG/L	51	1	
2-CHLOROANTHRACENE	%REC/SURR	127	28-138	
ANALYST	INITIALS	JO		

Comments:

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"Method Report Summary"

Accession Number: 802398
Client: AMERICAN ENVIRONMENTAL NETWORK (CA), INC.
Project Number: 9802233
Project Name: 7-285.1
Project Location: N/S
Test: POLYNUCLEAR AROMATICS BY 8310

Client Sample Id:	Parameter:	Unit:	Result:
MW-1	NAPHTHALENE	UG/L	2
MW-2	ACENAPHTHENE	UG/L	5
	ACENAPHTHYLENE	UG/L	8
MW-5	ACENAPHTHENE	UG/L	170
	ACENAPHTHYLENE	UG/L	150
	ANTHRACENE	UG/L	2
	BENZO(a)ANTHRACENE	UG/L	1
	BENZO(a)PYRENE	UG/L	1
	CHRYSENE	UG/L	2
	FLUORANTHENE	UG/L	11
	FLUORENE	UG/L	6
	PHENANTHRENE	UG/L	3
	PYRENE	UG/L	7
	2-METHYLNAPHTHALENE	UG/L	51

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Rd Pensacola, FL 32514 (850) 474-1001

Data Qualifiers for Final Report

AEN-Pensacola Inorganic/Organic

@	Adjusted reporting limit due to sample matrix (dilution prior to digestion and/or analysis)
+	Elevated reporting limit due to dilution into calibration range
*	Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)
#	Elevated reporting limit due to insufficient sample size
D	Diluted out
J5	The reported value is quantitated as a TIC; therefore, it is estimated
ND = Not Detected	N/S = Not Submitted N/A = Not Applicable

Florida Projects Inorganic/Organic

Y1	Improper preservation, no preservative present in sample upon receipt
Y2	Improper preservation, incorrect preservative present in sample upon receipt
Y3	Improper preservation, sample temperature exceeded EPA temperature limits of 2-6°C upon receipt
Y (FL description)	The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
Q	Sample held beyond the accepted holding time
I	The reported value is < Laboratory RL and > laboratory MDL
U1	The reported value is ≤ Laboratory MDL (value for sample result is reported as the MDL)
U (FL description)	Indicates the compound was analyzed for but not detected.
T	The reported value is < Laboratory MDL (value shall not be used for statistical analysis)
V	The analyte was detected in both the sample and the associated method blank.
J1	Surrogate recovery limits have been exceeded
J2	The sample matrix interfered with the ability to make any accurate determinations
J3	The reported value failed to meet the established quality control criteria for either precision or accuracy
J (FL description)	Estimated value; not accurate.

AFCEE Projects (under QAPP) and **All Other (AEN-PN) Projects/Sites for Inorganic/Organic Parameters**

J4	(For positive results) Temperature limits exceeded (≤2°C or ≥ 6°C)
J (AFCEE description)	The analyte was positively identified, the quantitation is an estimation
R1	(For nondetects) Temperature limits exceeded (≤2°C or ≥ 6°C)
R2	Improper preservation, no preservative present in sample upon receipt
R3	Improper preservation, incorrect preservative present in sample upon receipt
R4	Holding time exceeded
R5	Collection requirements not met, improper container used for sample
R (AFCEE description)	The data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria
F	< RL and > laboratory MDL
F (AFCEE description)	The analyte was positively identified but the associated numerical value is below the AFCEE or lab RL
U2	≤ Laboratory MDL (value for result will be the MDL, never below the MDL)
U (AFCEE description)	The analyte was analyzed for but not detected. The associated numerical value is at or below the MDL
B (AFCEE description)	The analyte was found in the associated blank, as well as in the sample

ICR Projects Inorganic/Organic

A	Acceptable
R6	Rejected

Examples: ICR Flags

R6 = Laboratory extracted the sample but the refrigerator malfunctioned so the extract became warm and client was notified

R6 = Sample arrived in laboratory in good condition; however, the laboratory did not analyze it within EPA's established holding time limit.

CLP and CLP-like Projects

Refer to referenced CLP Statement of Work (SOW) for explanation of data qualifiers

IDL = Laboratory Instrument Detection Limit
MDL = Laboratory Method Detection Limit
RL = Reporting Limit (AFCEE RLs are listed in the AFCEE QAPP)
CLP CRDL = CLP Contract Required Detection Limit (these limits are listed in the EPA CLP Statement of Work or SOW)
CLP CRQL = CLP Contract Required Quantitation Limit (these limits are listed in the EPA CLP Statement of Work or SOW)

Any time a sample arrives at the laboratory improperly preserved (at improper pH or temperature) or after holding time has expired or prepared or analyzed after holding time, client must be notified in writing (i.e. case narrative).

AEN-Pensacola uses the most current promulgated methods contained in the reference manuals.

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Quality Control Report

Analysis: POLYNUCLEAR AROMATICS BY 8310

Accession:	802398
Client:	AMERICAN ENVIRONMENTAL NETWORK (CA), INC.
Project Number:	9802233
Project Name:	7-285.1
Project Location:	N/S
Department:	SEMI-VOLATILE FUELS

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"QC Report"

Title: Water Blank
Batch: PAW036
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.

Blank Id: B Date Analyzed: 25-FEB-98 Date Extracted: 20-FEB-98

Parameters:	Units:	Results:	Reporting Limits:
ACENAPHTHENE	UG/L	ND	1
ACENAPHTHYLENE	UG/L	ND	1
ANTHRACENE	UG/L	ND	1
BENZO(a)ANTHRACENE	UG/L	ND	1
BENZO(a)PYRENE	UG/L	ND	1
BENZO(b)FLUORANTHENE	UG/L	ND	1
BENZO(g,h,i)PERYLENE	UG/L	ND	1
BENZO(k)FLUORANTHENE	UG/L	ND	1
CHRYSENE	UG/L	ND	1
DIBENZO(a,h)ANTHRACENE	UG/L	ND	1
FLUORANTHENE	UG/L	ND	1
FLUORENE	UG/L	ND	1
INDENO(1,2,3-cd)PYRENE	UG/L	ND	1
NAPHTHALENE	UG/L	ND	1
PHENANTHRENE	UG/L	ND	1
PYRENE	UG/L	ND	1
1-METHYLNAPHTHALENE	UG/L	ND	1
2-METHYLNAPHTHALENE	UG/L	ND	1
2-CHLOROANTHRACENE	%REC/SURR	107	28-138
ANALYST	INITIALS	JO	

Comments:

"QC Report"

Title: Water LCS
Batch: PAW036
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.

RS Date Analyzed: 25-FEB-98 RS Date Extracted: 19-FEB-98

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	Rec Lmts
ACENAPHTHYLENE	10.0	<1	11.1	111	45-127
BENZO(k)FLUORANTHENE	10.0	<1	11.6	116	68-131
CHRYSENE	10.0	<1	11.5	115	69-131
PHENANTHRENE	10.0	<1	10.3	103	63-124
PYRENE	10.0	<1	12.3	123	61-126
Surrogates:					
2-CHLOROANTHRACENE				90	28-138

Comments:

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

"QC Report"

Title: Water Matrix Spike/Matrix Spike Duplicate
Batch: PAW036
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.

Dry Weight %: N/A
Sample Spiked: 802349-11

MS Date Analyzed: 25-FEB-98
MSD Date Analyzed: 25-FEB-98

MS Date Extracted: 19-FEB-98
MSD Date Extracted: 19-FEB-98

Parameters:	Spike Added	Sample Conc	MS Conc	MS %Rec	MSD Conc	MSD %Rec	RPD	RPD Lmts	Rec Lmts
ACENAPHTHYLENE	10.0	<1	9.8	98	9.7	97	1	51	18-146
BENZO(k)FLUORANTHENE	10.0	<1	11.1	111	10.9	109	2	40	26-137
CHRYSENE	10.0	<1	11.6	116	11.4	114	2	69	16-156
PHENANTHRENE	10.0	<1	10.2	102	10.1	101	1	36	30-145
PYRENE	10.0	<1	12.4	124	12.3	123	1	41	39-137
Surrogates:									
2-CHLOROANTHRACENE				92		90			28-138

Comments:

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

Common Notation for Organic Reporting

N/S = NOT SUBMITTED
N/A = NOT APPLICABLE
UG = MICROGRAMS
UG/L = PARTS PER BILLION
UG/KG = PARTS PER BILLION
MG/M3 = MILLIGRAM PER CUBIC METER
PPMV = PART PER MILLION BY VOLUME
MG/KG = PARTS PER MILLION
MG/L = PARTS PER MILLION
< = LESS THAN
ND = NOT DETECTED

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

ORGANIC SOILS ARE REPORTED ON A DRYWEIGHT BASIS.

RPT LMTS = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION)

AEN/GC/FID
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME IONIZATION DETECTOR (FID).

AEN/GC/FIX
AEN GAS CHROMATOGRAPHIC METHOD FOR ANALYSIS OF FIXED GASES EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD) AND FLAME IONIZATION DETECTOR (FID).

AEN/GC/FPD
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME PHOTOMETRIC DETECTOR (FPD) IN SULFUR-SPECIFIC MODE.

AEN/GC/PID
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH PHOTOIONIZATION DETECTOR (PID).

AEN/GC/TCD
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD).

SW-846 METHOD 9020
PARTICULATE MATTER IS REMOVED BY ALLOWING PARTICULATES TO SETTLE IN THE SAMPLE CONTAINER AND DECANTING THE SUPERNATANT LIQUID. EXCESSIVE PARTICULATES ARE REMOVED BY FILTRATION OF THE SUPERNATANT LIQUID.

RSK 175
SAMPLE PREPARATION AND CALCULATIONS FOR DISSOLVED GAS ANALYSIS IN WATER SAMPLES USING A GC HEADSPACE EQUILIBRATION TECHNIQUE, RSK SOP-175, ROBERT S. KERR ENVIRONMENTAL RESEARCH LABORATORY, USEPA, AUGUST 11, 1994.

AEN-PN USES THE MOST CURRENT PROMULGATED METHODS CONTAINED IN THE REFERENCE MANUALS.

SW = STEVE WILHITE
RW = ROBERT WOLFE
KS = KENDALL SMITH
KL = KERRY LEMONT
JO = JENNIFER O'NEAL
LP = LEVERNE PETERSON
PLD = PAULA DOUGHTY
JL = JANET LECLEAR
RC = RON CALI

1. Client: AEN(CA)
Address:
Contact: BILL SVOBODA
Alt. Contact:

American Environmental Network
3440 Vincent Road, Pleasant Hill, CA 94523
Phone (510) 930-9090
FAX (510) 930-0256

802398

Page 1 of 1

REQUEST FOR ANALYSIS / CHAIN OF CUSTODY

Lab Job Number:
Lab Destination: AEN (FL)
Date Samples Shipped:
Lab Contact:
Date Results Required: 3/02/98
Date Report Required:
Client Phone No.:
Client FAX No.:

Address Report To:
2. #1

Send Invoice To:
3. #1

Send Report To: (1) or 2 (Circle one)

Client P.O. No.: 9802233 Client Project I.D. No.: 7-285.1

Sample Team Member (s)

Lab Number	Client Sample Identification	Air Volume	Date/ Time Collected	Sample Type*	Pres.	No. of Cont.	Type of Cont.	ANALYSIS 8310	Comments / Hazards
	MW-1		2/18/98	7	COLD	1	AMB	X	
	MW-2		↓	↓	↓	↓	↓	X	
	MW-3							X	
	MW-4							X	
	MW-5							X	

Relinquished by: (Signature)	DATE	TIME	Received by: (Signature) Willi Sych DATE 2/20/98 TIME 0915
Relinquished by: (Signature) Ronald C. Jensen 2/19/98	14:45		Received by: (Signature) DATE TIME
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature) DATE TIME
Method of Shipment			Lab Comments

*Sample type (Specify): 1) 37mm 0.8 µm MCEF 2) 25mm 0.8 µm MCEF 3) 25mm 0.4 µm polycarb. filter
4) PVC filter, diam. ____ pore size ____ 5) Charcoal tube 6) Silica gel tube 7) Water 8) Soil 9) Bulk Sample
10) Other ____ 11) Other ____

COPIES: WHITE - JOB FILE YELLOW - PROJECT FILE PINK - CLIENT

Reporting Information:

American Environmental Network
3440 Vincent Road, Pleasant Hill, CA 94523
Phone (510) 930-9090
FAX (510) 930-0256

AEN

REQUEST FOR ANALYSIS / CHAIN OF CUSTODY

1. Client: Hydro Environ. Tech.
Address: 2394 Mariner Sq Dr #2, Alameda 94501
Contact: Gary Pischke
Alt. Contact:

Lab Job Number: 9802233
Lab Destination:
Date Samples Shipped:
Lab Contact:
Date Results Required:
Date Report Required:
Client Phone No.: 510-521-2684
Client FAX No.: 510-521-5078

Address Report To:

2. Hydro Environmental Tech.

Send Invoice To:

3. Mariner Square & Associates
c/o Hydro Environ. Tech.

Send Report To: 1 or (2) (Circle one)

Client P.O. No.: _____ Client Project I.D. No.: 7-285.1

Sample Team Member (s) Gary Pischke

Lab Number	Client Sample Identification	Air Volume	Date/ Time Collected	Sample Type*	Pres.	No. of Cont.	Type of Cont.	ANALYSIS: TPHg (BTEX/MTBE)	TPHd / mo	PNAs (8310)	Vinyl Chl. (8010/8)	Comments / Hazards
01A-F	MW-1	—	2/18/98 11:14a	7	HCL	6	VOA	X		X		Silica gel & filtration on TPHd
GH1	MW-1		2/18/98 11:25a	7	none	3	Ltr		X	X		
02A-F	MW-2		2/18/98 3:57p	7	HCL	6	VOA	X		X		
GH1	MW-2		2/18/98 3:44p	7	none	3	Ltr		X	X		
03A-F	MW-3		2/18 1:08p	7	HCL	6	VOA	X		X		
GH1	MW-3		2/18 12:48p	7	none	3	Ltr		X	X		
04A-F	MW-4		2/18 1:42p	7	HCL	6	VOA	X		X		
GH1	MW-4		2/18 1:30p	7	none	3	Ltr		X	X		
05A-F	MW-5		2/18 3:19p	7	HCL	6	VOA	X		X		
GH1	MW-5		2/18 3:07p	7	none	3	Ltr		X	X		
9802233	MW-6		2/18 5:15p	7	HCL	6	VOA	X		X		
	MW-6		2/18 5:03p	7	none	3	Ltr		X	X		
	MW-7		2/18 2:39p	7	HCL	6	VOA	X		X		
	MW-7		2/18 2:27p	7	none	3	Ltr		X	X		

Relinquished by: (Signature) Gary Pischke	DATE 2/19/98	TIME 10:31	Received by: (Signature) Michael E. Heisler
Relinquished by: (Signature) Michael E. Heisler	DATE 2/19/98	TIME 12:55	Received by: (Signature) Leonard C. Jensen
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)
Method of Shipment			Lab Comments

*Sample type (Specify): 1) 37mm 0.8 µm MCEF 2) 25mm 0.8 µm MCEF 3) 25mm 0.4 µm polycarb. filter
4) PVC filter, diam. ____ pore size ____ 5) Charcoal tube 6) Silica gel tube 7) Water 8) Soil 9) Bulk Sample
10) Other _____ 11) Other _____

Re[redacted] Info[redacted]n:

1. Client: Hydro Enviro. Tech
Address: 8394 Mariner Sq. Dr #2, Alameda 94501
Contact: Gary Pischke
Alt. Contact:

American Environmental Network
3440 Vincent Road, Pleasant Hill, CA 94523
Phone (510) 930-9090
FAX (510) 930-0256

AEN

REQUEST FOR ANALYSIS / CHAIN OF CUSTODY

Lab Job Number: 9802233
Lab Destination:
Date Samples Shipped:
Lab Contact:
Date Results Required:
Date Report Required:
Client Phone No.: 510-521-2684
Client FAX No.: 510-521-5078

Address Report To:

2. Hydro Enviro. Tech.

Send Invoice To:

3. Mariner Square & Assoc. c/o Hydro Enviro. Tech.

Send Report To: (1) or 2 (Circle one)

Client P.O. No.: _____ Client Project I.D. No.: 7-285.1

Sample Team Member (s) Gary Pischke

Lab Number	Client Sample Identification	Air Volume	Date/ Time Collected	Sample Type*	Pres.	No. of Cont.	Type of Cont.	TPHg/BTEX/MTBE	TPHd (w/o silica gel)	PNAs (8310)	Vinyl Chl. (8010)	Comments / Hazards
9802233A	MW-8	—	2/18/98 10:00	7	HCl	6	VOA	X			X	Silica gel & filtration on TPHd
	MW-8	—	2/18 9:57	7	none	3	Hr		X	X		
	MW-9	—	2/18 12:10	7	HCl	6	VOA	X			X	
	MW-9	—	2/18 12:02	7	none	3	Hr.		X	X		

Relinquished by: (Signature) Gary Pischke	DATE 2/19/98	TIME 1053 am	Received by: (Signature) Michael E Mueller
Relinquished by: (Signature) Michael E Mueller	DATE 2/19/98	TIME 1255	Received by: (Signature)
Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)
Method of Shipment			Lab Comments

DATE 2/19/98 TIME 1031

*Sample type (Specify): 1) 37mm 0.8 µm MCEF 2) 25mm 0.8 µm MCEF 3) 25mm 0.4 µm polycarb. filter
4) PVC filter, diam. _____ pore size _____ 5) Charcoal tube 6) Silica gel tube 7) Water 8) Soil 9) Bulk Sample
10) Other _____ 11) Other _____

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

7-285.1
Q1 1st 98 PAGE 1
2/2

RECEIVED MAR 2 4 1998

HYDRO ENVIRONMENTAL TECH
2394 MARINER SQUARE DR. STE 2
ALAMEDA, CA 94501

ATTN: GARY PISCHKE
CLIENT PROJ. ID: 7-285.1
CLIENT PROJ. NAME: MARINER SQUARE

REPORT DATE: 03/19/98

DATE(S) SAMPLED: 02/18/98

DATE RECEIVED: 02/19/98

AEN WORK ORDER: 9802234

PROJECT SUMMARY:

On February 19, 1998, this laboratory received 4 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. Portion for EPA 8310 was subcontracted to a DOHS certified laboratory; subcontract report is included. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

Reviewed by:

William Sobota

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-6
AEN LAB NO: 9802234-01A
AEN WORK ORDER: 9802234
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/19/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	20 *	10	ug/L	02/26/98
Toluene	108-88-3	20 *	10	ug/L	02/26/98
Ethylbenzene	100-41-4	20 *	10	ug/L	02/26/98
Xylenes, Total	1330-20-7	70 *	40	ug/L	02/26/98
Purgeable HCs as Gasoline	5030/GCFID	70 *	1	mg/L	02/26/98
Methyl t-Butyl Ether	1634-04-4	ND	100	ug/L	02/26/98

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-6
AEN LAB NO: 9802234-01D
AEN WORK ORDER: 9802234
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/19/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	ND	2	ug/L	03/03/98

Reporting limits for gas/BTEX elevated due to high levels of target compounds. Sample run at dilution.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-6
AEN LAB NO: 9802234-01G
AEN WORK ORDER: 9802234
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/19/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Sample Filtration	GFF 0.7 um	-		Filtr Date	02/20/98
#Silica gel Cleanup	EPA 3630M	-		Cleanup	03/02/98
#Extraction for TPH	EPA 3510	-		Extrn Date	02/27/98
TPH as Diesel	GC-FID	ND	0.05	mg/L	03/02/98
TPH as Oil	GC-FID	ND	0.2	mg/L	03/02/98

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-6 (UNFILTERED)
AEN LAB NO: 9802234-01H
AEN WORK ORDER: 9802234
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/24/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Extraction for TPH	EPA 3510	-		Extrn Date	03/11/98
TPH as Diesel	GC-FID	100 *	1	mg/L	03/12/98

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-7
AEN LAB NO: 9802234-02A
AEN WORK ORDER: 9802234
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/19/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	9.5 *	0.5	ug/L	02/26/98
Toluene	108-88-3	0.6 *	0.5	ug/L	02/26/98
Ethylbenzene	100-41-4	ND	0.5	ug/L	02/26/98
Xylenes, Total	1330-20-7	6 *	2	ug/L	02/26/98
Purgeable HCs as Gasoline	5030/GCFID	0.65 *	0.05	mg/L	02/26/98
Methyl t-Butyl Ether	1634-04-4	16 *	5	ug/L	02/26/98

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-7
AEN LAB NO: 9802234-02D
AEN WORK ORDER: 9802234
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/19/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	ND	2	ug/L	03/03/98

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-7
AEN LAB NO: 9802234-02G
AEN WORK ORDER: 9802234
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/19/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Sample Filtration	GFF 0.7 um	-		Filtr Date	02/20/98
#Silica gel Cleanup	EPA 3630M	-		Cleanup	03/02/98
#Extraction for TPH	EPA 3510	-		Extrn Date	02/27/98
TPH as Diesel	GC-FID	ND	0.05	mg/L	03/03/98
TPH as Oil	GC-FID	ND	0.2	mg/L	03/03/98

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-8
AEN LAB NO: 9802234-03A
AEN WORK ORDER: 9802234
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/19/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	**EPA 8020**				
Benzene	71-43-2	0.9 *	0.5	ug/L	02/27/98
Toluene	108-88-3	ND	0.5	ug/L	02/27/98
Ethylbenzene	100-41-4	0.8 *	0.5	ug/L	02/27/98
Xylenes, Total	1330-20-7	3 *	2	ug/L	02/27/98
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	02/27/98
Methyl t-Butyl Ether	1634-04-4	ND	5	ug/L	02/27/98

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-8
AEN LAB NO: 9802234-03D
AEN WORK ORDER: 9802234
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/19/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	ND	2	ug/L	03/03/98

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-8
AEN LAB NO: 9802234-03G
AEN WORK ORDER: 9802234
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/19/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Sample Filtration	GFF 0.7 um	-		Filtr Date	02/20/98
#Silica gel Cleanup	EPA 3630M	-		Cleanup	03/02/98
#Extraction for TPH	EPA 3510	-		Extrn Date	02/27/98
TPH as Diesel	GC-FID	ND	0.05	mg/L	03/03/98
TPH as Oil	GC-FID	ND	0.2	mg/L	03/03/98

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-9
AEN LAB NO: 9802234-04A
AEN WORK ORDER: 9802234
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/19/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	02/26/98
Toluene	108-88-3	0.5 *	0.5	ug/L	02/26/98
Ethylbenzene	100-41-4	ND	0.5	ug/L	02/26/98
Xylenes, Total	1330-20-7	ND	2	ug/L	02/26/98
Purgeable HCs as Gasoline	5030/GCFID	0.10 *	0.05	mg/L	02/26/98
Methyl t-Butyl Ether	1634-04-4	6 *	5	ug/L	02/26/98

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-9
AEN LAB NO: 9802234-04D
AEN WORK ORDER: 9802234
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/19/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8010 - Water matrix	EPA 8010				
Vinyl Chloride	75-01-4	ND	2	ug/L	03/03/98

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

HYDRO ENVIRONMENTAL TECH

SAMPLE ID: MW-9
AEN LAB NO: 9802234-04G
AEN WORK ORDER: 9802234
CLIENT PROJ. ID: 7-285.1

DATE SAMPLED: 02/18/98
DATE RECEIVED: 02/19/98
REPORT DATE: 03/19/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
#Sample Filtration	GFF 0.7 um	-		Filtr Date	02/20/98
#Silica gel Cleanup	EPA 3630M	-		Cleanup	03/02/98
#Extraction for TPH	EPA 3510	-		Extrn Date	02/27/98
TPH as Diesel	GC-FID	ND	0.05	mg/L	03/03/98
TPH as Oil	GC-FID	ND	0.2	mg/L	03/03/98

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9802234
CLIENT PROJECT ID: 7-285.1

Quality Control and Project Summary

Sample MW6 contained suspended black "flakes". The sample was analyzed as received and the sample was analyzed after filtration through a glass fiber filter (0.7mm). The extracts were cleaned up via a silica gel column. Diesel was detected and quantified in the unfiltered sample. The filtered sample was ND for diesel.

All other laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spikes(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analyses.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behaviour, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrument performance.

D: Surrogates diluted out.

I: Interference.

!: Indicates result outside of established laboratory QC limits.

ANALYSIS: Extractable TPH

MATRIX: Water

METHOD BLANK SAMPLES

SAMPLE TYPE: Blank-Method/Media blank
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: BLKW-0227-1
PREPARED: 02/27/98
ANALYZED: 03/02/98
INSTR RUN: GC C\980227000000/1/
BATCH ID: DSLW022798-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		ND		0.05						
Motor Oil		ND		0.2						
n-Pentacosane	(surr)	97.4			100	97.4	60	130		

SAMPLE TYPE: Blank-Method/Media blank
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: BLKW-0311-1
PREPARED: 03/11/98
ANALYZED: 03/11/98
INSTR RUN: GC C\980301000000/162/
BATCH ID: DSLW031198-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		ND		0.05						
Motor Oil		ND		0.2						
n-Pentacosane	(surr)	96.1			100	96.1	60	130		

LABORATORY CONTROL SAMPLES

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: LCDW-0227-1
PREPARED: 02/27/98
ANALYZED: 03/02/98
INSTR RUN: GC C\980227000000/3/1
BATCH ID: DSLW022798-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		1.99	ND	0.05	2.00	99.5	60	130		
n-Pentacosane	(surr)	94.0	97.4		100	94.0	60	130		

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: LCSW-0227-1
PREPARED: 02/27/98
ANALYZED: 03/02/98
INSTR RUN: GC C\980227000000/2/1
BATCH ID: DSLW022798-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		1.88	ND	0.05	2.00	94.0	60	130		
n-Pentacosane	(surr)	94.9	97.4		100	94.9	60	130		

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: LCDW-0311-1
PREPARED: 03/11/98
ANALYZED: 03/11/98
INSTR RUN: GC C\980301000000/164/16
BATCH ID: DSLW031198-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		1.94	ND	0.05	2.00	97.0	60	130		
n-Pentacosane	(surr)	100.1	96.1		100	100	60	130		

SAMPLE TYPE: Laboratory Control Spike
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: LCSW-0311-1
PREPARED: 03/11/98
ANALYZED: 03/11/98
INSTR RUN: GC C\980301000000/163/16
BATCH ID: DSLW031198-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		1.83	ND	0.05	2.00	91.5	60	130		
n-Pentacosane	(surr)	99.1	96.1		100	99.1	60	130		

ANALYSIS: Extractable TPH

MATRIX: Water

LABORATORY CONTROL DUPLICATES

SAMPLE TYPE: Laboratory Control Sample Duplicate
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: LCDW-0227-1
PREPARED: 02/27/98
ANALYZED: 03/02/98
INSTR RUN: GC C\980227000000/4/2
BATCH ID: DSCW022798-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		1.99	1.88	0.05					5.68	20
Motor Oil		ND	ND	0.2					0	
n-Pentacosane	(surr)	94.0	94.9		100	94.0	60	130		

SAMPLE TYPE: Laboratory Control Sample Duplicate
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: LCRW-0311-1
PREPARED: 03/11/98
ANALYZED: 03/11/98
INSTR RUN: GC C\980301000000/175/163
BATCH ID: DSCW031198-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
Diesel		1.94	1.83	0.05					5.84	20
Motor Oil		ND	ND	0.2					0	
n-Pentacosane	(surr)	100.1	99.1		100	100	60	130		

SAMPLE SURROGATES

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: 9802234-01G
PREPARED: 02/27/98
ANALYZED: 03/02/98
INSTR RUN: GC C\980227000000/20/
BATCH ID: DSCW022798-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane	(surr)	102.5			100	103	60	130		

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: 9802234-02G
PREPARED: 02/27/98
ANALYZED: 03/03/98
INSTR RUN: GC C\980227000000/22/
BATCH ID: DSCW022798-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane	(surr)	101.6			100	102	60	130		

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: 9802234-03G
PREPARED: 02/27/98
ANALYZED: 03/03/98
INSTR RUN: GC C\980227000000/23/
BATCH ID: DSCW022798-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane	(surr)	108.6			100	109	60	130		

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/L
METHOD:
LAB ID: 9802234-04G
PREPARED: 02/27/98
ANALYZED: 03/03/98
INSTR RUN: GC C\980227000000/21/
BATCH ID: DSCW022798-1
DILUTION: 1.000000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane	(surr)	99.0			100	99.0	60	130		

SAMPLE TYPE: Sample-Client
INSTRUMENT: HP 5890
UNITS: mg/kg
METHOD:
LAB ID: 9802234-01H
PREPARED: 03/12/98
ANALYZED: 03/12/98
INSTR RUN: GC C\980301000000/195/
BATCH ID: DSCW031198-1
DILUTION: 25.00000

ANALYTE		RESULT	REF RESULT	REPORTING LIMIT	SPIKE VALUE	RECOVERY (%)	REC LIMITS (%) LOW	REC LIMITS (%) HIGH	RPD (%)	RPD LIMIT (%)
n-Pentacosane	(surr)	D								

QUALITY CONTROL DATA

METHOD: EPA 8010

AEN JOB NO: 9802234
INSTRUMENT: G
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery: Bromochloromethane	Percent Recovery: 1-Bromo-3-chloropropane
03/03/98	MW-6	01	84	98
03/03/98	MW-7	02	86	105
03/03/98	MW-8	03	79	98
03/03/98	MW-9	04	87	97
QC Limits:			70-130	70-130

DATE ANALYZED: 03/02/98
SAMPLE SPIKED: LCS
INSTRUMENT: G

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits: Percent Recovery	QC Limits: RPD
1,1-Dichloroethene	25	83	8	70-130	20
Trichloroethene	25	97	3	70-130	20
Chlorobenzene	25	88	3	70-130	20

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9802234
INSTRUMENT: H
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
02/26/98	MW-6	01	103
02/26/98	MW-7	02	93
02/27/98	MW-8	03	101
02/26/98	MW-9	04	104
QC Limits:			70-130

DATE ANALYZED: 02/27/98
SAMPLE SPIKED: 9802234-03
INSTRUMENT: H

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	200	100	3	70-130	20
Toluene	200	95	3	70-130	20
Ethylbenzene	200	100	3	70-130	20
Total Xylenes	600	100	3	70-130	20

Daily method blanks for all associated analytical runs showed no contamination at or above the reporting limit.

*** END OF REPORT ***

American Environmental Network

11 East Olive Road • Pensacola • Florida • 32514 • Phone (904) 474-1001 • Fax (904) 478-2671

CASE NARRATIVE

LABORATORY NAME: American Environmental Network of Florida
PROJECT NAME: 7-285.1
PROJECT NUMBER: 9802234

Client Sample ID	AEN Accession Number
MW-6	802399-001
MW-7	802399-002
MW-8	802399-003
MW-9	802399-004

The listed samples were received in good condition on February 20, 1998.

Sample MW-6 (AEN accession number 802399-001) had a dilution factor X20 which diluted out the surrogate. AEN did not document this on an Out Of Control Events/Corrective Action form because sample dilution is a routine procedure. There is no corrective procedure for this type of problem.

No other problems were associated with the analyses of these samples.

Linda Lofton
Project Manager

March 4, 1998

American Environmental Network, Inc.
11 East Olive Road • Pensacola, FL 32514 • (850) 474-1001

SIGNATURE PAGE

Reviewed by: Linda Lofton
AEN Project Manager

Client:	AMERICAN ENVIRONMENTAL NETWORK (CA), INC. PLEASANT HILL, CALIFORNIA
Project Name:	7-285.1
Project Number:	9802234
Project Location:	N/S
Accession Number:	802399
Project Manager:	BILL SVOBODA
Sampled By:	N/S

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Analysis Report

Analysis: POLYNUCLEAR AROMATICS BY 8310

Accession:	802399
Client:	AMERICAN ENVIRONMENTAL NETWORK (CA), INC.
Project Number:	9802234
Project Name:	7-285.1
Project Location:	N/S
Department:	SEMI-VOLATILE FUELS

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - SINGLE"

Accession: 802399
Client: AMERICAN ENVIRONMENTAL NETWORK (CA), INC.
Project Number: 9802234
Project Name: 7-285.1
Project Location: N/S
Test: POLYNUCLEAR AROMATICS BY 8310
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Matrix: WATER
QC Level: I

Lab Id: 001
Client Sample Id: MW-6

Sample Date/Time: 18-FEB-98 N/S
Received Date: 20-FEB-98

Batch: PAW038
Blank: A

Dry Weight %: N/A

Extraction Date: 20-FEB-98
Analysis Date: 27-FEB-98

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	ND	20	
ACENAPHTHYLENE	UG/L	ND	20	
ANTHRACENE	UG/L	ND	20	
BENZO(a)ANTHRACENE	UG/L	ND	20	
BENZO(a)PYRENE	UG/L	70	20	
BENZO(b)FLUORANTHENE	UG/L	130	20	
BENZO(g,h,i)PERYLENE	UG/L	23	20	
BENZO(k)FLUORANTHENE	UG/L	ND	20	
CHRYSENE	UG/L	190	20	
DIBENZO(a,h)ANTHRACENE	UG/L	62	20	
FLUORANTHENE	UG/L	90	20	
FLUORENE	UG/L	ND	20	
INDENO(1,2,3-cd)PYRENE	UG/L	ND	20	
NAPHTHALENE	UG/L	ND	20	
PHENANTHRENE	UG/L	ND	20	
PYRENE	UG/L	110	20	
1-METHYLNAPHTHALENE	UG/L	ND	20	
2-METHYLNAPHTHALENE	UG/L	21	20	
2-CHLOROANTHRACENE	%REC/SURR	D	28-138	
ANALYST	INITIALS	SW		

Comments:

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - SINGLE"

Accession:	802399
Client:	AMERICAN ENVIRONMENTAL NETWORK (CA), INC.
Project Number:	9802234
Project Name:	7-285.1
Project Location:	N/S
Test:	POLYNUCLEAR AROMATICS BY 8310
Analysis Method:	8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method:	3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Matrix:	WATER
QC Level:	I

Lab Id: 002 Sample Date/Time: 18-FEB-98 N/S
Client Sample Id: MW-7 Received Date: 20-FEB-98

Batch: PAW038 Extraction Date: 20-FEB-98
Blank: A Dry Weight %: N/A Analysis Date: 26-FEB-98

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	ND	1	
ACENAPHTHYLENE	UG/L	ND	1	
ANTHRACENE	UG/L	ND	1	
BENZO(a)ANTHRACENE	UG/L	ND	1	
BENZO(a)PYRENE	UG/L	ND	1	
BENZO(b)FLUORANTHENE	UG/L	ND	1	
BENZO(g,h,i)PERYLENE	UG/L	ND	1	
BENZO(k)FLUORANTHENE	UG/L	ND	1	
CHRYSENE	UG/L	ND	1	
DIBENZO(a,h)ANTHRACENE	UG/L	ND	1	
FLUORANTHENE	UG/L	ND	1	
FLUORENE	UG/L	ND	1	
INDENO(1,2,3-cd)PYRENE	UG/L	ND	1	
NAPHTHALENE	UG/L	ND	1	
PHENANTHRENE	UG/L	ND	1	
PYRENE	UG/L	ND	1	
1-METHYLNAPHTHALENE	UG/L	ND	1	
2-METHYLNAPHTHALENE	UG/L	ND	1	
2-CHLOROANTHRACENE	%REC/SURR	72	28-138	
ANALYST	INITIALS	SW		

Comments:

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"FINAL REPORT FORMAT - SINGLE"

Accession: 802399
Client: AMERICAN ENVIRONMENTAL NETWORK (CA), INC.
Project Number: 9802234
Project Name: 7-285.1
Project Location: N/S
Test: POLYNUCLEAR AROMATICS BY 8310
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Matrix: WATER
QC Level: I

Lab Id: 003 Sample Date/Time: 18-FEB-98 N/S
Client Sample Id: MW-8 Received Date: 20-FEB-98

Batch: PAW038 Extraction Date: 20-FEB-98
Blank: A Dry Weight %: N/A Analysis Date: 26-FEB-98

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	ND	1	
ACENAPHTHYLENE	UG/L	ND	1	
ANTHRACENE	UG/L	ND	1	
BENZO(a)ANTHRACENE	UG/L	ND	1	
BENZO(a)PYRENE	UG/L	ND	1	
BENZO(b)FLUORANTHENE	UG/L	ND	1	
BENZO(g,h,i)PERYLENE	UG/L	ND	1	
BENZO(k)FLUORANTHENE	UG/L	ND	1	
CHRYSENE	UG/L	ND	1	
DIBENZO(a,h)ANTHRACENE	UG/L	ND	1	
FLUORANTHENE	UG/L	ND	1	
FLUORENE	UG/L	ND	1	
INDENO(1,2,3-cd)PYRENE	UG/L	ND	1	
NAPHTHALENE	UG/L	ND	1	
PHENANTHRENE	UG/L	ND	1	
PYRENE	UG/L	ND	1	
1-METHYLNAPHTHALENE	UG/L	ND	1	
2-METHYLNAPHTHALENE	UG/L	ND	1	
2-CHLOROANTHRACENE	%REC/SURR	91	28-138	
ANALYST	INITIALS	SW		

Comments:

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"FINAL REPORT FORMAT - SINGLE"

Accession: 802399
Client: AMERICAN ENVIRONMENTAL NETWORK (CA), INC.
Project Number: 9802234
Project Name: 7-285.1
Project Location: N/S
Test: POLYNUCLEAR AROMATICS BY 8310
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Matrix: WATER
QC Level: I

Lab Id: 004 Sample Date/Time: 18-FEB-98 N/S
Client Sample Id: MW-9 Received Date: 20-FEB-98

Batch: PAW038 Extraction Date: 20-FEB-98
Blank: A Dry Weight %: N/A Analysis Date: 26-FEB-98

Parameter:	Units:	Results:	Rpt Lmts:	Q:
ACENAPHTHENE	UG/L	ND	1	
ACENAPHTHYLENE	UG/L	ND	1	
ANTHRACENE	UG/L	ND	1	
BENZO(a)ANTHRACENE	UG/L	ND	1	
BENZO(a)PYRENE	UG/L	ND	1	
BENZO(b)FLUORANTHENE	UG/L	ND	1	
BENZO(g,h,i)PERYLENE	UG/L	ND	1	
BENZO(k)FLUORANTHENE	UG/L	ND	1	
CHRYSENE	UG/L	ND	1	
DIBENZO(a,h)ANTHRACENE	UG/L	ND	1	
FLUORANTHENE	UG/L	ND	1	
FLUORENE	UG/L	ND	1	
INDENO(1,2,3-cd)PYRENE	UG/L	ND	1	
NAPHTHALENE	UG/L	ND	1	
PHENANTHRENE	UG/L	ND	1	
PYRENE	UG/L	ND	1	
1-METHYLNAPHTHALENE	UG/L	ND	1	
2-METHYLNAPHTHALENE	UG/L	ND	1	
2-CHLOROANTHRACENE	%REC/SURR	108	28-138	
ANALYST	INITIALS	SW		

Comments:

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

"Method Report Summary"

Accession Number: 802399
Client: AMERICAN ENVIRONMENTAL NETWORK (CA), INC.
Project Number: 9802234
Project Name: 7-285.1
Project Location: N/S
Test: POLYNUCLEAR AROMATICS BY 8310

Client Sample Id:	Parameter:	Unit:	Result:
MW-6	BENZO(a)PYRENE	UG/L	70
	BENZO(b)FLUORANTHENE	UG/L	130
	BENZO(g,h,i)PERYLENE	UG/L	23
	CHRYSENE	UG/L	190
	DIBENZO(a,h)ANTHRACENE	UG/L	62
	FLUORANTHENE	UG/L	90
	PYRENE	UG/L	110
	2-METHYLNAPHTHALENE	UG/L	21

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Rd Pensacola, FL 32514 (850) 474-1001

Data Qualifiers for Final Report

AEN-Pensacola Inorganic/Organic

@	Adjusted reporting limit due to sample matrix (dilution prior to digestion and/or analysis)
+	Elevated reporting limit due to dilution into calibration range
*	Elevated reporting limit due to matrix interference (dilution prior to digestion and/or analysis)
#	Elevated reporting limit due to insufficient sample size
D	Diluted out
J5	The reported value is quantitated as a TIC; therefore, it is estimated
ND = Not Detected	N/S = Not Submitted N/A = Not Applicable

Florida Projects Inorganic/Organic

Y1	Improper preservation, no preservative present in sample upon receipt
Y2	Improper preservation, incorrect preservative present in sample upon receipt
Y3	Improper preservation, sample temperature exceeded EPA temperature limits of 2-6°C upon receipt
Y (FL description)	The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
Q	Sample held beyond the accepted holding time
I	The reported value is < Laboratory RL and > laboratory MDL
U1	The reported value is ≤ Laboratory MDL (value for sample result is reported as the MDL)
U (FL description)	Indicates the compound was analyzed for but not detected.
T	The reported value is < Laboratory MDL (value shall not be used for statistical analysis)
V	The analyte was detected in both the sample and the associated method blank.
J1	Surrogate recovery limits have been exceeded
J2	The sample matrix interfered with the ability to make any accurate determinations
J3	The reported value failed to meet the established quality control criteria for either precision or accuracy
J (FL description)	Estimated value; not accurate.

AFCEE Projects (under QAPP) and **All Other (AEN-PN) Projects/Sites for Inorganic/Organic Parameters**

J4	(For positive results) Temperature limits exceeded (≤2°C or ≥ 6°C)
J (AFCEE description)	The analyte was positively identified, the quantitation is an estimation
R1	(For nondetects) Temperature limits exceeded (≤2°C or ≥ 6°C)
R2	Improper preservation, no preservative present in sample upon receipt
R3	Improper preservation, incorrect preservative present in sample upon receipt
R4	Holding time exceeded
R5	Collection requirements not met, improper container used for sample
R (AFCEE description)	The data are unusable due to deficiencies in the ability to analyze the sample and meet QC criteria
F	< RL and > laboratory MDL
F (AFCEE description)	The analyte was positively identified but the associated numerical value is below the AFCEE or lab RL
U2	≤ Laboratory MDL (value for result will be the MDL, never below the MDL)
U (AFCEE description)	The analyte was analyzed for but not detected. The associated numerical value is at or below the MDL
B (AFCEE description)	The analyte was found in the associated blank, as well as in the sample

ICR Projects Inorganic/Organic

A	Acceptable
R6	Rejected

Examples: ICR Flags

R6 = Laboratory extracted the sample but the refrigerator malfunctioned so the extract became warm and client was notified

R6 = Sample arrived in laboratory in good condition; however, the laboratory did not analyze it within EPA's established holding time limit.

CLP and CLP-like Projects

Refer to referenced CLP Statement of Work (SOW) for explanation of data qualifiers

IDL = Laboratory Instrument Detection Limit
MDL = Laboratory Method Detection Limit
RL = Reporting Limit (AFCEE RLs are listed in the AFCEE QAPP)
CLP CRDL = CLP Contract Required Detection Limit (these limits are listed in the EPA CLP Statement of Work or SOW)
CLP CRQL = CLP Contract Required Quantitation Limit (these limits are listed in the EPA CLP Statement of Work or SOW)

Any time a sample arrives at the laboratory improperly preserved (at improper pH or temperature) or after holding time has expired or prepared or analyzed after holding time, client must be notified in writing (i.e. case narrative).

AEN-Pensacola uses the most current promulgated methods contained in the reference manuals.

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Quality Control Report

Analysis: POLYNUCLEAR AROMATICS BY 8310

Accession:	802399
Client:	AMERICAN ENVIRONMENTAL NETWORK (CA), INC.
Project Number:	9802234
Project Name:	7-285.1
Project Location:	N/S
Department:	SEMI-VOLATILE FUELS

AMERICAN ENVIRONMENTAL NETWORK 11 East Olive Road Pensacola, Florida 32514 (904) 474-1001

Date 03-Mar-98

"QC Report"

Title: Water Blank
Batch: PAW038
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.

Blank Id: A Date Analyzed: 24-FEB-98 Date Extracted: 20-FEB-98

Parameters:	Units:	Results:	Reporting Limits:
ACENAPHTHENE	UG/L	ND	1
ACENAPHTHYLENE	UG/L	ND	1
ANTHRACENE	UG/L	ND	1
BENZO(a)ANTHRACENE	UG/L	ND	1
BENZO(a)PYRENE	UG/L	ND	1
BENZO(b)FLUORANTHENE	UG/L	ND	1
BENZO(g,h,i)PERYLENE	UG/L	ND	1
BENZO(k)FLUORANTHENE	UG/L	ND	1
CHRYSENE	UG/L	ND	1
DIBENZO(a,h)ANTHRACENE	UG/L	ND	1
FLUORANTHENE	UG/L	ND	1
FLUORENE	UG/L	ND	1
INDENO(1,2,3-cd)PYRENE	UG/L	ND	1
NAPHTHALENE	UG/L	ND	1
PHENANTHRENE	UG/L	ND	1
PYRENE	UG/L	ND	1
1-METHYLNAPHTHALENE	UG/L	ND	1
2-METHYLNAPHTHALENE	UG/L	ND	1
2-CHLOROANTHRACENE	%REC/SURR	78	28-138
ANALYST	INITIALS	SW	

Comments:

"QC Report"

Title: Water LCS
Batch: PAW038
Analysis Method: 8310/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.
Extraction Method: 3510/Test Methods for Evaluating Solid and Haz Waste, SW-846, 3rd Ed.

RS Date Analyzed: 24-FEB-98 RS Date Extracted: 20-FEB-98

Parameters:	Spike Added	Sample Conc	RS Conc	RS %Rec	Rec Lmts
ACENAPHTHYLENE	10.0	<1	8.2	82	45-127
BENZO(k)FLUORANTHENE	10.0	<1	11.9	119	68-131
CHRYSENE	10.0	<1	11.7	117	69-131
PHENANTHRENE	10.0	<1	8.8	88	63-124
PYRENE	10.0	<1	11.1	111	61-126
Surrogates:					
2-CHLOROANTHRACENE				102	28-138

Comments:
MATRIX SPIKE/MATRIX SPIKE DUPLICATE HAD RECOVERY(S) AND/OR RPD(S) OUTSIDE ACCEPTANCE LIMITS DUE TO MATRIX INTERFERENCE. REFER TO LCS DATA.

Notes:
N/S = NOT SUBMITTED N/A = NOT APPLICABLE D = DILUTED OUT
UG/L = PARTS PER BILLION. < = LESS THAN REPORTING LIMIT.
* = VALUES OUTSIDE OF QUALITY CONTROL LIMITS.
SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

Common Notation for Organic Reporting

N/S = NOT SUBMITTED
N/A = NOT APPLICABLE
UG = MICROGRAMS
UG/L = PARTS PER BILLION
UG/KG = PARTS PER BILLION
MG/M3 = MILLIGRAM PER CUBIC METER
PPMV = PART PER MILLION BY VOLUME
MG/KG = PARTS PER MILLION
MG/L = PARTS PER MILLION
< = LESS THAN
ND = NOT DETECTED

SOURCES FOR CONTROL LIMITS ARE INTERNAL LABORATORY QUALITY ASSURANCE PROGRAM AND REFERENCED METHOD.

ORGANIC SOILS ARE REPORTED ON A DRYWEIGHT BASIS.

RPT LMTS = REPORTING LIMITS BASED ON METHOD DETECTION LIMIT STUDIES.

RPD = RELATIVE PERCENT DIFFERENCE (OR DEVIATION)

AEN/GC/FID
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME IONIZATION DETECTOR (FID).

AEN/GC/FIX
AEN GAS CHROMATOGRAPHIC METHOD FOR ANALYSIS OF FIXED GASES EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD) AND FLAME IONIZATION DETECTOR (FID).

AEN/GC/FPD
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH FLAME PHOTOMETRIC DETECTOR (FPD) IN SULFUR-SPECIFIC MODE.

AEN/GC/PID
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH PHOTOIONIZATION DETECTOR (PID).

AEN/GC/TCD
AEN GAS CHROMATOGRAPHIC METHOD EMPLOYING DIRECT INJECTION ON COLUMN WITH THERMAL CONDUCTIVITY DETECTOR (TCD).

SW-846 METHOD 9020
PARTICULATE MATTER IS REMOVED BY ALLOWING PARTICULATES TO SETTLE IN THE SAMPLE CONTAINER AND DECANTING THE SUPERNATANT LIQUID. EXCESSIVE PARTICULATES ARE REMOVED BY FILTRATION OF THE SUPERNATANT LIQUID.

RSK 175
SAMPLE PREPARATION AND CALCULATIONS FOR DISSOLVED GAS ANALYSIS IN WATER SAMPLES USING A GC HEADSPACE EQUILIBRATION TECHNIQUE, RSK SOP-175, ROBERT S. KERR ENVIRONMENTAL RESEARCH LABORATORY, USEPA, AUGUST 11, 1994.

AEN-PN USES THE MOST CURRENT PROMULGATED METHODS CONTAINED IN THE REFERENCE MANUALS.

SW = STEVE WILHITE
RW = ROBERT WOLFE
KS = KENDALL SMITH
KL = KERRY LEMONT
JO = JENNIFER O'NEAL
LP = LEVERNE PETERSON
PLD = PAULA DOUGHTY
JL = JANET LECLEAR
RC = RON CALI

American Environmental Network of Florida

PROJECT SAMPLE INSPECTION FORM

Lab Accession #: 802399 Date Received: 2/20/98

1.	Was there a Chain of Custody?	(Yes)	No*	
2.	Was Chain of Custody properly filled out and relinquished?	(Yes)	No*	
3.	Were samples received cold? (Criteria: 2° - 6°C: AEN-SOP 1055)	(Yes)	No*	N/A
4.	Were all samples properly labeled and identified?	(Yes)	No*	
5.	Did samples require splitting? Req By: PM Client Other+	Yes*	(No)	
6.	Were samples received in proper containers for analysis requested?	(Yes)	No*	
7.	Were all sample containers received intact?	(Yes)	No*	
8.	Were samples checked for preservative? *(Check pH of all H_2O requiring preservative except VOA vials that require zero headspace)+*	Yes	No*	N/A
9.	Is there sufficient volume for analysis requested?	(Yes)	No*	
10.	Were samples received within Holding Time? (REFER TO AEN-SOP 1040)	(Yes)	No*	
11.	Is Headspace visible > ¼" in diameter in VOA vials?* If any headspace is evident, comment in out-of-control section.	Yes*	No	(N/A)
12.	If sent, were matrix spike bottles returned?	Yes	No*	(N/A)
13.	Was Project Manager notified of problems? (initials:_____)	Yes	(No*)	N/A

Airbill Number(s): N117 923 449 3 Shipped By: UPS

Cooler Number(s): theirs Shipping Charges:

Cooler Weight(s): 61# Cooler Temp(s) (°C): Cck1 4°C

(LIST THERMOMETER NUMBER(S) FOR VERIFICATION)

Out of Control Events and Inspection Comments:

(USE BACK OF PSIFFOR ADDITIONAL NOTES AND COMMENTS)

Inspected By: WS Date: 2/20/98 Logged By: WS Date: 2/20/98

♣ *Note all Out-of-Control and/or questionable events on Comment Section of this form.*

♦ *Note who requested the splitting of samples on the Comment Section of this form.*

\+ *All preservatives for the State of North Carolina, the State of New York, and other requested samples are to be recorded on the sheet provided to record pH results (AEN-SOP 938, section 2.2.9).*

* *According to EPA, ¼" of headspace is allowed in 40 ml vials requiring volatile analysis, however, AEN makes it policy to record any headspace as out-of-control (AEN-SOP 938, section 2.2.12).*

Reporting Information:

1. Client: AEN (CA)
Address:
Contact: BILL SVOBODA
Alt. Contact:

American Environmental Network
3440 Vincent Road, Pleasant Hill, CA 94523
Phone (510) 930-9090
FAX (510) 930-0256

AEN

Page 1 of 1

REQUEST FOR ANALYSIS / CHAIN OF CUSTODY

Lab Job Number:
Lab Destination: AEN (FL)
Date Samples Shipped:
Lab Contact:
Date Results Required:
Date Report Required:
Client Phone No.:
Client FAX No.:

Address Report To:

2. #1

Send Invoice To: 802399

3. #1

Send Report To: (1) or 2 (Circle one)

Client P.O. No.: 9802234 Client Project I.D. No.: 7-285.1

Sample Team Member (s)

Lab Number	Client Sample Identification	Air Volume	Date/ Time Collected	Sample Type*	Pres.	No. of Cont.	Type of Cont.	ANALYSIS: 8310	Comments / Hazards
	MW-6		2/18/98	7	COLD	1	AMB	X	
	MW-7		↓	↓	↓	↓	↓	X	
	MW-8		↓	↓	↓	↓	↓	X	
	MW-9		↓	↓	↓	↓	↓	X	

Relinquished by: (Signature)	Ronald C Jensen	DATE 2/19/98	TIME 14:45	Received by: (Signature) Willi Sy
Relinquished by: (Signature)		DATE	TIME	Received by: (Signature)
Relinquished by: (Signature)		DATE	TIME	Received by: (Signature)
Method of Shipment				Lab Comments

DATE 2/20/98 TIME 0915

*Sample type (Specify): 1) 37mm 0.8 µm MCEF 2) 25mm 0.8 µm MCEF 3) 25mm 0.4 µm polycarb. filter
4) PVC filter, diam. ____ pore size ____ 5) Charcoal tube 6) Silica gel tube 7) Water 8) Soil 9) Bulk Sample
10) Other ____ 11) Other ____