PES Environmental, Inc.
Engineering & Environmental Services

A Report Prepared For:

Drake Builders, Inc.
5201 Sacramento Avenue
Richmond, California 94804

Attention: Mr. Richard Gilcrease

QUARTERLY MONITORING REPORT
FORMER YOUNG'S CLEANERS
FOOTHILL SQUARE SHOPPING CENTER
OAKLAND, CALIFORNIA

APRIL 13, 1998

By:

Elizabeth Large
Senior Staff Geologist

William W. Mast, R.G.
Senior Engineer

502.0201.006

TABLE OF CONTENTS

LIST OF TABLES

LIST OF ILLUSTRATIONS

1.0 INTRODUCTION

This report presents the results of quarterly groundwater monitoring and offsite sentry well installation performed by PES Environmental, Inc. (PES) during the fourth quarter of 1997 at Foothill Square Shopping Center (Site) in Oakland, California (Plate 1). PES has been retained by Drake Builders, Inc. to conduct the quarterly groundwater monitoring at the site. The current groundwater monitoring program consists of measuring the depth to groundwater in 14 onsite monitoring wells and two offsite wells on a quarterly basis, and purging and sampling 10 of the monitoring wells (Wells AMW-1, AMW-4, AMW-6 through AMW-9, MW-6, MW-7, FHS-MW-10, and FHS-MW-11).

The purpose of the groundwater monitoring program at the site is to: (1) evaluate the presence of volatile organic compounds (VOCs) in groundwater; and (2) monitor water-level variations at the site. The quarterly monitoring program was performed in accordance with the procedures outlined in the PES documents *Proposal, Groundwater Monitoring, Former Young Cleaners, Foothill Square Shopping Center, Oakland, California*, dated April 8, 1996, and *Results of Additional Groundwater Investigation and Risk Evaluation, Former Young's Cleaners, Foothill Square Shopping Center, Oakland, California*, dated March 24, 1997 (PES, 1996, 1997b).

2.0 BACKGROUND INFORMATION

The site is located in a mixed residential and commercial area in Oakland, California. The site is presently used as a shopping center, which was developed in the early 1960's. Prior to the development of Foothill Square Shopping Center, the site was a truck manufacturing plant. Young's Cleaners, formerly located in the center of the shopping center near Well AMW-6 (refer to Plate 2), operated at this location between 1984 and 1995. Prior to Young's Cleaners, a coin operated dry cleaner, Norge Cleaners, operated at the location between 1962 and 1980.

Beginning in January 1989, Western Geologic Resources (WGR) installed and monitored Wells WGR-MW1 through WGR-MW5 on the property to characterize the subsurface conditions due to the presence of the adjacent ARCO gas station, northwest of the site. Wells WGR-MW1, WGR-MW2, WGR-MW3, and WGR-MW5 were installed in what WGR defined as the shallow groundwater bearing zone, and Well WGR-MW4 was installed in the deep groundwater bearing zone. Monitoring well locations in the vicinity of the site are shown on Plate 2.

Between 1991 and 1993, RESNA Consultants (RESNA) conducted an investigation on behalf of ARCO for the service station site in order to define the extent of gasoline contamination caused by leakage of petroleum fuels. During their investigation, RESNA reported detectable concentrations of chlorinated solvents in several soil borings. As a result, Alameda County Health Care Services Agency requested an investigation of the vertical and lateral extent of

tetrachloroethylene (PCE) on both the ARCO site and the Foothill Square Shopping Center by ARCO as documented in a March 23, 1993 letter to Drake Builders.

In order to verify the source and extent of the PCE contamination, Augeas Corporation (Augeas), on behalf of Drake Builders, installed Wells AMW-1 through AMW-3 in September through November of 1994, Wells AMW-4 and AMW-5 in March 1995, and Wells AMW-6 through AMW-9 in July through August of 1995. Using groundwater bearing zones defined by the WGR wells, Augeas installed Wells AMW-1 through AMW-7 in the shallow groundwater bearing zone, and Wells AMW-8 and AMW-9 in the deep groundwater bearing zone.

Augeas began performing groundwater monitoring of the AMW wells in October 1994. During September 1995, the last monitoring event conducted by Augeas, Wells WGR-MW1 through WGR-MW5, and MW-6 and MW-7 (installed on Foothill Square property by ARCO) were monitored in addition to the AMW wells (Augeas, 1995). The groundwater investigations conducted by Augeas concluded that the PCE contamination on the site was caused by a release of solvents from the dry cleaner and an associated underground sanitary sewer lateral. Between October 1995 and January 1996, All Environmental, Inc. (AEI) excavated the contaminated soil and backfilled the excavation with clean fill material. During the excavation process, Wells AMW-2 and AMW-3 were accidentally destroyed (AEI, 1996). Soil from the excavation was spread over the southeast corner of the property for treatment by aeration under a permit from the Bay Area Air Quality Management District. Well WGR-MW5 was covered by the soil and has not been accessible since that time.

In December 1996 and January 1997, PES implemented a groundwater investigation program to assess the potential offsite migration of PCE (PES, 1997b). The investigation consisted of HydroPunch™ sampling to collect groundwater samples from the shallow and deep groundwater zones. The results of the offsite groundwater sampling indicated that PCE was not detected offsite in the shallow groundwater zone. In the deep groundwater zone, PCE was detected northwest of the site near the ARCO station and offsite to the west of the site near the intersection of Myers Street and 10th Avenue (see Plate 2). On the basis of the these data, PES concluded that the VOC groundwater plume had not migrated substantially off of the Foothill Square Shopping Center site. To provide continuing data to evaluate the stability of the PCE groundwater plume, PES installed two sentry wells at the leading edge of the plume in July 1997 and added these wells to the quarterly monitoring program (PES, 1997b). Additionally, the analytical program was expanded at selected wells to evaluate the progress of intrinsic (naturally occurring) remediation by testing for geochemical parameters indicative of biological and chemical degradation.

3.0 WATER-LEVEL MEASUREMENTS

Water levels in 11 onsite groundwater monitoring wells (Wells WGR-MW2 through WGR-MW4, AMW-1, AMW-4 through AMW-9, MW-6, and MW-7) and one offsite well

(FHS-MW-11) were measured by Blaine Tech Services, Inc. (Blaine Tech) of San Jose, California, under the direct supervision of PES, prior to sampling on December 16, 1997. Access to one offsite well (FHS-MW-10) was initially blocked by a parked car; after the car was moved, Blaine Tech revisited the site and measured the water-level on January 8, 1998. Monitoring data was not collected from WGR-MW1 because the vault was inaccessible after being accidentally paved over with asphalt in June 1996. Well WGR-MW5 has been inaccessible since 1995, when it was covered by the stockpile of excavated soil.

Depth-to-water in the monitoring wells was measured from the top-of-casing (TOC) reference benchmark to a precision of 0.01 foot using an electronic water-level indicator/interface probe. Depth-to-water measurements were converted to water-level elevations referenced to mean sea level (MSL) by subtracting the depth to water from the TOC reference elevation. Free product was not observed in any of the monitoring wells.

To prevent cross-contamination between wells, the portion of the water-level indicator that was submerged in the well was cleaned between well measurements using a phosphate-free detergent/deionized water solution and double rinsed with deionized water.

4.0 GROUNDWATER SAMPLING

Groundwater samples were collected from AMW-1, AMW-4, AMW-6 through AMW-9, MW-6, MW-7, and FHS-MW-11 on December 16, 1997, by Blaine Tech under the direct supervision of PES. As described above, Well FHS-MW-10 was not accessible for sampling until January 8, 1998.

Prior to well purging and groundwater sampling, Blaine Tech personnel measured dissolved oxygen in water in the well casing in eight selected wells. This method of measurement minimally disturbs the groundwater in the well casing and provides the closest approximation to dissolved oxygen content in the adjacent aquifer. Groundwater samples were collected from each well after removing approximately three well volumes of water using either a positive displacement pump or disposable bailers. During well purging, the discharged water was monitored for pH, temperature, electrical conductivity, turbidity, and oxidation-reduction potential. Following purging, samples were collected from the wells using a stainless steel or teflon disposable bailer and transferred to the appropriate laboratory sample containers. The sample containers were filled slowly to minimize sample volatilization and to ensure that the sample was free of air bubbles. The samples were labeled to designate sample number, time and date collected, and analysis required. The samples were immediately placed in a chilled, thermally-insulated cooler. To prevent cross-contamination between wells, the pump and the bailer were decontaminated using a high pressure steam cleaner prior to initial use and after sampling at each well. Sampling procedures are documented in the groundwater sampling report prepared by Blaine Tech and included in Appendix A.

Groundwater samples were transported under chain-of-custody protocol to state-certified laboratories as listed below. American Environmental Network (AEN) of Pleasant Hill, California analyzed samples from the 10 wells for halogenated VOCs using EPA Test Method 8010. Samples from six selected wells (AMW-6, AMW-7, AMW-9, MW-6, FHS-MW-10, and FHS-MW-11) were also analyzed for inorganic parameters consisting of: dissolved oxygen, oxidation-reduction potential, sulfate, nitrate, carbon dioxide, methane, and ferrous iron. As described above, Blaine Tech measured dissolved oxygen and oxidation-reduction potential using field instruments. Quanterra Environmental Services of Sacramento, California analyzed the groundwater samples for sulfate using EPA Test Method 300.0, nitrate by EPA Test Method 353.3/300.0, and carbon dioxide and methane using RSK 175. Environmental Technical Services of Petaluma, California analyzed the samples for ferrous iron using the Phenanthroline Method as described in Standard Methods for Examination of Water and Wastewater, 18th edition (SMEWW 3500-Fe D). The analytical laboratory reports and chain-of-custody records are included in Appendix B.

5.0 GROUNDWATER MONITORING RESULTS

This section presents a summary of water-level measurements and groundwater analyses results from the December 1997 sampling event.

5.1 Water-Level Measurements

During the current groundwater monitoring period, depth-to-water measurements for the shallow groundwater zone ranged from 12.18 feet (AMW-4) to 23.17 feet (WGR-MW2) below the top-of-casing (TOC). Shallow groundwater zone water-level elevations ranged from 40.01 feet MSL (WGR-MW2) to 52.61 feet MSL (AMW-4). Depth-to-water measurements for the deep groundwater zone ranged from 17.23 feet (MW-7) to 34.55 feet (MW-6) below TOC. Deep groundwater zone water-level elevations ranged from 26.18 feet MSL (FHS-MW-11) to 46.88 feet MSL (AMW-8). Depth-to-water measurements and calculated water-level elevations since 1995 and for the current period are presented in Table 1. Historical water-level elevation data (prior to 1995) are presented in Table C-1, Appendix C. Future quarterly monitoring reports will present only data dating back through the previous calendar year. A complete tabulation of recent and historical data will be presented in the fourth quarter groundwater monitoring report.

Plates 3 and 4 present water-level elevation contours developed from water levels measured on December 16, 1997 (and on January 8, 1998 for Well FHS-MW-10), for the shallow and the deep groundwater zones, respectively. The contoured water-level elevations indicate that groundwater flow in both the shallow and the deep groundwater zones is generally west to northwest, as observed during previous groundwater monitoring events. The groundwater gradient in the shallow groundwater zone ranges from 0.033 to 0.082 foot per foot (ft/ft). In the deep groundwater zone, the groundwater gradient ranges from 0.083 ft/ft on the Foothill Square Shopping Center to 0.014 ft/ft offsite to the west.

5.2 Groundwater Chemistry

5.2.1 Volatile Organic Compounds

A summary of laboratory chemical analyses results since 1995 and for the current period is presented in Table 2; only those chemicals that were detected in at least one sample are listed. The analytical laboratory reports and chain-of-custody forms are presented in Appendix B. Complete historical analytical results (prior to 1995) are presented in Tables C-2 and C-3, Appendix C. Historical data will be presented annually in the fourth quarter groundwater monitoring report.

In the shallow groundwater zone, the highest concentrations of VOCs were detected in Wells AMW-6 and AMW-7, located downgradient of the former dry cleaners. During this monitoring period, PCE was detected at concentrations ranging from 0.7 to 4,300 micrograms per liter (µg/L) in Wells AMW-4, AMW-6, AMW-7, and MW-7. PCE concentrations in wells completed in the shallow groundwater zone are presented on Plate 5. Trichloroethylene (TCE), cis-1,2-dichloroethylene (c-1,2-DCE), and trans-1,2-dichloroethylene (t-1,2-DCE) were also detected in Wells AMW-6 and AMW-7, but generally at much lower concentrations than PCE. No VOCs were detected in the sample from Well AMW-1.

In the deep groundwater zone, PCE was detected in onsite Wells AMW-9 and MW-6 at concentrations of 110 and 500 µg/L, respectively. In offsite Sentry Well FHS-MW-11, PCE was detected at a concentration of 9.9 µg/L. PCE concentrations in deep wells are presented on Plate 6. No VOCs were detected in onsite Well AMW-8 or in offsite Sentry Well FHS-MW-10.

5.2.2 Inorganic Parameters

A summary of laboratory chemical analyses for inorganic parameters is presented in Table 3. Field measurements of dissolved oxygen and oxidation-reduction potential are included in Blaine Tech's report in Appendix A. The analytical laboratory reports and chain-of-custody forms are presented in Appendix B.

Unfortunately, the laboratory did not analyze the samples for carbon dioxide within the required holding time. Biochemical reactions were allowed to continue in the sample bottles for a prolonged period and resulted in anomalously high carbon dioxide concentrations for this quarterly (Table 3). These data are not considered valid.

Groundwater samples from shallow zone Wells AMW-6 and AMW-7 were analyzed for inorganic parameters. In general, levels were fairly consistent with those observed during the September 1997 monitoring period. In the sample from AMW-7, sulfate was slightly elevated relative to AMW-6, while the dissolved oxygen, ferrous iron, and methane were low.

Groundwater samples from deep zone Wells AMW-9, MW-6, FHS-MW-10, and FHS-MW-11 were analyzed for inorganic parameters. In general, levels were fairly consistent with those observed during the September 1997 monitoring period. Dissolved oxygen, sulfate, and nitrate concentrations were somewhat higher in samples from Wells FHS-MW-10 and FHS-MW-11, than in the samples from Wells AMW-9 and MW-6. At Well AMW-9, the oxidation-reduction potential was low and ferrous iron elevated relative to the three other deep groundwater zone wells.

6.0 DISCUSSION

The results of the organic and inorganic groundwater analyses (refer to Tables 1 and 2) indicate that intrinsic (naturally occurring) biodegradation may be occurring at several areas of the site.

At shallow zone Wells AMW-6 and AMW-7, the presence of PCE breakdown products (i.e., TCE, c-1,2-DCE, and t-1,2-DCE) indicate that degradation of the PCE is occurring just downgradient of the former source area.

The low oxidation-reduction potential and elevated ferrous iron levels in deep zone Well AMW-9 indicate a reducing environment. In addition, the relatively low concentrations of sulfate and nitrate in this well suggest ongoing sulfate reduction and denitrification, respectively. This reducing environment may be contributing to declining PCE concentrations in groundwater monitored by Well AMW-9.

The concentration of PCE in sentry well FHS-MW-11 has risen slightly since the third quarter 1997 (from 4 to 9.1 μg/L). This concentration indicates that the well is appropriately located at the leading edge of the plume. Future quarterly results from this well will provide an indication whether this change in concentration resulted from plume migration or from seasonal variations.

PES recommends continued quarterly monitoring of VOCs and inorganic constituents in the current monitoring well network. Water-level measurements will continue to be collected at all accessible monitoring wells.

7.0 REFERENCES

All Environmental, Inc. (AEI), 1996. *Soil Remedial Investigation and Excavation Project Summary, Young's Cleaners, Foothill Shopping Center, 10700 MacArthur Boulevard, Oakland, California, 94605*. February 7.

Augeas Corporation (Augeas), 1995a. *Quarterly Groundwater Monitoring Report, Draft, Fourth quarter, 1995*. December.

Augeas Corporation, 1995b. *Report of Subsurface Investigation, Young's Cleaners, 10700 MacArthur Boulevard, Oakland, California.* December.

EMCON Associates, 1996. *Fourth Quarter 1995 Groundwater Monitoring Program Results and Remediation System Performance Evaluation Report, Retail Service Station, 10600 and 10700 MacArthur Boulevard, Oakland, California.* March 22.

EMCON Associates, 1997. *Second Quarter 1997 Groundwater Monitoring Program Results and Remediation System Performance Evaluation Report, SVE System at Retail Service Station #0276, 10600 MacArthur Boulevard, Oakland, California.* August 29.

PES Environmental, Inc. (PES), 1996. *Proposal, Groundwater Monitoring, Former Young Cleaners, Foothill Square Shopping Center, Oakland, California.* April 8.

PES Environmental, Inc. (PES), 1997a. *Site Specific Health and Safety Plan, Groundwater Monitoring Well Installation, Foothill Square Shopping Center, 10700 MacArthur Boulevard, Oakland, California.* February 3.

PES Environmental, Inc. (PES), 1997b. *Results of Additional Groundwater Investigation and Risk Evaluation, Former Young's Cleaners, Foothill Square Shopping Center, Oakland, California.* March 24.

Table 1. Water-Level Elevation Data - 1995 To Present*
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Measured	Measured by	Top of Casing Elevation (feet MSL)	Depth to Water (feet bgs)	Water Table Elevation (feet MSL)
WGR-MW1 (Shallow Zone)	9/7/95	Augeas	65.97	5.82	60.15
	4/16/96	PES	65.97	3.88	62.09
	7/17/96	PES	65.97	NM	--
	10/23/96	PES	65.97	NM	--
	9/29/97	PES	65.97	NM	--
	12/16/97	**PES**	**65.97**	**NM**	**--**
WGR-MW2 (Shallow Zone)	3/23/95	Augeas	63.18	21.32	41.86
	6/21/95	Augeas	63.18	21.55	41.63
	9/7/95	Augeas	63.18	23.37	39.81
	4/16/96	PES	63.18	20.97	42.21
	7/17/96	PES	63.18	22.71	40.47
	10/23/96	PES	63.18	24.90	38.28
	9/29/97	PES	63.18	25.06	38.12
	12/16/97	**PES**	**63.18**	**23.17**	**40.01**
WGR-MW3 (Shallow Zone)	3/10/95	EMCON	58.34	15.20	43.14
	6/5/95	EMCON	58.34	19.25	39.09
	8/29/95	EMCON	58.34	21.41	36.93
	9/7/95	Augeas	58.34	21.55	36.79
	11/16/95	EMCON	58.34	22.50	35.84
	2/28/96	EMCON	58.34	14.90	43.44
	4/16/96	PES	58.34	18.49	39.85
	5/28/96	EMCON	58.34	18.33	40.01
	7/17/96	PES	58.34	20.49	37.85
	8/19/96	EMCON	58.34	21.38	36.96
	10/23/96	PES	58.34	22.10	36.24
	11/21/96	EMCON	58.34	18.70	39.64
	3/26/97	EMCON	58.34	18.98	39.36
	5/20/97	EMCON	58.34	19.70	38.64
	8/18/97	EMCON	57.96**	21.81	36.15
	9/29/97	PES	57.96**	21.72	36.24
	12/16/97	**PES**	**57.96****	**16.00**	**41.96**
WGR-MW4 (Deep Zone)	9/7/95	Augeas	60.02	27.20	32.82
	4/16/96	PES	60.02	23.26	36.76
	7/17/96	PES	60.02	25.89	34.13
	10/23/96	PES	60.02	28.12	31.90
	9/29/97	PES	60.02	28.16	31.86
	12/16/97	**PES**	**60.02**	**27.14**	**32.88**

Table 1. Water-Level Elevation Data - 1995 To Present*
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Measured	Measured by	Top of Casing Elevation (feet MSL)	Depth to Water (feet bgs)	Water Table Elevation (feet MSL)
WGR-MW5	9/7/95	Augeas	68.94	NM	--
(Shallow Zone)	4/16/96	PES	68.94	NM	--
	7/17/96	PES	68.94	NM	--
	10/23/96	PES	68.94	NM	--
	9/29/97	PES	68.94	NM	--
	12/16/97	**PES**	**68.94**	**NM**	--
AMW-1	3/23/95	Augeas	64.51	21.42	43.09
(Shallow Zone)	6/21/95	Augeas	64.51	23.50	41.01
	9/7/95	Augeas	64.51	23.01	41.50
	4/16/96	PES	64.51	21.99	42.52
	7/17/96	PES	64.51	22.65	41.86
	10/23/96	PES	64.51	NM	--
	9/29/97	PES	64.51	24.52	39.99
	12/16/97	**PES**	**64.51**	**23.00**	**41.51**
AMW-2	3/23/95	Augeas	65.33	13.12	52.21
(Shallow Zone)	6/21/95	Augeas	65.33	13.00	52.33
	Well abandoned during site remediation in 1995.				
AMW-3	3/23/95	Augeas	65.09	12.20	52.89
(Shallow Zone)	6/21/95	Augeas	65.09	11.80	53.29
	Well abandoned during site remediation in 1995.				
AMW-4	5/15/95	Augeas	64.79	12.60	52.19
(Shallow Zone)	6/21/95	Augeas	64.79	12.50	52.29
	9/7/95	Augeas	64.79	13.45	51.34
	4/16/96	PES	64.79	11.00	53.79
	7/17/96	PES	64.79	12.42	52.37
	10/23/96	PES	64.79	14.10	50.69
	9/29/97	PES	64.79	13.32	51.47
	12/16/97	**PES**	**64.79**	**12.18**	**52.61**
AMW-5	5/15/95	Augeas	64.97	13.71	51.26
(Shallow Zone)	6/21/95	Augeas	64.97	13.85	51.12
	9/7/95	Augeas	64.97	14.70	50.27
	4/16/96	PES	64.97	13.04	51.93
	7/17/96	PES	64.97	14.48	50.49
	10/23/96	PES	64.97	15.34	49.63
	9/29/97	PES	64.97	17.39	47.58
	12/16/97	**PES**	**64.97**	**17.34**	**47.63**

Table 1. Water-Level Elevation Data - 1995 To Present*
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Measured	Measured by	Top of Casing Elevation (feet MSL)	Depth to Water (feet bgs)	Water Table Elevation (feet MSL)
AMW-6	9/7/95	Augeas	65.10	14.32	50.78
(Shallow Zone)	4/16/96	PES	65.10	12.10	53.00
	7/17/96	PES	65.10	13.59	51.51
	10/23/96	PES	65.10	15.30	49.80
	9/29/97	PES	65.10	15.43	49.67
	12/16/97	**PES**	**65.10**	**15.77**	**49.33**
AMW-7	9/7/95	Augeas	64.24	15.30	48.94
(Shallow Zone)	4/16/96	PES	64.24	14.31	49.93
	7/17/96	PES	64.24	15.02	49.22
	10/23/96	PES	64.24	16.38	47.86
	9/29/97	PES	64.24	16.63	47.61
	12/16/97	**PES**	**64.24**	**16.22**	**48.02**
AMW-8	9/7/95	Augeas	64.55	17.90	46.65
(Deep Zone)	4/16/96	PES	64.55	15.06	49.49
	7/17/96	PES	64.55	16.60	47.95
	10/23/96	PES	64.55	18.82	45.73
	9/29/97	PES	64.55	17.69	46.86
	12/16/97	**PES**	**64.55**	**17.67**	**46.88**
AMW-9	9/7/95	Augeas	63.48	23.02	40.46
(Deep Zone)	4/16/96	PES	63.48	20.98	42.50
	7/17/96	PES	63.48	22.74	40.74
	10/23/96	PES	63.48	24.85	38.63
	9/29/97	PES	63.48	23.59	39.89
	12/16/97	**PES**	**63.48**	**23.31**	**40.17**
FHS-MW-10	7/25/97	PES	52.37**	26.00	26.37
(Deep Zone)	10/9/97	PES	52.37	27.92	24.45
	1/8/98	**PES**	**52.37**	**24.43**	**27.94**
FHS-MW-11	7/25/97	PES	54.06**	28.05	26.01
(Deep Zone)	9/29/97	PES	54.06	29.84	24.22
	12/16/97	**PES**	**54.06**	**27.88**	**26.18**
MW-6	3/10/95	EMCON	61.21	31.54	29.67
(Deep Zone)	6/5/95	EMCON	61.21	31.15	30.06
	8/29/95	EMCON	61.21	34.03	27.18
	9/7/95	Augeus	61.78**	34.09	27.69
	11/16/95	EMCON	61.78	36.40	25.38
	2/28/96	EMCON	61.78	30.18	31.60
	4/16/96	PES	61.78	29.40	32.38

Table 1. Water-Level Elevation Data - 1995 To Present*
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Measured	Measured by	Top of Casing Elevation (feet MSL)	Depth to Water (feet bgs)	Water Table Elevation (feet MSL)
MW-6 (cont.)	5/28/96	EMCON	61.78	30.29	31.49
	7/17/96	PES	61.78	32.36	29.42
	8/19/96	EMCON	61.78	33.54	28.24
	10/23/96	PES	61.78	35.56	26.22
	11/21/96	EMCON	61.78	35.70	26.08
	3/26/97	EMCON	61.78	30.15	31.63
	5/20/97	EMCON	61.78	32.40	29.38
	8/18/97	EMCON	61.78	35.47	26.31
	9/29/97	PES	61.78	36.27	25.51
	12/16/97	**PES**	**61.78**	**34.55**	**27.23**
MW-7 (Shallow Zone)	3/10/95	EMCON	58.22	17.69	40.53
	6/5/95	EMCON	58.22	19.68	38.54
	8/29/95	EMCON	58.22	21.70	36.52
	9/7/95	Augeus	58.64**	21.86	36.78
	11/16/95	EMCON	58.64	23.02	35.62
	2/28/96	EMCON	58.64	16.54	42.10
	4/16/96	PES	58.64	19.26	39.38
	5/28/96	EMCON	58.64	19.29	39.35
	7/17/96	PES	58.64	21.10	37.54
	8/19/96	EMCON	58.64	21.84	36.80
	10/23/96	PES	58.64	24.40	34.24
	11/21/96	EMCON	58.64	19.58	39.06
	3/26/97	EMCON	58.64	19.67	38.97
	5/20/97	EMCON	58.64	20.18	38.46
	8/18/97	EMCON	58.64	22.21	36.43
	9/29/97	PES	58.64	22.19	36.45
	12/16/97	**PES**	**58.64**	**17.23**	**41.41**

Notes:

* = Water-level measurement and elevation data prior to 1995 are presented in *Results of Additional Groundwater Investigation and Risk Evaluation, Former Young's Cleaners, Foothill Square Square Shopping Center, Oakland, California (PES, March 24, 1997).*

** = Top of casing elevations were surveyed in November 1997.

feet MSL = Feet above mean sea level

NM = Not measured

Augeas = Augeas Corporation

PES = PES Environmental, Inc.

EMCON = EMCON Associates

Sources: Augeus (1995a), EMCON (1996b)

Table 2. Analytical Results for Groundwater Samples - Organics
1995 To Present
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Sampled	Sampled by	PCE (µg/L)	TCE (µg/L)	c-1,2-DCE (µg/L)	t-1,2-DCE (µg/L)	Freon-12 (µg/L)
WGR-MW1	9/12/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
(Shallow Zone)	7/17/96	PES	NS	NS	NS	NS	NS
	10/23/96	PES	NS	NS	NS	NS	NS
	9/29/97	PES	NS	NS	NS	NS	NS
	12/16/97	**PES**	**NS**	**NS**	**NS**	**NS**	**NS**
WGR-MW2	3/23/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
(Shallow Zone)	6/21/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
	9/11/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
	4/16/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	7/17/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	10/23/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	9/29/97	PES	NS	NS	NS	NS	NS
	12/16/97	**PES**	**NS**	**NS**	**NS**	**NS**	**NS**
WGR-MW3	3/11/95	EMCON	<1	<1	<1	<1	--
(Shallow Zone)	6/5/95	EMCON	<1	<1	<1	<1	--
	8/29/95	EMCON	<1	<1	<1	<1	--
	9/11/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
	11/16/95	EMCON	<1	<1	<1	<1	<1
	2/28/96	EMCON	<1	<1	<1	<1	--
	4/16/96	PES	0.6	0.5	<0.5	<0.5	11
	5/28/96	EMCON	<1	<1	<1	<1	--
	7/17/96	PES	<0.5	0.7	<0.5	<0.5	<2
	8/19/96	EMCON	<1	<1	<1	<1	--
	10/23/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	11/21/96	EMCON	<1	<1	<1	<1	--
	3/26/97	EMCON	<1	<1	<1	<1	--
	5/20/97	EMCON	<0.5	<0.5	<0.5	<0.5	--
	8/18/97	EMCON	<5	<5	--	<5	--
	9/29/97	PES	<0.5	<0.5	<0.5	<0.5	<2
	12/16/97	**PES**	**NS**	**NS**	**NS**	**NS**	**NS**
WGR-MW4	4/16/96	PES	<0.5	<0.5	<0.5	<0.5	<2
(Deep Zone)	7/17/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	10/23/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	9/29/97	PES	<0.5	<0.5	<0.5	<0.5	<2
	12/16/97	**PES**	**NS**	**NS**	**NS**	**NS**	**NS**
WGR-MW5	7/17/96	PES	NS	NS	NS	NS	NS
(Shallow Zone)	10/23/96	PES	NS	NS	NS	NS	NS
	9/29/97	PES	NS	NS	NS	NS	NS
	12/16/97	**PES**	**NS**	**NS**	**NS**	**NS**	**NS**

Table 2. Analytical Results for Groundwater Samples - Organics
1995 To Present
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Sampled	Sampled by	PCE (µg/L)	TCE (µg/L)	c-1,2-DCE (µg/L)	t-1,2-DCE (µg/L)	Freon-12 (µg/L)
AMW-1	3/23/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
(Shallow Zone)	6/21/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
	9/11/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
	4/16/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	7/17/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	10/23/96	PES	NS	NS	NS	NS	NS
	9/29/97	PES	<0.5	<0.5	<0.5	<0.5	<2
	12/16/97	**PES**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<2**
AMW-2	3/23/95	Augeas	13,000	<250	--	<250	<250
(Shallow Zone)	6/21/95	Augeas	36,000	<500	--	<500	<500
	Well abandoned during site remediation in 1995.						
AMW-3	3/23/95	Augeas	45	<5.0	--	<5.0	<5.0
(Shallow Zone)	6/21/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
	Well abandoned during site remediation in 1995.						
AMW-4	5/15/95	Augeas	2,400	<50	--	<50	<50
(Shallow Zone)	6/21/95	Augeas	2,500	<50	--	<50	<50
	9/13/95	Augeas	1,100	<25	--	<25	<25
	4/16/96	PES	1,200	10	<10	<10	<40
	7/17/96	PES	860	<10	<10	<10	<40
	10/23/96	PES	22	0.5	<0.5	<0.5	<2
	9/29/97	PES	340	3	<3	<3	<10
	12/16/97	**PES**	**190**	**<3**	**<3**	**<3**	**<10**
AMW-5	5/15/95	Augeas	1.2	<0.5	--	<0.5	<0.5
(Shallow Zone)	6/21/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
	9/12/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
	4/16/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	7/17/96	PES	0.6	<0.5	<0.5	<0.5	<2
	10/23/96	PES	0.8	<0.5	<0.5	<0.5	<2
	9/29/97	PES	13	<0.5	<0.5	<0.5	<2
	12/16/97	**PES**	**NS**	**NS**	**NS**	**NS**	**NS**
AMW-6	9/13/95	Augeas	930	<25	--	<25	<25
(Shallow Zone)	4/16/96	PES	1,900	110	20	<10	<40
	7/17/96	PES	3,300	280	<30	<30	<100
	10/23/96	PES	2,900	140	<30	<30	<100
	9/29/97	PES	4,600	580	220	70	<200
	12/16/97	**PES**	**4,300**	**510**	**190**	**60**	**<200**

Table 2. Analytical Results for Groundwater Samples - Organics
1995 To Present
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Sampled	Sampled by	PCE (µg/L)	TCE (µg/L)	c-1,2-DCE (µg/L)	t-1,2-DCE (µg/L)	Freon-12 (µg/L)
AMW-7	9/12/95	Augeas	2,350	340	--	<25	<25
(Shallow Zone)	4/16/96	PES	2,300	500	2,200	60	<100
	7/17/96	PES	2,400	530	2,100	<30	<100
	10/23/96	PES	3,400	610	3,100	50	<100
	9/29/97	PES	520	100	330	20	<40
	12/16/97	**PES**	**350**	**67**	**180**	**9**	**<20**
AMW-8	9/11/95	Augeas	95	<25	--	<25	<25
(Deep Zone)	4/16/96	PES	0.8	<0.5	<0.5	<0.5	<2
	7/17/96	PES	1.6	<0.5	<0.5	<0.5	<2
	10/23/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	9/29/97	PES	0.7	<0.5	<0.5	<0.5	<2
	12/16/97	**PES**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<2**
AMW-9	9/13/95	Augeas	170	<25	--	<25	<25
(Deep Zone)	4/16/96	PES	170	4	7	<3	<10
	7/17/96	PES	190	4	<3	<3	<10
	10/23/96	PES	190	<3	<3	<3	<10
	9/29/97	PES	110	<3	<3	<3	<10
	12/16/97	**PES**	**110**	**<0.5**	**1.7**	**<0.5**	**<2**
FHS-MW-10	10/9/97	PES	<0.5	<0.5	<0.5	<0.5	<2
(Deep Zone)	**1/8/98**	**PES**	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<2**
FHS-MW-11	9/29/97	PES	4.0	<0.5	<0.5	<0.5	<2
(Deep Zone)	**12/16/97**	**PES**	**9.9**	**<0.5**	**<0.5**	**<0.5**	**<2**
MW-6	3/11/95	EMCON	1,300	<20	<20	<0.5	--
(Deep Zone)	6/5/95	EMCON	2,000	<20	<20	<20	--
	8/29/95	EMCON	1,300	<20	<20	<20	--
	9/11/95	Augeus	2,000	<50	--	<50	<50
	11/16/95	EMCON	1,300	<20	<20	<20	<20
	2/28/96	EMCON	960	<20	<20	<20	--
	4/16/96	PES	1,400	10	<10	<10	100
	5/28/96	EMCON	970	<20	<20	<20	--
	7/17/96	PES	590	<5	<5	<5	30
	8/19/96	EMCON	820	<20	<20	<20	--
	10/23/96	PES	680	<5	<5	<5	<20
	11/21/96	EMCON	680	<20	<20	<20	--
	3/26/97	EMCON	830	<40	<40	<40	--
	5/20/97	EMCON	270	<5	<5	<5	--
	8/18/97	EMCON	420	<62.5	--	<62.5	--
	9/29/97	PES	670	<10	<10	<10	<40
	12/16/97	**PES**	**500**	**8**	**<5**	**<5**	**40**

Table 2. Analytical Results for Groundwater Samples - Organics
1995 To Present
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Sampled	Sampled by	PCE (µg/L)	TCE (µg/L)	c-1,2-DCE (µg/L)	t-1,2-DCE (µg/L)	Freon-12 (µg/L)
MW-7 (Shallow Zone)	3/11/95	EMCON	Not sampled: floating product entering the well during purging				
	6/5/95	EMCON	<10	<10	<10	<10	--
	8/29/95	EMCON	<10	<10	<10	<10	--
	9/11/95	Augeus	85	<50	--	<50	<50
	11/16/95	EMCON	<20	<20	<20	<20	<20
	2/28/96	EMCON	<10	<10	<10	<10	--
	4/16/96	PES	<0.5	<0.5	<0.5	<0.5	8
	5/28/96	EMCON	<10	<10	<10	<10	--
	7/17/96	PES	<0.5	0.6	0.6	<0.5	<2
	8/21/96	EMCON	<1	<1	<1	<1	--
	10/23/96	PES	<0.5	<0.5	0.6	<0.5	<2
	11/21/96	EMCON	<10	<10	<10	<10	--
	3/26/97	EMCON	<20	<20	<20	<20	--
	5/20/97	EMCON	<10	<10	<10	<10	--
	8/18/97	EMCON	<10	<10	<10	<10	--
	9/29/97	PES	<0.5	<0.5	<0.5	<0.5	<2
	12/16/97	**PES**	**0.7**	**<0.5**	**<0.5**	**<0.5**	**<2**

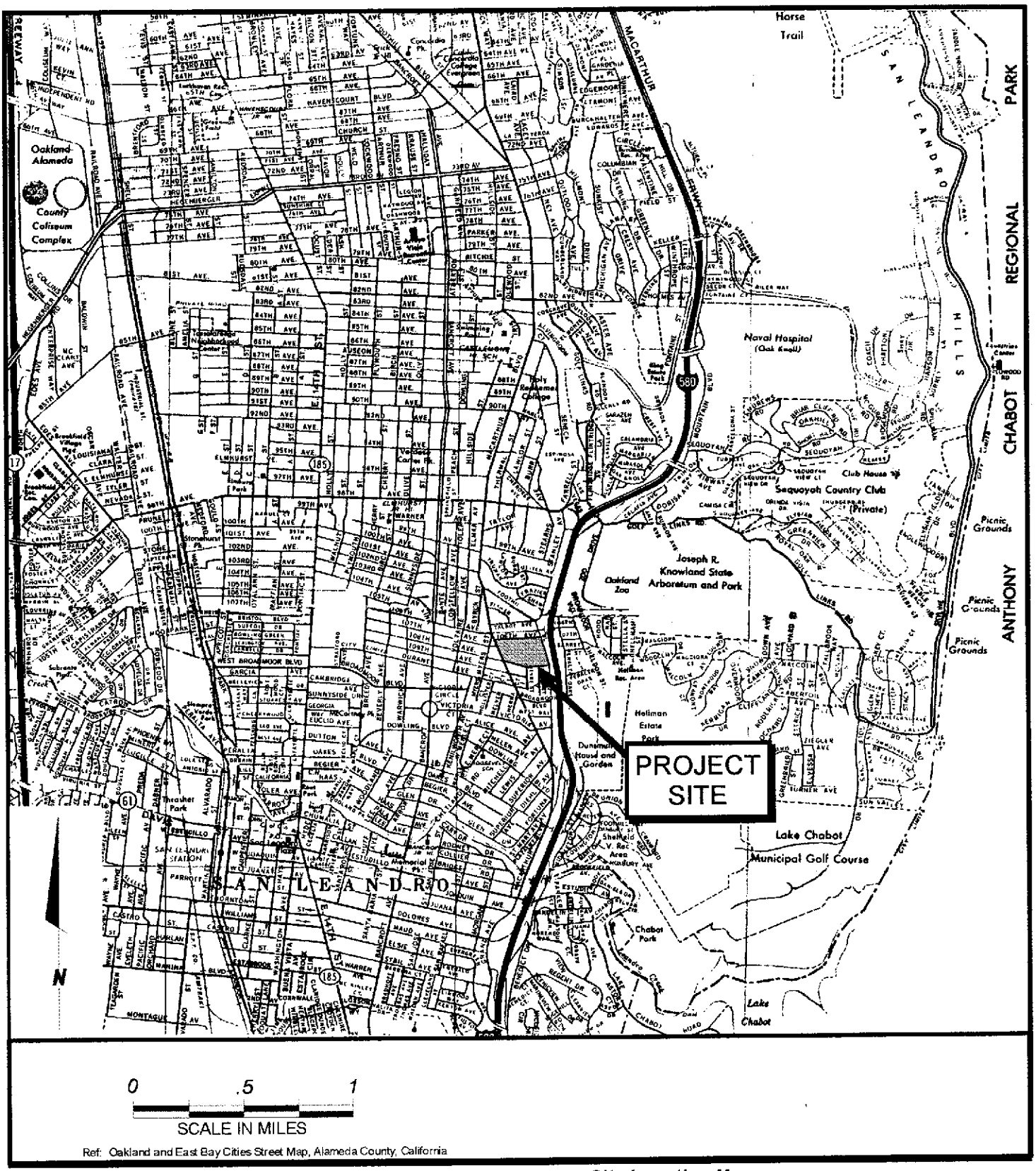
Notes:
PCE = Tetrachloroethene.
TCE = Trichloroethene.
c-1,2-DCE = cis-1,2-dichloroethene.
t-1,2-DCE = trans-1,2-dichloroethene.
Freon 12 = Dichlorodifluoromethane.
µg/L = Micrograms per liter.

Augeas = Augeas Corporation.
PES = PES Environmental, Inc.
EMCON = EMCON Associates.
<0.1 = Not detected at or above the detection limit indicated.
ND = Not detected, detection limit not reported by EMCON.
NS = Not sampled.
-- = Not analyzed.

Table 3. Analytical Results for Groundwater Samples - Inorganics
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Sample Location	Date Sampled	Sampled By	Dissolved Oxygen (mg/L)	Ox-Redux Potential (mV)	Sulfate (mg/L)	Nitrate (mg/L)	Ferrous Iron (mg/L)	Methane (mg/L)	Carbon Dioxide (mg/L)
AMW-4	9/29/97	PES	0.45	149	54.9	3.8	0.18	0.0029	8.4
(Shallow Zone)	**12/16/97**	**PES**	NS	NS	NS	NS	NS	NS	NS
AMW-6	9/29/97	PES	0.55	245	45.9	5.3	0.19	<0.0010	11
(Shallow Zone)	**12/16/97**	**PES**	**0.9**	**132**	**47.9**	**5.7**	**0.13**	**0.056**	**4,899 ***
AMW-7	9/29/97	PES	0.64	109	92.2	6.1	0.01	<0.0010	33
(Shallow Zone)	**12/16/97**	**PES**	**0.5**	**118**	**89.7**	**5.7**	**0.05**	**0.020**	**15,000 ***
AMW-9	9/29/97	PES	0.32	-87	39.7	3.5	0.90	<0.0010	7.7
(Deep Zone)	**12/16/97**	**PES**	**0.6**	**83**	**27.3**	**2.7**	**0.26**	**0.071**	**2,211 ***
WGR-MW3	9/29/97	PES	0.17	212	28.7	0.054	1.41	0.032	23
(Shallow Zone)	**12/16/97**	**PES**	NS	NS	NS	NS	NS	NS	NS
FHS-MW-10	10/9/97	PES	1.6	25	44.6	4.3	0.18	<0.0010	27
(Deep Zone)	**1/8/98**	**PES**	**2.1**	**134**	**43.3**	**4.1**	**<0.01**	<0.00024	**3,939 ***
FHS-MW-11	9/29/97	PES	0.89	85	67.1	5.8	0.17	0.0019	0.3
(Deep Zone)	**12/16/97**	**PES**	**2.2**	**163**	**45.3**	**5.4**	**0.08**	<0.00024	**11,000 ***
MW-6	9/29/97	PES	1.81	73	37.5	4.3	<0.01	<0.0010	11
(Deep Zone)	**12/16/97**	**PES**	**0.5**	**143**	**37.7**	**2.8**	**0.03**	<0.00024	**3,939 ***

Notes:
Ox-Redux = Oxidation-reduction potential.
mg/L = Milligrams per liter.
mV = Millivolts.
NS = Not sampled.
* = Sample analyzed outside of holding time; result considered invalid (see text for explanation).



Ref: Oakland and East Bay Cities Street Map, Alameda County, California

PES Environmental, Inc.
Engineering & Environmental Services

Site Location Map
Foothill Square Shopping Center
10700 MacArthur Boulevard
Oakland, California

PLATE
1

502.0201.006	50202v18.CDR	DWM	2/98
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

LARGE MAP REMOVED

APPENDIX A

GROUNDWATER SAMPLING REPORT

BLAINE
TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
(408) 573-7771 FAX
(408) 573-0555 PHONE

January 22, 1998

PES Environmental, Inc.
1682 Novato Blvd., Suite 100
Novato, CA 94947

ATTN: Will Mast

Site:
10700 MacArthur Blvd.
Oakland, California

Date:
December 16, 1997, & January 8, 1998

GROUNDWATER SAMPLING REPORT 971216-F-1

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

This report deals with the groundwater well sampling performed by our firm in response to your request. Data collected in the course of our work at the site are presented in the TABLE OF WELL MONITORING DATA. This information was collected during our inspection, well evacuation and sample collection. Measurements include the total depth of the well and the depth to water. Water surfaces were further inspected for the presence of immiscibles. A series of electrical conductivity, pH, turbidity, dissolved oxygen, oxidation reduction potential and temperature readings were obtained during well evacuation and at the time of sample collection.

STANDARD PRACTICES

Evacuation and Sampling Equipment

As shown in the TABLE OF WELL MONITORING DATA, the wells at this site were evacuated according to a protocol requirement for the removal of three case volumes of water, before sampling. The wells were evacuated using bailers and middleburg pumps.

Samples were collected using bailers.

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

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

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

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

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

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site.

Effluent Materials

The evacuation process creates a volume of effluent water which must be contained. Blaine Tech Services, Inc. will place this water in appropriate containers of the client's choice or bring new 55 gallon DOT 17 E drums to the site, which are appropriate for the containment of the effluent materials. The determination of how to properly dispose of the effluent water must usually await the results of laboratory analyses of the sample collected from the groundwater well. If that sample does not establish whether or not the effluent water is contaminated, or if effluent from more than one source has been combined in the same container, it may be necessary to conduct additional analyses on the effluent material.

Sampling Methodology

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

Sample Containers

Sample containers are supplied by the laboratory performing the analyses.

Sample Handling Procedures

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

Sample Designations

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

Chain of Custody

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

Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to American Environmental Network (AEN) in Pleasant Hill, California, Quanterra Environmental Services in Sacramento, California and Environmental Testing Services in Petaluma, California . AEN and Quanterra Environmental Services are certified by the California Department of Health Services as Hazardous Materials Testing Laboratories, and are listed as DOHS HMTL #1172 and #1171, respectively.

Personnel

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

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

Reportage

Submission to the Regional Water Quality Control Board and the local implementing agency should include copies of the sampling report, the chain of custody and the certified analytical report issued by the Hazardous Materials Testing Laboratory.

Please call if we can be of any further assistance.

Kent Brown

KEB/aa

attachments: table of well monitoring data
chain of custody

TABLE OF WELL MONITORING DATA

Well I.D.	AMW-1			AMW-4			AMW-5	AMW-6		
Date Sampled	12/16/97			12/16/97			12/16/97	12/16/97		
Well Diameter (in.)	2			2			2	2		
Total Well Depth (ft.)	33.91			24.26			30.13	24.93		
Depth To Water (ft.)	23.00			12.18			17.34	15.77		
Free Product (in.)	NONE			NONE			NONE	NONE		
Reason If Not Sampled	--			--			GAUGE ONLY	--		
1 Case Volume (gal.)	1.7			1.9				1.4		
Did Well Dewater?	NO			NO				NO		
Gallons Actually Evacuated	5.25			6.0				4.5		
Purging Device	BAILER			BAILER				BAILER		
Sampling Device	BAILER			BAILER				BAILER		
Time	9:16	9:19	9:22	9:47	9:52	9:57		9:13	9:16	9:21
Temperature (Fahrenheit)	65.6	64.8	64.4	63.4	62.4	62.4		62.0	61.8	61.8
pH	7.2	7.2	7.3	7.6	7.6	7.6		7.1	7.4	7.3
Conductivity (micromhos/cm)	1850	1860	1880	580	920	880		2400	2300	2200
Nephelometric Turbidity Units	168	>200	>200	>200	>200	>200		>200	>200	>200
Dissolved Oxygen (D.O.) (mg/L)								0.9		
Oxidation Reduction Potential (mV)								132		
BTS Chain of Custody	971216-F1			971216-F1				971216-F1		
BTS Sample I.D.	AMW-1			AMW-4				AMW-6		
DOHS HMTL Laboratory	AEN			AEN				AEN/QUANTERRA/ETS		
Analysis	EPA 8010			EPA 8010				EPA 8010, SULFATE, NITRATE, CARBON DIOXIDE, METHANE & FERROUS IRON		

TABLE OF WELL MONITORING DATA

Well I.D.	AMW-7			AMW-8			AMW-9			FHS-MW-10 *
Date Sampled	12/16/97			12/16/97			12/16/97			12/16/97
Well Diameter (in.)	2			2			2			--
Total Well Depth (ft.)	24.75			45.68			54.28			--
Depth To Water (ft.)	16.22			17.67			23.31			--
Free Product (in.)	NONE			NONE			NONE			INACCESSIBLE
Reason If Not Sampled	--			--			--			
1 Case Volume (gal.)	1.4			4.5			5.0			
Did Well Dewater?	NO			NO			NO			
Gallons Actually Evacuated	4.5			13.5			15.0			
Purging Device	BAILER			MIDDLEBURG			MIDDLEBURG			
Sampling Device	BAILER			BAILER			BAILER			
Time	10:15	10:19	10:23	9:44	9:49	9:54	10:29	10:34	10:39	
Temperature (Fahrenheit)	67.2	67.2	67.0	62.4	63.6	64.0	67.6	66.8	66.2	
pH	7.4	7.3	7.4	8.1	8.2	8.2	7.8	7.8	7.7	
Conductivity (micromhos/cm)	1500	1400	1400	410	390	370	610	600	600	
Nephelometric Turbidity Units	>200	>200	>200	>200	>200	>200	>200	>200	>200	
Dissolved Oxygen (D.O.) (mg/L)	0.5						0.6			
Oxidation Reduction Potential (mV)	118						83			
BTS Chain of Custody	971216-F1			971216-F1			971216-F1			
BTS Sample I.D.	AMW-7			AMW-8			AMW-9			
DOHS HMTL Laboratory	AEN/QUANTERRA/ETS			AEN			AEN/QUANTERRA/ETS			
Analysis	EPA 8010, SULFATE, NITRATE, CARBON DIOXIDE, METHANE & FERROUS IRON			EPA 8010			EPA 8010, SULFATE, NITRATE, CARBON DIOXIDE, METHANE & FERROUS IRON			

* Well FHS-MW-10 was not sampled due to a car parked over the well.

TABLE OF WELL MONITORING DATA

Well I.D.	FHS-MW-10 *			FHS-MW-11			MW-6			MW-7		
Date Sampled	01/08/98			12/16/97			12/16/97			12/16/97		
Well Diameter (in.)	2			2			2			2		
Total Well Depth (ft.)	51.71			64.03			48.70			36.58		
Depth To Water (ft.)	24.43			27.88			34.55			17.23		
Free Product (in.)	NONE			NONE			NONE			NONE		
Reason If Not Sampled	--			--			--			--		
1 Case Volume (gal.)	4.4			5.8			2.3			3.1		
Did Well Dewater?	NO			NO			NO			NO		
Gallons Actually Evacuated	13.25			18.0			7.0			10.5		
Purging Device	BAILER			MIDDLEBURG			MIDDLEBURG			MIDDLEBURG		
Sampling Device	BAILER			BAILER			BAILER			BAILER		
Time	13:46	13:52	13:57	12:34	12:40	12:46	11:13	11:16	11:19	11:15	11:21	11:25
Temperature (Fahrenheit)	61.0	60.6	60.1	65.0	66.0	66.4	65.0	65.2	64.6	65.6	66.2	66.6
pH	7.6	7.3	7.3	7.2	7.2	7.2	7.3	7.2	7.2	7.5	7.4	7.4
Conductivity (micromhos/cm)	690	520	500	710	670	690	1870	1810	1790	530	470	460
Nephelometric Turbidity Units	53	48	68	>200	>200	164	>200	>200	174	127	74	19
Dissolved Oxygen (D.O.) (mg/L)	2.1			2.2			0.5					
Oxidation Reduction Potential (mV)	134			163			143					
BTS Chain of Custody	980108-K3			971216-F1			971216-F1			971216-F1		
BTS Sample I.D.	FHS-MW-10			FHS-MW-11			MW-6			MW-7		
DOHS HMTL Laboratory	AEN/QUANTERRA/ETS			AEN/QUANTERRA/ETS			AEN/QUANTERRA/ETS			AEN		
Analysis	EPA 8010, SULFATE, NITRATE, CARBON DIOXIDE, METHANE & FERROUS IRON			EPA 8010, SULFATE, NITRATE, CARBON DIOXIDE, METHANE & FERROUS IRON			EPA 8010, SULFATE, NITRATE, CARBON DIOXIDE, METHANE & FERROUS IRON			EPA 8010		

* Per the client's request, Blaine Tech Services, Inc. returned to sample FHS-MW-10 on January 8, 1998.

TABLE OF WELL MONITORING DATA

Well I.D.	WGR/MW-2	WGR/MW-3	WGR/MW-4
Date Sampled	12/16/97	12/16/97	12/16/97
Well Diameter (in.)	4	4	4
Total Well Depth (ft.)	28.01	26.96	44.95
Depth To Water (ft.)	23.17	16.00	27.14
Free Product (in.)	NONE	NONE	NONE
Reason If Not Sampled	GAUGE ONLY	GAUGE ONLY	GAUGE ONLY
1 Case Volume (gal.)			
Did Well Dewater?			
Gallons Actually Evacuated			
Purging Device			
Sampling Device			
Time			
Temperature (Fahrenheit)			
pH			
Conductivity (micromhos/cm)			
Nephelometric Turbidity Units			
Dissolved Oxygen (D.O.) (mg/L)			
Oxidation Reduction Potential (mV)			
BTS Chain of Custody			
BTS Sample I.D.			
DOHS HMTL Laboratory			
Analysis			

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY 971216-F1

CLIENT PES ENVIRONMENTAL INC

SITE 10700 MACARTHUR BLVD.
OAKLAND
CA.

CONDUCT ANALYSIS TO DETECT

LAB AEN DHS #

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

☐ EPA ☐ RWQCB REGION _____
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS Invoice & Report to PES ENVIRONMENTAL INC. ATTN: WILL MAST

C = COMPOSITE ALL CONTAINERS

SAMPLE I.D.	DATE	TIME	MATRIX S = SOIL W = H2O	CONTAINERS TOTAL		C	EDF# 8010							ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
AMW-1	12/16	930	W	3			X										
AMW-4	12/16	1003	W	3			X										
AMW-6	12/16	930	W	3			X										
AMW-7	12/16	1030	W	3			X										
AMW-8	12/16	1000	W	3			X										
AMW-9	12/16	1045	W	3			X										
MW-6	12/16	1130	W	3			X										
MW-7	12/16	1135	W	3			X										
FHS/MW-11	12/16	1255	W	3			X										

SAMPLING COMPLETED	DATE	TIME	SAMPLING PERFORMED BY	RESULTS NEEDED NO LATER THAN
	12/16/97	1255	Tim Shaw	ASAP Client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Tim Shaw	12/17/97	1110	[signature]	12/17/97	1110
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #	

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY 971216-F1

CLIENT PES ENVIRONMENTAL

SITE 6700 MACARTHUR BLVD.
OAKLAND
CA.

CONDUCT ANALYSIS TO DETECT

LAB Quanterra - Los Angeles DHS #

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

☐ EPA ☐ RWQCB REGION _____
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS Invoice & Report to PES ENVIRONMENTAL INC.
Attn: Will Mast

* Watch Hold Times

SAMPLE I.D.	DATE	TIME	MATRIX S = SOIL W = H2O	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS	Carbon Dioxide	Methane	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
AMW-6	12/16	930	W	3		X	X				
AMW-7	12/16	1030	W	3		X	X				
AMW-9	12/16	1045	W	3		X	X				
MW-6	12/16	1130	W	3		X	X				
FHS/MW-11	12/16	1255	W	3		X	X				

SAMPLING COMPLETED DATE 12/16/97 TIME 1255

SAMPLING PERFORMED BY Tim Shaw

RESULTS NEEDED NO LATER THAN Per client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Tim Shaw	12/16/97	1700			

SHIPPED VIA AIRBORNE EXP | DATE SENT 12/16/97 | TIME SENT 1700 | COOLER # | # 891223057 4

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY 971216-F1

CLIENT PES Environmental Inc.

SITE 10700 MacArthur Blvd.
Oakland
CA.

LAB Quanterra - Sacramento DHS #

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

☐ EPA ☐ RWQCB REGION ____
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS Invoice & Report to PES Environmental Inc. Attn: Will Mast
* Note - Nitrate has a 48hr Hold time

C = COMPOSITE ALL CONTAINERS

CONDUCT ANALYSIS TO DETECT: Sulphate; Nitrate

SAMPLE I.D.	DATE	TIME	MATRIX S = SOIL W = H2O	CONTAINERS TOTAL	C	Sulphate	Nitrate	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
Amw-6	12/16	930	W	1		X	X				
Amw-7	12/16	1030	W	1		X	X				
Amw-9	12/16	1045	W	1		X	X				
mw-6	12/16	1130	W	1		X	X				
FHS/mw-11	12/16	1255	W	1		X	X				

SAMPLING COMPLETED DATE 12/16/97 TIME 1255

SAMPLING PERFORMED BY Tim Shaw

RESULTS NEEDED NO LATER THAN Per Client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Tim Shaw	12/16/97	1715			

SHIPPED VIA Airborne Express | DATE SENT 12/16/97 | TIME SENT 1715 | COOLER # | # 8912230670

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY 971216-F1

CLIENT PES ENVIRONMENTAL INC.

SITE 10700 MACARTHUR BLVD.
OAKLAND
CA

LAB ETS DHS #

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

☐ EPA ☐ RWQCB REGION ____
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS Invoice & Report to PES ENVIRONMENTAL INC. Attn: WILL MAST

C = COMPOSITE ALL CONTAINERS

CONDUCT ANALYSIS TO DETECT: TPH GAS / BTEX

SAMPLE I.D.	DATE	TIME	MATRIX S = SOIL W = H2O	CONTAINERS TOTAL	C	TPH GAS / BTEX	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
AMW-6	12/16	930	W	1		X				
AMW-7	12/16	1030	W	1		X				
AMW-9	12/16	1045	W	1		X				
MW-6	12/16	1130	W	1		X				
AMW-11	12/16	1255	W	1		X				

SAMPLING COMPLETED DATE 12/16/97 TIME 1255

SAMPLING PERFORMED BY Tim Kemp

RESULTS NEEDED NO LATER THAN PER Client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Tim Kemp	12/16/97	1524	[illegible]	12/16/97	1526

SHIPPED VIA | DATE SENT | TIME SENT | COOLER #

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY 980108-K3

CLIENT PES

SITE 10700 MacArthur Blvd
Oakland, CA

CONDUCT ANALYSIS TO DETECT

LAB ABC DHS #

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

☐ EPA ☐ RWQCB REGION _____
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS
Invoice & Report to PES
Attention Will Mast

SAMPLE I.D.	Date	Time	MATRIX S = SOIL W = H2O	CONTAINERS TOTAL		C = COMPOSITE ALL CONTAINERS	8010	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
FH3/MW-10	1/8/98	1410	W	3	40 ml VOA		X				

SAMPLING COMPLETED DATE 1/8/98 TIME 1410

SAMPLING PERFORMED BY Mark Spandler

RESULTS NEEDED NO LATER THAN Per Client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	1-9-98	12:34	Rick Gilmore	1-9-98	12:34
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY 980108-K2

CLIENT PES

SITE 10700 MacArthur Blvd.
Oakland, CA

CONDUCT ANALYSIS TO DETECT

LAB Quanterra DHS #

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

☐ EPA ☐ RWQCB REGION
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS

Invoice & Report to PES
Attention will Mast

SAMPLE I.D.	Date	Time	MATRIX S = SOIL W = H2O	CONTAINERS TOTAL		C = COMPOSITE ALL CONTAINERS	Carbon Disulfide/Naphthalene	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
FW1/MW6	1/6/98	1410	W	3	40 mL Vials		X				

SAMPLING COMPLETED DATE 1/8/98 TIME 1410

SAMPLING PERFORMED BY Mark Spandler

RESULTS NEEDED NO LATER THAN Per Client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
	1/8/98	1700			
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #	
AIRBORNE	1/8/98	1700		# 819227310 75

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY 980108-K3

CLIENT PES

SITE 10700 MacArthur Blvd.
Oakland, CA

CONDUCT ANALYSIS TO DETECT

LAB Quanterra DHS #

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

☐ EPA ☐ RWQCB REGION
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS
Invoice & Report to PES
Attention will Mast
"48 hr. hold time"

SAMPLE I.D.	Date	Time	MATRIX S = SOIL W = H2O	CONTAINERS TOTAL		C = COMPOSITE ALL CONTAINERS	8015 Modified Gasoline	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
FH5/MW10	1/8/98	1410	W	1	1 Brass		X				

SAMPLING COMPLETED DATE 1/8/98 TIME 1410

SAMPLING PERFORMED BY Matt Spindler

RESULTS NEEDED NO LATER THAN Per Client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
	1/8/98	~~1515~~ 1700			
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #	
AIRBORNE EXPRESS	1/8/98	1700		AIRBILL # 8912230972

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
FAX (408) 573-7771
PHONE (408) 573-0555

CONDUCT ANALYSIS TO DETECT

LAB E.T.S DHS #

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

☐ EPA ☐ RWQCB REGION _____
☐ LIA
☐ OTHER

CHAIN OF CUSTODY 980108-K3

CLIENT PES

SITE 10700 MacArthur Blvd.
Oakland, CA

SPECIAL INSTRUCTIONS
Invoice & Report to PES
Attention will Mast
"24 hr. hold time"

SAMPLE I.D.	Date	Time	MATRIX S = SOIL W = H2O	CONTAINERS TOTAL		C = COMPOSITE ALL CONTAINERS	Fuel Hydrocarbons	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
F113/MW-6	11/8/98	1410	W	1	1 1-Liter Amb		X				

SAMPLING COMPLETED DATE 11/8/98 TIME 1410

SAMPLING PERFORMED BY Mark Spandler

RESULTS NEEDED NO LATER THAN Per Client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
	11/8/98	1645PM			
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #
FED EX	11/8/98	1645PM	1 of 1

Airbill # 802482641 2829

APPENDIX B

LABORATORY REPORT
AND
CHAIN-OF-CUSTODY RECORDS

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

PES ENVIRONMENTAL, INC.
1682 NOVATO BLVD. STE. 100
NOVATO, CA 94947

ATTN: WILL MAST
CLIENT PROJ. ID: -

C.O.C. NUMBER: 971216-FI

REPORT DATE: 12/31/97

DATE(S) SAMPLED: 12/16/97

DATE RECEIVED: 12/17/97

AEN WORK ORDER: 9712274

PROJECT SUMMARY:

On December 17, 1997, this laboratory received 9 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. 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

PES ENVIRONMENTAL, INC.

SAMPLE ID: AMW-1
AEN LAB NO: 9712274-01
AEN WORK ORDER: 9712274
CLIENT PROJ. ID: -

DATE SAMPLED: 12/16/97
DATE RECEIVED: 12/17/97
REPORT DATE: 12/31/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8010 - Water matrix	EPA 8010				
Bromodichloromethane	75-27-4	ND	0.5	ug/L	12/25/97
Bromoform	75-25-2	ND	0.5	ug/L	12/25/97
Bromomethane	74-83-9	ND	2	ug/L	12/25/97
Carbon Tetrachloride	56-23-5	ND	0.5	ug/L	12/25/97
Chlorobenzene	108-90-7	ND	0.5	ug/L	12/25/97
Chloroethane	75-00-3	ND	2	ug/L	12/25/97
Chloroform	67-66-3	ND	0.5	ug/L	12/25/97
Chloromethane	74-87-3	ND	2	ug/L	12/25/97
Dibromochloromethane	124-48-1	ND	0.5	ug/L	12/25/97
1,2-Dichlorobenzene	95-50-1	ND	0.5	ug/L	12/25/97
1,3-Dichlorobenzene	541-73-1	ND	0.5	ug/L	12/25/97
1,4-Dichlorobenzene	106-46-7	ND	0.5	ug/L	12/25/97
Dichlorodifluoromethane	75-71-8	ND	2	ug/L	12/25/97
1,1-Dichloroethane	75-34-3	ND	0.5	ug/L	12/25/97
1,2-Dichloroethane	107-06-2	ND	0.5	ug/L	12/25/97
1,1-Dichloroethene	75-35-4	ND	0.5	ug/L	12/25/97
cis-1,2-Dichloroethene	156-59-2	ND	0.5	ug/L	12/25/97
trans-1,2-Dichloroethene	156-60-5	ND	0.5	ug/L	12/25/97
1,2-Dichloropropane	78-87-5	ND	0.5	ug/L	12/25/97
cis-1,3-Dichloropropene	10061-01-5	ND	0.5	ug/L	12/25/97
trans-1,3-Dichloropropene	10061-02-6	ND	0.5	ug/L	12/25/97
Methylene Chloride	75-09-2	ND	2	ug/L	12/25/97
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5	ug/L	12/25/97
Tetrachloroethene	127-18-4	ND	0.5	ug/L	12/25/97
1,1,1-Trichloroethane	71-55-6	ND	0.5	ug/L	12/25/97
1,1,2-Trichloroethane	79-00-5	ND	0.5	ug/L	12/25/97
Trichloroethene	79-01-6	ND	0.5	ug/L	12/25/97
Trichlorofluoromethane	75-69-4	ND	2	ug/L	12/25/97
1,1,2-Trichlorotrifluoroethan	76-13-1	ND	0.5	ug/L	12/25/97
Vinyl Chloride	75-01-4	ND	2	ug/L	12/25/97

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: AMW-4
AEN LAB NO: 9712274-02
AEN WORK ORDER: 9712274
CLIENT PROJ. ID: -

DATE SAMPLED: 12/16/97
DATE RECEIVED: 12/17/97
REPORT DATE: 12/31/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8010 - Water matrix	EPA 8010				
Bromodichloromethane	75-27-4	ND	3	ug/L	12/25/97
Bromoform	75-25-2	ND	3	ug/L	12/25/97
Bromomethane	74-83-9	ND	10	ug/L	12/25/97
Carbon Tetrachloride	56-23-5	ND	3	ug/L	12/25/97
Chlorobenzene	108-90-7	ND	3	ug/L	12/25/97
Chloroethane	75-00-3	ND	10	ug/L	12/25/97
Chloroform	67-66-3	ND	3	ug/L	12/25/97
Chloromethane	74-87-3	ND	10	ug/L	12/25/97
Dibromochloromethane	124-48-1	ND	3	ug/L	12/25/97
1,2-Dichlorobenzene	95-50-1	ND	3	ug/L	12/25/97
1,3-Dichlorobenzene	541-73-1	ND	3	ug/L	12/25/97
1,4-Dichlorobenzene	106-46-7	ND	3	ug/L	12/25/97
Dichlorodifluoromethane	75-71-8	ND	10	ug/L	12/25/97
1,1-Dichloroethane	75-34-3	ND	3	ug/L	12/25/97
1,2-Dichloroethane	107-06-2	ND	3	ug/L	12/25/97
1,1-Dichloroethene	75-35-4	ND	3	ug/L	12/25/97
cis-1,2-Dichloroethene	156-59-2	ND	3	ug/L	12/25/97
trans-1,2-Dichloroethene	156-60-5	ND	3	ug/L	12/25/97
1,2-Dichloropropane	78-87-5	ND	3	ug/L	12/25/97
cis-1,3-Dichloropropene	10061-01-5	ND	3	ug/L	12/25/97
trans-1,3-Dichloropropene	10061-02-6	ND	3	ug/L	12/25/97
Methylene Chloride	75-09-2	ND	10	ug/L	12/25/97
1,1,2,2-Tetrachloroethane	79-34-5	ND	3	ug/L	12/25/97
Tetrachloroethene	127-18-4	190 *	3	ug/L	12/25/97
1,1,1-Trichloroethane	71-55-6	ND	3	ug/L	12/25/97
1,1,2-Trichloroethane	79-00-5	ND	3	ug/L	12/25/97
Trichloroethene	79-01-6	ND	3	ug/L	12/25/97
Trichlorofluoromethane	75-69-4	ND	10	ug/L	12/25/97
1,1,2-Trichlorotrifluoroethan	76-13-1	ND	3	ug/L	12/25/97
Vinyl Chloride	75-01-4	ND	10	ug/L	12/25/97

Reporting limits 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

PES ENVIRONMENTAL, INC.

SAMPLE ID: AMW-6
AEN LAB NO: 9712274-03
AEN WORK ORDER: 9712274
CLIENT PROJ. ID: -

DATE SAMPLED: 12/16/97
DATE RECEIVED: 12/17/97
REPORT DATE: 12/31/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8010 - Water matrix	EPA 8010				
Bromodichloromethane	75-27-4	ND	50	ug/L	12/25/97
Bromoform	75-25-2	ND	50	ug/L	12/25/97
Bromomethane	74-83-9	ND	200	ug/L	12/25/97
Carbon Tetrachloride	56-23-5	ND	50	ug/L	12/25/97
Chlorobenzene	108-90-7	ND	50	ug/L	12/25/97
Chloroethane	75-00-3	ND	200	ug/L	12/25/97
Chloroform	67-66-3	ND	50	ug/L	12/25/97
Chloromethane	74-87-3	ND	200	ug/L	12/25/97
Dibromochloromethane	124-48-1	ND	50	ug/L	12/25/97
1,2-Dichlorobenzene	95-50-1	ND	50	ug/L	12/25/97
1,3-Dichlorobenzene	541-73-1	ND	50	ug/L	12/25/97
1,4-Dichlorobenzene	106-46-7	ND	50	ug/L	12/25/97
Dichlorodifluoromethane	75-71-8	ND	200	ug/L	12/25/97
1,1-Dichloroethane	75-34-3	ND	50	ug/L	12/25/97
1,2-Dichloroethane	107-06-2	ND	50	ug/L	12/25/97
1,1-Dichloroethene	75-35-4	ND	50	ug/L	12/25/97
cis-1,2-Dichloroethene	156-59-2	190 *	50	ug/L	12/25/97
trans-1,2-Dichloroethene	156-60-5	60 *	50	ug/L	12/25/97
1,2-Dichloropropane	78-87-5	ND	50	ug/L	12/25/97
cis-1,3-Dichloropropene	10061-01-5	ND	50	ug/L	12/25/97
trans-1,3-Dichloropropene	10061-02-6	ND	50	ug/L	12/25/97
Methylene Chloride	75-09-2	ND	200	ug/L	12/25/97
1,1,2,2-Tetrachloroethane	79-34-5	ND	50	ug/L	12/25/97
Tetrachloroethene	127-18-4	4,300 *	50	ug/L	12/25/97
1,1,1-Trichloroethane	71-55-6	ND	50	ug/L	12/25/97
1,1,2-Trichloroethane	79-00-5	ND	50	ug/L	12/25/97
Trichloroethene	79-01-6	510 *	50	ug/L	12/25/97
Trichlorofluoromethane	75-69-4	ND	200	ug/L	12/25/97
1,1,2-Trichlorotrifluoroethan	76-13-1	ND	50	ug/L	12/25/97
Vinyl Chloride	75-01-4	ND	200	ug/L	12/25/97

Reporting limits 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

PES ENVIRONMENTAL, INC.

SAMPLE ID: AMW-7
AEN LAB NO: 9712274-04
AEN WORK ORDER: 9712274
CLIENT PROJ. ID: -

DATE SAMPLED: 12/16/97
DATE RECEIVED: 12/17/97
REPORT DATE: 12/31/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8010 - Water matrix	EPA 8010				
Bromodichloromethane	75-27-4	ND	5	ug/L	12/25/97
Bromoform	75-25-2	ND	5	ug/L	12/25/97
Bromomethane	74-83-9	ND	20	ug/L	12/25/97
Carbon Tetrachloride	56-23-5	ND	5	ug/L	12/25/97
Chlorobenzene	108-90-7	ND	5	ug/L	12/25/97
Chloroethane	75-00-3	ND	20	ug/L	12/25/97
Chloroform	67-66-3	ND	5	ug/L	12/25/97
Chloromethane	74-87-3	ND	20	ug/L	12/25/97
Dibromochloromethane	124-48-1	ND	5	ug/L	12/25/97
1,2-Dichlorobenzene	95-50-1	ND	5	ug/L	12/25/97
1,3-Dichlorobenzene	541-73-1	ND	5	ug/L	12/25/97
1,4-Dichlorobenzene	106-46-7	ND	5	ug/L	12/25/97
Dichlorodifluoromethane	75-71-8	ND	20	ug/L	12/25/97
1,1-Dichloroethane	75-34-3	ND	5	ug/L	12/25/97
1,2-Dichloroethane	107-06-2	ND	5	ug/L	12/25/97
1,1-Dichloroethene	75-35-4	ND	5	ug/L	12/25/97
cis-1,2-Dichloroethene	156-59-2	180 *	5	ug/L	12/25/97
trans-1,2-Dichloroethene	156-60-5	9 *	5	ug/L	12/25/97
1,2-Dichloropropane	78-87-5	ND	5	ug/L	12/25/97
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/L	12/25/97
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/L	12/25/97
Methylene Chloride	75-09-2	ND	20	ug/L	12/25/97
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/L	12/25/97
Tetrachloroethene	127-18-4	350 *	5	ug/L	12/25/97
1,1,1-Trichloroethane	71-55-6	ND	5	ug/L	12/25/97
1,1,2-Trichloroethane	79-00-5	ND	5	ug/L	12/25/97
Trichloroethene	79-01-6	67 *	5	ug/L	12/25/97
Trichlorofluoromethane	75-69-4	ND	20	ug/L	12/25/97
1,1,2-Trichlorotrifluoroethan	76-13-1	ND	5	ug/L	12/25/97
Vinyl Chloride	75-01-4	ND	20	ug/L	12/25/97

Reporting limits 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

PES ENVIRONMENTAL, INC.

SAMPLE ID: AMW-8
AEN LAB NO: 9712274-05
AEN WORK ORDER: 9712274
CLIENT PROJ. ID: -

DATE SAMPLED: 12/16/97
DATE RECEIVED: 12/17/97
REPORT DATE: 12/31/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8010 - Water matrix	EPA 8010				
Bromodichloromethane	75-27-4	ND	0.5	ug/L	12/25/97
Bromoform	75-25-2	ND	0.5	ug/L	12/25/97
Bromomethane	74-83-9	ND	2	ug/L	12/25/97
Carbon Tetrachloride	56-23-5	ND	0.5	ug/L	12/25/97
Chlorobenzene	108-90-7	ND	0.5	ug/L	12/25/97
Chloroethane	75-00-3	ND	2	ug/L	12/25/97
Chloroform	67-66-3	ND	0.5	ug/L	12/25/97
Chloromethane	74-87-3	ND	2	ug/L	12/25/97
Dibromochloromethane	124-48-1	ND	0.5	ug/L	12/25/97
1,2-Dichlorobenzene	95-50-1	ND	0.5	ug/L	12/25/97
1,3-Dichlorobenzene	541-73-1	ND	0.5	ug/L	12/25/97
1,4-Dichlorobenzene	106-46-7	ND	0.5	ug/L	12/25/97
Dichlorodifluoromethane	75-71-8	ND	2	ug/L	12/25/97
1,1-Dichloroethane	75-34-3	ND	0.5	ug/L	12/25/97
1,2-Dichloroethane	107-06-2	ND	0.5	ug/L	12/25/97
1,1-Dichloroethene	75-35-4	ND	0.5	ug/L	12/25/97
cis-1,2-Dichloroethene	156-59-2	ND	0.5	ug/L	12/25/97
trans-1,2-Dichloroethene	156-60-5	ND	0.5	ug/L	12/25/97
1,2-Dichloropropane	78-87-5	ND	0.5	ug/L	12/25/97
cis-1,3-Dichloropropene	10061-01-5	ND	0.5	ug/L	12/25/97
trans-1,3-Dichloropropene	10061-02-6	ND	0.5	ug/L	12/25/97
Methylene Chloride	75-09-2	ND	2	ug/L	12/25/97
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5	ug/L	12/25/97
Tetrachloroethene	127-18-4	ND	0.5	ug/L	12/25/97
1,1,1-Trichloroethane	71-55-6	ND	0.5	ug/L	12/25/97
1,1,2-Trichloroethane	79-00-5	ND	0.5	ug/L	12/25/97
Trichloroethene	79-01-6	ND	0.5	ug/L	12/25/97
Trichlorofluoromethane	75-69-4	ND	2	ug/L	12/25/97
1,1,2-Trichlorotrifluoroethan	76-13-1	ND	0.5	ug/L	12/25/97
Vinyl Chloride	75-01-4	ND	2	ug/L	12/25/97

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: AMW-9
AEN LAB NO: 9712274-06
AEN WORK ORDER: 9712274
CLIENT PROJ. ID: -

DATE SAMPLED: 12/16/97
DATE RECEIVED: 12/17/97
REPORT DATE: 12/31/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8010 - Water matrix	EPA 8010				
Bromodichloromethane	75-27-4	ND	0.5	ug/L	12/30/97
Bromoform	75-25-2	ND	0.5	ug/L	12/30/97
Bromomethane	74-83-9	ND	2	ug/L	12/30/97
Carbon Tetrachloride	56-23-5	ND	0.5	ug/L	12/30/97
Chlorobenzene	108-90-7	ND	0.5	ug/L	12/30/97
Chloroethane	75-00-3	ND	2	ug/L	12/30/97
Chloroform	67-66-3	ND	0.5	ug/L	12/30/97
Chloromethane	74-87-3	ND	2	ug/L	12/30/97
Dibromochloromethane	124-48-1	ND	0.5	ug/L	12/30/97
1,2-Dichlorobenzene	95-50-1	ND	0.5	ug/L	12/30/97
1,3-Dichlorobenzene	541-73-1	ND	0.5	ug/L	12/30/97
1,4-Dichlorobenzene	106-46-7	ND	0.5	ug/L	12/30/97
Dichlorodifluoromethane	75-71-8	ND	2	ug/L	12/30/97
1,1-Dichloroethane	75-34-3	ND	0.5	ug/L	12/30/97
1,2-Dichloroethane	107-06-2	ND	0.5	ug/L	12/30/97
1,1-Dichloroethene	75-35-4	ND	0.5	ug/L	12/30/97
cis-1,2-Dichloroethene	156-59-2	1.7 *	0.5	ug/L	12/30/97
trans-1,2-Dichloroethene	156-60-5	ND	0.5	ug/L	12/30/97
1,2-Dichloropropane	78-87-5	ND	0.5	ug/L	12/30/97
cis-1,3-Dichloropropene	10061-01-5	ND	0.5	ug/L	12/30/97
trans-1,3-Dichloropropene	10061-02-6	ND	0.5	ug/L	12/30/97
Methylene Chloride	75-09-2	ND	2	ug/L	12/30/97
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5	ug/L	12/30/97
Tetrachloroethene	127-18-4	110 *	0.5	ug/L	12/30/97
1,1,1-Trichloroethane	71-55-6	ND	0.5	ug/L	12/30/97
1,1,2-Trichloroethane	79-00-5	ND	0.5	ug/L	12/30/97
Trichloroethene	79-01-6	ND	0.5	ug/L	12/30/97
Trichlorofluoromethane	75-69-4	ND	2	ug/L	12/30/97
1,1,2-Trichlorotrifluoroethan	76-13-1	ND	0.5	ug/L	12/30/97
Vinyl Chloride	75-01-4	ND	2	ug/L	12/30/97

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: MW-6
AEN LAB NO: 9712274-07
AEN WORK ORDER: 9712274
CLIENT PROJ. ID: -

DATE SAMPLED: 12/16/97
DATE RECEIVED: 12/17/97
REPORT DATE: 12/31/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8010 - Water matrix	**EPA 8010**				
Bromodichloromethane	75-27-4	ND	5	ug/L	12/26/97
Bromoform	75-25-2	ND	5	ug/L	12/26/97
Bromomethane	74-83-9	ND	20	ug/L	12/26/97
Carbon Tetrachloride	56-23-5	ND	5	ug/L	12/26/97
Chlorobenzene	108-90-7	ND	5	ug/L	12/26/97
Chloroethane	75-00-3	ND	20	ug/L	12/26/97
Chloroform	67-66-3	ND	5	ug/L	12/26/97
Chloromethane	74-87-3	ND	20	ug/L	12/26/97
Dibromochloromethane	124-48-1	ND	5	ug/L	12/26/97
1,2-Dichlorobenzene	95-50-1	ND	5	ug/L	12/26/97
1,3-Dichlorobenzene	541-73-1	ND	5	ug/L	12/26/97
1,4-Dichlorobenzene	106-46-7	ND	5	ug/L	12/26/97
Dichlorodifluoromethane	75-71-8	40 *	20	ug/L	12/26/97
1,1-Dichloroethane	75-34-3	ND	5	ug/L	12/26/97
1,2-Dichloroethane	107-06-2	ND	5	ug/L	12/26/97
1,1-Dichloroethene	75-35-4	ND	5	ug/L	12/26/97
cis-1,2-Dichloroethene	156-59-2	ND	5	ug/L	12/26/97
trans-1,2-Dichloroethene	156-60-5	ND	5	ug/L	12/26/97
1,2-Dichloropropane	78-87-5	ND	5	ug/L	12/26/97
cis-1,3-Dichloropropene	10061-01-5	ND	5	ug/L	12/26/97
trans-1,3-Dichloropropene	10061-02-6	ND	5	ug/L	12/26/97
Methylene Chloride	75-09-2	ND	20	ug/L	12/26/97
1,1,2,2-Tetrachloroethane	79-34-5	ND	5	ug/L	12/26/97
Tetrachloroethene	127-18-4	500 *	5	ug/L	12/26/97
1,1,1-Trichloroethane	71-55-6	ND	5	ug/L	12/26/97
1,1,2-Trichloroethane	79-00-5	ND	5	ug/L	12/26/97
Trichloroethene	79-01-6	8 *	5	ug/L	12/26/97
Trichlorofluoromethane	75-69-4	ND	20	ug/L	12/26/97
1,1,2-Trichlorotrifluoroethan	76-13-1	ND	5	ug/L	12/26/97
Vinyl Chloride	75-01-4	ND	20	ug/L	12/26/97

Reporting limits 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

PES ENVIRONMENTAL, INC.

SAMPLE ID: MW-7
AEN LAB NO: 9712274-08
AEN WORK ORDER: 9712274
CLIENT PROJ. ID: -

DATE SAMPLED: 12/16/97
DATE RECEIVED: 12/17/97
REPORT DATE: 12/31/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8010 - Water matrix	EPA 8010				
Bromodichloromethane	75-27-4	ND	0.5	ug/L	12/26/97
Bromoform	75-25-2	ND	0.5	ug/L	12/26/97
Bromomethane	74-83-9	ND	2	ug/L	12/26/97
Carbon Tetrachloride	56-23-5	ND	0.5	ug/L	12/26/97
Chlorobenzene	108-90-7	ND	0.5	ug/L	12/26/97
Chloroethane	75-00-3	ND	2	ug/L	12/26/97
Chloroform	67-66-3	ND	0.5	ug/L	12/26/97
Chloromethane	74-87-3	ND	2	ug/L	12/26/97
Dibromochloromethane	124-48-1	ND	0.5	ug/L	12/26/97
1,2-Dichlorobenzene	95-50-1	ND	0.5	ug/L	12/26/97
1,3-Dichlorobenzene	541-73-1	ND	0.5	ug/L	12/26/97
1,4-Dichlorobenzene	106-46-7	ND	0.5	ug/L	12/26/97
Dichlorodifluoromethane	75-71-8	ND	2	ug/L	12/26/97
1,1-Dichloroethane	75-34-3	ND	0.5	ug/L	12/26/97
1,2-Dichloroethane	107-06-2	ND	0.5	ug/L	12/26/97
1,1-Dichloroethene	75-35-4	ND	0.5	ug/L	12/26/97
cis-1,2-Dichloroethene	156-59-2	ND	0.5	ug/L	12/26/97
trans-1,2-Dichloroethene	156-60-5	ND	0.5	ug/L	12/26/97
1,2-Dichloropropane	78-87-5	ND	0.5	ug/L	12/26/97
cis-1,3-Dichloropropene	10061-01-5	ND	0.5	ug/L	12/26/97
trans-1,3-Dichloropropene	10061-02-6	ND	0.5	ug/L	12/26/97
Methylene Chloride	75-09-2	ND	2	ug/L	12/26/97
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5	ug/L	12/26/97
Tetrachloroethene	127-18-4	0.7 *	0.5	ug/L	12/26/97
1,1,1-Trichloroethane	71-55-6	ND	0.5	ug/L	12/26/97
1,1,2-Trichloroethane	79-00-5	ND	0.5	ug/L	12/26/97
Trichloroethene	79-01-6	ND	0.5	ug/L	12/26/97
Trichlorofluoromethane	75-69-4	ND	2	ug/L	12/26/97
1,1,2-Trichlorotrifluoroethan	76-13-1	ND	0.5	ug/L	12/26/97
Vinyl Chloride	75-01-4	ND	2	ug/L	12/26/97

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: FHS/MW-11
AEN LAB NO: 9712274-09
AEN WORK ORDER: 9712274
CLIENT PROJ. ID: -

DATE SAMPLED: 12/16/97
DATE RECEIVED: 12/17/97
REPORT DATE: 12/31/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8010 - Water matrix	EPA 8010				
Bromodichloromethane	75-27-4	ND	0.5	ug/L	12/26/97
Bromoform	75-25-2	ND	0.5	ug/L	12/26/97
Bromomethane	74-83-9	ND	2	ug/L	12/26/97
Carbon Tetrachloride	56-23-5	ND	0.5	ug/L	12/26/97
Chlorobenzene	108-90-7	ND	0.5	ug/L	12/26/97
Chloroethane	75-00-3	ND	2	ug/L	12/26/97
Chloroform	67-66-3	ND	0.5	ug/L	12/26/97
Chloromethane	74-87-3	ND	2	ug/L	12/26/97
Dibromochloromethane	124-48-1	ND	0.5	ug/L	12/26/97
1,2-Dichlorobenzene	95-50-1	ND	0.5	ug/L	12/26/97
1,3-Dichlorobenzene	541-73-1	ND	0.5	ug/L	12/26/97
1,4-Dichlorobenzene	106-46-7	ND	0.5	ug/L	12/26/97
Dichlorodifluoromethane	75-71-8	ND	2	ug/L	12/26/97
1,1-Dichloroethane	75-34-3	ND	0.5	ug/L	12/26/97
1,2-Dichloroethane	107-06-2	ND	0.5	ug/L	12/26/97
1,1-Dichloroethene	75-35-4	ND	0.5	ug/L	12/26/97
cis-1,2-Dichloroethene	156-59-2	ND	0.5	ug/L	12/26/97
trans-1,2-Dichloroethene	156-60-5	ND	0.5	ug/L	12/26/97
1,2-Dichloropropane	78-87-5	ND	0.5	ug/L	12/26/97
cis-1,3-Dichloropropene	10061-01-5	ND	0.5	ug/L	12/26/97
trans-1,3-Dichloropropene	10061-02-6	ND	0.5	ug/L	12/26/97
Methylene Chloride	75-09-2	ND	2	ug/L	12/26/97
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5	ug/L	12/26/97
Tetrachloroethene	127-18-4	9.9 *	0.5	ug/L	12/26/97
1,1,1-Trichloroethane	71-55-6	ND	0.5	ug/L	12/26/97
1,1,2-Trichloroethane	79-00-5	ND	0.5	ug/L	12/26/97
Trichloroethene	79-01-6	ND	0.5	ug/L	12/26/97
Trichlorofluoromethane	75-69-4	ND	2	ug/L	12/26/97
1,1,2-Trichlorotrifluoroethan	76-13-1	ND	0.5	ug/L	12/26/97
Vinyl Chloride	75-01-4	ND	2	ug/L	12/26/97

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

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9712274

CLIENT PROJECT ID: 971216-FI

Quality Control Summary

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

Definitions

Laboratory Control Sample (LCS)/Method Spike(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 analysis.

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 behavior, 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 instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 8010

AEN JOB NO: 9712274
INSTRUMENT: I
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Bromochloro-methane	Percent Recovery 1-Bromo-3-chloro-propane
12/25/97	AMW-1	01	92	96
12/25/97	AMW-4	02	95	96
12/25/97	AMW-6	03	99	97
12/25/97	AMW-7	04	98	98
12/25/97	AMW-8	05	101	103
12/30/97	AMW-9	06	99	99
12/26/97	MW-6	07	100	106
12/26/97	MW-7	08	98	100
12/26/97	FHS/MW-11	09	104	108
QC Limits:			70-130	70-130

DATE ANALYZED: 12/25/97
SAMPLE SPIKED: LCS
INSTRUMENT: I

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
1,1-Dichloroethene	25	110	1	70-130	20
Trichloroethene	25	126	<1	70-130	20
Chlorobenzene	25	112	4	70-130	20

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

*** END OF REPORT ***

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY 971216-F1

CLIENT PES ENVIRONMENTAL INC

SITE 10700 MACARTHUR BLVD.
OAKLAND
CA.

CONDUCT ANALYSIS TO DETECT

LAB AEN 9712274 DHS #

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

☐ EPA ☐ RWQCB REGION _____
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS INVOICE & REPORT to PES ENVIRONMENTAL INC. ATTN: WILL MAST

SAMPLE I.D.	DATE	TIME	MATRIX S=SOIL W=H2O	CONTAINERS TOTAL	C=COMPOSITE ALL CONTAINERS	EPA# 8010								ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
AMW-1	12/16	930	W	3		X											01A-C
AMW-4	12/16	1003	W	3		X											02A-C
AMW-6	12/16	930	W	3		X											03A-C
AMW-7	12/16	1030	W	3		X											04A-C
AMW-8	12/16	1000	W	3		X											05A-C
AMW-9	12/16	1045	W	3		X											06A-C
MW-6	12/16	1130	W	3		X											07A-C
MW-7	12/16	1135	W	3		X											08A-C
FHS/MW-11	12/16	1255	W	3		X											09A-C
																	~~10~~

SAMPLING COMPLETED DATE 12/16/97 TIME 1255

SAMPLING PERFORMED BY Tim Hunt

RESULTS NEEDED NO LATER THAN ASAP Client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Tim Hunt	12/17/97	1110	Michael E. Schuller	12/17/97	1110
Michael E. Schuller	12/17/97	1230	Lynn Gillespie	12-17-97	1230

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #	

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

PES ENVIRONMENTAL, INC.
1682 NOVATO BLVD. STE. 100
NOVATO, CA 94947

ATTN: WILL MAST
CLIENT PROJ. ID: -

C.O.C. NUMBER: 090108-K3

REPORT DATE: 01/22/98

DATE(S) SAMPLED: 01/08/98

DATE RECEIVED: 01/09/98

AEN WORK ORDER: 9801046

PROJECT SUMMARY:

On January 9, 1998, this laboratory received 1 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. 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

PES ENVIRONMENTAL, INC.

SAMPLE ID: FHS/MW-10
AEN LAB NO: 9801046-01
AEN WORK ORDER: 9801046
CLIENT PROJ. ID: -

DATE SAMPLED: 01/08/98
DATE RECEIVED: 01/09/98
REPORT DATE: 01/22/98

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8010 - Water matrix	EPA 8010				
Bromodichloromethane	75-27-4	ND	0.5	ug/L	01/17/98
Bromoform	75-25-2	ND	0.5	ug/L	01/17/98
Bromomethane	74-83-9	ND	2	ug/L	01/17/98
Carbon Tetrachloride	56-23-5	ND	0.5	ug/L	01/17/98
Chlorobenzene	108-90-7	ND	0.5	ug/L	01/17/98
Chloroethane	75-00-3	ND	2	ug/L	01/17/98
Chloroform	67-66-3	ND	0.5	ug/L	01/17/98
Chloromethane	74-87-3	ND	2	ug/L	01/17/98
Dibromochloromethane	124-48-1	ND	0.5	ug/L	01/17/98
1,2-Dichlorobenzene	95-50-1	ND	0.5	ug/L	01/17/98
1,3-Dichlorobenzene	541-73-1	ND	0.5	ug/L	01/17/98
1,4-Dichlorobenzene	106-46-7	ND	0.5	ug/L	01/17/98
Dichlorodifluoromethane	75-71-8	ND	2	ug/L	01/17/98
1,1-Dichloroethane	75-34-3	ND	0.5	ug/L	01/17/98
1,2-Dichloroethane	107-06-2	ND	0.5	ug/L	01/17/98
1,1-Dichloroethene	75-35-4	ND	0.5	ug/L	01/17/98
cis-1,2-Dichloroethene	156-59-2	ND	0.5	ug/L	01/17/98
trans-1,2-Dichloroethene	156-60-5	ND	0.5	ug/L	01/17/98
1,2-Dichloropropane	78-87-5	ND	0.5	ug/L	01/17/98
cis-1,3-Dichloropropene	10061-01-5	ND	0.5	ug/L	01/17/98
trans-1,3-Dichloropropene	10061-02-6	ND	0.5	ug/L	01/17/98
Methylene Chloride	75-09-2	ND	2	ug/L	01/17/98
1,1,2,2-Tetrachloroethane	79-34-5	ND	0.5	ug/L	01/17/98
Tetrachloroethene	127-18-4	ND	0.5	ug/L	01/17/98
1,1,1-Trichloroethane	71-55-6	ND	0.5	ug/L	01/17/98
1,1,2-Trichloroethane	79-00-5	ND	0.5	ug/L	01/17/98
Trichloroethene	79-01-6	ND	0.5	ug/L	01/17/98
Trichlorofluoromethane	75-69-4	ND	2	ug/L	01/17/98
1,1,2-Trichlorotrifluoroethan	76-13-1	ND	0.5	ug/L	01/17/98
Vinyl Chloride	75-01-4	ND	2	ug/L	01/17/98

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

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9801046

CLIENT PROJECT ID: -

Quality Control and Project Summary

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

Definitions

Laboratory Control Sample (LCS)/Method Spike(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 analysis.

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 behavior, 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 instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 8010

AEN JOB NO: 9801046
INSTRUMENT: I
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery: Bromochloro-methane	Percent Recovery: 1-Bromo-3-chloro-propane
01/17/98	FHS/MW-10	01	93	97
QC Limits:			70-130	70-130

DATE ANALYZED: 01/16/98
SAMPLE SPIKED: LCS
INSTRUMENT: I

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits: Percent Recovery	QC Limits: RPD
1,1-Dichloroethene	25	100	5	70-130	20
Trichloroethene	25	110	<1	70-130	20
Chlorobenzene	25	94	3	70-130	20

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

*** END OF REPORT ***

9801046 R533

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY 980108-K3

CLIENT PES

SITE 10700 MacArthur Blvd
Oakland, CA

LAB AEN | DHS #

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

☐ EPA ☐ RWQCB REGION _____
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS
Invoice and Report to PES
Attention Will Mast

SAMPLE I.D.	Date / Time	MATRIX S = SOIL W = H_2O	CONTAINERS TOTAL		C = COMPOSITE ALL CONTAINERS	CONDUCT ANALYSIS TO DETECT: 8010	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
FHS/HWD	1/8/98 1410	W	3	40 mL VOAs		X				1A-C

SAMPLING COMPLETED DATE 1/8/98 TIME 1410

SAMPLING PERFORMED BY Mark Spandler

RESULTS NEEDED NO LATER THAN Per Client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	1-9-98	12:34	Rich Dilmore	1-9-98	12:34
Rich Dilmore	1-9-98	14:30	Greg Glaser	1-9-98	1430
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #	

Quanterra Incorporated
880 Riverside Parkway
West Sacramento, California 95605

916 373-5600 Telephone
916 372-1059 Fax

Quanterra
Environmental Services

December 29, 1997

QUANTERRA INCORPORATED PROJECT NUMBER: 096666
PO/CONTRACT: 502.0201.006

Will Mast
PES
1682 Novato Blvd.
Novato, CA 94947

Dear Mr. Mast,

This report contains the analytical results for the five samples received under chain of custody by Quanterra Incorporated on December 17, 1997.

The case narrative is an integral part of this report.

If you have any questions, please feel free to call me at (916)374-4383.

Sincerely,

Calvin Tanaka
Project Manager

Quanterra
Environmental Services

TABLE OF CONTENTS

QUANTERRA INCORPORATED PROJECT NUMBER 096666

Quanterra
Environmental Services

CASE NARRATIVE

QUANTERRA INCORPORATED PROJECT NUMBER 096666

There were no anomalies associated with this project.

Quanterra
Environmental Services

Quanterra Environmental Services - Western Region

Quality Control Definitions

QC Parameter	Definition
QC Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Duplicate Control Sample (DCS)	Consist of a pair of LCSs analyzed within the same QC batch to monitor precision and accuracy independent of sample matrix effects. This QC is performed only if required by client or when insufficient sample is available to perform MS/MSD.
Duplicate Sample (DU)	A second aliquot of an environmental sample, taken from the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative of the precision for other samples in the batch.
Laboratory Control Sample (LCS)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. An LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried through the entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank (MB)	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate Spike	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.

Source: Quanterra® Quality Control Program, Policy QA-003, Rev. 0, 8/19/96.

Quanterra
Environmental Services

SAMPLE DESCRIPTION INFORMATION
for
PES

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
096666-0001-SA	AMW-6	AQUEOUS	16 DEC 97	09:30	17 DEC 97
096666-0002-SA	AMW-7	AQUEOUS	16 DEC 97	10:30	17 DEC 97
096666-0003-SA	AMW-9	AQUEOUS	16 DEC 97	10:45	17 DEC 97
096666-0004-SA	MW-9	AQUEOUS	16 DEC 97	11:30	17 DEC 97
096666-0005-SA	FHS/MW-11	AQUEOUS	16 DEC 97	12:55	17 DEC 97

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY 971216 - 01

CLIENT PES ENVIRONMENTAL INC.

SITE 10700 MACARTHUR BLVD.
OAKLAND
CA.

CONDUCT ANALYSIS TO DETECT

LAB QUANTERRA - SACRAMENTO DHS #

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

☐ EPA ☐ LIA ☐ OTHER ☐ RWQCB REGION

SPECIAL INSTRUCTIONS: INVOICE & REPORT to PES ENVIRONMENTAL INC. ATTN: BILL MAST
* note - Nitrate has a 48hr HOLD time

SAMPLE I.D.	DATE	TIME	MATRIX S=SOIL W=H2O	CONTAINERS TOTAL	C=COMPOSITE ALL CONTAINERS	Sulphate	Nitrate	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
AMW-6	12/16	930	W	1		X	X				
AMW-7	12/16	1030	W	1		X	X				
AMW-9	12/16	1045	W	1		X	X				
MW-6	12/16	1130	W	1		X	X				
FHS/MW-11	12/16	1255	W	1		X	X				

Samples rec'd in good condition
12/17/97

SAMPLING COMPLETED DATE 12/16/97 TIME 1255

SAMPLING PERFORMED BY Tim Long

RESULTS NEEDED NO LATER THAN Per Client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Tim Long	12/16/97	1715			
				12/17/97	11:15

SHIPPED VIA Airborne Express

DATE SENT 12/16/97

TIME SENT 1715

COOLER #

8912230670

Quanterra
Environmental
Services

General Inorganics - Method 300.0

Quanterra
Environmental Services

GENERAL INORGANICS

(Water)

Client Name: PES
Client ID: AMW-6
Lab ID: 096666-0001-SA
Matrix: AQUEOUS
Authorized: 17 DEC 97

Sampled: 16 DEC 97
Prepared: See Below

Received: 17 DEC 97
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Nitrate (as N)	5.7	mg/L	0.50	300.0	NA	17 DEC 97 o
Sulfate	47.9	mg/L	10.0	300.0	NA	17 DEC 97 o

Note o : Reporting limit(s) raised due to high level of analyte present in sample.

ND = Not detected
NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Josefina Jones

The cover letter is an integral part of this report.
Rev 230787

Quanterra
Environmental Services

GENERAL INORGANICS

(Water)

Client Name: PES
Client ID: AMW-7
Lab ID: 096666-0002-SA
Matrix: AQUEOUS
Authorized: 17 DEC 97

Sampled: 16 DEC 97
Prepared: See Below

Received: 17 DEC 97
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Nitrate (as N)	5.7	mg/L	0.50	300.0	NA	17 DEC 97 o
Sulfate	89.7	mg/L	10.0	300.0	NA	17 DEC 97 o

Note o : Reporting limit(s) raised due to high level of analyte present in sample.

ND = Not detected
NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Josefina Jones

The cover letter is an integral part of this report.
Rev 230787

Quanterra
Environmental Services

GENERAL INORGANICS

(Water)

Client Name: PES
Client ID: AMW-9
Lab ID: 096666-0003-SA
Matrix: AQUEOUS
Authorized: 17 DEC 97

Sampled: 16 DEC 97
Prepared: See Below

Received: 17 DEC 97
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Nitrate (as N)	2.7	mg/L	0.050	300.0	NA	17 DEC 97
Sulfate	27.3	mg/L	1.0	300.0	NA	17 DEC 97

ND = Not detected
NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Josefina Jones

The cover letter is an integral part of this report.
Rev 230787

Quanterra
Environmental Services

GENERAL INORGANICS

(Water)

Client Name: PES
Client ID: MW-96
Lab ID: 096666-0004-SA
Matrix: AQUEOUS
Authorized: 17 DEC 97

Sampled: 16 DEC 97
Prepared: See Below

Received: 17 DEC 97
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Nitrate (as N)	2.8	mg/L	0.50	300.0	NA	17 DEC 97 o
Sulfate	37.7	mg/L	10.0	300.0	NA	17 DEC 97 o

Note o : Reporting limit(s) raised due to high level of analyte present in sample.

ND = Not detected
NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Josefina Jones

The cover letter is an integral part of this report.
Rev 230787

Quanterra
Environmental Services

GENERAL INORGANICS

(Water)

Client Name: PES
Client ID: FHS/MW-11
Lab ID: 096666-0005-SA
Matrix: AQUEOUS
Authorized: 17 DEC 97

Sampled: 16 DEC 97
Prepared: See Below

Received: 17 DEC 97
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Nitrate (as N)	5.4	mg/L	0.50	300.0	NA	17 DEC 97 o
Sulfate	45.3	mg/L	10.0	300.0	NA	17 DEC 97 o

Note o : Reporting limit(s) raised due to high level of analyte present in sample.

ND = Not detected
NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Josefina Jones

The cover letter is an integral part of this report.
Rev 230787

Quanterra
Environmental Services

QC LOT ASSIGNMENT REPORT - MS QC
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
096666-0001-SA	AQUEOUS	IC-A	-	17 DEC 97-A	17 DEC 97-AA
096666-0002-SA	AQUEOUS	IC-A	-	17 DEC 97-A	17 DEC 97-AA
096666-0003-SA	AQUEOUS	IC-A	-	17 DEC 97-A	17 DEC 97-AA
096666-0004-SA	AQUEOUS	IC-A	-	17 DEC 97-A	17 DEC 97-AA
096666-0005-SA	AQUEOUS	IC-A	-	17 DEC 97-A	17 DEC 97-AA

Quanterra
Environmental Services

METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation
Project: 096666

Test: IC-SCAN-2-A Ion Chromatography Scan, Multiple elements
Method: 300.0
Matrix: AQUEOUS
QC Lot: 17 DEC 97-AX QC Run: 17 DEC 97-A
Analyzed: 17 DEC 97 Time: 10:18

Analyte	Result	Units	Reporting Limit	Qualifier
Nitrate (as N)	ND	mg/L	0.050	

Test: IC-SCAN-2-A Ion Chromatography Scan, Multiple elements
Method: 300.0
Matrix: AQUEOUS
QC Lot: 17 DEC 97-AX QC Run: 17 DEC 97-A
Analyzed: 17 DEC 97 Time: 10:18

Analyte	Result	Units	Reporting Limit	Qualifier
Sulfate	ND	mg/L	1.0	

ND = Not Detected

Quanterra
Environmental Services

LABORATORY CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation
Project: 096666

Category: IC-A Ion Chromatography Inorganics
Test: IC-SCAN-2-A
Matrix: AQUEOUS
QC Lot: 17 DEC 97-AX QC Run: 17 DEC 97-A
Concentration Units: mg/L

Analyte	Concentration Spiked	Measured	Accuracy(%) LCS	Limits
Fluoride	5.00	5.18	104	90-110
Chloride	10.0	10.2	102	90-110
Nitrite (as N)	1.00	0.927	93	90-110
Bromide	5.00	4.91	98	90-110
Nitrate (as N)	1.00	0.939	94	90-110
Orthophosphate (as P)	2.00	1.89	95	90-110
Sulfate	20.0	19.5	97	90-110

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra
Environmental Services

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
Wet Chemistry Analysis and Preparation
Project: 096666

Category: IC-A Ion Chromatography Inorganics
Test : IC-SCAN-2-A Method: 300.0
Matrix : AQUEOUS
Sample : 096549-0002
MS Run : 17 DEC 97-AA
Units : mg/L

Analyte	Concentration: Sample Result	MS Result	MSD Result	Amount Spiked: MS	Amount Spiked: MSD	%Recovery: MS	%Recovery: MSD	%RPD	Acceptance Limit: Recov.	Acceptance Limit: RPD
Chloride	74.3	190	188	100	100	116	114	1.1	75-125	20
Fluoride	ND	54.4	53.9	50.0	50.0	109	108	0.92	75-125	20
Nitrite (as N)	ND	10.1	10.2	10.0	10.0	101	102	0.99	75-125	20
Bromide	ND	52.0	50.2	50.0	50.0	104	100	3.5	75-125	20
Nitrate (as N)	15.7	26.4	26.3	10.0	10.0	107	106	0.38	75-125	20
Sulfate	22.2	173	171	150	150	101	99	1.2	75-125	20
Orthophosphate (as P)	ND	19.9	20.2	20.0	20.0	100	101	1.5	75-125	20

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra
Environmental Services

Quanterra Incorporated
880 Riverside Parkway
West Sacramento, California 95605

916 373-5600 Telephone
916 372-1059 Fax

January 20, 1998

QUANTERRA INCORPORATED PROJECT NUMBER: 096945
PO/CONTRACT: 502.0201.006

Will Mast
PES
1682 Novato Boulevard
Novato, CA 94947

Dear Mr. Mast,

This report contains the analytical results for the one sample received under chain of custody by Quanterra Incorporated on January 9, 1998. This sample is associated with your Foothill Square project.

The case narrative is an integral part of this report.

If you have any questions, please feel free to call me at (916)374-4383.

Sincerely,

Calvin Tanaka

Calvin Tanaka
Project Manager

Quanterra
Environmental Services

TABLE OF CONTENTS

QUANTERRA INCORPORATED PROJECT NUMBER 096945

Quanterra
Environmental
Services

CASE NARRATIVE

QUANTERRA INCORPORATED PROJECT NUMBER 096945

There were no anomalies associated with this project.

Quanterra
Environmental Services

Quanterra Environmental Services - Western Region

Quality Control Definitions

QC Parameter	Definition
QC Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Duplicate Control Sample (DCS)	Consist of a pair of LCSs analyzed within the same QC batch to monitor precision and accuracy independent of sample matrix effects. This QC is performed only if required by client or when insufficient sample is available to perform MS/MSD.
Duplicate Sample (DU)	A second aliquot of an environmental sample, taken from the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative of the precision for other samples in the batch.
Laboratory Control Sample (LCS)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. An LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried through the entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank (MB)	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate Spike	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.

Source: Quanterra® Quality Control Program, Policy QA-003, Rev. 0, 8/19/96.

Quanterra
Environmental Services

SAMPLE DESCRIPTION INFORMATION
for
PES

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
096945-0001-SA	FHS/MW-10	AQUEOUS	08 JAN 98	14:10	09 JAN 98

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY: [illegible]

CLIENT: PES

SITE: 13730 MacArthur Blvd.
Oakland, CA

CONDUCT ANALYSIS TO DETECT: [illegible]

LAB: [illegible] DHS #:

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

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

SPECIAL INSTRUCTIONS:
Invoice & Report to PES
Attention Will Mast
"48 hr. hold time"

SAMPLE I.D.	Date / Time		MATRIX (S = SOIL, W = H2O)	CONTAINERS TOTAL		C = COMPOSITE ALL CONTAINERS	[illegible]							ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
[illegible]	1/8/98	1410	W	1	[illegible]		X										

Sample rec'd in good condition 010998 [illegible]

SAMPLING COMPLETED	DATE	TIME	SAMPLING PERFORMED BY	RESULTS NEEDED NO LATER THAN
	1/8/98	1410	[illegible]	PER Client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	1/8/98	~~[illegible]~~ 1700	[signature]	010998	[illegible]

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #	
AIRBORNE EXPRESS	1/8/98	1700		AIRBILL # 8912230972

Quanterra
Environmental Services

General Inorganics - Various Methods

Quanterra
Environmental Services

GENERAL INORGANICS

(Water)

Client Name: PES
Client ID: FHS/MW-10
Lab ID: 096945-0001-SA
Matrix: AQUEOUS
Authorized: 09 JAN 98

Sampled: 08 JAN 98
Prepared: See Below

Received: 09 JAN 98
Analyzed: See Below

Parameter	Result	Units	Reporting Limit	Analytical Method	Prepared Date	Analyzed Date
Nitrate (as N)	4.1	mg/L	0.50	300.0	NA	09 JAN 98 o
Sulfate	43.3	mg/L	10.0	300.0	NA	09 JAN 98 o

Note o : Reporting limit(s) raised due to high level of analyte present in sample.

ND = Not detected
NA = Not applicable

Reported By: Lori Ann Upton

Approved By: Hamid Foolad

The cover letter is an integral part of this report.
Rev 230787

Quanterra
Environmental Services

QC LOT ASSIGNMENT REPORT - MS QC
Wet Chemistry Analysis and Preparation

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
096945-0001-SA	AQUEOUS	IC-A	-	09 JAN 98-A	09 JAN 98-AB

Quanterra
Environmental Services

METHOD BLANK REPORT
Wet Chemistry Analysis and Preparation
Project: 096945

Test: IC-SCAN-2-A Ion Chromatography Scan, Multiple elements
Method: 300.0
Matrix: AQUEOUS
QC Lot: 09 JAN 98-AX QC Run: 09 JAN 98-A
Analyzed: 09 JAN 98 Time: 10:36

Analyte	Result	Units	Reporting Limit	Qualifier
Nitrate (as N)	ND	mg/L	0.050	

Test: IC-SCAN-2-A Ion Chromatography Scan, Multiple elements
Method: 300.0
Matrix: AQUEOUS
QC Lot: 09 JAN 98-AX QC Run: 09 JAN 98-A
Analyzed: 09 JAN 98 Time: 10:36

Analyte	Result	Units	Reporting Limit	Qualifier
Sulfate	ND	mg/L	1.0	

ND = Not Detected

Quanterra
Environmental Services

LABORATORY CONTROL SAMPLE REPORT
Wet Chemistry Analysis and Preparation
Project: 096945

Category: IC-A Ion Chromatography Inorganics
Test: IC-SCAN-2-A
Matrix: AQUEOUS
QC Lot: 09 JAN 98-AX QC Run: 09 JAN 98-A
Concentration Units: mg/L

Analyte	Concentration Spiked	Measured	Accuracy(%) LCS	Limits
Fluoride	5.00	4.96	99	90-110
Chloride	10.0	9.46	95	90-110
Nitrite (as N)	1.00	0.937	94	90-110
Bromide	5.00	4.66	93	90-110
Nitrate (as N)	1.00	0.904	90	90-110
Orthophosphate (as P)	2.00	1.84	92	90-110
Sulfate	20.0	18.5	92	90-110

Calculations are performed before rounding to avoid round-off errors in calculated results.

Quanterra
Environmental Services

MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
Wet Chemistry Analysis and Preparation
Project: 096945

Category: IC-A Ion Chromatography Inorganics
Test : IC-SCAN-2-A Method: 300.0
Matrix : AQUEOUS
Sample : 096885-0002
MS Run : 09 JAN 98-AB
Units : mg/L

Analyte	Concentration Sample Result		Concentration MS Result	Concentration MSD Result	Amount Spiked MS	Amount Spiked MSD	%Recovery MS	%Recovery MSD	%RPD	Acceptance Limit Recov.	Acceptance Limit RPD
Chloride	68.2	o	176	178	100	100	108	110	1.1	75-125	20
Nitrate (as N)	0.867		10.5	10.3	10.0	10.0	96	94	1.9	75-125	20
Sulfate	6.40		149	150	150	150	95	96	0.67	75-125	20

o = Reporting limit(s) raised due to high level of analyte present in sample.

Calculations are performed before rounding to avoid round-off errors in calculated results.

E T S

1343 Redwood Way
Petaluma, CA 94954
(707) 795-9605/FAX 795-9384

Environmental Technical Services

Soil, Water & Air Testing & Monitoring
Analytical Labs
Technical Support

Serving people and the environment so that both benefit.

WATER ANALYSIS REPORT

To: William Mast
PES Environmental, Inc.
1682 Novato Blvd. Suite 100
Novato, CA 94947

Date: December 23, 1997
Lab #: 97-12-0211 thru 97-12-0215
Received: December 16, 1997
Tech(s): C. Lawrence
Lab Supervisor: D. Jacobson
Lab Director: G.S. Conrad, Ph.D.
Sample ID(s): AMW-6, AMW-7, AMW-9; MW-6; and FHS/MW-11

Sample of: monitor well water
Project ID: FSSC

Site Location: Foothill Square Shopping Center, 10700 MacArthur Blvd., Oakland, California.

RESULTS

SAMPLE ID	FERROUS IRON
AMW-6	**0.13 mg/l**
AMW-7	**0.05 mg/l**
AMW-9	**0.26 mg/l**
MW-6	**0.03 mg/l**
FHS/MW-11	**0.08 mg/l**

COMMENTS

These samples ranged from low to moderate in ferrous iron content suggesting low to modest levels of total iron; or if total iron levels were higher then the data would suggest some variability in the oxidation levels in each area. Indeed, there appears to be something of a gradient in ferrous iron levels in the AMW samples. Assuming the same total iron in those three areas means greater oxidative and/or iron bacterial activity in AMW-7 than in AMW-9 with AMW-6 being intermediate.

QC DATA - Ferrous Tests 11/10/97

Test	Lab Standard	Result	Percent Recovery
Ferrous Iron*	1.000 mg/l	0.882 mg/l	88.2%

* Ferrous Ammonium Sulfate - $(Fe(NH_4)_2(SO_4)_2 \cdot 6H_2O$

NOTES:
These tests were done according to the Association for Testing Materials (ASTM), and/or conform to standard and accepted protocols as described in Standard Methods for the Examination of Water and Wastewater, 18th ed., ç 1992: Ferrous Iron (Fe^{+}) - Phenanthroline Method (modified SMEWW 3500-Fe D); Redox - ASTM D 1498.

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY 971216-E1

CLIENT PES ENVIRONMENTAL INC.

SITE 10700 MACARTHUR BLVD.
OAKLAND
CA

C = COMPOSITE ALL CONTAINERS

CONDUCT ANALYSIS TO DETECT: FUELS ITEM

LAB ETS DHS #

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

☐ EPA ☐ RWQCB REGION ____
☐ LIA
☐ OTHER

SPECIAL INSTRUCTIONS Invoice & Report to PES ENVIRONMENTAL INC. Attn: Will MAST

SAMPLE I.D.	DATE	TIME	MATRIX S = SOIL W = H2O	CONTAINERS TOTAL	C	FUELS ITEM	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
AMW-6	12/16	930	W	1		X				
AMW-7	12/16	1030	W	1		X				
AMW-9	12/16	1045	W	1		X				
MW-6	12/16	1130	W	1		X				
4 MW-11	12/16	1255	W	1		X				

SAMPLING COMPLETED DATE 12/16/97 TIME 1255

SAMPLING PERFORMED BY Tim Hunt

RESULTS NEEDED NO LATER THAN Per client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
Tim Hunt	12/16/97	1524	William Mast	12/16/97	1526
William Mast	12/16/97	1720	Greg L Conrad	12/16/97	5:20pm

SHIPPED VIA | DATE SENT | TIME SENT | COOLER #

E T S
1343 Redwood Way
Petaluma, CA 94954
(707) 795-9605/FAX 795-9384

RECEIVED JAN 16 1998

Environmental Technical Services

Soil, Water & Air Testing & Monitoring
Analytical Labs
Technical Support

Serving people and the environment so that both benefit.

WATER ANALYSIS REPORT

To: William Mast
PES Environmental, Inc.
1682 Novato Blvd. Suite 100
Novato, CA 94947

Date: January 15, 1998
Lab #: 98-01-0102
Received: January 9, 1998
Tech(s): C. Lawrence
Lab Supervisor: D. Jacobson
Lab Director: G.S. Conrad, Ph.D.
Sample ID(s): FHS/MW-10

Sample of: monitor well water
Project ID: FHS

Site Location: Foothill Square Shopping Center, 10700 MacArthur Blvd., Oakland, California.

RESULTS

SAMPLE ID	FERROUS IRON
FHS/MW-10	**<0.01 mg/l**

COMMENTS

This sample had no detectable ferrous iron present. Either total iron is very low, or there is excellent oxidation taking place; or there is excellent iron bacteria activity.

QC DATA - Ferrous Tests 1/10/98

Test	Lab Standard	Result	Percent Recovery
Ferrous Iron*	0.500 mg/l	0.94 mg/l	94.0%

* Ferrous Ammonium Sulfate - $(Fe(NH_4)_2-(SO_4)_2 \cdot 6H_2O$

NOTES:
These tests were done according to the Association for Testing Materials (ASTM), and/or conform to standard and accepted protocols as described in Standard Methods for the Examination of Water and Wastewater, 18th ed., ç 1992: Ferrous Iron (Fe^{+2}) - Phenanthroline Method (modified SMEWW 3500-Fe D); Redox - ASTM D 1498.

BLAINE TECH SERVICES INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY 980108-K3

CLIENT PES

SITE 10700 MacArthur Blvd.
Oakland, CA

SAMPLE I.D.	Date	Time	MATRIX S = SOIL W = H2O	CONTAINERS TOTAL		C = COMPOSITE ALL CONTAINERS	CONDUCT ANALYSIS TO DETECT: Extract Hold
F113/MW5	1/8/98	1410	W	1	1 1 Liter		X

LAB ETS DHS #

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

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

SPECIAL INSTRUCTIONS

"Invoice + Report to PES Attention will Mast"
"24 hr. hold time"

ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #

SAMPLING COMPLETED DATE 1/8/98 TIME 1410

SAMPLING PERFORMED BY Mark Spindler

RESULTS NEEDED NO LATER THAN Per Client

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
[signature]	1/8/98	4:45pm	David R. Jackson	1-9-98	9:50 A.M.
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #	
FED EX	1/8/98	4:45pm	1 of 1	Airbill # 802483642829

APPENDIX C

HISTORICAL WATER-LEVEL EVALUATION
AND
GROUNDWATER ANALYTICAL DATA

Table C-1. Historical Water-Level Elevation Data
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Measured	Measured by	Top of Casing Elevation (feet MSL)	Depth to Water (feet bgs)	Water Table Elevation (feet MSL)
WGR MW-1 (Shallow Zone)	1/11/89	WGR	65.95	10.18	55.77
	9/7/95	Augeas	65.97	5.82	60.15
	4/16/96	PES	65.97	3.88	62.09
WGR MW-2 (Shallow Zone)	1/11/89	WGR	63.06	25.32	37.74
	11/3/94	WGR	63.18	25.70	37.48
	3/23/95	Augeas	63.18	21.32	41.86
	6/21/95	Augeas	63.18	21.55	41.63
	9/7/95	Augeas	63.18	23.37	39.81
	4/16/96	PES	63.18	20.97	42.21
	7/17/96	PES	63.18	22.71	40.47
	10/23/96	PES	63.18	24.90	38.28
	9/29/97	PES	63.18	25.06	38.12
	12/16/97	PES	63.18	23.17	40.01
WGR MW-3 (Shallow Zone)	1/11/89	WGR	58.42	20.19	38.23
	5/2/94	Resna	58.34	20.06	38.28
	8/3/94	Resna	58.34	22.30	36.04
	12/6/94	EMCON	58.34	17.52	40.82
	3/10/95	EMCON	58.34	15.20	43.14
	6/5/95	EMCON	58.34	19.25	39.09
	8/29/95	EMCON	58.34	21.41	36.93
	9/7/95	Augeas	58.34	21.55	36.79
	11/16/95	EMCON	58.34	22.50	35.84
	2/28/96	EMCON	58.34	14.90	43.44
	4/16/96	PES	58.34	18.49	39.85
	5/28/96	EMCON	58.34	18.33	40.01
	7/17/96	PES	58.34	20.49	37.85
	10/23/96	PES	58.34	22.10	36.24
	11/21/96	EMCON	58.34	18.70	39.64
	3/26/97	EMCON	58.34	18.98	39.36
	5/20/97	EMCON	58.34	19.70	38.64
	8/18/97	EMCON	57.96**	21.81	36.15
	9/29/97	PES	57.96**	21.72	36.24
	12/16/97	PES	57.96**	16.00	41.96
WGR MW-4 (Deep Zone)	1/11/89	WGR	59.96	31.88	28.08
	9/7/95	Augeas	60.02	27.20	32.82
	4/16/96	PES	60.02	23.26	36.76
	7/17/96	PES	60.02	25.89	34.13
	10/23/96	PES	60.02	28.12	31.90
	9/29/97	PES	60.02	28.16	31.86
	12/16/97	PES	60.02	27.14	32.88

Table C-1. Historical Water-Level Elevation Data
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Measured	Measured by	Top of Casing Elevation (feet MSL)	Depth to Water (feet bgs)	Water Table Elevation (feet MSL)
WGR MW-5	1/11/89	WGR	68.94	19.00	49.94
(Shallow Zone)	9/7/95	Augeas	68.94	NM	--
	4/16/96	PES	68.94	NM	--
	7/17/96	PES	68.94	NM	--
	10/23/96	PES	68.94	NM	--
	9/29/97	PES	68.94	NM	--
	12/16/97	PES	68.94	NM	--
AMW-1	10/4/94	Augeas	64.51	24.82	39.69
(Shallow Zone)	11/3/94	Augeas	64.51	25.08	39.43
	3/23/95	Augeas	64.51	21.42	43.09
	6/21/95	Augeas	64.51	23.50	41.01
	9/7/95	Augeas	64.51	23.01	41.50
	4/16/96	PES	64.51	21.99	42.52
	7/17/96	PES	64.51	22.65	41.86
	9/29/97	PES	64.51	24.52	39.99
	12/16/97	PES	64.51	23.00	41.51
AMW-2	10/4/94	Augeas	65.33	16.57	48.76
(Shallow Zone)	10/18/94	Augeas	65.33	16.70	48.63
	11/3/94	Augeas	65.33	16.83	48.50
	3/23/95	Augeas	65.33	13.12	52.21
	6/21/95	Augeas	65.33	13.00	52.33
	Well abandoned during site remediation in 1995.				
AMW-3	11/28/94	Augeas	65.09	14.84	50.25
(Shallow Zone)	3/23/95	Augeas	65.09	12.20	52.89
	6/21/95	Augeas	65.09	11.80	53.29
	Well abandoned during site remediation in 1995.				
AMW-4	5/15/95	Augeas	64.79	12.60	52.19
(Shallow Zone)	6/21/95	Augeas	64.79	12.50	52.29
	9/7/95	Augeas	64.79	13.45	51.34
	4/16/96	PES	64.79	11.00	53.79
	7/17/96	PES	64.79	12.42	52.37
	10/23/96	PES	64.79	14.10	50.69
	9/29/97	PES	64.79	13.32	51.47
	12/16/97	PES	64.79	12.18	52.61

Table C-1. Historical Water-Level Elevation Data
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Measured	Measured by	Top of Casing Elevation (feet MSL)	Depth to Water (feet bgs)	Water Table Elevation (feet MSL)
AMW-5 (Shallow Zone)	5/15/95	Augeas	64.97	13.71	51.26
	6/21/95	Augeas	64.97	13.85	51.12
	9/7/95	Augeas	64.97	14.70	50.27
	4/16/96	PES	64.97	13.04	51.93
	7/17/96	PES	64.97	14.48	50.49
	10/23/96	PES	64.97	15.34	49.63
	9/29/97	PES	64.97	17.39	47.58
	12/16/97	PES	64.97	17.34	47.63
AMW-6 (Shallow Zone)	9/7/95	Augeas	65.10	14.32	50.78
	4/16/96	PES	65.10	12.10	53.00
	7/17/96	PES	65.10	13.59	51.51
	10/23/96	PES	65.10	15.30	49.80
	9/29/97	PES	65.10	15.43	49.67
	12/16/97	PES	65.10	15.77	49.33
AMW-7 (Shallow Zone)	9/7/95	Augeas	64.24	15.30	48.94
	4/16/96	PES	64.24	14.31	49.93
	7/17/96	PES	64.24	15.02	49.22
	10/23/96	PES	64.24	16.38	47.86
	9/29/97	PES	64.24	16.63	47.61
	12/16/97	PES	64.24	16.22	48.02
AMW-8 (Deep Zone)	9/7/95	Augeas	64.55	17.90	46.65
	4/16/96	PES	64.55	15.06	49.49
	7/17/96	PES	64.55	16.60	47.95
	10/23/96	PES	64.55	18.82	45.73
	9/29/97	PES	64.55	17.69	46.86
	12/16/97	PES	64.55	17.67	46.88
AMW-9 (Deep Zone)	9/7/95	Augeas	63.48	23.02	40.46
	4/16/96	PES	63.48	20.98	42.50
	7/17/96	PES	63.48	22.74	40.74
	10/23/96	PES	63.48	24.85	38.63
	9/29/97	PES	63.48	23.59	39.89
	12/16/97	PES	63.48	23.31	40.17
FHS-MW-10 (Deep Zone)	7/25/97	PES	52.37**	26.00	26.37
	10/9/97	PES	52.37	27.92	24.45
	1/8/98	PES	52.37	24.43	27.94

Table C-1. Historical Water-Level Elevation Data
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Measured	Measured by	Top of Casing Elevation (feet MSL)	Depth to Water (feet bgs)	Water Table Elevation (feet MSL)
FHS-MW-11 (Deep Zone)	7/25/97	PES	54.06**	28.05	26.01
	9/29/97	PES	54.06	29.84	24.22
	12/16/97	PES	54.06	27.88	26.18
MW-6 (Deep Zone)	6/30/92	RESNA	61.21	35.50	25.71
	7/15/92	RESNA	61.21	39.89	21.32
	8/25/92	RESNA	61.21	34.90	26.31
	1/22/93	RESNA	61.21	36.52	24.69
	2/12/93	RESNA	61.21	35.65	25.56
	3/28/93	RESNA	61.21	33.33	27.88
	4/30/93	RESNA	61.21	33.56	27.65
	5/12/93	RESNA	61.21	33.95	27.26
	6/17/93	RESNA	61.21	34.90	26.31
	8/18/93	RESNA	61.21	36.72	24.49
	11/10/93	RESNA	61.21	38.64	22.57
	2/4/94	RESNA	61.21	38.48	22.73
	5/2/94	RESNA	61.21	37.02	24.19
	8/3/94	RESNA	61.21	37.97	23.24
	12/6/94	EMCON	61.21	37.33	23.88
	3/10/95	EMCON	61.21	31.54	29.67
	6/5/95	EMCON	61.21	31.15	30.06
	8/29/95	EMCON	61.21	34.03	27.18
	9/7/95	Augeus	61.78**	34.09	27.69
	11/16/95	EMCON	61.78	36.40	25.38
	2/28/96	EMCON	61.78	30.18	31.60
	4/16/96	PES	61.78	29.40	32.38
	5/28/96	EMCON	61.78	30.29	31.49
	7/17/96	PES	61.78	32.36	29.42
	10/23/96	PES	61.78	35.56	26.22
	11/21/96	EMCON	61.78	35.70	26.08
	3/26/97	EMCON	61.78	30.15	31.63
	5/20/97	EMCON	61.78	32.40	29.38
	8/18/97	EMCON	61.78	35.47	26.31
	9/29/97	PES	61.78	36.27	25.51
	12/16/97	PES	61.78	34.55	27.23
MW-7 (Shallow Zone)	6/30/92	RESNA	58.22	23.70	34.52
	7/15/92	RESNA	58.22	23.10	35.12
	8/25/92	RESNA	58.22	34.23	23.99
	9/9/92	RESNA	58.22	26.30	31.92
	10/31/92	RESNA	58.22	35.44	22.78
	11/20/92	RESNA	58.22	23.47	34.75
	12/16/92	RESNA	58.22	19.07	39.15

Table C-1. Historical Water-Level Elevation Data
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Measured	Measured by	Top of Casing Elevation (feet MSL)	Depth to Water (feet bgs)	Water Table Elevation (feet MSL)
MW-7 (cont.)	1/22/93	RESNA	58.22	16.56	41.66
	2/12/93	RESNA	58.22	18.22	40.00
	3/28/93	RESNA	58.22	18.04	40.18
	4/30/93	RESNA	58.22	19.34	38.88
	5/12/93	RESNA	58.22	19.80	38.42
	6/17/93	RESNA	58.22	22.63	35.59
	8/18/93	RESNA	58.22	22.44	35.78
	11/10/93	RESNA	58.22	24.51	33.71
	2/4/94	RESNA	58.22	20.78	37.44
	5/2/94	RESNA	58.22	20.51	37.71
	8/3/94	RESNA	58.22	22.66	35.56
	12/6/94	EMCON	58.22	18.37	39.85
	3/10/95	EMCON	58.22	17.69	40.53
	6/5/95	EMCON	58.22	19.68	38.54
	8/29/95	EMCON	58.22	21.70	36.52
	9/7/95	Augeus	58.64**	21.86	36.78
	11/16/95	EMCON	58.64	23.02	35.62
	2/28/96	EMCON	58.64	16.54	42.10
	4/16/96	PES	58.64	19.26	39.38
	5/28/96	EMCON	58.64	19.29	39.35
	7/17/96	PES	58.64	21.10	37.54
	10/23/96	PES	58.64	24.40	34.24
	11/21/96	EMCON	58.64	19.58	39.06
	3/26/97	EMCON	58.64	19.67	38.97
	5/20/97	EMCON	58.64	20.18	38.46
	8/18/97	EMCON	58.64	22.21	36.43
	9/29/97	PES	58.64	22.19	36.45
	12/16/97	PES	58.64	17.23	41.41

Notes:
feet MSL = Feet above mean sea level
NA = Not accessible
WGR = Western Geologic Resources, Inc.
Augeas = Augeas Corporation
PES = PES Environmental, Inc.
RESNA = RESNA Consultants
* = Top of casing elevations were resurveyed by Augeas Corporation in March 1995.
Sources: Augeus (1995a), EMCON (1996a & b)

Table C-2. Historical Groundwater Analytical Results - Organics
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Sampled	Sampled by	PCE (µg/L)	TCE (µg/L)	c-1,2-DCE (µg/L)	t-1,2-DCE (µg/L)	Freon-12 (µg/L)
FOOTHILL SQUARE SHOPPING CENTER WELLS							
WGR MW-1	12/13/88	WGR	<0.1	<0.1	<0.1	<0.1	<0.1
(Shallow Zone)	9/12/95	Augeas	<0.5	<0.5	–	<0.5	<0.5
	7/17/96	PES	NS	NS	NS	NS	NS
	10/23/96	PES	NS	NS	NS	NS	NS
	9/29/97	PES	NS	NS	NS	NS	NS
	12/16/98	PES	NS	NS	NS	NS	NS
WGR MW-2	12/13/88	WGR	<0.1	<0.1	<0.1	<0.1	<0.1
(Shallow Zone)	2/10/94	WGR	<0.5	<0.5	<0.5	<0.5	<0.5
	3/23/95	Augeas	<0.5	<0.5	–	<0.5	<0.5
	6/21/95	Augeas	<0.5	<0.5	–	<0.5	<0.5
	9/11/95	Augeas	<0.5	<0.5	–	<0.5	<0.5
	4/16/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	7/17/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	10/23/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	9/29/97	PES	NS	NS	NS	NS	NS
	12/16/98	PES	NS	NS	NS	NS	NS
WGR MW-3	12/13/88	WGR	<0.1	<0.1	<0.1	<0.1	<0.1
(Shallow Zone)	5/2/94	EMCON	<1	<1	<1	NS	NS
	8/3/94	EMCON	<1	<1	<1	NS	NS
	12/6/94	EMCON	**4**	<1	<1	<1	–
	3/11/95	EMCON	<1	<1	<1	<1	–
	6/5/95	EMCON	<1	<1	<1	<1	–
	8/29/95	EMCON	<1	<1	<1	<1	–
	9/11/95	Augeas	<0.5	<0.5	–	<0.5	<0.5
	11/16/95	EMCON	<1	<1	<1	<1	<1
	2/28/96	EMCON	<1	<1	<1	<1	–
	4/16/96	PES	**0.6**	**0.5**	<0.5	<0.5	**11**
	5/28/96	EMCON	<1	<1	<1	<1	–
	7/17/96	PES	<0.5	0.7	<0.5	<0.5	<2
	8/19/96	EMCON	<1	<1	<1	<1	–
	10/23/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	11/21/96	EMCON	<1	<1	<1	<1	–
	3/26/97	EMCON	<1	<1	<1	<1	–
	5/20/97	EMCON	<0.5	<0.5	<0.5	<0.5	–
	8/18/97	EMCON	<5	<5	–	<5	–
	9/29/97	PES	<0.5	<0.5	<0.5	<0.5	<2
	12/16/98	PES	NS	NS	NS	NS	NS
WGR MW-4	12/13/88	WGR	<0.1	<0.1	<0.1	<0.1	<0.1
(Deep Zone)	4/16/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	7/17/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	10/23/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	9/29/97	PES	<0.5	<0.5	<0.5	<0.5	<2
	12/16/98	PES	NS	NS	NS	NS	NS
WGR MW-5	12/5/88	WGR	<0.1	<0.1	<0.1	<0.1	<0.1
(Shallow Zone)	7/17/96	PES	NS	NS	NS	NS	NS
	10/23/96	PES	NS	NS	NS	NS	NS
	9/29/97	PES	NS	NS	NS	NS	NS
	12/16/98	PES	NS	NS	NS	NS	NS

Table C-2. Historical Groundwater Analytical Results - Organics
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Sampled	Sampled by	PCE (µg/L)	TCE (µg/L)	c-1,2-DCE (µg/L)	t-1,2-DCE (µg/L)	Freon-12 (µg/L)
AMW-1	10/4/94	Augeas	<0.2	<0.2	**0.5**	<0.2	--
(Shallow Zone)	3/23/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
	6/21/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
	9/11/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
	4/16/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	7/17/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	10/23/96	PES	NS	NS	NS	NS	NS
	9/29/97	PES	<0.5	<0.5	<0.5	<0.5	<2
	12/16/97	PES	<0.5	<0.5	<0.5	<0.5	<2
AMW-2	10/4/94	Augeas	**28,000**	**320**	**110**	**50**	<0.5
(Shallow Zone)	10/18/94	Augeas	**18,000**	<250	<250	<250	<250
	11/8/94	Augeas	**35,000**	<0.5	<0.5	<0.5	<0.5
	3/23/95	Augeas	**13,000**	<250	--	<250	<250
	6/21/95	Augeas	**36,000**	<500	--	<500	<500
	Well abandoned during site remediation in 1995.						
AMW-3	11/28/94	Augeas	**22**	<0.5	<0.5	<0.5	<0.5
(Shallow Zone)	3/23/95	Augeas	**45**	<5.0	--	<5.0	<5.0
	6/21/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
	Well abandoned during site remediation in 1995.						
AMW-4	5/15/95	Augeas	**2,400**	<50	--	<50	<50
(Shallow Zone)	6/21/95	Augeas	**2,500**	<50	--	<50	<50
	9/13/95	Augeas	**1,100**	<25	--	<25	<25
	4/16/96	PES	**1,200**	**10**	<10	<10	<40
	7/17/96	PES	**860**	<10	<10	<10	<40
	10/23/96	PES	**22**	**0.5**	<0.5	<0.5	<2
	9/29/97	PES	**340**	**3**	<3	<3	<10
	12/16/97	PES	**190**	<3	<3	<3	<10
AMW-5	5/15/95	Augeas	**1.2**	<0.5	--	<0.5	<0.5
(Shallow Zone)	6/21/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
	9/12/95	Augeas	<0.5	<0.5	--	<0.5	<0.5
	4/16/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	7/17/96	PES	**0.6**	<0.5	<0.5	<0.5	<2
	10/23/96	PES	**0.8**	<0.5	<0.5	<0.5	<2
	9/29/97	PES	**13**	<0.5	<0.5	<0.5	<2
	12/16/97	PES	NS	NS	NS	NS	NS
AMW-6	9/13/95	Augeas	**930**	<25	--	<25	<25
(Shallow Zone)	4/16/96	PES	**1,900**	**110**	**20**	<10	<40
	7/17/96	PES	**3,300**	**280**	<30	<30	<100
	10/23/96	PES	**2,900**	**140**	<30	<30	<100
	9/29/97	PES	**4,600**	**580**	**220**	**70**	<200
	12/16/97	PES	**4,300**	**510**	**190**	**60**	<200
AMW-7	9/12/95	Augeas	**2,350**	**340**	--	<25	<25
(Shallow Zone)	4/16/96	PES	**2,300**	**500**	**2,200**	**60**	<100
	7/17/96	PES	**2,400**	**530**	**2,100**	<30	<100
	10/23/96	PES	**3,400**	**610**	**3,100**	**50**	<100
	9/29/97	PES	**520**	**100**	**330**	**20**	<40
	12/16/97	PES	**350**	**67**	**180**	**9**	<20

Table C-2. Historical Groundwater Analytical Results - Organics
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Sampled	Sampled by	PCE (µg/L)	TCE (µg/L)	c-1,2-DCE (µg/L)	t-1,2-DCE (µg/L)	Freon-12 (µg/L)
AMW-8	9/11/95	Augeas	**95**	<25	–	<25	<25
(Deep Zone)	4/16/96	PES	**0.8**	<0.5	<0.5	<0.5	<2
	7/17/96	PES	**1.6**	<0.5	<0.5	<0.5	<2
	10/23/96	PES	<0.5	<0.5	<0.5	<0.5	<2
	9/29/97	PES	**0.7**	<0.5	<0.5	<0.5	<2
	12/16/97	PES	<0.5	<0.5	<0.5	<0.5	<2
AMW-9	9/13/95	Augeas	**170**	<25	–	<25	<25
(Deep Zone)	4/16/96	PES	**170**	**4**	**7**	<3	<10
	7/17/96	PES	**190**	**4**	<3	<3	<10
	10/23/96	PES	**190**	<3	<3	<3	<10
	9/29/97	PES	110	<3	<3	<3	<10
	12/16/97	PES	110	<0.5	1.7	<0.5	<2
FHS-MW-10	10/9/97	PES	<0.5	<0.5	<0.5	<0.5	<2
(Deep Zone)	12/16/97	PES	<0.5	<0.5	<0.5	<0.5	<2
FHS-MW-11	9/29/97	PES	**4.0**	<0.5	<0.5	<0.5	<2
(Deep Zone)	12/16/97	PES	**9.9**	<0.5	<0.5	<0.5	<2
ARCO SERVICE STATION WELLS							
MW-1	9/3/91	RESNA	**4.5**	ND	ND	ND	
(Deep Zone)	11/6/91	RESNA	<2.0	<2.0	<2.0	<2.0	–
	3/10/92	RESNA	**8.2**	ND	ND	ND	–
	6/30/92	RESNA	**15**	ND	ND	ND	–
	9/9/92	RESNA	**6**	ND	ND	ND	–
	11/20/92	RESNA	**2**	ND	ND	ND	–
	2/12/93	RESNA	**92**	ND	ND	ND	–
	5/12/93	RESNA	**280**	ND	ND	ND	–
	8/18/93	RESNA	**120**	ND	ND	ND	–
	11/10/93	RESNA	**46**	ND	ND	ND	–
	2/4/94	RESNA	**22**	<1	<1	<1	–
	5/2/94	RESNA	**35**	<1	<1	<1	–
	8/3/94	RESNA	**14**	<1	–	<1	–
	12/6/94	RESNA	**17**	<1	–	<1	–
	3/10/95	RESNA	**170**	<1	–	<1	–
	6/5/95	RESNA	**210**	<1	–	<1	–
	8/29/95	EMCON	**130**	<1	–	<1	–
	11/16/95	EMCON	**45**	<1	–	<1	<1
	2/28/96	EMCON	**97**	<1	<1	<1	–
	5/28/96	EMCON	**160**	<5	<5	<5	–
	8/19/96	EMCON	**77**	<1	<1	<1	–
	11/21/96	EMCON	**30**	<1	<1	<1	–
	3/26/97	EMCON	**66**	<1	<1	<1	–
	5/20/97	EMCON	**36**	<0.5	<0.5	<0.5	–
	8/18/97	EMCON	**11**	<0.5	<0.5	<0.5	–
MW-2	9/3/91	RESNA	Not sampled: well contained floating product				
(Shallow Zone)	11/6/91	RESNA	Not sampled: well contained floating product				
	3/10/92	RESNA	**0.9**	ND	**5.4**	ND	–
	6/30/92	RESNA	<2000	<2000	<2000	<2000	

Table C-2. Historical Groundwater Analytical Results - Organics
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Sampled	Sampled by	PCE (µg/L)	TCE (µg/L)	c-1,2-DCE (µg/L)	t-1,2-DCE (µg/L)	Freon-12 (µg/L)
MW-2 (cont.)	2/4/94	RESNA	<1	<1	<1	<1	--
	5/2/94	RESNA	<1	<1	<1	<1	--
	12/6/94	RESNA	<5	<5	--	<5	--
	3/11/95	RESNA	<1	<1	--	<1	--
	6/5/95	RESNA	<1	<1	--	<1	--
	8/29/95	EMCON	<5	<5	--	<5	--
	2/28/96	EMCON	<1	<1	<1	<1	--
	5/28/96	EMCON	<1	<1	<1	<1	--
	8/21/96	EMCON	<1	<1	<1	<1	--
	11/21/96	EMCON	<1	<1	<1	<1	--
	3/26/97	EMCON	<10	<10	<10	<10	--
	5/20/97	EMCON	<1	<1	<1	<1	--
	8/18/97	EMCON	<5	<5	<5	<5	--
MW-3 (Deep Zone)	9/3/91	RESNA	1,600	ND	ND	ND	
	11/6/91	RESNA	400	ND	ND	ND	
	3/10/92	RESNA	980	5.6	1	ND	3.4
	6/30/92	RESNA	1,500	ND	ND	ND	
	9/9/92	RESNA	800	ND	ND	ND	
	11/20/92	RESNA	690	ND	ND	ND	
	2/12/93	RESNA	1,200	ND	ND	ND	
	5/12/93	RESNA	1,600	ND	ND	ND	
	8/18/93	RESNA	1,300	ND	ND	ND	
	11/10/93	RESNA	1,300	ND	ND	ND	
	2/4/94	RESNA	91	<5	<5	<5	--
	5/2/94	RESNA	1,600	<20	<20	<20	--
	8/3/94	RESNA	680	<20	--	<20	--
	12/6/94	RESNA	1,100	<25	--	<25	--
	3/11/95	RESNA	1,700	<10	--	<10	--
	6/5/95	RESNA	2,500	<20	--	<20	--
	8/29/95	EMCON	1,600	<20	--	<20	--
	11/16/95	EMCON	1,100	<20	--	<20	--
	2/28/96	EMCON	1,100	<10	<10	<10	--
	5/28/96	EMCON	1,700	<20	<20	<20	--
	8/19/96	EMCON	1,200	<10	<10	<10	--
	11/21/96	EMCON	710	<20	<20	<20	--
	3/26/97	EMCON	710	<40	<40	<40	--
	5/20/97	EMCON	800	<25	<25	<25	--
	8/18/97	EMCON	420	<5	<5	<5	--
MW-4 (Deep Zone)	4/24/89	AGS	1,500	<50	<50	<50	--
	7/31/90	RESNA	1,600	7.5	0.7	ND	--
	10/30/90	RESNA	3,600	8.1	0.7	ND	--
	1/30/91	RESNA	4,900	12	ND	ND	--
	4/30/91	RESNA	2,200	ND	ND	ND	--
	8/6/91	RESNA	1,700	ND	ND	ND	--
	9/3/91	RESNA	2,000	ND	ND	ND	--
	11/6/91	RESNA	1,000	6.3	ND	ND	--
	3/10/92	RESNA	2,300	13	4	ND	--
	6/30/92	RESNA	1,800	ND	ND	ND	--
	9/9/92	RESNA	1,300	ND	ND	ND	--
	11/20/92	RESNA	1,700	ND	ND	ND	--

Table C-2. Historical Groundwater Analytical Results - Organics
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Sampled	Sampled by	PCE (µg/L)	TCE (µg/L)	c-1,2-DCE (µg/L)	t-1,2-DCE (µg/L)	Freon-12 (µg/L)
MW-4 (cont.)	2/12/93	RESNA	1,800	ND	ND	ND	--
	5/12/93	RESNA	1,500	ND	ND	ND	--
	8/18/93	RESNA	1,800	ND	ND	ND	--
	11/10/93	RESNA	1,800	ND	ND	ND	--
	2/4/94	RESNA	1,900	<20	<20	<20	--
	5/2/94	RESNA	1,700	<20	<20	<20	--
	8/3/94	RESNA	1,200	<20	--	<20	--
	12/6/94	RESNA	2,200	<20	--	<20	--
	3/11/95	RESNA	2,600	<20	--	<20	--
	6/5/95	RESNA	3,100	<20	--	<20	--
	8/29/95	EMCON	2,900	<20	--	<20	--
	11/16/95	EMCON	2,100	<20	--	<20	<20
	2/28/96	EMCON	2,400	<20	<20	<20	--
	5/28/96	EMCON	2,700	<20	<20	<20	--
	8/19/96	EMCON	2,600	<20	<20	<20	--
	11/21/96	EMCON	1,100	<20	<20	<20	--
	3/26/97	EMCON	1,900	<40	<40	<40	--
	5/20/97	EMCON	1600	<50	<50	<50	--
	8/18/97	EMCON	600	<125	<125	--	--
MW-5 (Deep Zone)	8/6/91	RESNA	7.3	ND	ND	ND	--
	9/3/91	RESNA	25	ND	ND	ND	--
	11/6/91	RESNA	12	ND	ND	ND	--
	3/10/92	RESNA	300	1.3	ND	ND	--
	6/30/92	RESNA	30	ND	ND	ND	--
	9/9/92	RESNA	120	ND	ND	ND	--
	11/24/92	RESNA	93	ND	ND	ND	--
	2/12/93	RESNA	210	ND	ND	ND	--
	5/12/93	RESNA	50	ND	ND	ND	--
	8/18/93	RESNA	80	ND	ND	ND	--
	11/10/93	RESNA	42	ND	ND	ND	--
	2/4/94	RESNA	39	<1	<1	<1	--
	5/2/94	RESNA	35	<1	<1	<1	--
	8/3/94	RESNA	25	<1	--	<1	--
	12/6/94	RESNA	1,800	<20	--	<20	--
	3/10/95	RESNA	270	<5	--	<5	--
	6/5/95	RESNA	310	<5	--	<5	--
	8/29/95	EMCON	240	<5	--	<5	--
	11/16/95	EMCON	940	<5	--	<5	<5
	2/28/96	EMCON	1,100	<10	<10	<10	--
	5/28/96	EMCON	360	<5	<5	<5	--
	8/21/96	EMCON	150	<1	2	<1	--
	11/21/96	EMCON	1,900	<20	<20	<20	--
	3/26/97	EMCON	270	<10	<10	<10	--
	5/20/97	EMCON	290	<5	<5	<5	--
MW-6 (Deep Zone)	6/30/92	RESNA	2,400	<0.5	<0.5	<0.5	<0.5
	2/12/93	RESNA	4,200	<0.5	<0.5	<0.5	<0.5
	5/12/93	RESNA	3,500	<0.5	<0.5	<0.5	<0.5
	8/18/93	RESNA	3,000	<0.5	<0.5	<0.5	<0.5
	11/10/93	RESNA	3,900	<0.5	<0.5	<0.5	<0.5

Table C-2. Historical Groundwater Analytical Results - Organics
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Sampled	Sampled by	PCE (µg/L)	TCE (µg/L)	c-1,2-DCE (µg/L)	t-1,2-DCE (µg/L)	Freon-12 (µg/L)
MW-6	2/4/94	RESNA	**2,900**	<50	<50	<50	--
(cont.)	5/2/94	RESNA	**2,000**	<50	<50	<0.5	<0.5
	8/3/94	RESNA	**1,400**	<50	<50	<0.5	<0.5
	12/6/94	EMCON	**2,000**	<50	<50	<0.5	--
	3/11/95	EMCON	**1,300**	<20	<20	<0.5	--
	6/5/95	EMCON	**2,000**	<20	<20	<20	--
	8/29/95	EMCON	**1,300**	<20	<20	<20	--
	9/11/95	Augeus	**2,000**	<50	--	<50	<50
	11/16/95	EMCON	**1,300**	<20	<20	<20	<20
	2/28/96	EMCON	**960**	<20	<20	<20	--
	4/16/96	PES	**1,400**	10	<10	<10	**100**
	5/28/96	EMCON	**970**	<20	<20	<20	--
	7/17/96	PES	**590**	<5	<5	<5	**30**
	8/19/96	EMCON	**820**	<20	<20	<20	--
	10/23/96	PES	**680**	<5	<5	<5	<20
	11/21/96	EMCON	**680**	<20	<20	<20	--
	3/26/97	EMCON	**830**	<40	<40	<40	--
	5/20/97	EMCON	**270**	<5	<5	<5	--
	8/18/97	EMCON	**420**	<62.5	--	<62.5	--
	9/29/97	PES	**670**	<10	<10	<10	<40
	12/16/97	PES	**500**	**8**	<5	<5	40
MW-7	6/30/92	RESNA	<1000	<1000	<1000	<1000	<1000
(Shallow Zone)	2/4/94	RESNA	<50	<50	<50	<50	<50
	5/2/94	RESNA	<50	<50	<50	<50	<50
	8/3/94	RESNA	<50	<50	<50	<50	<50
	12/6/94	EMCON	<50	<50	<50	<50	--
	6/5/95	EMCON	<10	<10	<10	<10	--
	8/29/95	EMCON	<10	<10	<10	<10	--
	9/11/95	Augeus	**85**	<50	--	<50	<50
	11/16/95	EMCON	<20	<20	<20	<20	<20
	2/28/96	EMCON	<10	<10	<10	<10	--
	4/16/96	PES	<0.5	<0.5	<0.5	<0.5	**8**
	5/28/96	EMCON	<10	<10	<10	<10	--
	7/17/96	PES	<0.5	**0.6**	**0.6**	<0.5	<2
	8/21/96	EMCON	<1	<1	<1	<1	--
	10/23/96	PES	<0.5	<0.5	**0.6**	<0.5	<2
	11/21/96	EMCON	<10	<10	<10	<10	--
	3/26/97	EMCON	<20	<20	<20	<20	--
	5/20/97	EMCON	<10	<10	<10	<10	--
	8/18/97	EMCON	<10	<10	<10	<10	--
	9/29/97	PES	<0.5	<0.5	<0.5	<0.5	<2
	12/16/97	PES	**0.7**	<0.5	<0.5	<0.5	<2
MW-8	9/9/92	RESNA	**37**	ND	ND	ND	
(Deep Zone)	11/24/92	RESNA	**2**	ND	ND	ND	
	2/12/93	RESNA	<1	<1	<1	<1	
	5/12/93	RESNA	<1	<1	<1	<1	
	8/18/93	RESNA	<1	<1	<1	<1	
	11/10/93	RESNA	<1	<1	<1	<1	
	5/2/94	RESNA	<1	<1	<1	<1	--

Table C-2. Historical Groundwater Analytical Results - Organics
Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Sampled	Sampled by	PCE (µg/L)	TCE (µg/L)	c-1,2-DCE (µg/L)	t-1,2-DCE (µg/L)	Freon-12 (µg/L)
MW-8	8/3/94	RESNA	<1	<1	--	<1	--
(cont.)	12/6/94	RESNA	**2**	<1	--	<1	--
	3/11/95	RESNA	<1	<1	--	<1	--
	6/5/95	RESNA	<1	<1	--	<1	--
	8/29/95	EMCON	<1	<1	--	<1	--
	11/16/95	EMCON	<1	<1	--	<1	<1
	2/28/96	EMCON	**3**	<1	<1	<1	--
	5/28/96	EMCON	<1	<1	<1	<1	--
	8/21/96	EMCON	<1	<1	<1	<1	--
	11/21/96	EMCON	**7**	<1	<1	<1	--
	3/26/97	EMCON	<1	<1	<1	<1	--
	5/20/97	EMCON	<0.5	<0.5	<0.5	<0.5	--
	8/18/97	EMCON	<5	<5	<5	--	--
RW-1	11/6/91	RESNA	**980**	ND	ND	ND	--
(Deep Zone)	3/10/92	RESNA	**400**	**1.7**	ND	ND	
	6/30/92	RESNA	**1,100**	ND	ND	ND	
	9/9/92	RESNA	**1,500**	ND	ND	ND	
	11/24/92	RESNA	**1,500**	ND	ND	ND	
	2/12/93	RESNA	**620**	ND	ND	ND	
	5/12/93	RESNA	**500**	ND	ND	ND	
	8/18/93	RESNA	**470**	ND	ND	ND	
	11/10/93	RESNA	**1,500**	ND	ND	ND	
	2/4/94	RESNA	**2,200**	<20	<20	<20	--
	5/2/94	RESNA	**45**	<1	<1	<1	--
	8/3/94	RESNA	**350**	**4**	--	<1	--
	12/6/94	RESNA	**340**	<5	--	<5	--
	3/10/95	RESNA	**260**	<5	--	<5	--
	6/5/95	RESNA	**59**	<1	--	<1	--
	8/29/95	EMCON	**570**	<5	--	<5	--
	11/16/95	EMCON	**140**	<1	--	<1	<1
	2/28/96	EMCON	**6**	<1	<1	<1	--
	5/28/96	EMCON	**12**	<1	<1	<1	--
	8/21/96	EMCON	**100**	<1	<1	<1	--
	11/21/96	EMCON	**190**	<1	<1	<1	--
	3/26/97	EMCON	**6**	<1	<1	<1	--
	5/20/97	EMCON	**5.3**	<0.5	<0.5	<0.5	--
	8/18/97	EMCON	**46**	<5	<5	--	--

Notes:
PCE = Tetrachloroethene.
TCE = Trichloroethene.
c-1,2-DCE = cis-1,2-dichloroethene.
t-1,2-DCE = trans-1,2-dichloroethene.
Freon 12 = Dichlorodifluoromethane.
WGR = Western Geologic Resources, Inc.
Augeas = Augeas Corporation.
AGS = Applied GeoSystems.
PES = PES Environmental, Inc.
EMCON = EMCON Associates.
RESNA = RESNA Consultants.
<0.1 = Not detected at or above the detection limit indicated.
ND = Not detected, detection limit not reported.
NS = Not sampled because well was inaccessible.
-- = Not analyzed.

DISTRIBUTION

QUARTERLY MONITORING REPORT
FORMER YOUNG'S CLEANERS
FOOTHILL SQUARE SHOPPING CENTER
OAKLAND, CALIFORNIA

APRIL 13, 1998

COPY NO. 7

		Copy No.
1 Copy	Mr. Richard Gilcrease Drake Builders 1616 23rd Street Galveston, Texas 77550	1
1 Copy	Mr. Barney Chan Alameda County Health Care Service Agency Department of Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502-6577	2
1 Copy	Mr. Derek Lee San Francisco Bay Regional Water Quality Control Board 2101 Webster Street, Suite 500 Oakland, California 94612	3
1 Copy	Mr. Ken Phares Jay-Phares Corporation 10700 MacArthur Boulevard, Suite 200 Oakland, California 94605-5260	4
3 Copies	PES File	5 - 7
1 Copy	Unbound Original	8

QUALITY CONTROL REVIEWER

William F Fiffell for/
Robert S. Creps, P.E.