November 22, 1996

502.0101.003

Mr. Hugh K. Phares, III Mr. John Jay Jay-Phares Corporation 10700 MacArthur Boulevard, Suite 200 Oakland, California 94605-5260

TRANSMITTAL GROUNDWATER MONITORING REPORT FOOTHILL SQUARE SHOPPING CENTER OAKLAND, CALIFORNIA

Gentlemen:

Enclosed please find your copies of the Quarterly Monitoring Report, Former Young's Cleaners, Foothill Square Shopping Center, Oakland, California for the July 1996 monitoring. Please call us at 415-899-1600 if you have any questions.

Yours very truly,

PES ENVIRONMENTAL, INC.

J. Mm Le Mast.

William Mast Senior Engineer

Enclosure

cc: Richard Gilcrease - Drake Builders

Barney Chan - Alameda County Department of Environmental Health

A Report Prepared For:

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Attention: Mr. Hugh K. Phares, III

Mr. John Jay

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

NOVEMBER 19, 1996

By:

Donald J. Seymour Senior Staff Engineer

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Senior Engineer

502.0101.003

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1.0 INTRODUCTION

This report presents the results of the second quarterly groundwater monitoring performed by PES Environmental, Inc. (PES) during July 1996 at Foothill Square Shopping Center (Site) in Oakland, California (Plate 1). PES has been retained by Jay-Phares Corporation 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 on a quarterly basis, and purging and sampling 12 of the monitoring wells (Wells WGR MW-2 through 4, AMW-1, AMW-4 through 9, MW-6, and MW-7).

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

2.0 BACKGROUND INFORMATION

The site is located in a 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 the Foothill Square Shopping Center, the site was a truck manufacturing plant. Young's Cleaners, located in the center of the shopping center near Well AMW-6, operated at the site between 1984 and 1995. Prior to Young's Cleaners, a coin operated dry cleaner, Norge Cleaners, operated at the location between 1962 and 1980. The cleaners have been on the CALSITES database list since 1980.

Beginning in January 1989, Western Geologic Resources (WGR) installed and monitored Wells WGR MW-1 through WGR MW-5 on the property to characterize the subsurface conditions due to the presence of the adjacent ARCO gas station, northwest of the site. Wells WGR MW-1, WGR MW-2, WGR MW-3, and WGR MW-5 were installed in what WGR defined as the shallow groundwater bearing zone, and Well WGR MW-4 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 (ACHSA) 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 the March 23, 1993 letter.

In order to verify the source and extent of the PCE contamination, Augeas Corporation (Augeas) 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. A summary of the monitoring well completion details is provided in Table 1.

Augeas began performing groundwater monitoring of the AMW wells in October 1994. During September 1995, the last monitoring event conducted by Augeas, Wells WGR MW-1 through WGR MW-5, 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 the associated underground sanitary sewer lateral. From October 1995 to 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 MW-5 was covered by the soil and has not been accessible since that time.

3.0 WATER-LEVEL MEASUREMENTS

Water levels in 12 onsite groundwater monitoring wells (Wells WGR MW-2 through WGR MW-4, AMW-1, AMW-4 through AMW-9, MW-6, and MW-7) were measured by PES prior to sampling on July 17, 1996. Monitoring data was not collected from WGR MW-1 because the vault was inaccessible after being accidentally paved over with asphalt in the few preceding weeks. Well WGR MW-5 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-feet 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. The Water Level Data Form completed by PES is presented in Appendix A.

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 Wells WGR MW-2 through WGR MW-4, AMW-1, AMW-4 through AMW-9, MW-6, and MW-7 on July 17, 1996, by Blaine Tech Services, Inc. (Blaine Tech) of San Jose, California, under the direct supervision of PES.

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, and turbidity. 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 or after sampling at each well. Sampling procedures are documented in the groundwater sampling report prepared by Blaine Tech and included in Appendix B.

Groundwater samples were transported under chain-of-custody protocol to American Environmental Network (AEN), a state-certified laboratory in Pleasant Hill, California. Samples collected from the 12 wells were analyzed for VOCs using EPA Test Method 8010. The AEN laboratory reports and chain-of-custody records are included in Appendix C.

5.0 DISCUSSION OF MONITORING RESULTS

This section presents a summary of water-level measurements and groundwater analyses results from the July 1996 sampling event.

5.1 Water-Level Measurements

Depth-to-water measurements for July, 1996, for the shallow groundwater zone ranged from 12.42 feet (AMW-4) to 22.71 feet (WGR MW-2) below the top-of-casing (TOC). Shallow groundwater zone water-level elevations ranged from 37.54 feet MSL (MW-7) to 52.37 feet MSL (AMW-4). Depth-to-water measurements for the deep groundwater zone ranged from 15.02 feet (AMW-7) to 32.36 feet (MW-6) below TOC. Deep groundwater zone water-level elevations ranged from 29.42 feet MSL (MW-6) to 47.95 feet MSL (AMW-8). Depth-to-water measurements and calculated water-level elevations are presented in Table 2.

Plates 3 and 4 present water-level elevation contours developed from water levels measured on July 17, 1996, 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. The groundwater gradients in the shallow

and deep groundwater zones were approximately 0.044 and 0.078 foot per foot (ft/ft), respectively.

5.2 Groundwater Chemistry

A summary of laboratory chemical analyses results is presented in Table 3; only those chemicals that were detected in at least one sample are listed. The complete analytical laboratory reports and chain-of-custody forms are presented in Appendix C.

In the shallow groundwater zone, the highest concentrations of VOCs were detected in Wells AMW-6, located near the former dry cleaners, and AMW-7, located adjacent to the onsite sanitary sewer lateral. During this monitoring period, PCE was detected at concentrations ranging from 0.6 to 3,300 micrograms per liter (µg/L) in Wells AMW-4, AMW-5, AMW-6 and AMW-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), trans-1,2-dichloroethylene (t-1,2-DCE), and Freon-12 were also detected in Wells WGR MW-3, AMW-6 and AMW-7, but generally at much lower concentrations than PCE. No VOCs were detected in Wells WGR MW-2 and AMW-1.

In the deep groundwater zone, PCE was detected in Wells AMW-8, AMW-9, and MW-6 at concentrations ranging from 1.6 to 590 μ g/L. PCE concentrations in deep wells are presented on Plate 6. Low concentrations of TCE and Freon-12 were detected in Wells AMW-9 and MW-6, respectively. No VOCs were detected in Well WGR MW-4.

6.0 QUALITY ASSURANCE/QUALITY CONTROL (QA/AC)

Chemical data obtained from groundwater sample analyses were validated according to accuracy, precision, and completeness criteria. For the quantity of samples analyzed this quarter, the QA/QC program evaluated chemical data on the basis of one trip blank and one field equipment blank.

The evaluation procedure for blanks includes a qualitative review of the chemical analyses data reported by the laboratory. The trip blank was prepared by AEN and submitted for EPA Test Method 8010. The field equipment blank was prepared in the field using deionized water supplied by AEN and analyzed using EPA Test Method 8010. No VOCs were detected in the trip blank or the field equipment blank. The data from AEN are considered to be representative and of good quality.

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), 1995. Report of Subsurface Investigation, Young's Cleaners, 10700 MacArthur Boulevard, Oakland, California. December.
- PES Environmental, Inc. (PES), 1996. Proposal, Groundwater Monitoring, Former Young Cleaners, Foothill Square Shopping Center, Oakland, California. April 8.

TABLES

Table 1. Monitoring Well Completion Details

Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well Number	Date Installed	Installed By	Total Depth (feet bgs)	Screened Interval (feet bgs)	Top-of-Casing Elevation (feet MSL)	Groundwater Zone Monitored
WGR MW-1 (1)	12/5/88	WGR	33.5	23.5 - 28.5	65.97	Shallow
WGR MW-2	12/6/88	WGR	40.5	23 - 28	63.18	Shallow
WGR MW-3	12/7/88	WGR	42	22 - 27	58.34	Shallow
WGR MW-4	12/7/88	WGR	50.5	23 - 45	60.02	Deep
WGR MW-5 (2)	12/8/88	WGR	31.5	23.5 - 31.5	68.94	Shallow
AMW-1	9/12/94	Augeas	34	24 - 34	64.51	Shallow
AMW-2 ⁽³⁾	9/30/94	Augeas	29	19 - 29	65.33	Shallow
AMW-3 (3)	11/18/94	Augeas	29	19 - 29	65.09	Shallow
AMW-4	3/22/95	Augeas	25	15 - 25	64.79	Shallow
AMW-5	3/22/95	Augeas	30	20 - 30	64.97	Shallow
AMVV-6	NA	Augeas	25	NA	65.10	Shallow
AMW-7	NA	Augeas	25	NA	64.24	Shallow
AMW-8	NA	Augeas	48	NA	64.55	Deep
AMW-9	NA	Augeas	53	NA	63.48	Deep
MW-6	6/16/92	RESNA	56	37.5 - 56	61.78	Deep
MW-7	6/16/92	RESNA	37.5	17.5 - 37.5	58.64	Shallow

Note:

feet bgs = Feet below ground surface

feet MSL = Feet above mean sea level

WGR = Western Geologic Resources, Inc.

Augeas = Augeas Corporation

RESNA = RESNA Consultants

(1) = Well accidently covered by asphalt paving in June 1996.

(2) = Well covered by soil remediation stockpile in 1995.

(3) = Well abandoned during site remediation activities in 1995.

NA = Not available

		<u> </u>	Top of Casing	Depth to	Water Table
Well	Date	 Measured	Elevation	Water	Elevation
Number	Measured	by	(feet MSL)	(feet bgs)	(feet MSL)
Mulliper	mousureu	~,	(loce more)	(iout bgo)	(loot moz)
WGR MW-1	9/7/95	Augeas	65.97	5.82	60.15
(Shallow Zone)	4/16/96	PES	65.97	3.88	62.09
(Ontailori 20110)	7/17/96	PES	65.97	NM	
	.,,,,,,			• • • • • • • • • • • • • • • • • • • •	
WGR MW-2	11/3/94	WGR	63.18	25.70	37.48
(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
WGR MW-3	5/2/94	Resna	58.34	20.06	38.28
(Shallow Zone)	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
WGR MW-4	9/7/95	Augeas	60.02	27.20	32.82
(Deep Zone)	4/16/96	PES	60.02	23.26	36.76
	7/17/96	PES	60.02	25.89	34.13
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	
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

		T	Top of Casing	Depth to	Water Table
Well	Date	Measured	Elevation	Water	Elevation
Number	Measured	by	(feet MSL)	(feet bgs)	(feet MSL)
· · · · · · · · · · · · · · · · · · ·			(100011102)	((1001)1102)
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 remed	iation.		
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 remedi	iation.		
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
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
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
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
AMW-8	9/7/95	Augeas	64.55	17.90	46.65
(Deep Zone)	4/16/96	PES	64.55	15.06	49.49
(Doop Zone)	7/17/96	PES	64.55	16.60	47.95
A 84147 O	0/7/05	Augana	62.49	22.22	40.40
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

			Top of Casing	Depth to	Water Table
Well	Date	Measured	Elevation	Water	Elevation
Number	Measured	by	(feet MSL)	(feet bgs)	(feet MSL)
MW-6	6/30/92	RESNA	61.21	35.50	25.71
(Deep Zone)	7/15/92	RESNA	61.21	39.89	21.32
	8/25/92	RESNA	61.21	34.90	26.31
	9/9/92	RESNA	61.21	NM	
	10/31/92	RESNA	61.21	NM	
	11/20/92	RESNA	61.21	NM	
	12/16/92	RESNA	61.21	NM	
	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	Augeas	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
MW-7	6/30/92	RESNA	58.22	23.70	34.52
(Shallow Zone)	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
	1/22/93	RESNA	58.22	16.56	41.66
ļ	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

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)
Mulliper	Measured		(ICCL MOL)	(reer pgs)	(leet MOL)
MW-7	11/10/93	RESNA	58.22	24.51	33.71
(Shallow Zone)	2/4/94	RESNA	58.22	20.78	37.44
(continued)	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	Augeas	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
	L				<u> </u>

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.

Table 3. Summary of Analytical Results for Groundwater Samples Through July 1996

Well	Date	Sampled	Conce	ntrations expr	essed in micro	grams per lite	er (µg/L)
Number	Sampled	by	PCE	TCE	c-1,2-DCE	t-1,2-DCE	Freon-12
	40440400	WGR	-0.4	-0.4	-0.4	-0.4	
WGR MW-1	12/13/88		<0.1	<0.1	<0.1	<0.1	<0.1
(Shallow Zone)	9/12/95	Augeas	<0.5	<0.5	<0.5	<0.5	<0.5 ,
	7/17/96	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	<0.5
	6/21/95	Augeas	<0.5	<0.5	<0.5	<0.5	<0.5
	9/11/95	Augeas	<0.5	<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
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
(011411011 20110)	8/3/94	EMCON	<1	<1	<1	NS	NS
	12/6/94	EMCON	4	<1	<1	NS	NS
	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	<0.5
	11/16/95	EMCON	<1	<1	<1	<1	~0.5
	4/16/96	PES	0.6	0.5	<0.5	<0.5	 11
	2/28/96	EMCON	<1	<1	<1	<1	1 1
	5/28/96	EMCON	\ \ <1	<1	<1	<1	
	7/17/96	PES	<0.5	0.7	<0.5	<0.5	 <2
	1/11/30	r L G	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	0.7	0.5	70.5	~ 2
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
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
(Ciranon Long)		, 40	.,,	""			140
AMW-1	10/4/94	Augeas	<0.2	<0.2	0.5	<0.5	<0.5
(Shallow Zone)	3/23/95	Augeas	<0.5	<0.5	<0.5	<0.5	<0.5
,	6/21/95	Augeas	<0.5	<0.5	<0.5	<0.5	<0.5
	9/11/95	Augeas	<0.5	<0.5	<0.5	<0.5	<0.5
	4/16/96	PES	<0.5	<0.5	<0.5	<0.5	<2
1	7/17/96	PES	<0.5	<0.5	<0.5	<0.5	<2
AMW-2	10/4/94	Augoos	28,000	200	110	50	
	10/4/94	Augeas		320 -250		50	<0.5
(Shallow Zone)	l E	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	<250

Table 3. Summary of Analytical Results for Groundwater Samples Through July 1996

Well	Date	Sampled	Concentrations expressed in micrograms per liter (µg/L				er (µg/L)
Number	Sampled	by	PCE	TCE	c-1,2-DCE	t-1,2-DCE	Freon-12
AMW-2	6/21/95	Augeas	36,000	<500	<500	<500	<500
(continued)	9/12/95	Augeas	Well abandon	ed during site r	emediation I	<u> </u>	
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	<5.0
) '	6/21/95	Augeas	<0.5	<0.5	<0.5	<0.5	<0.5
	9/12/95	Augeas	Well abandon	ed during site r	emediation		
AMW-4	5/15/95	Augeas	2,400	<50	<50	<50	<50
(Shallow Zone)	6/21/95	Augeas	2,500	<50	<50 <50	<50	<50 <50
(Onanow Zone)	9/13/95	Augeas	1,100	<25	<25	<25	<25
	4/16/96	PES	1,200	10	<10	<10	<40
	7/17/96	PES	860	<10	<10	<10 <10	<40
	7717790	F 44-03	000	10	10	~10	~40
AMW-5	5/15/95	Augeas	1.2	<0.5	<0.5	<0.5	<0.5
(Shallow Zone)	6/21/95	Augeas	<0.5	<0.5	<0.5	<0.5	<0.5
	9/12/95	Augeas	<0.5	<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
AMW-6	9/13/95	Augeas	930	<25	<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
AMW-7	9/12/95	Augooo	2,350	340	<25	-05	-or
(Shallow Zone)	4/16/96	Augeas PES	2,300	500		<25	<25
(Silallow Zolle)	7/17/96	PES	2,300 2,400	500 530	2,200	60	<100
	1111190	FLO	2,400	330	2,100	<30	<100
8-WMA	9/11/95	Augeas	95	<25	<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
AMW-9	9/13/95	Augeas	170	<25	<25	<25	<25
(Deep Zone)	4/16/96	PES	170	4	7	<3	<10
, , ,	7/17/96	PES	190	4	<3	<3	<10
MW-6	6/30/92	DECNIA	0.400	-0 F	~0.F	-0-	-0.5
(Deep Zone)	9/9/92	RESNA RESNA	2,400	<0.5	<0.5	<0.5	<0.5
(Deep Zone)	9/9/92 11/20/92		NS Ne	NS NS	NS NS	NS	NS
	2/12/93	RESNA RESNA	NS 4 200	NS -0.5	NS -0.5	NS -0.5	NS
	5/12/93 5/12/93	RESNA	4,200 3,500	<0.5	<0.5	<0.5	<0.5
	8/18/93	RESNA	3,500	<0.5	<0.5	<0.5	<0.5
	11/10/93		3,000	<0.5	<0.5	<0.5	<0.5
j	2/4/94	RESNA RESNA	3,900	<0.5	<0.5	<0.5	<0.5
	5/2/94	RESNA	2,900	<50 <50	<50 <50	<0.5	<0.5
	0/2/84	IVEOINA	2,000	<50	<50	<0.5	<0.5

Table 3. Summary of Analytical Results for Groundwater Samples Through July 1996

Former Young's Cleaners
Foothill Square Shopping Center
Oakland, California

Well	Date	Sampled	Concer	ntrations expr	essed in micro	grams per lite	er (µg/L)
Number	Sampled	by	PCE	TCE	c-1,2-DCE	t-1,2-DCE	Freon-12
MW-6	8/3/94	RESNA	1,400	<50	<50	<0.5	<0.5
(continued)	12/6/94	EMCON	2,000	<50	<50	<0.5	<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	Augeas	2,000	<50	<50	<50	<50
	11/16/95	EMCON	1,300	<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
BANA/ 7	6/00/00	DECNIA	-1000	44000	-4000	44000	11000
MW-7	6/30/92	RESNA	<1000	<1000	<1000	<1000	<1000
(Shallow Zone)	9/9/92	RESNA	i '		floating produc		
	11/20/92	RESNA	•		floating produc		
	2/12/93	RESNA			floating product		
	5/12/93 8/18/93	RESNA RESNA	•		floating product		,
	11/10/93	RESNA	1 '		floating product		
	2/4/94	RESNA	<50	sating product	entering the wo	en auring purgi <50	,
	2/4/94 5/2/94	RESNA	<50 <50	<50 <50	<50 <50	<50 <50	<50 <50
	8/3/94	RESNA	<50 <50	<50 <50	<50 <50	<50 <50	<50 <50
	12/6/94	EMCON	<50	<50 <50	<50 <50	<50 <50	<50 <50
	3/11/95	EMCON	ì	1	entering the we		
	6/5/95	EMCON	<10	<10	<10	1 <10	<10
	8/29/95	EMCON	<10	<10	<10	<10	
	9/11/95	Augeas	85	<50	<50	<50	<50
	11/16/95	EMCON	<20	<20	<200	<200	
	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

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

EMCON = EMCON Associates

PES = PES Environmental, Inc.

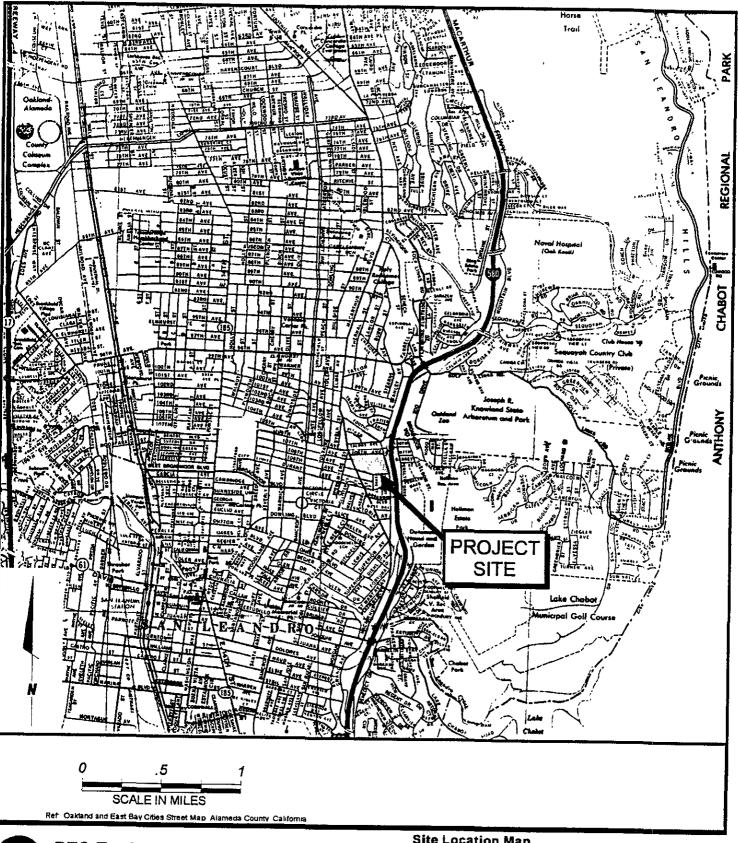
RESNA = RESNA Consultants

<0.1 = Concentration not detected at or above the indicated detection limit

NS = Not sampled because well was inaccessible

PES Environmental, Inc.

ILLUSTRATIONS



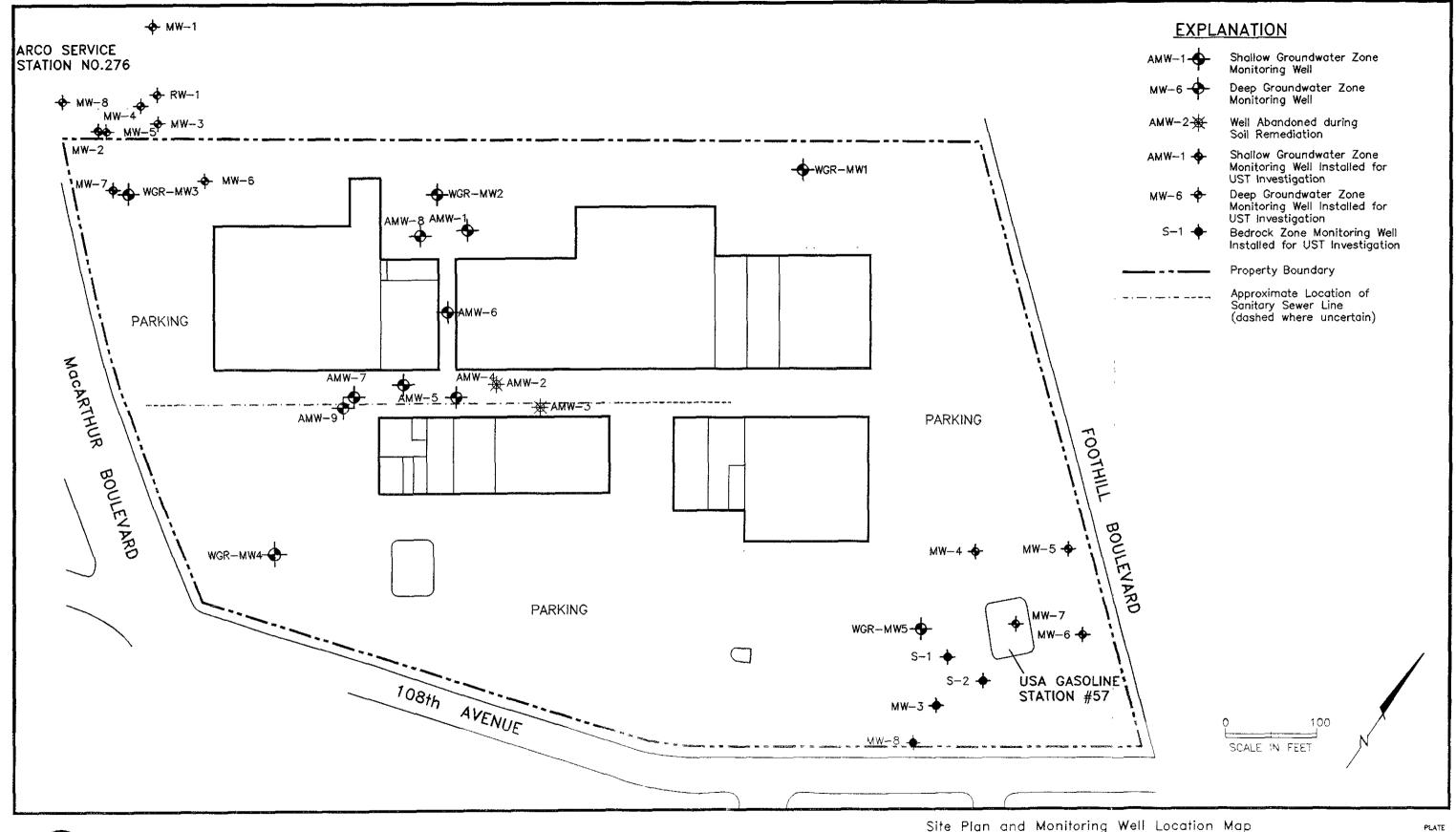


Site Location Map Foothill Square Shopping Center 10700 MacArthur Boulevard Oakland, California

PLATE

 502.0101.001
 502011V1.CDR
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 8/96

 JOB NUMBER
 DRAWING NUMBER
 REVIEWED BY
 DATE



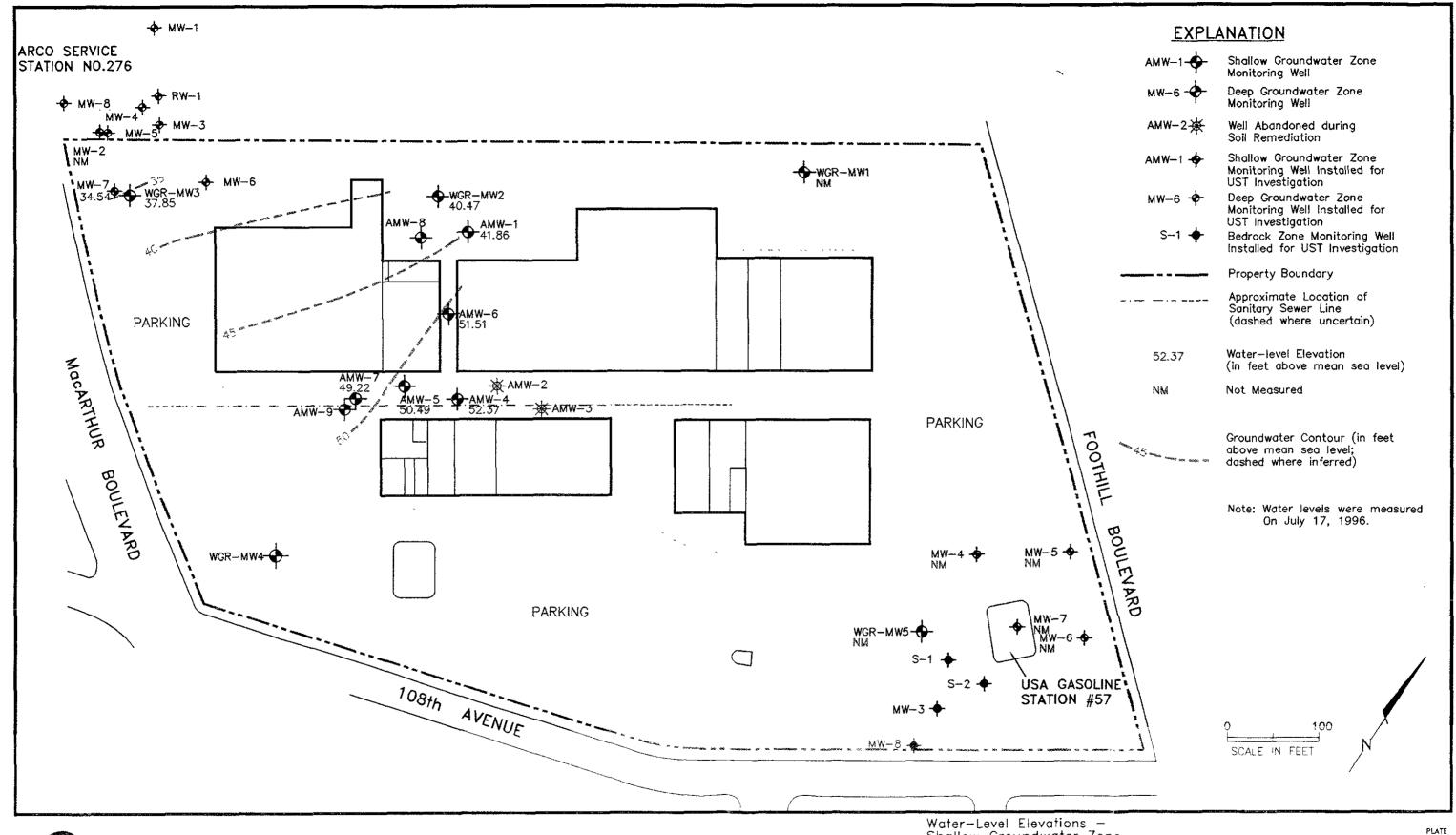
Site Plan and Monitoring Well Location Map Foothill Square Shopping Center 10700 MacArthur Bowlevard Oakland, California

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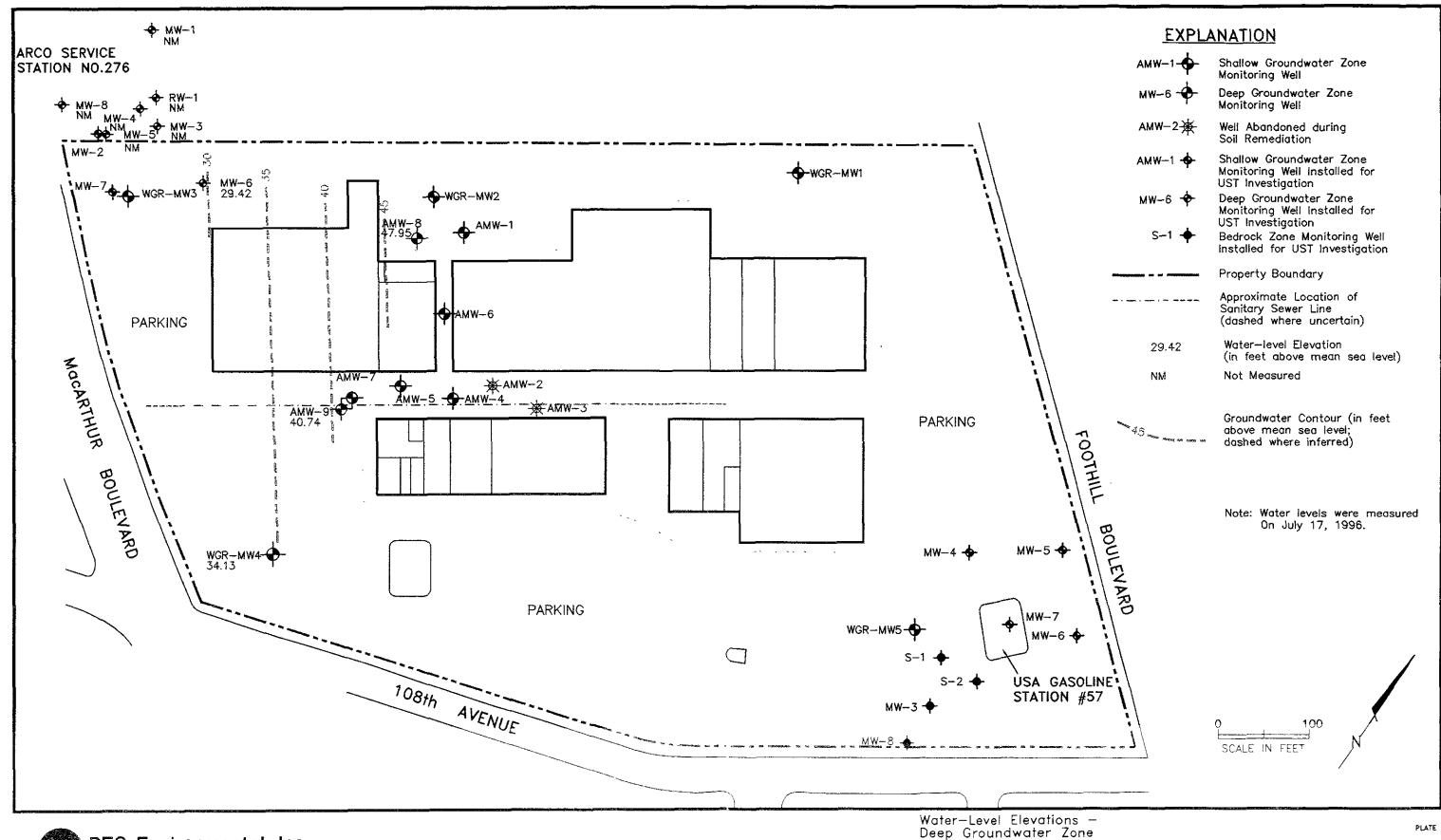
Water-Level Elevations — Shallow Groundwater Zone Foothili Square Shopping Center 10700 MacArthur Boulevard Oakland, California

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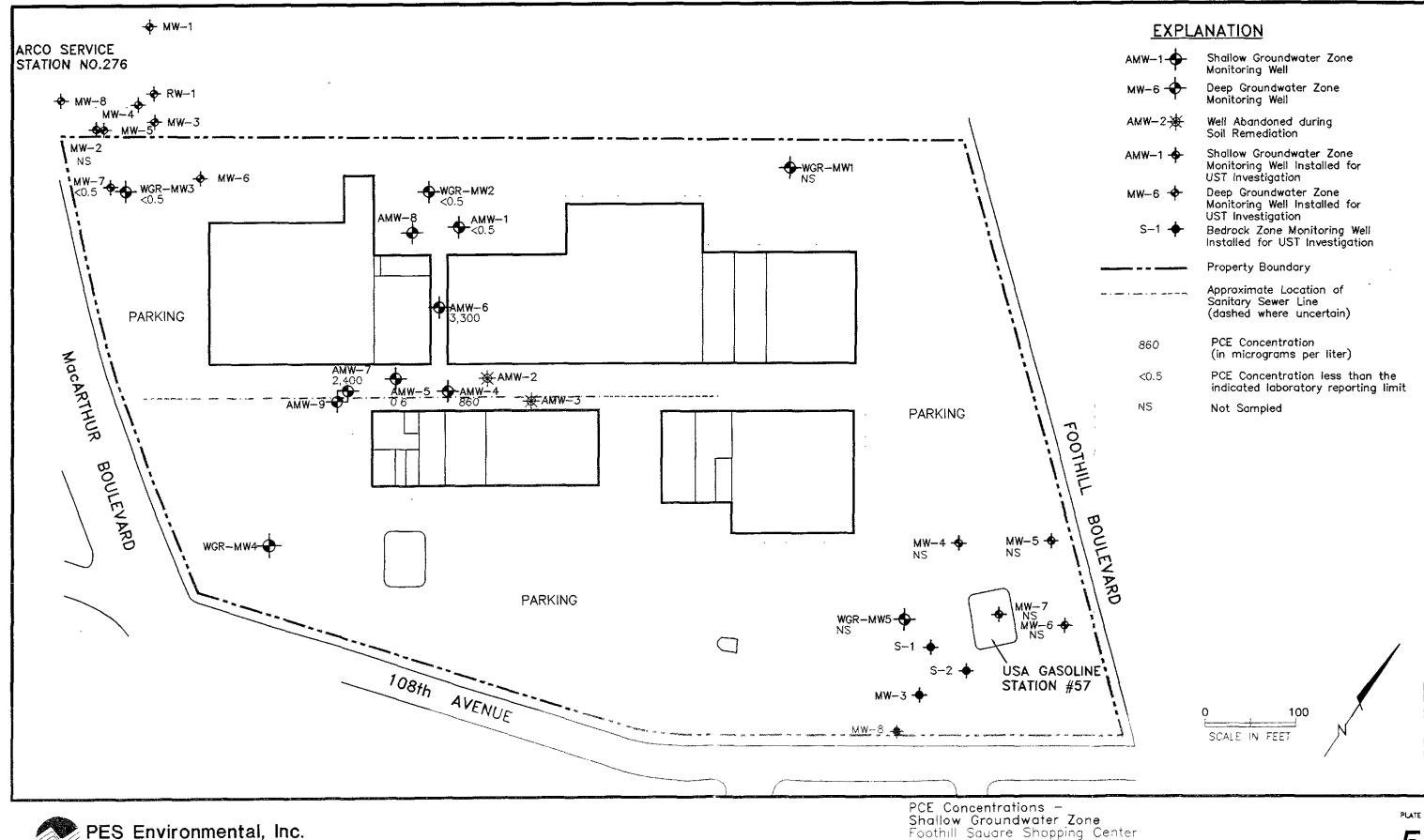
Water-Level Elevations — Deep Groundwater Zone Footh: Square Shopping Center 10700 MacArthur Boulevard Oakland, California

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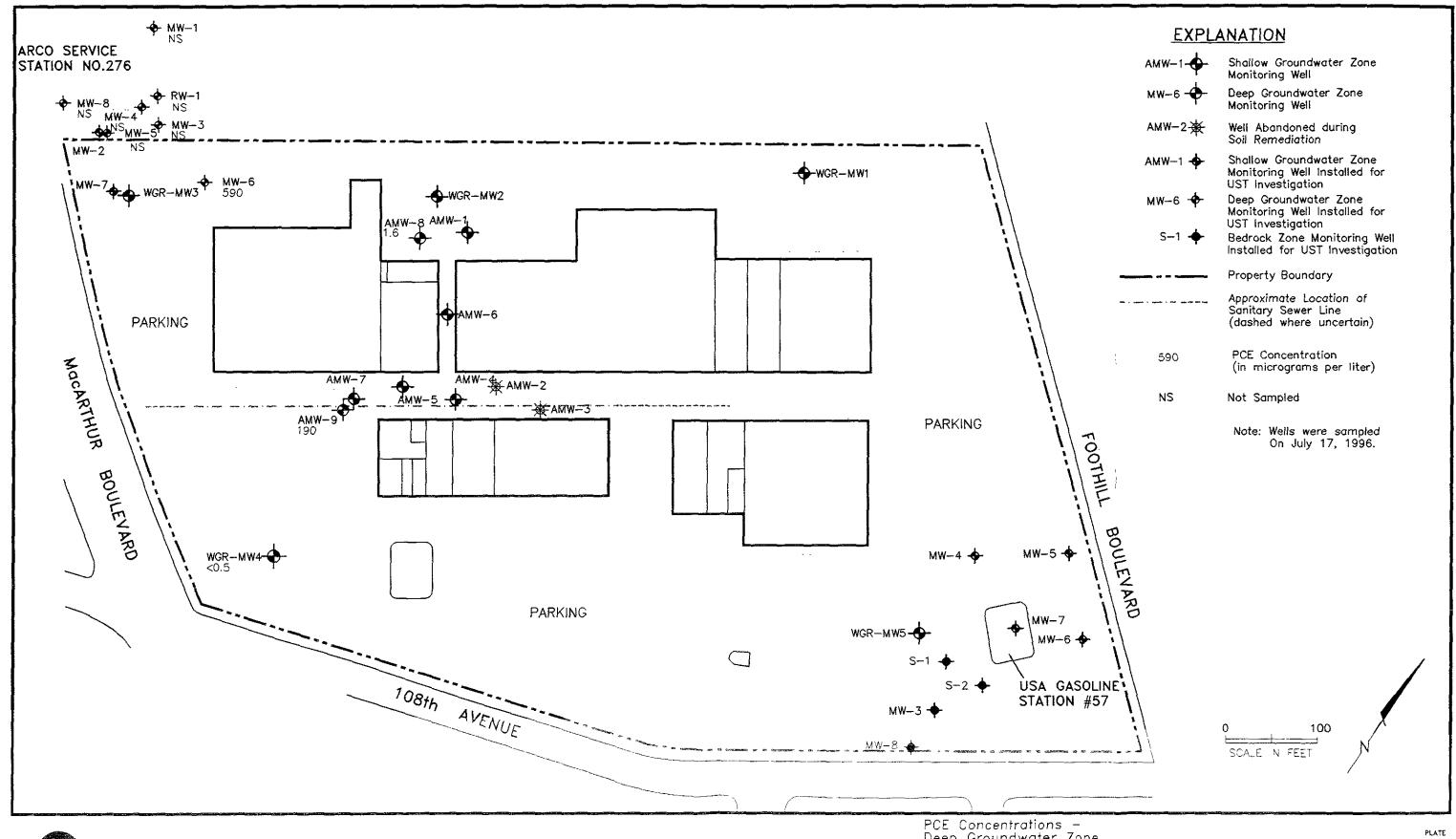
502.0101.003 JOB NUMBER

0100312T DRAWING NUMBER

Engineering & Environmental Services

REVIEWED BY

Shallow Groundwater Zone
Foothill Sauare Shopping Center
10700 MacArthur Boulevard
Oakland, California



Deep Groundwater Zone Footnill Square Shopping Center 10700 MacArthur Boulevard Oak and, California

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502.0101.003

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REVIEWED BY

11/96

PES Environmental, Inc.

APPENDIX A

WATER-LEVEL DATA FORM



PAGE	2	OF	2	
DATE:	7/17/0	, K		

WATER LEVEL DATA FORM

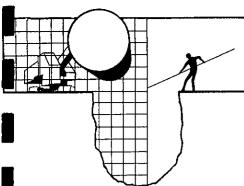
JOB NO.: 502, 0/01. 003

FIELD PERSONNEL: M. TroHales) Keich brown blank MEASURING INSTRUMENT: RECORDED BY: M. Take STEEL TAPE OTHER-TYPE DATUM: ☐ MEAN SEA LEVEL INSTRUMENT 16612 ELECTRIC SOUNDER SERIAL NO. OTHER - DESCRIBE DEPTH TO WATER (feet) WATER LEVEL ELEVATION REFERENCE COMMENTS WELL I.D. TIME ELEVATION (well condition, odor, (feet) 2nd 3rd . (feet) presence of product, etc.) 21.10 21.10 21.10 37,54 MW-7 1750 58.64 UGR-HW-5 0753 58.3 20.49 20.49 20.49 37,81 32.36 32.36 32.36 1755 MW-6 0855 0838 0100 64.51 22.65 41.86 ¥МИ-6 65,10 1359 13.59 51,51 13 59 64.79 12,42 12.42 12.42 52.37 14.48 14.48 14.48 50.49 19/6 63,48 15.02 15.02 15.02 48.46 22,74 22.74 22.74 41,5 0918 64.24 NGR 4144 092 0 25.89 25.89 25.89 34.13 60.02 W G-R-MW5 WGR-MWL

PES Environmental, Inc.

APPENDIX B

GROUNDWATER SAMPLING REPORT



BLAINE TECH SERVICES INC.

985 TIMOTHY DRIVE SAN JOSE, CA 95133 (408) 995-5535 FAX (408) 293-8773

July 26, 1996

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

ATTN: Will Mast

Site: 10700 MacArthur Blvd. Oakland, California

Date: July 17, 1996

GROUNDWATER SAMPLING REPORT 960717-K-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, 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, middleburg, and electric submersible 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. The pump contains a flexible Teflon bladder which is alternately allowed to fill with well water and then collapsed. Actuation of the pump is accomplished with compressed air supplied by a single hose to one side of the Teflon membrane. Water on the other side of the membrane is squeezed out of the pump and up a Teflon conductor pipe to the surface. Evacuation and sampling are accomplished as a continuum. The rate of water removal is relatively slow and loss of volatiles almost non-existent. There is only positive pressure on the water being sampled and there is no impeller cavitation or suction. The pumps can be placed at any location within the well, can draw water from the very bottom of the well case, and are virtually immune to the erosive effects of silt or lack of water which destroy other types of pumps.

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

Electric Submersible Pumps: Electric submersible pumps are appropriate for the high volume evacuation of wells of any depth provided the well diameter is large enough to admit the pump. Four inch and three inch diameter wells will readily accept electric submersible pumps, while two inch wells do not. In operation, the pump is lowered into the well with a pipe train above it. A checkvalve immediately above the pump and below the first section of pipe prevents water that has entered the pipe from flowing back into the well. Electricity is provided to the pump via an electrical cable and the action of the pump is to push water up out of the well.

Electric submersible pumps are often used as well evacuation devices, which are then supplanted with a more specialized sample collection device (such as a bailer) at the time of sampling. An alternative is to use the pump for both evacuation and sampling. When a bailer is used to collect the sample, interpretation of results by the consultant should allow for variations attributable to near surface contamination entering the bailer. When the electric submersible is, itself, used for sample collection it should be operated with the output restricted to a point where the loss of volatiles becomes indistinguishable from the level obtained with true sampling pumps. It should be noted that when the pump is used for both evacuation and sample collection that it is possible to perform these operations as an uninterrupted continuum. This contrasts with the variations in elapsed time between evacuation and sample collection that occur when field personnel cease one mode of operation and must bring other apparatus into use.

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 in Pleasant Hill, California. AEN is certified by the California Department of Health Services as a Hazardous Materials Testing Laboratory, and is listed as DOHS HMTL #1172.

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.

The following addresses have been listed here for your convenience:

Water Quality Control Board San Francisco Bay Region 2101 Webster Street 5th Floor Oakland, CA 94612 ATTN: John West

Oakland Fire Prevention Bureau One City Hall Plaza Oakland, CA 94612 ATTN: Stanley Y. Chi Please call if we can be of any further assistance.

Richard C. Blaine

RCB/mc

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	07/17/96			07/17/96			07/17/96			07/17/96			
											•		
Well Diameter (in.)	2			2			2			2			
Total Well Depth (ft.)	33.95			24.59			30.15			25.02			
Depth To Water (ft.)	22.68			15.46			14.45			13.57			
Free Product (in.)	NONE			NONE			NONE			NONE			
Reason If Not Sampled													
1 Case Volume (gal.)	1.8			1.4			2.5			1.8			
Did Well Dewater?	NO			ИО			NO			NO			
Gallons Actually Evacuated	5.5			4.5			7.5			5.5			
Durging Davies													
Purging Device	BAILER			BAILER			BAILER			BAILER			
Sampling Device	BAILER			BAILER			BAILER			BAILER			
Time	10:05	10:08	10:12	12:15	12:18	12:21	11:55	11:59	10-02	00.25			
Temperature (Fahrenheit)	66.6	67.0	67.0	62.6	63.4	64.0	67.0	68.6	12:03	09:35	09:39	09:43	
Hq	7.3	7.1	7.0	7.4	7.1	7.0	7.0	7.0	68.6 7.0	65.0 7.0	64.8	65.0	
Conductivity (micromhos/cm)	1700	1600	1600	1700	1600	1700	1700	1700	1700		7.0	7.0	
Nephelometric Turbidity Units	>200	>200	>200	>200	>200	>200	>200	>200	>200	2000	2000	2000	
				, 200	7200	7200	/200	7200	7200	>200	>200	>200	
BTS Chain of Custody	960717-K-1			960717-K-1			960717-K-1			960717-K-1			
BTS Sample I.D.	AMW-1			AMW-4			AMW-5			AMW-6			
DOHS HMTL Laboratory	AEN			AEN			AEN			AEN			
Analysis	EPA 8010			EPA 8010			EPA 8010			EPA 8010			
								-		VOI	•		

TABLE OF WELL MONITORING DATA

Well I.D.	AMW-7			AMW-8			AMW-9			MW-6				
Date Sampled	07/17/96			07/17/96			07/17/96			07/17/96				
Well Diameter (in.)	2			2			2	2			2			
Total Well Depth (ft.)	24.76			48.44			54.28			49.02				
Depth To Water (ft.)	15.00			16.60			22.69			32.32				
Free Product (in.)	NONE			NONE			NONE			NONE				
Reason If Not Sampled	sur die													
1 Case Volume (gal.)	1.5			5.1			5.1			2.7				
Did Well Dewater?	NO			NO			ИО			NO				
Gallons Actually Evacuated	4.5			15.5			15.5			8.5				
Purging Device	BAILER			MIDDLEBURG			MIDDLEBURG			MIDDLEBURG				
Sampling Device	BAILER			BAILER			BAILER			BAILER				
Time	11:33	11:36	11:38	09:03	09:09	09:15	11:06	11:14	11:21	08:36	08:39	08:42		
Temperature (Fahrenheit)	70.2	68.8	68.6	65.4	66.2	66.0	68.6	68.0	68.4	64.6	65.2	65.6		
pH	6.7	6.8	6.8	7.5	7.6	7.6	6.8	6.8	6.8	6.7	6.8	6.8		
Conductivity (micromhos/cm)	1200	1100	1200	480	380	390	1700	1600	1600	1400	1500	1500		
Nephelometric Turbidity Units	>200	>200	>200	>200	>200	>200	86.4	51.2	44.7	>200	123.7	76.6		
Replietomectic furbidity onits	7200	7200	7200	7200	/200	2200	00.4	31.2	77.1	7200	123.7	70.0		
BTS Chain of Custody	960717-K-1			960717-K-1			960717-	960717-K-1			960717-K-1			
BTS Sample I.D.	AMW-7			AMW-8			AMW-9			MW-6				
DOHS HMTL Laboratory	AEN			AEN				AEN			AEN			
Analysis	EPA 8010			EPA 8010			EPA 8010			EPA 8010				
marjors	DLW 0010			DIA OUTO			ELW GOID			ErA OUIU				

TABLE OF WELL MONITORING DATA

Well I.D.	MW-7			WGR/MW-	2		WGR/MW-	3*		WGR/MW-4		
Date Sampled	07/17/9	6		07/17/9	6		07/17/9	6		07/17/96	i	
Well Diameter (in.)	2			4			4			4		
Total Well Depth (ft.)	36.62			27.96			26.93			44.93		
Depth To Water (ft.)	21.06			22.70			20.96			25.85		
Free Product (in.)	NONE			NONE			NONE			NONE		
Reason If Not Sampled												
		•										
1 Case Volume (gal.)	2.5			3.4			3.9			12.4		
Did Well Dewater?	NO			NO			NO			NO		
Gallons Actually Evacuated	7.5			12.0			12.0			39.0		
Purging Device	MIDDLEB	URG/		ELECTRI	C SUBMERS	IBLE	ELECTRI	C SUBMERS	IBLE	ELECTRIC	SUBMERSIB	LE
		C SUBMERS	SIBLE									
Sampling Device	BAILER			BAILER			BAILER			BAILER		
	07.45		07.51	****	40.00	10.05	00-15	00-17	00-00	10-44	10.45	10.47
Time	07:45	07:48	07:51	10:20	10:23	10:25	08:15	08:17	08:20	10:44	10:46	10:47
Temperature (Fahrenheit)	67.2	67.0	67.4	67.4	68.0	68.2	67.2	67.8	67.8	70.6	71.8	71.6
pH	6.6	6.5	6.6	7.2	7.2	7.2	6.6	6.4	6.4	6.7	6.6	6.6
Conductivity (micromhos/cm)	1000	680	670	1400	1400	1400	600	580	580	1000	940	980
Nephelometric Turbidity Units	>200	>200	120.2	198.5	>200	41.7	68.1	146.1	>200	80.5	102.8	74.6
BTS Chain of Custody	960717-	.K-1		960717-	.K-1		960717-	-K-1		960717-1	√-1	
"	MW-7	IX " I		WGR-MW2			WGR-MW3			WGR-MW4	` -	
BTS Sample I.D. DOHS HMTL Laboratory	AEN			AEN	•		AEN	•		AEN		
nous unit ranotacotà	WUIA			MEN			LATE: IA			WEW		
Analysis	EPA 801	٥		EPA 801	٥		EPA 801	٥		EPA 801	1	

^{*} Sample EB is an equipment blank taken before sampling WGR/MW-3 and after sampling MW-7.

BLAINE	SAN JOSE, CA	N 95133	C	ONDUCTAN	ALYSIS TO DETECT	LAB AEN	/ 	· • • • • • • • • • • • • • • • • • • •	10HS #
TECH SERVICES INC.	(408) 99 FAX (408) 29					ALL ANALYSES M SET BY CALIFORI	UST MEET SPECII	FICATIONS AND	DETECTION LIMITS
CHAIN OF CUSTODY			ļ			□ EPA		RWQ	OB REGION
CLIENT 7607/7-1		_{&}				OTHER			
SITE FOOTNILL SQUARE Sh	opne (b	CONTAINER				SPECIAL INSTRU	ctions INC	roke c	y Repari
10700 MACANAUR	Blud.	\ \				TO PE	6 ENO	IRON 18	+ Repart
. Jos	ATRIX CONTAIN	ERS GOMPOO	3010			Project	#:50	111111 Z,011	01,003
SAMPLE I.D. 1035 V	<u>\$</u> total. ∧⁄ 3	Ů				ADD'L INFORMATIO		CONDITION	LAB SAMPLE #
UGR-MW3 830			\forall						
JER-MW4 WS5	1-1-1-		X						
4MW1 1015			X				- 		
MW4 1225			X						
MW5 1210			X						
MW6 950			X						· · · · · · · · · · · · · · · · · · ·
1MW7 1145			X_{\perp}						
ANW 8 925			X						
7400-1 1765	4 4		X						
	MPLING ERFORMED BY	Ke		Bou	<i>s</i> ~	RESULTS NEEDED NO LATER THAN	Stan	dard	TAT
	/h_	DATE //	[6] [1] [6]	ПИЕ 1470	RECEIVED BY	De dulla		DATE/	TIME
RELEASED BY	•	DATÉ /	77	TIME	HECEIVED BY			DATE	TIME
ELEASED BY	 	DATE	Ţ	IME	RECEIVED BY	<u> </u>		DATE	TIME
HIPPED VIA	**	DATE SEN	T T	TIME SENT	COOLER #		<u> </u>		
	 			·					.)

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	JOSE, CA 95133	CONDUCT AN/	ALYSIS TO DETECT	ILAB HEN		ıDHS#
TECH SERVICES INC. FAX	(408) 995-5535 K (408) 293-8773				MEET SPECIFICATIO	NS AND DETECTION LIMITS
CHAIN OF CUSTODY 960717-161	8			□ EPA □ LIA □ OTHER	С	RWQCB REGION
SAMPLE I.D. 50 50 50 50 50 50 50 5	CONTAINERS CONTAINERS			SPECIAL INSTRUCTION A PES AHAN; Je,	:502.	e of Report
1007 800 -		} 				
EB - \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \						
SAMPLING DATE TIME SAMPLING PERFORME	130146	Soour TIME		RESULTS NEEDED NO LATER THAN	5-taxida	ed TAT
RELEASED BY Sall Company	DATE 18 DATE DATE	TIME 142 <i>C)</i>	RECEIVED BY	he hell	DATE DATE	8/2C 1420
RELEASED BY	DATE	TIME	RECEIVED BY		DATE	TIME
SHIPPED VIA	DATE SENT	TIME SENT	COOLER #			

APPENDIX C

LABORATORY REPORT
AND
CHAIN-OF-CUSTODY RECORDS

American Environmental Network

Certificate of Analysis

OOHS Certification: 1172

AIHA Accreditation: 11134

PAGE 1

RECEIVED JUL 3 1 1996

PES ENVIRONMENTAL, INC. 1682 NOVATO BLVD.

SUITE 100

NOVATO, CA 94947

ATTN: JENNY HAN

CLIENT PROJ. ID: 502.0101.003 CLIENT PROJ. NAME: FOOTHILL SQ.

C.O.C. NUMBER: 960717-K1

REPORT DATE: 07/29/96

DATE(S) SAMPLED: 07/17/96-07/18/96

DATE RECEIVED: 07/18/96

AEN WORK ORDER: 9607225

PROJECT SUMMARY:

On July 18, 1996, this laboratory received 14 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.

_ar*fy* Klein

Laboratory Director

PES ENVIRONMENTAL, INC.

SAMPLE ID: WGR-MW2 AEN LAB NO: 9607225-01 AEN WORK ORDER: 9607225 CLIENT PROJ. ID: 502.0101.003

DATE SAMPLED: 07/17/96 DATE RECEIVED: 07/18/96 **REPORT DATE: 07/29/96**

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT UNITS	DATE ANALYZED
EPA 8010 - Water matrix Bromodichloromethane Bromoform	EPA 8010 75-27-4 75-25-2	ND ND	0.5 ug/L 0.5 ug/L	07/20/96
Bromomethane	74-83-9	ND	2 ug/L	07/20/96 07/20/96
Carbon Tetrachloride Chlorobenzene	56-23-5 108-90-7	ND	0.5 ug/L	07/20/96
Chloroethane	75-00-3	ND ND	0.5 ug/L	07/20/96
2-Chloroethyl Vinyl Ether	110-75-8	ND	2 ug/L 0.5 ug/L	07/20/96 07/20/96
Chloroform	67-66 - 3	ND	0.5 ug/L	07/20/96
Chloromethane	74 - 87-3	ND	2 ug/L	07/20/96
Dibromochloromethane 1,2-Dichlorobenzene	124-48-1 95-50-1	ND	0.5 uğ/L	07/20/96
1.3-Dichlorobenzene	541-73-1	ND ND	0.5 ug/L	07/20/96
1.4-Dichlorobenzene	106-46-7	ND	0.5 ug/L 0.5 ug/L	07/20/96 07/20/96
Dichlorodifluoromethane	75-71 - 8	ND	2 ua/L	07/20/96
1.1-Dichloroethane	75-34-3	ND	0.5 ug/L	07/20/96
1.2-Dichloroethane 1.1-Dichloroethene	107-06-2 75-35-4	ND ND	0.5 ug/L	07/20/96
cis-1,2-Dichloroethene	156-59-2	ND ND	0.5 ug/L 0.5 ug/L	07/20/96
trans-1,2-Dichloroethene	156-60-5	ND	0.5 ug/L	07/20/96 07/20/96
1.2-Dichloropropane	78 - 87-5	ND	0.5 ug/L	07/20/96
cis-1,3-Dichloropropene	10061-01-5	ND	0.5 ug/L	07/20/96
trans-1,3-Dichloropropene Methylene Chloride	10061-02-6 75-09-2	ND ND	0.5 ug/L	07/20/96
1.1.2.2-Tetrachloroethane	79-34-5	ND	2 ug/L 0.5 ug/L	07/20/96 07/20/96
Tetrachloroethene	127-18-4	ND	0.5 ug/L	07/20/96
1.1.1-Trichloroethane	71-55-6	ND	0.5 ug/L	07/20/96
1.1.2-Trichloroethane Trichloroethene	79-00-5	ND ·	0.5 ug/L	07/20/96
Trichlorofluoromethane	79-01-6 75-69-4	ND ND	0.5 ug/L	07/20/96
1.1.2Trichlorotrifluoroethane	76-13-1	ND ND	2 ug/L 0.5 ug/L	07/20/96 07/20/96
Vinyl Chloride	75-01-4	ND	2 ug/L	07/20/96

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: WGR-MW3 AEN LAB NO: 9607225-02 AEN WORK ORDER: 9607225

CLIENT PROJ. ID: 502.0101.003

DATE SAMPLED: 07/17/96 DATE RECEIVED: 07/18/96 REPORT DATE: 07/29/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8010 - Water matrix Bromodichloromethane Bromoform Bromomethane Carbon Tetrachloride Chlorobenzene Chloroethane 2-Chloroethyl Vinyl Ether Chloroform Chloromethane Dibromochloromethane 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloroethene trans-1,3-Dichloropropene trans-1,3-Dichloropropene Methylene Chloride 1,1,2,2-Tetrachloroethane Tetrachloroethene 1,1,1-Trichloroethane Tichloroethene Trichloroethene Trichloroethene Trichlorofluoromethane	EPA 8010 75-27-4 75-25-2 74-83-9 56-23-5 108-90-7 75-00-3 110-75-8 67-66-3 74-87-3 124-48-1 95-50-1 541-73-1 106-46-7 75-71-8 75-34-3 107-06-2 75-35-4 156-59-2 156-60-5 78-87-5 10061-01-5 10061-02-6 75-09-2 79-34-5 127-18-4 71-55-6 79-00-5 79-01-6 75-69-4 76-13-1 75-01-4	ND N	0.525.525.525.525.525.525.525.525.525.52		07/22/96 07/22/96

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: WGR-MW4 AEN LAB NO: 9607225-03 AEN WORK ORDER: 9607225 CLIENT PROJ. ID: 502.0101.003

DATE SAMPLED: 07/17/96 DATE RECEIVED: 07/18/96 REPORT DATE: 07/29/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT UNITS	DATE ANALYZED
EPA 8010 - Water matrix Bromodichloromethane Bromoform Bromomethane Carbon Tetrachloride Chlorobenzene Chloroethane 2-Chloroethyl Vinyl Ether Chloroform Chloromethane Dibromochloromethane 1.2-Dichlorobenzene 1.3-Dichlorobenzene 1.4-Dichlorobenzene 1.1-Dichloroethane 1.1-Dichloroethane 1.1-Dichloroethene cis-1.2-Dichloroethene trans-1.2-Dichloropropene trans-1.3-Dichloropropene trans-1.3-Dichloropropene Methylene Chloride 1.1.2.2-Tetrachloroethane 1.1.1-Trichloroethane 1.1.2-Trichloroethane Trichlorofluoromethane	EPA 8010 75-27-4 75-25-2 74-83-9 56-23-5 108-90-7 75-00-3 110-75-8 67-66-3 74-87-3 124-48-1 95-50-1 541-73-1 106-46-7 75-71-8 75-34-3 107-06-2 75-35-4 156-59-2 156-60-5 78-87-5 10061-01-5 10061-02-6 75-09-2 79-34-5 127-18-4 71-55-6 79-00-5 79-01-6 75-69-4 76-13-1 75-01-4	88 88 88 88 88 88 88 88 88 88 88 88 88	0.5 ug/L 0.5 2 ug/L	07/20/96 07/20/96

ND = Not detected at or above the reporting limit \star = Value at or above reporting limit

SAMPLE ID: AMW1

AEN LAB NO: 9607225-04 AEN WORK ORDER: 9607225 CLIENT PROJ. ID: 502.0101.003

DATE SAMPLED: 07/17/96 DATE RECEIVED: 07/18/96 REPORT DATE: 07/29/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT UNITS	DATE ANALYZED
EPA 8010 - Water matrix Bromodichloromethane Bromoform Bromomethane Carbon Tetrachloride Chlorobenzene Chloroethane 2-Chloroethyl Vinyl Ether Chloroform Chloromethane Dibromochloromethane 1.2-Dichlorobenzene 1.3-Dichlorobenzene 1.4-Dichlorobenzene Dichlorodifluoromethane 1.1-Dichloroethane 1.1-Dichloroethane 1.1-Dichloroethene trans-1,2-Dichloroethene trans-1,2-Dichloropropene trans-1,3-Dichloropropene trans-1,3-Dichloropropene trans-1,3-Dichloropropene trans-1,3-Dichloroethane 1.1,2-Tetrachloroethane Tetrachloroethene 1.1,1-Trichloroethane Tichlorofluoromethane Trichlorofluoromethane Trichlorofluoromethane Trichlorofluoromethane Trichlorofluoromethane Trichlorofluoromethane Trichlorofluoromethane Trichlorofluoromethane Trichlorofluoromethane Trichlorofluoromethane Thichlorofluoromethane Trichlorofluoromethane	EPA 8010 75-27-4 75-25-2 74-83-9 56-23-5 108-90-7 75-00-3 110-75-8 67-66-3 74-87-3 124-48-1 95-50-1 541-73-1 106-46-7 75-71-8 75-34-3 107-06-2 75-35-4 156-60-5 78-87-5 10061-01-5 10061-02-6 75-09-2 79-34-5 127-18-4 71-55-6 79-00-5 79-01-6 75-69-4 76-13-1 75-01-4		0.5 ug/L 0.5 ug/L 0.5 ug/L 0.5 ug/L 0.5 2 ug/L 0.5 2 ug/L 0.5 2 ug/L 0.5 2 ug/L 0.5 ug/L	07/20/96 07/20/96

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

SAMPLE ID: AMW4

AEN LAB NO: 9607225-05

AEN WORK ORDER: 9607225 CLIENT PROJ. ID: 502.0101.003

DATE SAMPLED: 07/17/96 DATE RECEIVED: 07/18/96 REPORT DATE: 07/29/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT UNITS	DATE ANALYZED
EPA 8010 - Water matrix Bromodichloromethane Bromoform Bromomethane Carbon Tetrachloride Chlorobenzene Chloroethane 2-Chloroethyl Vinyl Ether Chloroform Chloromethane Dibromochloromethane i.2-Dichlorobenzene 1.3-Dichlorobenzene 1.4-Dichlorobenzene Dichlorodifluoromethane 1.1-Dichloroethane 1.2-Dichloroethane 1.1-Dichloroethene cis-1.2-Dichloroethene trans-1.2-Dichloropropene trans-1.3-Dichloropropene trans-1.3-Dichloropropene trans-1.3-Dichloropropene Methylene Chloride 1.1.2-Tetrachloroethane Tetrachloroethene 1.1.1-Trichloroethane Trichloroethene Trichloroethene Trichlorofluoromethane	EPA 8010 75-27-4 75-25-2 74-83-9 56-23-5 108-90-7 75-00-3 110-75-8 67-66-3 74-87-3 124-48-1 95-50-1 541-73-1 106-46-7 75-71-8 75-34-3 107-06-2 75-35-4 156-59-2 156-60-5 78-87-5 10061-01-5 10061-02-6 75-09-2 79-34-5 127-18-4 71-55-6 79-00-5 79-01-6 75-69-4 76-13-1 75-01-4	ND N	10 ug/L	07/24/96 07/24/96

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: AMW5

AEN LAB NO: 9607225-06 AEN WORK ORDER: 9607225 CLIENT PROJ. ID: 502.0101.003

DATE SAMPLED: 07/17/96 DATE RECEIVED: 07/18/96

REPORT DATE: 07/29/96

Bromororm /5-25-2 ND 0.5 ug/L 07/23 Bromomethane 74-83-9 ND 2 ug/L 07/23 Carbon Tetrachloride 56-23-5 ND 0.5 ug/L 07/23 Chlorobenzene 108-90-7 ND 0.5 ug/L 07/22 Chloroethane 75-00-3 ND 2 ug/L 07/22 2-Chloroethyl Vinyl Ether 110-75-8 ND 0.5 ug/L 07/22 Chloroform 67-66-3 ND 0.5 ug/L 07/22 Chloromethane 74-87-3 ND 2 ug/L 07/22 Chloromethane 124-48-1 ND 0.5 ug/L 07/22 Dibromochloromethane 124-48-1 ND 0.5 ug/L 07/22 1.3-Dichlorobenzene 95-50-1 ND 0.5 ug/L 07/22 1.4-Dichlorobenzene 541-73-1 ND 0.5 ug/L 07/22 Dichlorodifluoromethane 75-71-8 ND 0.5 ug/L 07/22 1.1-Dichloroethane 107-06-2 ND 0.5 ug/L 07/22	ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT UNITS	DATE ANALYZED
trans-1,2-Dichloroethene 156-60-5 ND 0.5 ug/L 07/22 1,2-Dichloropropane 78-87-5 ND 0.5 ug/L 07/22 cis-1,3-Dichloropropene 10061-01-5 ND 0.5 ug/L 07/22 trans-1,3-Dichloropropene 10061-02-6 ND 0.5 ug/L 07/22 Methylene Chloride 75-09-2 ND 2 ug/L 07/22 1.1.2.2-Tetrachloroethane 79-34-5 ND 0.5 ug/L 07/22 Tetrachloroethene 127-18-4 0.6 * 0.5 ug/L 07/22	EPA 8010 - Water matrix Bromodichloromethane Bromoform Bromomethane Carbon Tetrachloride Chlorobenzene Chloroethane 2-Chloroethyl Vinyl Ether Chloroform Chloromethane Dibromochloromethane 1.2-Dichlorobenzene 1.3-Dichlorobenzene 1.4-Dichloroethane 1.1-Dichloroethane 1.1-Dichloroethane 1.1-Dichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloroethene trans-1,3-Dichloropropene trans-1,3-Dichloropropene Methylene Chloride 1.1.2.2-Tetrachloroethane Tetrachloroethene	CAS# 75-27-4 75-25-2 74-83-9 56-23-5 108-90-7 75-00-3 110-75-8 67-66-3 74-87-3 124-48-1 95-50-1 541-73-1 106-46-7 75-71-8 75-34-3 107-06-2 75-35-4 156-59-2 156-60-5 78-87-5 10061-01-5 10061-01-5 10061-02-6 75-09-2 79-34-5 127-18-4	ND N	0.5 ug/L	

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

SAMPLE ID: AMW6

AEN LAB NO: 9607225-07 AEN WORK ORDER: 9607225

CLIENT PROJ. ID: 502.0101.003

DATE SAMPLED: 07/17/96 DATE RECEIVED: 07/18/96 REPORT DATE: 07/29/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT UNITS	DATE ANALYZED
PA 8010 - Water matrix Bromodichloromethane Bromoform Bromomethane Carbon Tetrachloride Chlorobenzene Chloroethane 2-Chloroethyl Vinyl Ether Chloroform Chloromethane Dibromochloromethane 1.2-Dichlorobenzene 1.3-Dichlorobenzene 1.4-Dichlorobenzene Dichlorodifluoromethane 1.1-Dichloroethane 1.2-Dichloroethane 1.1-Dichloroethene cis-1.2-Dichloroethene trans-1.2-Dichloropropene trans-1.3-Dichloropropene trans-1.3-Dichloropropene trans-1.3-Dichloroethane 1.1.2.2-Tetrachloroethane [1.1.2.2-Tetrachloroethane [1.1.2.2-Trichloroethane [1.1.2-Trichloroethane [1.1.2-Trichloroeth	EPA 8010 75-27-4 75-25-2 74-83-9 56-23-5 108-90-7 75-00-3 110-75-8 67-66-3 74-87-3 124-48-1 95-50-1 541-73-1 106-46-7 75-71-8 75-34-3 107-06-2 75-35-4 156-59-2 156-60-5 78-87-5 10061-01-5 10061-02-6 75-09-2 79-34-5 127-18-4 71-55-6 79-00-5 79-01-6 75-69-4 76-13-1 75-01-4	ND N	30 ug/L 30 ug/L 30 ug/L 100 ug/L 30 ug/L	07/24/96 07/24/96

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

SAMPLE ID: AMW7

AEN LAB NO: 9607225-08 AEN WORK ORDER: 9607225 CLIENT PROJ. ID: 502.0101.003

DATE SAMPLED: 07/17/96 DATE RECEIVED: 07/18/96 REPORT DATE: 07/29/96

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

SAMPLE ID: AMW8

AEN LAB NO: 9607225-09 AEN WORK ORDER: 9607225

CLIENT PROJ. ID: 502.0101.003

DATE SAMPLED: 07/17/96 DATE RECEIVED: 07/18/96 REPORT DATE: 07/29/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT UNITS	DATE ANALYZED
EPA 8010 - Water matrix Bromodichloromethane Bromoform Bromomethane Carbon Tetrachloride Chlorobenzene Chloroethane 2-Chloroethyl Vinyl Ether Chloroform Chloromethane Dibromochloromethane 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethane 1,2-Dichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloroethene trans-1,3-Dichloropropene trans-1,3-Dichloropropene Methylene Chloride 1,1,2,2-Tetrachloroethane Tetrachloroethene 1,1,1-Trichloroethane I,1,2-Trichloroethane I,1,2-Trichloroethane Irichloroethene Irichlorofluoromethane Irichloroethene Irichlorofluoromethane Inchlorofluoromethane Inchloromethane Inchlorometha	EPA 8010 75-27-4 75-25-2 74-83-9 56-23-5 108-90-7 75-00-3 110-75-8 67-66-3 74-87-3 124-48-1 95-50-1 541-73-1 106-46-7 75-71-8 75-71-8 75-34-3 107-06-2 75-35-4 156-59-2 156-60-5 78-87-5 10061-01-5 10061-02-6 75-09-2 79-34-5 127-18-4 71-55-6 79-00-5 79-01-6 75-69-4 76-13-1 75-01-4	ND N	0.5 ug/L 0.5 ug/L	07/22/96 07/22/96

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: AMW9

AEN LAB NO: 9607225-10 AEN WORK ORDER: 9607225

CLIENT PROJ. ID: 502.0101.003

DATE SAMPLED: 07/17/96 DATE RECEIVED: 07/18/96 REPORT DATE: 07/29/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT UNITS	DATE ANALYZED
EPA 8010 · Water matrix Bromodichloromethane Bromoform Bromomethane Carbon Tetrachloride Chlorobenzene Chloroethane 2-Chloroethyl Vinyl Ether Chloroform Chloromethane Dibromochloromethane 1.2-Dichlorobenzene 1.3-Dichlorobenzene 1.4-Dichlorobenzene 1.1-Dichloroethane 1.1-Dichloroethane 1.2-Dichloroethene cis-1.2-Dichloroethene trans-1.2-Dichloropropene trans-1.3-Dichloropropene trans-1.3-Dichloropropene dethylene Chloride 1.1.2.2-Tetrachloroethane I.1.1-Trichloroethane I.1.2-Trichloroethane Irichloroethene Irichloroethene Irichloroethene Irichloroethene Irichlorofluoromethane Irichlorofluoromethane Irichlorofluoromethane II.2-Trichloroethane II.2-Trichloroethane III.2-Trichloroethane III.2-Trichloroethane III.2-Trichloroethane	EPA 8010 75-27-4 75-25-2 74-83-9 56-23-5 108-90-7 75-00-3 110-75-8 67-66-3 74-87-3 124-48-1 95-50-1 541-73-1 106-46-7 75-71-8 75-34-3 107-06-2 75-35-4 156-59-2 156-60-5 78-87-5 10061-01-5 10061-02-6 75-09-2 79-34-5 127-18-4 71-55-6 79-00-5 79-01-6 75-69-4 76-13-1	ND N	3 ug/L	07/24/96 07/24/96

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

SAMPLE ID: MW6

AEN LAB NO: 9607225-11 AEN WORK ORDER: 9607225

CLIENT PROJ. ID: 502.0101.003

DATE SAMPLED: 07/17/96 DATE RECEIVED: 07/18/96 REPORT DATE: 07/29/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
EPA 8010 - Water matrix Bromodichloromethane Bromoform Bromomethane Carbon Tetrachloride Chlorobenzene Chloroethane 2-Chloroethyl Vinyl Ether Chloroform Chloromethane Dibromochloromethane 1.2-Dichlorobenzene 1.3-Dichlorobenzene 1.4-Dichlorobenzene Dichlorodifluoromethane 1.1-Dichloroethane 1.1-Dichloroethane 1.1-Dichloroethene cis-1.2-Dichloroethene trans-1.2-Dichloropropene trans-1.3-Dichloropropene trans-1.3-Dichloropropene trans-1.3-Dichloropropene trans-1.3-Dichloropropene trans-1.3-Dichloropropene trachloroethene 1.1.2-Trichloroethane Inchloroethene Trichloroethene Trichlorofluoromethane	EPA 8010 75-27-4 75-25-2 74-83-9 56-23-5 108-90-7 75-00-3 110-75-8 67-66-3 74-87-3 124-48-1 95-50-1 541-73-1 106-46-7 75-71-8 75-34-3 107-06-2 75-35-4 156-59-2 156-60-5 78-87-5 10061-01-5 10061-02-6 75-09-2 79-34-5 127-18-4 71-55-6 79-00-5 79-01-6 75-69-4 76-13-1 75-01-4	ND N	5 ug 20 ug 5 ug 5 ug 20 ug		07/24/96 07/24/96

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

PES ENVIRONMENTAL, INC.

SAMPLE ID: MW7

AEN LAB NO: 9607225-12 AEN WORK ORDER: 9607225

CLIENT PROJ. ID: 502.0101.003

DATE SAMPLED: 07/17/96 DATE RECEIVED: 07/18/96 REPORT DATE: 07/29/96

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

07/22/96

PES ENVIRONMENTAL, INC.

SAMPLE ID: EB

AEN LAB NO: 9607225-13 AEN WORK ORDER: 9607225

CLIENT PROJ. ID: 502.0101.003

DATE SAMPLED: 07/17/96 DATE RECEIVED: 07/18/96 REPORT DATE: 07/29/96

METHOD/ REPORTING DATE ANALYTE CAS# RESULT UNITS LIMIT **ANALYZED** EPA 8010 - Water matrix EPA 8010 Bromodichloromethane 75-27-4 ND $0.5 \, \text{ug/L}$ 07/22/96 Bromoform 75-25-2 ND 0.5 ug/L 07/22/96 Bromomethane 74-83-9 ND 2 ug/L 07/22/96 Carbon Tetrachloride 56-23-5 ND 0.5 ug/L 07/22/96 Chlorobenzene 108-90-7 ND 0.5 ug/L 07/22/96 Chloroethane 75-00-3 2 ug/L 0.5 ug/L ND 07/22/96 2-Chloroethyl Vinyl Ether 110-75-8 ND 07/22/96 Chloroform. 67-66-3 ND 0.5 ug/L 07/22/96 Chloromethane 74-87-3 ND 2 ug/L 07/22/96 Dibromochloromethane 124-48-1 0.5 ug/L ND 07/22/96 1.2-Dichlorobenzene 95-50-1 ND 0.5 ug/L 07/22/96 1.3-Dichlorobenzene 541-73-1 ND 07/22/96 0.5 ug/L 1.4-Dichlorobenzene 106-46-7 0.5 ug/L ND 07/22/96 Dichlorodifluoromethane 75-71-8 ND 2 ug/L07/22/96 1.1-Dichloroethane 75-34-3 0.5 ug/L ND 07/22/96 1.2-Dichloroethane 107-06-2 0.5 ug/L ND 07/22/96 1.1-Dichloroethene 75-35-4 ND 0.5 ug/L 07/22/96 cis-1.2-Dichloroethene 156-59-2 ND 0.5 ug/L 07/22/96 trans-1,2-Dichloroethene 156-60-5 ND 0.5 ug/L 07/22/96 1.2-Dichloropropane 78-87-5 ND 0.5 ug/L 07/22/96 cis-1,3-Dichloropropene 10061-01-5 ND 0.5 ug/L 07/22/96 trans-1,3-Dichloropropene 10061-02-6 ND 0.5 ug/L 07/22/96 Methylene Chloride 75-09-2 ND 2 ug/L 07/22/96 1.1.2.2-Tetrachloroethane 79-34-5 ND 0.5 ug/L 07/22/96 Tetrachloroethene 127-18-4 ND 0.5 ug/L 07/22/96 1.1.1-Trichloroethane 71-55-6 ND 0.5 ug/L 07/22/96 1.1.2-Trichloroethane 79-00-5 ND $0.5 \, \text{ug/L}$ 07/22/96 Trichloroethene 79-01-6 ND 0.5 ug/L 07/22/96 Trichlorofluoromethane 75-69-4 ND 2 ug/L 07/22/96 1.1.2Trichlorotrifluoroethane 76-13-1 ND 0.5 ug/L 07/22/96 Vinyl Chloride 75-01-4 ND 2 ug/L

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

SAMPLE ID: TB

AEN LAB NO: 9607225-14 AEN WORK ORDER: 9607225 CLIENT PROJ. ID: 502.0101.003

DATE SAMPLED: 07/18/96 DATE RECEIVED: 07/18/96

REPORT DATE: 07/29/96

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT UNITS	DATE ANALYZED
EPA 8010 - Water matrix Bromodichloromethane Bromoform Bromomethane Carbon Tetrachloride Chlorobenzene Chloroethane 2-Chloroethyl Vinyl Ether Chloroform Chloromethane Dibromochloromethane 1.2-Dichlorobenzene 1.3-Dichlorobenzene 1.4-Dichlorobenzene Dichlorodifluoromethane 1,1-Dichloroethane 1,1-Dichloroethane 1,1-Dichloroethene cis-1,2-Dichloroethene trans-1,2-Dichloropropene trans-1,3-Dichloropropene trans-1,3-Dichloropropene Methylene Chloride 1.1,2,2-Tetrachloroethane Etrachloroethene 1.1,1-Trichloroethane I.1,2-Trichloroethane	EPA 8010 75-27-4 75-25-2 74-83-9 56-23-5 108-90-7 75-00-3 110-75-8 67-66-3 74-87-3 124-48-1 95-50-1 541-73-1 106-46-7 75-71-8 75-34-3 107-06-2 75-35-4 156-59-2 156-60-5 78-87-5 10061-01-5 10061-02-6 75-09-2 79-34-5 127-18-4 71-55-6 79-00-5 79-01-6 75-69-4 76-13-1 75-01-4		0.5 ug/L 0.5 ug/L 0.5 ug/L 0.5 2 ug/L 0.5 2 ug/L 0.5 2 ug/L 0.5 2 ug/L 0.5 ug/L	07/20/96 07/20/96

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

AEN (CALIFORNIA) QUALITY CONTROL REPORT

AEN JOB NUMBER: 9507225

CLIENT PROJECT ID: 502.0101.003

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: 9507225 INSTRUMENT: G, I MATRIX: WATER

Surrogate Standard Recovery Summary

			Percer	it Recovery
Date Analyzed	Client Id.	Lab Id.	Bromochloro- methane	1-Bromo-3-chloro- propane
07/20/96 07/22/96 07/20/96 07/20/96 07/24/96 07/24/96 07/24/96 07/22/96 07/24/96 07/22/96 07/22/96 07/22/96	WGR-MW2 WGR-MW3 WGR-MW4 AMW1 AMW4 AMW5 AMW6 AMW7 AMW8 AMW9 MW6 MW7 EB TB	01 02 03 04 05 06 07 08 09 10 11 12 13 14	79 88 77 78 73 84 83 95 82 88 84 92 92 72	88 87 87 87 81 90 91 87 103 93 84 86 82
QC Limits:			70-130	70-130

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AMWS 1210					- OSA	<u>C</u>
AMW6 950					C/6 A	<u>C</u>
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AMW 8 925						
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BLAINE	SAN JOSE, CA 95133		CONDUCT	ANALYSIS TO	O DETECT		Jun AEN	960	一 722'	c R3,	5-1
TECH SERVICES INC.	(408) 995-5535 FAX (408) 293-8773						ALL ANALYSES MUS	T MEET COECIE	iCATIONS U	DHS #	
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NOVEMBER 19, 1996

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Quality Control Reviewer

Robert S. Creps, P.E.