PES Environmental, Inc.
Engineering & Environmental Services

R0411

A Report Prepared For:

Pacific Electric Motor Company
1009 66th Avenue
Oakland, California 94601

Attention: Mr. Rand Perry

SECOND QUARTER 2003 GROUNDWATER MONITORING REPORT PACIFIC ELECTRIC MOTOR COMPANY 1009 66TH AVENUE OAKLAND, CALIFORNIA

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1.0 INTRODUCTION

This report presents the results of quarterly groundwater monitoring performed by PES Environmental, Inc. (PES) during the second quarter of 2003 at Pacific Electric Motor Company (PEM) in Oakland, California (Plate 1). The monitoring is being performed to fulfill post-remediation groundwater monitoring requirements of the Alameda County Health Care Services, Environmental Health Services (ACEHS), as described in a letter dated August 9, 2002.

The purpose of groundwater monitoring is to assess the presence and trend of petroleum hydrocarbons previously observed in onsite groundwater monitoring wells, and evaluate the success of recent remedial action conducted at the site.

Per the ACEHS' letter, the groundwater monitoring program consists of measuring the depth to groundwater in four monitoring wells (wells MW-1, MW-2, MW-3, MW-4), and one unused extraction well (EW-1), and purging and sampling the monitoring wells on a quarterly basis for four consecutive quarters, at which time the monitoring program will be reevaluated. The second quarter 2003 monitoring event marks the third of the four consecutive monitoring events to be performed at the site.

2.0 BACKGROUND INFORMATION

The site is located in a residential and light industrial area in Oakland, California and is not currently occupied. Most recently the site housed repair operations for large electric motors. PEM formerly operated a 2,000-gallon steel gasoline underground storage tank (UST) on the east side of the warehouse building (Plate 2). The tank was reportedly installed in approximately 1975 (ENVIRON, 1997). In February 1995, the UST was removed by W.A. Craig, Inc. (WAC). Observations at the time of removal indicated that the tank was in good condition and no holes were evident. However, free-phase gasoline product was observed on the water surface in the tank excavation. Soil samples collected from the UST excavation and associated piping trenches detected total petroleum hydrocarbons as gasoline (TPHg) at concentrations up to 10,000 milligrams per kilogram.

In April 1995, WAC performed a soil investigation consisting of the drilling and sampling of nine soil borings to delineate the lateral and vertical extent of the petroleum hydrocarbons in soil. On the basis of the results of the soil investigation, WAC prepared and implemented a remediation program to remove soil affected by petroleum hydrocarbons. Approximately 1,500 cubic yards of soil were excavated and stockpiled onsite, and 116,000 gallons of petroleum hydrocarbon-affected water were pumped from the excavation and disposed. A dewatering sump installed by WAC during soil excavation was later converted to groundwater monitoring well WAC-1 (Plate 2). Because of its uncertain construction, ACEHS stated that no monitoring of Well WAC-1 is required (ACEHS, 1997). WAC summarized the results of their remediation program in a report entitled *Excavation and Sampling Report, Pacific*

Electric Motor Co., 1009 66th Avenue, Oakland, California, dated May 12, 1997 (WAC, 1997).

ENVIRON, Inc. (ENVIRON) installed and sampled three shallow monitoring wells (MW-1, MW-2, MW-3) in June 1997 to evaluate groundwater conditions in the vicinity of the former UST. Well completion details are summarized in Table 1. The well installation program and associated soil and groundwater sampling program was summarized in the ENVIRON report *Soil and Ground Water Investigation, Summary Report, Pacific Electric Motor Co., 1009-66th Avenue, Oakland, California*, dated July 17, 1997 (ENVIRON, 1997). ENVIRON concluded that the remediation performed had successfully removed the source of the petroleum hydrocarbons (i.e., the former UST), and that residual concentrations of petroleum hydrocarbons in soil and groundwater were present only in the immediate vicinity of the former UST.

In September 1998 PES conducted additional soil and groundwater sampling in the vicinity of the former UST, as requested by the ACEHS in a May 13, 1998 letter to PEM (ACEHS, 1998a). Two soil borings were drilled within the backfill of the former UST excavation, and one monitoring well was installed downgradient of the former UST. Petroleum hydrocarbons were generally not detected in the excavation backfill, although groundwater samples collected from both soil borings indicated the presence of methyl tert-butyl ether (MTBE), a gasoline additive. Elevated petroleum hydrocarbons were found in soil and groundwater downgradient of the UST excavation during installation and groundwater sampling of monitoring well MW-4. On the basis of the elevated concentrations of petroleum hydrocarbons, PES recommended performing periodic groundwater monitoring. The additional investigation was summarized in the PES report *Results of Additional Soil and Groundwater Investigation, 1009 66th Avenue, Oakland, California*, dated November 11, 1998 (PES, 1998a).

Groundwater monitoring has been conducted at the site since the installation of monitoring wells MW-1, MW-2, and MW-3 in June 1997. Monitoring well MW-4 was incorporated into the monitoring program upon installation in September 1998. Historical and current water-level elevation data is presented in Table 2. Historical and current analytical results of groundwater monitoring events are presented in Table 3.

Additional site remediation activities were conducted by Decon Environmental Services (Decon) in 2002. The remediation activities included soil excavation from an area located to the south/southwest of the original excavation discussed above and the injection of Oxygen Release Compound® (ORC®) at 25 locations in the vicinity of monitoring well MW-4 and around the northern portion of the additional excavation area. The areas of excavation and ORC® injection are shown on Plate 2. To dewater the excavation, Decon constructed an extraction well (EW-1) in the northern portion of the excavation area following backfilling activities.

3.0 WATER-LEVEL AND DISSOLVED OXYGEN MEASUREMENTS

Water levels in the five onsite wells were measured by Blaine Tech Services, Inc. (Blaine Tech) of San Jose, California, prior to sampling on May 16, 2003. Depth-to-water in the wells was measured from the top-of-casing (TOC) reference benchmark to a precision of 0.01-feet using an electronic water-level indicator. Depth-to-water measurements were converted to water-level elevations by subtracting the depth to water from the surveyed TOC elevation. Well construction details and TOC elevations are compiled in Table 1. Measurable free product was not observed in any of the monitoring wells, however, a sheen was present on the water removed from monitoring well MW-1.

Following completion of water-level measurements, Blaine Tech collected dissolved oxygen (DO) readings from each well. DO measurements were collected using a handheld meter. A probe was lowered into the screened interval of the well and gently raised and lowered until the DO readings stabilized.

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

4.0 GROUNDWATER SAMPLING

On May 16, 2003, Blaine Tech collected groundwater samples from Wells MW-1, MW-2, MW-3, MW-4, and EW-1. Groundwater samples were collected from each well after removing approximately three well volumes of water with disposable bailers. Because of the large volume of water required for adequate purging, EW-1 was purged using a submersible electric pump. The pump and associated tubing was cleaned prior to and following the completion of well purging using a phosphate-free detergent/deionized water solution and double rinsed with deionized water. During well purging, the discharged water was monitored for pH, temperature, electrical conductivity, and turbidity.

Following purging, samples were collected from the wells using disposable polyethylene bailers 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. Sampling procedures are documented in the groundwater sampling report prepared by Blaine Tech, included as Appendix A.

Groundwater samples were transported under chain-of-custody protocol to Severn Trent Laboratories, Inc. (STL), a state-certified laboratory in Pleasanton, California. STL analyzed samples for:

- Total petroleum hydrocarbons quantified as gasoline (TPHg) using U.S. Environmental Protection Agency (EPA) Test Method 8015-Modified

- Benzene, toluene, ethyl-benzene, and total xylenes (BTEX) using U.S. EPA Test Method 8021B or U.S. EPA Test Method 8260B; and

- Tert-butyl alcohol (TBA), methyl tert-butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), ethylene dichloride (EDC [also known as 1,2-dichloroethane]), and ethylene dibromide (EDB) using U.S. EPA Test Method 8260B.

Analytical data from the second quarter 2003 monitoring event will be submitted electronically to the SWRCB Geotracker database along with the well location data. The laboratory reports and chain-of-custody records are included in Appendix B.

5.0 DISCUSSION OF MONITORING RESULTS

This section summarizes the field measurements (water-level and DO) and groundwater analytical results from the May 2003 sampling event.

5.1 Water-Level and Dissolved Oxygen Measurements

Depth-to-water measurements taken on May 16, 2003 ranged from 2.73 feet (EW-1) to 3.87 feet (MW-4) below TOC. Calculated groundwater elevations ranged from 6.57 feet (MW-3) to 7.53 feet (EW-1) relative to mean sea level (MSL). Historical and current depth-to-water measurements and water-level elevations are presented in Table 2.

Groundwater-level elevations are presented on Plate 2. A definitive groundwater flow direction could not be extrapolated from the groundwater-level elevations observed on May 16, 2003. It should be noted, however, that the area in the center of the groundwater monitoring zone has been highly disturbed during remediation activities (Section 2.0). Consequently, any number of factors including the excavation of soil and subsequent backfilling of the remediation area and the injection of ORC® could be influencing groundwater elevations in the vicinity of the monitoring wells.

DO measurements collected on May 16, 2003 ranged from 0.2 milligrams per liter (mg/L), in monitoring well MW-1, to 2.7 mg/L in well MW-2. DO measurements are presented in Blain Tech's groundwater sampling report (Appendix B) and in Table 3.

5.2 Groundwater Chemistry

A summary of current laboratory chemical results for petroleum hydrocarbons is presented in Table 3. Copies of the laboratory report and chain-of-custody documentation are provided in Appendix B.

During the current monitoring period, at monitoring wells MW-2 and MW-3, only MTBE was detected at concentrations of 16 micrograms per liter (µg/L) and 2.6 µg/L, respectively. No other petroleum hydrocarbons were detected in either well at or above the respective laboratory reporting limits.

In the sample collected from monitoring well MW-1, petroleum hydrocarbons were detected at the following concentrations: TPH-g at 5,600 µg/L; benzene at 22 µg/L; ethyl-benzene at 240 µg/L; and total xylenes at 490 µg/L. No other compounds were detected at or above the respective laboratory reporting limits in the sample collected from well MW-1. Petroleum hydrocarbon concentrations detected in the sample collected from well MW-1 in May 2003 are relatively consistent with concentrations observed during the previous monitoring event conducted in December 2002.

In the sample collected from monitoring well MW-4, petroleum hydrocarbons were detected at the following concentrations: TPHg at 530,000 µg/L; benzene at 24,000 µg/L; toluene at 20,000 µg/L; ethyl-benzene at 12,000 µg/L; total xylenes at 63,000 µg/L; and MTBE at 42,000 µg/L. While concentrations of petroleum hydrocarbon compounds detected during the May 2003 event were generally higher than those observed in December 2002 and February 2003, they are generally consistent with the range of concentrations observed prior to the 2002 remediation activities.

In the sample collected from EW-1, petroleum hydrocarbons were detected at the following concentrations: TPHg at 330 µg/L; benzene at 12 µg/L; toluene at 7.6 µg/L; ethyl-benzene at 4.2 µg/L; total xylenes at 14 µg/L; and MTBE at 300 µg/L. No other compounds were detected at or above the respective laboratory reporting limits in the sample collected from the extraction well. Concentrations detected in well EW-1 during the current sampling event were lower than those observed during the previous quarter.

In general, these data appear to indicate that the petroleum hydrocarbon plume associated with the former UST remains localized and relatively stable.

6.0 REFERENCES

Alameda County Environmental Health Services (ACEHS), 1997. *Soil and Groundwater Investigation for Pacific Electric Motor Co., 1009-66th Ave., Oakland, CA 94601.* August 19.

_____, 1998a. *Evaluation of Residual Health Risks at Pacific Electric Motor Company, 1009 66th Avenue, Oakland, CA 94601.* May 13.

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PES Environmental, Inc. (PES), 1998a. *Results of Additional Soil and Groundwater Investigation, 1009 66th Avenue, Oakland, California.* November 11.

_____, 1998b. *Proposal, Quarterly Groundwater Sampling, Pacific Electric Motor Company, Oakland, California.* December 11.

W. A. Craig, Inc. (*WAC*), 1997. *Excavation and Sampling Report, Pacific Electric Motor Co., 1009 66th Avenue, Oakland, California.* May 12. (Partial)

Table 1
Monitoring Well Completion Details
Groundwater Monitoring Report
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

Well Number	Date Installed	Installed By	Top of Casing Elevation (feet MSL)	Boring Diameter (inches)	Casing Diameter (inches)	Total Depth Boring (feet bgs)	Total Depth of Casing (feet bgs)	Screened Interval Depth (feet bgs)	
								Top	Bottom
MW-1	6/10/1997	ENVIRON	10.87	8	2	26.5	25.5	5	25
MW-2	6/10/1997	ENVIRON	10.02	8	2	25.5	25.5	5	25
MW-3	6/10/1997	ENVIRON	10.12	8	2	25.5	25.5	5	25
MW-4	9/14/1998	PES	10.50	8	2	25.0	25.0	15	25
EW-1*	NP	Decon	10.26	NP	7	NP	8.77	NP	NP

Notes:
bgs = Below ground surface
NP = Information not provided to PES
* = Well completion information derived from December 2002 sampling event field notes

Table 2
Water-Level Elevation Data
Groundwater Monitoring Report
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

Well Number	Date Measured	Measured By	Top of Casing Elevation (feet[1]/feet MSL[2])	Depth to Water (feet BTOC)	Water-level Elevation (feet[1]/feet MSL[2])
MW-1	6/19/1997	ENVIRON	100.67	5.87	94.80
	7/1/1997	ENVIRON	100.67	5.88	94.79
	9/29/1997	PES	100.67	6.45	94.22
	12/16/1997	PES	100.67	3.42	97.25
	3/10/1998	PES	100.67	3.06	97.61
	10/1/1998	PES	100.67	6.36	94.31
	1/19/1999	PES	100.67	5.33	95.34
	4/15/1999	PES	100.67	3.23	97.44
	5/6/1999	PES	100.67	4.36	96.31
	7/30/1999	PES	100.67	5.49	95.18
	11/15/1999	PES	100.67	6.30	94.37
	3/24/2000	PES	100.67	3.47	97.20
	5/18/2000	PES	100.67	4.34	96.33
	7/26/2000	PES	100.67	5.28	95.39
	10/30/2000	PES	100.67	5.68	94.99
	11/14/2000	PES	100.67	5.53	95.14
	7/24/2001	PES	100.67	5.52	95.15
	11/28/2001	PES	100.67	5.31	95.36
	2/18/2002	PES	100.67	3.69	96.98
	12/11/2002	PES	10.87	5.71	5.16
	2/26/2003	PES	10.87	3.90	6.97
	5/16/2003	**PES**	**10.87**	**3.61**	**7.26**
MW-2	6/19/1997	ENVIRON	99.85	5.30	94.55
	7/1/1997	ENVIRON	99.85	5.37	94.48
	9/29/1997	PES	99.85	6.05	93.80
	12/16/1997	PES	99.85	3.81	96.04
	3/10/1998	PES	99.85	2.89	96.96
	10/1/1998	PES	99.85	5.83	94.02
	1/19/1999	PES	99.85	5.26	94.59
	4/15/1999	PES	99.85	3.19	96.66
	5/6/1999	PES	99.85	3.91	95.94
	7/30/1999	PES	99.85	4.79	95.06
	11/15/1999	PES	99.85	5.92	93.93
	3/24/2000	PES	99.85	3.55	96.30
	5/18/2000	PES	99.85	4.04	95.81
	7/26/2000	PES	99.85	4.85	95.00
	10/30/2000	PES	99.85	5.31	94.54
	11/14/2000	PES	99.85	5.14	94.71
	7/24/2001	PES	99.85	5.12	94.73
	11/28/2001	PES	99.85	5.15	94.70
	2/18/2002	PES	99.85	3.73	96.12
	12/11/2002	PES	10.02	5.30	4.72
	2/26/2003	PES	10.02	3.55	6.47
	5/16/2003	**PES**	**10.02**	**3.37**	**6.65**
MW-3	6/19/1997	ENVIRON	99.93	5.50	94.43
	7/1/1997	ENVIRON	99.93	5.52	94.41
	9/29/1997	PES	99.93	6.16	93.77
	12/16/1997	PES	99.93	5.52	94.41
	3/10/1998	PES	99.93	3.11	96.82
	10/1/1998	PES	99.93	5.96	93.97
	1/19/1999	PES	99.93	5.45	94.48
	4/15/1999	PES	99.93	3.85	96.08

Table 2
Water-Level Elevation Data
Groundwater Monitoring Report
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

Well Number	Date Measured	Measured By	Top of Casing Elevation (feet[1]/feet MSL[2])	Depth to Water (feet BTOC)	Water-level Elevation (feet[1]/feet MSL[2])
MW-3	5/6/1999	PES	99.93	4.12	95.81
cont.	7/30/1999	PES	99.93	5.14	94.79
	11/15/1999	PES	99.93	6.35	93.58
	3/24/2000	PES	99.93	3.29	96.64
	5/18/2000	PES	99.93	4.16	95.77
	7/26/2000	PES	99.93	5.14	94.79
	10/30/2000	PES	99.93	5.43	94.50
	11/14/2000	PES	99.93	5.25	94.68
	7/24/2001	PES	99.93	5.29	94.64
	11/28/2001	PES	99.93	4.92	95.01
	2/18/2002	PES	99.93	3.88	96.05
	12/11/2002	PES	10.12	5.37	4.75
	2/26/2003	PES	10.12	3.71	6.41
	5/16/2003	**PES**	**10.12**	**3.55**	**6.57**
MW-4	10/1/1998	PES	100.32	6.32	94.00
	1/19/1999	PES	100.32	5.59	94.73
	4/15/1999	PES	100.32	7.71 #	92.61 #
	5/6/1999	PES	100.32	4.50	95.82
	7/30/1999	PES	100.32	5.18	95.14
	11/15/1999	PES	100.32	6.27	94.05
	3/24/2000	PES	100.32	3.59	96.73
	5/18/2000	PES	100.32	4.40	95.92
	7/26/2000	PES	100.32	5.65	94.67
	10/30/2000	PES	100.32	5.89	94.43
	11/14/2000	PES	100.32	5.61	94.71
	7/24/2001	PES	100.32	5.34	94.98
	11/28/2001	PES	100.32	5.67	94.65
	2/18/2002	PES	100.32	4.21	96.11
	12/11/2002	PES	10.50	5.77	4.73
	2/26/2003	PES	10.50	4.00	6.50
	5/16/2003	**PES**	**10.50**	**3.87**	**6.63**
EW-1	12/11/2002	PES	10.26	5.00	5.26
	2/26/2003	PES	10.26	3.10	7.16
	5/16/2003	**PES**	**10.26**	**2.73**	**7.53**

Notes:
[1] = Top of casing elevations referenced to site datum established by ENVIRON (1997), used through February 2002
[2] = Top of casing elevations resurveyed by Cross Land Surveying, Inc. on January 16, 2003; referenced to NGVD 1929
MSL = Mean sea level
BTOC = Below top of casing
# = Anomalous data, not used for water-level elevation contouring

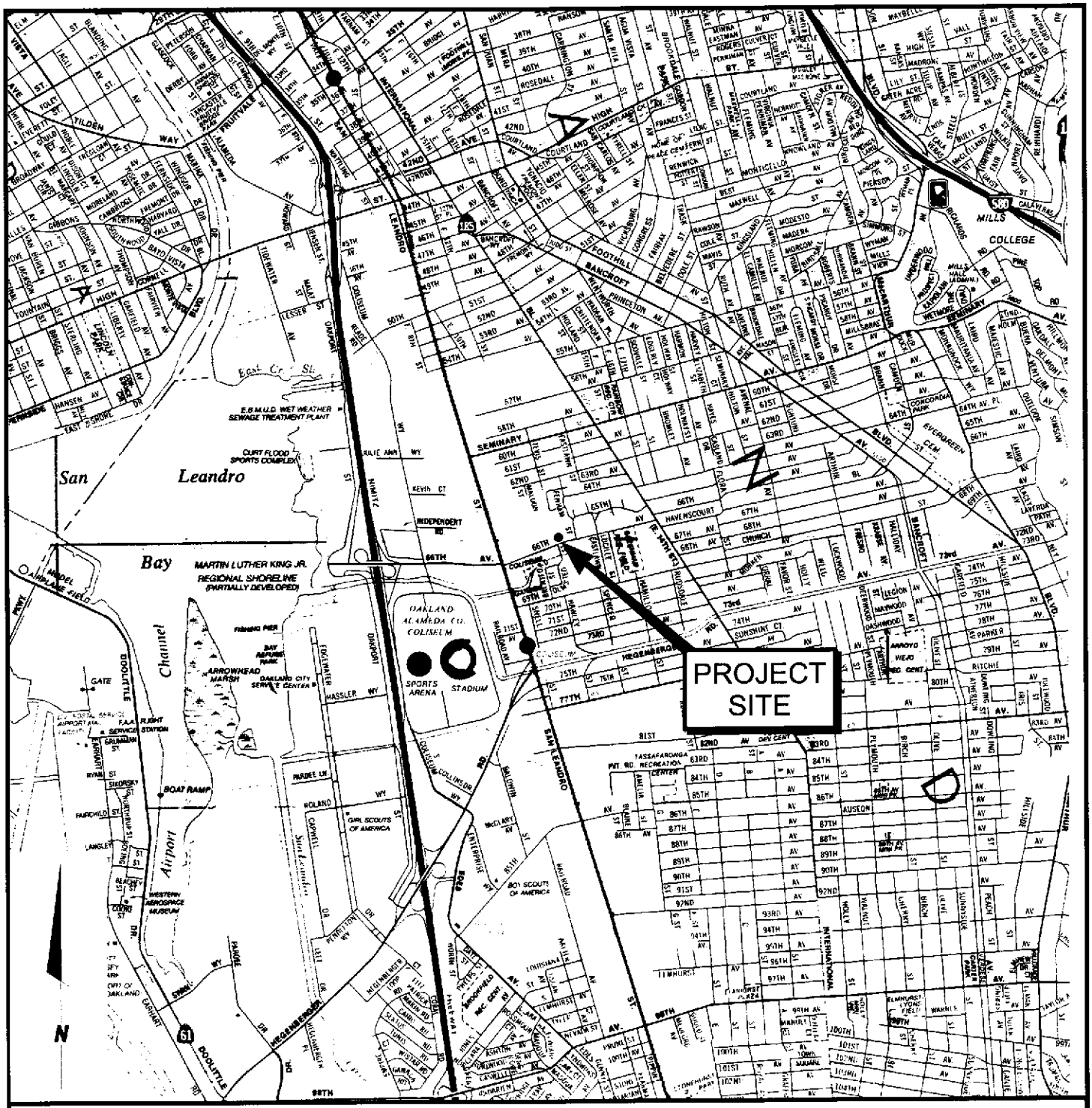
Table 3
Summary of Analytical Results for Groundwater Samples
Groundwater Monitoring Report
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

Well Number	Date Sampled	Sampled By	Dissolved Oxygen (mg/L)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE EPA 8020 (µg/L)	MTBE EPA 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	EDC (µg/L)	EDB (µg/L)
MW-1	6/19/1997	ENVIRON	na	18,000	3,300	200	1,100	4,900	<250	--	--	--	--	--	--	--
	9/29/1997	PES	na	29,000	4,800	<25	2,000	3,500	<250	--	--	--	--	--	--	--
	12/16/1997	PES	na	<50	1.3	<0.5	0.6	0.7	<5	--	--	--	--	--	--	--
	3/10/1998	PES	na	190	2.0	<0.5	5.7	1.7	<5	--	--	--	--	--	--	--
	1/19/1999	PES	na	1,000	40	<0.5	18	68	8.3	6.9	--	--	--	--	--	--
	4/15/1999	PES	na	<50	0.92	0.9	0.7	0.87	<5.0	--	--	--	--	--	--	--
	7/30/1999	PES	na	1,400	60	<0.5	83	120	13	<5.0	--	--	--	--	--	--
	11/15/1999	PES	na	3,600	120	<0.5	150	620	<5.0	--	--	--	--	--	--	--
	3/24/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	5/18/2000	PES	na	1,300	10	1.2	38	130	8.6	<5.0	--	--	--	--	--	--
	7/26/2000	PES	na	6,400	100	7.4	260	680	<5.0	--	--	--	--	--	--	--
	10/30/2000	PES	na	6,000	130	14	330	950	<100	--	--	--	--	--	--	--
	7/24/2001	PES	na	1,200	13	<0.5	70	39	13	--	--	--	--	--	--	--
	11/28/2001	PES	na	1,800	27	0.93	72	160	<5.0	--	--	--	--	--	--	--
	2/18/2002	PES	na	2,400	18	<2.5	89	200	<25	--	--	--	--	--	--	--
	12/11/2002	PES	0.7	8,400	83	9.2	320	640	--	<0.50	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50
	2/26/2003	PES	2.2*	8,300	12	<10	240	720	--	<10	<100	<20	<10	<10	<10	<10
	5/16/2003	PES	0.2	5,600	22	<5.0	240	490	--	<5.0	<50	<10	<5.0	<5.0	<5.0	<5.0
MW-2	6/19/1997	ENVIRON	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	9/29/1997	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--	--	--	--
	12/16/1997	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--	--	--	--
	3/10/1998	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	1/19/1999	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--	--	--	--	--	--
	4/15/1999	PES	na	<50	0.75	0.64	<0.5	0.74	<5.0	--	--	--	--	--	--	--
	7/30/1999	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	11/15/1999	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	3/24/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	5/18/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	7/26/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	10/30/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	7/24/2001	PES	na	<50	<0.5	<0.5	<0.5	<0.5	7.6	--	--	--	--	--	--	--
	11/28/2001	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	2/18/2002	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	12/11/2002	PES	1.4	<50	<0.50	<0.50	<0.50	<1.0	--	5.8	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50
	2/26/2003	PES	0.8	<50	<0.50	<0.50	<0.50	<1.0	--	10	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50
	5/16/2003	PES	2.7	<50	<0.50	<0.50	<0.50	<1.0	--	16	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50
MW-3	6/19/1997	ENVIRON	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	9/29/1997	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--	--	--	--
	12/16/1997	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--	--	--	--
	3/10/1998	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	1/19/1999	PES	na	<50	0.78	<0.5	<0.5	<0.5	8.7	<5.0	--	--	--	--	--	--
	4/15/1999	PES	na	<50	5.4	3.9	1.7	5.6	23	25	--	--	--	--	--	--
	7/30/1999	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	11/15/1999	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	3/24/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--

Table 3
Summary of Analytical Results for Groundwater Samples
Groundwater Monitoring Report
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

Well Number	Date Sampled	Sampled By	Dissolved Oxygen (mg/L)	TPH-g (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl-benzene (µg/L)	Xylenes (µg/L)	MTBE EPA 8020 (µg/L)	MTBE EPA 8260 (µg/L)	TBA (µg/L)	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	EDC (µg/L)	EDB (µg/L)
MW-3 cont.	5/18/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	7/26/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	10/30/2000	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	7/24/2001	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	11/28/2001	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	2/18/2002	PES	na	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	12/11/2002	PES	1.9	<50	<0.50	<0.50	<0.50	<1.0	--	0.78	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50
	2/26/2003	PES	1.9	<50	<0.50	<0.50	<0.50	<1.0	--	<0.50	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50
	5/16/2003	**PES**	1.9	<50	<0.50	<0.50	<0.50	<1.0	--	**2.6**	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50
MW-4	9/15/1998	PES	na	**170,000**	**26,000**	**32,000**	**2,900**	**18,000**	**26,000**	--	--	--	--	--	--	--
	1/19/1999	PES	na	**2,600**	**1,700**	**3.8**	**25**	**29**	**13,000**	**16,000**	--	--	--	--	--	--
	4/15/1999	PES	na	**210,000**	**28,000**	**15,000**	**3,700**	**19,000**	**52,000**	**67,000**	--	--	--	--	--	--
	7/30/1999	PES	na	**91,000**	**16,000**	**7,500**	**2,300**	**8,500**	**68,000**	**67,000**	--	--	--	--	--	--
	11/15/1999	PES	na	**63,000**	**8,500**	**2,400**	**1,400**	**4,000**	**57,000**	**58,000**	--	--	--	--	--	--
	3/24/2000	PES	na	**95,000**	**16,000**	**13,000**	**2,500**	**12,000**	**44,000**	--	--	--	--	--	--	--
	5/18/2000	PES	na	**91,000**	**15,000**	**10,000**	**2,200**	**9,600**	**64,000**	**77,000**	--	--	--	--	--	--
	7/26/2000	PES	na	**130,000**	**11,000**	**6,400**	**1,700**	**6,500**	**80,000**	--	--	--	--	--	--	--
	10/30/2000	PES	na	**59,000**	**6,700**	**2,200**	**750**	**3,100**	**68,000**	**68,000****	--	--	--	--	--	--
	7/24/2001	PES	na	**180,000**	**25,000**	**23,000**	**3,500**	**20,000**	**44,000**	**44,000****	--	--	--	--	--	--
	11/28/2001	PES	na	**67,000**	**8,100**	**3,300**	**1,400**	**5,600**	**57,000**	**57,000****	--	--	--	--	--	--
	2/18/2002	PES	na	**98,000**	**20,000**	**12,000**	**2,300**	**15,000**	**47,000**	**47,000****	--	--	--	--	--	--
	12/11/2002	PES	0.8	**200,000**	**340**	<50	**590**	**1,000**	--	**17,000**	**3,600**	<100	<50	<50	<50	<50
	2/26/2003	PES	0.1	**63,000**	**8,100**	**4,400**	**1,900**	**8,200**	--	**30,000**	<1,300	<250	<130	<130	<130	<130
	5/16/2003	**PES**	0.4	**530,000**	**24,000**	**20,000**	**12,000**	**63,000**	--	**42,000**	<2,500	<500	<250	<250	<250	<250
EW-1	12/11/2002	PES	2.4	**6,600**	**530**	<50	**87**	<100	--	**2,600**	**1,600**	<100	<50	<50	<50	<50
	2/26/2003	PES	0.1	**4,000**	**170**	**20**	**41**	**53**		**5,000**	**130**	<25	<13	<13	<13	<13
	5/16/2003	**PES**	0.5	**330**	**12**	**7.6**	**4.2**	**14**	--	**300**	<25	<5.0	<2.5	<2.5	<2.5	<2.5

Notes:
TPH-g = Total petroleum hydrocarbons quantified as gasoline (EPA 8015M)
MTBE = Methyl tert-butyl ether (EPA 8020; detected concentrations were confirmed by EPA 8260)
TBA = tert-butyl alchohol
DIPE = di-isopropyl ether
ETBE = ethyl tert-butyl ether
TAME = tert-amyl methyl ether
EDC = ethylene dichloride (also known as 1,2-dichloroethane)
EDB = ethylene dibromide
mg/L = milligrams per liter
µg/L = micrograms per liter
na = not analyzed
* = Dissolved oxygen measurement collected following purging
** = MTBE results confirmed but not requantified by EPA Method 8260
<50 = Not detected at or above the indicated laboratory reporting limit
-- = Not analyzed



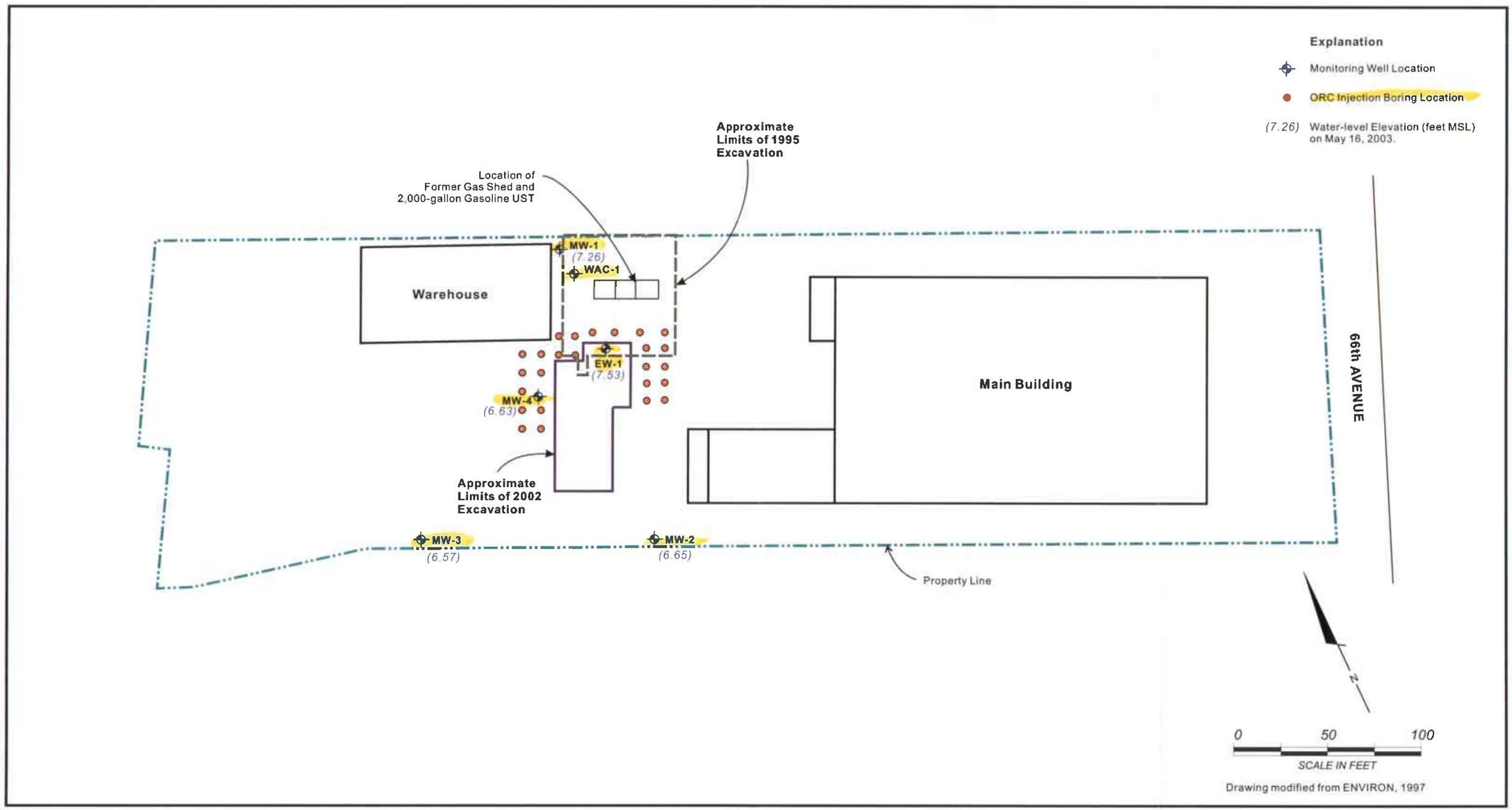
Oakland Map, California State Automobile Association, 1997.

PES Environmental, Inc.
Engineering & Environmental Services

Site Location Map
Second Quarter 2003 Groundwater Monitoring Report
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

PLATE 1

618.001.02.005	61800101004_V1.CDR	WWM	7/03
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE



PES Environmental, Inc.
Engineering & Environmental Services

Site Plan and Well Location Map and Water-level Elevation Map
Second Quarter 2003 Groundwater Monitoring Report
Pacific Electric Motor Company
1009 66th Avenue
Oakland, California

PLATE 2

618.001.02.005	61800102004_2Q-2003.cdr	WWM	7/03
JOB NUMBER	DRAWING NUMBER	REVIEWED BY	DATE

APPENDIX A

GROUNDWATER SAMPLING REPORT

RECEIVED JUN - 6 2003

WELLHEAD INSPECTION CHECKLIST

Client PENC Date 5/1

Site Address 1009 66th Ave, OAKLAND

Job Number 030516-BA1 Technician BRIAN ALCORN

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)	Repair Order Submitted
MW-1	✓							
MW-2						(1)		
MW-3	✓							
MW-4	✓							
~~MW~~ EW-1						(2)		

NOTES: (1) Missing one bolt - bolt hole in lid damaged (2) Well has no cap - not sealed

WELL GAUGING DATA

Project # 030516-BA1 Date 5/16/03 Client PES ENVIRONMENTAL

Site 1009 66th AVE, OAKLAND

Well ID	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	
MW-1	2					3.61	24.78	TOC	
MW-2	2					3.37	24.76		
MW-3	2					3.55	24.63		
MW-4	2					3.87	24.57		
EW-1	8					2.73	8.74		

WELL MONITORING DATA SHEET

Project #: 030516-BA1	Client: PES ENVIRONMENTAL
Sampler: BRIAN ALCORN	Start Date: 5/16/03
Well I.D.: MW-1	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 24.78	Depth to Water: 3.61
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Purge Method:

- Bailer
- (Disposable Bailer)
- Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method: Bailer

- (Disposable Bailer)
- Extraction Port
- Dedicated Tubing
- Other: _____

3.5 (Gals.) X 3 = 10.5 Gals.

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or (µS))	Turbidity (NTU)	Gals. Removed	Observations
1117	62.6	7.0	345	71	3.5	clear, mild odor, slight sheen
1123	63.1	6.6	280	210	7.0	cloudy, brown, odor + slight sheen
1128	64.0	6.5	283	496	10.5	"

Did well dewater? Yes (No) Gallons actually evacuated: 10.5

Sampling Time: 1130 Sampling Date: 5/16/03

Sample I.D.: MW-1 Laboratory: STL

Analyzed for: (TPH-G BTEX MTBE) TPH-D Other: TAME, DIPE, ETBE, TBA, EDB, + EDC all by 8260

Equipment Blank I.D.: @ Time Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd): Down Hole	(Pre-purge):	0.2 mg/L	Post-purge:		mg/L
ORP (if req'd):	Pre-purge:	mV	Post-purge:		mV

WELL MONITORING DATA SHEET

Project #: 030516-BA1	Client: PES Environmental
Sampler: Brian Alcorn	Start Date: 5/16/03
Well I.D.: MW-2	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 24.76	Depth to Water: 3.37
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Purge Method:

Bailer / Waterra
(Disposable Bailer) / Peristaltic
Middleburg / Extraction Pump
Electric Submersible / Other_____

Sampling Method: Bailer

(Disposable Bailer)
Extraction Port
Dedicated Tubing
Other: _____

3.5 (Gals.) X 3 = 10.5 Gals.

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or (uS))	Turbidity (NTU)	Gals. Removed	Observations
0937	64.9	6.5	1,185	590	3.5	cloudy brown
0944	64.1	6.8	1,183	>1,000	7.0	"
0949	63.7	6.8	1,129	>1,000	10.5	"

Did well dewater? Yes (No)		Gallons actually evacuated: 10.5	
Sampling Time: 0950		Sampling Date: 5/16/03	
Sample I.D.: MW-2		Laboratory: STL	
Analyzed for: (TPH-G BTEX MTBE) TPH-D		Other: TAME, ETBE, DIPE, TBA, EDB, + EDC all by 8260	
Equipment Blank I.D.:	@ Time	Duplicate I.D.:	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
D.O. (if req'd): Down Hole	Pre-purge: 2.7 mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge: mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 030516-BA1	Client: PES ENVIRONMENTAL
Sampler: BRIAN ALCORN	Start Date: 5/16/03
Well I.D.: MW-3	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 24.63	Depth to Water: 3.55
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Purge Method:

- Bailer
- (Disposable Bailer)
- Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method: Bailer

- (Disposable Bailer)
- Extraction Port
- Dedicated Tubing
- Other: _____

3.5 (Gals.) X 3 = 10.5 Gals.

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or (µS))	Turbidity (NTU)	Gals. Removed	Observations
1046	61.6	6.9	2.445	338	3.5	cloudy brown
1053	61.8	6.8	3,094	231	7.0	"
1058	63.2	6.7	4,065	188	10.5	"

Did well dewater? Yes (No) Gallons actually evacuated: 10.5

Sampling Time: 1100 Sampling Date: 5/16/03

Sample I.D.: MW-3 Laboratory: STL

Analyzed for: (TPH-G BTEX MTBE) TPH-D Other: TAME, DIPE, ETBE, TBA, EDB + EDC all by 8260

Equipment Blank I.D.: @ Time Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd): Down-Hole (Pre-purge):	1.9 mg/L	Post-purge:		mg/L
ORP (if req'd): Pre-purge:	mV	Post-purge:		mV

WELL MONITORING DATA SHEET

Project #: 030516-BA1	Client: PES ENVIRONMENTAL
Sampler: BRIAN ALCORN	Start Date: 5/16/03
Well I.D.: MW-4	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth: 24.57	Depth to Water: 3.87
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Purge Method:

- Bailer
- (Disposable Bailer)
- Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other_____

Sampling Method:

- Bailer
- (Disposable Bailer)
- Extraction Port
- Dedicated Tubing
- Other: _____

3.5 (Gals.) X 3 = 10.5 Gals.

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or (µS))	Turbidity (NTU)	Gals. Removed	Observations
1013	67.6	7.1	2,372	319	3.5	cloudy gray, odor
1019	67.0	6.6	3,172	349	7.0	"
1029	66.7	6.6	3,432	732	10.5	"

Did well dewater? Yes (No)		Gallons actually evacuated: 10.5	
Sampling Time: 1030		Sampling Date: 5/16/03	
Sample I.D.: MW-4		Laboratory: STL	
Analyzed for: (TPH-G BTEX MTBE) TPH-D		Other: TAME, DIPE, ETBE, TBA, EDB + EDC all by 8260	
Equipment Blank I.D.:	@ Time	Duplicate I.D.:	
Analyzed for: TPH-G BTEX MTBE TPH-D		Other:	
D.O. (if req'd): Down Hole	Pre-purge: (0.4) mg/L	Post-purge:	mg/L
ORP (if req'd):	Pre-purge: mV	Post-purge:	mV

WELL MONITORING DATA SHEET

Project #: 030516-BA1	Client: PES ENVIRONMENTAL
Sampler: BRIAN ALLDEN	Start Date: 5/16/03
Well I.D.: EW-1	Well Diameter: 2 3 4 6 (8)
Total Well Depth: 8.74	Depth to Water: 2.73
Before: After:	Before: After:
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH

Purge Method:

- Bailer
- Disposable Bailer
- Middleburg
- (Electric Submersible)
- Waterra
- Peristaltic
- Extraction Pump
- Other

Sampling Method: Bailer

- (Disposable Bailer)
- Extraction Port
- Dedicated Tubing
- Other:

16.0 (Gals.) X 3 = 48.0 Gals.

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp. (°F or °C)	pH	Conductivity (mS or µS)	Turbidity (NTU)	Gals. Removed	Observations
1151	70.0	9.2	1,267	496	16.0	cloudy, yellow, dusty odor
1154	70.5	10.6	1,222	8	32.0	clear, yellow, dusty odor
1157	70.3	10.6	1,166	12	48.0	"

Did well dewater? Yes (No) Gallons actually evacuated: 48

Sampling Time: 1200 Sampling Date: 5/16/03

Sample I.D.: EW-1 Laboratory: STL

Analyzed for: TPH-G BTEX (MTBE) TPH-D Other:

Equipment Blank I.D.: @ Time Duplicate I.D.:

Analyzed for: TPH-G BTEX MTBE TPH-D Other:

D.O. (if req'd): Down Hole Pre-purge: 0.5 mg/L Post-purge: mg/L

ORP (if req'd): Pre-purge: mV Post-purge: mV

APPENDIX B

LABORATORY REPORT
AND
CHAIN-OF-CUSTODY RECORDS

RECEIVED MAY 2 9 2003

SEVERN TRENT STL

Submission#: 2003-05-0508

PES

May 23, 2003

1682 Novato Blvd., Suite 100
Novato, CA 94947-7021

Attn.: Will Mast

Project#: 618.001.02.005
Project: Pacific Electric Motor
Site: 1099 66th Ave., Oakland, CA

Dear Mr. Mast,

Attached is our report for your samples received on 05/16/2003 18:22
This report has been reviewed and approved for release. Reproduction of this report is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after 06/30/2003 unless you have requested otherwise.
We appreciate the opportunity to be of service to you. If you have any questions, please call me at (925) 484-1919.
You can also contact me via email. My email address is: asalimpour@stl-inc.com

Sincerely,

Afsaneh Salimpour
Project Manager

SEVERN TRENT STL

Submission #: 2003-05-0508

Gas/BTEXFuel Oxygenates by 8260B

PES

Attn.: Will Mast

1682 Novato Blvd., Suite 100
Novato, CA 94947-7021
Phone: (415) 899-1600 Fax: (415) 899-1601

Project: 618.001.02.005
Pacific Electric Motor

Received: 05/16/2003 18:22

Site: 1099 66th Ave., Oakland, CA

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-1	05/16/2003 11:30	Water	1
MW-2	05/16/2003 09:50	Water	2
MW-3	05/16/2003 11:00	Water	3
MW-4	05/16/2003 10:30	Water	4
EW-1	05/16/2003 12:00	Water	5

SEVERN TRENT STL

Submission #: 2003-05-0508

Gas/BTEXFuel Oxygenates by 8260B

PES
Attn.: Will Mast

1682 Novato Blvd., Suite 100
Novato, CA 94947-7021
Phone: (415) 899-1600 Fax: (415) 899-1601

Project: 618.001.02.005
Pacific Electric Motor

Received: 05/16/2003 18:22

Site: 1099 66th Ave., Oakland, CA

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	**MW-1**	Lab ID:	2003-05-0508 - 1
Sampled:	05/16/2003 11:30	Extracted:	5/23/2003 11:16
Matrix:	Water	QC Batch#:	2003/05/23-01.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	5600	500	ug/L	10.00	05/23/2003 11:16	
Benzene	22	5.0	ug/L	10.00	05/23/2003 11:16	
Toluene	ND	5.0	ug/L	10.00	05/23/2003 11:16	
Ethylbenzene	240	5.0	ug/L	10.00	05/23/2003 11:16	
Total xylenes	490	10	ug/L	10.00	05/23/2003 11:16	
tert-Butyl alcohol (TBA)	ND	50	ug/L	10.00	05/23/2003 11:16	
Methyl tert-butyl ether (MTBE)	ND	5.0	ug/L	10.00	05/23/2003 11:16	
Di-isopropyl Ether (DIPE)	ND	10	ug/L	10.00	05/23/2003 11:16	
Ethyl tert-butyl ether (ETBE)	ND	5.0	ug/L	10.00	05/23/2003 11:16	
tert-Amyl methyl ether (TAME)	ND	5.0	ug/L	10.00	05/23/2003 11:16	
1,2-DCA	ND	5.0	ug/L	10.00	05/23/2003 11:16	
EDB	ND	5.0	ug/L	10.00	05/23/2003 11:16	
Ethanol	ND	250	ug/L	10.00	05/23/2003 11:16	
Surrogates(s)						
1,2-Dichloroethane-d4	100.5	76-114	%	10.00	05/23/2003 11:16	
Toluene-d8	98.0	88-110	%	10.00	05/23/2003 11:16	

Gas/BTEXFuel Oxygenates by 8260B

PES

Attn.: Will Mast

1682 Novato Blvd., Suite 100
Novato, CA 94947-7021
Phone: (415) 899-1600 Fax: (415) 899-1601

Project: 618.001.02.005
Pacific Electric Motor

Received: 05/16/2003 18:22

Site: 1099 66th Ave., Oakland, CA

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	**MW-2**	Lab ID:	2003-05-0508 - 2
Sampled:	05/16/2003 09:50	Extracted:	5/23/2003 11:38
Matrix:	Water	QC Batch#:	2003/05/23-01.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	05/23/2003 11:38	
Benzene	ND	0.50	ug/L	1.00	05/23/2003 11:38	
Toluene	ND	0.50	ug/L	1.00	05/23/2003 11:38	
Ethylbenzene	ND	0.50	ug/L	1.00	05/23/2003 11:38	
Total xylenes	ND	1.0	ug/L	1.00	05/23/2003 11:38	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	05/23/2003 11:38	
Methyl tert-butyl ether (MTBE)	16	0.50	ug/L	1.00	05/23/2003 11:38	
Di-isopropyl Ether (DIPE)	ND	1.0	ug/L	1.00	05/23/2003 11:38	
Ethyl tert-butyl ether (ETBE)	ND	0.50	ug/L	1.00	05/23/2003 11:38	
tert-Amyl methyl ether (TAME)	ND	0.50	ug/L	1.00	05/23/2003 11:38	
1,2-DCA	ND	0.50	ug/L	1.00	05/23/2003 11:38	
EDB	ND	0.50	ug/L	1.00	05/23/2003 11:38	
Ethanol	ND	25	ug/L	1.00	05/23/2003 11:38	
Surrogates(s)						
1,2-Dichloroethane-d4	104.1	76-114	%	1.00	05/23/2003 11:38	
Toluene-d8	99.2	88-110	%	1.00	05/23/2003 11:38	

Gas/BTEXFuel Oxygenates by 8260B

PES

Attn.: Will Mast

1682 Novato Blvd., Suite 100
Novato, CA 94947-7021
Phone: (415) 899-1600 Fax: (415) 899-1601

Project: 618.001.02.005
Pacific Electric Motor

Received: 05/16/2003 18:22

Site: 1099 66th Ave., Oakland, CA

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	**MW-3**	Lab ID:	2003-05-0508 - 3
Sampled:	05/16/2003 11:00	Extracted:	5/23/2003 02:53
Matrix:	Water	QC Batch#:	2003/05/22-2c.65

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	05/23/2003 02:53	
Benzene	ND	0.50	ug/L	1.00	05/23/2003 02:53	
Toluene	ND	0.50	ug/L	1.00	05/23/2003 02:53	
Ethylbenzene	ND	0.50	ug/L	1.00	05/23/2003 02:53	
Total xylenes	ND	1.0	ug/L	1.00	05/23/2003 02:53	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	05/23/2003 02:53	
Methyl tert-butyl ether (MTBE)	2.6	0.50	ug/L	1.00	05/23/2003 02:53	
Di-isopropyl Ether (DIPE)	ND	1.0	ug/L	1.00	05/23/2003 02:53	
Ethyl tert-butyl ether (ETBE)	ND	0.50	ug/L	1.00	05/23/2003 02:53	
tert-Amyl methyl ether (TAME)	ND	0.50	ug/L	1.00	05/23/2003 02:53	
1,2-DCA	ND	0.50	ug/L	1.00	05/23/2003 02:53	
EDB	ND	0.50	ug/L	1.00	05/23/2003 02:53	
Ethanol	ND	25	ug/L	1.00	05/23/2003 02:53	
Surrogates(s)						
1,2-Dichloroethane-d4	112.0	76-114	%	1.00	05/23/2003 02:53	
Toluene-d8	100.3	88-110	%	1.00	05/23/2003 02:53	

Gas/BTEXFuel Oxygenates by 8260B

PES

Attn.: Will Mast

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Novato, CA 94947-7021
Phone: (415) 899-1600 Fax: (415) 899-1601

Project: 618.001.02.005
Pacific Electric Motor

Received: 05/16/2003 18:22

Site: 1099 66th Ave., Oakland, CA

Prep(s): 5030B
Sample ID: **MW-4**
Sampled: 05/16/2003 10:30
Matrix: Water

Test(s): 8260FAB
Lab ID: 2003-05-0508 - 4
Extracted: 5/23/2003 12:00
QC Batch#: 2003/05/23-01.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	530000	25000	ug/L	500.00	05/23/2003 12:00	
Benzene	24000	250	ug/L	500.00	05/23/2003 12:00	
Toluene	20000	250	ug/L	500.00	05/23/2003 12:00	
Ethylbenzene	12000	250	ug/L	500.00	05/23/2003 12:00	
Total xylenes	63000	500	ug/L	500.00	05/23/2003 12:00	
tert-Butyl alcohol (TBA)	ND	2500	ug/L	500.00	05/23/2003 12:00	
Methyl tert-butyl ether (MTBE)	42000	250	ug/L	500.00	05/23/2003 12:00	
Di-isopropyl Ether (DIPE)	ND	500	ug/L	500.00	05/23/2003 12:00	
Ethyl tert-butyl ether (ETBE)	ND	250	ug/L	500.00	05/23/2003 12:00	
tert-Amyl methyl ether (TAME)	ND	250	ug/L	500.00	05/23/2003 12:00	
1,2-DCA	ND	250	ug/L	500.00	05/23/2003 12:00	
EDB	ND	250	ug/L	500.00	05/23/2003 12:00	
Ethanol	ND	13000	ug/L	500.00	05/23/2003 12:00	
Surrogates(s)						
1,2-Dichloroethane-d4	100.0	76-114	%	1.00	05/23/2003 12:00	
Toluene-d8	98.8	88-110	%	1.00	05/23/2003 12:00	

Gas/BTEXFuel Oxygenates by 8260B

PES
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Novato, CA 94947-7021
Phone: (415) 899-1600 Fax: (415) 899-1601

Project: 618.001.02.005
Pacific Electric Motor

Received: 05/16/2003 18:22

Site: 1099 66th Ave., Oakland, CA

Prep(s):	5030B	Test(s):	8260FAB
Sample ID:	**EW-1**	Lab ID:	2003-05-0508 - 5
Sampled:	05/16/2003 12:00	Extracted:	5/23/2003 12:23
Matrix:	Water	QC Batch#:	2003/05/23-01.64

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	330	250	ug/L	5.00	05/23/2003 12:23	
Benzene	12	2.5	ug/L	5.00	05/23/2003 12:23	
Toluene	7.6	2.5	ug/L	5.00	05/23/2003 12:23	
Ethylbenzene	4.2	2.5	ug/L	5.00	05/23/2003 12:23	
Total xylenes	14	5.0	ug/L	5.00	05/23/2003 12:23	
tert-Butyl alcohol (TBA)	ND	25	ug/L	5.00	05/23/2003 12:23	
Methyl tert-butyl ether (MTBE)	300	2.5	ug/L	5.00	05/23/2003 12:23	
Di-isopropyl Ether (DIPE)	ND	5.0	ug/L	5.00	05/23/2003 12:23	
Ethyl tert-butyl ether (ETBE)	ND	2.5	ug/L	5.00	05/23/2003 12:23	
tert-Amyl methyl ether (TAME)	ND	2.5	ug/L	5.00	05/23/2003 12:23	
1,2-DCA	ND	2.5	ug/L	5.00	05/23/2003 12:23	
EDB	ND	2.5	ug/L	5.00	05/23/2003 12:23	
Ethanol	ND	130	ug/L	5.00	05/23/2003 12:23	
Surrogates(s)						
1,2-Dichloroethane-d4	103.7	76-114	%	1.00	05/23/2003 12:23	
Toluene-d8	97.7	88-110	%	1.00	05/23/2003 12:23	

Gas/BTEXFuel Oxygenates by 8260B

PES

Attn.: Will Mast

1682 Novato Blvd., Suite 100
Novato, CA 94947-7021
Phone: (415) 899-1600 Fax: (415) 899-1601

Project: 618.001.02.005
Pacific Electric Motor

Received: 05/16/2003 18:22

Site: 1099 66th Ave., Oakland, CA

Batch QC Report

Prep(s): 5030B
Method Blank

Water

Test(s): 8260FAB
QC Batch # 2003/05/22-2c.65

MB: 2003/05/22-2c.65-056

Date Extracted: 05/22/2003 20:59

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	05/22/2003 20:59	
Benzene	ND	0.5	ug/L	05/22/2003 20:59	
Toluene	ND	0.5	ug/L	05/22/2003 20:59	
Ethylbenzene	ND	0.5	ug/L	05/22/2003 20:59	
Total xylenes	ND	1.0	ug/L	05/22/2003 20:59	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	05/22/2003 20:59	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	05/22/2003 20:59	
Di-isopropyl Ether (DIPE)	ND	1.0	ug/L	05/22/2003 20:59	
Ethyl tert-butyl ether (ETBE)	ND	0.5	ug/L	05/22/2003 20:59	
tert-Amyl methyl ether (TAME)	ND	0.5	ug/L	05/22/2003 20:59	
1,2-DCA	ND	0.5	ug/L	05/22/2003 20:59	
EDB	ND	0.5	ug/L	05/22/2003 20:59	
Ethanol	ND	25	ug/L	05/22/2003 20:59	
Surrogates(s)					
1,2-Dichloroethane-d4	106.4	76-114	%	05/22/2003 20:59	
Toluene-d8	100.2	88-110	%	05/22/2003 20:59	

Gas/BTEXFuel Oxygenates by 8260B

PES

Attn.: Will Mast

1682 Novato Blvd., Suite 100
Novato, CA 94947-7021
Phone: (415) 899-1600 Fax: (415) 899-1601

Project: 618.001.02.005
Pacific Electric Motor

Received: 05/16/2003 18:22

Site: 1099 66th Ave., Oakland, CA

Batch QC Report

Prep(s): 5030B
Method Blank

Water

Test(s): 8260FAB
QC Batch # 2003/05/23-01.64

MB: 2003/05/23-01.64-003

Date Extracted: 05/23/2003 10:01

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	05/23/2003 10:01	
Benzene	ND	0.5	ug/L	05/23/2003 10:01	
Toluene	ND	0.5	ug/L	05/23/2003 10:01	
Ethylbenzene	ND	0.5	ug/L	05/23/2003 10:01	
Total xylenes	ND	1.0	ug/L	05/23/2003 10:01	
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	05/23/2003 10:01	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	05/23/2003 10:01	
Di-isopropyl Ether (DIPE)	ND	1.0	ug/L	05/23/2003 10:01	
Ethyl tert-butyl ether (ETBE)	ND	0.5	ug/L	05/23/2003 10:01	
tert-Amyl methyl ether (TAME)	ND	0.5	ug/L	05/23/2003 10:01	
1,2-DCA	ND	0.5	ug/L	05/23/2003 10:01	
EDB	ND	0.5	ug/L	05/23/2003 10:01	
Ethanol	ND	25	ug/L	05/23/2003 10:01	
Surrogates(s)					
1,2-Dichloroethane-d4	98.8	76-114	%	05/23/2003 10:01	
Toluene-d8	97.4	88-110	%	05/23/2003 10:01	

Gas/BTEXFuel Oxygenates by 8260B

PES

Attn.: Will Mast

1682 Novato Blvd., Suite 100
Novato, CA 94947-7021
Phone: (415) 899-1600 Fax: (415) 899-1601

Project: 618.001.02.005
Pacific Electric Motor

Received: 05/16/2003 18:22

Site: 1099 66th Ave., Oakland, CA

Batch QC Report

Prep(s): 5030B

Test(s): 8260FAB

Laboratory Control Spike **Water** **QC Batch # 2003/05/22-2c.65**

LCS 2003/05/22-2c.65-055 Extracted: 05/22/2003 Analyzed: 05/22/2003 20:14

LCSD 2003/05/22-2c.65-002 Extracted: 05/22/2003 Analyzed: 05/22/2003 20:37

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	25.5	24.7	25	102.0	98.8	3.2	69-129	20		
Toluene	24.8	23.7	25	99.2	94.8	4.5	70-130	20		
Methyl tert-butyl ether (MTBE)	34.7	34.3	25	138.8	137.2	0.9	65-165	20		
Surrogates(s)										
1,2-Dichloroethane-d4	513	495	500	102.6	99.0		76-114			
Toluene-d8	502	488	500	100.4	97.6		88-110			

Gas/BTEXFuel Oxygenates by 8260B

PES

Attn.: Will Mast

1682 Novato Blvd., Suite 100
Novato, CA 94947-7021
Phone: (415) 899-1600 Fax: (415) 899-1601

Project: 618.001.02.005
Pacific Electric Motor

Received: 05/16/2003 18:22

Site: 1099 66th Ave., Oakland, CA

Batch QC Report

Prep(s): 5030B

Test(s): 8260FAB

Laboratory Control Spike **Water** **QC Batch # 2003/05/23-01.64**

LCS 2003/05/23-01.64-002 Extracted: 05/23/2003 Analyzed: 05/23/2003 09:17
LCSD 2003/05/23-01.64-001 Extracted: 05/23/2003 Analyzed: 05/23/2003 09:39

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD	%	Rec.	RPD	LCS	LCSD
Benzene	25.5	23.4	25.0	102.0	93.6	8.6	69-129	20		
Toluene	25.0	23.8	25.0	100.0	95.2	4.9	70-130	20		
Methyl tert-butyl ether (MTBE)	26.3	24.4	25.0	105.2	97.6	7.5	65-165	20		
Surrogates(s)										
1,2-Dichloroethane-d4	515	481	500	103.0	96.2		76-114	0		
Toluene-d8	511	508	500	102.2	101.6		88-110	0		

Gas/BTEXFuel Oxygenates by 8260B

PES
Attn.: Will Mast

1682 Novato Blvd., Suite 100
Novato, CA 94947-7021
Phone: (415) 899-1600 Fax: (415) 899-1601

Project: 618.001.02.005
Pacific Electric Motor

Received: 05/16/2003 18:22

Site: 1099 66th Ave., Oakland, CA

Batch QC Report

Prep(s): 5030B

Test(s): 8260FAB

Matrix Spike (MS / MSD) **Water** **QC Batch # 2003/05/22-2c.65**

MW-1 >> MS

Lab ID: 2003-05-0358 - 001

MS: 2003/05/22-2c.65-053 Extracted: 05/22/2003

Analyzed: 05/22/2003 22:49

Dilution: 1.00

MSD: 2003/05/22-2c.65-054 Extracted: 05/22/2003

Analyzed: 05/22/2003 23:12

Dilution: 1.00

Compound	Conc. ug/L			Spk.Level	Recovery			Limits %		Flags	
	MS	MSD	Sample	ug/L	MS	MSD	RPD	Rec.	RPD	MS	MSD
Benzene	26.6	25.8	ND	25	106.4	103.2	3.1	69-129	20		
Toluene	25.4	24.8	ND	25	101.6	99.2	2.4	70-130	20		
Methyl tert-butyl ether	36.1	35.7	ND	25	144.4	142.8	1.1	65-165	20		
Surrogate(s)											
1,2-Dichloroethane-d4	522	515		500	104.3	103.0		76-114			
Toluene-d8	499	487		500	99.7	97.5		88-110			

BLAINE
TECH SERVICES, INC.

1680 ROGERS AVENUE
SAN JOSE, CALIFORNIA 95112-1105
FAX (408) 573-7771
PHONE (408) 573-0555

CHAIN OF CUSTODY BTS # 030516-BA1

CLIENT: PES

SITE: Pacific Electric Motor
1099 66th Avenue
Oakland, CA

LAB: STL San Francisco 74328 DHS #

ALL ANALYSES MUST MEET SPECIFICATIONS AND DETECTION LIMITS SET BY CALIFORNIA DHS AND
☐ EPA ☐ LIA ☐ OTHER ☐ RWQCB REGION _____

2003-05-0508

SPECIAL INSTRUCTIONS

Invoice and Report to : PES
Attn: Will Mast
Job # 618.001.02.005

SAMPLE I.D.	DATE	TIME	MATRIX S= SOIL W=H_2O	CONTAINERS TOTAL	C = COMPOSITE ALL CONTAINERS	CONDUCT ANALYSIS TO DETECT: TPH - Gas (8260)	BTEX, MTBE, TAME, ETBE, DIPE, TBA, EDB, EDC (8260)	ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #
MW-1	5/16	1130	W	6		X	X				
MW-2		0950				X	X				
MW-3		1100				X	X				
MW-4		1030				X	X				2.0°
BW-1		1200				X	X				

SAMPLING COMPLETED	DATE	TIME
	5/16/03	1200

SAMPLING PERFORMED BY: Brian Allore

RESULTS NEEDED NO LATER THAN: As Contracted with PES

RELEASED BY	DATE	TIME	RECEIVED BY	DATE	TIME
				5/16/03	1610
	5/16/03	1822			
			Vouna K.	5/16/03	1822

SHIPPED VIA	DATE SENT	TIME SENT	COOLER #

SEVERN TRENT STL

STL San Francisco

Sample Receipt Checklist

Submission #:2003- 05 - 0508

Checklist completed by: (initials) DSH Date: 05/19/03

Courier name: ☑ STL San Francisco ☐ Client _____

Custody seals intact on shipping container/samples	Yes____ No____	Not Present ✓
Chain of custody present?	Yes ✓ No____	
Chain of custody signed when relinquished and received?	Yes ✓ No____	
Chain of custody agrees with sample labels?	Yes ✓ No____	
Samples in proper container/bottle?	Yes ✓ No____	
Sample containers intact?	Yes ✓ No____	
Sufficient sample volume for indicated test?	Yes ✓ No____	
All samples received within holding time?	Yes ✓ No____	
Container/Temp Blank temperature in compliance (4^0 C ± 2)?	Temp: 2.0 °C	Yes ✓ No____
Water - VOA vials have zero headspace?	No VOA vials submitted____	Yes ✓ No____

(if bubble is present, refer to approximate bubble size and itemize in comments as **S** (small ~O), **M** (medium ~ O) or **L** (large ~ O)

Water - **pH acceptable upon receipt?** ☒ Yes ☐ No

☐ **pH adjusted**– Preservative used: ☐ HNO_3 ☐ HCl ☐ H_2SO_4 ☐ NaOH ☐ ZnOAc

For any item check-listed "No", provided detail of discrepancy in comment section below:

Comments:

Project Management [Routing for instruction of indicated discrepancy(ies)]

Project Manager: (initials) _____ Date: _____/_____/03

Client contacted: ☐ Yes ☐ No

Summary of discussion:

Corrective Action (per PM/Client):

DISTRIBUTION

SECOND QUARTER 2003
GROUNDWATER MONITORING REPORT
PACIFIC ELECTRIC MOTOR COMPANY
1009 66TH AVENUE
OAKLAND, CALIFORNIA

JULY 31, 2003

COPY NO. 4

		Copy No.
1 Copy	Pacific Electric Motor Company 137 Fiesta Circle Orinda, California 94563 Attention: Mr. Steve Boyd	1
2 Copies	Pacific Electric Motor Company 129 Natalie Drive Moraga, California 94556-2422 Attention: Mr. Rand Perry	2 - 3
2 Copies	Alameda County Health Care Service Agency Department of Environmental Health 1131 Harbor Bay Parkway, Suite 250 Alameda, California 94502-6577 Attention: Mr. Barney Chan	4 - 5
3 Copies	PES Job File	6 - 8
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