



A Report Prepared For:

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

Attention: Mr. Rand Perry

Alameda County
MAR 04 2003
Environmental Health

**FOURTH QUARTER 2002
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 fourth quarter of 2002 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 fourth quarter 2002 monitoring event marks the first of the four consecutive monitoring events to be performed at the site.

Additionally, in accordance with the California Environmental Protection Agency State Water Resources Control Board (SWRCB) Underground Storage Tank (UST) Program specifications, the five onsite monitoring wells included in the monitoring program were resurveyed.

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 twenty five 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 in the northern portion of the excavation area following backfilling activities.

The extraction well location is shown on Plate 2 and construction details for the well, inferred from the December 2002 sampling event, are presented in Table 1.

3.0 GROUNDWATER MONITORING WELL RESURVEY

PES contracted with Cross Land Surveying, Inc. (Cross), a California-state licensed land surveying company of San Jose, California to conduct the resurveying of the five wells. The horizontal locations of the wells were referenced to the North American Datum of 1983 (NAD83) coordinate system, and the top of-casing elevations were referenced to mean sea level (MSL) using the National Geodetic Vertical Datum of 1929 (NGVD 1929). The results of the well survey will be submitted electronically to the SWRCB Geotracker database. A copy of Cross's well survey report is presented in Appendix A.

4.0 WATER-LEVEL AND DISSOLVED OXYGEN MEASUREMENTS

Water levels in the five onsite groundwater monitoring wells were measured by Blaine Tech Services, Inc. (Blaine Tech) of San Jose, California, prior to sampling on December 11, 2002. 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. Depth-to-water measurements were converted to water-level elevations by subtracting the depth to water from the surveyed TOC elevation. Monitoring 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 in 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 placed 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.

5.0 GROUNDWATER SAMPLING

On December 11, 2002, Blaine Tech, collected groundwater samples from Wells MW-1, MW-2, MW-3, MW-4, and the extraction well. Groundwater samples were collected from each well after removing approximately three well volumes of water with disposable bailers. The extraction well was purged using a submersible electric pump, because of the large volume of water required for adequate purging. 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 B.

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, ethylbenzene, 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 fourth quarter 2002 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 C.

6.0 DISCUSSION OF MONITORING RESULTS

This section presents summaries and discussions of water-level and DO measurements and groundwater analyses results from the December 2002 sampling event.

6.1 Water-Level and Dissolved Oxygen Measurements

Depth-to-water measurements taken on December 11, 2002 ranged from 5.00 feet (EW-1) to 5.77 feet (MW-4) below TOC. Calculated groundwater elevations ranged from 4.72 feet (MW-3) to 5.16 feet MSL (MW-1). 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 December 2002. 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 December 11, 2002 ranged from 0.7 milligrams per liter (mg/L), in monitoring well MW-1, to 2.4 mg/L in the extraction well. DO measurements are presented in Blain Techs groundwater sampling report (Appendix B) and in Table 4.

6.2 Groundwater Chemistry

A summary of current laboratory chemical results for petroleum hydrocarbons is presented in Table 4. Copies of the laboratory report and chain-of-custody documentation are provided in Appendix C.

During the current monitoring period petroleum hydrocarbon compounds were detected in groundwater samples from all five of the monitoring wells. However, only MTBE was detected in wells MW-2 and MW-3 at concentrations of 5.8 micrograms per liter ($\mu\text{g/L}$) and 0.78 $\mu\text{g/L}$, respectively.

In the sample collected from monitoring well MW-1, petroleum hydrocarbons were detected at the following concentrations: TPH-g at 8,400 $\mu\text{g/L}$; benzene at 83 $\mu\text{g/L}$; toluene at 9.2 $\mu\text{g/L}$; ethyl benzene at 320 $\mu\text{g/L}$; and total xylenes at 640 $\mu\text{g/L}$. No other compounds were detected at or above the respective laboratory reporting limits in the sample collected from well MW-1. While petroleum hydrocarbon concentrations in well MW-1 have generally decreased since June 1997, concentrations observed during the December 2002 sampling event are generally higher than those observed during the more recent sampling events conducted prior to the 2002 remediation activities.

In the sample collected from monitoring well MW-4, petroleum hydrocarbons were detected at the following concentrations: TPHg at 200,000 $\mu\text{g/L}$; benzene at 340 $\mu\text{g/L}$; ethyl benzene at 590 $\mu\text{g/L}$; total xylenes at 1,000 $\mu\text{g/L}$; TBA at 3,600 $\mu\text{g/L}$; and MTBE at 17,000 $\mu\text{g/L}$. With the exception of the concentration of TPHg, concentrations of petroleum hydrocarbons in MW-4 during the current 2002 sampling event are lower than those observed prior to the remediation activities conducted in 2002.

In the sample collected from EW-1, petroleum hydrocarbons were detected as follows: TPHg at 6,600 $\mu\text{g/L}$; benzene at 530 $\mu\text{g/L}$; ethyl benzene at 87 $\mu\text{g/L}$; TBA at 1,600 $\mu\text{g/L}$; and MTBE at 2,600 $\mu\text{g/L}$. No other compounds were detected at or above the respective laboratory reporting limits in the sample collected from the extraction well. This is the first sampling event that EW-1 has been sampled.

Water samples from downgradient monitoring wells MW-2 and MW-3 contained only MTBE at 5.8 and 0.78 $\mu\text{g/L}$, respectively. These data appear to indicate that the petroleum hydrocarbon plume associated with the former UST remains relatively stable and localized.

7.0 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.
- _____, 1998b. *Additional Soil and Groundwater Investigation Report, 1009 66th Ave., Oakland, 94601.* December 1.
- ENVIRON Corporation, 1997. *Soil and Groundwater Investigation, Summary Report, Pacific Electric Motor Co., 1009-66th Avenue, Oakland, California.* July 17.
- 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
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

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	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
	5/6/1999	PES	99.93	4.12	95.81
	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
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	

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 (feet¹/feet MSL²)	Depth to Water (feet BTOC)	Water-level Elevation (feet¹/feet MSL²)
EW-1	12/11/2002	PES	10.26	5.00	5.26

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	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	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	EDC (µg/L)	EDB (µg/L)
MW-1	6/19/1997	ENVIRON	18,000	3,300	200	1,100	4,900	<250	--	--	--	--	--	--	--
	9/29/1997	PES	29,000	4,800	<25	2,000	3,500	<250	--	--	--	--	--	--	--
	12/16/1997	PES	<50	1.3	<0.5	0.6	0.7	<5	--	--	--	--	--	--	--
	3/10/1998	PES	190	2.0	<0.5	5.7	1.7	<5	--	--	--	--	--	--	--
	1/19/1999	PES	1,000	40	<0.5	18	68	8.3	6.9	--	--	--	--	--	--
	4/15/1999	PES	<50	0.92	0.9	0.7	0.87	<5.0	--	--	--	--	--	--	--
	7/30/1999	PES	1,400	60	<0.5	63	120	13	<5.0	--	--	--	--	--	--
	11/15/1999	PES	3,600	120	<0.5	150	620	<5.0	--	--	--	--	--	--	--
	3/24/2000	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	5/18/2000	PES	1,300	10	1.2	38	130	8.6	<5.0	--	--	--	--	--	--
	7/26/2000	PES	6,400	100	7.4	260	680	<5.0	--	--	--	--	--	--	--
	10/30/2000	PES	6,000	130	14	330	950	<100	--	--	--	--	--	--	--
	7/24/2001	PES	1,200	13	<0.5	70	39	13	--	--	--	--	--	--	--
	11/28/2001	PES	1,800	27	0.93	72	160	<5.0	--	--	--	--	--	--	--
2/18/2002	PES	2,400	18	<2.5	89	200	<25	--	--	--	--	--	--	--	
12/11/2002	PES	8,400	83	9.2	320	640	--	<0.50	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50	
MW-2	6/19/1997	ENVIRON	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	9/29/1997	PES	<50	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--	--	--	--
	12/16/1997	PES	<50	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--	--	--	--
	3/10/1998	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	1/19/1999	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	<5.0	--	--	--	--	--	--
	4/15/1999	PES	<50	0.75	0.64	<0.5	0.74	<5.0	--	--	--	--	--	--	--
	7/30/1999	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	11/15/1999	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	3/24/2000	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	5/18/2000	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	7/26/2000	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	10/30/2000	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	7/24/2001	PES	<50	<0.5	<0.5	<0.5	<0.5	7.6	--	--	--	--	--	--	--
	11/28/2001	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
2/18/2002	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	
12/11/2002	PES	<50	<0.50	<0.50	<0.50	<1.0	--	5.8	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50	

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	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	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	EDC (µg/L)	EDB (µg/L)
MW-3	6/19/1997	ENVIRON	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	9/29/1997	PES	<50	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--	--	--	--
	12/16/1997	PES	<50	<0.5	<0.5	<0.5	<0.5	<5	--	--	--	--	--	--	--
	3/10/1998	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	1/19/1999	PES	<50	0.78	<0.5	<0.5	<0.5	8.7	<5.0	--	--	--	--	--	--
	4/15/1999	PES	<50	5.4	3.9	1.7	5.6	23	25	--	--	--	--	--	--
	7/30/1999	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	11/15/1999	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	3/24/2000	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	5/18/2000	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	7/26/2000	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	10/30/2000	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	7/24/2001	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
	11/28/2001	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--
2/18/2002	PES	<50	<0.5	<0.5	<0.5	<0.5	<5.0	--	--	--	--	--	--	--	
12/11/2002	PES	<50	<0.50	<0.50	<0.50	<1.0	--	0.78	<5.0	<1.0	<0.50	<0.50	<0.50	<0.50	
MW-4	9/15/1998	PES	170,000	26,000	32,000	2,900	18,000	26,000	--	--	--	--	--	--	--
	1/19/1999	PES	2,600	1,700	3.8	25	29	13,000	16,000	--	--	--	--	--	--
	4/15/1999	PES	210,000	28,000	15,000	3,700	19,000	52,000	67,000	--	--	--	--	--	--
	7/30/1999	PES	91,000	16,000	7,500	2,300	8,500	68,000	67,000	--	--	--	--	--	--
	11/15/1999	PES	63,000	8,500	2,400	1,400	4,000	57,000	58,000	--	--	--	--	--	--
	3/24/2000	PES	95,000	16,000	13,000	2,500	12,000	44,000	--	--	--	--	--	--	--
	5/18/2000	PES	91,000	15,000	10,000	2,200	9,600	64,000	77,000	--	--	--	--	--	--
	7/26/2000	PES	130,000	11,000	6,400	1,700	6,500	80,000	--	--	--	--	--	--	--
	10/30/2000	PES	59,000	6,700	2,200	750	3,100	68,000	68,000*	--	--	--	--	--	--
	7/24/2001	PES	180,000	25,000	23,000	3,500	20,000	44,000	44,000*	--	--	--	--	--	--
	11/28/2001	PES	67,000	8,100	3,300	1,400	5,600	57,000	57,000*	--	--	--	--	--	--
2/18/2002	PES	98,000	20,000	12,000	2,300	15,000	47,000	47,000*	--	--	--	--	--	--	
12/11/2002	PES	200,000	340	<50	590	1,000	--	17,000	3,600	<100	<50	<50	<50	<50	

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	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	DIPE (µg/L)	ETBE (µg/L)	TAME (µg/L)	EDC (µg/L)	EDB (µg/L)
EW-1	12/11/2002	PES	6,600	530	<50	87	<100	--	2,600	1,600	<100	<50	<50	<50	<50

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 alcohol

DIPE = di-isopropyl ether

ETBE = ethyl tert-butyl ether

TAME = tert-amyl methyl ether

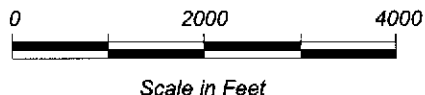
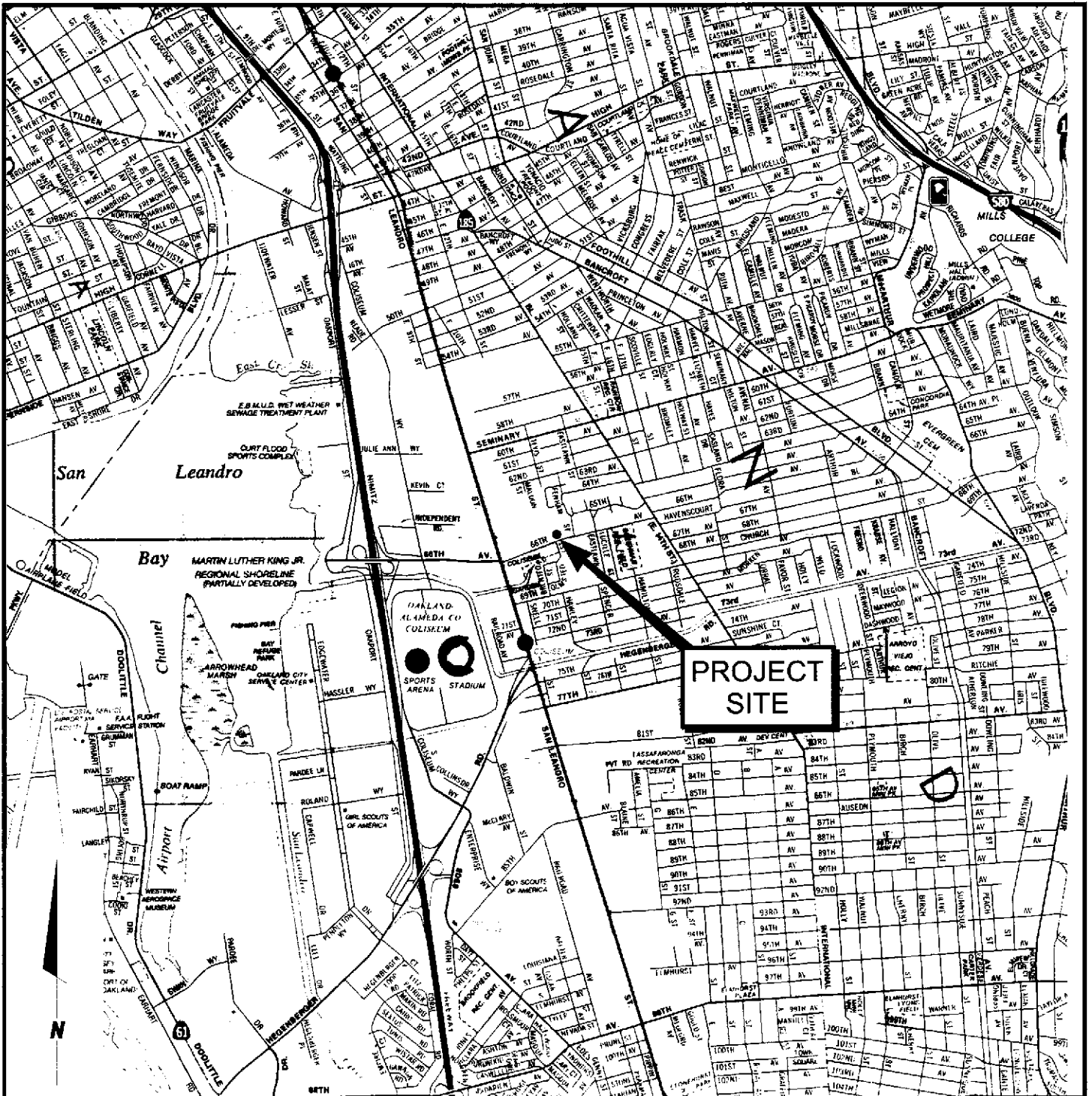
EDC = ethylene dichloride (also known as 1,2-dichloroethane)

EDB = ethylene dibromide

µg/L = Micrograms per liter

<50 = Not detected at or above the indicated laboratory reporting limit

-- = Not analyzed



Oakland Map, California State Automobile Association, 1997.

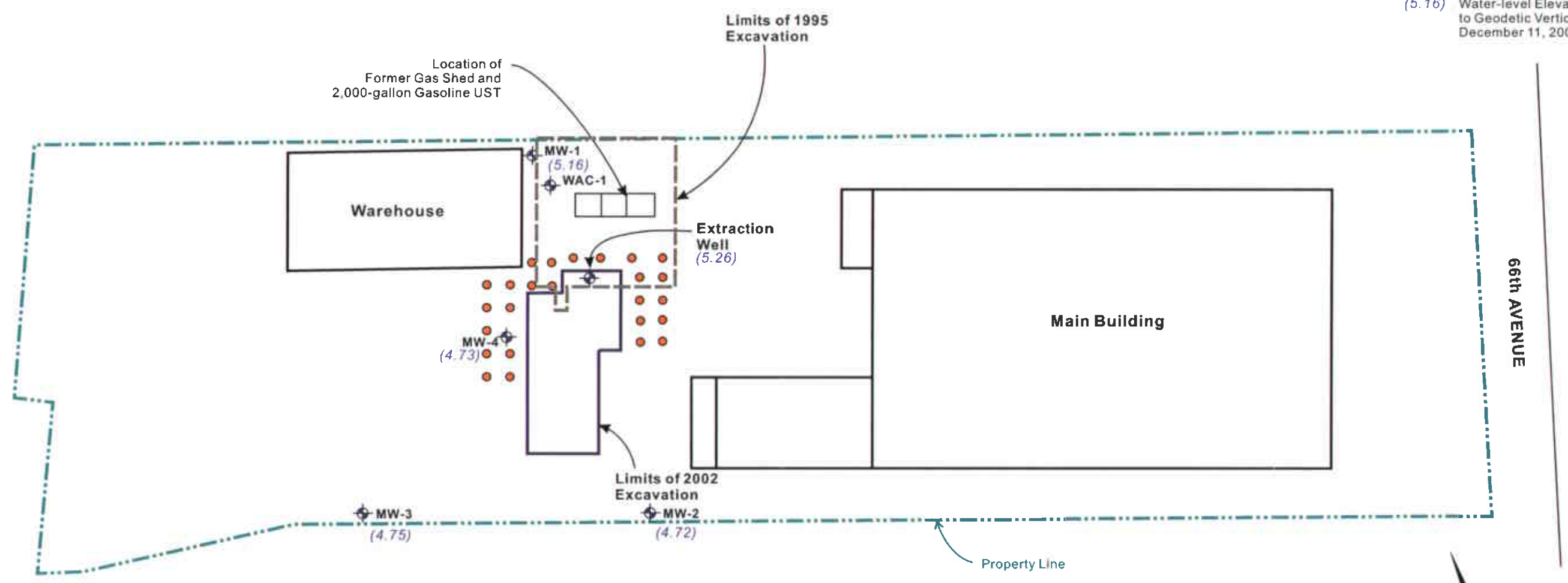


PES Environmental, Inc.
Engineering & Environmental Services

Site Location Map
Fourth Quarter 2002 Groundwater
Monitoring Report
Pacific Electric Motor Company
1009 66th Avenue, Oakland, California

PLATE
1

- Explanation**
- ⊕ Monitoring Well Location
 - ORC Injection Boring Location
 - (5.16) Water-level Elevation Relative to Geodetic Vertical Datum 29 on December 11, 2002.



APPENDIX A

WELL SURVEY REPORT



CROSS LAND SURVEYING, INC.

Consulting Land Surveyors • GPS Control Surveys

KRISTINA D. COMERER, PLS 6766

2210 Mt. Pleasant Road
San Jose, CA 95148
(408) 274-7994
FAX (408) 270-8670

MONITORING WELL REPORT
PACIFIC ELECTRIC MOTOR CO.
1009 66TH AVENUE
OAKLAND, CALIFORNIA
January 16, 2003

WELL NO.	LATITUDE	LONGITUDE	CASING ELEV.	GROUND ELEV.	RISER HT.
MW-1	37.7600233 N	122.1989047 W	10.87	11.25	-0.38
MW-2	37.7596268 N	122.1991636 W	10.02	10.30	-0.28
MW-3	37.7598718 N	122.1994603 W	10.12	10.43	-0.31
MW-4	37.7598853 N	122.1991297 W	10.50	10.77	-0.27
EXT. WELL	37.7598753 N	122.1990305 W	10.26	10.46	-0.20

Horizontal datum is NAD83 derived from a GPS Fast-Static survey holding California High Precision Geodetic Network and Densification points HPGN 04-06 and HPGN-D 04-FH fixed in a least squares adjustment of the GPS data.

Vertical datum is NGVD29. Held City of Oakland Bench Mark Designation 3878, No. T-63, a found cut square in top of curb at midpoint of return of the southwesterly corner Lucille Street and 66th Avenue. Elevation is 13.594 feet NGVD29.



Kristina D. Comerer

Kristina D. Comerer, PLS 6766
License expires: September 30, 2004

APPENDIX B

GROUNDWATER SAMPLING REPORT

BLAINE
TECH SERVICES, INC.



1680 ROGERS AVENUE
SAN JOSE, CA 95112-1105
(408) 573-7771 FAX
(408) 573-0555 PHONE
CONTRACTOR'S LICENSE #746684
www.blainetech.com

December 20, 2002

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

ATTN: Will Mast

Site:
Pacific Electric Motor Company
1099 66th Ave.
Oakland, California

Date:
December 11, 2002

GROUNDWATER SAMPLING REPORT 021211-DW-1

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

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

Samples were collected using bailers.

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.

Bailers: A bailer, in its simplest form, is a hollow tube that 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.

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 that 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 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 analyzed at STL in Pleasanton, California. STL is certified by the California Department of Health Services under the Environmental Laboratory Accreditation Program (ELAP), and is listed as ELAP #1094.

Personnel

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

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

Reportage

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

Please call if we can be of any further assistance.



William Jones

WRJ/cm

attachments: table of well monitoring data
chain of custody

TABLE OF WELL MONITORING DATA

Well I.D.	MW-1			MW-2			MW-3			MW-4		
Date Sampled	12/11/2002			12/11/2002			12/11/2002			12/11/2002		
Well Diameter (in.)	2			2			2			2		
Total Well Depth (ft.)	24.90			24.88			24.71			24.74		
Depth To Water (ft.)	5.71			5.30			5.37			5.77		
Free Product (in.)	NONE			NONE			NONE			NONE		
Reason If Not Sampled		
1 Case Volume (gal.)	3.1			3.1			3.1			3.0		
Did Well Dewater?	NO			NO			NO			NO		
Gallons Actually Evacuated	9.3			9.3			9.3			9.0		
Purging Device	BAILER			BAILER			BAILER			BAILER		
Sampling Device	BAILER			BAILER			BAILER			BAILER		
Time	10:11	10:16	10:21	9:35	9:40	9:45	11:50	11:55	12:00	10:40	10:45	10:50
Temperature (Fahrenheit)	64.9	65.1	65.2	62.6	63.7	63.1	62.2	62.8	63.0	68.3	68.1	68.5
pH	6.8	6.7	6.8	6.9	7.0	7.0	6.9	6.8	6.9	6.8	6.7	6.8
Conductivity (micromhos/cm)	465	491	512	1098	1090	1020	3344	3536	3777	3161	3269	3295
Nephelometric Turbidity Units	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200	>200
BTS Chain of Custody	021211-DW-1			021211-DW-1			021211-DW-1			021211-DW-1		
BTS Sample I.D.	MW-1			MW-2			MW-3			MW-4		
DOHS HMTL Laboratory	STL			STL			STL			STL		
Analysis	TPH-G, BTEX, MTBE			TPH-G, BTEX, MTBE			TPH-G, BTEX, MTBE			TPH-G, BTEX, MTBE		

TABLE OF WELL MONITORING DATA

Well I.D.	EW-1		
Date Sampled	12/11/2002		
Well Diameter (in.)	7		
Total Well Depth (ft.)	8.77		
Depth To Water (ft.)	5.00		
Free Product (in.)	NONE		
Reason If Not Sampled	..		
1 Case Volume (gal.)	7.5		
Did Well Dewater?	NO		
Gallons Actually Evacuated	24		
Purging Device	ELECTRIC SUBMERSIBLE		
Sampling Device	BAILER		
Time	11:06	11:08	11:10
Temperature (Fahrenheit)	63.1	67.4	69.0
pH	7.4	7.6	7.5
Conductivity (micromhos/cm)	2088	1488	1398
Nephelometric Turbidity Units	35	29	20
BTS Chain of Custody	021211-DW-1		
BTS Sample I.D.	EW-1		
DOHS HMTL Laboratory	STL		
Analysis	TPH-G, BTEX, MTBE		

WELL MONITORING DATA SHEET

Project #: <u>02/211-DW-1</u>	Client: <u>PES Environmental</u>
Sampler: <u>Dave Walter</u>	Start Date: <u>12-11-02</u>
Well I.D.: <u>MW-1</u>	Well Diameter: <u>(2)</u> 3 4 6 8 _____
Total Well Depth: <u>24.90</u>	Depth to Water: <u>5.71</u>
Before: _____ After: _____	Before: _____ After: _____
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH

Purge Method:

- Bailer
- Disposable Bailer
- Middleburg
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other: _____

Sampling Method:

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

3.1 (Gals.) X 3 = 9.3
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 μ S)	Turbidity (NTU)	Gals. Removed	Observations
10:11	64.9	6.8	465	7200	3.1	gray/odor/sheen
10:16	65.1	6.7	491	7200	6.2	
10:21	65.2	6.8	512	7200	9.3	

Did well dewater? Yes No Gallons actually evacuated: 9.3

Sampling Time: 10:21 Sampling Date: 12-11-02

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

Analyzed for: TPH-G BTEX MTBE TPH-D Other: Oxygenates (-) by 82605

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

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

D.O. (if req'd): Pre-purge: 0.7 mg/L Post-purge: _____ mg/L

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

WELL MONITORING DATA SHEET

Project #: <u>021211-DW-1</u>	Client: <u>PES Environmental</u>
Sampler: <u>Dave Walter</u>	Start Date: <u>12-11-02</u>
Well I.D.: <u>mw-2</u>	Well Diameter: <u>(2)</u> 3 4 6 8 _____
Total Well Depth: <u>24.88</u>	Depth to Water: <u>5.36</u>
Before: _____ After: _____	Before: _____ After: _____
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Referenced to: <u>(PVC)</u> Grade _____	D.O. Meter (if req'd): <u>(YSI)</u> HACH

Purge Method:

- | | |
|--|--|
| <input type="checkbox"/> Bailer
<input checked="" type="checkbox"/> Disposable Bailer
<input type="checkbox"/> Middleburg
<input type="checkbox"/> Electric Submersible | <input type="checkbox"/> Waterra
<input type="checkbox"/> Peristaltic
<input type="checkbox"/> Extraction Pump
<input type="checkbox"/> Other _____ |
|--|--|

Sampling Method:

- | |
|--|
| <input type="checkbox"/> Bailer
<input checked="" type="checkbox"/> Disposable Bailer
<input type="checkbox"/> Extraction Port
<input type="checkbox"/> Dedicated Tubing
<input type="checkbox"/> Other: _____ |
|--|

3.1 (Gals.) X 3 = 9.3
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 μ S)	Turbidity (NTU)	Gals. Removed	Observations
9:35	62.6	6.9	1098	>200	3.1	Brown
9:40	63.7	7.0	1090	>200	6.2	
9:45	63.1	7.0	1070	>200	9.3	

Did well dewater? Yes No Gallons actually evacuated: 9.3

Sampling Time: 9:48 Sampling Date: 12-11-02

Sample I.D.: mw-2 Laboratory: SFL

Analyzed for: (TPH-G BTEX) MTBE TPH-D Other: Oxygenates (-) by 82605

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

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

D.O. (if req'd): Pre-purge: (1.4) mg/L Post-purge: _____ mg/L

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

WELL MONITORING DATA SHEET

Project #: <i>021211-DW-1</i>	Client: <i>PES Environmental</i>
Sampler: <i>Dave Walter</i>	Start Date: <i>12-11-02</i>
Well I.D.: <i>MW-3</i>	Well Diameter: <u>(2)</u> 3 4 6 8 _____
Total Well Depth: <i>24.71</i>	Depth to Water: <i>5.37</i>
Before: _____ After: _____	Before: _____ After: _____
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Referenced to: <u>(PVC)</u> Grade _____	D.O. Meter (if req'd): <u>(YSI)</u> HACH

Purge Method:	Sampling Method: <u>Bailer</u>
<input type="checkbox"/> Bailer <input checked="" type="checkbox"/> Disposable Bailer <input type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible	<input type="checkbox"/> Waterra <input type="checkbox"/> Peristaltic <input type="checkbox"/> Extraction Pump <input type="checkbox"/> Other _____
	<input checked="" type="checkbox"/> Disposable Bailer <input type="checkbox"/> Extraction Port <input type="checkbox"/> Dedicated Tubing <input type="checkbox"/> Other: _____

3.1 (Gals.) X *3* = *9.3*
 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
<i>11:50</i>	<i>62.2</i>	<i>6.9</i>	<i>3344</i>	<i>>200</i>	<i>3.1</i>	<i>Brown</i>
<i>11:55</i>	<i>62.8</i>	<i>6.8</i>	<i>3536</i>	<i>>200</i>	<i>6.2</i>	
<i>12:00</i>	<i>63.0</i>	<i>6.9</i>	<i>3777</i>	<i>>200</i>	<i>9.3</i>	

Did well dewater? Yes No Gallons actually evacuated: *9.3*

Sampling Time: *12:00* Sampling Date: *12-11-02*

Sample I.D.: *MW-3* Laboratory: *SFL*

Analyzed for: (TPH-G BTEX) MTBE TPH-D Other: *Oxygenates (-) by 8260*

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

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

D.O. (if req'd):	Pre-purge: <i>1.9</i> mg/L	Post-purge: _____ mg/L
ORP (if req'd):	Pre-purge: _____ mV	Post-purge: _____ mV

WELL MONITORING DATA SHEET

Project #: <u>021211-DW-1</u>	Client: <u>PES Environmental</u>
Sampler: <u>Dave Walter</u>	Start Date: <u>12-11-02</u>
Well I.D.: <u>mw-4</u>	Well Diameter: <u>(2)</u> 3 4 6 8 _____
Total Well Depth: <u>24.74</u>	Depth to Water: <u>5.77</u>
Before: _____ After: _____	Before: _____ After: _____
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Referenced to: <u>(PVC)</u> Grade _____	D.O. Meter (if req'd): <u>(YSI)</u> HACH

Purge Method: _____ Sampling Method: Bailer

<input type="checkbox"/> Bailer <input checked="" type="checkbox"/> Disposable Bailer <input type="checkbox"/> Middleburg <input type="checkbox"/> Electric Submersible	<input type="checkbox"/> Waterra <input type="checkbox"/> Peristaltic <input type="checkbox"/> Extraction Pump <input type="checkbox"/> Other: _____
	<input checked="" type="checkbox"/> Disposable Bailer <input type="checkbox"/> Extraction Port <input type="checkbox"/> Dedicated Tubing <input type="checkbox"/> Other: _____

3.0 (Gals.) X 3 = 9.0
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
<u>10:40</u>	<u>68.3</u>	<u>6.8</u>	<u>3161</u>	<u>>200</u>	<u>3</u>	<u>gray leech</u>
<u>10:45</u>	<u>68.1</u>	<u>6.7</u>	<u>3269</u>	<u>>200</u>	<u>6</u>	
<u>10:50</u>	<u>68.5</u>	<u>6.8</u>	<u>3295</u>	<u>>200</u>	<u>9</u>	

Did well dewater? Yes No Gallons actually evacuated: 9

Sampling Time: 10:50 Sampling Date: 12-11-02

Sample I.D.: mw-4 Laboratory: SFL

Analyzed for: (TPH-G BTEX) MTBE TPH-D Other: Oxygenates (7) by 82605

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

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

D.O. (if req'd):	Pre-purge: <u>(0.8)</u> mg/L	Post-purge: _____ mg/L
ORP (if req'd):	Pre-purge: _____ mV	Post-purge: _____ mV

SHELL WELL MONITORING DATA SHEET

BTS #: <u>021211-DW-1</u>	Site: <u>YES Environmental</u>
Sampler: <u>Dave Walker</u>	Date: <u>12-11-02</u>
Well I.D.: <u>EW-1</u>	Well Diameter: 2 3 4 6 8 <u>7"</u>
Total Well Depth (TD): <u>8.77</u>	Depth to Water (DTW): <u>5.00</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: Bailer Disposable Bailer Middleburg Electric Submersible

Water: Peristaltic Extraction Pump Other _____

Sampling Method: Bailer Disposable Bailer Extraction Port Dedicated Tubing Other _____

$\frac{7.5}{1} \text{ (Gals.)} \times \frac{3}{\text{Specified Volumes}} = \frac{22.5}{\text{Calculated Volume}} \text{ Gals.}$	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </table>	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
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)	pH	Cond. (mS or μ S)	Turbidity (NTUs)	Gals. Removed	Observations
11:06	63.1	7.4	2088	35	8	
11:09	67.4	7.6	1488	29	16	odor
11:10	69.0	7.5	1397	20	24	

Did well dewater? Yes No Gallons actually evacuated: 24

Sampling Date: 12-11-02 Sampling Time: 11:15 Depth to Water: _____

Sample I.D.: EW-1 Laboratory: Kiff SPL Other STL

Analyzed for: TPH-G BTEX MTBE TPH-D Other: Oxygenates (7) by 8260

EB I.D. (if applicable): _____ @ _____ Time Duplicate I.D. (if applicable): _____

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

D.O. (if req'd): <u>Pre-purge:</u> <u>2.4</u> mg/L	Post-purge: _____ mg/L
O.R.P. (if req'd): <u>Pre-purge:</u> _____ mV	Post-purge: _____ mV

APPENDIX C

**LABORATORY REPORTS
AND
CHAIN-OF-CUSTODY RECORDS**

RECEIVED JAN - 3 2003

SEVERN
TRENT

STL

Submission#: 2002-12-0323

PES

December 26, 2002

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

Attn.: Will Mast
Project: Pacific Electric Motor
Site: 1099 66th Avenue
Oakland, CA

Dear Mr. Mast,

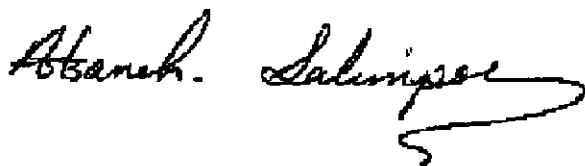
Attached is our report for your samples received on 12/13/2002 17:28
This report has been reviewed and approved for release. Reproduction of this report
is permitted only in its entirety.

Please note that any unused portion of the samples will be discarded after
01/27/2003 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 Laboratories, Inc.
STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566
Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

Fuel 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: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-1	12/11/2002 10:21	Water	1
MW-2	12/11/2002 09:48	Water	2
MW-3	12/11/2002 12:00	Water	3
MW-4	12/11/2002 10:50	Water	4
EW-1	12/11/2002 11:15	Water	5

Fuel 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: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Prep(s): 5030B	Test(s): 8260B
Sample ID: MW-1	Lab ID: 2002-12-0323 - 1
Sampled: 12/11/2002 10:21	Extracted: 12/20/2002 14:00
Matrix: Water	QC Batch#: 2002/12/20-01.27

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	12/20/2002 14:00	
Methyl tert-butyl ether (MTBE)	ND	0.50	ug/L	1.00	12/20/2002 14:00	
Di-isopropyl Ether (DIPE)	ND	1.0	ug/L	1.00	12/20/2002 14:00	
Ethyl tert-butyl ether (ETBE)	ND	0.50	ug/L	1.00	12/20/2002 14:00	
tert-Amyl methyl ether (TAME)	ND	0.50	ug/L	1.00	12/20/2002 14:00	
1,2-DCA	ND	0.50	ug/L	1.00	12/20/2002 14:00	
EDB	ND	0.50	ug/L	1.00	12/20/2002 14:00	
Surrogates(s)						
1,2-Dichloroethane-d4	84.4	76-114	%	1.00	12/20/2002 14:00	
Toluene-d8	96.8	88-110	%	1.00	12/20/2002 14:00	

Fuel 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: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Prep(s): 5030B	Test(s): 8260B
Sample ID: MW-3	Lab ID: 2002-12-0323 - 3
Sampled: 12/11/2002 12:00	Extracted: 12/20/2002 14:43
Matrix: Water	QC Batch#: 2002/12/20-01.27

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	1.00	12/20/2002 14:43	
Methyl tert-butyl ether (MTBE)	0.78	0.50	ug/L	1.00	12/20/2002 14:43	
Di-isopropyl Ether (DIPE)	ND	1.0	ug/L	1.00	12/20/2002 14:43	
Ethyl tert-butyl ether (ETBE)	ND	0.50	ug/L	1.00	12/20/2002 14:43	
tert-Amyl methyl ether (TAME)	ND	0.50	ug/L	1.00	12/20/2002 14:43	
1,2-DCA	ND	0.50	ug/L	1.00	12/20/2002 14:43	
EDB	ND	0.50	ug/L	1.00	12/20/2002 14:43	
Benzene	ND	0.50	ug/L	1.00	12/20/2002 14:43	
Toluene	ND	0.50	ug/L	1.00	12/20/2002 14:43	
Ethylbenzene	ND	0.50	ug/L	1.00	12/20/2002 14:43	
Total xylenes	ND	1.0	ug/L	1.00	12/20/2002 14:43	
Surrogates(s)						
1,2-Dichloroethane-d4	90.3	76-114	%	1.00	12/20/2002 14:43	
Toluene-d8	98.5	88-110	%	1.00	12/20/2002 14:43	

Severn Trent Laboratories, Inc.

STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566
Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

12/26/2002 13:38

Fuel 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: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Batch QC Report

Prep(s): 5030B

Method Blank

MB: 2002/12/20-01.27-028

Water

Test(s): 8260B

QC Batch # 2002/12/20-01.27

Date Extracted: 12/20/2002 11:50

Compound	Conc.	RL	Unit	Analyzed	Flag
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	12/20/2002 11:50	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	12/20/2002 11:50	
Di-isopropyl Ether (DIPE)	ND	1.0	ug/L	12/20/2002 11:50	
Ethyl tert-butyl ether (ETBE)	ND	0.5	ug/L	12/20/2002 11:50	
tert-Amyl methyl ether (TAME)	ND	0.5	ug/L	12/20/2002 11:50	
1,2-DCA	ND	0.5	ug/L	12/20/2002 11:50	
EDB	ND	0.5	ug/L	12/20/2002 11:50	
Benzene	ND	0.5	ug/L	12/20/2002 11:50	
Toluene	ND	0.5	ug/L	12/20/2002 11:50	
Ethylbenzene	ND	0.5	ug/L	12/20/2002 11:50	
Total xylenes	ND	1.0	ug/L	12/20/2002 11:50	
Surrogates(s)					
1,2-Dichloroethane-d4	85.6	76-114	%	12/20/2002 11:50	
Toluene-d8	95.0	88-110	%	12/20/2002 11:50	

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12/26/2002 13:38

Fuel 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: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Batch QC Report

Prep(s): 5030B
Method Blank
MB: 2002/12/23-01.27-016

Water

Test(s): 8260B
QC Batch # 2002/12/23-01.27
Date Extracted: 12/23/2002 16:11

Compound	Conc.	RL	Unit	Analyzed	Flag
tert-Butyl alcohol (TBA)	ND	5.0	ug/L	12/23/2002 16:11	
Methyl tert-butyl ether (MTBE)	ND	0.5	ug/L	12/23/2002 16:11	
Di-isopropyl Ether (DIPE)	ND	1.0	ug/L	12/23/2002 16:11	
Ethyl tert-butyl ether (ETBE)	ND	0.5	ug/L	12/23/2002 16:11	
tert-Amyl methyl ether (TAME)	ND	0.5	ug/L	12/23/2002 16:11	
1,2-DCA	ND	0.5	ug/L	12/23/2002 16:11	
EDB	ND	0.5	ug/L	12/23/2002 16:11	
Benzene	ND	0.5	ug/L	12/23/2002 16:11	
Toluene	ND	0.5	ug/L	12/23/2002 16:11	
Ethylbenzene	ND	0.5	ug/L	12/23/2002 16:11	
Total xylenes	ND	1.0	ug/L	12/23/2002 16:11	
Surrogates(s)					
1,2-Dichloroethane-d4	85.0	76-114	%	12/23/2002 16:11	
Toluene-d8	95.4	88-110	%	12/23/2002 16:11	

Fuel 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: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Batch QC Report

Prep(s): 5030B

Test(s): 8260FAB

Laboratory Control Spike

Water

QC Batch # 2002/12/20-01.27

LCS 2002/12/20-01.27-003

Extracted: 12/20/2002

Analyzed: 12/20/2002 11:00

LCSD 2002/12/20-01.27-004

Extracted: 12/20/2002

Analyzed: 12/20/2002 11:29

Compound	Conc. ug/L		Exp. Conc.	Recovery		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	24.9	25.4	25.0	99.6	101.6	2.0	69-129	20		
Toluene	24.0	25.1	25.0	96.0	100.4	4.5	70-130	20		
Methyl tert-butyl ether (MTBE)	26.7	26.1	25.0	106.8	104.4	2.3	65-165	20		
Surrogates(s)										
1,2-Dichloroethane-d4	430	428	500	86.0	85.6		76-114			
Toluene-d8	482	482	500	96.4	96.4		88-110			

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12/26/2002 13:38

Fuel 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: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Batch QC Report

Prep(s): 5030B

Test(s): 8260FAB

Laboratory Control Spike

Water

QC Batch # 2002/12/23-01.27

LCS 2002/12/23-01.27-003

Extracted: 12/23/2002

Analyzed: 12/23/2002 15:20

LCSD 2002/12/23-01.27-004

Extracted: 12/23/2002

Analyzed: 12/23/2002 15:49

Compound	Conc. ug/L		Exp. Conc.	Recovery		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	22.4	23.4	25.0	89.6	93.6	4.4	69-129	20		
Toluene	21.7	23.1	25.0	86.8	92.4	6.3	70-130	20		
Methyl tert-butyl ether (MTBE)	25.3	24.1	25.0	101.2	96.4	4.9	65-165	20		
Surrogates(s)										
1,2-Dichloroethane-d4	423	429	500	84.6	85.8		76-114			
Toluene-d8	477	475	500	95.4	95.0		88-110			

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12/26/2002 13:38

Fuel 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: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Legend and Notes

Analysis Flag

o

Reporting limits were raised due to high level of analyte present in the sample.

Gasoline

PES

Attn.: Will Mast

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

Project: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Samples Reported

Sample Name	Date Sampled	Matrix	Lab #
MW-1	12/11/2002 10:21	Water	1
MW-2	12/11/2002 09:48	Water	2
MW-3	12/11/2002 12:00	Water	3
MW-4	12/11/2002 10:50	Water	4
EW-1	12/11/2002 11:15	Water	5

Gasoline

PES

Attn.: Will Mast

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

Project: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Prep(s):	5030 5030	Test(s):	8015M 8021B
Sample ID:	MW-1	Lab ID:	2002-12-0323 - 1
Sampled:	12/11/2002 10:21	Extracted:	12/17/2002 15:35
Matrix:	Water	QC Batch#:	2002/12/17-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	8400	250	ug/L	5.00	12/17/2002 15:35	
Benzene	83	2.5	ug/L	5.00	12/17/2002 15:35	
Toluene	9.2	2.5	ug/L	5.00	12/17/2002 15:35	
Ethyl benzene	320	2.5	ug/L	5.00	12/17/2002 15:35	
Xylene(s)	640	0.5	ug/L	5.00	12/17/2002 15:35	
Surrogates(s)						
4-Bromofluorobenzene	114.2	50-150	%	5.00	12/17/2002 15:35	
4-Bromofluorobenzene-FID	114.3	50-150	%	5.00	12/17/2002 15:35	

Gasoline

PES

Attn.: Will Mast

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

Project: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Prep(s): 5030	Test(s): 8015M
Sample ID: MW-2	Lab ID: 2002-12-0323 - 2
Sampled: 12/11/2002 09:48	Extracted: 12/16/2002 22:09
Matrix: Water	QC Batch#: 2002/12/16-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/16/2002 22:09	
Surrogates(s)						
4-Bromofluorobenzene-FID	114.5	50-150	%	1.00	12/16/2002 22:09	

Gasoline

PES

Attn.: Will Mast

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

Project: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Prep(s): 5030	Test(s): 8015M
Sample ID: MW-3	Lab ID: 2002-12-0323 - 3
Sampled: 12/11/2002 12:00	Extracted: 12/16/2002 23:24
Matrix: Water	QC Batch#: 2002/12/16-01.04

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	ND	50	ug/L	1.00	12/16/2002 23:24	
<i>Surrogates(s)</i>						
4-Bromofluorobenzene-FID	115.2	50-150	%	1.00	12/16/2002 23:24	

Gasoline

PES

Attn.: Will Mast

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

Project: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Prep(s): 5030	Test(s): 8015M
Sample ID: MW-4	Lab ID: 2002-12-0323 - 4
Sampled: 12/11/2002 10:50	Extracted: 12/20/2002 11:34
Matrix: Water	QC Batch#: 2002/12/20-01.05

Compound	Conc.	RL	Unit	Dilution	Analyzed	Flag
Gasoline	200000	25000	ug/L	500.00	12/20/2002 11:34	
Surrogates(s)						
4-Bromofluorobenzene-FID	113.0	50-150	%	500.00	12/20/2002 11:34	

Gasoline

PES

Attn.: Will Mast

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

Project: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Batch QC Report

Prep(s): 5030

Method Blank

MB: 2002/12/16-01.04-005

Water

Test(s): 8015M

QC Batch # 2002/12/16-01.04

Date Extracted: 12/16/2002 11:11

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/16/2002 11:11	
Benzene	ND	0.5	ug/L	12/16/2002 11:11	
Toluene	ND	0.5	ug/L	12/16/2002 11:11	
Ethyl benzene	ND	0.5	ug/L	12/16/2002 11:11	
Xylene(s)	ND	0.5	ug/L	12/16/2002 11:11	
Surrogates(s)					
4-Bromofluorobenzene	109.0	50-150	%	12/16/2002 11:11	
4-Bromofluorobenzene-FID	115.8	50-150	%	12/16/2002 11:11	

Severn Trent Laboratories, Inc.

STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

12/26/2002 13:39

Gasoline

PES

Attn.: Will Mast

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

Project: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Batch QC Report

Prep(s): 5030

Method Blank

MB: 2002/12/17-01.04-001

Water

Test(s): 8015M

QC Batch # 2002/12/17-01.04

Date Extracted: 12/17/2002 10:54

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/17/2002 10:54	
Benzene	ND	0.5	ug/L	12/17/2002 10:54	
Toluene	ND	0.5	ug/L	12/17/2002 10:54	
Ethyl benzene	ND	0.5	ug/L	12/17/2002 10:54	
Xylene(s)	ND	0.5	ug/L	12/17/2002 10:54	
Surrogates(s)					
4-Bromofluorobenzene	113.6	50-150	%	12/17/2002 10:54	
4-Bromofluorobenzene-FID	114.4	50-150	%	12/17/2002 10:54	

Severn Trent Laboratories, Inc.

STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

12/26/2002 13:39

Gasoline

PES

Attn.: Will Mast

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

Project: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
 Oakland, CA

Batch QC Report

Prep(s): 5030

Method Blank

MB: 2002/12/20-01.05-003

Water

Test(s): 8015M

QC Batch # 2002/12/20-01.05

Date Extracted: 12/20/2002 08:30

Compound	Conc.	RL	Unit	Analyzed	Flag
Gasoline	ND	50	ug/L	12/20/2002 08:30	
Benzene	ND	0.5	ug/L	12/20/2002 08:30	
Toluene	ND	0.5	ug/L	12/20/2002 08:30	
Ethyl benzene	ND	0.5	ug/L	12/20/2002 08:30	
Xylene(s)	ND	0.5	ug/L	12/20/2002 08:30	
Surrogates(s)					
4-Bromofluorobenzene-FID	100.6	50-150	%	12/20/2002 08:30	

Severn Trent Laboratories, Inc.

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12/26/2002 13:39

Gasoline

PES

Attn.: Will Mast

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

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike

Water

QC Batch # 2002/12/16-01.04

LCS 2002/12/16-01.04-001

Extracted: 12/16/2002

Analyzed: 12/16/2002 11:35

LCSD 2002/12/16-01.04-002

Extracted: 12/16/2002

Analyzed: 12/16/2002 11:59

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Gasoline	515	518	500	103.0	103.6	0.6	75-125	20		
Surrogates(s)										
4-Bromofluorobenzene-FID	580	587	500	116.0	117.4		50-150	0		

Severn Trent Laboratories, Inc.

STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566

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12/26/2002 13:39

Gasoline

PES

Attn.: Will Mast

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

Project: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike

Water

QC Batch # 2002/12/16-01.04

LCS 2002/12/16-01.04-003

Extracted: 12/16/2002

Analyzed: 12/16/2002 12:23

LCSD 2002/12/16-01.04-004

Extracted: 12/16/2002

Analyzed: 12/16/2002 12:47

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	110	108	100.0	110.0	108.0	1.8	77-123	20		
Toluene	107	105	100.0	107.0	105.0	1.9	78-122	20		
Ethyl benzene	103	102	100.0	103.0	102.0	1.0	70-130	20		
Xylene(s)	304	300	300	101.3	100.0	1.3	75-125	20		
Surrogates(s)										
4-Bromofluorobenzene	563	559	500	112.6	111.8		50-150	0		

Severn Trent Laboratories, Inc.

STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

12/26/2002 13:39

Gasoline

PES

Attn.: Will Mast

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

Project: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike

Water

QC Batch # 2002/12/17-01.04

LCS 2002/12/17-01.04-002

Extracted: 12/17/2002

Analyzed: 12/17/2002 12:07

LCSD 2002/12/17-01.04-003

Extracted: 12/17/2002

Analyzed: 12/17/2002 12:31

Compound	Conc. ug/L		Exp. Conc.	Recovery		RPD	Ctrl. Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	113	109	100.0	113.0	109.0	3.6	77-123	20		
Toluene	111	107	100.0	111.0	107.0	3.7	78-122	20		
Ethyl benzene	108	103	100.0	108.0	103.0	4.7	70-130	20		
Xylene(s)	313	303	300	104.3	101.0	3.2	75-125	20		
Surrogates(s)										
4-Bromofluorobenzene	597	578	500	119.4	115.6		50-150	0		

Severn Trent Laboratories, Inc.

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12/26/2002 13:39

Gasoline

PES

Attn.: Will Mast

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

Project: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike

Water

QC Batch # 2002/12/17-01.04

LCS 2002/12/17-01.04-004

Extracted: 12/17/2002

Analyzed: 12/17/2002 11:19

LCSD 2002/12/17-01.04-005

Extracted: 12/17/2002

Analyzed: 12/17/2002 11:43

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %			Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS	LCSD
Gasoline	510	516	500	102.0	103.2	1.2	75-125	20			
Surrogates(s)											
4-Bromofluorobenzene-FID	570	580	500	114.0	116.0		50-150	0			

Severn Trent Laboratories, Inc.

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12/26/2002 13:39

Gasoline

PES

Attn.: Will Mast

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

Project: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Batch QC Report

Prep(s): 5030

Test(s): 8021B

Laboratory Control Spike

Water

QC Batch # 2002/12/20-01.05

LCS 2002/12/20-01.05-004

Extracted: 12/20/2002

Analyzed: 12/20/2002 09:02

LCSD 2002/12/20-01.05-005

Extracted: 12/20/2002

Analyzed: 12/20/2002 09:34

Compound	Conc. ug/L		Exp. Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Benzene	88.6	91.8	100.0	88.6	91.8	3.5	77-123	20		
Toluene	89.8	93.5	100.0	89.8	93.5	4.0	78-122	20		
Ethyl benzene	90.2	94.4	100.0	90.2	94.4	4.6	70-130	20		
Xylene(s)	271	283	300	90.3	94.3	4.3	75-125	20		

Severn Trent Laboratories, Inc.

STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566

Tel 925 484 1919 Fax 925 484 1096 * www.stl-inc.com * CA DHS ELAP# 2496

12/26/2002 13:39

Gasoline

PES

Attn.: Will Mast

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

Project: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Batch QC Report

Prep(s): 5030

Test(s): 8015M

Laboratory Control Spike

Water

QC Batch # 2002/12/20-01.05

LCS 2002/12/20-01.05-006

Extracted: 12/20/2002

Analyzed: 12/20/2002 10:06

LCSD 2002/12/20-01.05-007

Extracted: 12/20/2002

Analyzed: 12/20/2002 10:39

Compound	Conc. ug/L		Exp.Conc.	Recovery		RPD	Ctrl.Limits %		Flags	
	LCS	LCSD		LCS	LCSD		%	Rec.	RPD	LCS
Gasoline	486	530	500	97.2	106.0	8.7	75-125	20		
<i>Surrogates(s)</i> 4-Bromofluorobenzene-FID	485	535	500	97.0	107.0		50-150			

Severn Trent Laboratories, Inc.

STL San Francisco * 1220 Quarry Lane, Pleasanton, CA 94566

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12/26/2002 13:39

Gasoline

PES

Attn.: Will Mast

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

Project: Pacific Electric Motor

Received: 12/13/2002 17:28

Site: 1099 66th Avenue
Oakland, CA

Legend and Notes

Result Flag

g

Hydrocarbon reported in the gasoline range does not match our gasoline standard.

BLAINE

TECH SERVICES, INC.

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

1083

CONDUCT ANALYSIS TO DETECT

LAB STL San Francisco DHS # _____

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

- EPA
 LIA
 OTHER
- RWQCB REGION _____

2002-12-0323

SPECIAL INSTRUCTIONS

Invoice and Report to : PES
 Attn: Will Mast

CHAIN OF CUSTODY
 BTS # 021211-0w-1

CLIENT PES

SITE Pacific Electric Motor

1099 66th Avenue

Oakland, CA

SAMPLE I.D.	DATE	TIME	MATRIX	CONTAINERS		C = COMPOSITE ALL CONTAINERS	TPH - Gas (8015)	BTX, MTBE, TAME, ETBE, DIPE, TBA, EDB, EDC (8260)	CONDUCT ANALYSIS TO DETECT										ADD'L INFORMATION	STATUS	CONDITION	LAB SAMPLE #						
			S=SOIL W=H ₂ O	TOTAL	1				2	3	4	5	6	7	8	9	10	11					12					
mw-1	12-11	6:21	W	6			X	X																				
mw-2		9:48					X	X																				
mw-3		12:00					X	X																				
mw-4		10:50					X	X																				
EW-1		11:15					X	X																				

SAMPLING COMPLETED 12/11/02 TIME 12:15 SAMPLING PERFORMED BY Dave Walter RESULTS NEEDED NO LATER THAN As Contracted with PES

RELEASED BY <u>David C. Valt</u>	DATE <u>12/13/02</u>	TIME <u>1450</u>	RECEIVED BY <u>[Signature]</u>	DATE <u>12/13/02</u>	TIME <u>1950</u>
RELEASED BY <u>[Signature]</u>	DATE <u>12/13/02</u>	TIME <u>1728</u>	RECEIVED BY <u>Deanne Harrington</u>	DATE <u>12/13/02</u>	TIME <u>1728</u>
RELEASED BY _____	DATE _____	TIME _____	RECEIVED BY _____	DATE _____	TIME _____

SHIPPED VIA _____ DATE SENT _____ TIME SENT _____ COOLER # _____

3.6°C

Sample Receipt Checklist

Submission #: 2002- 12 - 0323

Checklist completed by: (initials) DSH Date: 12/16/02

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 ($4^{\circ}C \pm 2$)? Yes No ___

Temp: 3.6°C

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 - \bigcirc), M (medium - \bigcirc) or L (large - \bigcirc))

Water - pH acceptable upon receipt? Yes No

pH adjusted - Preservative used: HNO₃ HCl H₂SO₄ 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: _____/_____/02

Client contacted: Yes No

Summary of discussion: _____

Corrective Action (per PM/Client): _____

DISTRIBUTION

FOURTH QUARTER 2002
GROUNDWATER MONITORING REPORT
PACIFIC ELECTRIC MOTOR COMPANY
1009 66TH AVENUE
OAKLAND, CALIFORNIA

FEBRUARY 28, 2002

COPY NO. 4

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1 Copy	Pacific Electric Motor Company 137 Fiesta Circle Orinda, California 94563 Attention: Mr. Steve Boyd	1
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