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**AllWest Environmental, Inc.**

Specialists in Physical Due  
Diligence and Remedial Services

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**2008 BIENNIAL GROUNDWATER MONITORING REPORT**

*Kragen Auto Supply  
(Former Grand Auto #43)  
4240 International Boulevard (East 14<sup>th</sup> Street)  
Oakland, California*

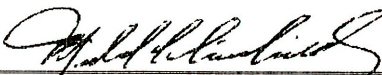
(Geotracker ID - T06019705075 & ACHS #RO0002483)

**PREPARED FOR:**

*PACCAR, Inc.  
Corporate Environmental Department  
P.O. Box 1518  
Bellevue, WA 98009*

**ALLWEST PROJECT No. 28075.28  
July 28, 2008**

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**AllWest Environmental, Inc.**

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**2008 Biennial Groundwater Monitoring Report**

*Former Grand Auto #43  
4240 International Boulevard (East 14<sup>th</sup> Street)  
Oakland, California*

(Geotracker ID - T06019705075 & ACEHD #RO0002483)

**I. INTRODUCTION**

This report presents the results of the 2008 biennial groundwater monitoring event conducted on June 2, 2008, by AllWest Environmental at the former Grand Auto Retail Store #43, Oakland, California. At the time of the 2008 monitoring the property was occupied by a Kragen Auto Supply facility. The sampling event consisted of monitoring four on-site groundwater wells, MW-1, MW-2, MW-3A and MW-4. Included in this report is an abbreviated site setting, a description of field activities, a summary of analytical results, interpretation of the data and conclusions. Supporting information such as site figures, sampling logs, and laboratory reports are included as attachments or appendices to this report.

The purpose of this report is to present data from the groundwater sampling of the four on-site groundwater monitoring wells, demonstrate the stability of the plume and present conclusions and recommendations to the Alameda County Health Care Services (ACHCS) and the State Water Resources Control Board (Water Board).

**II. PROJECT BACKGROUND**

**A. Site Setting**

The approximately 1.2 acre former Grand Auto retail facility is located at the northwest corner of High Street and International Boulevard (formerly 14<sup>th</sup> Street) in Oakland, California. The site currently is used as a Kragen Auto Supply store. Previously the site was used for retail gasoline sales and had underground storage

tanks (USTs) and a car wash with an associated drainage sump. The USTs were removed in 1986. The car wash drainage sump was removed in August 1992. In October 1993, the remaining fuel conveyance piping associated with the former USTs was excavated and removed from the site.

When environmental activities were initiated at the subject property, the former Super Tire store at 4256 East 14th Street (currently All Mufflers Discounted) was located southeast of the subject property were included as part of the Grand Auto site. Subsequently, the former Super Tire store was considered by both PACCAR and ACHCS as a separate site. In a letter to PACCAR dated December 27, 1993, the ACHCS indicated that no further action was required for soil-related issues at the former Super Tire store. In a second letter dated November 20, 2000, ACHCS approved the destruction of a single groundwater well, HC-1, located on the former Super Tire facility.

Review of previous work indicated the site is underlain by an irregularly layered sequence of silty to gravelly sand lenses separated by clayey silt to depths of 46 feet. The groundwater gradient in the area is very flat, thus the determination of the groundwater flow direction is difficult to assess. Regionally, groundwater is typically reported to flow from the east to the west from the Oakland Hills towards the San Francisco Bay. Groundwater flow in the vicinity of the site has been historically calculated to be to the east, at a very flat gradient. Groundwater levels continued to show a gradual increase since the California drought years of the late 1980s and early 1990s. Groundwater levels have risen approximately 12 to 13 feet at the site since 1993. Groundwater levels measured in 2008 have decreased slightly, approximately 0.3 feet from their 2006 levels and are currently near their highest levels since monitoring began in 1993. The recent decrease in groundwater elevations is attributed to lack of significant precipitation in the water shed since January 2008.

Several series of site investigations and remedial activities have been performed at the property since the USTs were removed in 1986. They include drilling of borings at the former location of the USTs, collection of soil samples during removal of the car wash sump, installation and periodic sampling of monitoring wells, removal of conveyance piping, preparation of a closure report, completion of a risk assessment, an issuance of a closure letter for soil by the ACHS in 1996, the re-establishing of groundwater monitoring in 1999, an issuance of a no further remedial action letter by the ACHS in 2000, the abandonment of two wells and replacement of one well in 2001. A summary of this work was presented in AllWest's "Annual Groundwater Monitoring and Well Destruction Report" dated August 27, 2001. The ACHCS in their letter of November 7, 2005 directed groundwater monitoring be conducted on a biennial basis (every two years).

### **III. GROUNDWATER SAMPLING AND FIELD OBSERVATIONS**

This groundwater monitoring event included, gauging the depth to groundwater to calculate the groundwater flow direction and gradient and sampling of the wells to demonstrate the stability of the groundwater plume. The sampling of the four wells, MW-1 through MW-4, occurred June 2, 2008.

#### **A. Sampling Protocols**

AllWest's standard groundwater sampling protocols were followed. As per these protocols, an electronic sounder was utilized to measure the depth to groundwater in each well. Each well was then purged a minimum of three well volumes using a 4-inch teflon bailers. During purging, groundwater field parameters (temperature, pH, and conductivity) were monitored and recorded on a field log. After purging, samples from each well were collected. Copies of the groundwater sampling field logs are presented in Appendix A. The purged groundwater was temporarily stored on site in 55-gallon drums and is scheduled to be removed from the site by Integrated Waste Management, Milpitas, California, a state licensed hazardous waste transporter. The purge water will be transported under appropriate state and local regulations.

#### **B. Well Sampling Purge Characteristics**

The groundwater observed during purging was clear to slightly. Field parameters measured were similar to historical measurements. pH measurements were not collected due to concerns with the operation of the meter. Conductivity levels were between 529  $\mu$ S to 971  $\mu$ S and temperatures between 65.4° F to 79.5° F. Temperature and conductivities varied from well to well but measurements were consistent in individual wells over time.

#### **C. Groundwater Depth and Gradient**

The depth to groundwater ranged between 22.11 feet below ground surface (bgs) in MW-4 to 23.74 feet bgs in MW-3A. As compared to 2006 groundwater levels have decreased approximately 0.3 feet. The current groundwater levels are slightly below historic highs and are approximately 12 to 17 feet higher than those measure in 1993 at the end of the California drought years of the late 1980s and early 1990s. Groundwater elevations are shown on Table 2 and Figure 3.

Groundwater elevations between the wells varied only slightly (0.02 feet). As shown on Figure 3, groundwater elevations ranged from lows of 12.97 feet MSL in MW-2, MW-3A and MW-4 to a high of 12.99 feet MSL in MW-1. The groundwater gradient calculated in the vicinity of MW-1, MW3A and MW-4 is approximately 0.001 feet/foot. As noted during previous investigations, groundwater gradients have historically been very flat.

The local groundwater flow direction measured during this sampling events is generally towards the west. The regional groundwater is to the west towards San Francisco Bay, concurrent with the topography. Prior to the current measurements gradients have be generally to the east. This change is not considered significant due to very small differences in groundwater elevations measured.

#### **IV. LABORATORY ANALYSES**

Groundwater samples were forwarded for chemical analyses to McCampbell Analytical, Pittsburg California, a state certified analytical laboratory. The samples were analyzed to detect the presence of halogenated volatile organic compounds (HVOCs) by EPA Method 8260B.

##### **A. Halogenated Volatile Organic Compounds Results (HVOCs)**

PCE was the most prevalent chemical detected at the site with concentrations ranging from a low of 6.5 ppb in the sample collected from MW-2 to a high of 71 ppb in the sample collected from MW-3A. The levels of PCE were all below levels observed during the September 2006 sampling event and were at historical low concentration in MW-3A and MW-4. TCE, a degradation product of PCE was detected in samples collected from all wells at concentration of 1.8 ppb in MW-2 to a high of 11 ppb in MW-3A . The TCE concentrations were all at historic lows. Cis-1,2-DCE, another PCE degradation product, has been historically detected in all groundwater samples collected from the site. During the 2008 sampling, Cis-1,2-DCE was not detected in wells MW-2, MW-3A and MW-4 and detected at a concentrations of 4.6 ppb in the sample collected from MW-1.

Dichlorodifluoromethane (Freon 12) was detected in all four wells at concentrations from 8.1 to 47 ppb. Freon 12 concentrations historically ranged in the tens of parts per billion with the lowest concentrations detected in MW-3A and the highest in wells MW-1 and MW-2.

Historically chloroform concentrations have been either been not detected or detected at concentrations of approximately 1 ppb. Chloroform was not detected in any of the samples collected during the June 2008 sampling event.

No other organic constituents were detected during the June 2008 sampling event.

## **B. Laboratory QA/QC**

A review of laboratory internal quality assurance/quality control (QA/QC) report indicates the method blank and sample spike data are within the laboratory recovery limits. The laboratory QA/QC report indicated the groundwater samples were analyzed within the acceptable EPA holding time. A copy of the laboratory analytical reports and chain-of-custody records are presented in the LABORATORY RESULTS section of this report. A summary of the analytical results is presented on Table 3.

## **V. DISCUSSION**

### **A. Spatial Distribution of Chemical Constituents**

Chlorinated solvents continue to be detected in all wells at the property. The highest concentrations of PCE have historically been detected in MW-1. Slightly lower level have been detected in MW-3A and MW-4. Significantly lower concentrations of PCE have been detected in MW-2. The PCE breakdown products, TCE, and cis-1,2 DCE also follow this trend. Based on the spatial distribution of the chemicals detected in site monitoring wells, a single, well defined source for the chemicals does not likely exist.

### **B. Contaminant Trend Analyses**

Concentrations of chlorinated solvents have generally decreased since the last sampling performed in 2006. Historical low PCE concentrations were detected in two of four samples with TCE and Cis-1,2-DCE concentrations all at historic lows. Chloroform levels decreased from the 1 ppb range to non-detectable levels.

Chlorinated solvent concentrations detected in the four wells during the June 2, 2008 monitoring event were compared to Environmental Screening Levels (ESLs) as described in Table F-1b Groundwater Screening Levels (groundwater is NOT a current or potential drinking water resource) in the "Screening For Environmental Concerns At Sites With Contaminated Soil and Groundwater" prepared by the California Regional Water Quality Control Board, San Francisco Bay Region, Interim Final November 2007. None of the chlorinated solvents detected exceeded their ESL.

## **VI. CONCLUSIONS AND RECOMMENDATIONS**

The 2008 groundwater sampling data indicate that shallow groundwater at the subject property is impacted with chlorinated solvents. No specific source of the chemicals has been identified.

Concentrations of PCE and TCE and their breakdown products have generally decreased since the 2006 sampling event and are at or near historical levels indicating a stable shrinking plume. It is reasonable to presume the concentrations will continue to decrease due to the processes of natural in situ degradation which include biodegradation, volatilization and dispersion.

Based on site specific results and a comparison to ESLs propagated by the Water Board, it is unlikely residual chemicals in site groundwater pose an unacceptable risk to human health or the environment.

AllWest recommends the facility be granted "Site Closure" status by the ACHS and the Water Board. After issuance of a "Site Closure" AllWest will destroyed the four wells and disposal of all waste materials and in accordance with applicable regulations.

## **VII. REPORT LIMITATIONS**

This report has been prepared for the exclusive use of PACCAR Inc for submittal to the Alameda County Health Care Services (ACHCS) and the Regional Water Quality Control Board (RWQCB) as it pertains to the property located at 4240 International Boulevard (East 14<sup>th</sup> Street), Oakland, California. Our services were performed in accordance with generally accepted professional practices, related to the nature of the work accomplished, in the same or similar localities, at the time the services are performed, and under the terms and conditions of the existing contract between PACCAR and AllWest.



# TABLES

**Table 1 - Well Construction Details**

**Grand Auto #43  
4240 East 14th Street Oakland, California  
Oakland, California**

**AllWest Project Number 28075.28**

<b>Well Number</b>	<b>Surface Elevation (ft MSL)</b>	<b>Top of Casing (ft MSL)</b>	<b>Total Depth (ft bgs)</b>	<b>Top of Screen (ft bgs)</b>	<b>Bottom of Screen (ft bgs)</b>	<b>Well Diameter (Inches)</b>
MW-1	36.83	36.55	43	33	43	4
MW-2	36.68	36.43	45	31	45	4
MW-3A	37.03	36.71	41	20	41	4
MW-4	25.54	35.08	45	30	45	4

Notes: MW-3 was replaced by MW-3A on May 25, 2000  
HC-1 was abandoned on June 18, 2001  
bgs = below ground surface  
MSL = mean sea level  
Elevations relative North American Vertical Datum 1988-Ortho. Ht. (GEOID03)  
Wells were resurveyed on 9/26/06 for horizontal and vertical control by  
CSS Environmental Services, Inc,  
Novato, California (Aaron N. Stessman PE No: C 054644)

**TABLE 2 - Groundwater Elevation Measurements**  
**4240 East 14th Street, Oakland, California**

**Project Number 28075.28**

<b>Well Number</b>	<b>Top of Well Casing Feet - MSL (1)</b>	<b>Depth to Groundwater Feet</b>	<b>Groundwater Elevation Feet - MSL</b>	<b>Date</b>
MW-1 (1)	36.55	23.56	12.99	2-Jun-08
MW-1 (1)	36.55	23.27	13.28	27-Sep-06
MW-1	30.53	24.76	5.77	23-Jul-04
MW-1	30.53	25.29	5.24	15-May-03
MW-1	30.53	24.91	5.62	21-May-02
MW-1	30.53	25.67	4.86	19-Jun-01
MW-1	30.53	27.40	3.13	4-Nov-99
MW-1	30.53	28.18	2.35	10-May-96
MW-1	30.53	29.34	1.19	15-Sep-95
MW-1	30.53	30.83	-0.30	31-Jan-95
MW-1	30.53	32.44	-1.91	20-Sep-94
MW-1	30.53	33.04	-2.51	7-Jun-94
MW-1	30.53	34.60	-4.07	18-Feb-94
MW-1	30.53	35.30	-4.77	17-Nov-93
MW-1	30.53	34.93	-4.40	4-Aug-93
MW-1	30.53	35.45	-4.92	5-May-93
MW-2 (1)	36.43	23.46	12.97	2-Jun-08
MW-2 (1)	36.43	23.13	13.30	27-Sep-06
MW-2	30.41	24.62	5.79	23-Jul-04
MW-2	30.41	25.16	5.25	15-May-03
MW-2	30.41	24.78	5.63	21-May-02
MW-2	30.41	25.54	4.87	19-Jun-01
MW-2	30.41	27.28	3.13	4-Nov-99
MW-2	30.41	28.06	2.35	10-May-96
MW-2	30.41	29.19	1.22	15-Sep-95
MW-2	30.41	30.71	-0.30	31-Jan-95
MW-2	30.41	32.40	-1.99	20-Sep-94
MW-2	30.41	32.92	-2.51	7-Jun-94
MW-2	30.41	34.46	-4.05	18-Feb-94
MW-2	30.41	35.18	-4.77	17-Nov-93
MW-2	30.41	34.79	-4.38	4-Aug-93
MW-2	30.41	35.32	-4.91	5-May-93
MW-3A (1)	36.71	23.74	12.97	2-Jun-08
MW-3A (1)	36.71	23.42	13.29	27-Sep-06
MW-3A	30.70	24.90	5.80	23-Jul-04
MW-3A	30.70	25.43	5.27	15-May-03
MW-3A	30.70	25.04	5.66	21-May-02
MW-3A	30.70	25.81	4.89	19-Jun-01
MW-3	30.31	27.22	3.09	4-Nov-99
MW-3	30.31	27.96	2.35	10-May-96
MW-3	30.31	29.11	1.20	15-Sep-95
MW-3	30.31	30.62	-0.31	31-Jan-95
MW-3	30.31	32.30	-1.99	20-Sep-94
MW-3	30.31	32.83	-2.52	7-Jun-94
MW-3	30.31	34.38	-4.07	18-Feb-94
MW-3	30.31	35.13	-4.82	17-Nov-93
MW-3	30.31	34.70	-4.39	4-Aug-93
MW-3	30.31	35.22	-4.91	5-May-93
MW-4 (1)	35.08	22.11	12.97	2-Jun-08
MW-4 (1)	35.08	21.81	13.27	27-Sep-06
MW-4	29.08	23.30	5.78	23-Jul-04
MW-4	29.08	23.82	5.26	15-May-03
MW-4	29.08	23.46	5.62	21-May-02
MW-4	29.08	24.20	4.88	19-Jun-01
MW-4	29.08	25.92	3.16	4-Nov-99
MW-4	29.08	26.70	2.38	10-May-96
MW-4	29.08	27.86	1.22	15-Sep-95
MW-4	29.08	29.38	-0.30	31-Jan-95
MW-4	29.08	31.07	-1.99	20-Sep-94
MW-4	29.08	31.60	-2.52	7-Jun-94
MW-4	29.08	33.14	-4.06	18-Feb-94
MW-4	29.08	33.90	-4.82	17-Nov-93
MW-4	29.08	33.47	-4.39	4-Aug-93
MW-4	29.08	33.98	-4.90	5-May-93

(1) Wells were resurveyed on September 27, 2006 to North America Vertical Datum 1988-Otrho. Mt (GEOID03)

4240 East 14th Street, Oakland, California

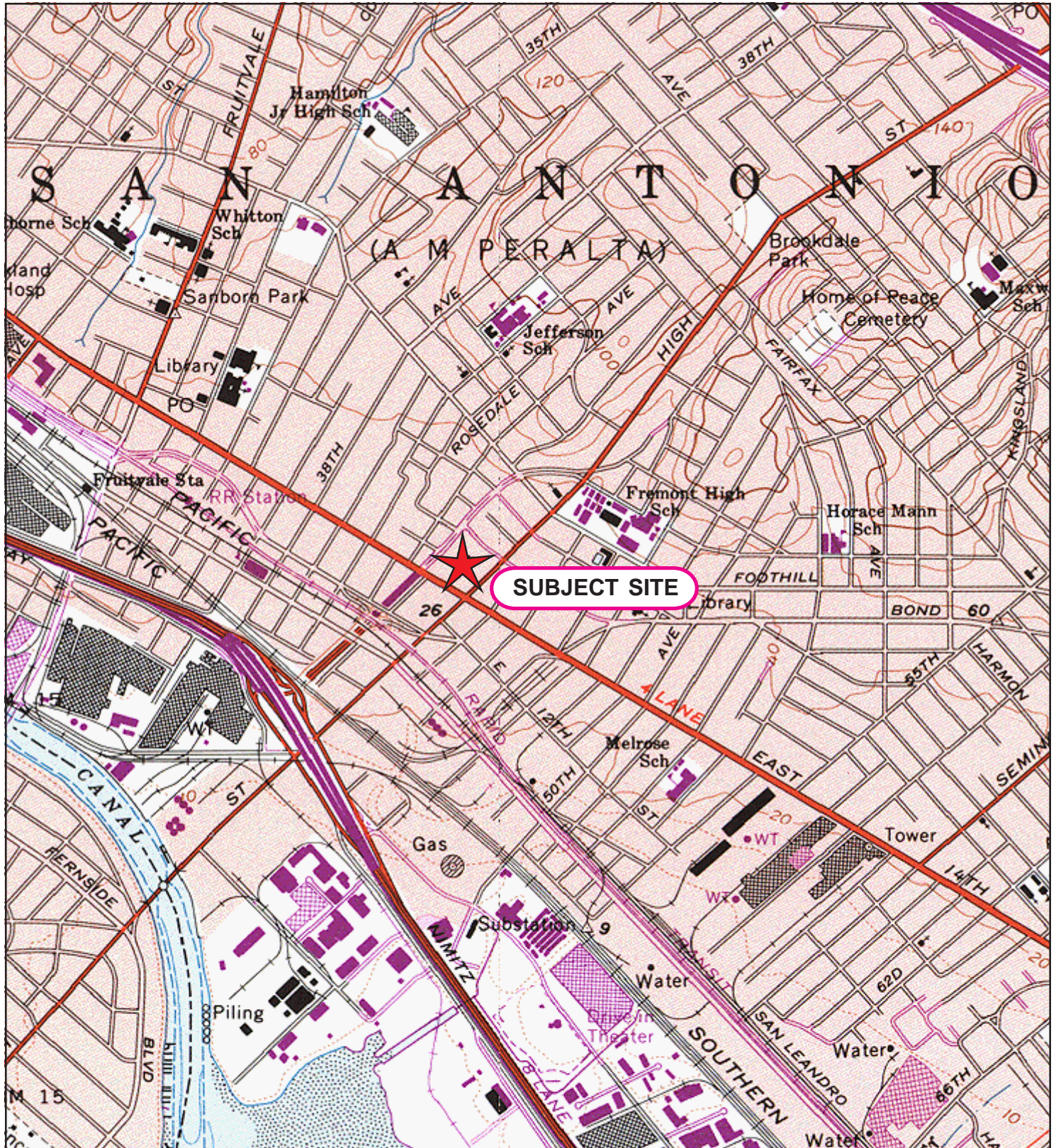
Project Number 28075.28

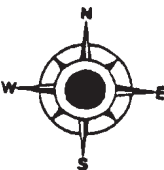

All results in parts per billion (ppb)

Location	PCE	TCE	cis-1,2 DCE	FREON 12	Chloro-form	1,1,1-TCA	1,2-DCA	Vinyl Chloride	Carbon Tetrachloride	TPH-g	All others	Date Collected
MW-1	68	10	4.6	36	ND	ND	ND	ND	ND	NA	ND	2-Jun-08
	110	15	8.7	21	0.83	ND	ND	ND	ND	NA	ND	27-Sep-06
	140	19	5.9	69	ND	ND	ND	ND	ND	NA	ND	23-Jul-04
	120	15	5.8	50	ND	ND	ND	ND	ND	NA	ND	15-May-03
	140	15	ND	ND	ND	ND	ND	ND	ND	NA	ND	21-May-02
	130	17	5.3	35	ND	ND	ND	ND	ND	NA	ND	19-Jun-01
	120	17	6.6	62	ND	ND	ND	ND	ND	ND	ND	4-Nov-99
	270	24	4.3	NR	2.6	ND 1.3	ND 1.3	ND 1.3	ND	NR	ND	10-May-96
	200	25	6.8	NR	1.4	ND 0.5	ND 0.5	ND 0.5	ND	ND	ND	15-Sep-95
	54	13	9.7	NR	ND 1	ND 1	ND 1	ND 2	ND	ND	ND	31-Jan-95
	54	13	9.3	NR	ND 1	ND 1	ND 1	ND 2	ND	ND	ND	31-Jan-95
	270	37	19	NR	ND 5	ND 5	ND 5	ND 5	ND	ND	ND	20-Sep-94
	270	36	18	NR	ND 5	ND 5	ND 5	ND 5	ND	ND	ND	20-Sep-94
	200	28	25	NR	1.6	ND 0.5	ND 0.5	ND 0.5	ND	ND	ND	7-Jun-94
	340	35	22	NR	1.5	ND 0.5	ND 0.5	ND 0.5	ND	ND	ND	7-Jun-94
	200	25	12	NR	1	ND 0.5	ND 0.5	ND 0.5	ND	ND	ND	18-Feb-94
	230	28	15	NR	1.8	ND 0.5	ND 0.5	ND 1	ND	ND	ND	17-Nov-93
	290	23	10	NR	ND 5	ND 5	ND 5	ND 10	ND	ND	ND	4-Aug-93
	300	22	8.7	37	1	ND 0.5	ND 0.5	ND 1	ND	ND	ND	26-Apr-93
	300	22	8.7	110	1.1	0.6	ND 0.5	ND 1	ND	ND	ND	26-Apr-93
220	28	14	NR	ND 3	ND 3	ND 1	--	ND	ND	ND	19-Jan-93	
310	26	11	NR	1.1	ND 0.5	ND 0.6	--	ND	ND	ND	10-Sep-92	
MW-2	6.5	1.8	ND	47	ND	ND	ND	ND	ND	NA	ND	2-Jun-08
	8.3	5.9	1.7	24	0.91	ND	ND	ND	1.9	NA	ND	27-Sep-06
	3.7	11	3	60	ND	ND	0.53	ND	ND	NA	ND	23-Jul-04
	3.9	12	2.9	56	ND	ND	0.63	ND	ND	NA	ND	15-May-03
	6.3	4.7	0.84	44	ND	ND	ND	ND	0.61	NA	ND	21-May-02
	9.1	5.3	1	38	ND	ND	ND	ND	0.83	NA	ND	19-Jun-01
	7.6	8.1	1.9	55	ND	ND	ND	ND	2	ND	ND	4-Nov-99
	7.2	51	13	NR	ND 1	ND 1	ND 1	ND 1	ND	NR	ND	10-May-96
	6.3	52	17	NR	ND 0.5	ND 0.5	ND 0.5	0.8	ND	ND	ND	15-Sep-95
	6.5	69	17	NR	ND 0.5	ND 0.5	0.9	0.9	ND	ND	ND	15-Sep-95
	3	60	17	NR	ND1	ND 1	ND 1	ND2	ND	ND	ND	31-Jan-95
	6	130	36	NR	ND 5	ND 5	ND 5	ND 5	ND	ND	ND	20-Sep-94
	6.9	120	31	NR	ND 0.5	ND 0.5	1.8	ND 0.5	ND	ND	ND	7-Jun-94
	4.8	75	25	NR	ND 0.5	ND 0.5	1.5	ND 0.5	ND	ND	ND	18-Feb-94
	6.1	32	8.7	NR	ND 0.5	ND 0.5	ND 0.5	ND 1	ND	ND	ND	17-Nov-93
	7.2	110	22	NR	ND 1.2	ND 1.2	ND 1.2	ND 2.4	ND	ND	ND	4-Aug-93
	7.5	32	8.5	31	0.9	0.6	0.6	ND 1	ND	ND	ND	26-Apr-93
MW-3A	71	11	ND	8.1	ND	ND	ND	ND	ND	NA	ND	2-Jun-08
	83	12	4.7	3.6	0.83	ND	ND	ND	ND	NA	ND	27-Sep-06
	85	12	2.4	8.3	ND	ND	ND	ND	ND	NA	ND	23-Jul-04
	130	16	ND	21	ND	ND	ND	ND	ND	NA	ND	15-May-03
	120	16	ND	7.1	ND	ND	ND	ND	ND	NA	ND	2-May-02
	120	21	ND	ND	ND	ND	ND	ND	ND	NA	ND	19-Jun-01
	150	24	14	14	ND	ND	ND	ND	ND	61	ND	4-Nov-99
	160	25	7.2	NR	ND 1	ND 1	ND 1	ND 1	ND	NR	ND	10-May-96
	170	25	6.2	NR	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND	ND	ND	15-Sep-95
	160	34	6.2	NR	ND 1	ND 1	ND 1	ND 5	ND	ND	ND	31-Jan-95
	240	37	11	NR	ND 5	ND 5	ND 5	ND 5	ND	ND	ND	20-Sep-94
	160	34	8.3	NR	0.6	0.6	ND 0.5	ND 0.5	ND	ND	ND	7-Jun-94
	85	19	5	NR	0.7	ND 0.5	ND 0.5	ND 0.5	ND	ND	ND	18-Feb-94
	170	29	12	NR	1.3	0.8	ND 0.5	ND 1	ND	ND	ND	17-Nov-93
170	28	ND 5	NR	ND 5	ND 5	ND 5	ND 10	ND	ND	ND	4-Aug-93	
79	21	9.7	35	ND 0.5	0.8	ND 0.5	ND 1	ND	ND	ND	26-Apr-93	
MW-4	39	4.3	ND	29	ND	ND	ND	ND	ND	NA	ND	2-Jun-08
	62	7.8	1.4	13	1.1	ND	ND	ND	1.3	NA	ND	27-Sep-06
	23	3.7	1	26	ND	ND	ND	ND	0.5	NA	ND	23-Jul-04
	120	7.7	0.75	16	ND	ND	ND	ND	ND	NA	ND	15-May-03
	70	7.7	ND	18	ND	ND	ND	ND	ND	NA	ND	21-May-02
	47	7	1.2	19	ND	ND	ND	ND	ND	NA	ND	19-Jun-01
	61	10	2.2	41	ND	ND	ND	ND	ND	ND	ND	4-Nov-99
	190	22	2.5	NR	ND 1.3	ND 1.3	ND 1.3	ND 1.3	ND	NR	ND	10-May-96
	160	24	4.4	NR	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND	ND	ND	15-Sep-95
	140	20	4.7	NR	ND 1	ND 1	ND 1	ND 5	ND	ND	ND	31-Jan-95
	220	32	5	NR	ND 5	ND 5	ND 5	ND 5	ND	ND	ND	20-Sep-94
	140	28	7.1	NR	0.9	0.9	ND 0.5	ND 0.5	ND	ND	ND	7-Jun-94
	120	31	6	NR	1.9	0.7	ND 0.5	ND 0.5	ND	ND	ND	18-Feb-94
87	20	6.6	NR	1	ND 0.5	ND 0.5	ND 1	ND	ND	ND	17-Nov-93	
110	16	ND 5	NR	ND 5	ND 5	ND 5	ND 10	ND	ND	ND	4-Aug-93	
78	17	3.9	28	0.6	ND 0.5	ND 0.5	ND 1	ND	ND	ND	26-Apr-93	
HC-1	100	17	8.7	43	ND	ND	ND	ND	ND	ND	ND	4-Nov-99
	200	27	13	NR	ND 5	ND 5	ND 5	ND 5	ND	NR	ND	10-May-96
	170	27	14	NR	ND 0.5	ND 0.5	ND 0.5	ND 0.5	ND	ND	ND	15-Sep-95
	120	27	11	NR	ND 1	ND 1	ND 1	ND 5	ND	ND	ND	31-Jan-95
	190	37	15	NR	ND 5	ND 5	ND 5	ND 5	ND	ND	ND	20-Sep-94
	180	42	22	NR	1	ND 0.5	ND 0.5	ND 0.5	ND	ND	ND	7-Jun-94
	140	30	13	NR	0.7	ND 0.5	ND 0.5	ND 0.5	ND	ND	ND	18-Feb-94
	150	22	11	NR	0.6	ND 0.5	ND 0.5	ND 0.5	ND	ND	ND	18-Feb-94
	130	27	16	NR	1.1	0.7	ND 0.6	ND 2	ND	ND	ND	17-Nov-93
	83	27	15	NR	ND 0.5	ND 0.5	ND 0.5	ND 1	ND	ND	ND	4-Aug-93
46	22	13	47	ND 0.5	ND 0.5	ND 0.5	ND 1	ND	ND	ND	26-Apr-93	

# FIGURES

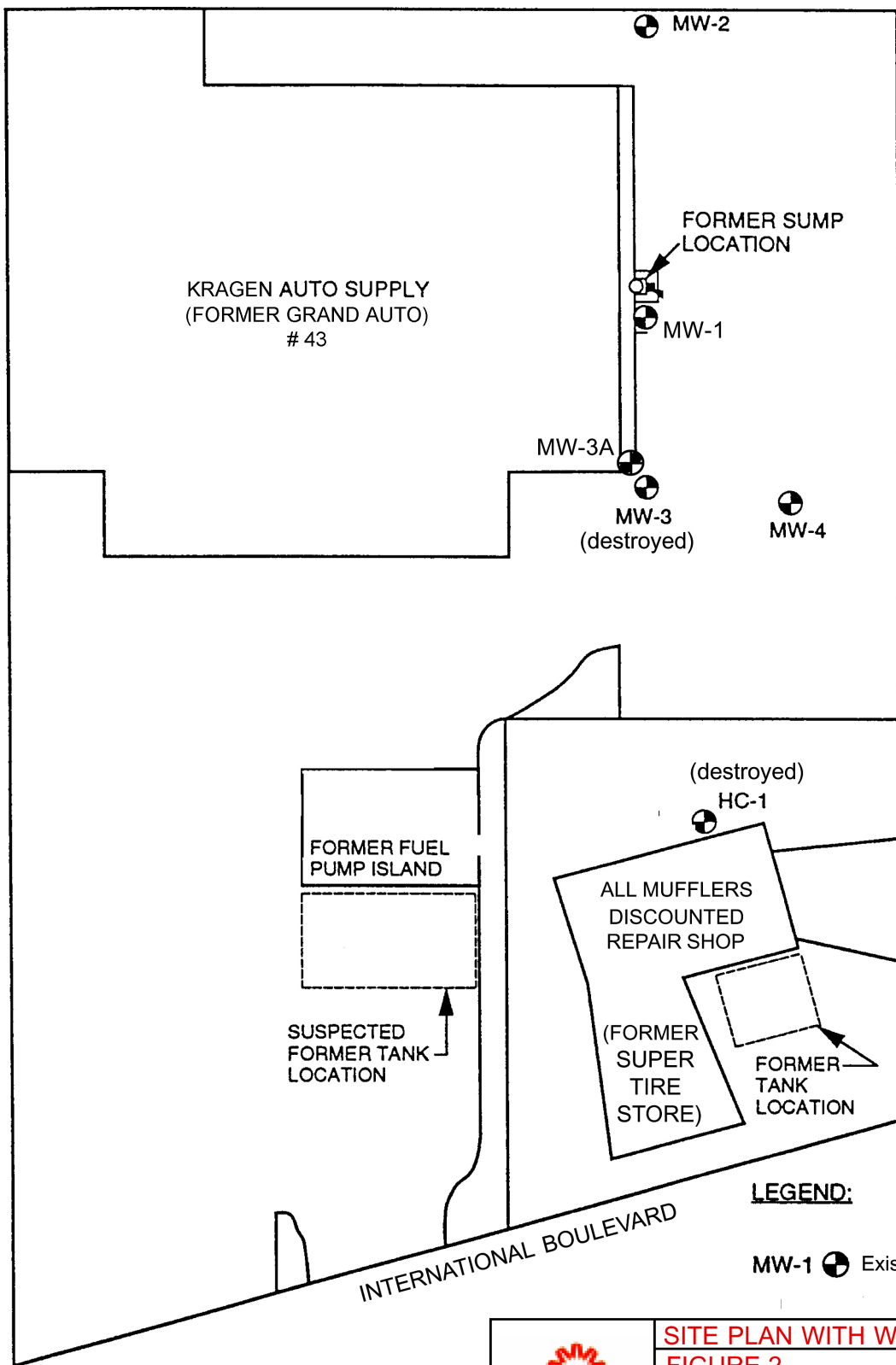
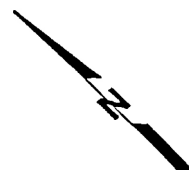




 NOT TO SCALE	 PROJECT NO. 28075.28	<b>SITE LOCATION MAP</b> <b>FIGURE 1</b> 4240 EAST 14TH STREET OAKLAND, CALIFORNIA SOURCE: USGS TOPO
		PREPARED BY: E. VELA DATE: 06/19/03



MISSION AUTOMOTIVE

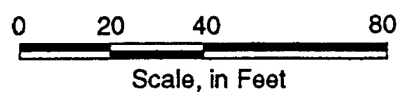


H I G H S T R E E T

**LEGEND:**

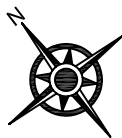
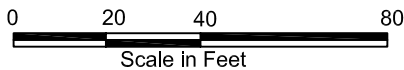
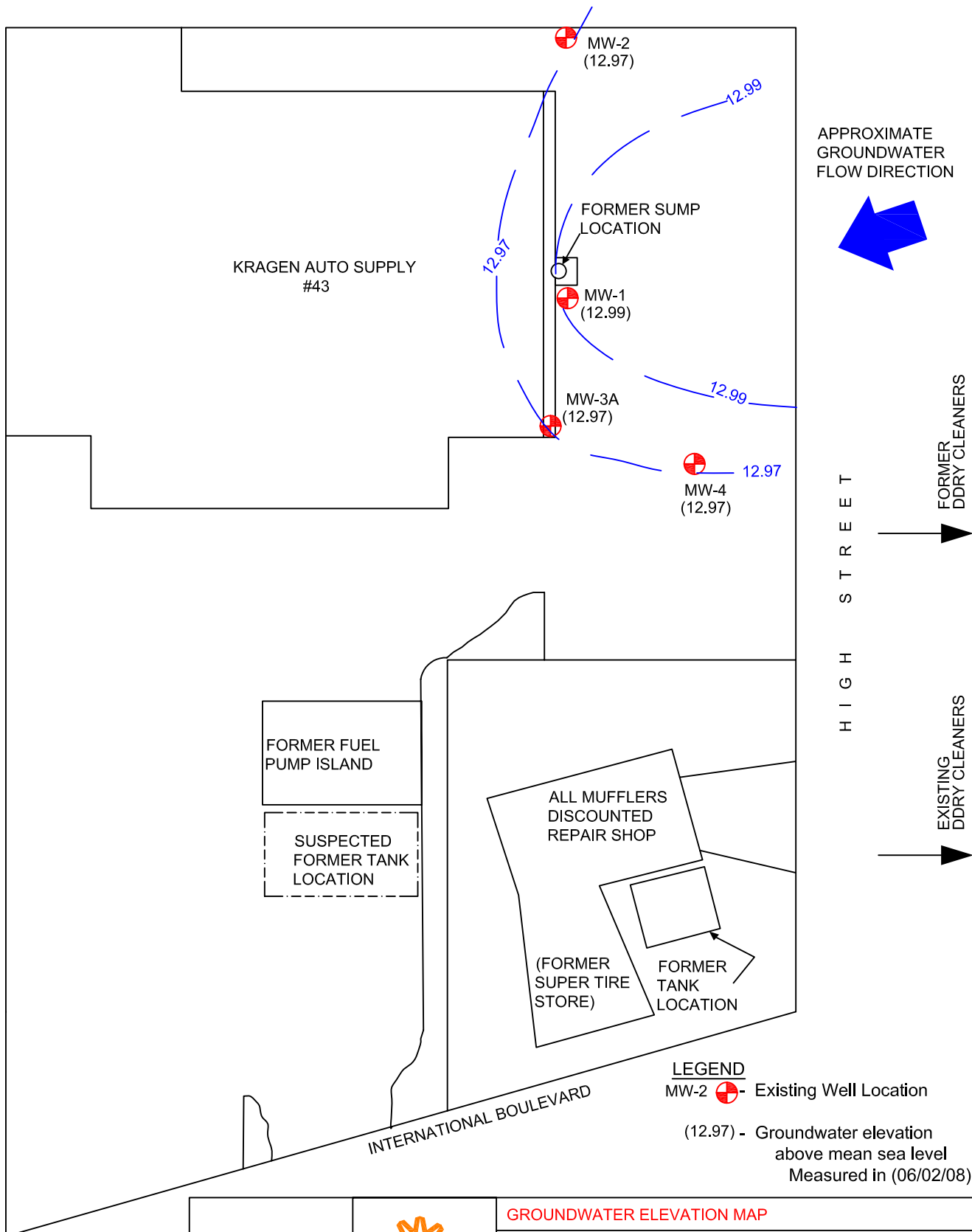
MW-1 Existing Well Location

Note:  
MW-3A replaced MW-3  
on 05/25/00 and  
HC-1 abandoned on  
06/18/01.



	<p><b>SITE PLAN WITH WELL LOCATIONS</b></p> <p><b>FIGURE 2</b></p>
	<p>4240 EAST 14TH STREET</p> <p>OAKLAND, CALIFORNIA</p> <p>SOURCE: ALLWEST</p>
<p>PROJECT NO. 28075.28</p>	<p>PREPARED BY: E. VELA</p> <p>DATE: 06/23/03</p>

MISSION AUTOMOTIVE



PROJECT NO.  
28075.28

**GROUNDWATER ELEVATION MAP**

**FIGURE 3**

4240 EAST 14TH STREET

OAKLAND, CALIFORNIA

SOURCE: ALLWEST

PREPARED BY: D. ZAMORA (REV. 06/08/08)



# LABORATORY RESULTS



**McC Campbell Analytical, Inc.**

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Web: www.mcccampbell.com E-mail: main@mcccampbell.com  
Telephone: 877-252-9262 Fax: 925-252-9269

All West Environmental, Inc 530 Howard Street, Ste. 300 San Francisco, CA 94105	Client Project ID: #28075.28; Paccar	Date Sampled: 06/02/08
		Date Received: 06/02/08
	Client Contact: Mike Siembieda	Date Reported: 06/06/08
	Client P.O.:	Date Completed: 06/05/08

**WorkOrder: 0806015**

June 06, 2008

Dear Mike:

Enclosed within are:

- 1) The results of the **4** analyzed samples from your project: **#28075.28; Paccar,**
- 2) A QC report for the above samples,
- 3) A copy of the chain of custody, and
- 4) An invoice for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits.

If you have any questions or concerns, please feel free to give me a call. Thank you for choosing

McC Campbell Analytical Laboratories for your analytical needs.

Best regards,

Angela Rydelius  
Laboratory Manager  
McC Campbell Analytical, Inc.



# McCAMPBELL ANALYTICAL, INC.

1534 WILLOW PASS ROAD  
PITTSBURG, CA 94565-1701

Website: [www.mccampbell.com](http://www.mccampbell.com) Email: [main@mccampbell.com](mailto:main@mccampbell.com)  
Telephone: (877) 252-9262 Fax: (925) 252-9269

## CHAIN OF CUSTODY RECORD

TURN AROUND TIME

RUSH  24 HR  48 HR  72 HR  5 DAY

GeoTracker EDF  PDF  Excel  Write On (DW)   
 Check if sample is effluent and "J" flag is required

0806015

Report To: **MIKE SIEMBIEDA** Bill To: \_\_\_\_\_  
 Company: **ALLWEST ENV.**  
**530 HOWARD ST.**  
**S.F. CA 94105** E-Mail: **MICHAEL@ALLWEST1.COM**  
 Tele: **(415) 391-2510** Fax: **(415) 391-2008**  
 Project #: **28075.28** Project Name: **PACCAR**  
 Project Location: **OAKLAND, CA**  
 Sampler Signature: \_\_\_\_\_

Analysis Request Other Comments

SAMPLE ID	LOCATION/ Field Point Name	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				Analysis Request	Other	Comments
		Date	Time			Water	Soil	Air	Sludge	Other	ICE	HCL	HNO <sub>3</sub>	Other			
+w-MW-1		6/2/08	9:48	3	VOA	X					X	X				Filter Samples for Metals analysis: Yes (No)	
+w-MW-2		6/2/08	11:37	3	VOA	X					X	X					
+w-MW-3A		6/2/08	10:38	3	VOA	X					X	X					
+w-MW-4		6/2/08	10:40	3	VOA	X					X	X					

BTEX & TPH as Gas (602 / 8021 + 8015) / MTBE	
TPH as Diesel (8015)	
Total Petroleum Oil & Grease (1664 / 5520 E/B&F)	
Total Petroleum Hydrocarbons (418.1)	
EPA 502.2 / 601 / 8010 / 8021 (HVOCs)	
MTBE / BTEX ONLY (EPA 602 / 8021)	
EPA 505 / 608 / 8081 (CI Pesticides)	
EPA 608 / 8082 PCB's ONLY; Aroclors / Congeners	
EPA 507 / 8141 (NP Pesticides)	
EPA 515 / 8151 (Acidic CI Herbicides)	
EPA 524.2 / 624 / 8260 (VOCs) <b>HVOCs</b>	X
EPA 525.2 / 625 / 8270 (SVOCs)	X
EPA 8270 SIM / 8310 (PAHs / FNAs)	
CAM 17 Metals (200.7 / 200.8 / 6010 / 6020)	
LUFF 5 Metals (200.7 / 200.8 / 6010 / 6020)	
Lead (200.7 / 200.8 / 6010 / 6020)	

Relinquished By: \_\_\_\_\_ Date: 6/2/08 Time: 10:40 Received By: \_\_\_\_\_  
 Relinquished By: \_\_\_\_\_ Date: 6/2/08 Time: 10:40 Received By: **me vell**  
 Relinquished By: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_ Received By: \_\_\_\_\_

ICE/T° **7.6°C**  
 GOOD CONDITION   
 HEAD SPACE ABSENT   
 DECHLORINATED IN LAB   
 APPROPRIATE CONTAINERS   
 PRESERVED IN LAB   
 COMMENTS:  
 VOAS  O&G METALS OTHER  
 PRESERVATION  pH<2

**McC Campbell Analytical, Inc.**



1534 Willow Pass Rd  
 Pittsburg, CA 94565-1701  
 (925) 252-9262

**CHAIN-OF-CUSTODY RECORD**

**WorkOrder: 0806015**

**ClientCode: AWE**

WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

**Report to:**  
 Mike Siembieda  
 All West Environmental, Inc  
 530 Howard Street, Ste. 300  
 San Francisco, CA 94105  
 (415) 391-2510    FAX (415) 391-2008

**Email:** michael@allwest1.com  
**cc:**  
**PO:**  
**ProjectNo:** #28075.28; Paccar

**Bill to:**  
 Darlene Torio  
 All West Environmental, Inc  
 530 Howard Street, Ste.300  
 San Francisco, CA 94105  
 darlene@allwest1.com

**Requested TAT: 5 days**  
**Date Received: 06/02/2008**  
**Date Printed: 06/02/2008**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
0806015-001	W-MW-1	Water	6/2/2008 9:48	<input type="checkbox"/>	A	A											
0806015-002	W-MW-2	Water	6/2/2008 11:37	<input type="checkbox"/>	A												
0806015-003	W-MW-3A	Water	6/2/2008 10:38	<input type="checkbox"/>	A												
0806015-004	W-MW-4	Water	6/2/2008 10:40	<input type="checkbox"/>	A												

**Test Legend:**

1	8010BMS_W	2	PREDF REPORT	3		4		5	
6		7		8		9		10	
11		12							

**Prepared by: Melissa Valles**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
 Hazardous samples will be returned to client or disposed of at client expense.



### Sample Receipt Checklist

Client Name: **All West Environmental, Inc**

Date and Time Received: **6/2/08 5:24:35 PM**

Project Name: **#28075.28; Paccar**

Checklist completed and reviewed by: **Melissa Valles**

WorkOrder N°: **0806015** Matrix Water

Carrier: Rob Pringle (MAI Courier)

#### Chain of Custody (COC) Information

- 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
- Sample IDs noted by Client on COC? Yes  No
- Date and Time of collection noted by Client on COC? Yes  No
- Sampler's name noted on COC? Yes  No

#### Sample Receipt Information

- Custody seals intact on shipping container/cooler? Yes  No  NA
- Shipping container/cooler in good condition? Yes  No
- Samples in proper containers/bottles? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No

#### Sample Preservation and Hold Time (HT) Information

- All samples received within holding time? Yes  No
- Container/Temp Blank temperature Cooler Temp: 7.6°C NA
- Water - VOA vials have zero headspace / no bubbles? Yes  No  No VOA vials submitted
- Sample labels checked for correct preservation? Yes  No
- TTLC Metal - pH acceptable upon receipt (pH<2)? Yes  No  NA

\* NOTE: If the "No" box is checked, see comments below.

-----

Client contacted:

Date contacted:

Contacted by:

Comments:



# McC Campbell Analytical, Inc.

"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701  
Web: www.mcccampbell.com E-mail: main@mcccampbell.com  
Telephone: 877-252-9262 Fax: 925-252-9269

All West Environmental, Inc  530 Howard Street, Ste. 300  San Francisco, CA 94105	Client Project ID: #28075.28; Paccar	Date Sampled: 06/02/08
		Date Received: 06/02/08
	Client Contact: Mike Siembieda	Date Extracted: 06/03/08-06/05/08
	Client P.O.:	Date Analyzed 06/03/08-06/05/08

### Halogenated Volatile Organics by P&T and GC-MS (8010 Basic Target List)\*

Extraction Method: SW5030B

Analytical Method: SW8260B

Work Order: 0806015

Lab ID	0806015-001A	0806015-002A	0806015-003A	0806015-004A	Reporting Limit for DF=1	
Client ID	W-MW-1	W-MW-2	W-MW-3A	W-MW-4	S	W
Matrix	W	W	W	W		
DF	1	2	1	1		

Compound	Concentration				µg/kg	µg/L
Bromodichloromethane	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
Bromoform	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
Bromomethane	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
Carbon Tetrachloride	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
Chlorobenzene	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
Chloroethane	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
Chloroform	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
Chloromethane	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
Dibromochloromethane	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
1,2-Dibromoethane (EDB)	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
1,2-Dichlorobenzene	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
1,3-Dichlorobenzene	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
1,4-Dichlorobenzene	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
Dichlorodifluoromethane	36	47	8.1	29	NA	0.5
1,1-Dichloroethane	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
1,2-Dichloroethane (1,2-DCA)	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
1,1-Dichloroethene	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
cis-1,2-Dichloroethene	4.6	ND<1.0	ND<2.5	ND<1.0	NA	0.5
trans-1,2-Dichloroethene	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
1,2-Dichloropropane	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
cis-1,3-Dichloropropene	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
trans-1,3-Dichloropropene	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
Freon 113	ND<50	ND<20	ND<50	ND<20	NA	10
Methylene chloride	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
1,1,1,2-Tetrachloroethane	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
1,1,2,2-Tetrachloroethane	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
Tetrachloroethene	68	6.5	71	39	NA	0.5
1,1,1-Trichloroethane	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
1,1,2-Trichloroethane	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
Trichloroethene	10	1.8	11	4.3	NA	0.5
Trichlorofluoromethane	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5
Vinyl Chloride	ND<2.5	ND<1.0	ND<2.5	ND<1.0	NA	0.5

#### Surrogate Recoveries (%)

%SS1:	103	102	102	103	
%SS2:	104	99	103	105	
%SS3:	103	96	101	80	

#### Comments

\* water and vapor samples are reported in µg/L, soil/sludge/solid samples in mg/kg, product/oil/non-aqueous liquid samples and all TCLP & SPLP extracts are reported in mg/L, wipe samples in µg/wipe.

ND means not detected above the reporting limit; N/A means analyte not applicable to this analysis.

# surrogate diluted out of range or surrogate coelutes with another peak.

h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~1 vol. % sediment; j) sample diluted due to high organic content/matrix interference; k) reporting limit near, but not identical to our standard reporting limit due to variable Encore sample weight; m) reporting limit raised due to insufficient sample amount; n) results are reported on a dry weight basis; p) see attached narrative.



### QC SUMMARY REPORT FOR SW8260B

W.O. Sample Matrix: Water

QC Matrix: Water

WorkOrder: 0806015

EPA Method SW8260B	Extraction SW5030B			BatchID: 36027			Spiked Sample ID: 0806011-010B					
	Sample	Spiked	MS	MSD	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)			
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	MS / MSD	RPD	LCS/LCSD	RPD
Chlorobenzene	ND	10	104	102	1.68	105	104	0.746	70 - 130	30	70 - 130	30
1,2-Dibromoethane (EDB)	ND	10	110	109	0.838	112	114	1.68	70 - 130	30	70 - 130	30
1,2-Dichloroethane (1,2-DCA)	ND	10	100	96.8	3.56	99.1	99.8	0.685	70 - 130	30	70 - 130	30
1,1-Dichloroethene	ND	10	98.6	95.1	3.59	102	101	0.626	70 - 130	30	70 - 130	30
Trichloroethene	ND	10	110	106	3.80	110	110	0	70 - 130	30	70 - 130	30
%SS1:	98	25	103	102	0.543	102	103	0.586	70 - 130	30	70 - 130	30
%SS2:	95	25	101	101	0	100	99	0.198	70 - 130	30	70 - 130	30
%SS3:	106	25	96	97	0.645	97	97	0	70 - 130	30	70 - 130	30

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:  
NONE

#### BATCH 36027 SUMMARY

Lab ID	Date Sampled	Date Extracted	Date Analyzed	Lab ID	Date Sampled	Date Extracted	Date Analyzed
0806015-001A	06/02/08 9:48 AM	06/03/08	06/03/08 9:55 AM	0806015-001A	06/02/08 9:48 AM	06/04/08	06/04/08 10:05 PM
0806015-002A	06/02/08 11:37 AM	06/05/08	06/05/08 10:48 PM	0806015-003A	06/02/08 10:38 AM	06/03/08	06/03/08 11:19 AM
0806015-003A	06/02/08 10:38 AM	06/04/08	06/04/08 11:30 PM	0806015-004A	06/02/08 10:40 AM	06/03/08	06/03/08 12:02 PM
0806015-004A	06/02/08 10:40 AM	06/05/08	06/05/08 12:13 AM				

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = 100 \* (MS-Sample) / (Amount Spiked); RPD = 100 \* (MS - MSD) / ((MS + MSD) / 2).

MS / MSD spike recoveries and / or %RPD may fall outside of laboratory acceptance criteria due to one or more of the following reasons: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) the spiked sample's matrix interferes with the spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

Laboratory extraction solvents such as methylene chloride and freon 113 may occasionally appear in the method blank at low levels.

# Appendix A



# Groundwater Monitoring Well Sampling Field Log

Project No.: 28015-28

Project Name: PACCAR

Well No.: MW-1

Well Location: /

Well Depth: 43 (ft.)

Casing Diameter: 4 (in.)

Depth to Water: 23.59 (ft.)

Date: 6-2-08 Time: 9:00

Water Column in Well: ~20 (ft.)

Well Volume: 39 (gal.)

Odor? /

Free Product? /

Thickness: 20 ~ 0.6583 x 3 =

Purging Method: Hand Pump  Submersible Pump  Bailer  Other

Time	pH	Conduc. (µS)	Temp. (°C)	Water Level	Volume Removed	Remark
08:55	7.25	621	66.6	23.59	Start	clear
09:05	7.28	613	67.7	/	7	
09:10	7.02	744	65.9	/	16	sl Turbid
09:20	6.51	731	63.1	/	27	sl Turbid
09:30	/	7.91	64.7	/	39	ph - MAC react

Purging Start Time: 8:55

Purging Stop Time: 9:35

Total Volume Purged: 40 (gal.)

Well Dewater? NO

Water Level Prior to Sampling: \_\_\_\_\_ (ft.) Time: \_\_\_\_\_

Sampling Method: Teflon Bailer  Disposable Bailer  Sampling Pump

Sample Collected: @ 9:45

Sample No.: MW-1

Remark: 3-VOA

Sampler: Siembicki/Reeve

Date/Time: 6/2/08

# Groundwater Monitoring Well Sampling Field Log

Project No.: 28075.28      Project Name: PACCAR  
 Well No.: MW-2      Well Location: \_\_\_\_\_  
 Well Depth: 45 (ft.)      Casing Diameter: 4 (in.)  
 Depth to Water: 23.46 (ft.)      Date: 6/2/08      Time: \_\_\_\_\_  
 Water Column in Well: 22 (ft.)      Well Volume: 42 (gal.)  
 Odor? NO      Free Product? NO      Thickness: —  
 Purging Method: Hand Pump —      Submersible Pump —      Bailer X      Other —

Time	pH	Conduc. (µS)	Temp. (°C)	Water Level	Volume Removed	Remark
1100	—	8.11	76.0	—	2 GAL	clear
1107	—	8.03	74.0	—	9 GAL	clear
1108	—	8.74	72.6	—	18 GAL	clear
1132		9.41	74.6	—	35 GAL	
1137		9.71	79.5	—	40 GAL	sl cloudy

Purging Start Time: 1100      Purging Stop Time: \_\_\_\_\_  
 Total Volume Purged: 40 (gal.)      Well Dewater? NO  
 Water Level Prior to Sampling: — (ft.)      Time: —  
 Sampling Method: Teflon Bailer X      Disposable Bailer X      Sampling Pump —  
 Sample Collected: W-MW-2-      Sample No.: MW-2  
 Remark: \_\_\_\_\_  
    3-VO AS - ph/meh not working  
 \_\_\_\_\_  
 \_\_\_\_\_

Sampler: Simbich / Reese      Date/Time: 6/2/08

# Groundwater Monitoring Well Sampling Field Log

Project No.: 28075.28

Project Name: PACCAR

Well No.: MW-3A

Well Location: \_\_\_\_\_

Well Depth: 41 (ft.)

Casing Diameter: 4 (in.)

Depth to Water: 23.74 (ft.)

Date: 6-2-08 Time: 9:10

Water Column in Well: 17 (ft.)

Well Volume: -34- (gal.)

Odor? NO /

Free Product? NO /

Thickness: /

Purging Method: Hand Pump  Submersible Pump  Bailer  Other

Time	pH	Conduc. (µS)	Temp. (°C)	Water Level	Volume Removed	Remark
09:48	/	539	65.4		start	Sl. Clear
10:05	/	527	71.0		15	cloudy turbid
10:22		574	73.5		30	↓ ↓
10:38		584	74.2		40	

Purging Start Time: 9:48

Purging Stop Time: 10:47

Total Volume Purged: 20 (gal.)

Well Dewater? NO

Water Level Prior to Sampling: \_\_\_\_\_ (ft.) Time: \_\_\_\_\_

Sampling Method: Teflon Bailer  Disposable Bailer  Sampling Pump

Sample Collected: W-MW-3A

Sample No.: MW-3A

Remark: \_\_\_\_\_

3- UOR's

Sampler: Siembeck / Reeve

Date/Time: 104x / 6-2-08

# Groundwater Monitoring Well Sampling Field Log

Project No.: 28075-28 Project Name: PACCAR

Well No.: MW-4 Well Location: \_\_\_\_\_

Well Depth: 45 (ft.) Casing Diameter: 4 (in.)

Depth to Water: 22.4 (ft.) Date: 6/2/08 Time: \_\_\_\_\_

Water Column in Well: ~23 (ft.) Well Volume: ~44 (gal.) /

Odor?  Free Product?  Thickness: \_\_\_\_\_

Purging Method: Hand Pump  Submersible Pump  Bailer  Other

Time	pH	Conduc. (µS)	Temp. (°C)	Water Level	Volume Removed	Remark
1000	—	5.61	71.0		1 gal	clean
1010		8.63	70		10 gal	
1020		8.57	71.7		25 gal	
1031		8.23	72.2		35 gal	
1040		8.22	72.1		40 gal	

Purging Start Time: 1000 Purging Stop Time: 1040

Total Volume Purged: 40 (gal.) Well Dewater? NO

Water Level Prior to Sampling: \_\_\_\_\_ (ft.) Time: \_\_\_\_\_

Sampling Method: Teflon Bailer  Disposable Bailer  Sampling Pump

Sample Collected: \_\_\_\_\_ Sample No.: MW-4

Remark: - 4" CAP on casing - NOT secured - laying on inside of well near 11  
3 - VOR

Sampler: Stenhardt/Reeve

Date/Time: 6/2/08