

Observation Well Installation and
Biodegradation Enhancement

Former Penske Truck Leasing Company Facility
725 Julie Ann Way
Richmond, California



1050 Marina Way South
Richmond, CA 94804
510 233-3200

FINAL REPORT
Prepared May 8 1998



Via Fax 510-233-3204

May 11, 1998

Mr. Paul Hehn
Geraghty & Miller, Inc.
1050 Marina Way South
Richmond, CA 94804

Re: Observation Well Installation and
Biodegradation Enhancement Report
Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, CA

Dear Paul,

I have reviewed and approve the above referenced report. Please forward the appropriate number of copies to the required regulatory agencies. Please provide one copy for my file with a copy of your report transmittal letters to the agencies. If you have questions or need assistance, please call my office at 610-775-6010.

Sincerely,

A handwritten signature in cursive script that reads "Richard G. Saut".

Richard G. Saut
Environmental Project Manager

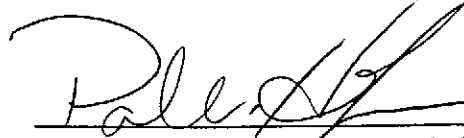
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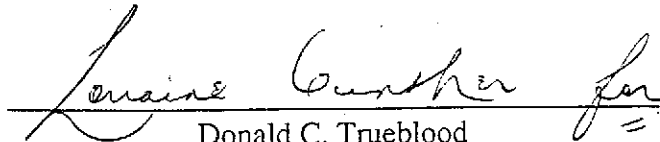
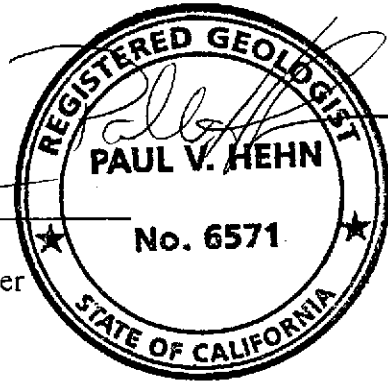
OBSERVATION WELL INSTALLATION AND
BIODEGRADATION ENHANCEMENT
FORMER PENSKE TRUCK LEASING COMPANY FACILITY
725 JULIE ANN WAY
OAKLAND, CALIFORNIA

May 8, 1998
Project No. RC000019.0011

Prepared by ARCADIS Geraghty & Miller, Inc.



Paul V. Hehn, R.G.
Project Geologist/Project Manager



Donald C. Trueblood
Regional Manager

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**OBSERVATION WELL INSTALLATION AND
BIODEGRADATION ENHANCEMENT REPORT**

**FORMER PENSKE TRUCK LEASING CO. FACILITY
725 JULIE ANN WAY
OAKLAND, CALIFORNIA**

1.0 INTRODUCTION

This report presents the results of the installation of two observation wells, and the testing and enhancement of natural biodegradation of petroleum hydrocarbons in groundwater. The work was performed by ARCADIS Geraghty & Miller at the former Penske Truck Leasing Co. (Penske) facility located at 725 Julie Ann Way, Oakland, California (Figure 1).

The objective of the activities was to install two groundwater observation wells within the former underground storage tank (UST) excavation to investigate groundwater levels and potential impacts from petroleum hydrocarbons. Groundwater samples from the completed observation wells were tested for petroleum hydrocarbons, and bioremediation parameters requested by the Alameda County Health Care Services Agency (ACHCSA) in a letter to Penske dated May 6, 1997. The results of the first six months of enhancement of the natural biodegradation using oxygen release compound (ORC®) are also presented. The scope of work for this project was originally presented in a Geraghty & Miller document dated March 31, 1997.

The work plan for the installation of the two observation wells was reviewed by the ACHCSA. A letter from Barney Chan at the ACHCSA dated May 6, 1997 approved the work plan and requested that additional analytes for indicators of natural biodegradation be added to the work plan. In the letter, the ACHCSA also approved the use of biodegradation enhancement supplements (such as oxygen release compounds [ORC®]). After approval by Penske of the costs for the additional analysis, the work plan was modified, and the work was started.

2.0 BACKGROUND

During October 1989, one 10,000-gallon unleaded gasoline underground storage tank (UST), one 10,000-gallon diesel storage UST, and one 550-gallon waste oil UST were excavated and removed from the former Penske site. A representative from EA Engineering, Science and Technology was on site to collect soil samples, and observe the removal of the USTs. Two excavations resulted from the removal of the USTs.

After removal of the USTs, several inches of water containing a product odor were observed in the excavation beneath each UST. Due to the presence of the water in the bottom of the excavation, soil samples were collected from the sidewalls of the excavation. A total of six soil samples were collected from the sidewalls from depths ranging from 8 to 9.5 feet below the ground surface (bgs).

The Alameda County Health Care Services Agency (ACHCSA) representative on site requested that the water in the bottom of the excavation be purged and that, if the water subsequently reentered the excavation, a water sample should be collected. A vacuum truck was scheduled for the following day. When the vacuum truck arrived at the site, the excavation was dry so no water sample was collected. Subsequently, the excavations were backfilled with clean pea gravel and capped with asphalt.

The soil samples collected from the excavation detected concentrations for total petroleum hydrocarbons (TPH) as gasoline ranging from 22.4 mg/kg to 2,100 mg/kg. Concentrations for TPH as diesel ranged from 840 mg/kg to 13,000 mg/kg. Oil and grease were detected in two of the samples collected from the gasoline and diesel USTs excavation at concentrations of 54 mg/kg and 35 mg/kg.

During September 1990, six soil borings were drilled at the site in or adjacent to the former USTs excavation to investigate the extent of impacts to soil and groundwater. Three groundwater monitor wells (Wells MW-1 through MW-3) were installed next to the excavations (Figure 2). Soil samples were collected from all borings and groundwater samples were collected from the three monitoring wells. TPH as gasoline was detected in the soil samples from two boring and all monitoring wells drilled at concentrations ranging from 1 to 820 mg/kg at depths between 5 and 20 feet bgs. TPH as diesel was detected in the soil samples from all borings and wells at concentrations ranging from 32 mg/kg to 980 mg/kg at

depths of between 5 and 20 feet bgs. Benzene was also detected in all borings and wells at concentrations ranging from 0.01 mg/kg to 3.2 mg/kg. Groundwater samples detected TPH as gasoline only in Well MW-1 at a concentration of 170 µg/L. TPH as diesel was detected in the groundwater samples collected from all three wells at concentrations ranging from 80 to 2,900 µg/L. Benzene was also detected in all three wells at concentration ranging from 0.4 to 20 µg/L.

Since TPH constituents were being detected in the wells on site, an additional investigation was performed in February 1993 to better define the extent of downgradient (northwest) impacts in soil and groundwater. Two additional soil borings were drilled and completed as Monitoring Wells MW-4 and MW-5 (located in Figure 2). Soil and groundwater were collected and analyzed from both wells. The analysis of the soil samples detected TPH as gasoline only in the samples from Well MW-4 ranging from 6 to 400 mg/kg from depths between 5 and 15 feet bgs. The highest concentration was detected in the 5 feet bgs sample. TPH as diesel was detected in the soil samples from both wells at concentrations ranging from 21 to 4,100 mg/kg at depths between 5 and 15 feet bgs. Again the highest concentrations were detected in MW 4 at a depth of 5 feet bgs. Benzene was only detected in the soil samples from MW-4 at concentrations ranging from 0.022 to 1.6 mg/kg at depths of 5 to 15 feet bgs, with the highest concentration detected in the 5 feet bgs sample. The groundwater samples collected from Well MW-4 detected TPH as gasoline (58 µg/L), TPH as diesel (450 µg/L) but no benzene. The groundwater samples collected from Well MW-5 detected only TPH as diesel at 240 µg/L.

A third site assessment investigation was performed during July 1994. The objective of this additional assessment was to define the extent of impacts to soil and groundwater downgradient (to the west) and crossgradient (to the north and southwest) of the former UST excavations. An additional objective was to assess whether the site would be appropriate for use of the non-attainment zone remedial approach. Four additional soil borings were drilled, and three of the four soil borings were completed as Monitoring Well MW-6 through MW-8. Soil and groundwater samples were collected from all four borings. TPH as gasoline was detected in the soil samples collected from Borings MW-6, MW-7, MW-8, and BH-4. The concentrations of detectable TPH as gasoline ranged from 1 milligram per kilogram (mg/kg) (Boring MW-8 at 15.5 feet) to 31 mg/kg (Boring MW-7 at 15 feet). TPH as diesel was detected in the soil samples collected from Borings MW-7, MW-8, and BH-4. The concentrations of detectable TPH as diesel ranged from 41 mg/kg (Boring MW-8 at 10.5 feet) to 5,500 mg/kg (Boring MW-7 at 15 feet). Benzene was detected in the soil samples

collected from Borings MW-7, MW-8, and BH-4. The concentrations of detectable benzene ranged from 0.008 mg/kg (Boring BH-4 at 5 feet) to 0.039 mg/kg (Boring MW-8 at 5.5 feet).

TPH as gasoline was detected in the water samples collected from Monitor Wells MW-7 (160 micrograms per liter [$\mu\text{g/L}$]) and MW-8 (170 $\mu\text{g/L}$). TPH as gasoline was not detected in the water samples collected from Monitor Well MW-6 or Boring BH-4. TPH as diesel was detected in the water samples from Monitor Wells MW-7 (620 $\mu\text{g/L}$), MW-8 (850 $\mu\text{g/L}$), and Boring BH-4 (370 $\mu\text{g/L}$). TPH as diesel was not detected in the sample collected from Monitor Well MW-6. Benzene was detected in the water samples collected from Monitor Wells MW-7 (2.7 $\mu\text{g/L}$), MW-8 (2.7 $\mu\text{g/L}$), and Boring BH-4 (2.4 $\mu\text{g/L}$).

Based on the results of the third assessment event, a non-attainment-type zone was established with the concurrence of the ACHCSA. Concentrations of benzene reported in Monitor Wells MW-7 and MW-8 (2.7 $\mu\text{g/L}$) were much lower than the 21 $\mu\text{g/L}$ (ppb) limit established by the RWQCB to protect the nearby estuary waters. The ACHCSA was also in concurrence with this limit. Since the concentrations of benzene detected in Wells MW-3, MW-6, MW-7, and MW-8 located to the northwest and west of the former underground storage tanks were lower than the limit established by the ACHCSA and the RWQCB to be protective of the downgradient receptors in the estuarine environment, the attainment zone was established.

3.0 SITE ASSESSMENT ACTIVITIES

3.1 DRILLING AND COMPLETION OF TWO OBSERVATION WELLS

Prior to drilling, Geraghty & Miller submitted a soil boring and groundwater monitor well construction permit application to the Alameda County Flood Control and Water Conversation District on April 4, 1997. An approved drilling permit (#97250) was subsequently issued by Alameda County on April 23, 1997. A copy of the drilling permit is included in Appendix A. As requested, Mr. Barney Chan of the ACHCSA was notified by telephone prior to the start of drilling of the date and time of the drilling should he desire to observe the activity. Mr. Chan declined to observe the drilling, citing other commitments which would prevent his observing the work, and he indicated that the work could proceed without his observation.

The two observation wells (OW-1 and OW-2) were drilled and completed at the former Penske facility on May 22, 1997. The locations of the two wells are presented in Figure 2. The borings were installed using a hollow stem auger drill rig provided by West Hazmat Drilling Corp. (West Hazmat) of Newark, California. The exact location of the former UST backfill was not fully known prior to drilling the borings. **Therefore, total of five soil borings had to be drilled in order to properly locate and complete the two observation wells into the backfill.** The three other soil borings were properly backfilled with bentonite/cement grout immediately following drilling and determining that they were not in the tank backfill. All five soil borings were drilled to total depths of 13 to 16 feet below the ground surface (bgs).

Soil samples were collected at approximately five foot intervals and at lithologic changes using a split-spoon sampling device. The soil samples were collected for lithologic information only and no samples of the tank backfill material were collected for laboratory analysis. The soil samples were logged by an on-site ARCADIS Geraghty & Miller geologist using the Unified Soil Classification System. The soil boring logs are presented in Appendix B. All equipment that entered the hole was steam-cleaned before drilling each boring. Prior to each use, the split-spoon sampler was washed in a solution of nonphosphate detergent and potable water and then triple rinsed in potable water.

Field measurements of combustible vapors were obtained from soil samples collected from the split-spoon sampler soil tubes using a Thermo Model 580B photoionization detector

(PID) calibrated to hexane. The soil samples were sealed in air-tight containers in which headspace concentrations of combustible vapors accumulated. The concentrations of combustible vapors measured in the headspace by the PID were recorded on the boring logs.

The drilling continued in each soil boring until the bottom of the former UST excavation backfill was encountered. Both borings were drilled to a total depth of 16 feet bgs which was approximately one foot below the bottom of the excavation backfill. **Groundwater was encountered in each boring at a depth of 6 feet (Well OW-2) to 7 feet (Well OW-1) bgs.** Each boring was completed as an observation well using 4-inch diameter, flush threaded, Schedule 40 PVC casing. **A ten foot length of slotted well screen (0.010-inch manufactured slots) was installed through the 10-inch diameter hollow-stem augers to a depth of approximately 6 to 16 feet bgs.** The annular space between the well screen and borehole was backfilled using #3 Lonestar sand to approximately 1 foot above the top of the well screen. Six inches of bentonite were placed above the sand pack, and the remainder of the annular space was backfilled with cement grout containing approximately 5% bentonite. A locking watertight well cap and traffic-rated, flush-mounted well box were installed at the ground surface. Monitor-well construction details and survey data are included with the soil boring logs in Appendix B. Top-of-casing elevation and location for each well were surveyed and recorded relative to mean sea level by a registered land surveyor. A copy of the survey information is provided in Appendix C.

The soil and water generated during the soil boring and well installation activities were placed in United States DOT-approved 55-gallon drums properly labeled and stored onsite for disposal by Penske.

3.2 GROUNDWATER SAMPLING

Water samples were collected from Observation Wells OW-1 through OW-2 on June 24, 1997. Prior to sampling, depth-to-water and total-well-depth measurements were obtained from each well using a water-level probe, and each well was checked for the presence of liquid-phase hydrocarbons using an interface probe. Both probes were washed with a nonphosphate cleaner and triple rinsed with deionized water prior to use in each well. The results of the field parameters measured in both wells during the groundwater sampling is presented in Table 1. Groundwater samples for laboratory analysis were collected from both wells, and retained in USEPA-approved containers, placed on ice, and transported to American Environmental Network (AEN) under appropriate chain-of-custody documentation. As requested in the ACHCSA letter of May 6, 1997, the groundwater

samples were analyzed for the following constituents: TPH as gasoline and diesel (USEPA Method 8015, modified); benzene, toluene, ethylbenzene and xylenes (BTEX) (USEPA Method 8020); methyl t-butyl ether (MTBE) (USEPA Method 8020); sulfate (USEPA Method 300); nitrate-nitrogen (USEPA Method 300); redox (ASTM Method D 1498); ferrous iron (+2) (modified Method SMEWW 3500-Fe D); total heterotrophic bacteria; and contaminant utilizing bacteria. The results of the laboratory analysis of the groundwater samples is presented in Table 2.

A trip blank consisting of a sample vial containing laboratory-grade water, which accompanied the sample vials from the laboratory to the site and back to the laboratory, was also submitted for analysis. The purpose of the trip blank is to assess whether any of the compounds analyzed for may have been imparted to the samples by air in the vicinity of the sample bottles during shipping, by the sample container, by the preservative, or by other exogenous sources. The trip blank was analyzed for TPH as gasoline, BTEX and MTBE.

4.0 RESULTS OF ASSESSMENT ACTIVITIES

4.1 HYDROGEOLOGIC CONDITIONS

Based on the results of the exploratory drilling activities conducted during the installation of the observation wells, the area of the wells is underlain by tank excavation backfill material composed primarily of fine to coarse grained gravel and fine to medium-grained sand to a depth of approximately 15 feet bgs. Below the tank excavation backfill material, native material consists of sandy silt to the total depth explored of 16 feet bgs in both borings. Depth to water measured on June 24, 1997, ranged from 5.23 feet (Well OW-2) to 5.94 feet (Well OW-1) bgs. Based on the depth-to-water measurements of groundwater measured from the eight groundwater monitoring wells on site during previous quarterly groundwater monitoring event (May 28, 1997), the direction of shallow groundwater flow continues to be towards the southeast.

4.2 GROUNDWATER ANALYTICAL RESULTS

A summary of the groundwater analytical results is presented in Tables 3 and 4. Copies of the certified laboratory analytical reports and chain-of-custody documentation are included in Appendix D.

A measured thickness of 0.01 foot of liquid phase hydrocarbons was detected in Observation Well OW-1. Liquid-phase hydrocarbons were not observed in Observation Well OW-2. Dissolved oxygen measurements were also performed on both wells with 0.71 ppm being measured in Well OW-1 and 0.74 ppm being measured in Well OW-2.

Laboratory analytical results detected TPH as gasoline in the groundwater samples collected from both downgradient Observation Well OW-1 (5,600 µg/L) and upgradient Observation Well OW-2 (4,400 µg/L). TPH as diesel was detected in the groundwater samples collected from both Wells OW-1 (310,000 µg/L) and OW-2 (10,000 µg/L). Benzene was also detected in the water samples collected from both Observation Wells OW-1 (38 µg/L) and OW-2 (300 µg/L). Concentrations of ethylbenzene, toluene, and xylenes were also detected in the water samples collected, and the results are presented in Table 3. MTBE was not detected in any of the water samples.

The results of the biodegradation parameters and water sample analysis (Table 3) indicate that populations of both total heterotrophic bacteria and contaminant utilizing bacteria are present in the groundwater. However, the low dissolved oxygen concentrations, low sulfate and iron, and the lack of nitrate in the groundwater indicates that the subsurface groundwater environment is lacking in the essential nutrients, oxygen, and alternative electron acceptors necessary to promote increased natural biodegradation of the petroleum hydrocarbons in the groundwater.

5.0 ENHANCEMENT OF NATURAL BIODEGRADATION

5.1 CONSIDERATION OF NATURAL BIODEGRADATION ENHANCEMENT ALTERNATIVES

Based on the results of the groundwater and biodegradation parameter testing listed above and detailed in Table 2, it appeared that enhancement of the natural biodegradation would be necessary to promote the degradation of the petroleum hydrocarbons in the groundwater. The two primary methods of enhancement that were considered for this site were the addition of either oxygen release compound (ORC®) or nitrate into the groundwater. These two methods would provide either the oxygen or an alternative electron acceptor (nitrate) necessary for promoting growth of the subsurface bacteria which could consume the petroleum hydrocarbons in the groundwater.

At the time of evaluating these two alternatives, Geraghty & Miller was involved in a field pilot test using nitrate as an alternative electron acceptor at a site located adjacent to the Bay in Richmond, California. Nitrate was being used since the cost per pound as an alternative to oxygen available to the groundwater for the enhancement of biodegradation is considerably less than the cost of the ORC®. This pilot test was being performed under a work plan and monitoring plan approved by the RWQCB.

Two factors limited the use of the nitrate approach at the Penske site at the time of this decision. First, the nitrate pilot test was going to continue through the end of 1997, and the results would not be available until early 1998. Penske desired to get the subsurface remediation started sooner than the results of the nitrate tests would become available. Second, since the entire Penske site is either paved or covered by buildings, surface application of the nitrate could not be performed as in the pilot test area. The nitrate would have to be applied to the subsurface using a series of injection points and would require a number of injection events to achieve the desired results of reducing the petroleum hydrocarbons in the groundwater. The installation of the injection points and the multiple injection events would be more costly and labor intensive than the addition of the ORC® in the two observation wells. Thus it was decided to proceed with enhancement of natural biodegradation by adding ORC® socks to both observation wells. Adding the ORC® to the upgradient observation wells would allow the oxygen released from the ORC® to move downgradient from the tank excavation and into the area southwest of the tank excavation where the highest concentrations of petroleum hydrocarbons were located as detected in

existing Monitoring Wells MW-1, MW-4 and MW-7 (located in Figure 2). The additional vacuum enhanced purging of the downgradient wells could also benefit this method by pulling the ORC® towards the area of highest impacts.

5.2 APPLICATION OF SELECTED ENHANCEMENT TECHNIQUE

At the request of Penske, ORC® socks were added to both Observation Wells OW-1 and OW-2 on September 9, 1997. A total of ten 1 foot long ORC® socks were hung end to end in each of the two observation wells. The method prescribed by ORC® for installation of the socks was closely followed for each well. The total ten foot length of the ORC® socks in each well would fully fill the entire ten feet of wetted screen in each of the two wells. The ORC® socks remain in Wells OW-1 and OW-2.

5.3 SIX MONTH RESULTS OF THE ENHANCEMENT OF BIODEGRADATION

At the end of nearly six months after the addition of ORC® to Observation Wells OW-1 and OW-2, significant reductions in concentrations in at least one of the downgradient wells have been detected. Concentrations detected in groundwater samples collected during the two quarterly groundwater sampling events following the addition of the ORC® are showing a decreasing trend in Monitoring Well MW-4. Well MW-4 is located approximately 25 feet downgradient from the tank excavation and Observation Well OW-1. Since September 1997, TPH as gasoline has been reduced from 37,000 µg/L to 580 µg/L by February 27, 1998. During the same time period TPH as diesel has been reduced from 2,600,000 µg/L to 9,300µg/L and benzene has been reduced from 260 µg/L to 2.7 µg/L.

In the other wells downgradient from the tank excavation, this reducing trend is not yet clearly established. In Monitoring Well MW-1, also located approximately 25 feet from OW-1 but in the opposite direction, only a reduction in benzene from 230 µg/L to 50 µg/L has been observed. The concentrations for TPH as gasoline and diesel remain high. In Monitoring Well MW-7 located between Well MW-1 and MW-4, and located 35 feet downgradient from Well OW-1, no trend in the concentrations has been observed. Details of all of the monthly and quarterly groundwater samples for all of the wells is included in Table 3 including the recent results for the February 27, 1998 quarterly groundwater sampling event. It has not been possible to collect dissolved oxygen measurements during recent sampling event due to higher concentrations of liquid phase petroleum hydrocarbons being present in the wells which clogs the instrument if downwell measurements are attempted in more than a thin liquid phase petroleum hydrocarbons layer.

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ORP + 2.0
Run
gtrick

6.0 REFERENCES

Geraghty & Miller, Inc. March 31, 1997. Work Plan for the Installation and Sampling of Two Observation Wells, Former Penske Truck Leasing Company Facility, 725 Julie Ann Way, Oakland, California.

Alameda County Health Care Services Agency. May 6, 1997. Letter to Penske Truck Leasing Co., Penske Truck Leasing Co. Facility, 3009 Evergreen Avenue, West Sacramento, California. Yolo County File No. L-206.

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Table 1: Summary of Field Sampling, Depth-to-Water, and Casing Elevation Data - Observation Wells

Former Penske Truck Leasing Facility,
725 Julie Ann Way, Oakland, California.

Well	Date	Depth to Water (a) (feet)	Top of Casing Elevation (feet)	Top of Water Elevation (feet)	Measured Depth of Well (a) (feet)	Calculated Purge Volume (b) (gallons)	Actual Purge Volume (gallons)	Field Measurements			Dissolved Oxygen (ppm)	Casing Diameter (inches)
								pH	Temp. (°F)	SC (µS/cm)		
OW-1	24-Jun-97	5.94	5.09	-0.85	14.85	23.16	23.25	6.9	76.9	2,020	0.71	4
OW-2	24-Jun-97	5.23	5.39	0.16	13.90	22.54	23	6.9	76.0	2,010	0.74	4

- (a) Measured from top of PVC casing.
 (b) Based on four casing volumes.
 (c) Well elevations surveyed to site benchmark on June 27, 1997.

SC Specific Conductance
 (µS/cm) Microsiemens per centimeter

All elevations are measured relative to a site benchmark (elevation 6.62') based on the City of Oakland datum which is 3 feet higher than mean sea level.

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Table 2: Summary of Groundwater Analytical Results - Observation Well SamplingFormer Penske Truck Leasing Facility,
725 Julie Ann Way, Oakland, California.

Well	Date	TPH as Gasoline (a) (µg/L)	TPH as Diesel (a) (µg/L)	Benzene (b) (µg/L)	Toluene (b) (µg/L)	Ethylbenzene (b) (µg/L)	Xylenes (b) (µg/L)	MTBE (b) (µg/L)	Nitrate- Nitrogen (c) (mg/L)	Sulfate (c) (mg/L)	Redox (d) (mV)	Ferrous Iron (e) (mg/L)	Total Heterotrophic Bacteria	Contaminant Utilizing Bacteria
OW-1	24-Jun-97	5,600	310,000	38	10	30	40	ND(<50)	ND(<0.1)	5.6	+305.1	0.19	1.7 x 10 ⁶	3.5 x 10 ⁴
OW-2	24-Jun-97	4,400	10,000	300	15	110	30	ND(<50)	ND(<0.1)	3.5	+308.9	0.05	8.2 x 10 ⁶	2.0 x 10 ⁴
Trip Blank	24-Jun-97	ND(<50)	--	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	--	--	--	--	--	--

(a) Analyzed by USEPA Method 8015, modified.

(b) Analyzed by USEPA Method 8020.

(c) Analyzed by USEPA Method 300.

(d) Analyzed by ASTM D 1498.

(e) Analyzed by Phenanthroline Method (modified SMEWW 3500-Fe3 D).

() Reported detection limit

-- Not analyzed

ND Not detected

µg/L Micrograms per liter

mg/L Milligrams per liter

Analysis by American Environmental Newark (AEN) Pleasant Hill, California.

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Table 3: Summary of Groundwater Analytical Results - Monthly and Quarterly Sampling
Former Penske Truck Leasing Facility,
725 Julie Ann Way, Oakland, California.

Well	Date	TPH Gasoline (a) (µg/L)	TPH Diesel (a) (µg/L)	Benzene (b) (µg/L)	Toluene (b) (µg/L)	Ethylbenzene (b) (µg/L)	Xylenes (b) (µg/L)	MTBE (b) (µg/L)	Total Dissolved Solids (c) (mg/L)
MW-1	2-Oct-90	170	2,900	20	18	1.9	5.7		--
	28-Feb-91	260	550	43	1	7	1		--
	25-Mar-91	73	160	10	ND(<0.3)	0.5	ND(<0.3)		--
	1-May-91	ND(<50)	(d)	2.2	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	5-Aug-91	310	330	22	5.5	9.5	23		--
	23-Oct-91	440	1,800	23	21	6.2	35		--
	6-Jan-92	430	1,600	56	8.4	18	22		--
	20-Jul-92	ND(<50)	25,000	0.4	0.8	1	2.1		--
	23-Oct-92	280	6,500	9.3	13	8.2	15		--
	4-Feb-93	68 (f)	320	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	8-Apr-93	180	7,800	0.5	2.1	0.8	13		--
	6-Aug-93	740	17,000	75	100	25	130		3,500
	28-Oct-93	140	7,600	4.7	1.9	3.2	5.4		3,500
	1-Feb-94	430	10,000	8.2	1.1	3.5	4.8		3,800
	12-Sep-94	230	22,000	0.7	1.7	2.0	3.7		4,000
	23-Nov-94	ND(<50)	1,700	ND(<0.5)	ND(<0.5)	ND(<0.5)	0.6		3,600
	21-Feb-95	ND(<50)	4,200	ND(<0.5)	ND(<0.5)	0.8	0.6		4,200
	23-May-95	ND(<50)	300	ND(<0.5)	ND(<0.5)	2.1	2.0		3,800
	16-Aug-95	ND(<50)	740	ND(<0.5)	ND(<0.5)	1.4	1.4		3,800
	21-Nov-95	ND(<50)	410	ND(<0.5)	ND(<0.5)	0.7	0.8		4,100
	13-Feb-96	ND(<50)	400	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		3,600
	13-May-96	310 (k)	12,000	13	14	2.4	11		3,500
	28-Aug-96	11,000 (k)	56,000	110	ND(<50)	ND(<50)	ND(<50)		3,300
	21-Nov-96	65 (k)	1,500	3.3	0.51	0.59	0.84		3,400
	20-Feb-97	2,900 (k)	200,000	260	61	42	96		1,400
	28-May-97	2,100	28,000 (o)	230	42	55	110		3,100
	19-Sep-97	110,000	2,700,000	230	140	250	700	ND (<500)	3,200
17-Nov-97	40,000 (r)	950,000 (r)	240 (r)	190 (r)	270 (r)	880 (r)	ND (<300) (r)	3,400	
27-Feb-98	↑ 380,000	↑ 1,200,000	50	50	200	800	ND (<500)	3,600	

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Table 3: Summary of Groundwater Analytical Results - Monthly and Quarterly SamplingFormer Penske Truck Leasing Facility,
725 Julie Ann Way, Oakland, California.

Well	Date	TPH Gasoline (a) (µg/L)	TPH Diesel (a) (µg/L)	Benzene (b) (µg/L)	Toluene (b) (µg/L)	Ethylbenzene (b) (µg/L)	Xylenes (b) (µg/L)	MTBE (b) (µg/L)	Total Dissolved Solids (c) (mg/L)
MW-2	2-Oct-90	ND(<50)	80	0.4	ND(<0.3)	ND(<0.3)	0.5		--
	28-Feb-91	ND(<50)	ND(<50)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	25-Mar-91	ND(<50)	ND(<50)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	1-May-91	ND(<50)	(d)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	5-Aug-91	ND(<50)	ND(<50)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	23-Oct-91	ND(<50)	ND(<50)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	6-Jan-92	11,000	1200 (e)	ND(<0.3)	83	82	940		--
	20-Jul-92	73	120	1.7	3.3	1.1	9.6		--
	23-Oct-92	ND(<50)	ND(<50)	ND(<0.3)	ND(<0.3)	ND(<0.3)	0.5		--
	4-Feb-93	ND(<50)	330 (e)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	8-Apr-93	150	74 (h)	1	2.1	1	13		--
	6-Aug-93	ND(<50)	ND(<50)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.9)		990
	28-Oct-93	ND(<50)	ND(<50)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.9)		1,500
	1-Feb-94	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		2,000
	12-Sep-94	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		2,100
	22-Nov-94	ND(<50)	51 (h)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		2,400
	21-Feb-95	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		5,700
	23-May-95	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		5,100
	16-Aug-95	ND(<50)	190	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		5,400
	21-Nov-95	ND(<50)	180	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		5,800
	13-Feb-96	ND(<50)	1,500	ND(<0.5)	ND(<0.5)	ND(<0.5)	8.7		1,100
	13-May-96	ND(<50)	25,000 (i)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		150
	28-Aug-96	ND(<50)	680	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		410
	21-Nov-96	ND(<50)	1,800 (n)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		720
	20-Feb-97	ND(<50)	1,000 (n)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)		1,400
	28-May-97	ND(<50)	3,700 (n) (o)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)		830
	19-Sep-97	ND(<50)	4,100	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	1,200
	17-Nov-97	ND(<50)	1,300	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	340
	27-Feb-98	ND(<50)	340	ND(<0.5)	0.9	ND(<0.5)	ND(<2)	ND(<5)	210

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Table 3: Summary of Groundwater Analytical Results - Monthly and Quarterly SamplingFormer Penske Truck Leasing Facility,
725 Julie Ann Way, Oakland, California.

Well	Date	TPH Gasoline (a) (µg/L)	TPH Diesel (a) (µg/L)	Benzene (b) (µg/L)	Toluene (b) (µg/L)	Ethylbenzene (b) (µg/L)	Xylenes (b) (µg/L)	MTBE (b) (µg/L)	Total Dissolved Solids (c) (mg/L)
MW-3	2-Oct-90	ND(<50)	90	28	3.1	0.6	1.5		--
	28-Feb-91	ND(<50)	ND(<50)	6	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	25-Mar-91	ND(<50)	ND(<50)	0.6	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	1-May-91	ND(<50)	(d)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	5-Aug-91	ND(<50)	ND(<50)	1.7	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	23-Oct-91	ND(<50)	ND(<50)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	6-Jan-92	ND(<50)	ND(<50)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	20-Jul-92	66	ND(<50)	1.1	2.2	0.7	6.4		--
	23-Oct-92	ND(<50)	ND(<50)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	4-Feb-93	270	ND(<100)(g)	9.8	4.6	4.5	8.7		--
	8-Apr-93	ND(<50)	ND(<50)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.9)		--
	6-Aug-93	ND(<50)	ND(<50)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.9)		3,400
	28-Oct-93	ND(<50)	ND(<50)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.9)		2,700
	1-Feb-94	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		3,400
	12-Sep-94	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		3,500
	22-Nov-94	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		3,400
	21-Feb-95	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		4,200
	23-May-95	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		4,100
	16-Aug-95	ND(<50)	240	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		4,100
	21-Nov-95	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		4,200
	13-Feb-96	ND(<50)	72	16	ND(<0.5)	ND(<0.5)	0.73		3,400
	13-May-96	ND(<50)	250 (m)	1.7	ND(<0.5)	ND(<0.5)	ND(<0.5)		3,700
	28-Aug-96	ND(<50)	1,200	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		2,200
	21-Nov-96	ND(<50)	ND(<50)	0.82	ND(<0.5)	ND(<0.5)	ND(<0.5)		3,500
	20-Feb-97	ND(<50)	140 (n)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)		2,900
	28-May-97	ND(<50)	240 (n) (o)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)		1,900
	19-Sep-97	ND(<50)	ND(<50)	0.7	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	3,300
	17-Nov-97	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	3,400
	27-Feb-98	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	3,800

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Table 3: Summary of Groundwater Analytical Results - Monthly and Quarterly SamplingFormer Penske Truck Leasing Facility,
725 Julie Ann Way, Oakland, California.

Well	Date	TPH Gasoline (a) (µg/L)	TPH Diesel (a) (µg/L)	Benzene (b) (µg/L)	Toluene (b) (µg/L)	Ethylbenzene (b) (µg/L)	Xylenes (b) (µg/L)	MTBE (b) (µg/L)	Total Dissolved Solids (c) (mg/L)
MW-4	4-Feb-93	58 (f)	450	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	8-Apr-93	74	220	19	0.4	ND(<0.3)	ND(<0.9)		--
	6-Aug-93	95	ND(<50)	68	0.9	1.1	ND(<0.9)		5,800
	28-Oct-93	160	600	46	0.7	1.6	1.2		5,200
	1-Feb-94	320	160	290	0.6	6.7	3.2		6,200
	12-Sep-94	390	95	120	3.9	14	14		6,000
	23-Nov-94	100	1,800	9.9	0.7	1.6	3.8		5,600
	21-Feb-95	91	680	23	ND(<0.5)	1.0	ND(<0.5)		7,100
	23-May-95	ND(<50)	270	5.3	ND(<0.5)	ND(<0.5)	ND(<0.5)		8,300
	16-Aug-95	ND(<50)	610	4.1	ND(<0.5)	ND(<0.5)	ND(<0.5)		7,100
	21-Nov-95	ND(<50)	280	1.0	ND(<0.5)	ND(<0.5)	ND(<0.5)		9,800
	13-Feb-96	980 (j)	7,500	570	ND(<0.5)	9.2	13		3,600
	13-May-96	150 (k)	1,200	45	ND(<1.0)	ND(<1.0)	1.5		7,900
	28-Aug-96	70,000 (k)	1,300,000	340	ND(<200)	ND(<200)	ND(<200)		1,800
	21-Nov-96	52,000 (i)	40,000	130	ND(<100)	ND(<100)	ND(<100)		5,400
	20-Feb-97	64,000 (i)	470,000	ND(<100)	ND(<100)	ND(<100)	ND(<100)		1,500
	28-May-97	11,000 (j)	1,000,000 (o)	ND(<100)	ND(<100)	ND(<100)	ND(<100)		1,700
	19-Sep-97	37,000	2,600,000	260	ND(<30)	ND(<30)	ND(<100)	ND(<300)	2,700
	17-Nov-97	↓ 4,400 (r)	↓ 57,000 (r)	↓ 25 (r)	ND(<5) (r)	ND(<5) (r)	ND(<20) (r)	ND(<50) (r)	7,900
	27-Feb-98	↓ 580	↓ 9,300	↓ 2.7	0.8	0.8	3	ND(<50)	9,700

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Table 3: Summary of Groundwater Analytical Results - Monthly and Quarterly SamplingFormer Penske Truck Leasing Facility,
725 Julie Ann Way, Oakland, California.

Well	Date	TPH Gasoline (a) (µg/L)	TPH Diesel (a) (µg/L)	Benzene (b) (µg/L)	Toluene (b) (µg/L)	Ethylbenzene (b) (µg/L)	Xylenes (b) (µg/L)	MTBE (b) (µg/L)	Total Dissolved Solids (c) (mg/L)
MW-5	4-Feb-93	ND(<50)	240	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)		--
	8-Apr-93	ND(<50)	480	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.9)		--
	6-Aug-93	ND(<50)	120	0.8	ND(<0.3)	ND(<0.3)	ND(<0.9)		2,800
	28-Oct-93	ND(<50)	370	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.9)		2,400
	1-Feb-94	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		2,500
	12-Sep-94	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		2,600
	22-Nov-94	ND(<50)	160	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		2,600
	21-Feb-95	ND(<50)	170	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		3,800
	23-May-95	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		4,100
	16-Aug-95	ND(<50)	590	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		2,800
	21-Nov-95	ND(<50)	500	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		2,800
	13-Feb-96	ND(<50)	830	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		3,000
	13-May-96	ND(<50)	870	0.59	ND(<0.5)	ND(<0.5)	ND(<0.5)		2,700
	28-Aug-96	ND(<50)	1,000	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		2,000
	21-Nov-96	ND(<50)	610	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		2,700
	20-Feb-97	ND(<50)	1,100 (n)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)		1,300
	28-May-97	60 (i)	560 (p) (o)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)		2,500
	19-Sep-97	70	1,000	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	2,400
	17-Nov-97	70	1,100	0.6	0.7	0.5	ND(<2)	5	2,800
27-Feb-98	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	5	330	

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Table 3: Summary of Groundwater Analytical Results - Monthly and Quarterly SamplingFormer Penske Truck Leasing Facility,
725 Julie Ann Way, Oakland, California.

Well	Date	TPH Gasoline (a) (µg/L)	TPH Diesel (a) (µg/L)	Benzene (b) (µg/L)	Toluene (b) (µg/L)	Ethylbenzene (b) (µg/L)	Xylenes (b) (µg/L)	MTBE (b) (µg/L)	Total Dissolved Solids (c) (mg/L)
MW-6	12-Sep-94	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		560
	22-Nov-94	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	1.5		1,800
	21-Feb-95	NS	NS	NS	NS	NS	NS		NS
	23-May-95	NS	NS	NS	NS	NS	NS		NS
	16-Aug-95	NS	NS	NS	NS	NS	NS		NS
	21-Nov-95	NS	NS	NS	NS	NS	NS		NS
	13-Feb-96	NS	NS	NS	NS	NS	NS		NS
	13-May-96	NS	NS	NS	NS	NS	NS		NS
	28-Aug-96	NS	NS	NS	NS	NS	NS		NS
	21-Nov-96	NS	NS	NS	NS	NS	NS		NS
	20-Feb-97	NS	NS	NS	NS	NS	NS		NS
	28-May-97	NS	NS	NS	NS	NS	NS		NS
	19-Sep-97	NS	NS	NS	NS	NS	NS	NS	NS
	17-Nov-97	NS	NS	NS	NS	NS	NS	NS	NS
27-Feb-98	NS	NS	NS	NS	NS	NS	NS	NS	

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Table 3: Summary of Groundwater Analytical Results - Monthly and Quarterly Sampling
Former Penske Truck Leasing Facility,
725 Julie Ann Way, Oakland, California.

Well	Date	TPH Gasoline (a) (µg/L)	TPH Diesel (a) (µg/L)	Benzene (b) (µg/L)	Toluene (b) (µg/L)	Ethylbenzene (b) (µg/L)	Xylenes (b) (µg/L)	MTBE (b) (µg/L)	Total Dissolved Solids (c) (mg/L)
MW-7	12-Sep-94	160	620	2.7	1.3	ND(<0.5)	2.1		1,100
	23-Nov-94	ND(<50)	150	2.4	ND(<0.5)	ND(<0.5)	ND(<0.5)		3,600
	21-Feb-95	93	1,400	0.6	0.8	0.8	3.3		4,000
	23-May-95	ND(<50)	360	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		3,400
	16-Aug-95	53	1,100	0.5	ND(<0.5)	ND(<0.5)	0.5		4,000
	21-Nov-95	87	9,100	1.4	ND(<0.5)	1.0	1.5		4,200
	13-Feb-96	1,800,000 (j)	5,000,000	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<0.5)		3,900
	13-May-96	ND(<50,000)	2,300,000	ND(<500)	ND(<500)	ND(<500)	500 (i)		3,500
	28-Aug-96	59,000 (k)	640,000	ND(<200)	ND(<200)	ND(<200)	600		3,100
	21-Nov-96	3,800 (k)	780,000	130	93	33	64		3,400
	20-Feb-97	15,000 (i)	1,500,000	81	51	ND(<50)	ND(<50)		3,300
	28-May-97	390,000 (i)	440,000 (o)	ND(<1000)	ND(<1000)	ND(<1000)	ND(<1000)		3,500
	19-Sep-97	3,600	910,000	110	64	37	ND(<100)	ND(<300)	3,200
	17-Nov-97	15,000 (r)	18,000,000 (r)	110 (r)	41 (r)	12 (r)	110 (r)	ND(<50) (r)	3,300
	27-Feb-98	45,000	290,000	80	60	ND(<50)	ND(<200)	ND(<500)	3,300

18,000 ppm ! =
1.8% = FP

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Table 3: Summary of Groundwater Analytical Results - Monthly and Quarterly Sampling
 Former Penske Truck Leasing Facility,
 725 Julie Ann Way, Oakland, California.

Well	Date	TPH Gasoline (a) (µg/L)	TPH Diesel (a) (µg/L)	Benzene (b) (µg/L)	Toluene (b) (µg/L)	Ethylbenzene (b) (µg/L)	Xylenes (b) (µg/L)	MTBE (b) (µg/L)	Total Dissolved Solids (c) (mg/L)
MW-8	12-Sep-94	170	850	2.7	0.5	ND(<0.5)	2		5,500
	23-Nov-94	ND(<50)	570	1.5	ND(<0.5)	ND(<0.5)	ND(<0.5)		6,300
	21-Feb-95	NS	NS	NS	NS	NS	NS		NS
	23-May-95	NS	NS	NS	NS	NS	NS		NS
	16-Aug-95	NS	NS	NS	NS	NS	NS		NS
	21-Nov-95	NS	NS	NS	NS	NS	NS		NS
	13-Feb-96	NS	NS	NS	NS	NS	NS		NS
	13-May-96	NS	NS	NS	NS	NS	NS		NS
	28-Aug-96	NS	NS	NS	NS	NS	NS		NS
	21-Nov-96	400 (k)	2,200	4.6	37	4.6	68		5,100
	20-Feb-97	340 (k)	2,500	2.1	53	7.1	94		3,800
	28-May-97	480 (k)	200 (q) (o)	2.5	12	ND(<2.5)	76		4,100
	19-Sep-97	1,000	7,000	0.8	5.0	0.5	130	ND(<5)	5,000
	17-Nov-97	250	520	1.4	2.1	0.7	3	ND(<5)	4,600
	27-Feb-98	ND(<50)	150	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	3,500

Notes appear on the following page.

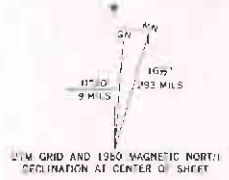
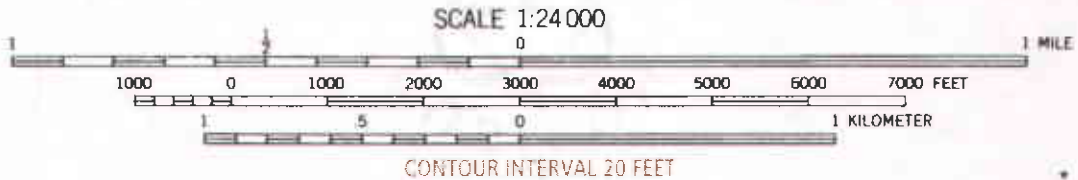
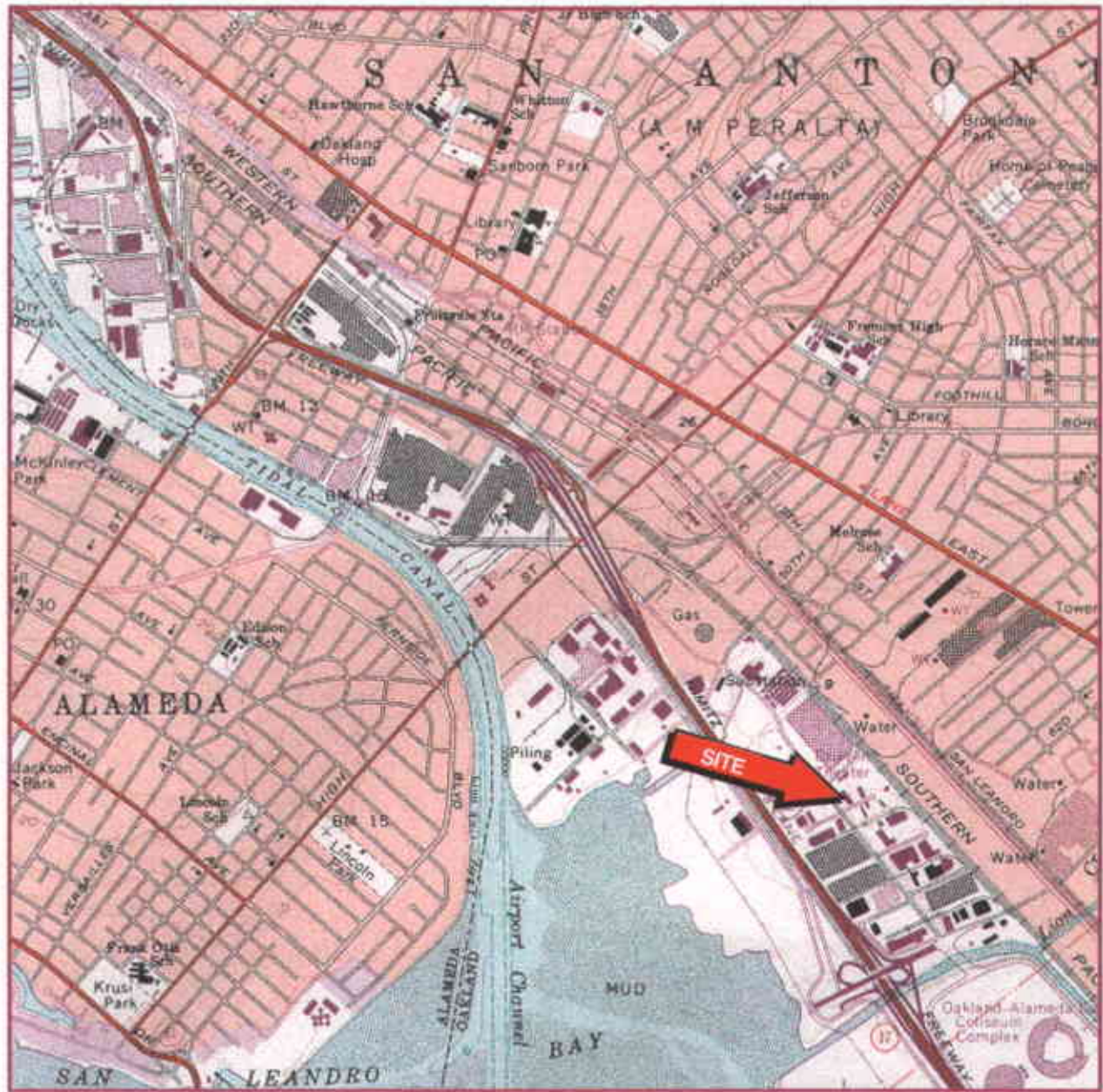
ARCADIS GERAGHTY & MILLER

Table 3: Summary of Groundwater Analytical Results - Monthly and Quarterly Sampling
Former Penske Truck Leasing Facility,
725 Julie Ann Way, Oakland, California.

Well	Date	TPH Gasoline (a) (µg/L)	TPH Diesel (a) (µg/L)	Benzene (b) (µg/L)	Toluene (b) (µg/L)	Ethylbenzene (b) (µg/L)	Xylenes (b) (µg/L)	MTBE (b) (µg/L)	Total Dissolved Solids (c) (mg/L)
		(a)							
		(b)							
		(c)							
		(d)							
		(e)							
		(f)							
		(g)							
		(h)							
		(i)							
		(j)							
		(k)							
		(l)							
		(m)							
		(n)							
		(o)							
		(p)							
		(q)							
		(r)							
		(s)							
		()							
		--							
		ND							
		µg/L							
		mg/L							
		NS							

Analysis prior to May 28, 1997 by Sequoia Analytical, Walnut Creek, California.

Analysis after May 28, 1997 by American Environmental Network (AEN), Pleasant Hill, California.



Reference: U.S.G.S. 7-minute Quadrangle, Oakland East, California, revised, Photorevised 1980.

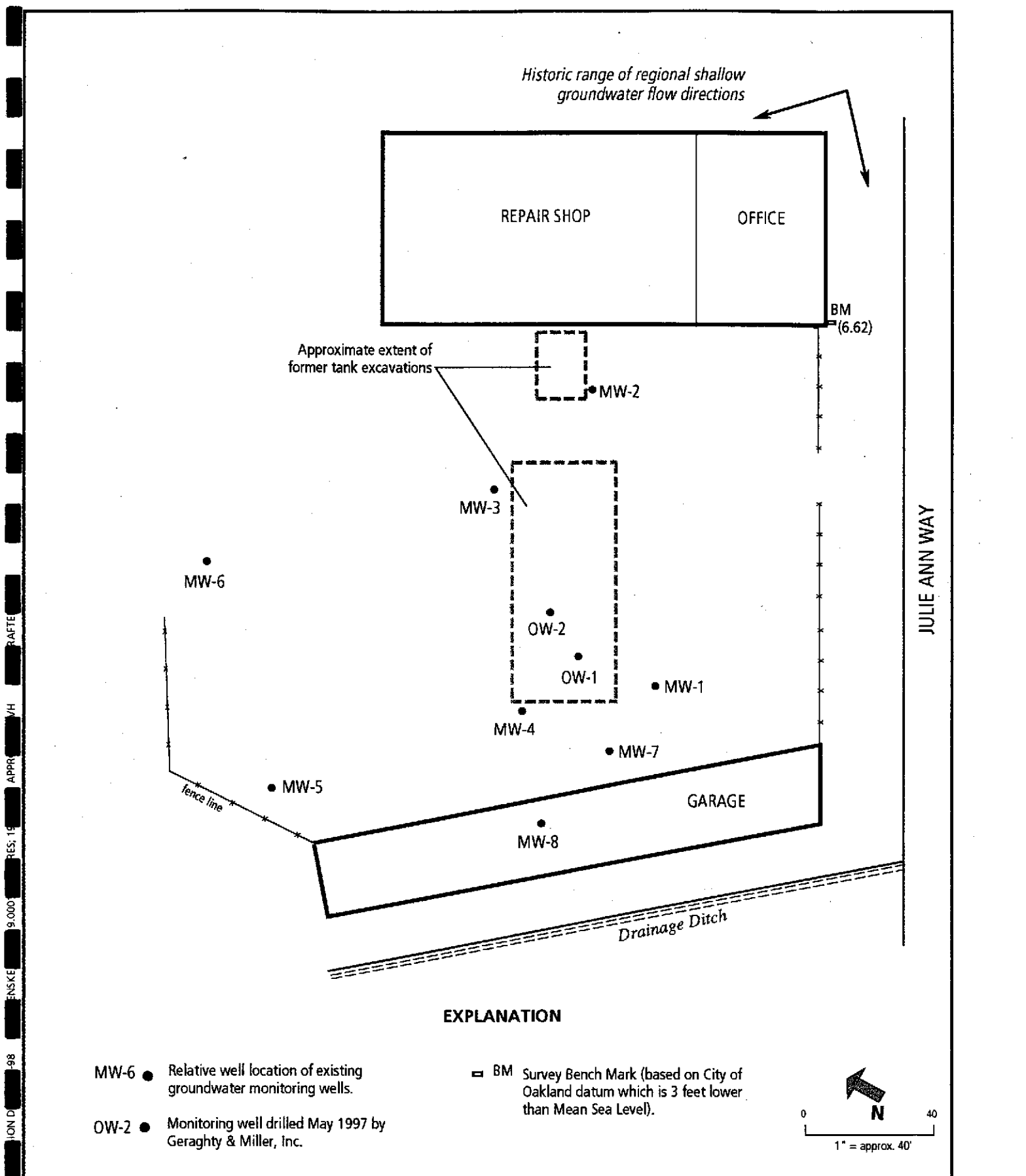


SITE LOCATION MAP
Former Penske Truck Leasing Company Facility
725 Julie Ann Way
Oakland, California

RC00019.0000

FIGURE

1



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SURVEYED RELATIVE WELL LOCATIONS
 Former Penske Truck Leasing Company
 725 Julie Ann Way, Oakland, California

RC00019.0011
 FIGURE
2

APPENDIX A

COPY OF SOIL BORING PERMIT



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

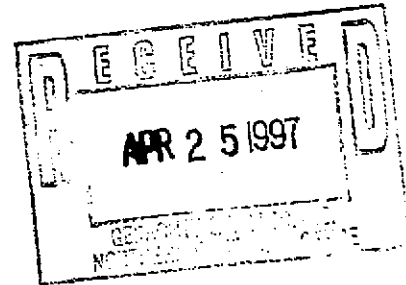
5997 PARKSIDE DRIVE

PLEASANTON, CALIFORNIA 94588-5127

PHONE (510) 484-2600 FAX (510) 462-3914

*Rec'd
4/25/97
RWS019.011*

April 23, 1997



Mr. Paul Hehn
Geraghty & Miller Inc.
1050 Marina Way South
Richmond, CA 94804

Dear Mr. Hehn:

Enclosed is drilling permit 97250 for a monitoring well construction project at 725 Julie Ann Way in Oakland for Penske Truck Leasing.

Please note that permit condition A-2 requires that a well construction report be submitted after completion of the work. The report should include drilling and completion logs, location sketch, and permit number. Please submit the original of your completion report. We will forward your submittal to the California Department of Water Resources.

If you have any questions, please contact Wyman Hong at extension 235 or me at extension 240.

Very truly yours,

Craig A. Mayfield

Craig A. Mayfield
Water Resources Engineer III

CM:pl



ALAMEDA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94566 (415) 484-2600

GROUNDWATER PROTECTION ORDINANCE PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

FOR OFFICE USE

LOCATION OF PROJECT
225 Julie Ann Way
Oakland, CA

PERMIT NUMBER 97250
LOCATION NUMBER

CLIENT
Penske Truck Leasing Co., L.P.
PO Box 7635
Reading, PA
Phone (610) 775-6010
Zip 19603-7635

PERMIT CONDITIONS

Circled Permit Requirements Apply

APPLICANT
Geraghty & McHee, Inc
Paul V. Hehr
1050 Marina Way South
Richmond, CA
Phone (510) 233-3200
Zip 94804

- A. GENERAL
1. A permit application should be submitted so as to arrive at the Zone 7 office five days prior to proposed starting date.
2. Submit to Zone 7 within 60 days after completion of permitted work the original Department of Water Resources Water Well Drillers Report or equivalent for well projects, or drilling logs and location sketch for geotechnical projects.
3. Permit is void if project not begun within 90 days of approval date.
B. WATER WELLS, INCLUDING PIEZOMETERS
1. Minimum surface seal thickness is two inches of cement grout placed by tremie.
2. Minimum seal depth is 50 feet for municipal and industrial wells or 20 feet for domestic and irrigation wells unless a lesser depth is specially approved. Minimum seal depth for monitoring wells is the maximum depth practicable or 20 feet.
C. GEOTECHNICAL. Backfill bore hole with compacted cuttings or heavy bentonite and upper two feet with compacted material. In areas of known or suspected contamination, tremied cement grout shall be used in place of compacted cuttings.
D. CATHODIC. Fill hole above anode zone with concrete placed by tremie.
E. WELL DESTRUCTION. See attached.

TYPE OF PROJECT
Construction Geotechnical Investigation
Cathodic Protection General
Water Supply Contamination
Monitoring Well Destruction

PROPOSED WATER SUPPLY WELL USE
Domestic Industrial Other
Municipal Irrigation

DIGGING METHOD:
Rotary Air Rotary Auger
Other

DRILLER'S LICENSE NO.

WELL PROJECTS
Drill Hole Diameter 8 in. Maximum
Casing Diameter 4 in. Depth 20 ft.
Surface Seal Depth 5 ft. Number 2

GEOTECHNICAL PROJECTS
Number of Borings Maximum
Hole Diameter in. Depth ft.

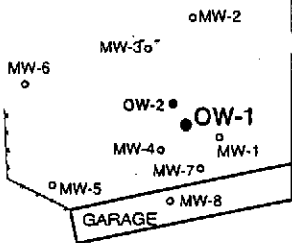
ESTIMATED STARTING DATE 4/29/97
ESTIMATED COMPLETION DATE 4/30/97

I hereby agree to comply with all requirements of this permit and Alameda County Ordinance No. 73-68.

APPLICANT'S SIGNATURE Paul V. Hehr Date 4/4/97

Approved Wyman Hong Date 23 Apr 97

REPAIR SHOP OFFICE



JULIE ANN WAY

LOG OF BORING OW-1

Former Penske Truck Leasing Facility

725 Julie Ann Way

Oakland, California

Project No.: RC019.011 Date Drilled: May 22, 1997
 Logged By: Jeff Hawkins Drilling Method: 10" Hollow stem auger
 Drilling Co.: West Hazmat Sampling Method: California split-spoon
 Driller: Joe McNulty Driller's License: C57-554979

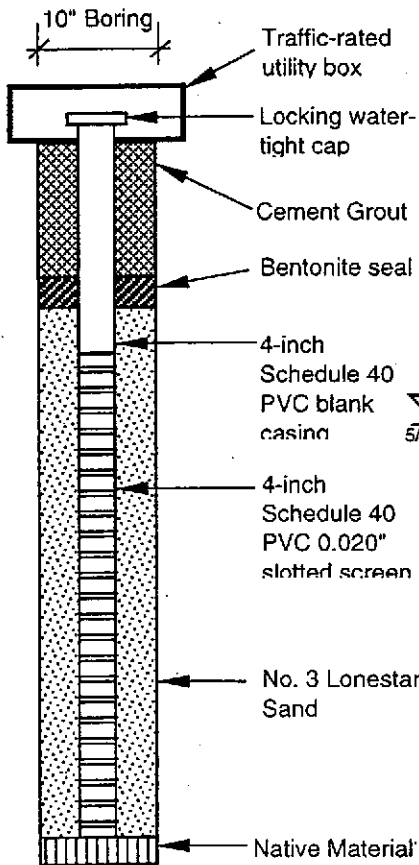
WELL CONSTRUCTION

Depth (ft.)
Blows/ft.

Samples

Key

DESCRIPTION



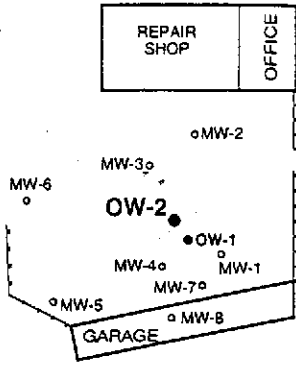
Depth (ft.)	Blows/ft.	Samples	Key	DESCRIPTION
0				Asphaltic Concrete
				FILL: GRAVELLY SAND (SW); 20-40% fine to coarse gravel; damp.
				FILL: GRAVEL (GP); medium-grained; 5 to 10% fines.
5	45			FILL: SILTY GRAVEL (GM); fine to coarse gravel; 15-20% fines; damp to moist.
10	50			FILL: GRAVEL (GW); fine to coarse grained; 5-10% fines; wet.
15	57			SANDY SILT (ML); 15-30% fine-grained sand; trace coarse-grained sand to fine gravel; moist to wet.
				Total Depth Explored: 16 Feet. Date: 5/22/97
20				
25				

LOG OF BORING OW-2

Former Penske Truck Leasing Facility

725 Julie Ann Way Oakland, California

Project No.: RC019.011 Date Drilled: May 22, 1997
 Logged By: Jeff Hawkins Drilling Method: 10" Hollow stem auger
 Drilling Co.: West Hazmat Sampling Method: California split-spoon
 Driller: Joe McNulty Driller's License: C57-554979

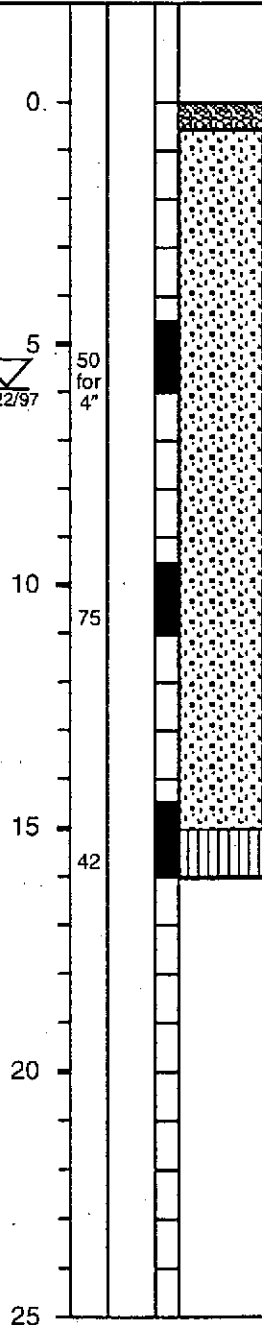
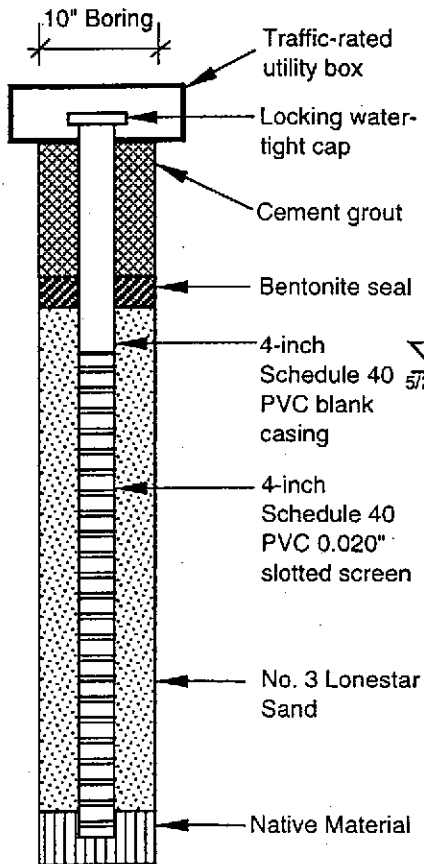


WELL CONSTRUCTION

Depth (ft.)
Blows/ft.

Samples
Key

DESCRIPTION



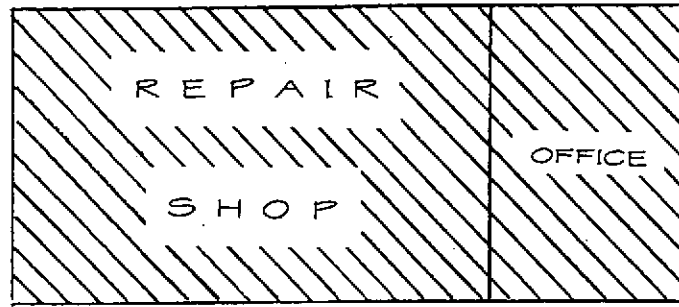
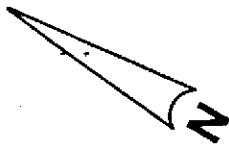
Asphaltic Concrete

FILL: GRAVEL (GW); fine to coarse-grained; 5-15% fine to medium-grained sand; moist.

@ 6 feet: wet.

SILT (ML); 5-15% fine to medium-grained sand; moist to wet.

Total Depth Explored: 16 Feet.
Date: 5/22/97



CURB LINE

BM

○ MW-2

○ MW-3

○ MW-6

○ OW-2

○ OW-1

○ MW-1

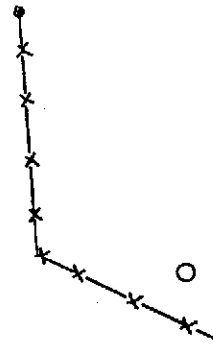
○ MW-4

FENCE LINE

○ MW-7

○ MW-5

○ MW-8



GARAGE

JULIE ANN WAY

SITE PLAN

Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

PREPARED BY: FIELD DESIGNS

LEGEND

○ GROUND-WATER MONITOR WELL

SCALE: 1" = 40'

DATE: 08/20/94

GROUND AND CASING ELEVATIONS

JOB #: RC0019.007

DATE: 06/27/97

DATUM: BENCH MARK ON SITE

ELEVATION: 6.62

CORRECTION TO M.S.L.: NONE

ADJUSTED DATUM:

WELL #	ELEV.@ GROUND	ELEV. ON TOP CASING
OW-1	5.69	5.09
OW-2	5.97	5.39

POINT	NORTHING	EASTING	ELEVATION	NOTE
1	5000.0000	5000.0000	100.0000	DUMMY
2	961.6523	4915.3423	5.7800	WP1-B
3	971.0772	4910.1036	5.3874	OW-2
4	971.8405	4909.8927	5.9725	OW-2 AC
5	959.6099	4921.7609	5.0938	OW-1
6	959.0257	4922.4550	5.6902	OW-1 AC
7	941.4039	4899.6889	5.5728	CK ELV.MW-4
12	1058.1130	4999.9997	6.6200	BM
13	1059.4863	4998.8096	0.0000	BC
14	1119.3777	5000.7321	0.0000	BC
15	928.4741	4994.6087	0.0000	BC
16	903.9103	4993.8904	0.0000	BC
17	1064.0535	4858.8729	0.0000	BC
18	902.0960	4832.2954	0.0000	BC

RAWDATA FILE

JOB: 019-011A Date 6-27-1997 Time 10:23:13.54
 Mode setup:North Azm,Dist ft,scale 1.000000, Earth crv OFF,offset 0.000
 Store :Pt 1 N 5000.0000 E 5000.0000, Elv 100.0000, START
 Store :Pt 1 N 5000.0000 E 5000.0000, Elv 100.0000, DUMMY
 Store :Pt 12 N 1058.1130 E 4999.9997, Elv 6.6200, BM
 Store :Pt 13 N 1059.4863 E 4998.8096, Elv 0.0000, BC
 Store :Pt 14 N 1119.3777 E 5000.7321, Elv 0.0000, BC
 Store :Pt 15 N 928.4741 E 4994.6087, Elv 0.0000, BC
 Store :Pt 16 N 903.9103 E 4993.8904, Elv 0.0000, BC
 Store :Pt 17 N 1064.0535 E 4858.8729, Elv 0.0000, BC
 Store :Pt 18 N 902.0960 E 4832.2954, Elv 0.0000, BC
 Resection:Pt 17 circl 289.4402 Zen. 90.0000 SlpD 579.560
 HI / HR : Inst H 5.400 Rod H 999.000
 Resection:Pt 17 circl 0.0000 Zen. 87.5836 SlpD 117.075
 Resection:Pt 13 circl 69.2038 Zen. 88.1054 SlpD 128.735
 HI / HR : Inst H 5.400 Rod H 2.640
 Note:Resection, Hor precision=1864
 Store :Pt 2 N 961.6523 E 4915.3423, Elv 491.3108, WP1-B
 Occupy:Pt 2 N 961.6523 E 4915.3423, Elv 491.3110, WP1-B
 Backsight:2-17, BS azm 331.0731, BS cir 0.0000
 Backsight:2-17, BS azm 331.0731, BS cir 0.0000
 HI / HR : Inst H 5.400 Rod H 8.590
 Store :Pt 2 N 961.6523 E 4915.3423, Elv 65.0000, WP1-B
 Occupy:Pt 2 N 961.6523 E 4915.3423, Elv 65.0000, WP1-B
 Backsight:2-17, BS azm 331.0731, BS cir 0.0000
 Store :Pt 2 N 961.6523 E 4915.3423, Elv 7.0000, WP1-B
 Occupy:Pt 2 N 961.6523 E 4915.3423, Elv 7.0000, WP1-B
 Backsight:2-17, BS azm 331.0731, BS cir 0.0000
 Store :Pt 2 N 961.6523 E 4915.3423, Elv 5.7800, WP1-B
 Occupy:Pt 2 N 961.6523 E 4915.3423, Elv 5.7800, WP1-B
 Backsight:2-17, BS azm 331.0731, BS cir 0.0000
 HI / HR : Inst H 5.400 Rod H 4.840
 Side shot : 2-3 Ang-Rt 359.4827 Zen 95.0255 SlpD 10.825 ,OW-2
 Side shot : 2-4 Ang-Rt 0.4357 Zen 91.4918 SlpD 11.560 ,OW-2 AC
 Side shot : 2-5 Ang-Rt 136.3132 Zen 100.2854 SlpD 6.850 ,OW-1
 Side shot : 2-6 Ang-Rt 139.0836 Zen 94.5354 SlpD 7.610 ,OW-1 AC
 Side shot : 2-7 Ang-Rt 246.3452 Zen 91.4301 SlpD 25.605 ,CK ELV.MW-4
 Store :Pt 3 N 971.0772 E 4910.1036, Elv 5.3870, OW-2
 Store :Pt 4 N 971.8405 E 4909.8927, Elv 5.9730, OW-2 AC
 Store :Pt 5 N 959.6099 E 4921.7609, Elv 5.0940, OW-1
 Store :Pt 6 N 959.0257 E 4922.4550, Elv 5.6900, OW-1 AC

APPENDIX D

**COPIES OF CERTIFIED LABORATORY REPORTS AND
CHAIN-OF-CUSTODY DOCUMENTATION**

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172

AIHA Accreditation: 11134

PAGE 1

GERAGHTY & MILLER, INC.
1050 MARINA WAY SOUTH
RICHMOND, CA 94804

ATTN: PAUL HEHN
CLIENT PROJ. ID: RC0019.010

REPORT DATE: 07/15/97

DATE(S) SAMPLED: 06/24/97

DATE RECEIVED: 06/24/97

AEN WORK ORDER: 9706345

PROJECT SUMMARY:

On June 24, 1997, this laboratory received 4 water sample(s).

Client requested sample(s) be analyzed for chemical parameters. Portions for ferrous iron/redox potential and bacteria content were subcontracted to certified laboratories. Subcontract report for ferrous iron/redox potential is included; subcontract report for bacteria content will follow at a later date. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.


Larry Klein
Laboratory Director

GERAGHTY & MILLER, INC.

SAMPLE ID: OW-1
 AEN LAB NO: 9706345-01
 AEN WORK ORDER: 9706345
 CLIENT PROJ. ID: RC0019.010

DATE SAMPLED: 06/24/97
 DATE RECEIVED: 06/24/97
 REPORT DATE: 07/15/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	38 *	5 ug/L		07/08/97
Toluene	108-88-3	10 *	5 ug/L		07/08/97
Ethylbenzene	100-41-4	30 *	5 ug/L		07/08/97
Xylenes, Total	1330-20-7	40 *	20 ug/L		07/08/97
Purgeable HCs as Gasoline	5030/GCFID	5.6 *	0.5 mg/L		07/08/97
Methyl t-Butyl Ether	1634-04-4	ND	50 ug/L		07/08/97
#Extraction for TPH	EPA 3510	-		Extrn Date	07/01/97
TPH as Diesel	GC-FID	310 *	2 mg/L		07/03/97
#Anion Sample Prep.		-		Prep date	06/25/97
Nitrate-Nitrogen	EPA 300	ND	0.1 mg/L		06/25/97
Sulfate	EPA 300	5.6 *	0.5 mg/L		06/25/97

RLs elevated for diesel and gas/BTEX due to high levels of target compounds. Sample run dilute.

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

GERAGHTY & MILLER, INC.

SAMPLE ID: OW-2
 AEN LAB NO: 9706345-02
 AEN WORK ORDER: 9706345
 CLIENT PROJ. ID: RC0019.010

DATE SAMPLED: 06/24/97
 DATE RECEIVED: 06/24/97
 REPORT DATE: 07/15/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	300 *		5 ug/L	07/08/97
Toluene	108-88-3	15 *		5 ug/L	07/08/97
Ethylbenzene	100-41-4	110 *		5 ug/L	07/08/97
Xylenes, Total	1330-20-7	30 *		20 ug/L	07/08/97
Purgeable HCs as Gasoline	5030/GCFID	4.4 *		0.5 mg/L	07/08/97
Methyl t-Butyl Ether	1634-04-4	ND		50 ug/L	07/08/97
#Extraction for TPH	EPA 3510	-		Extrn Date	07/01/97
TPH as Diesel	GC-FID	10 *		0.2 mg/L	07/03/97
#Anion Sample Prep.		-		Prep date	06/25/97
Nitrate-Nitrogen	EPA 300	ND		0.1 mg/L	06/25/97
Sulfate	EPA 300	3.5 *		0.5 mg/L	06/25/97

RLs elevated for diesel and gas/BTEX due to high levels of target compounds. Sample run dilute.

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

GERAGHTY & MILLER, INC.

SAMPLE ID: MW-7
 AEN LAB NO: 9706345-03
 AEN WORK ORDER: 9706345
 CLIENT PROJ. ID: RC0019.010

DATE SAMPLED: 06/24/97
 DATE RECEIVED: 06/24/97
 REPORT DATE: 07/15/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	130 *	5 ug/L		07/08/97
Toluene	108-88-3	75 *	5 ug/L		07/08/97
Ethylbenzene	100-41-4	37 *	5 ug/L		07/08/97
Xylenes, Total	1330-20-7	100 *	20 ug/L		07/08/97
Purgeable HCs as Gasoline	5030/GCFID	8.5 *	0.5 mg/L		07/08/97
Methyl t-Butyl Ether	1634-04-4	ND	50 ug/L		07/08/97
#Extraction for TPH	EPA 3510	-		Extrn Date	07/01/97
TPH as Diesel	GC-FID	350 *	2 mg/L		07/03/97

RLs elevated for diesel and gas/BTEX due to high levels of target compounds. Sample run dilute.

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

GERAGHTY & MILLER, INC.

SAMPLE ID: TB
AEN LAB NO: 9706345-04
AEN WORK ORDER: 9706345
CLIENT PROJ. ID: RC0019.010

DATE SAMPLED: 06/24/97
DATE RECEIVED: 06/24/97
REPORT DATE: 07/15/97

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	07/08/97
Toluene	108-88-3	ND	0.5	ug/L	07/08/97
Ethylbenzene	100-41-4	ND	0.5	ug/L	07/08/97
Xylenes, Total	1330-20-7	ND	2	ug/L	07/08/97
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	07/08/97
Methyl t-Butyl Ether	1634-04-4	ND	5	ug/L	07/08/97

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

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9706345

CLIENT PROJECT ID: RC0019.010

Quality Control Summary

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

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 3510 GCFID

AEN JOB NO: 9706345
 DATE EXTRACTED: 07/01/97
 INSTRUMENT: C
 MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery n-Pentacosane
07/03/97	OW-1	01	D
07/03/97	OW-2	02	72
07/03/97	MW-7	03	D
QC Limits:			65-125

D: Surrogate diluted out.

DATE EXTRACTED: 07/01/97
 DATE ANALYZED: 07/02/97
 SAMPLE SPIKED: LCS
 INSTRUMENT: C

Laboratory Control Sample Recovery

Analyte	Spike Added (mg/L)	Percent Recovery	RPD	QC Limits	
				Percent Recovery	RPD
Diesel	2.00	96	3	60-110	15

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

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9706345
 INSTRUMENT: E
 MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
07/08/97	OW-1	01	104
07/08/97	OW-2	02	105
07/08/97	MW-7	03	104
07/08/97	TB-LB	04	104
QC Limits:			70-130

DATE ANALYZED: 07/07/97
 SAMPLE SPIKED: LCS
 INSTRUMENT: E

Laboratory Control Sample Recovery

Analyte	Spike Added (ug/L)	Percent Recovery	RPD	QC Limits	
				Percent Recovery	RPD
Benzene	18.5	114	<1	85-120	20
Toluene	64.7	106	3	85-120	20
Hydrocarbon as Gasoline	500	113	<1	85-120	20

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

QUALITY CONTROL DATA

AEN JOB NO: 9706345
SAMPLE SPIKED: DI WATER
DATE(S) ANALYZED: 06/25/97
MATRIX: WATER

Method Blank and Spike Recovery Summary

Analyte	Inst. / Method	Blank Result (mg/L)	Spike Added (mg/L)	Percent Recovery	RPD	QC Limits	
						Percent Recovery	RPD
Nitrate-N	DIONEX/300	ND	2.0	104	1	80-120	15
Sulfate	DIONEX/300	ND	10.0	92	2	80-120	15

*** END OF REPORT ***



ETS

1343 Redwood Way
Petaluma, CA 94954

(707) 795-9605/FAX 795-9384

Environmental
Technical
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Testing & Monitoring
Analytical Labs
Technical Support

Serving people and the environment so that both benefit.

WATER ANALYSIS REPORT

To: Bill Svoboda

American Environmental Network
3440 Vincent Road
Pleasant Hill, CA 94523

Date: July 2, 1997

Lab #: 97-06-0365 & 97-06-0366

Received: June 26, 1997

Tech(s): C. Lawrence

Lab Supervisor: D. Jacobson

Lab Director: G.S. Conrad, Ph.D.

Sample ID(s): OW-1 & OW-2

Sample of: monitor well ground
water

Site Location: Northern California

RESULTS

SAMPLE ID	REDOX	FERROUS IRON
OW-1	+305.1 mV	0.19 mg/l
OW-2	+308.9 mV	0.05 mg/l

COMMENTS

Both parameters were at somewhat typical levels despite the fact that these samples had considerable hydrocarbon contamination. Both redox values were only mildly reduced (i.e., only a little less than +400 mV), with both being close to +300 mV. And both ferrous iron levels were fairly low, although they were definitely above minimal or nil levels, especially OW-1 which had almost four times more ferrous iron than OW-2.

NOTES:

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

Reporting Information:

1. Client: GERACHTY, MILLER
 Address: 1050 MARINA WAY S214
RICHMOND, CA 94804
 Contact: PAUL HEHN
 Alt. Contact: TERESA PAYNE

American Environmental Network

3440 Vincent Road, Pleasant Hill, CA 94523
 Phone (510) 930-9090
 FAX (510) 930-0256

AEN

REQUEST FOR ANALYSIS / CHAIN OF CUSTODY

Lab Job Number: RC0019.010 9706345
 Lab Destination: AEN
 Date Samples Shipped: 6-24-97
 Lab Contact: _____
 Date Results Required: 10 DAY TURNAROUND
 Date Report Required: _____
 Client Phone No.: 510-233-3200
 Client FAX No.: 510-233-3204

Address Report To:

2. SAME AS ABOVE

Send Invoice To:

3. SAME AS #1

Send Report To: 1 or 2 (Circle one)

Client P.O. No.: _____ Client Project I.D. No.: RC0019.010

Sample Team Member (s) _____

Lab Number	Client Sample Identification	Air Volume	Date/Time Collected	Sample Type*	Pres.	No. of Cont.	Type of Cont.	Comments / Hazards
01A-I	OW-1		6-24-97			9		Note: ONLY 1 VOA PROVIDED FOR EACH ANALYSIS. PLEASE CALL AENS IF A PROBLEM.
02A-I	OW-2		AS LABELED			9		
03A-E	MW-7					5		
04AB	TR-LB					2		

BTEX/TPH-B
 TPH-D
 REDOX/Freezing Point
 NITRATE/Sulfate
 TOTAL Hydrocarbons
 Hydrocarbons
 Specific Gravity
 ANALYSIS

SEE NOTE

Relinquished by: <u>Louane Gunther</u>	DATE: <u>6/24/97</u>	TIME: <u>5:07</u>	Received by: <u>Rich Gilmore</u>	DATE: <u>6-24-97</u>	TIME: <u>17:07</u>
Relinquished by: <u>Rich Gilmore</u>	DATE: <u>6-24-97</u>	TIME: <u>18:00</u>	Received by: <u>Louane Gunther</u>	DATE: <u>6/24/97</u>	TIME: <u>18:20</u>
Relinquished by: _____	DATE: _____	TIME: _____	Received by: _____	DATE: _____	TIME: _____
Method of Shipment			Lab Comments		

*Sample type (Specify): 1) 37mm 0.8 µm MCEF 2) 25mm 0.8 µm MCEF 3) 25mm 0.4 µm polycarb. filter
 4) PVC filter, diam. _____ pore size _____ 5) Charcoal tube 6) Silica gel tube 7) Water 8) Soil 9) Bulk Sample
 Other _____ 1) Other _____