SITE ASSESSMENT REPORT: ADDITIONAL SOIL AND GROUNDWATER ASSESSMENT FORMER PENSKE TRUCK LEASING CO. FACILITY 725 JULIE ANN WAY OAKLAND, CALIFORNIA

Sep 29, 1994

September 29, 1994

Prepared by

Geraghty & Miller, Inc.
1050 Marina Way South
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GERAGHTY
& MILLER, INC.
Environmental Services

A **Heidemij** company

November 3, 1994
Project No. RC0019.007

Mr. Barney Chan
Division of Hazardous Materials
Department of Environmental Health
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Room 250
Alameda, CA 94502

SUBJECT: Submittal of Site Assessment Report: Additional Soil and Groundwater Assessment
Former Penske Truck Leasing Co. Facility
725 Julie Ann Way, Oakland, California.

Dear Mr. Chan:

On behalf of Penske Truck Leasing Co. (Penske), and at the request of Penske, Geraghty & Miller, Inc. is submitting for your review, the site assessment report for additional soil and groundwater assessment for the above referenced facility. I have also included a letter from Penske authorizing the distribution of the report.

The additional site assessment report details the results of the installation and sampling of additional downgradient groundwater monitor wells at this facility to assist in the determination of the vertical and lateral extent of any possible petroleum hydrocarbons in the soil and groundwater. After you have had a chance to review this report, I would like to discuss with you the next steps in the remediation management plan for this facility. The next steps may include the completion of an appropriate risk assessment to determine the cleanup goals for soils beneath the facility, and whether or not a fate-and-transport model will be necessary for the facility.

If you have any questions concerning this report, please do not hesitate to call.

Sincerely,
GERAGHTY & MILLER, INC.

Paul V. Hehn
Staff Geologist/Project Manager

cc: Mr. Richard G. Saut, Penske Truck Leasing Co.

SITE ASSESSMENT REPORT
FORMER PENSKE TRUCK LEASING CO. FACILITY
725 JULIE ANN WAY
OAKLAND, CALIFORNIA

September 29, 1994

Geraghty & Miller, Inc. is submitting this report to Penske Truck Leasing Company for work performed at the above-referenced facility. The report was prepared in conformance with Geraghty & Miller's strict quality assurance/quality control procedures to ensure that the report meets industry standards in terms of the methods used and the information presented. If you have any questions or comments concerning this report, please contact one of the individuals listed below.

Respectfully submitted,

GERAGHTY & MILLER, INC.

Paul V. Hehn
Project Geologist/Project Manager

Jeffrey W. Hawkins, R.G.
Senior Geologist

Gary W. Keyes
Principal Engineer/Project Officer
Richmond, California Office Manager

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ATTACHMENTS

SITE ASSESSMENT REPORT
FORMER PENSKE TRUCK LEASING CO. FACILITY
725 JULIE ANN WAY
OAKLAND, CALIFORNIA

1.0 INTRODUCTION

This report presents the results of the additional soil and groundwater assessment activities performed by Geraghty & Miller, Inc. (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 additional assessment activities was to better define the extent of petroleum hydrocarbons in the soil and shallow groundwater hydraulically downgradient (west) and crossgradient (north) from the former location of the underground storage tanks and existing groundwater monitor wells previously installed by Geraghty & Miller (Geraghty & Miller, November 15, 1990, and March 15, 1993) (Figure 2). The scope of work for this project was presented in a Geraghty & Miller document dated April 22, 1994.

An additional objective of the activities was to assess whether the site would be appropriate for use of the non-attainment zone remedial approach proposed by Geraghty & Miller on behalf of Penske to the California Regional Water Quality Control Board – San Francisco Bay Region (RWQCB). A review of this approach was presented in a letter from Geraghty & Miller on behalf of Penske to Barney Chan of the Alameda County Health Care Services Agency (ACHCSA) dated April 25, 1994 (Appendix A). Part of this non-attainment zone approach encompasses evaluating whether groundwater monitor wells downgradient from the former tank excavation could attain and maintain the RWQCB's "California's Enclosed Bays and Estuaries Plan" criterion of 21 parts per billion (ppb) (equivalent to 21 micrograms per liter [µg/L]) of benzene in groundwater. There are no established criteria for total petroleum hydrocarbons (TPH) as gasoline or diesel in the RWQCB Plan. The RWQCB established the 21 ppb benzene level as the highest acceptable level of benzene in groundwater which will still be protective of downgradient receptors in an estuarine environment, as is found in the vicinity of the former Penske facility.

If the current additional soil and groundwater assessment were to establish that the 21 ppb benzene level is applicable to the downgradient wells at this former Penske facility, the non-attainment zone approach could proceed to the next steps outlined in the work plan and remedial approach letter, and agreed to by the ACHCSA and the RWQCB. At this facility, the

next steps include the use of fate-and-transport modeling and a human-health-based risk assessment. The fate-and-transport modeling will be used to determine what concentrations, if any, of petroleum hydrocarbons could reach the estuarine environment. The risk assessment will be used to determine acceptable cleanup goals for soil and groundwater beneath the facility that are protective of future uses of the property. The combination of the modeling and the risk assessment would then establish what, if any, additional remediation activities will be needed at the facility to reach and maintain these site-specific cleanup goals and be protective of groundwater and the downgradient estuarine environment.

2.0 BACKGROUND

For background information on this former Penske facility, and the results of the previous site-assessment activities, refer to Geraghty & Miller's report, "Results of Initial Soil and Ground-Water Assessment Activities," dated November 15, 1990, and "Site Assessment Report: Additional Soil and Groundwater Assessment," dated March 15, 1993.

3.0 SITE ASSESSMENT ACTIVITIES

3.1 EXPLORATORY DRILLING AND MONITORING WELL INSTALLATION

Prior to drilling, a request for a monitor-well construction permit was submitted to Alameda County on July 18, 1994. A Ground Water Protection Ordinance Permit (#994423) was subsequently issued by the Alameda County Flood Control and Water Conservation District on July 25, 1994. A copy of the permit is included in Appendix B.

Four exploratory soil borings (MW-6, MW-7, MW-8, and BH-4) were drilled at the former Penske facility on July 26 and 27, 1994. Exploratory boring locations are presented in Figure 2. The borings were drilled by West Hazmat Drilling Corp. of Hayward, California, using a CME-75 truck-mounted auger drilling rig and a limited access rig. The soil borings were drilled using 10-inch diameter hollow-stem augers to the final borehole size and depth. All drilling equipment that entered the borehole was steam cleaned prior to drilling each boring.

During drilling, soil samples were collected at approximately 5-foot depth intervals from the continuous core by the Geraghty & Miller geologist. Soil samples were collected from the continuously cored soil in visually identified areas of potential contamination and at lithological changes above the groundwater table. A brass liner was filled with soil, sealed with Teflon™ tape and plastic end caps, placed on ice, and transported, along with appropriate chain-of-custody documentation, to Superior Precision Analytical, Inc. (Superior), a State of California Department of Health Services certified laboratory in San Francisco and Martinez, California. The soil samples were analyzed for TPH as gasoline and diesel (USEPA Method 8015, modified) and benzene, toluene, ethylbenzene, and xylenes (BTEX) (USEPA Method 8020).

The soil from the continuous core was described according to the Unified Soil Classification System by a Geraghty & Miller geologist. The exploratory boring logs are included in Appendix C. Combustible vapor measurements were performed on the soil from the core by placing the soil in a Ziplock™ bag and allowing approximately 20 minutes for any vapors present in the soil to equilibrate in the headspace, then inserting the tip of a Gastech™ Model 1314 explosimeter, calibrated to isobutylene, into the headspace of the bag.

The exploratory borings were terminated at approximately 10 to 15 feet below the zone in which water was first encountered during drilling. The total depths for Borings MW-6, MW-7, and MW-8 were 29.3, 30.0, and 31.5 feet below the ground surface (bgs), respectively. Soil Boring BH-4 was completed to a depth of 30.0 feet bgs.

Upon completion of drilling, three of the four borings were completed as groundwater monitor wells by installing 4-inch diameter, flush threaded, Schedule 40 PVC casing. Slotted well screen (0.010-inch manufactured slots) was installed through the hollow-stem augers. The annular space between the well screen and borehole was backfilled using #2/12 sand to approximately 1 foot above the top of the well screen. Two to three feet 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 are included on the boring logs presented in Appendix C.

After Boring BH-4 was completed, the drilling rods were pulled back to allow groundwater to enter the borehole. A groundwater sample was collected by installing a temporary 2-inch diameter, Schedule 40 PVC screened casing that had been steam cleaned. Groundwater samples were collected from the temporary well using a new disposable bailer. The temporary casing and screen were then removed from Boring BH-4 and the boring was backfilled with bentonite/cement grout.

Upon completion, the top-of-casing elevation and location for each well were surveyed relative to the City of Oakland control datum by a State-licensed surveyor from Field Designs Registered Land Surveyors of Richmond, California. The City of Oakland datum is reported to be 3.00 feet above mean sea level. A copy of the survey map is included in Appendix D.

The soil generated during the drilling activities was stored in drums. Four discrete soil samples were collected from different random drums of stockpiled soil. The discrete soil samples were collected by advancing a clean, brass sample liner approximately 6 inches into the stockpiled soil. The discrete soil samples were placed on ice and transported to Superior, where they were composited into one sample for analysis. The composite soil sample was analyzed for TPH as gasoline and diesel (USEPA Method 8015, modified), BTEX (USEPA Method 8020), and total organic lead by the DHS LUFT method. The composited soil sample was also tested for reactivity, corrosivity, and ignitability, as required for soil-disposal

purposes. The water generated during the steam cleaning of the drilling equipment was placed in drums. The soil and water were retained onsite for proper handling and disposal by Penske.

3.2 GROUNDWATER SAMPLING

Water samples were collected on July 27, 1994, from Soil Boring BH-4 and on August 12, 1994, from Monitor Wells MW-6, MW-7, and MW-8. 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. Liquid-phase hydrocarbons were not observed in any of the wells.

Each permanent well was developed by purging approximately four casing volumes of water using a 1-inch surface diaphragm pump. The temporary well set in Boring BH-4 was not purged prior to sampling. The purged water was not monitored for temperature, pH, or specific conductance due to an equipment failure in the field. A summary of the field data is presented in Table 1. The purge water was retained in 55-gallon drums onsite for proper handling and disposal by Penske.

Following development, water samples were collected, using a new polyethylene disposable bailer for each well. The water samples were placed in 40-milliliter (mL) vials and 1,000-mL amber glass bottles, placed on ice, and transported, along with chain-of-custody documentation, to Superior. The water samples were analyzed for TPH as gasoline and diesel (USEPA Method 8015, modified) and BTEX (USEPA Method 8020). The water samples from Monitor Wells MW-6 through MW-8 were also analyzed for total dissolved solids (USEPA Method 160.1).

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.

4.0 REGIONAL HYDROGEOLOGIC SETTING

The regional hydrogeology for this site was previously presented in Geraghty & Miller's report to Penske on the initial site assessment dated November 15, 1990.

5.0 RESULTS OF ASSESSMENT ACTIVITIES

5.1 HYDROGEOLOGIC CONDITIONS

Based on the results of the exploratory drilling activities conducted during the assessment activities, and as presented in Cross Sections A-A' and B-B' (Figures 3 and 4), the project site is underlain by primarily clay, sand, silty sand, clayey sand, and sandy clay to a depth of approximately 31.5 feet bgs, the total depth explored (Boring MW-8). Depth to water measured on August 12, 1994, ranged from 6.16 feet (Well MW-7) to 6.56 feet (Well MW-6) bgs. The historic direction of regional shallow groundwater flow is toward the west/northwest.

5.2 SOIL ANALYTICAL RESULTS

A summary of the soil analytical results is presented in Table 2. Copies of the certified laboratory analytical reports and chain-of-custody documentation are included in Appendix E.

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).

Results for toluene, ethylbenzene, and xylenes are presented in Table 2.

5.3 GROUNDWATER ANALYTICAL RESULTS

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

TPH as gasoline was detected in the water samples collected from Monitor Wells MW-7 (160 micrograms per liter [µg/L]) and MW-8 (170 µg/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 µg/L), MW-8 (850 µg/L), and Boring BH-4 (370 µg/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 µg/L), MW-8 (2.7 µg/L), and Boring BH-4 (2.4 µg/L). Concentrations of toluene and xylenes were detected in the water samples collected from Monitor Wells MW-7 and MW-8 and Boring BH-4, as presented in Table 3. The trip blank was analyzed for TPH as gasoline and BTEX only, and no detectable concentrations of these analytes were detected.

6.0 DISCUSSION

The soil samples containing the highest concentrations of TPH as diesel were collected from Borings MW-7 (5,500 mg/kg at 15 feet bgs) and BH-4 (1,300 mg/kg at 10 feet bgs). The highest concentration of TPH as gasoline was detected in Boring MW-7 (31 mg/kg at 15 feet bgs). The highest concentration of benzene was detected in Boring MW-8 (0.039 mg/kg at 5.5 feet bgs).

Varying concentrations of petroleum hydrocarbons were detected in groundwater samples collected from three of the groundwater monitor wells. The groundwater sample collected from Monitor Well MW-6 did not contain any detectable concentrations of petroleum hydrocarbons. The highest concentration of TPH as gasoline was reported in Monitor Well MW-8 (170 µg/L). The highest concentration of TPH as diesel was also reported in Monitor Well MW-8 (850 µg/L). The highest concentrations of benzene were detected in Monitor Wells MW-7 and MW-8 (both at 2.7 µg/L).

Based on the soil and groundwater sample results discussed above, the extent of petroleum hydrocarbons has been defined to the north, as indicated by the sample results from Monitor Well MW-6, in which there were no concentrations reported above the analytical method limit in soil or groundwater samples. The full extent of petroleum hydrocarbons has not been defined to the west; however, the concentrations of TPH as diesel detected in the groundwater samples from Monitor Wells MW-7 and MW-8 are substantially lower than results detected in recent quarterly groundwater samples collected from Monitor Well MW-1 (TPH as diesel at 22,000 µg/L on August 12, 1994) (Geraghty & Miller, September 28, 1994). The extent has also not been defined to the south or east, but these upgradient groundwater directions were not expressed as areas of concern during discussions with the ACHCSA.

Concentrations of benzene reported in Monitor Wells MW-7 and MW-8 (2.7 µg/L) are much lower than the 21 µg/L (ppb) limit established by the RWQCB to protect the nearby estuary waters. The ACHCSA was also in concurrence with this limit as discussed in the work plan and remedial approach letter included in Appendix A. Benzene was not detected in the groundwater sample collected from Monitor Well MW-6.

In conclusion, 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 are lower than the limit established by the ACHCSA and the RWQCB to be protective of the downgradient receptors in the estuarine environment, the next steps in the non-attainment zone process can proceed. As discussed and agreed to by the ACHCSA and the RWQCB in the work plan and remedial approach letter, the next steps in the non-attainment zone remedial approach are as follows:

1) Complete an appropriate human-health-based risk assessment to determine appropriate soil cleanup criteria in the area of the former underground storage tanks beneath the site which will be protective of the anticipated future uses of the property.

2) Complete, if necessary, groundwater fate-and-transport modeling to determine what, if any, petroleum hydrocarbons (as benzene) will reach the estuarine environment. If the groundwater fate-and-transport modeling indicates that petroleum hydrocarbons (as benzene) will reach the estuarine aquatic receptors in concentrations exceeding those agreed upon by both the RWQCB and the ACHCSA, a back calculation will be performed to determine what the site-specific groundwater cleanup goal should be so that the aquatic criteria are not exceeded.

3) Continue the current program of quarterly groundwater modeling at the site, adding the three newly completed wells (MW-6 through MW-8) to the monitoring program. As stated by Geraghty & Miller in our letter to the ACHCSA dated April 25, 1994 (Appendix A), and agreed to by the ACHCSA and the RWQCB, Monitor Wells MW-6 and MW-8 will be established as non-attainment zone confirmation wells and Monitor Wells MW-3 and MW-7 will be established as non-attainment zone guard wells. If, during any two quarterly groundwater monitoring events, the concentrations in the two guard wells MW-3 and MW-7 exceed the 21 µg/L (ppb) limit for benzene established by the RWQCB and the ACHCSA, Penske is prepared to implement additional remedial measures (a pump-and-treat system or another, more stringent, remedial measure) to prevent migration of petroleum hydrocarbons (as benzene) to downgradient Monitor Wells MW-6 and MW-8, which will be used as confirmation wells. The confirmation wells are part of the non-attainment zone remedial strategy, since they confirm that the established groundwater value for benzene (21 µg/L [ppb]) is being maintained and that unacceptable levels of benzene are not reaching the downgradient receptors of the estuarine environment.

7.0 REFERENCES

Geraghty & Miller, Inc. November 15, 1990. Results of Initial Soil and Ground-Water Assessment Activities, Former Penske Truck Leasing Company Facility, 725 Julie Ann Way, Oakland, California.

———. March 15, 1993. Results of Initial Soil and Ground-Water Assessment Activities, Former Penske Truck Leasing Co. Facility, 725 Julie Ann Way, Oakland, California.

———. January 7, 1994. Letter to Barney Chan of the Alameda County Health Care Services Agency on Conceptual Remedial Approach, Former Penske Truck Leasing Company Facility, 725 Julie Ann Way, Oakland, California.

———. April 22, 1994. Work Plan and Budget Estimate for Additional Soil and Groundwater Assessment, Former Penske Truck Leasing Facility, 725 Julie Ann Way, Oakland, California.

———. April 25, 1994. Letter to Barney Chan of the Alameda County Health Care Services Agency on Work Plan and Remedial Approach, Former Penske Truck Leasing Company Facility, 725 Julie Ann Way, Oakland, California.

———. September 28, 1994. Results of Quarterly Groundwater Monitoring, August 1994, Former Penske Truck Leasing Company Facility, 725 Julie Ann Way, Oakland, California.

Table 1: Summary of Field Sampling, Depth-to-Water, and Casing Elevation Data
Former Penske Truck Leasing Co. 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			Casing Diameter (inches)
								pH	Temp. (°F)	SC (µS/cm)	
MW-6	12-Aug-94	6.56	5.37	-1.19	29.3	47.0	41 (c)	NM	71.2	12,970	4
MW-7	12-Aug-94	6.16	4.84	-1.32	30.0	58.0	60	6.65	73.5	7,920	4
MW-8	12-Aug-94	6.46	5.08	-1.38	31.5	49.0	55	5.22	NM	11,400	4

(a) Measured from top of PVC casing.
(b) Based on four casing volumes.
(c) Well went dry during purging.

SC Specific Conductance
(µS/cm) Microsiemens per centimeter
NM Not measured - meter not operating.

All elevations are measured relative to a site benchmark (elevation 6.62') based on the City of Oakland datum.

Table 2: Soil Sample Analytical Results
Former Penske Truck Leasing Co. Facility
725 Julie Ann Way, Oakland, California.

Boring	Date	Depth (feet)	TPH Gasoline (a) (mg/kg)	TPH Diesel (a) (mg/kg)	Benzene (b) (mg/kg)	Toluene (b) (mg/kg)	Ethyl-benzene (b) (mg/kg)	Xylenes (b) (mg/kg)
BH-4	27-Jul-94	5	5	ND(<10)	0.008	0.100	ND<(0.005)	0.160
		10	5	1,300	ND<(0.005)	0.018	0.013	0.079
		15	11	1,200	0.009	0.098	0.037	0.310
MW-6	27-Jul-94	7	7	ND(<10)	ND<(0.005)	0.030	0.006	0.067
		11	2	ND(<10)	ND<(0.005)	0.013	ND<(0.005)	0.036
		13	ND(<1)	ND(<10)	ND<(0.005)	0.017	ND<(0.005)	0.032
MW-7	27-Jul-94	5	ND (<1)	90	ND<(0.005)	0.016	0.006	0.030
		10	ND (<1)	3,300	0.011	0.017	0.005	0.031
		15	31	5,500	ND(<0.025)	0.160	0.200	0.650
MW-8	26-Jul-94	5.5	18	50	0.039	0.230	0.300	0.850
		10.5	5	41	ND<(0.005)	0.011	ND<(0.005)	0.200
		15.5	1	ND(<10)	ND<(0.005)	0.013	0.005	0.037
Composite Soil Sample:								
SP-1 A-D			6	280	0.057	0.10	0.070	0.210

Total Organic Lead:	ND (<2 mg/kg)	(analyzed by DHS Method - Luft Manual)
pH:	8.9	(analyzed by USEPA Method 9041)
Flashpoint:	>100 degrees C	(analyzed by USEPA Method SW-846 Method 1010)
Reactive Cyanide:	ND (<1 mg/kg)	(analyzed by USEPA Method 9010)
Reactive Sulfide:	ND (<10 mg/kg)	(analyzed by USEPA Method SW 7.3.4.2)

(a) Analyzed by USEPA Method 8015, modified.
(b) Analyzed by USEPA Method 8020.
mg/kg Milligrams per kilogram
( ) Detection limit
ND Not detected

Analysis by Superior Precision Analytical, Inc., San Francisco and Martinez, California.

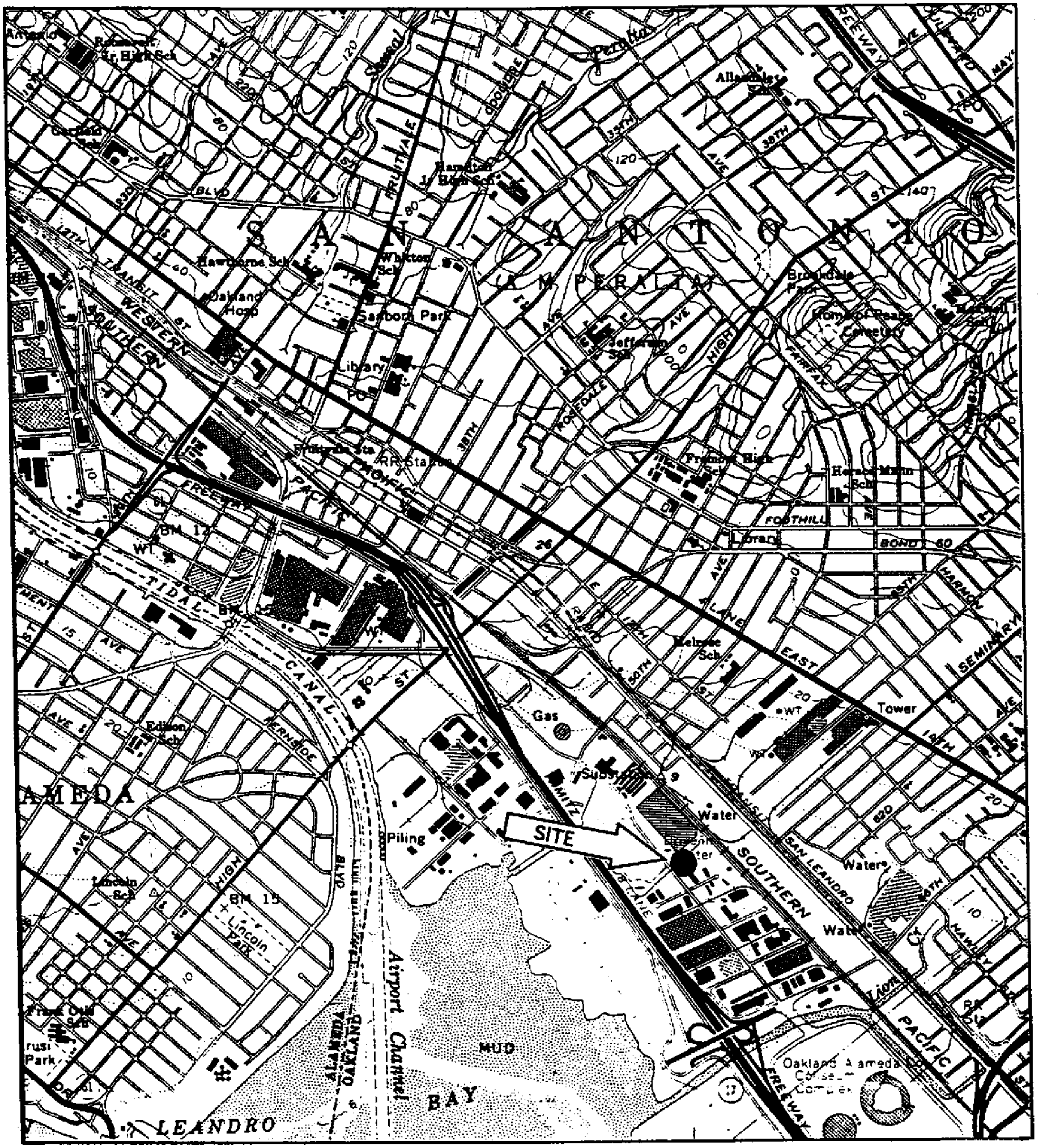
Table 3: Groundwater Analytical Results
Former Penske Truck Leasing Co. Facility
725 Julie Ann Way, Oakland, California.

Well	Date	TPH Gasoline (a) (µg/L)	TPH Diesel (a) (µg/L)	Benzene (b) (µg/L)	Toluene (b) (µg/L)	Ethyl-benzene (b) (µg/L)	Xylenes (b) (µg/L)	TDS (c)
BH-4	27-Jul-94	ND<(50)	370	2.4	0.6	ND(<0.5)	0.7	NA
MW-6	17-Aug-94	ND<(50)	ND<(50)	ND<(0.5)	ND<(0.5)	ND<(0.5)	ND<(0.5)	560
MW-7	17-Aug-94	160	620	2.7	1.3	ND<(0.5)	2.1	1,100
MW-8	17-Aug-94	170	850	2.7	0.5	ND<(0.5)	2.0	5,500
TB	27-Jul-94	ND<(50)	NA	ND<(0.5)	ND<(0.5)	ND<(0.5)	ND<(0.5)	NA

(a) Analyzed by USEPA Method 8015, modified.
(b) Analyzed by USEPA Method 8020.
(c) Analyzed by USEPA Method 160.1.

µg/L Micrograms per liter
TDS Total dissolved solids
( ) Reported detection limit
ND Not detected
NA Not analyzed

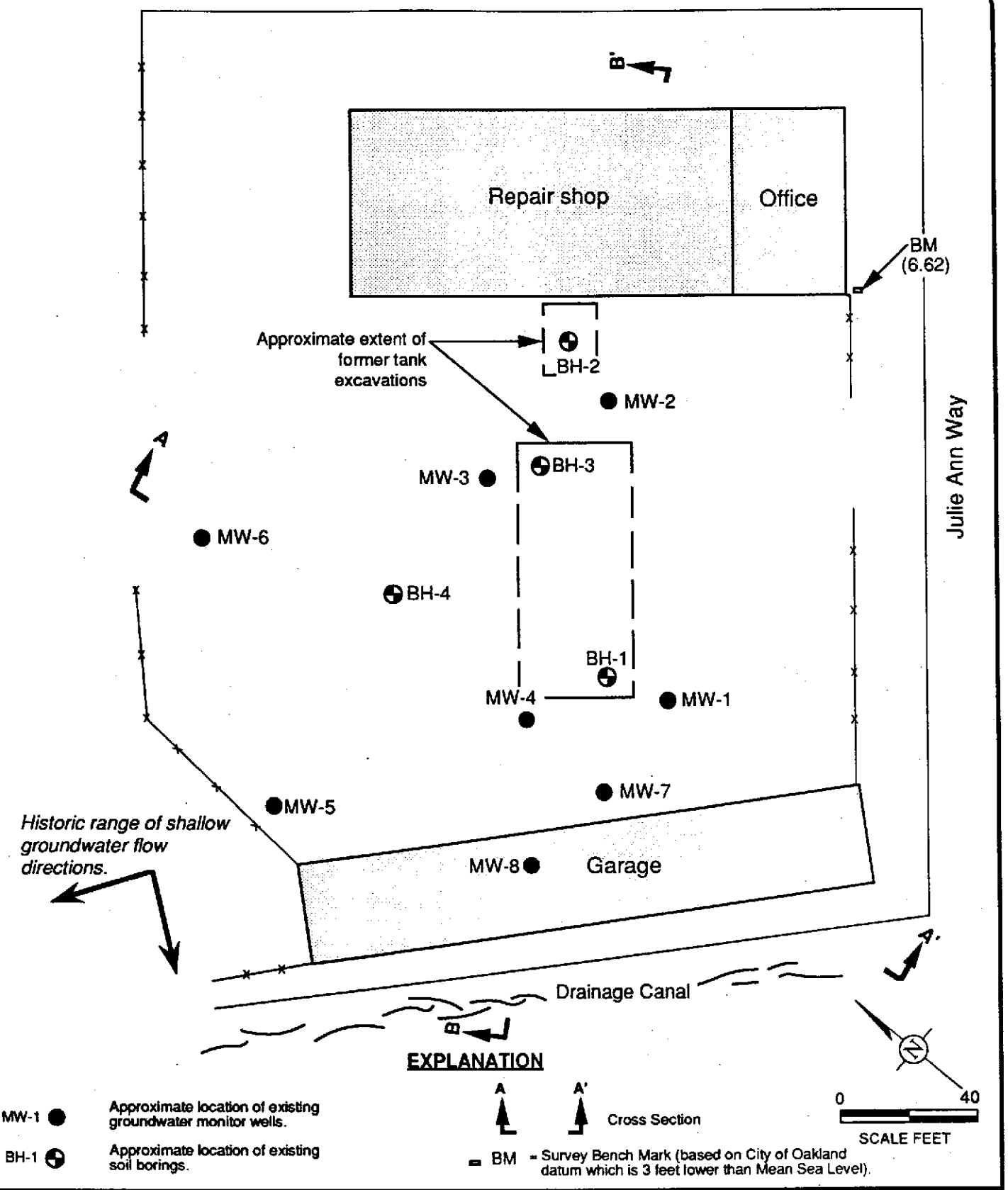
Analysis by Superior Precision Analytical, Inc., San Francisco and Martinez, California.



N

Reference: USGS Oakland East, CA 7 1/2 Min. Quad
Scale: 1: 24,000

GERAGHTY & MILLER, INC. *Environmental Services*	**SITE LOCATION MAP** Former Penske Truck Leasing Co. Facility 725 Julie Ann Way Oakland, California	FIGURE 1
Proj. No. RC0019.000		

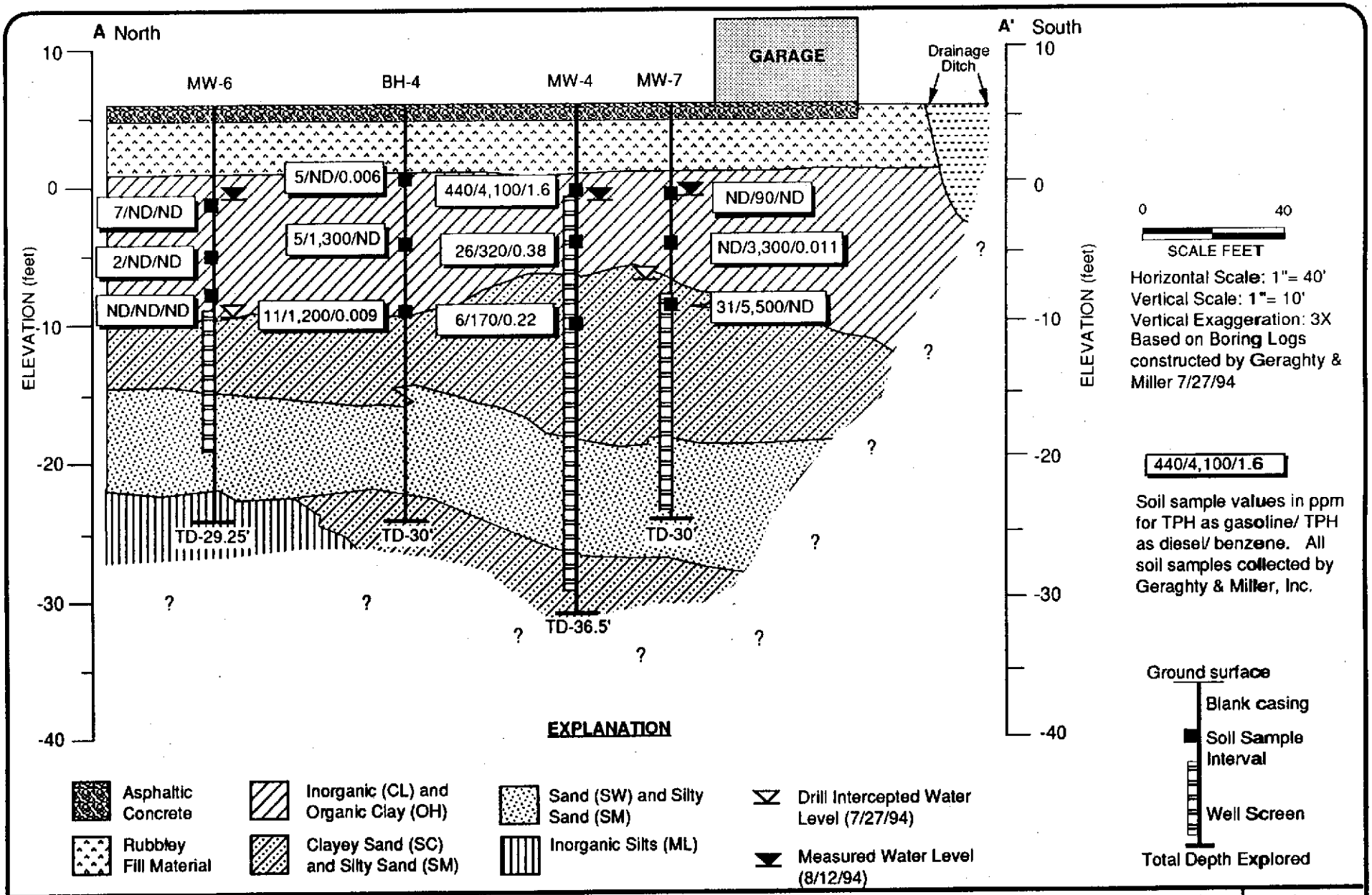


GERAGHTY & MILLER, INC.
Environmental Services

Project No. RC0019.007

MONITOR WELL AND SOIL BORING LOCATIONS
Former Penske Truck Leasing Co.
725 Julie Ann Way
Oakland, California

FIGURE
2

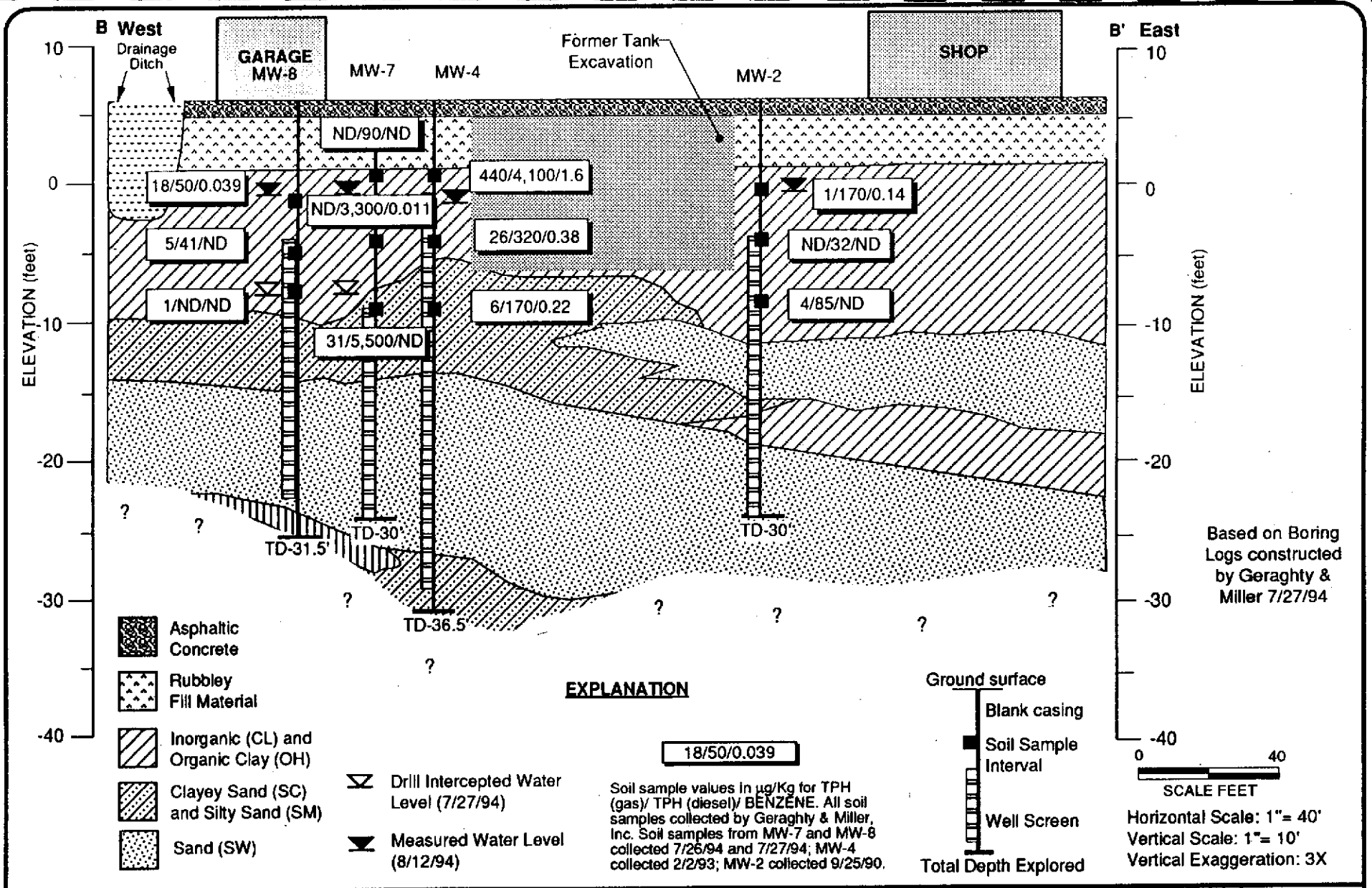


GERAGHTY & MILLER, INC.
Environmental Services

Project No. RC0019.000

CROSS SECTION A - A'
FORMER PENSKE TRUCK LEASING CO. FACILITY
725 Julie Ann Way
Oakland, California

FIGURE
3



GERAGHTY & MILLER, INC.
Environmental Services

Project No. RC0019.000

CROSS SECTION B - B'

FORMER PENSKE TRUCK LEASING CO. FACILITY
725 Julie Ann Way
Oakland, California

FIGURE
4

APPENDIX A

COPY OF LETTER FROM GERAGHTY & MILLER TO BARNEY CHAN, ALAMEDA COUNTY HEALTH CARE SERVICES AGENCY, DATED APRIL 25, 1994, ON WORK PLAN AND REMEDIAL APPROACH

GERAGHTY
& MILLER, INC.
Environmental Services

April 25, 1994
Project No. RC0019.007

Mr. Barney M. Chan
Hazardous Materials Specialist
Alameda County Health Care Services Agency
Department of Environmental Health
UST Local Oversight Program
80 Swan Way, Room 200
Oakland, CA 94621

SUBJECT: Work Plan and Remedial Approach
Former Penske Truck Leasing Co. Facility
725 Julie Ann Way, Oakland, California.

Dear Mr. Chan:

This letter accompanies a work plan for additional soil and groundwater assessment at the former Penske Truck Leasing Company (Penske) facility referenced above. This letter and the work plan have been prepared by Geraghty & Miller, Inc. (Geraghty & Miller) and is being submitted on behalf of Penske. The letter and the work plan are being submitted to you in response to your letter to Penske dated March 25, 1994. The objective of the work plan is to complete the additional site assessment and groundwater monitoring activities requested in your letter.

Your letter discussed your approval of the Geraghty & Miller-prepared remedial approach for the former Penske facility. As you will recall, the remedial approach incorporates the use of the California Regional Water Quality Control Board-San Francisco (RWQCB) Alternative Points of Compliance (APCs) concept to achieve the RWQCB's Basin Plan Water Quality objectives at monitoring wells located downgradient of the petroleum hydrocarbon plume instead of in the center of the plume. It should be noted that in response to comments from the State Water Resources Control Board (February 17, 1994), the RWQCB uses the terminology of "non-attainment zones" instead of alternative

points of compliance. Instead of "APC wells", this work plan will use the term "confirmation wells" to represent the points at which the achievement of the appropriate groundwater quality objectives are verified. The remedial approach will further utilize RWQCB Resolution 80-39, which in part states that, if groundwater at the site is shown to have total dissolved solids concentrations exceeding 3,000 milligrams per liter (mg/L), the municipal and domestic supply beneficial uses should not apply to the shallow groundwater and that the drinking water maximum contaminant levels (MCLs) would be too stringent a compliance criterion for the confirmation wells. If the MCLs do not apply, then alternative cleanup compliance criteria need to be established. Your letter proposes that one cleanup criterion be the one detailed in the RWQCB California's Enclosed Bays and Estuaries Plan, which cites a benzene level of 21 parts per billion (ppb) as the highest acceptable level of benzene in groundwater which will still be protective of downgradient receptors in this type of estuarine environment.

While this 21 ppb benzene level is initially an acceptable level for benzene in downgradient guard wells, the human health-based risk assessment may establish different acceptable cleanup goals for soil and groundwater beneath the site. These cleanup goals will be protective of the anticipated future uses of the property, of construction workers during any subsequent property development, and of the aquatic environment. The human health-based risk assessment to be completed by Geraghty & Miller will be used to establish these site-specific cleanup goals. The risk assessment will be submitted to the Alameda County Health Care Services Agency (ACHCS) for review by your staff toxicologist.

To further determine what site-specific cleanup goals should be established to be protective of the downgradient marine and estuarine environment, fate-and-transport modeling may also be performed. The need for modeling will be determined after receipt of groundwater analytical results from samples collected from the additional assessment groundwater monitor wells. If necessary, the fate-and-transport modeling will be performed to determine what concentrations, if any, of petroleum hydrocarbons will reach the estuarine environment. This fate-and-transport modeling will be performed using public domain models (either BIOPLUME II or a combination of MODFLOW and MT3D). It is anticipated that the modeling will show that the action levels established above to be protective of groundwater, human health, and the estuarine environment will not be exceeded at the perimeter confirmation wells.

Per your inquiry under Item 3 in your letter as to the type of remediation method to be used, if the concentrations within the guard wells upgradient from the confirmation wells should at any time exceed the acceptable limits established by the above methods, Penske is prepared to implement additional measures to prevent migration of petroleum hydrocarbons to the confirmation wells. The additional measures would likely involve the installation and operation of a pump-and-treat system similar to that presented in the schematic diagram in Figure 1. This pump-and-treat system would operate long enough to reduce the concentrations of petroleum hydrocarbons to below the allowable limits to be determined as described above. However, Penske would like to reserve the right to install a more stringent remediation system should such a system be more beneficial or cost-effective to the long-range remediation of the site. Any remediation system which might be planned for the site will be discussed with the ACHCS prior to installation.

Because the maximum concentration proposed by the ACHCS is more stringent than that proposed by Geraghty & Miller in our conceptual approach documents, we request a change in the guard wells proposed in Item #5 of your letter. Monitor Well MW-1 is currently acceptable as a guard well. However, Monitor Well MW-4 would not be appropriate as a guard well if the 21 ppb concentration level for benzene is used. The levels for benzene in Monitor Well MW-4 have in the past exceeded 21 ppb benzene. Thus, Geraghty & Miller recommends that one of the new monitor wells to be completed as part of the current work plan be completed as a guard well. We propose that Monitor Well MW-7, downgradient from existing Monitor Well MW-4 and between MW-4 and perimeter Confirmation/Monitor Well MW-8, be established as one of the guard wells (Figure 2). Monitor Well MW-7 will be installed at a distance such that it can function as a guard well to determine if the maximum acceptable concentrations of petroleum hydrocarbons in groundwater are exceeded. If so, this exceedance would trigger the additional remedial measures mentioned above to prevent migration of petroleum hydrocarbons to the confirmation wells.

As stated in your letter, the work plan dated April 22, 1994, for the installation of the additional groundwater monitor wells and soil borings is acceptable to Alameda County, and work can be scheduled for completion. Geraghty & Miller will contact you at least two working days prior to the scheduled drilling activity so that an observer from the ACHCS can arrange to be present.

If you have any questions concerning this letter or the presented work plan, please do not hesitate to contact the undersigned.

Sincerely,
GERAGHTY & MILLER, INC.

Paul V. Hehn
Staff Geologist/Project Manager

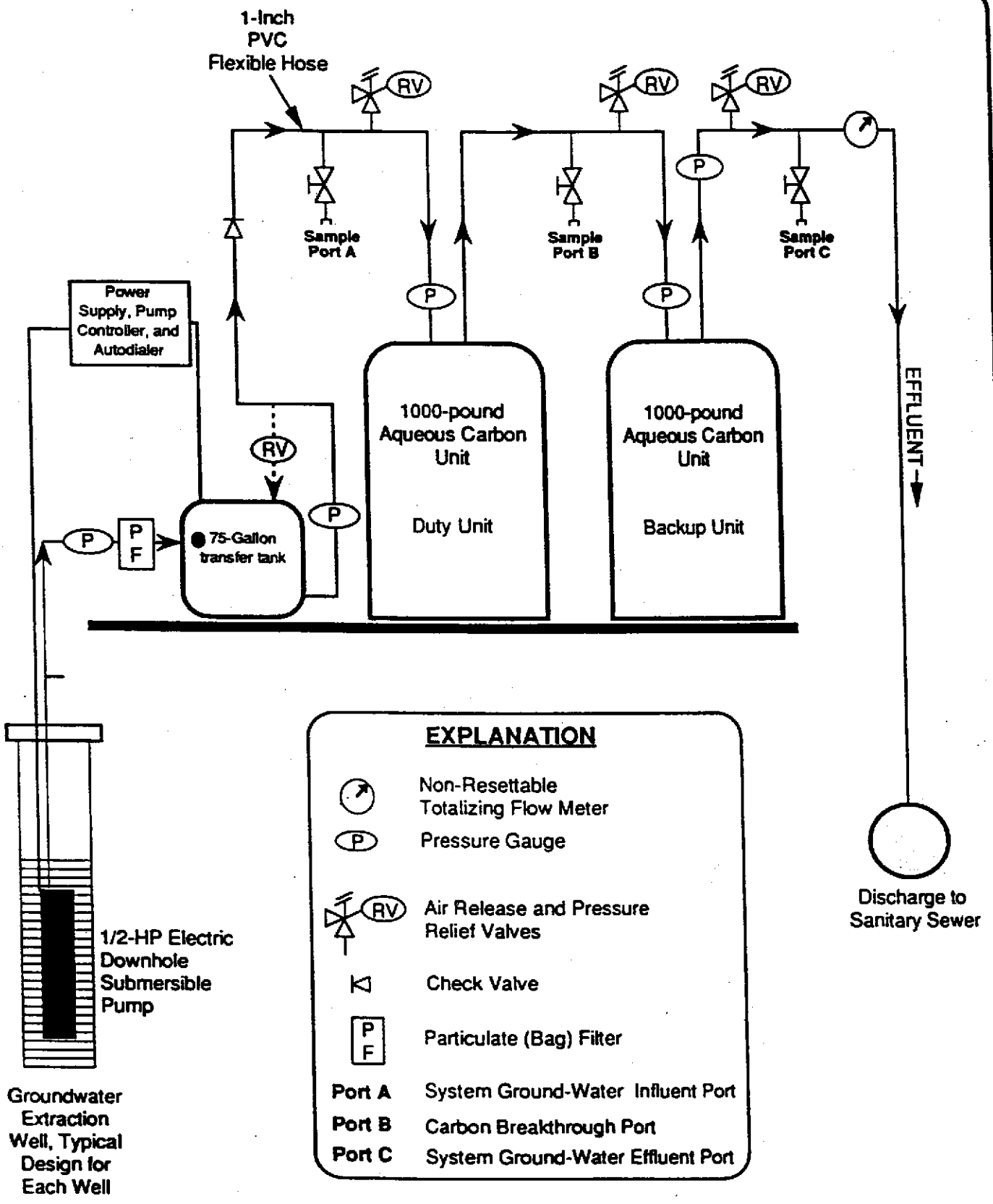
Gary W. Keyes, P.E.
Principal Engineer/Associate
Richmond, California Office Manager

Attachments: Figure 1 Schematic of Typical Groundwater Treatment System

Figure 2 Proposed Additional Monitor Well and Soil Boring Locations

cc: Marc E. Althen, Penske Truck Leasing Co.

Project No. RC0019.007



GERAGHTY & MILLER, INC.
Environmental Services

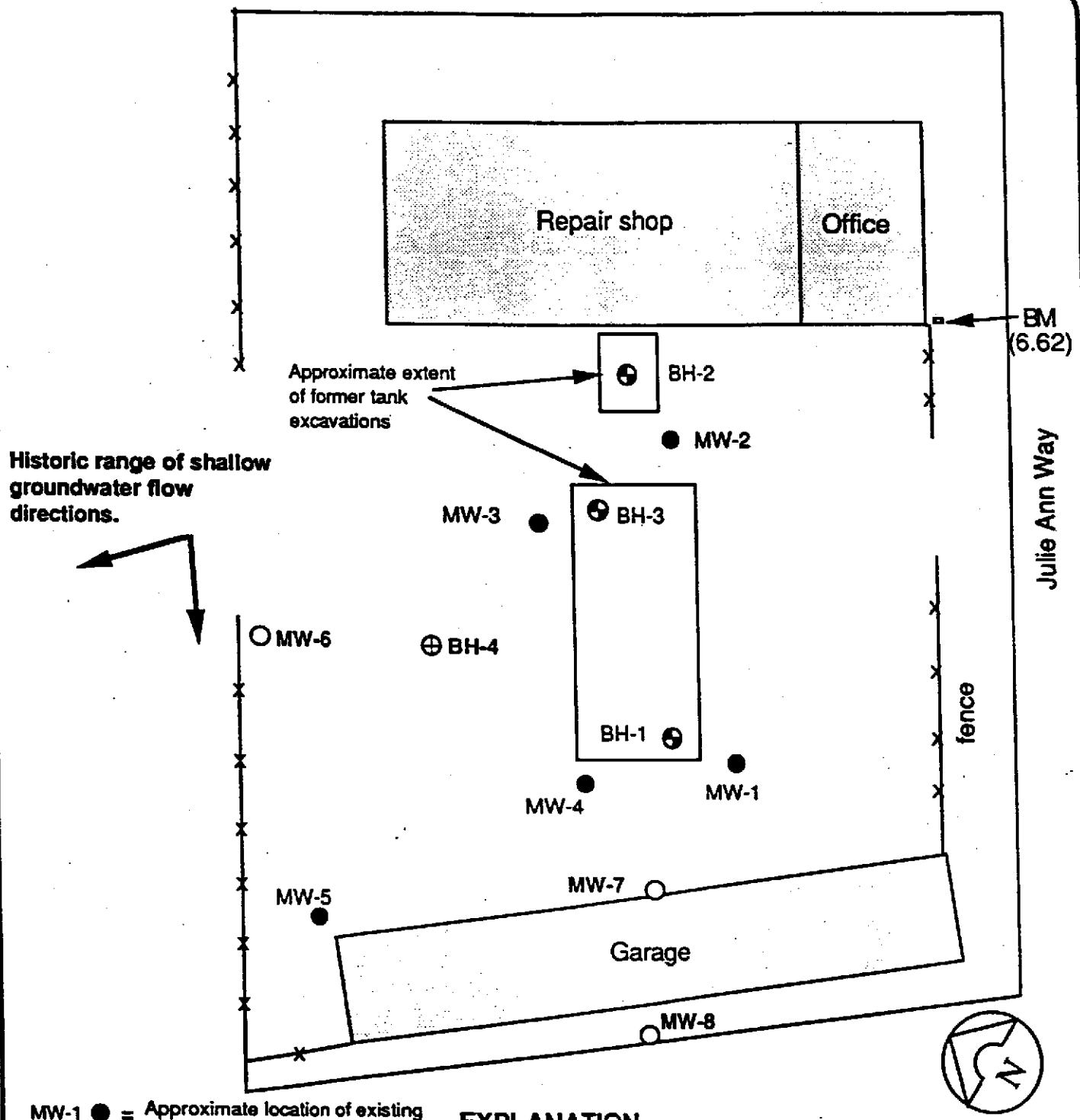
Project No. RC0019.007

SCHEMATIC OF TYPICAL GROUNDWATER TREATMENT SYSTEM

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

FIGURE

1



MW-1 ● = Approximate location of existing ground-water monitor wells.

BH-1 ◔ = Approximate location of existing soil borings.

MW-6 ○ = Approximate location of proposed additional ground-water monitor wells.

EXPLANATION

BH-4 ⊕ = Approximate location of proposed additional soil borings.

= BM = Survey Bench Mark (based on City of Oakland datum which is 3 feet lower than Mean Sea Level).

GERAGHTY & MILLER, INC.
Environmental Services

Project No. RC0019.007

PROPOSED ADDITIONAL MONITOR WELL and SOIL BORING LOCATIONS
Former Penske Truck Leasing Co.
725 Julie Ann Way
Oakland, California

FIGURE
2

APPENDIX B

COPY OF GROUNDWATER PROTECTION ORDINANCE PERMIT

ZONE 7 WATER AGENCY

5997 PARKSIDE DRIVE PLEASANTON, CALIFORNIA 94588 VOICE (510) 484-2600
FAX (510) 462-3914

DRILLING PERMIT APPLICATION

FOR APPLICANT TO COMPLETE

LOCATION OF PROJECT 125 JULIE ANN WAY
OAKLAND CALIFORNIA

CLIENT
Name PENSKE TRUCK LEASING CO.
Address ROUTE 10, GREEN HILLS Voice P.O. BOX 563
City READING, PA Zip 19603

APPLICANT
Name GERAGHTY & MILLER, INC. Fax 510 283 3204
Address 1050 MARINA WAY SOUTH Voice 510 233 3200
City RICHMOND CALIFORNIA Zip 94804

TYPE OF PROJECT

Well Construction		Geotechnical Investigation	
Cathodic Protection	___	General	___
Water Supply	___	Contamination	___
Monitoring	X	Well Destruction	___

PROPOSED WATER SUPPLY WELL USE
Domestic ___ Industrial ___ Other GROUNDWATER MONITORING
Municipal ___ Irrigation ___

DRILLING METHOD:
Mud Rotary ___ Air Rotary ___ Auger ___
Cable ___ Other HOLLOW STEM AUGER

DRILLER'S LICENSE NO. C-57 No. 554979

WELL PROJECTS
Drill Hole Diameter 10 in. Maximum
Casing Diameter 4 in. Depth 30 ft.
Surface Seal Depth 14 ft. Number 3

GEOTECHNICAL PROJECTS
Number of Borings 1 Maximum
Hole Diameter 8 in. Depth 30 ft.

ESTIMATED STARTING DATE 7.26.94
ESTIMATED COMPLETION DATE 7.27.94

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

APPLICANT'S SIGNATURE C. Sean Beach Date 7.18.94

FOR OFFICE USE

PERMIT NUMBER 94423
LOCATION NUMBER ___

PERMIT CONDITIONS

Circled Permit Requirements Apply

(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.

Approved Wyman Hong Date 25 Jul 94
Wyman Hong

91992

APPENDIX C

BORING LOGS

KEY TO BORING LOG SYMBOLS

UNIFIED SOIL CLASSIFICATION SYSTEM - ASTM D2488

MAJOR DIVISIONS			SYMBOL/ GRAPHIC	DESCRIPTIONS
COARSE GRAINED SOILS (>50% by weight larger than #200 sieve)	GRAVELS (More than 50% of coarse fraction is larger than the #4 sieve size.)	Clean gravels with little or no fines	GW	Well Graded Gravels, Gravel - Sand Mixtures
			GP	Poorly Graded Gravels, Gravels - Sand Mixtures
		Gravels with over 12% fines	GM	Silty Gravels, Poorly Graded Gravel - Sand - Silt Mixtures
			GC	Clayey Gravels, Poorly Graded Gravel - Sand - Clay Mixtures
	SANDS (More than 50% of coarse fraction is smaller than #4 sieve size.)	Clean sands with little or no fines	SW	Well Graded Sands, Gravelly Sands
			SP	Poorly Graded Sands, Gravelly Sands
		Sands with over 12% fines	SM	Silty Sands, Poorly Graded Sand - Silt Mixtures
			SC	Clayey Sands, Poorly Graded Sand - Clay Mixtures
FINE GRAINED SOILS (>50% smaller than #200 sieve)	SILTS AND CLAYS (liquid limit less than 50)		ML	Inorganic Silts and Very Fine Sands, Silty or Clayey Fine Sands
			CL	Inorganic Clays of Low to Medium Plasticity; Gravelly, Sandy or Silty Clays; Lean Clays
			OL	Organic Clays and Organic Silty Clays of Low Plasticity
	SILTS AND CLAYS (liquid limit greater than 50)		MH	Inorganic Silts, Micaceous or Diatomaceous Fine Sandy or Silty Soils, Elastic Silts
			CH	Inorganic Clays of High Plasticity, Fat Clays
			OH	Organic Clays of Medium to High Plasticity, Organic Silts
HIGHLY ORGANIC SOILS			Pt	Peat and other Highly Organic Soils

Stabilized water level (date)

Water level encountered during drilling

Shaded interval represents soil sample. Blackened interval indicates portion of sample prepared for laboratory analysis.

Indicates no recovery of sample

Monitoring well

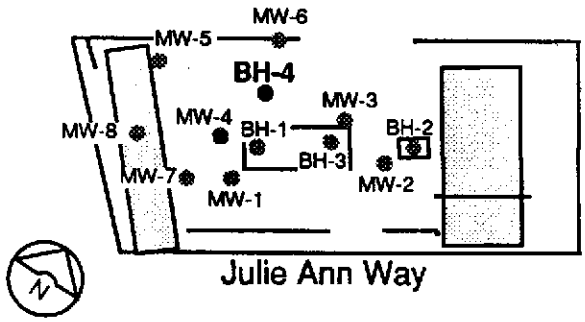
Soil boring

	Asphaltic Concrete
	Portland Cement Concrete
	Cement Grout

PID Photo-ionization detector readings (ppmv)

FID Flame-ionization detector readings (ppmv)

EXP Gastech explosimeter readings (ppmv)

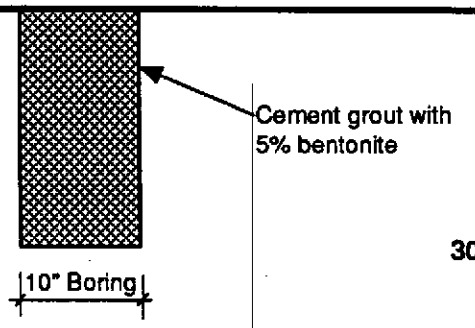


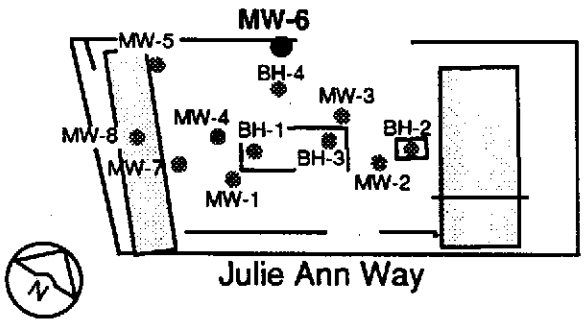
LOG OF BORING BH-4
Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC0019.007 | Date Drilled: July 27, 1994
Logged By: C. Sean Bisch | Drilling Method: 10" Hollow stem auger
Drilling Co.: West Hazmat | Sampling Method: Continous Core
Driller: Scott Irwin | Driller's License: 554979

WELL CONSTRUCTION	Blows/ft.	PID (ppm)	Samples	Graphic	DESCRIPTION
10" Boring; Cement grout with 5% bentonite					
	0				3" Asphaltic Concrete
					CLAY (CL); very dark grayish brown (2.5Y 3/2); 10-15% fine to coarse-grained sand; 10-15% gravel; moist.
					GRAVEL (GC); black (5Y 2.5/1); angular gravel; 10-20% fines; moist.
	5	80			SILTY CLAY (CL); black (5Y 2.5/1); 0-5% fine to coarse-grained sand; moist.
					ORGANIC CLAY (OL); black (5Y 2.5/1); 10-20% decaying organic matter; wood fragments; roots; hydrocarbon odor; moist.
	10	380			CLAY (CL); dark greenish gray (5GY 4/1); 10-20% fine to coarse-grained, angular sand; trace gravel; hydrocarbon odor; moist. @ 11 feet: Sandy Silty Clay (CL); yellowish brown (10YR 5/4); mottled with dark greenish gray (5GY 4/1); 20-30% fine-grained sand; iron oxide staining; moist;
	15	450			CLAYEY SILTY SAND (SM); yellowish brown (10YR 5/4); mottled with dark greenish gray (5GY 4/1); fine-grained sand; 40-50% fines; localized iron-oxide and manganese oxide staining; moist.
	20				SAND (SW); dark yellowish brown (10YR 4/4); fine to coarse-grained, angular sand; trace fines; grades from fine to coarse-grained sand from 19 to 23 feet; wet.
	25				SILTY SAND (SM); yellowish brown (10YR 5/4); fine-grained sand; 25-35% fines; finely laminated iron-oxide staining; moist.

LOG OF BORING BH-4 (continued)

WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	Samples	Graphic	DESCRIPTION
	30				SAND (SW); yellow brown (10YR 5/4); 95-100% fine to coarse-grained sand; 0-5% fines; grades from fine to coarse-grained sand from 25 to 30 feet; wet. @ 29 feet: iron-oxide staining. Total Depth Explored: 30 feet. Date: July 27, 1994 Time: 1145
	35				
	40				
	45				
	50				
	55				
	60				



LOG OF BORING MW-6
Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC0019.007 Date Drilled: July 27, 1994
Logged By: C. Sean Bisch Drilling Method: 10" Hollow stem auger
Drilling Co.: West Hazmat Sampling Method: Continuous core
Driller: Scott Irwin Driller's License: 554979

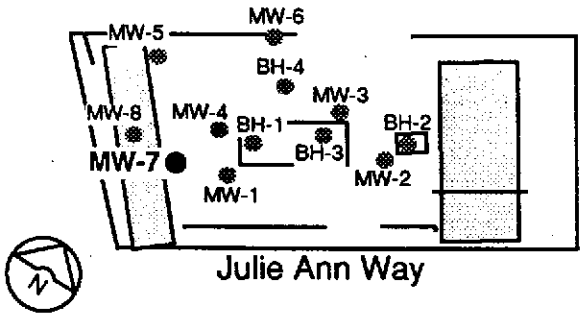
WELL CONSTRUCTION

10" Boring
Traffic-rated utility box
Locking water-tight cap
Concrete
Cement grout with 5% bentonite
4-inch Schedule 40 PVC blank casing
Bentonite seal
4-inch Schedule 40 PVC 0.010" slotted casing
7/27/94 8:01 a.m.
No. 2/12 Sand
Bottom of slotted casing at 25 feet.

Depth	Blows/ft.	PPM	Samples	Graphic	DESCRIPTION
0					3" Asphaltic Concrete
		100			CLAY (CL); very dark grayish brown (2.5Y 3/2); mottled with grayish green (5G 5/2); 10-15% fine to coarse-grained sand; 10-15% angular gravel; wood fragments; possible fill material; moist.
					GRAVEL (GW); light olive brown (2.5Y 5/4); 80-90% angular gravel; 10-20% fine to coarse-grained sand; dry.
5					ORGANIC CLAY (OL); black (2.5Y 2/0); 10-20% decaying organic matter; wood fragments; moist.
		260			SANDY CLAY (CL); very dark grayish brown (2.5Y 3/2); 25-35% fine to coarse-grained sand; root traces; moist.
10		110			SANDY SILT (ML); yellowish brown (10YR 5/4); 25-35% fine-grained sand; moist.
		100			CLAY (CL); dark greenish gray (5GY 4/1); 10-20% fine to coarse-grained sand; roots; moist.
					@ 14.5 feet: very dark gray (5Y 3/1); 5-15% fine to coarse-grained sand; wet.
15					SAND (SP); yellowish brown (10YR 5/4); medium to coarse-grained, angular sand; 0-5% fines; wet.
					SILTY SAND (SM); yellow brown (10YR 5/4); fine-grained sand; 10-20% fines; moist.
					SAND (SP); coarse-grained; wet.
					CLAYEY SAND (SC); yellowish brown (10YR 5/4); fine to medium-grained sand; 5-15% fines; wet.
20					SAND (SW); dark yellowish brown (10YR 4/4); fine to coarse-grained, angular sand; 5-15% fines; wet.
					SILT (ML); olive (5Y 5/4); trace fine-grained sand; moist.
					SAND (SW); dark yellowish brown (10YR 4/4); fine to coarse-grained angular sand; trace fines; wet.
25					

LOG OF BORING MW-6 (continued)

WELL CONSTRUCTION	Depth (ft.)	Blows/ft.	Samples	Graphic	DESCRIPTION
← Native material					SAND (SW); continued.
					CLAYEY SILT (ML); olive (5Y 5/3); 95-100% fines; 0-5% fine-grained sand; moist.
10" Boring	30				Total Depth Explored: 29.25 feet Date: July 27, 1994
	35				
	40				
	45				
	50				
	55				
	60				



LOG OF BORING MW-7
Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

Project No.: RC0019.007 | Date Drilled: July 27, 1994
Logged By: C. Sean Bisch | Drilling Method: 10" Hollow stem auger
Drilling Co.: West Hazmat | Sampling Method: Continuous core
Driller: Scott Irwin | Driller's License: 554979

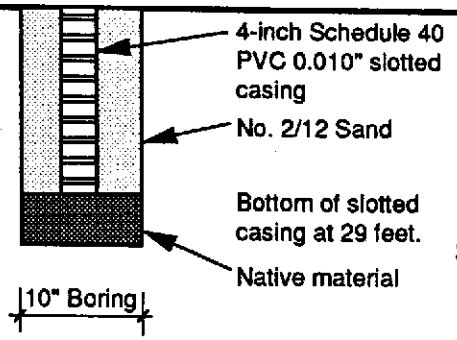
WELL CONSTRUCTION

10" Boring
Traffic-rated utility box
Locking water-tight cap
Concrete
Cement grout with 5% bentonite
4-inch Schedule 40 PVC blank casing
Bentonite seal
7/27/94 1:18 p.m.
4-inch Schedule 40 PVC 0.010" slotted casing
No. 2/12 Sand

Blows/ft	PPM	Samples	Graphic	DESCRIPTION
0				6" Asphaltic Concrete
				CLAYEY GRAVEL (GC); olive (5Y 4/4); fine to coarse, subangular gravel; 25-35% fines; 10-20% fine to medium-grained sand; brick fragment; moist.
5	1,650			SILTY CLAY (CL); black (10YR 2/1); 80-90% fines; 10-20% fine to coarse-grained sand; trace coarse-grained, subangular gravel; trace roots; moist.
				@ 9 feet: abundant wood fragments; hydrocarbon odor; wet.
10	1,320			@ 10 feet: gray (5Y 5/1); 5-15% fine to coarse-grained sand; petroleum hydrocarbons; wood fragments; moist.
				@ 13 feet: yellowish brown (10YR 5/4); mottled; trace coarse-grained sand.
15	2,750			SAND (SW); very dark gray (5Y 3/1); fine to coarse-grained, angular sand; 5-15% fines; petroleum hydrocarbons; wet.
				SILTY SAND (SM); yellowish brown (10YR 5/4); fine-grained sand; 10-20% fines; wet.
20	13,750			SAND (SW); dark yellowish brown (10YR 4/4); fine to coarse-grained, angular sand; 0-5% fines; wet.
				@ 23 feet: iron-oxide lamination.
25				

LOG OF BORING MW-7 (continued)

WELL CONSTRUCTION



PID (PPM) | Samples | Graphic

DESCRIPTION

SAND (SW); continued.

30

Total Depth Explored: 30 feet
Date: July 27, 1994 Time: 1420

35

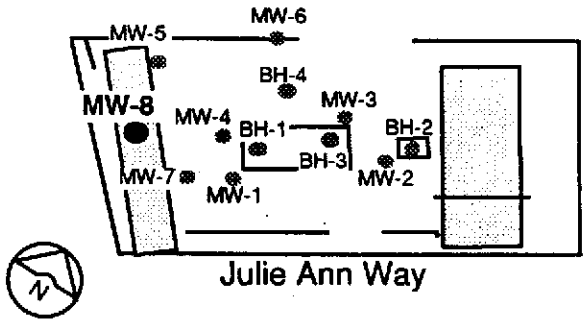
40

45

50

55

60



LOG OF BORING MW-8
Former Penske Truck Leasing Facility
725 Julie Ann Way
Oakland, California

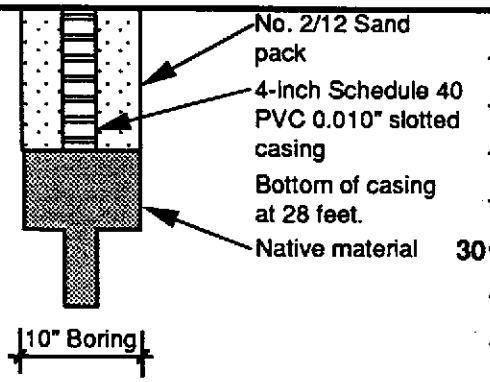
Project No.: RC0019.007 | Date Drilled: July 26, 1994
Logged By: C. Sean Bisch | Drilling Method: 10" Hollow stem auger
Drilling Co.: West Hazmat | Sampling Method: Continuous core
Driller: George | Driller's License: 554979

WELL CONSTRUCTION

10" Boring
Traffic-rated utility box
Locking water-tight cap
Concrete
Cement grout with 5% bentonite
4-inch Schedule 40 PVC blank casing
Bentonite seal
No. 2/12 Sand
7/26/94 9:49 a.m.
4-inch Schedule 40 PVC 0.010" slotted casing

Blows/ft.	PPM	Samples	Graphic	DESCRIPTION
				3" Asphaltic Concrete
				CLAY (CL); black (7.5YR 2/0); 0-5% fine-grained sand; hydrocarbon odor; moist.
41	45			CLAYEY GRAVEL (GC); black (7.5YR 2/0); fine gravel; 30-40% fines; 10-15% fine-grained sand; dense; moist.
20	0			SILTY SAND (SM); brown (7.5YR 5/4); fine to coarse-grained, angular sand; 20-30% fines; 5-15% fine, subangular gravel; medium dense; moist.
23				CLAY (CL); dark gray (5Y 4/1); 10-20% fine-grained sand; trace medium to coarse-grained sand; very stiff; moist.
18				SANDY SILT (ML); dark brown (10YR 4/3); 25-35% fine-grained, angular sand; hard; wet.
36				CLAYEY SAND (SC); dark gray (10YR 4/1); fine to coarse-grained, angular sand; 25-35% fines; medium dense; wet.
				CLAY (CL); dark gray (5Y 4/1); 10-20% fine-grained sand; very stiff; moist.
21				SAND (SP); dark yellowish brown (10YR 4/4); fine-grained sand; 5-15% fines; iron oxide staining; medium dense; wet.
	125			CLAY (CL); dark gray (5Y 4/1); 10-20% fine-grained sand; very stiff; moist.
6				SAND (SP); dark yellowish brown (10YR 4/4); fine-grained sand; 5-15% fines; loose; wet.
23				@ 24 feet: medium dense.

WELL CONSTRUCTION



LOG OF BORING MW-8 (continued)

Depth (ft.)	Blows/ft.	Samples	Graphic	DESCRIPTION
30				SAND (SP); continued.
	49			CLAY (CL); grayish brown (10YR 5/2); hard; moist.
				Total Depth Explored: 31.5 feet Date: July 26, 1994 Time: 11:12 a.m.
35				
40				
45				
50				
55				
60				

APPENDIX D

SURVEY DATA

GROUND AND CASING ELEVATIONS

JOB #: RC0019.007 **DATE:** 08/19/94

DATUM: BENCH ON SITE

ELEVATION: 6.62

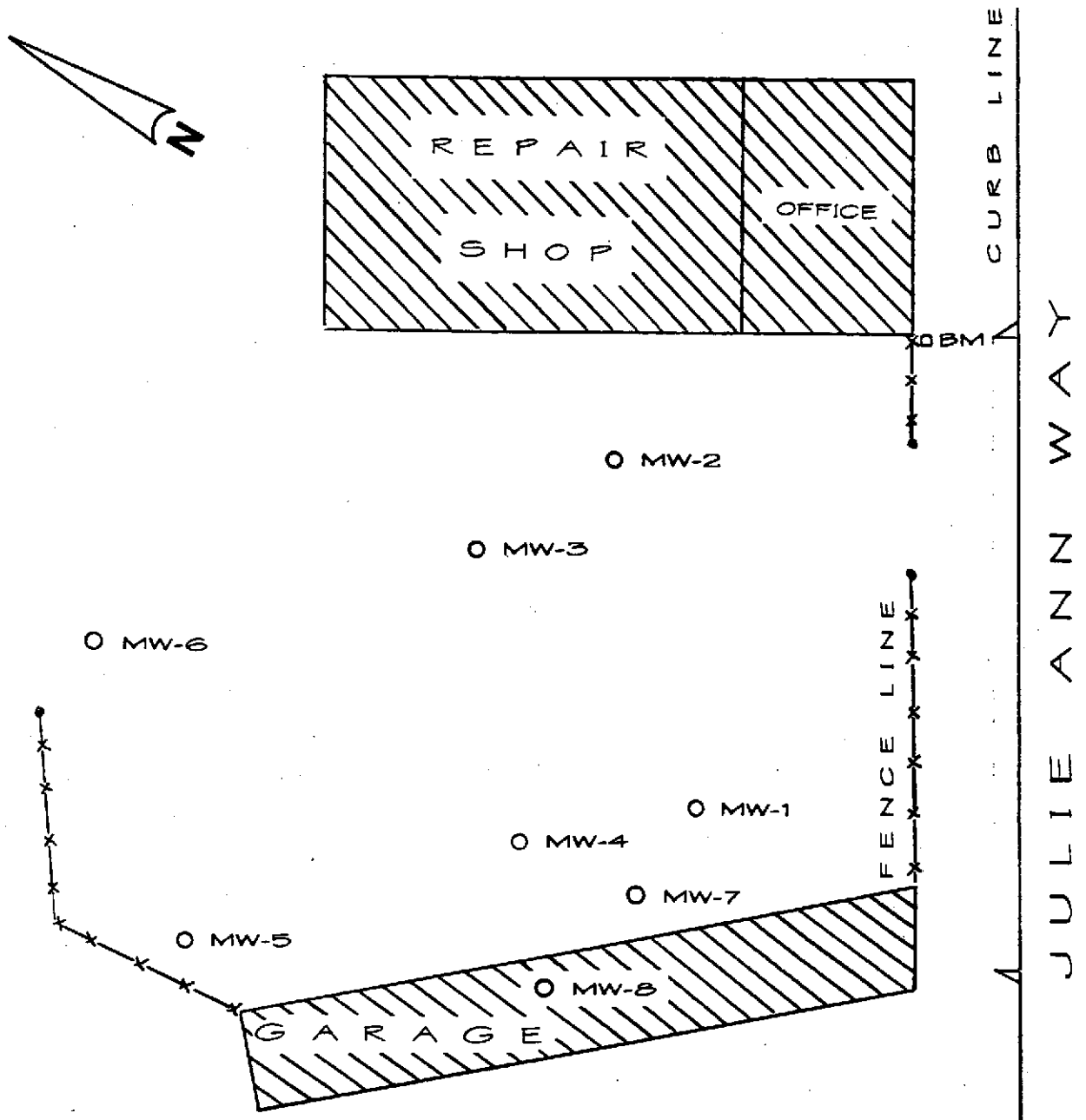
CORRECTION TO M.S.L.: NONE

CORRECTED DATUM:

WELL #	ELEV. @ GROUND	ELEV. ON TOP CASING
MW-6	5.84 (AC/dirt)	5.37
MW-7	5.38 (AC)	4.84
MW-8	5.44 (AC)	5.08

File: 9308.CR5

POINT	NORTHING	EASTING	ELEVATION	NOTE
11	988.3550	4883.0242	6.2550	START
12	1058.1130	4999.9997	6.6260	CK BM
13	1059.4863	4998.8096	6.6493	BC
14	1119.3777	5000.7321	7.5342	BC
15	928.4741	4994.6087	5.8402	BC
16	903.9103	4993.8904	5.3355	BC
17	1064.0535	4858.8729	14.0898	BC
18	902.0960	4832.2954	4.9372	BC
19	925.4196	4789.7220	4.9784	INT F
20	976.1983	4787.6928	5.7255	END F
21	1032.7688	4997.8745	6.3748	GATE POST -30.6
31	948.3963	4942.0886	5.4289	MW-1
32	1032.4197	4926.6037	6.2012	MW-2
33	1011.7038	4892.7392	6.1003	MW-3
34	941.8272	4900.2562	5.1885	MW-4
35	919.8537	4820.0308	4.7100	MW-5
36	1058.0885	5023.6542	6.9008	FC DWY
37	907.0085	5018.7006	7.9778	FC DWY
41	947.8024	4942.9137	5.7764	MW-1 AC
42	1033.1575	4926.9319	6.5397	MW-2
43	1011.0392	4893.0288	6.4495	MW-3 AC
44	943.1674	4900.5165	5.5513	MW-4 AC
45	918.3841	4820.3821	4.9528	MW-5 AC
46	1058.1145	5000.0003	6.6109	CK BM
50	1058.0829	4999.9986	6.6139	CK BM
56	991.4646	4801.0932	5.3651	MW-6
57	928.0884	4927.0364	4.8405	MW-7
58	907.7855	4902.6245	5.0788	MW-8
66	991.9565	4799.9599	5.8356	MW-6 AC/DIRT
67	928.9271	4925.9066	5.3772	MW-7 AC
68	908.5854	4901.8729	5.4351	MW-8 AC



SITE PLAN

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

PREPARED BY: FIELD DESIGNS

LEGEND

O GROUND-WATER MONITOR WELL

SCALE: 1" = 40"

DATE: 08/20/94

APPENDIX E

COPIES OF CERTIFIED LABORATORY REPORTS

AND

CHAIN-OF-CUSTODY DOCUMENTATION

Superior Precision Analytical, Inc.
A member of FSSCON Environmental Support Service Consortium

Geraghty & Miller
ATTN: SEAN BISCH

Project RC0019.007
Reported 08/01/94

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed	Matrix
92221- 1	BH-4	07/27/94	07/28/94	Water
92221- 2	TB-LB	07/27/94	07/28/94	Water

RESULTS OF ANALYSIS

Laboratory Number: 92221- 1 92221- 2

Gasoline:	ND<50	ND<50
Benzene:	2.4	ND<0.5
Toluene:	0.6	ND<0.5
Ethyl Benzene:	ND<0.5	ND<0.5
Total Xylenes:	0.7	ND<0.5
Diesel:	370	NA
Concentration:	ug/L	ug/L

Superior Precision Analytical, Inc.
A member of ESSCON Environmental Support Service Consortium

Geraghty & Miller
Attn: PAUL HIEN

Project RC0019.007
Reported 07-August-1994

ANALYSIS FOR ORGANIC LEAD
by DHS LUFT Manual Method

Chronology

Laboratory Number 92235

Identification	Sampled	Received	Extracted	Analyzed	Run #	Lab #
SP-1,SP-2,SP-3,SP-4	07/26/94	07/29/94	07/29/94	07/29/94		1

Certified Laboratories
825 Arnold Dr., Suite 114 • Martinez, California 94553 • (510) 313-0850 / fax (510) 229-1526

Geraghty & Miller
Attn: PAUL HIEN

Project RC0019.007
Reported 07-August-1994

ANALYSIS FOR ORGANIC LEAD

Laboratory Number	Sample Identification	Matrix
92235- 1	SP-1,SP-2,SP-3,SP-4	Soil

RESULTS OF ANALYSIS

Laboratory Number: 92235- 1

ORGANIC LEAD:	ND<2
Concentration:	mg/Kg

Certified Laboratories
825 Arnold Dr., Suite 114 • Martinez, California 94553 • (510) 313 0850 / fax (510) 229-1526

Superior Precision Analytical, Inc.
A member of ESSCON Environmental Support Service Consortium

ANALYSIS FOR ORGANIC LEAD
Quality Assurance and Control Data - Soil

Laboratory Number 92235

Compound	Method Blank (mg/Kg)	RL (mg/Kg)	Spike Recovery (%)	Limits (%)	RPD (%)
ORGANIC LEAD:	ND<2	2	94/95	75-125	1%

Definitions:
ND = Not Detected
RPD = Relative Percent Difference
RL = Reporting Limit
mg/Kg = Parts per million (ppm)
QC File No. 92235

Senior Chemist
Account Manager

Certified Laboratories
825 Arnold Dr., Suite 114 • Martinez, California 94553 • (510) 313 0850 / fax (510) 229-1526

Superior Precision Analytical, Inc.
A member of ESSCON Environmental Support Service Consortium

Geraghty & Miller
Attn: PAUL HIEN

Project RC0019.007
Reported 08/08/94

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed	Matrix
92235- 1	SP-1,SP-2,SP-3,SP-4	07/26/94	08/05/94	Soil
92235- 2	BH4(5)	07/27/94	08/05/94	Soil
92235- 3	BH4(10)	07/27/94	08/05/94	Soil
92235- 4	BH4(15)	07/27/94	08/05/94	Soil
92235- 5	MW6(6.5)	07/27/94	08/05/94	Soil
92235- 6	MW6(11.0)	07/27/94	08/05/94	Soil
92235- 7	MW6(13.0)	07/27/94	08/05/94	Soil
92235- 8	MW7(5.0)	07/27/94	08/05/94	Soil
92235- 9	MW7(10.0)	07/27/94	08/05/94	Soil
92235-10	MW7(15.0)	07/27/94	08/05/94	Soil

RESULTS OF ANALYSIS

Laboratory Number:	92235- 1	92235- 2	92235- 3	92235- 4	92235- 5
Gasoline:	6	5	5	11	7
Benzene:	.057	.008	ND<.005	0.009	ND<.005
Toluene:	.10	.100	0.018	0.098	0.030
Ethyl Benzene:	.070	ND<.005	0.013	0.037	0.006
Total Xylenes:	.210	.160	0.079	0.310	0.067
Diesel Range:	280	ND<10	1300	1200	ND<10
Concentration:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg

Laboratory Number:	92235- 6	92235- 7	92235- 8	92235- 9	92235-10
Gasoline:	2	ND<1	ND<1	ND<1	31
Benzene:	ND<.005	ND<.005	ND<.005	0.011	ND<.025
Toluene:	0.013	0.017	0.016	0.017	.160
Ethyl Benzene:	ND<.005	ND<.005	0.006	0.005	.200
Total Xylenes:	0.036	0.032	0.030	0.031	.650
Diesel Range:	ND<10	ND<10	90	3300	5500
Concentration:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg

Certified Laboratories
825 Arnold Dr., Suite 114 • Martinez, California 94553 • (510) 313 0850 / fax (510) 229-1526

Geraghty & Miller
Attn: PAUL HIEN

Project RC0019.007
Reported 08/08/94

TOTAL PETROLEUM HYDROCARBONS

Lab #	Sample Identification	Sampled	Analyzed	Matrix
92235-11	MW8(5.5)	07/26/94	08/05/94	Soil
92235-12	MW8(10.5)	07/26/94	08/05/94	Soil
92235-13	MW8(15.5)	07/26/94	08/05/94	Soil

RESULTS OF ANALYSIS

Laboratory Number:	92235-11	92235-12	92235-13
Gasoline:	18	5	1
Benzene:	0.039	ND<.005	ND<.005
Toluene:	.230	0.011	0.013
Ethyl Benzene:	.300	ND<.005	0.005
Total Xylenes:	.850	.200	0.037
Diesel Range:	50	41	ND<10
Concentration:	mg/Kg	mg/Kg	mg/Kg

Certified Laboratories
825 Arnold Dr., Suite 114 • Martinez, California 94553 • (510) 313-0850 / fax (510) 229-1526

Superior Precision Analytical, Inc.
A member of ESSCON Environmental Support Service Consortium

CERTIFICATE OF ANALYSIS

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

QA/QC INFORMATION
SET: 92235

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
mg/kg = parts per million (ppm)

OIL AND GREASE ANALYSIS By Standard Methods Method 5520F:
Minimum Detection Limit in Soil: 50mg/kg

Modified EPA SW-846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Soil: 1mg/kg

EPA SW-846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Soil: 1mg/kg

EPA SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Soil: 0.005mg/kg

ANALYTE	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Gasoline:	130/129	1%	70-130
Benzene:	105/119	13%	70-130
Toluene:	113/121	7%	70-130
Ethyl Benzene:	98/107	9%	70-130
Total Xylenes:	111/120	8%	70-130
Diesel:	114/114	0%	50-150

Senior Chemist

Superior Precision Analytical, Inc.

A member of ESSCON Environmental Support Service Consortium

GERAGHTY & MILLER
Attn: PAUL HEHN

Project RC0019.005
Reported 17-August-1994

ANALYSIS FOR GASOLINE, BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES
by EPA SW-846 Methods 5030/8015M/8020.

Chronology

Laboratory Number 58572

Identification	Sampled	Received	Extracted	Analyzed	Run #	Lab #
MW-6	08/12/94	08/15/94	08/16/94	08/16/94		1
MW-7	08/12/94	08/15/94	08/16/94	08/16/94		2
MW-8	08/12/94	08/15/94	08/16/94	08/16/94		3

Certified Laboratories

1555 Burke St., Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

GERAGHTY & MILLER
Attn: PAUL HEHN

Project RC0019.005
Reported 17-August-1994

ANALYSIS FOR GASOLINE, BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES

Laboratory Number	Sample Identification	Matrix
58572- 1	MW-6	Water
58572- 2	MW-7	Water
58572- 3	MW-8	Water

RESULTS OF ANALYSIS

Laboratory Number:	58572- 1	58572- 2	58572- 3
Gasoline_Range:	ND<50	160	170
Benzene:	ND<0.5	2.7	2.7
Toluene:	ND<0.5	1.3	0.5
Ethyl Benzene:	ND<0.5	ND<0.5	ND<0.5
Total Xylenes:	ND<0.5	2.1	2.0
Concentration:	ug/L	ug/L	ug/L
-- Surrogate % Recoveries --			
Trifluorotoluene (SS):	99	100	93

Certified Laboratories
1555 Burke St., Unit 1 • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

Superior Precision Analytical, Inc.
A member of ESSCON Environmental Support Service Consortium

ANALYSIS FOR GASOLINE, BENZENE, TOLUENE, ETHYLBENZENE, AND XYLENES
Quality Assurance and Control Data - Water

Laboratory Number 58572

Compound	Method Blank (ug/L)	RL (ug/L)	Spike Recovery (%)	Limits (%)	RPD (%)
Gasoline_Range:	ND<50	50	75/88	61-134	16%
Benzene:	ND<0.5	0.5	86/93	60-135	8%
Toluene:	ND<0.5	0.5	87/86	60-135	1%
Ethyl Benzene:	ND<0.5	0.5	84/84	60-135	0%
Total Xylenes:	ND<0.5	0.5	92/91	60-135	1%

Definitions:
ND = Not Detected
RPD = Relative Percent Difference
RL = Reporting Limit
ug/L = Parts per billion (ppb)
QC File No. 58572

8/22/94
Senior Chemist
Account Manager

Certified Laboratories
1555 Burke St., Unit 1 • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

GERAGHTY & MILLER
Attn: PAUL HEHN

Project RC0019.005
Reported 19-August-1994

TOTAL PETROLEUM HYDROCARBONS AS DIESEL
BY EPA SW-846 METHOD 8015M

Chronology

Laboratory Number 58572

Identification	Sampled	Received	Extracted	Analyzed	Run #	Lab #
MW-6	08/12/94	08/15/94	08/16/94	08/18/94		1
MW-7	08/12/94	08/15/94	08/16/94	08/18/94		2
MW-8	08/12/94	08/15/94	08/16/94	08/18/94		3

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

GERAGHTY & MILLER
Attn: PAUL HEHN

Project RC0019.005
Reported 19-August-1994

TOTAL PETROLEUM HYDROCARBONS AS DIESEL

Laboratory Number	Sample Identification	Matrix
58572- 1	MW-6	Water
58572- 2	MW-7	Water
58572- 3	MW-8	Water

RESULTS OF ANALYSIS

Laboratory Number:	58572- 1	58572- 2	58572- 3
Diesel Range:	ND<50	620	850
Concentration:	ug/L	ug/L	ug/L

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

TOTAL PETROLEUM HYDROCARBONS AS DIESEL
Quality Assurance and Control Data - Water

Laboratory Number 58572

Compound	Method Blank (ug/L)	RL (ug/L)	Spike Recovery (%)	Limits (%)	RPD (%)
Diesel Range:	ND<50	50	56/56	50-150	0%

Definitions:
ND = Not Detected
RPD = Relative Percent Difference
RL = Reporting Limit
ug/L = Parts per billion (ppb)
SPC File No. 58572

8/22/94
Senior Chemist
Account Manager

Superior Precision Analytical, Inc.

A member of ESSCON Environmental Support Service Consortium

CERTIFICATE OF ANALYSIS

Laboratory No.: 58572
Client : GERAGHTY & MILLER
Client job No.: RC0019.005

Date received : 08/15/94
Date reported : 08/22/94

TOTAL DISSOLVED SOLIDS BY EPA METHOD 160.1

Lab	Sample ID	Date Sampled	Date Analyzed	Analyte	Conc.	RL	Unit
1	MW-6	08/12/94	08/18/94	TDS	560	10	mg/L
	MW-7	08/12/94	08/18/94	TDS	1100	10	mg/L
	MW-8	08/12/94	08/18/94	TDS	5500	10	mg/L
QC	METHOD BLANK	Water	08/18/94	TDS	ND	10	mg/L

mg/L = parts per million (ppm)
ND = Not Detected
NA = Not Applicable
RL = Reporting Limit

8/25/94
Senior Chemist
Account Manager

Certified Laboratories
1555 Burke St., Unit 1 • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

[redacted]ERA[redacted]TY[redacted] & MILLER, INC.
Environmental Services

Laboratory Task Order No. ________

CHAIN-OF-CUSTODY RECORD

Page [redacted] of [redacted]

58572

Project Number: RCO 019.005
Project Location: Pleasanton / Oakland
Laboratory: Superior
Sampler(s)/Affiliation: Geraghty & Miller / Gary Crowley

SAMPLE BOTTLE / CONTAINER DESCRIPTION

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	TPH-Gasoline 8015	TPH-Diesel 8015	BTEX 802	Total Dissolved Solids						TOTAL
MW-6	L	8/14 1:45		X	X	X	X						5
MW-7	↓	↓ 2:20		X	X	X	X						5
MW-8	↓	↓ 2:15		X	X	X	X						5

Please initial: __
Samples Stored in Ice __ 6°
Appropriate containers __ ✓
Samples preserved __ ✓
VOA's without headspace __
Comments: __

Total No. of Bottles/Containers: ____

Sample Code: L = Liquid; S = Solid; A = Air

Relinquished by: Paul [signature]	Organization: Geraghty & Miller	Date 8/15/94	Time 9:30 Am	Seal Intact? Yes No N/A
Received by: [signature]	Organization: Accu	Date 8/15/94	Time 9:30 am	
Relinquished by: [signature]	Organization: Accu	Date 8/15/94	Time 10:25	Seal Intact? (Yes) No N/A
Received by: [signature]	Organization: Superior [illegible]	Date 8/15/94	Time 10:25	

Special Instructions/Remarks: Contact Paul V. Hehn with results
Geraghty & Miller, Inc. 1050 Marina Way South, Richmond, CA 94804 / Report results on this CofC Separately
(510) 233-3200 FAX-(510) 233-3204

Delivery Method: ☐ In Person ☐ Common Carrier ________ SPECIFY ☒ Lab Courier ☐ Other ________ SPECIFY