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ARCADIS Geraghty & Miller, Inc.
1050 Marina Way South
Richmond
California 94804
Tel 510 233 3200
Fax 510 233 3204

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

554

WESTERN REGION

Subject:
Results of Quarterly Groundwater Monitoring - Third Quarter 1998
Former Penske Truck Leasing Company Facility
725 Julie Ann Way
Oakland, California

Richmond, California,
February 12, 1999

Dear Mr. Chan:

Contact:
Paul V. Hehn

The above referenced report is being forwarded to you at the request of Penske Truck Leasing Co. The report details the results of quarterly groundwater monitoring and sampling for the third quarter 1998 at the Former Penske Truck Leasing Facility at 725 Julie Ann Way, Oakland.

Extension:
(510) 233-3200

If you have any questions, please do not hesitate to call

Sincerely,

ARCADIS Geraghty & Miller, Inc.

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

Copies:
Mr. Richard G. Saut
Penske Truck Leasing Co.

Files - Project No. RC000019.0010

PENSKE

Truck Leasing

Via Fax 510-233-3204

February 2, 1999

RECEIVED

FEB - 4 1999

ARCADIS Geraghty & Miller

Mr. Paul Hehn
Arcadis, Inc.
1050 Marina Way South
Richmond, CA 94804

Re: Third Quarter 1998
Groundwater Monitoring 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 two copies 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,



Richard G. Saut
Environmental Project Manager

RGS/csk
L1020299.rgs

Quarterly Groundwater Monitoring and Sampling

Third Quarter 1998

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



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

QUARTERLY REPORT

Prepared January 8, 1999

ARCADIS GERAGHTY & MILLER



Mr. Richard G. Saut
Environmental Project Manager
Penske Truck Leasing Company, L.P.
Route 10, Green Hills
P.O. Box 7635
Reading, Pennsylvania 19603-7635

ARCADIS Geraghty & Miller, Inc.
1050 Marina Way South
Richmond
California 94804
Tel 510 233 3200
Fax 510 233 3204

WESTERN REGION

Subject:

Results of Quarterly Groundwater Monitoring, Third Quarter 1998,
Former Penske Truck Leasing Facility, 725 Julie Ann Way, Oakland, California.

Dear Mr. Saut:

Richmond,
8 January 1999

This report presents the results of the third quarter 1998 quarterly groundwater monitoring and sampling activities performed on October 1, 1998, at the former Penske Truck Leasing Co. (Penske) facility referenced above (Figure 1). The scope of work for this project was presented to Penske in a Geraghty & Miller letter dated January 25, 1996. The scope of work for groundwater monitoring and sampling consists of collecting depth-to-water measurements, total-well-depth measurements, and water samples for laboratory analysis from selected wells. The scope of work also includes preparation of quarterly groundwater sampling and monitoring reports based on the data and groundwater samples collected during each quarterly event. This quarterly groundwater sampling and monitoring program is related to the containment zone (CZ) concept remedial approach approved by the Alameda County Health Care Services Agency (ACHCSA) and the California Regional Water Quality Control Board - San Francisco Bay Region (RWQCB) in its letter to Penske dated March 25, 1994.

Contact:
Paul V. Hehn

Extension:
510 233 3200

Field Procedures

The third quarter 1998 groundwater monitoring was performed on October 1, 1998. Monitoring was completed and groundwater samples were collected from Monitoring Wells MW-1 through MW-5, MW-7, and MW-8 in accordance with the CZ remedial approach monitoring and sampling plan referenced above. The monitoring-well locations are shown in Figure 2.

Prior to sampling, depth-to-water measurements were obtained from all on-site wells. Additionally, the wells were checked for the presence of liquid-phase hydrocarbons. Each well sampled was purged of at least four casing volumes of water. At Penske's request, additional purging was performed to remove dissolved-phase petroleum hydrocarbons from the groundwater. Due to the purging equipment

used to perform the extra purging, the exact amount of water purged from each well cannot be accurately determined but exceeded the amount necessary for a minimum four well volume purge. The approximate well volume estimated by the field personnel indicates that the extra purge volume exceeded the four volume purge requirements by 15% to 50%. During the current event, it was estimated that 900 gallons was purged from the seven wells sampled at the site. This total is about 50% more groundwater purged than would normally be required by a four volume purge.

Prior to sampling each well, all equipment that entered the well was washed in a solution of nonphosphate detergent and water and then triple rinsed in deionized water. Purged water was monitored for pH, temperature, and specific conductance. A summary of the field data is presented in Table 1. Following purging, groundwater samples were collected using a new disposable polyethylene bailer for each well. The purged water was removed by a Penske-contracted vacuum truck for proper disposal.

Groundwater samples were put into the appropriate USEPA-approved containers, placed on ice, and transported to Quanterra Laboratory in West Sacramento, California, under appropriate chain-of-custody documentation. The water samples were analyzed for total petroleum hydrocarbons (TPH) as gasoline (USEPA Method 8015, modified); TPH as diesel (USEPA Method 8015, modified); benzene, toluene, ethylbenzene, and total xylenes (BTEX) (USEPA Method 8020); and methyl tertiary butyl ether (MTBE) (USEPA Method 8020).

Results

Shallow Groundwater Flow

A summary of the field data is presented in Table 1. Depth to water ranged from 5.23 feet (Monitoring Well MW-4) to 6.95 feet (Monitoring Wells MW-2 and MW-3) below the ground surface. ~~Liquid phase hydrocarbons were measured~~ in Wells MW-1 (0.15 foot), MW-4 (0.01 foot), and MW-7 (0.27 foot) during this monitoring event.

A contour map based on the groundwater elevation data collected October 1, 1998, is presented on Figure 2. The historic shallow groundwater flow is toward the west; however, there are local variations in flow directions at the facility.

The difference in the elevation of the groundwater surface between Wells MW-2 and MW-1 is 0.33 feet, producing a hydraulic gradient (slope of the groundwater surface) of approximately 0.0036 in a southwesterly direction. The groundwater

gradient and groundwater contours for the current quarter are consistent with those presented during previous quarters.

Field Parameters

As in all previous quarterly sampling events at this facility, the specific conductance measurements for the groundwater purged during the sampling continue to be high (Table 1).

Groundwater Analytical Results

A summary of the groundwater analytical results is presented in Table 2. Copies of the certified laboratory reports and chain-of-custody documentation are included in Attachment 1. TPH as gasoline was detected in the groundwater samples from Monitoring Wells MW-1 (1,300 µg/L), MW-2 (3,200 µg/L), MW-4 (2,400 µg/L), and MW-7 (710 µg/L). TPH as diesel was detected in the groundwater samples collected from Monitoring Wells MW-1 (63,000 µg/L), MW-2 (3,500 µg/L), MW-3 (56 µg/L), MW-4 (670,000 µg/L), MW-5 (630 µg/L), MW-7 (89,000 µg/L), and MW-8 (440 µg/L). Benzene was detected in the groundwater samples collected from Monitoring Wells MW-1 (43 µg/L), MW-4 (5.7 µg/L), and MW-7 (39 µg/L). All other BTEX constituent results are presented in Table 2. TPH as gasoline, BTEX and MTBE were not detected in the trip blank.

Discussion and Compliance with Containment Zone Approach

Benzene was not detected at concentrations exceeding the compliance concentration of 71 µg/L in the shallow groundwater sample collected from designated CZ-concept Guard Well MW-7 (39 µg/L). At the request of the ACHCSA, Compliance Well MW-8 was sampled during this quarterly event. The well will also be sampled during the following quarterly (fourth quarter 1998) groundwater sampling event. If the following quarterly samples for Well MW-7 are also below the compliance level, sampling of Well MW-8 will be suspended pending any future out of compliance sampling results. Benzene was not detected in the groundwater sample collected from Compliance Well MW-8.

During this quarterly groundwater sampling event, increases in TPH as gasoline concentrations were detected in the samples collected from Wells MW-2 (from ND to 3,200 µg/L) and MW-7 (from 140 µg/L to 170 µg/L). Decreases were detected in the groundwater samples collected from Wells MW-1 (from 13,000 µg/L to 1,300 µg/L) and MW-4 (from 3,900 µg/L to 2,400 µg/L). TPH as gasoline was not detected (ND) in Wells MW-3, MW-5, and MW-8.

FP
Increases in TPH as diesel concentrations were detected in the samples collected from Wells MW-2 (from 1,300 µg/L to 3,500 µg/L), MW-3 (from ND to 56 µg/L), MW-4 (from 11,000 µg/L to 670,000 µg/L), MW-7 (from 1,600 µg/L to 89,000 µg/L), and MW-8 (from 70 µg/L to 440 µg/L). Decreases were detected in the groundwater samples collected from Wells MW-1 (from 280,000 µg/L to 63,000 µg/L) and MW-5 (from 770 µg/L to 630 µg/L). FP

Increases in benzene concentrations were detected in the samples collected from Wells MW-4 (from 1.4 µg/L to 5.7 µg/L) and MW-7 (from 2.3 µg/L to 39 µg/L). A decrease was detected in the groundwater sample collected from Well MW-1 (from 110 µg/L to 43 µg/L). Benzene was not detected (ND) in Wells MW-2, MW-3, MW-5, and MW-8.

Concentrations of petroleum hydrocarbons continue to be detected in Wells MW-1, MW-4, and MW-7, all of which are located immediately downgradient from the former UST excavation. The concentrations that continue to be detected from these wells indicate that additional mass of petroleum hydrocarbons remains in the groundwater and probably within the soil downgradient from the former UST excavation. However, decreases in the concentrations of petroleum hydrocarbons detected in the groundwater sample collected from Well MW-4 may indicate that there is reduced mass of petroleum hydrocarbons present. The reductions could also indicate increased biodegradation activity taking place in the vicinity of this well as a result of the addition of the ORCTM socks in Observation Wells OW-1 and OW-2 which are both located upgradient from Well MW-4

At the request of Penske, additional groundwater purging will be continued during future quarterly events. The additional purging will help remove additional mass of petroleum hydrocarbons from the groundwater downgradient from the former tank excavation to aid in the remediation of the groundwater at this former facility.

Discussion on Recent Regulatory Requested Changes

Letters dated May 20, 1998 and June 25, 1998 from Mr. Barney Chan at the ACHCSA were received by Penske. In his letters, Mr. Chan requested that biodegradation parameters be analyzed in all wells to establish baseline concentrations for assessing biodegradation activity at this site. He also requested that dissolved oxygen (DO) and oxygen-reduction potential (redox) measurements be collected during quarterly sampling events.

The results of the requested additional sampling were performed during the second quarter 1998 sampling event completed on May 27 and 29, 1998, and the results were reported as part of the results for the quarter.

In its letters to Penske, the ACHCSA recommended that future groundwater monitoring events should include measurements of dissolved oxygen and redox potential for all monitoring wells. ARCADIS Geraghty & Miller recommends, and Penske would prefer that these measurements be collected twice a year rather than every quarter. It is recommended that these measurements be collected during the spring quarterly sampling event (higher average groundwater levels) and during the fall quarterly sampling event (lower average groundwater levels). This recommended frequency of measurements would collect sufficient information to monitor biodegradation activity while still being cost effective for Penske.

*Very little
additional cost*


Additional Activities During the Next Quarter

During the first quarter of 1999, the ORC™ socks placed in Observation Wells OW-1 and OW-2 will be changed. To complete this change, the existing ORC™ socks will be removed from the wells. Once the socks are removed from the wells, the wells will be monitored for dissolved oxygen and redox measurements using down well field instruments. Following these measurements, the wells will be purged, monitored and sampled using the normal well purging and sampling procedures followed for other wells at this site. The groundwater samples collected from Observation Wells OW-1 and OW-2 will be analyzed for TPH as gasoline, TPH as diesel, BTEX, and MTBE. Groundwater samples will also be collected and analyzed for biodegradation parameters for nitrate, sulfate and ferrous iron as requested by the ACHCSA. Following the collection of the groundwater samples, additional groundwater will be purged from the wells using the vacuum-enhanced purging method.


ARCADIS GERAGHTY & MILLER

ARCADIS Geraghty & Miller appreciates the opportunity to be of service to Penske.
If you have any questions regarding this report, please do not hesitate to call us.

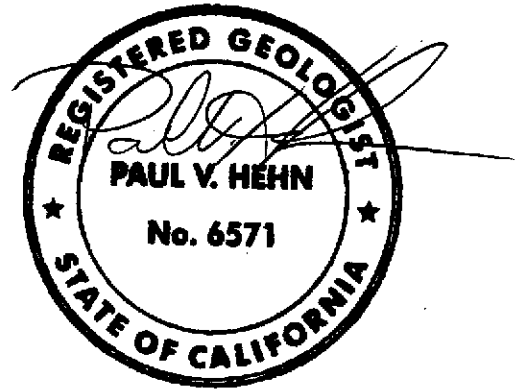
Sincerely,
ARCADIS Geraghty & Miller, Inc.



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



Donald C. Trueblood
Regional Manager



Attachments: References

- | | |
|--------------|---|
| Table 1 | Summary of Field Sampling, Depth-to-Water, and Casing Elevation Data |
| Table 2 | Summary of Groundwater Analytical Results- Monthly and Quarterly Sampling |
| Figure 1 | Site Location Map |
| Figure 2 | Shallow Groundwater Contours - Third Quarter 1998 |
| Figure 3 | Benzene Concentrations - Third Quarter 1998 |
| Attachment 1 | Copies of Certified Laboratory Reports and Chain-of-Custody Documentation |

References

Alameda County Health Care Services Agency. December 6, 1996. Letter to Penske Truck Leasing Co. on Former Penske Truck Leasing Facility, 725 Julie Ann Way, Oakland, CA 94621.

———. May 20, 1998. Letter to Penske Truck Leasing Co. on Former Penske Truck Leasing Facility, 725 Julie Ann Way, Oakland, CA 94621.

———. June 25, 1998. Letter to Penske Truck Leasing Co. on Former Penske Truck Leasing Facility, 725 Julie Ann Way, Oakland, CA 94621.

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

———. February 7, 1991. Scope of Work and Project Budget Estimate for Ground-Water Monitoring Activities for the Period February 1991 through February 1992, Former Penske Truck Leasing Co. Facility, 725 Julie Ann Way, Oakland, California.

———. January 25, 1995. Work Plan and Budget Cost Estimate for Groundwater Sampling Coordination, Quarterly Report Preparation, and Purge Water Disposal Assistance, Former Penske Truck Leasing Co. Facility, 725 Julie Ann Way, Oakland, California.

———. January 25, 1996. Work Plan and Budget Cost Estimate for Groundwater Sampling Coordination, Quarterly Report Preparation, and Purge Water Disposal Assistance, Former Penske Truck Leasing Co. Facility, 725 Julie Ann Way, Oakland, California.

ARCADIS GERAGHTY & MILLER

Table 1: Summary of Field Sampling, Depth-to-Water, and Casing Elevation Data
 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				Casing Diameter (inches)
								pH	Temp. (°F)	SC (µS/cm)	DO (mg/L)	
MW-1	2-Oct-90	9.76	5.42	-4.34	37.28	58.56	47	6.71	87.5	5,280		4
	28-Feb-91	8.54		-3.12	33.58	65.00	70	6.30	66.0	9,700		
	25-Mar-91	7.35		-1.93	33.50	71.00	75	6.50	64.0	7,200		
	1-May-91	7.91		-2.49	33.70	67.00	51	6.20	65.0	3,500		
	5-Aug-91	8.63		-3.21	NM	51.00	68	NM	63.6	7,690		
	23-Oct-91	9.00		-3.58	33.77	67.00	67	9.40	64.2	7,470		
	6-Jan-92	8.52		-3.10	33.87	65.00	69	9.40	63.2	6,640		
	20-Jul-92	7.94		-2.52	33.95	65.02	66	7.20	65.7	6,410		
	23-Oct-92	8.62		-3.20	33.57	64.80	60	7.50	69.8	1,930		
	4-Feb-93	6.55	5.43 (c)	-1.12	33.84	70.96	71	8.02	65.0	9,520		
	8-Apr-93	6.37		-0.94	33.80	71.32	65	6.60	66.7	>2,000		
	6-Aug-93	7.39		-1.96	33.88	68.67	69	7.22	68.1	5,890		
	28-Oct-93	7.85		-2.42	33.80	67.48	68	7.00	68.3	5,910		
	1-Feb-94	7.25		-1.82	33.99	69.52	70	7.63	63.2	7,610		
	12-Sep-94	6.75		-1.32	33.95	70.72	70	6.90	75.8	7,950		
	23-Nov-94	6.13		-0.70	33.93	72.28	73	6.10	66.2	>2,000		
	21-Feb-95	6.00		-0.57	34.00	55.44	56	7.36	70	890		
	23-May-95	6.04		-0.61	34.00	54.52	56	7.11	66.2	5,920		
	16-Aug-95	6.03		-0.60	34.00	55.94	56	7.27	69.3	5,510		
	21-Nov-95	6.90		-1.47	34.00	52.85	54	7.19	67.8	5,720		
	13-Feb-96	5.18		0.25	33.87	74.59	>75	7	71.2	6,070		
	13-May-96	6.10		-0.67	NM	72.20 (f)	>73	6.5	76.4	14,370		
	28-Aug-96	6.17		-0.74	33.85	71.96	>72	7	85.5	4,820		
	21-Nov-96	6.09		-0.66	33.92	72.43	>73	6.5	77.8	7,890		
	20-Feb-97	5.41		0.02	33.94	74.17	>75	6.0	66.3	1,900		
	28-May-97	5.98		-0.55	NM	72.69 (f)	>73	8.0	77	9,000		
	19-Sep-97	6.45		-1.02	33.80	71.12	>72	7.4	71.3	5,500		
	17-Nov-97	6.14		-0.71	34.03	72.51	>73	7.12	75	6,690		
	27-Feb-98	4.83		0.60	33.97	75.76	>76	6.80	65	6,680		
	27-May-98	6.42		-0.99	34.00	71.60	72	6.79	62.42	7,990		
1-Oct-98	6.49		-1.06	34.00	71.52	>72	8.01	65.7	5,220			

ARCADIS GERAGHTY & MILLER

Table 1: Summary of Field Sampling, Depth-to-Water, and Casing Elevation Data
 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				Casing Diameter (inches)
								pH	Temp. (°F)	SC (µS/cm)	DO (mg/L)	
MW-2	2-Oct-90	10.38	6.21	-4.17	32.97	48.07	47	6.92	86.4	5,460		4
	28-Feb-91	9.19		-2.98	29.39	53.00	55	6.60	64.0	9,000		
	25-Mar-91	7.95		-1.74	29.39	57.00	70	6.60	63.0	6,400		
	1-May-91	8.58		-2.37	29.60	55.00	50	6.20	64.0	3,000		
	5-Aug-91	9.33		-3.12	NM	40.00	54	NM	65.1	5,680		
	23-Oct-91	9.57		-3.36	29.35	52.00	53	7.60	65.4	7,970		
	6-Jan-92	9.08		-2.87	29.50	53.00	53	9.18	62.8	6,990		
	20-Jul-92	8.60		-2.39	29.45	54.21	55	6.50	65.2	6,690		
	23-Oct-92	9.33		-3.12	29.18	51.60	55	7.20	69.8	1,900		
	4-Feb-93	7.17	6.20 (c)	-0.97	29.37	57.72	55	8.25	64.0	10,310		
	8-Apr-93	6.95		-0.75	29.32	58.16	60	6.90	66.7	>2,000		
	6-Aug-93	8.05		-1.85	29.33	55.33	66.5	7.26	66.4	6,250		
	28-Oct-93	8.50		-2.30	29.43	54.40	55	7.08	71.2	6,780		
	1-Feb-94	7.87		-1.67	29.54	56.32	57	8.35	62.4	8,250		
	12-Sep-94	7.42		-1.22	29.45	57.24	66	(e)	69.9	8,130		
	22-Nov-94	6.75		-0.55	29.50	59.15	60	6.8	67.6	>2,000		
	21-Feb-95	6.20		0.00	30.00	47.12	48	6.97	64	1,050		
	23-May-95	6.10		0.10	30.00	46.60	48	7.18	70.3	7,710		
	16-Aug-95	6.69		-0.49	30.00	46.62	46	7.42	65	6,790		
	21-Nov-95	7.62		-1.42	30.00	43.64	45	7.30	67.6	7,250		
	13-Feb-96	5.81		0.39	29.47	61.51	>62	7	71.8	2,890		
	13-May-96	6.40		-0.20	NM	59.98 (f)	>60	5.5	74.4	860		
	28-Aug-96	7.11		-0.91	29.42	58.00	>58	6	83.5	590		
	21-Nov-96	6.41		-0.21	29.43	59.85	>60	6.5	76.3	4,160		
	20-Feb-97	6.26		-0.06	29.54	60.52	>61	6.5	65.2	1,940		
	28-May-97	6.65		-0.45	NM	59.51 (f)	>60	7.0	73.6	5,540		
	19-Sep-97	6.90		-0.70	29.47	58.68	>59	6.9	69.7	12,630		
	17-Nov-97	6.75		-0.55	29.56	59.31	>60	8.08	75.7	710		
	27-Feb-98	5.31		0.89	29.45	62.76	>63	6.50	67.3	530		
	27-May-98	5.87		0.33	29.47	61.36	62	6.95	63.5	5,870		
1-Oct-98	6.95		-0.75	29.45	58.52	>59	7.96	66.7	1,100			

ARCADIS GERAGHTY & MILLER

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								pH	Temp. (°F)	SC (µS/cm)		DO (mg/L)
MW-3	2-Oct-90	10.38	6.10	-4.28	37.08	56.82	54	6.89	88.4	639		4
	28-Feb-91	9.45		-3.35	31.61	58.00	60	6.10	66.0	1,020		
	25-Mar-91	7.98		-1.88	31.60	70.00	75	6.40	65.0	8,200		
	1-May-91	8.58		-2.48	33.70	65.00	50	6.40	67.0	4,100		
	5-Aug-91	9.26		-3.16	NM	50.00	67	NM	64.1	6,190		
	23-Oct-91	9.60		-3.50	33.48	66.00	66	7.30	67.3	8,430		
	6-Jan-92	9.08		-2.98	33.66	64.00	64	9.98	61.7	7,010		
	20-Jul-92	8.59		-2.49	33.76	65.44	66	6.80	66.0	7,540		
	23-Oct-92	9.30		-3.20	33.47	63.40	65	7.50	71.6	1,800		
	4-Feb-93	7.19	6.10 (c)	-1.09	33.65	68.79	65	8.29	64.0	10,290		
	8-Apr-93	6.98		-0.88	33.55	69.08	72	6.90	68.2	>2,000		
	6-Aug-93	8.01		-1.91	33.55	66.40	56 (d)	7.43	67.3	6,490		
	28-Oct-93	8.45		-2.35	33.60	65.40	66	7.02	72.0	6,590		
	1-Feb-94	8.03		-1.93	33.74	66.84	67	8.32	63.3	8,400		
	12-Sep-94	7.39		-1.29	33.70	68.40	70	7.73	68.7	8,030		
	22-Nov-94	6.76		-0.66	33.75	70.17	70	6.60	65.8	>2,000		
	21-Feb-95	6.36		-0.26	33.50	53.74	54	6.99	85.4	880		
	23-May-95	6.48		-0.38	33.50	52.69	54	7.25	68.7	6,060		
	16-Aug-95	6.63		-0.53	33.50	53.74	54	7.53	66.1	5,390		
	21-Nov-95	7.51		-1.41	33.50	50.68	52	7.34	67.4	5,730		
	13-Feb-96	5.91		0.19	33.69	72.24	>73	7	71.5	6,790		
	13-May-96	6.36		-0.26	NM	71.06 (f)	>72	6.5	76.7	14,360		
	28-Aug-96	7.15		-1.05	33.52	68.56	>69	8	79.2	2,930		
	21-Nov-96	6.64		-0.54	33.54	69.94	>70	6.5	77.0	7,500		
	20-Feb-97	6.36		-0.26	33.67	71.00	>72	6.5	68.7	4,180		
	28-May-97	6.62		-0.52	NM	70.33 (f)	>71	7.0	74.1	6,580		
	19-Sep-97	6.83		-0.73	33.55	69.48	>70	7.0	70.8	8,570		
	17-Nov-97	6.77		-0.67	33.59	69.73	>70	7.08	75.0	6,580		
	27-Feb-98	5.38		0.72	33.60	73.37	>74	7.0	65.9	7,530		
	27-May-98	6.05		0.05	33.63	71.72	72	8.28	64.8	6,880		
1-Oct-98	6.95		-0.85	33.70	69.56	>70	7.71	67.1	6,380			

ARCADIS GERAGHTY & MILLER

Table 1: Summary of Field Sampling, Depth-to-Water, and Casing Elevation Data
 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				Casing Diameter (inches)
								pH	Temp. (°F)	SC (µS/cm)	DO (mg/L)	
MW-4	4-Feb-93	6.68	5.18 (c)	-1.50	32.70	64.38	60 (d)	NM	63.5	14,100		4
	8-Apr-93	6.21		-1.03	33.04	69.76	70	6.80	69.1	>2,000		
	6-Aug-93	7.20		-2.02	32.92	66.87	60 (d)	7.44	68.9	13,900		
	28-Oct-93	7.64		-2.46	32.98	65.88	66	6.79	72.1	11,940		
	1-Feb-94	7.26		-2.08	33.31	67.72	68	8.65	63.6	18,110		
	12-Sep-94	6.55		-1.37	33.41	69.84	60 (d)	6.03	77.5	16,710		
	23-Nov-94	6.08		-0.90	33.35	70.90	55 (d)	5.60	66.7	>2,000		
	21-Feb-95	5.36		-0.18	33.50	55.71	48 (d)	6.83	80.2	880		
	23-May-95	5.05		0.13	33.50	55.48	59	6.71	66.5	12,090		
	16-Aug-95	5.63		-0.45	33.50	55.74	33 (d)	7.34	69.8	8,670		
	21-Nov-95	6.63		-1.45	33.50	52.39	34 (d)	7.03	68.2	10,380		
	13-Feb-96	5.14		0.04	33.25	73.08	>74	7	75.3	6,090		
	13-May-96	5.75		-0.57	NM	71.50 (f)	>72	7	76.1	>20,000		
	28-Aug-96	6.04		-0.86	33.20	70.61	>71	7.4	83.9	2,600		
	21-Nov-96	7.90		-2.72	33.17	65.70	>66	6.5	75.9	8,940		
	20-Feb-97	5.29		-0.11	33.28	72.77	>73	6.5	66.1	2,110		
	28-May-97	5.66		-0.48	NM	71.81 (f)	>72	7.0	74	6,480		
	19-Sep-97	6.00		-0.82	33.31	71.00	>71	7.4	71	4,330		
	17-Nov-97	6.06		-0.88	33.35	70.95	>71	6.81	70	11,020		
	27-Feb-98	4.66		0.52	33.22	74.25	>75	7.30	65.9	15,720		
27-May-98	5.98		-0.80	33.00	70.40	35 (d)	6.89	62.4	10,980			
1-Oct-98	5.23		-0.05	33.26	72.88	>73	7.87	66.8	3,390			

ARCADIS GERAGHTY & MILLER

Table 1: Summary of Field Sampling, Depth-to-Water, and Casing Elevation Data
 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				Casing Diameter (inches)
								pH	Temp. (°F)	SC (µS/cm)	DO (mg/L)	
MW-5	4-Feb-93	8.94	4.71 (c)	-4.23	31.40	61.65	40 (d)	8.43	63.2	16,870		4
	8-Apr-93	5.43		-0.72	31.36	67.42	68	7.20	68.0	>2,000		
	6-Aug-93	6.19		-1.48	31.30	65.29	68	7.47	63.6	5,180		
	28-Oct-93	6.86		-2.15	31.43	62.72	48 (d)	7.12	70.6	4,980		
	1-Feb-94	6.48		-1.77	31.43	64.84	49 (d)	(e)	63.1	6,120		
	12-Sep-94	5.89		-1.18	31.43	66.40	39 (d)	(e)	69.4	5,020		
	22-Nov-94	5.66		-0.95	31.44	67.02	58 (d)	6.80	68.4	>2,000		
	21-Feb-95	4.90		-0.19	31.00	51.68	45 (d)	7.30	82.5	880		
	23-May-95	4.86		-0.15	31.00	50.97	52	7.03	66.5	4,320		
	16-Aug-95	4.97		-0.26	31.00	52.06	36 (d)	7.48	67.5	3,900		
	21-Nov-95	5.82		-1.11	31.00	49.10	32 (d)	7.26	67.0	4,110		
	13-Feb-96	4.86		-0.15	31.41	69.03	>69	7	68.3	5,950		
	13-May-96	5.06		-0.35	NM	68.51 (f)	>69	6.5	71.9	9,830		
	28-Aug-96	5.29		-0.58	31.34	67.73	>68	7.9	79.6	2,590		
	21-Nov-96	5.44		-0.73	31.33	67.31	>67	6.5	76.0	7,260		
	20-Feb-97	4.68		0.03	31.46	69.62	>70	6.5	60.7	1,990		
	28-May-97	5.21		-0.50	NM	68.25 (f)	>69	7.8	70.7	11,500		
	19-Sep-97	5.43		-0.72	31.46	67.68	>68	7.1	67.9	3,920		
	17-Nov-97	5.28		-0.57	31.44	68.02	>69	7.0	73.0	5,180		
	27-Feb-98	4.10		0.61	31.49	71.21	>72	6.8	62.5	1,650		
	27-May-98	5.40		-0.69	32.00	70.40	70	6.89	64.2	4,830		
	1-Oct-98	5.42		-0.71	31.45	67.68	>68	7.65	65.6	4,290		

ARCADIS GERAGHTY & MILLER

Table 1: Summary of Field Sampling, Depth-to-Water, and Casing Elevation Data
 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			Casing Diameter (inches)	
								pH	Temp. (°F)	SC (µS/cm)		DO (mg/L)
MW-6	12-Sep-94	6.56	5.37	-1.19	24.85	47.55	41 (d)	(e)	71.2	12,970		4
	22-Nov-94	6.04		-0.67	24.88	48.98	50	6.70	66.4	>2,000		
	21-Feb-95	NS		NS	NS	NS	NS	NS	NS	NS		
	23-May-95	5.32		0.05	24.70	NS	NS	NS	NS	NS		
	16-Aug-95	5.97		-0.60	24.70	NS	NS	NS	NS	NS		
	21-Nov-95	6.78		-1.41	24.70	NS	NS	NS	NS	NS		
	13-Feb-96	5.14		0.23	24.71	NS	NS	NS	NS	NS		
	13-May-96	5.64		-0.27	NM	NS	NS	NS	NS	NS		
	28-Aug-96	6.15		-0.78	24.67	NS	NS	NS	NS	NS		
	21-Nov-96	5.71		-0.34	24.65	NS	NS	NS	NS	NS		
	20-Feb-97	5.38		-0.01	24.79	NS	NS	NS	NS	NS		
	28-May-97	5.93		-0.56	NM	NS	NS	NS	NS	NS		
	19-Sep-97	6.15		-0.78	24.76	NS	NS	NS	NS	NS		
	17-Nov-97	6.06		-0.69	27.71	NS	NS	NS	NS	NS		
	27-Feb-98	4.74		0.63	24.64	NS	NS	NS	NS	NS		
	27-May-98	5.40		-0.03	29	NS	NS	NS	NS	NS		
1-Oct-98	6.37		-1.00	24.72	NS	NS	NS	NS	NS			

ARCADIS GERAGHTY & MILLER

Table 1: Summary of Field Sampling, Depth-to-Water, and Casing Elevation Data
 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				Casing Diameter (inches)
								pH	Temp. (°F)	SC (µS/cm)	DO (mg/L)	
MW-7	12-Sep-94	6.16	5.38	-0.78	28.51	58.08	60	6.65	73.5	7,920		4
	23-Nov-94	5.61		-0.23	28.46	59.40	60	6.00	64.6	>2,000		
	21-Feb-95	5.25		0.13	28.30	45.64	46	7.46	69.5	910		
	23-May-95	5.10		0.28	28.30	45.24	46	7.21	65.0	5,740		
	16-Aug-95	5.42		-0.04	28.30	45.76	46	7.36	66.8	5,560		
	21-Nov-95	6.28		-0.90	28.30	42.99	44	7.29	65.9	5,650		
	13-Feb-96	4.64		0.74	28.39	61.75	>62	7	70.1	7,050		
	13-May-96	5.36		0.02	NM	59.88 (f)	>60	6.5	76.6	15,030		
	28-Aug-96	6.20		-0.82	28.30	57.46	>58	7.4	76.4	3,980		
	21-Nov-96	6.12		-0.74	28.30	57.66	>58	6.5	75.2	8,400		
	20-Feb-97	5.70		-0.32	28.46	59.17	>60	6.5	63.9	4,410		
	28-May-97	5.46		-0.08	NM	59.80 (f)	>60	7.5	71.3	9,790		
	19-Sep-97	5.91		-0.53	28.49	58.72	>59	7.3	71.4	4,910		
	17-Nov-97	5.59		-0.21	23.39	46.28	>47	6.97	71.0	6,410		
	27-Feb-98	4.68		0.70	23.40	74.63	>75	6.80	64.0	7,070		
	27-May-98	5.17		0.21	30.00	66.00	65	6.89	63.0	4,980		
1-Oct-98	5.80		-0.42	30.00	62.92	>63	7.58	64.1	4,000			

ARCADIS GERAGHTY & MILLER

Table 1: Summary of Field Sampling, Depth-to-Water, and Casing Elevation Data
 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			Casing Diameter (inches)	
								pH	Temp. (°F)	SC (µS/cm)		DO (mg/L)
MW-8	12-Sep-94	6.46	5.44	-1.02	25.15	48.56	55	(e)	(e)	11,400		4
	23-Nov-94	6.01		-0.57	25.66	78.60	75	5.60	61.5	>2,000		
	21-Feb-95	NS		NS	NS	NS	NS	NS	NS	NS		
	23-May-95	5.53		-0.09	25.40	NS	NS	NS	NS	NS		
	16-Aug-95	5.68		-0.24	25.40	NS	NS	NS	NS	NS		
	21-Nov-95	6.37		-0.93	25.40	NS	NS	NS	NS	NS		
	13-Feb-96	5.36		0.08	25.54	NS	NS	NS	NS	NS		
	13-May-96	5.62		-0.18	NM	NS	NS	NS	NS	NS		
	28-Aug-96	6.17		-0.73	25.52	NS	NS	NS	NS	NS		
	21-Nov-96	5.74		-0.30	25.45	51.24	>52	6.5	73.6	9,300		
	20-Feb-97	5.10		0.34	25.54	53.14	>54	6.5	61.5	4,950		
	28-May-97	5.68		-0.24	NM	51.63 (f)	>54	7.5	71.2	14,930		
	19-Sep-97	5.95		-0.51	25.41	50.60	>51	7.0	67.8	7,860		
	17-Nov-97	5.91		-0.47	25.59	51.17	>52	7.49	70.2	8,320		
	27-Feb-98	4.50		0.94	25.58	54.80	>55	7.00	63.8	6,310		
	27-May-98	6.10		-0.66	31.00	65.00	65	7.19	63.9	6,460		
	1-Oct-98	6.13		-0.69	25.50	50.36	>51	7.74	63.7	6,880		

Notes appear on the following page.

ARCADIS GERAGHTY & MILLER

Table 1: Summary of Field Sampling, Depth-to-Water, and Casing Elevation Data
 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				Casing Diameter (inches)
								pH	Temp. (°F)	SC (µS/cm)	DO (mg/L)	
(a)	Measured from top of PVC casing.											
(b)	Based on four casing volumes.											
(c)	All well elevations resurveyed to site benchmark on February 10, 1993.											
(d)	Well went dry during purging.											
(e)	No reading - instrument malfunction.											
(f)	Purge volume estimated using well depth-to-bottom measurements from previous quarter.											
SC	Specific Conductance											
(µS/cm)	Microsiemens per centimeter											
(mg/L)	milligrams per liter											
(mv)	millivolt											
NM	Not measured											
NS	Well not sampled or monitored during this quarterly event.											

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.

ARCADIS GERAGHTY & MILLER

Table 2: 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
	29-May-98	13,000	280,000	110	13	66	390	ND (<50)	--
	1-Oct-98	1,300 (t)	63,000	43	1.2	15	84	ND (<10)	--

ARCADIS GERAGHTY & MILLER

Table 2: Summary of Groundwater Analytical Results - Monthly and Quarterly Sampling
Former Penske Truck Leasing Facility,
725 Julie Ann Way, Oakland, California.

Well	Date	Total Dissolved							Solids (c) (mg/L)
		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)	
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 (l)	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
	27-May-98	ND(<50)	1,300	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	--
	1-Oct-98	3,200 (o)	3,500 (v)	ND(<1.0)	ND(<1.0)	ND(<1.0)	ND(<2)	ND(<10)	--

ARCADIS GERAGHTY & MILLER

Table 2: 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-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
	27-May-98	ND(<50)	ND(<50)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	--
	1-Oct-98	ND(<50)	56 (w)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<1)	ND(<5)	--

ARCADIS GERAGHTY & MILLER

Table 2: Summary of Groundwater Analytical Results - Monthly and Quarterly Sampling
 Former Penske Truck Leasing Facility,
 725 Julie Ann Way, Oakland, California.

Well	Date								Total Dissolved
		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)	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 (i)	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 (i)	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
29-May-98	3,900	11,000	1.4	0.6	ND(<0.5)	ND(<2)	ND(<5)	--	
1-Oct-98	2,400 (u)	670,000	5.7	ND(<2.0)	ND(<10)	4.6	ND(<10)	--	

ARCADIS GERAGHTY & MILLER

Table 2: Summary of Groundwater Analytical Results - Monthly and Quarterly Sampling
 Former Penske Truck Leasing Facility,
 725 Julie Ann Way, Oakland, California.

Well	Date	Total Dissolved							Solids (c) (mg/L)
		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)	
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
29-May-98	ND(<50)	770	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	--	
1-Oct-98	ND(<50)	630	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<1.0)	ND(<5.0)	--	

ARCADIS GERAGHTY & MILLER

Table 2: Summary of Groundwater Analytical Results - Monthly and Quarterly Sampling
 Former Penske Truck Leasing Facility,
 725 Julie Ann Way, Oakland, California.

Well	Date								Total Dissolved
		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)	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
	29-May-98	NS	NS	NS	NS	NS	NS	NS	--
1-Oct-98	NS	NS	NS	NS	NS	NS	NS	--	

ARCADIS GERAGHTY & MILLER

Table 2: 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
	29-May-98	140	1,600	2.3	0.9	0.9	3	ND(<5)	--
	1-Oct-98	710 (u)	89,000	39	2.4	11	31	ND(<10)	--

ARCADIS GERAGHTY & MILLER

Table 2: 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
	29-May-98	ND(<50)	70	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<2)	ND(<5)	--
1-Oct-98	ND(<50)	440 (x)	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<1)	ND(<5)	--	
TB-LB	1-Oct-98	ND(<50)	NA	ND(<0.5)	ND(<0.5)	ND(<0.5)	ND(<1)	ND(<5.0)	NA

Notes appear on the following page.

ARCADIS GERAGHTY & MILLER

Table 2: 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)							
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		(p)							
		(q)							
		(r)							
		(s)							
		(t)							
		(u)							
		(v)							
		(w)							
		(x)							

Notes continue on the following page.

ARCADIS GERAGHTY & MILLER

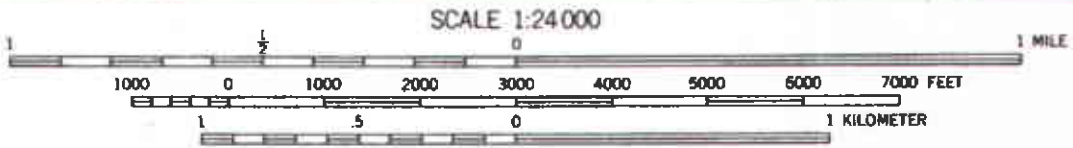
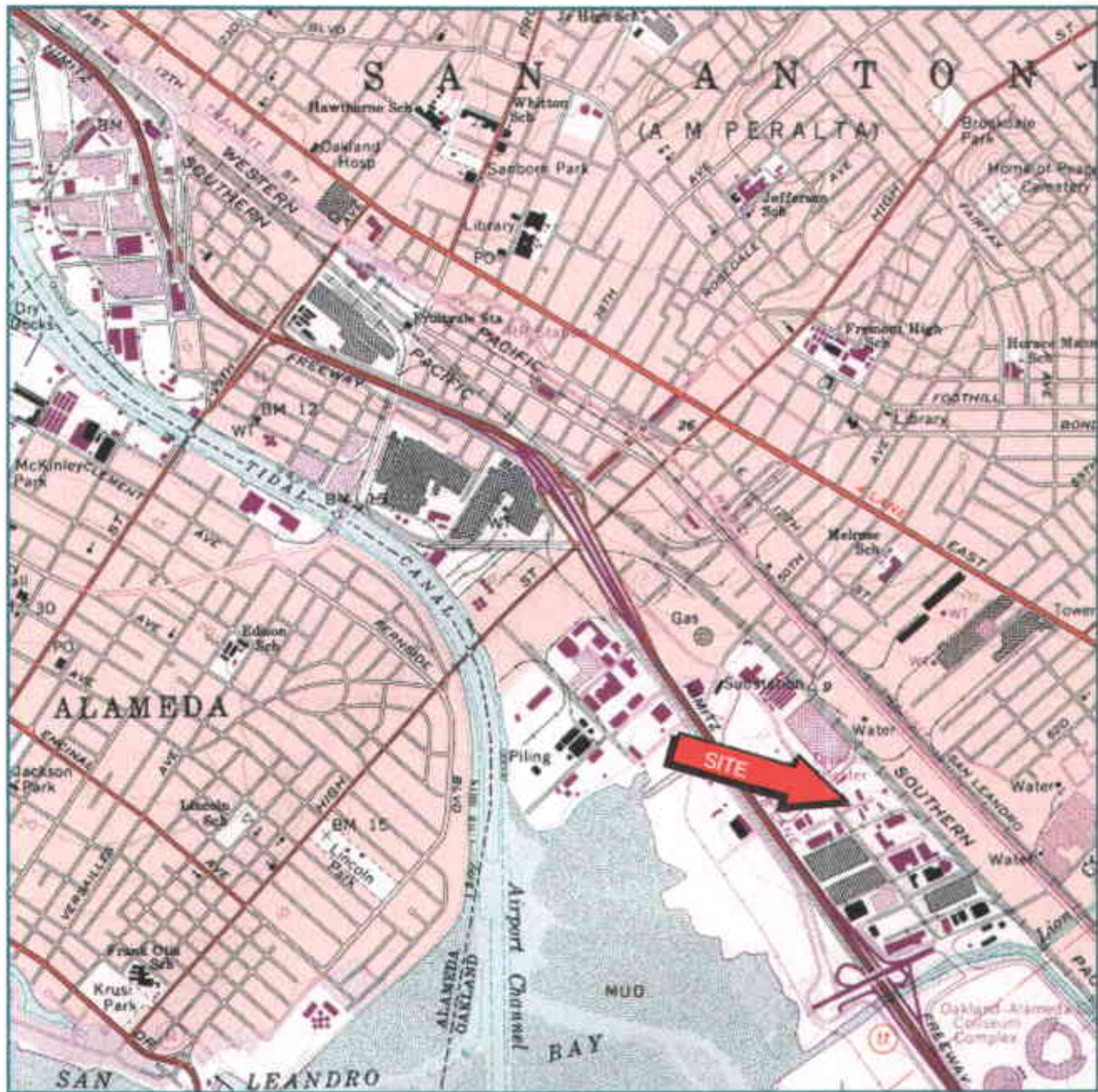
Table 2: Summary of Groundwater Analytical Results - Monthly and Quarterly Sampling
 Former Penske Truck Leasing Facility,
 725 Julie Ann Way, Oakland, California.

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)
(y)	Laboratory reports reporting limit(s) raised due to high level of analyte present in sample.								
(z)	Laboratory reports the peak pattern present in this sample represents an unknown mixture atypical of gasoline in the range of n-C10 to greater than n-C12. Quantitation is based on a gasoline reference in the range of n-C07 to n-C12 only.								
(aa)	Laboratory reports the hydrocarbon pattern present in this sample represents an unknown mixture in the range of n-C09 to n-C36. Quantitation is based on a diesel reference between n-C10 and n-C24 only.								
(ab)	Laboratory reports the hydrocarbon pattern present in this sample represents an unknown mixture in the range of n-C10 to n-C40. Quantitation is based on a diesel reference between n-C10 and n-C24 only.								
(ac)	Laboratory reports the hydrocarbon pattern present in this sample represents an unknown mixture in the range of n-C10 to n-C26. Quantitation is based on a diesel reference between n-C10 and n-C24 only.								
()	Reported detection limit								
--	Not analyzed								
ND	Not detected								
µg/L	Micrograms per liter								
mg/L	Milligrams per liter								
NS	Well not sampled or monitored during this quarterly event.								

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.

Analysis beginning October 1, 1998 by Quanterra Incorporated, West Sacramento, California.



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

UTM GRID AND 1980 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

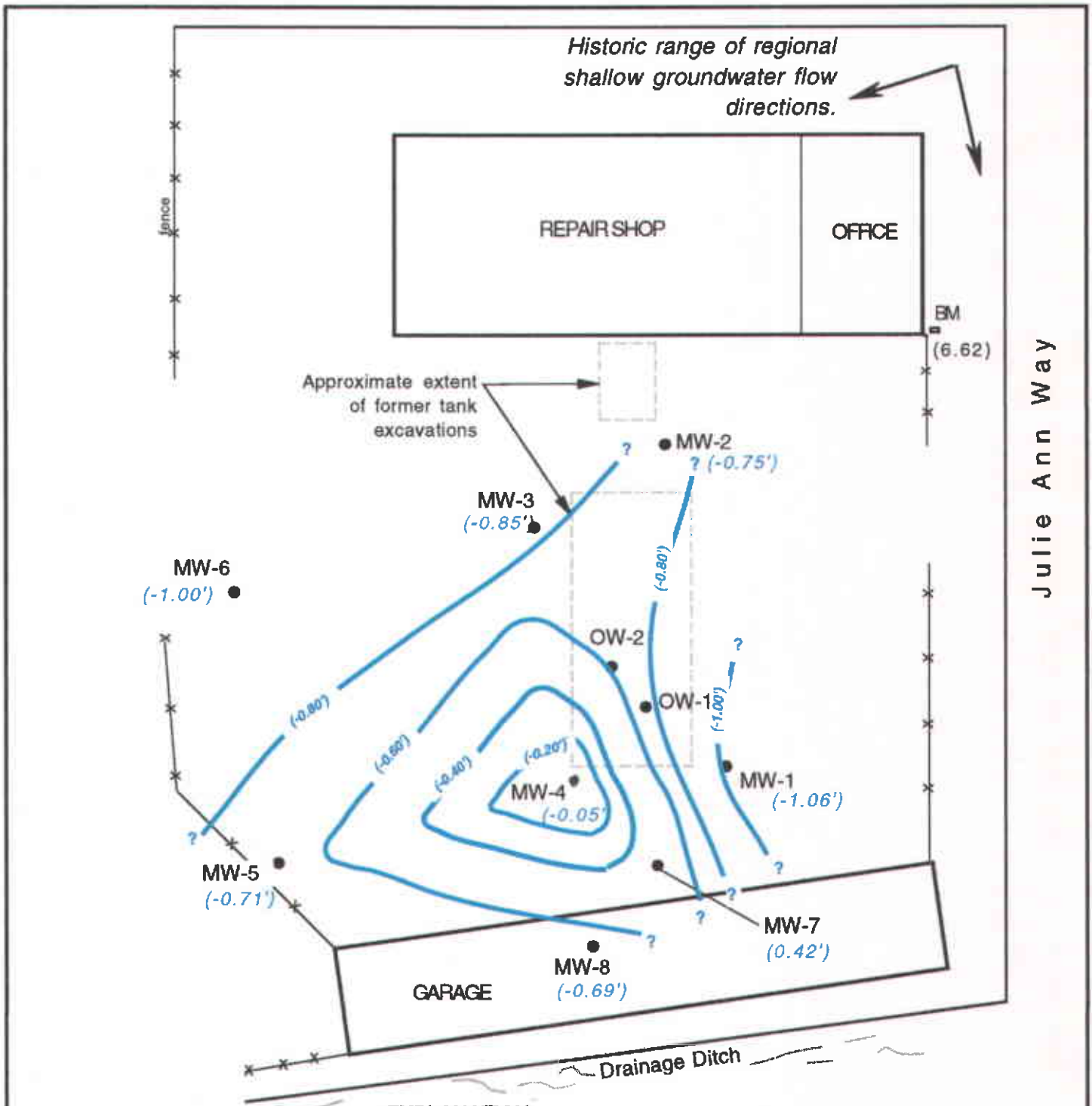
GERAGHTY & MILLER, INC.
Environmental Services

A Heidemij Company

Project No. RC0019.000

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

FIGURE
1

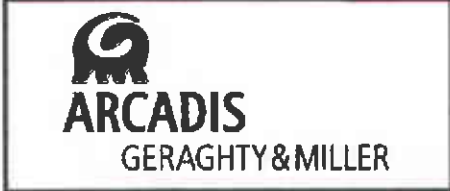


Julie Ann Way

EXPLANATION

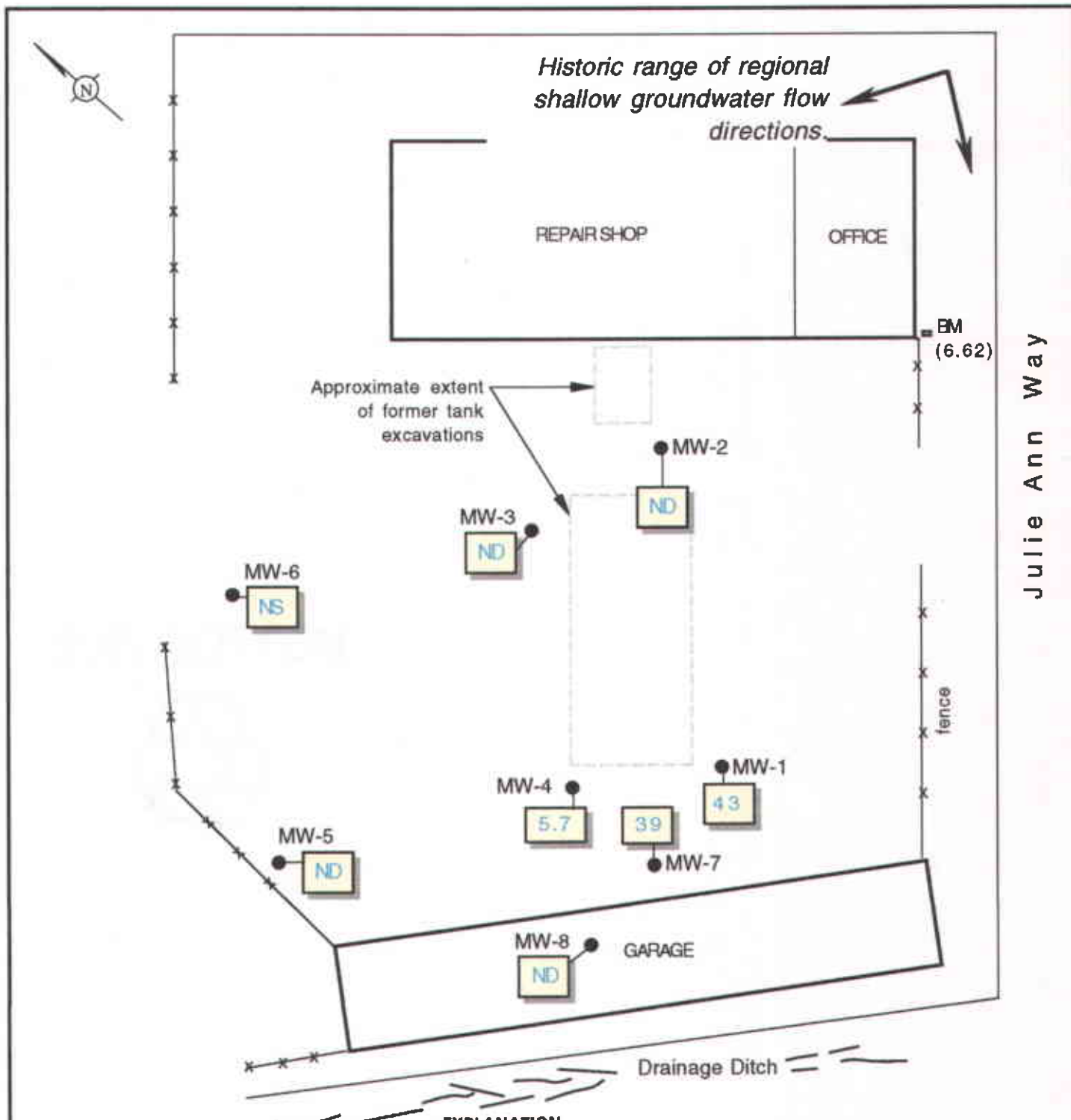
- MW-1 ● Approximate location of existing groundwater monitoring wells.
- BM Survey Bench Mark (based on City of Oakland datum which is 3 feet lower than Mean Sea Level).

- (-0.75) Groundwater elevation (feet) relative to benchmark, measured October 1, 1998
- (-0.30) Groundwater elevation contour (feet); dashed where inferred (contour interval equals 0.10 feet) queried where unknown.



SHALLOW GROUNDWATER CONTOURS
Third Quarter 1998
 Former Penske Truck Leasing Co.
 725 Julie Ann Way, Oakland, California

RC000019.0010
 FIGURE
2



EXPLANATION

MW-1 ● Approximate location of existing groundwater monitoring wells.

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

ND Not Detected-below laboratory detection limits listed in Table 2.

5.7 Benzene concentrations (in $\mu\text{g/L}$) from groundwater samples collected October 1, 1998

NS Well not sampled or monitored during this quarterly event.



ATTACHMENT 1

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



Quanterra Incorporated
880 Riverside Parkway
West Sacramento, California 95605

916 373-5600 Telephone
916 372-1059 Fax

October 20, 1998

QUANTERRA INCORPORATED PROJECT NUMBER: 301881
PO/CONTRACT: RC000019.0010

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

Dear Mr. Hehn,

This report contains the analytical results for the eight samples received under chain of custody by Quanterra Incorporated on October 2, 1998. These samples are associated with your Penske/Oakland project.

The case narrative is an integral part of this report.

If you have any questions, please feel free to call me at (916)374-4383.

Sincerely,

A handwritten signature in black ink, appearing to read "Calvin Tanaka".

Calvin Tanaka
Project Manager



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Samples: 1 - 8

Sample Data Sheets

Method Blank Reports

Laboratory QC Reports

CASE NARRATIVE

QUANTERRA INCORPORATED PROJECT NUMBER 301881

General Comments

The sample containers were received intact and in good condition..

Where applicable, the reporting limits are adjusted to reflect any dilutions.

The method blank, LCS and matrix spike results for this set met the specified QC criteria for acceptance, except as noted below. Where QC criteria were not initially met, corrective actions are documented.

Total Petroleum Hydrocarbons (Diesel) - Method 8015M

Sample 301881-0006 was observed to have "globs" of organic material floating on the surface. These were removed by filtration and the aqueous portion was extracted and analyzed.

Total Petroleum Hydrocarbons (Gasoline) - Method 8015M

The surrogate recoveries for samples 301881-0001, -0002, and -0004 are outside of the control limits of 87-122%. The acceptable Laboratory Control Sample data indicated that the method was operating within control and this condition is due to matrix interferences.

Benzene, Toluene, Ethylbenzene and Xylenes - Method 8020

The surrogate recovery for sample 301881-0004 was outside of the control limits of 75-124%. The acceptable Laboratory Control Sample data indicated that the method was operating within control and this condition is due to matrix interferences.

There were no other anomalies associated with this project.

Quanterra - Western Region
Quality Control Definitions

QC Parameter	Definition
QC Batch	A set of up to 20 field samples plus associated laboratory QC samples that are similar in composition (matrix) and that are processed within the same time period with the same reagent and standard lots.
Duplicate Control Sample (DCS)	Consist of a pair of LCSs analyzed within the same QC batch to monitor precision and accuracy independent of sample matrix effects. This QC is performed only if required by client or when insufficient sample is available to perform MS/MSD.
Duplicate Sample (DU)	A second aliquot of an environmental sample, taken from the same sample container when possible, that is processed independently with the first sample aliquot. The results are used to assess the effect of the sample matrix on the precision of the analytical process. The precision estimated using this sample is not necessarily representative of the precision for other samples in the batch.
Laboratory Control Sample (LCS)	A volume of reagent water for aqueous samples or a contaminant-free solid matrix (Ottawa sand) for soil and sediment samples which is spiked with known amounts of representative target analytes and required surrogates. An LCS is carried through the entire analytical process and is used to monitor the accuracy of the analytical process independent of potential matrix effects.
Matrix Spike and Matrix Spike Duplicate (MS/MSD)	A field sample fortified with known quantities of target analytes that are also added to the LCS. Matrix spike duplicate is a second matrix spike sample. MSs/MSDs are carried through the entire analytical process and are used to determine sample matrix effect on accuracy of the measurement system. The accuracy and precision estimated using MS/MSD is only representative of the precision of the sample that was spiked.
Method Blank (MB)	A sample composed of all the reagents (in the same quantities) in reagent water carried through the entire analytical process. The method blank is used to monitor the level of contamination introduced during sample preparation steps.
Surrogate Spike	Organic constituents not expected to be detected in environmental media and are added to every sample and QC at a known concentration. Surrogates are used to determine the efficiency of the sample preparation and the analytical process.



SAMPLE DESCRIPTION INFORMATION
for
Geraghty & Miller, Inc.

Lab ID	Client ID	Matrix	Sampled		Received
			Date	Time	Date
301881-0001-SA	MW-1	AQUEOUS	01 OCT 98	13:25	02 OCT 98
301881-0002-SA	MW-2	AQUEOUS	01 OCT 98	12:00	02 OCT 98
301881-0003-SA	MW-3	AQUEOUS	01 OCT 98	11:45	02 OCT 98
301881-0004-SA	MW-4	AQUEOUS	01 OCT 98	12:50	02 OCT 98
301881-0005-SA	MW-5	AQUEOUS	01 OCT 98	12:20	02 OCT 98
301881-0006-SA	MW-7	AQUEOUS	01 OCT 98	13:05	02 OCT 98
301881-0007-SA	MW-8	AQUEOUS	01 OCT 98	12:35	02 OCT 98
301881-0008-TB	TB-LB	AQUEOUS	01 OCT 98		02 OCT 98

ARCADIS GERAGHTY & MILLER

Project Number/Name RC000019.0010

Project Location FENESKE/OAKLAND

Laboratory QUANTERRA

Project Manager PUH

Sampler(s)/Affiliation RK

ANALYSIS / METHOD / SIZE

Sample ID/Location	Matrix	Date/Time Sampled	Lab ID	ANALYSIS / METHOD / SIZE		Remarks	Total
MW-1	L	As labeled		+ (TPH-G-MTBE)	+ (TPH-D)		5
MW-2	L	As labeled		+ (TPH-G-MTBE)	+ (TPH-D)		5
MW-3	L	As labeled		+ (TPH-G-MTBE)	+ (TPH-D)		5
MW-4	L	As labeled		+ (TPH-G-MTBE)	+ (TPH-D)		5
MW-5	L	As labeled		+ (TPH-G-MTBE)	+ (TPH-D)		5
MW-6				+	+		5
MW-7	L	As labeled		+ (TPH-G-MTBE)	+ (TPH-D)		5
MW-8	L	As labeled		+ (TPH-G-MTBE)	+ (TPH-D)		5
TB-LB				+ (TPH-G-MTBE)		*Rec'd 3 Voal tip blanks without client sample ID stickers P.S. 10/2/98 17:15	3
						the TB have 3-4mm air bubbles	
						100298MP	

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

Total No. of Bottles/Containers 36

Relinquished by: <u>[Signature]</u>	Organization: <u>ARCADIS GERAGHTY + MILLER</u>	Date: <u>10/2/98</u>	Time: <u>12:49</u>	Seal Intact? Yes No <u>N/A</u>
Received by: <u>[Signature]</u>	Organization: <u>DES UP/STO</u>	Date: <u>10/2/98</u>	Time: <u>12:49</u>	Seal Intact? Yes No <u>N/A</u>
Relinquished by: _____	Organization: _____	Date: <u>1/1</u>	Time: _____	Seal Intact? Yes No <u>N/A</u>
Received by: _____	Organization: _____	Date: <u>1/1</u>	Time: _____	Seal Intact? Yes No <u>N/A</u>

Special Instructions/Remarks: Rec'd in good condition P.S. 10/2/98 17:15

Delivery Method: In Person Common Carrier Lab Courier Other _____

Total Petroleum Hydrocarbons
(Diesel) - Method 8015M



Total Petroleum Hydrocarbons by GC/FID (Triregional)
Method TPH-D-TRIREGIONAL

Client Name: Geraghty & Miller, Inc.
Client ID: MW-1
LAB ID: 301881-0001-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: 05 OCT 98

Received: 02 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 50

Parameter	Result	Units	Reporting Limit	Qualifier
Diesel Fuel	63000	ug/L	2700	RoI
Unknown hydrocarbon	ND	ug/L	2700	

Surrogate	Recovery	Acceptable Range	
o-Terphenyl	ND %	73 - 134	H

Note 1 = The diesel pattern appears degraded.
Note H = Spiked analyte not detected because of required sample dilution.
Note o = Reporting limit(s) raised due to high level of analyte present in sample.
Note R = Reporting limit(s) raised due to sample volume limitations.
ND = Not Detected

Reported By: Emily Uebelhoer

Approved By: Lisa Stafford

The cover letter is an integral part of this report.
Rev 230787



Total Petroleum Hydrocarbons by GC/FID (Triregional)
Method TPH-D-TRIREGIONAL

Client Name: Geraghty & Miller, Inc.
Client ID: MW-2
LAB ID: 301881-0002-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: 05 OCT 98

Received: 02 OCT 98
Analyzed: 09 OCT 98

Dilution Factor: 5.0

Parameter	Result	Units	Reporting Limit	Qualifier
Diesel Fuel	ND	ug/L	270	Ro
Unknown hydrocarbon	3500	ug/L	270	I
Surrogate	Recovery		Acceptable Range	
o-Terphenyl	204 %		73 - 134	I

Note 1 = The hydrocarbon pattern present in this sample represents an unknown mixture in the range of n-C08 to n-C40. Quantitation is based on a diesel reference between n-C10 and n-C24 only.
Note I = Surrogate recovery outside of limits due to sample matrix interference.
Note o = Reporting limit(s) raised due to high level of analyte present in sample.
Note R = Reporting limit(s) raised due to sample volume limitations.
ND = Not Detected

Reported By: Emily Uebelhoer

Approved By: Lisa Stafford

The cover letter is an integral part of this report.
Rev 230787



Total Petroleum Hydrocarbons by GC/FID (TriRegional)
Method TPH-D-TRIREGIONAL

Client Name: Geraghty & Miller, Inc.
Client ID: MW-3
LAB ID: 301881-0003-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: 05 OCT 98

Received: 02 OCT 98
Analyzed: 08 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Diesel Fuel	ND	ug/L	50	
Unknown hydrocarbon	56	ug/L	50	1
Surrogate	Recovery		Acceptable Range	
o-Terphenyl	96 %		73 - 134	

Note 1 = The hydrocarbon pattern present in this sample represents an unknown mixture in the range of n-C12 to n-C28. Quantitation is based on a diesel reference between n-C10 and n-C24 only.

ND = Not Detected

Reported By: Emily Uebelhoer

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

Rev 230787



Total Petroleum Hydrocarbons by GC/FID (Triregional)
Method TPH-D-TRIREGIONAL

Client Name: Geraghty & Miller, Inc.
Client ID: MW-4
LAB ID: 301881-0004-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: 05 OCT 98

Received: 02 OCT 98
Analyzed: 09 OCT 98

Dilution Factor: 500

Parameter	Result	Units	Reporting Limit	Qualifier
Diesel Fuel	670000	ug/L	25000	o1
Unknown hydrocarbon	ND	ug/L	25000	

Surrogate	Recovery	Acceptable Range	
o-Terphenyl	ND %	73 - 134	H

Note I = The diesel pattern appears degraded.

Note H = Spiked analyte not detected because of required sample dilution.

Note o = Reporting limit(s) raised due to high level of analyte present in sample.

ND = Not Detected

Reported By: Emily Uebelhoer

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

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Total Petroleum Hydrocarbons by GC/FID (Triregional)
Method TPH-D-TRIREGIONAL

Client Name: Geraghty & Miller, Inc.
Client ID: MW-5
LAB ID: 301881-0005-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: 05 OCT 98

Received: 02 OCT 98
Analyzed: 09 OCT 98

Dilution Factor: 4.0

Parameter	Result	Units	Reporting Limit	Qualifier
Diesel Fuel	630	ug/L	200	o1
Unknown hydrocarbon	ND	ug/L	200	

Surrogate	Recovery	Acceptable Range
o-Terphenyl	133 %	73 - 134

Note 1 = The diesel pattern appears degraded.

Note o = Reporting limit(s) raised due to high level of analyte present in sample.

ND = Not Detected

Reported By: Emily Uebelhoer

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

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Total Petroleum Hydrocarbons by GC/FID (Triregional)
Method TPH-D-TRIREGIONAL

Client Name: Geraghty & Miller, Inc.
Client ID: MW-7
LAB ID: 301881-0006-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: 05 OCT 98

Received: 02 OCT 98
Analyzed: 09 OCT 98

Dilution Factor: 100

Parameter	Result	Units	Reporting Limit	Qualifier
Diesel Fuel	89000	ug/L	5500	Rol
Unknown hydrocarbon	ND	ug/L	5500	
Surrogate	Recovery		Acceptable Range	
o-Terphenyl	ND %		73 - 134	H

Note 1 = The diesel pattern appears degraded.

Note H = Spiked analyte not detected because of required sample dilution.

Note o = Reporting limit(s) raised due to high level of analyte present in sample.

Note R = Reporting limit(s) raised due to sample volume limitations.

ND = Not Detected

Reported By: Emily Uebelhoer

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

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Total Petroleum Hydrocarbons by GC/FID (Triregional)
Method TPH-D-TRIREGIONAL

Client Name: Geraghty & Miller, Inc.
Client ID: MW-8
LAB ID: 301881-0007-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: 05 OCT 98

Received: 02 OCT 98
Analyzed: 08 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Diesel Fuel	ND	ug/L	53	R
Unknown hydrocarbon	440	ug/L	53	1

Surrogate	Recovery	Acceptable Range
o-Terphenyl	107 %	73 - 134

Note 1 = The hydrocarbon pattern present in this sample represents an unknown mixture in the range of n-C10 to n-C28. Quantitation is based on a diesel reference between n-C10 and n-C24 only.

Note R = Reporting limit(s) raised due to sample volume limitations.
ND = Not Detected

Reported By: Emily Uebelhoer

Approved By: Lisa Stafford

The cover letter is an integral part of this report.
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QC LOT ASSIGNMENT REPORT - MS QC
Hydrocarbon Work Cell

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
301881-0001-SA	AQUEOUS	TPH-D-TR-A	05 OCT 98-11C	05 OCT 98-11C	
301881-0002-SA	AQUEOUS	TPH-D-TR-A	05 OCT 98-11C	05 OCT 98-11C	
301881-0003-SA	AQUEOUS	TPH-D-TR-A	05 OCT 98-11C	05 OCT 98-11C	
301881-0004-SA	AQUEOUS	TPH-D-TR-A	05 OCT 98-11C	05 OCT 98-11C	
301881-0005-SA	AQUEOUS	TPH-D-TR-A	05 OCT 98-11C	05 OCT 98-11C	
301881-0006-SA	AQUEOUS	TPH-D-TR-A	05 OCT 98-11C	05 OCT 98-11C	
301881-0007-SA	AQUEOUS	TPH-D-TR-A	05 OCT 98-11C	05 OCT 98-11C	



METHOD BLANK REPORT
Hydrocarbon Work Cell
Project: 301881

Test: TPH-D-TR-A
Method: TPH-D-TRIREGIONAL
Matrix: AQUEOUS
QC Lot: 05 OCT 98-11C
Analyzed: 08 OCT 98

Total Petroleum Hydrocarbons by GC/FID (Triregional)

QC Run: 05 OCT 98-11C
Time: 17:55

Analyte	Result	Units	Reporting Limit	Qualifier
Diesel Fuel	ND	ug/L	50	
Unknown hydrocarbon	ND	ug/L	50	
Surrogate	% Recovery	Acceptable Range		
o-Terphenyl	100	73 -134		

ND = Not Detected



DUPLICATE CONTROL SAMPLE REPORT
Hydrocarbon Work Cell
Project: 301881

Category: TPH-D-TR-A Petroleum Hydrocarbons (Diesel), Tri-Regional
Testcode: TPH-D-TR-A Method: TPH-D-TRIREGIONA
Matrix: AQUEOUS Concentration Units: ug/L
QC Lot: 05 OCT 98-11C Analyzed Date: 08 OCT 98 Time: 18:55

Analyte	-----Concentration-----			Accuracy		Precision	
	Spiked	-----Measured-----		(%)		Limits	(RPD)
		DCS1	DCS2	DCS1	DCS2		DCS Limit
Diesel Fuel	300	300	310	100	103	57-112	3.3 23

Surrogate	-----Concentration-----			Accuracy (%)		Limits
	Spiked	-----Measured-----		DCS1	DCS2	
		DCS1	DCS2	DCS1	DCS2	
o-Terphenyl	40.0	40.8	41.8	102	104	73-134

Calculations are performed before rounding to avoid round-off errors in calculated results.

Total Petroleum Hydrocarbons
(Gasoline) - Method 8015M



Total Petroleum Hydrocarbons (Gasoline)
Method P/T-GAS-TR

Client Name: Geraghty & Miller, Inc.

Client ID: MW-1

LAB ID: 301881-0001-SA

Matrix: AQUEOUS

Authorized: 02 OCT 98

Sampled: 01 OCT 98

Prepared: NA

Received: 02 OCT 98

Analyzed: 14 OCT 98

Dilution Factor: 2.0

Parameter	Result	Units	Reporting Limit	Qualifier
Gasoline	ND	ug/L	100	o
Unknown hydrocarbon	1300	ug/L	100	1
Surrogate	Recovery		Acceptable Range	
4-Bromofluorobenzene	132 %		87 - 122	I

Note 1 = The peak pattern present in this sample represents an unknown mixture atypical of gasoline in the range of n-C09 to greater than n-C12. Quantitation is based on a gasoline reference in the range of n-C07 to n-C12 only.

Note I = Surrogate recovery outside of limits due to sample matrix interference.

Note o = Reporting limit(s) raised due to high level of analyte present in sample.

NA = Not Applicable

ND = Not Detected

Reported By: Karen Mason

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

Rev 230787



Total Petroleum Hydrocarbons (Gasoline)
Method P/T-GAS-TR

Client Name: Geraghty & Miller, Inc.
Client ID: MW-2
LAB ID: 301881-0002-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: NA

Received: 02 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 2.0

Parameter	Result	Units	Reporting Limit	Qualifier
Gasoline	ND	ug/L	100	o
Unknown hydrocarbon	3200	ug/L	100	1
Surrogate	Recovery		Acceptable Range	
4-Bromofluorobenzene	730 %		87 - 122	I

Note 1 = The peak pattern present in this sample represents an unknown mixture atypical of gasoline in the range of n-C09 to greater than n-C12. Quantitation is based on a gasoline reference in the range of n-C07 to n-C12 only.
Note I = Surrogate recovery outside of limits due to sample matrix interference.
Note o = Reporting limit(s) raised due to high level of analyte present in sample.
NA = Not Applicable
ND = Not Detected

Reported By: Karen Mason

Approved By: Lisa Stafford

The cover letter is an integral part of this report.
Rev 230787



Total Petroleum Hydrocarbons (Gasoline)
Method P/T-GAS-TR

Client Name: Geraghty & Miller, Inc.
Client ID: MW-3
LAB ID: 301881-0003-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: NA

Received: 02 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Gasoline	ND	ug/L	50	
Unknown hydrocarbon	ND	ug/L	50	
Surrogate	Recovery		Acceptable Range	
4-Bromofluorobenzene	101 %		87 - 122	

NA = Not Applicable
ND = Not Detected

Reported By: Karen Mason

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

Rev 230787



Total Petroleum Hydrocarbons (Gasoline)
Method P/T-GAS-TR

Client Name: Geraghty & Miller, Inc.

Client ID: MW-4

LAB ID: 301881-0004-SA

Matrix: AQUEOUS

Authorized: 02 OCT 98

Sampled: 01 OCT 98

Prepared: NA

Received: 02 OCT 98

Analyzed: 14 OCT 98

Dilution Factor: 2.0

Parameter	Result	Units	Reporting Limit	Qualifier
Gasoline	ND	ug/L	100	o
Unknown hydrocarbon	2400	ug/L	100	1
Surrogate	Recovery		Acceptable Range	
4-Bromofluorobenzene	162 %		87 - 122	I

Note I = The peak pattern present in this sample represents an unknown mixture atypical of gasoline in the range of n-C07 to greater than n-C12. Quantitation is based on a gasoline reference in the range of n-C07 to n-C12 only.

Note I = Surrogate recovery outside of limits due to sample matrix interference.

Note o = Reporting limit(s) raised due to high level of analyte present in sample.

NA = Not Applicable

ND = Not Detected

Reported By: Karen Mason

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

Rev 230787



Total Petroleum Hydrocarbons (Gasoline)
Method P/T-GAS-TR

Client Name: Geraghty & Miller, Inc.
Client ID: MW-5
LAB ID: 301881-0005-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: NA

Received: 02 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Gasoline	ND	ug/L	50	
Unknown hydrocarbon	ND	ug/L	50	
Surrogate	Recovery		Acceptable Range	
4-Bromofluorobenzene	94 %		87 - 122	

NA = Not Applicable
ND = Not Detected

Reported By: Karen Mason

Approved By: Lisa Stafford

The cover letter is an integral part of this report.
Rev 230787



Total Petroleum Hydrocarbons (Gasoline)
Method P/T-GAS-TR

Client Name: Geraghty & Miller, Inc.
Client ID: MW-7
LAB ID: 301881-0006-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: NA

Received: 02 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 2.0

Parameter	Result	Units	Reporting Limit	Qualifier
Gasoline	ND	ug/L	100	0
Unknown hydrocarbon	710	ug/L	100	1
Surrogate	Recovery		Acceptable Range	
4-Bromofluorobenzene	94 %		87 - 122	

Note 1 = The hydrocarbon pattern present in this sample represents an unknown mixture in the range of n-C07 and n-C12. Quantitation is based on a gasoline reference between n-C07 and n-C12 only.

Note 0 = Reporting limit(s) raised due to high level of analyte present in sample.
NA = Not Applicable
ND = Not Detected

Reported By: Karen Mason

Approved By: Lisa Stafford

The cover letter is an integral part of this report.

Rev 230787



Total Petroleum Hydrocarbons (Gasoline)
Method P/T-GAS-TR

Client Name: Geraghty & Miller, Inc.
Client ID: MW-8
LAB ID: 301881-0007-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: NA

Received: 02 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Gasoline	ND	ug/L	50	
Unknown hydrocarbon	ND	ug/L	50	
Surrogate	Recovery		Acceptable Range	
4-Bromofluorobenzene	91 %		87 - 122	

NA = Not Applicable
ND = Not Detected

Reported By: Karen Mason

Approved By: Lisa Stafford

The cover letter is an integral part of this report.
Rev 230787



Total Petroleum Hydrocarbons (Gasoline)
Method P/T-GAS-TR

Client Name: Geraghty & Miller, Inc.

Client ID: TB-LB

LAB ID: 301881-0008-TB

Matrix: AQUEOUS

Authorized: 02 OCT 98

Sampled: 01 OCT 98

Prepared: NA

Received: 02 OCT 98

Analyzed: 13 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Gasoline	ND	ug/L	50	
Unknown hydrocarbon	ND	ug/L	50	
Surrogate	Recovery		Acceptable Range	
4-Bromofluorobenzene	97. %		87 - 122	

NA = Not Applicable
ND = Not Detected

Reported By: Karen Mason

Approved By: Lisa Stafford

The cover letter is an integral part of this report.
Rev 230787



QC LOT ASSIGNMENT REPORT - MS QC
Volatile Organics by GC

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
301881-0001-SA	AQUEOUS	TPH-GAS-A		13 OCT 98-64A	13 OCT 98-64A
301881-0002-SA	AQUEOUS	TPH-GAS-A		13 OCT 98-64A	13 OCT 98-64A
301881-0003-SA	AQUEOUS	TPH-GAS-A		13 OCT 98-64A	13 OCT 98-64A
301881-0004-SA	AQUEOUS	TPH-GAS-A		13 OCT 98-64A	13 OCT 98-64A
301881-0005-SA	AQUEOUS	TPH-GAS-A		13 OCT 98-64A	13 OCT 98-64A
301881-0006-SA	AQUEOUS	TPH-GAS-A		13 OCT 98-64A	13 OCT 98-64A
301881-0007-SA	AQUEOUS	TPH-GAS-A		13 OCT 98-64A	13 OCT 98-64A
301881-0008-TB	AQUEOUS	TPH-GAS-A		13 OCT 98-64A	13 OCT 98-64A



METHOD BLANK REPORT
Volatile Organics by GC
Project: 301881

Test: TPH-GAS-TR-A
Method: P/T-GAS-TR
Matrix: AQUEOUS
QC Lot: 13 OCT 98-641
Analyzed: 13 OCT 98

Total Petroleum Hydrocarbons (Gasoline)

QC Run: 13 OCT 98-64A
Time: 10:24

Analyte	Result	Units	Reporting Limit	Qualifier
Gasoline	ND	ug/L	50	
Unknown hydrocarbon	ND	ug/L	50	
Surrogate	% Recovery		Acceptable Range	
4-Bromofluorobenzene	102		87 -122	

ND = Not Detected



LABORATORY CONTROL SAMPLE REPORT
Volatile Organics by GC
Project: 301881

Category: TPH-GAS-A TPH by Purge and Trap GC-FID
Testcode: TPH-GAS-TR-A Method: P/T-GAS-TR
Matrix: AQUEOUS Concentration Units: ug/L
QC Lot: 13 OCT 98-641 QC Run: 13 OCT 98-64A
Analyzed Date: 13 OCT 98 Time: 11:43

Analyte	-----Concentration-----		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Gasoline	1000	940	94	74-120
Surrogate	-----Concentration-----		Accuracy(%)	
	Spiked	Measured	LCS	Limits
4-Bromofluorobenzene	20.0	21.0	105	87-122

Calculations are performed before rounding to avoid round-off errors in calculated results.



MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT
Volatile Organics by GC
Project: 301881

Category: TPH-GAS-A TPH by Purge and Trap GC-FID
Test : TPH-GAS-TR-A
Matrix : AQUEOUS
Sample : 301873-0002
Run : 13 OCT 98-64A
Units : ug/L

Method: P/T-GAS-TR

Analyte	-----Concentration-----			Amount Spiked		%Recovery		%RPD	Acceptance Limit	
	Sample Result	MS Result	MSD Result	MS	MSD	MS	MSD		Recov.	RPD
Gasoline	ND	928	928	1000	1000	93	93	0.08	74-120	15
Surrogates		Sample %Recovery			%Recovery MS		MSD		Acceptance Limit Recovery	
4-Bromofluorobenzene		100			111		116		87-122	

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

*Benzene, Toluene, Ethylbenzene, and
Xylenes - Method 8020*



Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX)
Method 8020

Client Name: Geraghty & Miller, Inc.

Client ID: MW-1

LAB ID: 301881-0001-SA

Matrix: AQUEOUS

Authorized: 02 OCT 98

Sampled: 01 OCT 98

Prepared: NA

Received: 02 OCT 98

Analyzed: 14 OCT 98

Dilution Factor: 2.0

Parameter	Result	Units	Reporting Limit	Qualifier
Benzene	43	ug/L	1.0	o
Toluene	1.2	ug/L	1.0	
Ethylbenzene	15	ug/L	1.0	
Xylenes (total)	84	ug/L	2.0	
Methyl-t-butyl ether (MTBE)	ND	ug/L	10	

Surrogate	Recovery	Acceptable Range
a,a,a-Trifluorotoluene	111 %	75 - 124

Note o = Reporting limit(s) raised due to high level of analyte present in sample.

NA = Not Applicable

ND = Not Detected

Reported By: Robert White

Approved By: Rose Harrelson

The cover letter is an integral part of this report.

Rev 230787



Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX)
Method 8020

Client Name: Geraghty & Miller, Inc.
Client ID: MW-2
LAB ID: 301881-0002-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: NA

Received: 02 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 2.0

Parameter	Result	Units	Reporting Limit	Qualifier
Benzene	ND	ug/L	1.0	o
Toluene	ND	ug/L	1.0	
Ethylbenzene	ND	ug/L	1.0	
Xylenes (total)	ND	ug/L	2.0	
Methyl-t-butyl ether (MTBE)	ND	ug/L	10	

Surrogate	Recovery	Acceptable Range
a,a,a-Trifluorotoluene	121 %	75 - 124

Note o = Reporting limit(s) raised due to high level of analyte present in sample.
NA = Not Applicable
ND = Not Detected

Reported By: Robert White

Approved By: Rose Harrelson

The cover letter is an integral part of this report.
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Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX)
Method 8020

Client Name: Geraghty & Miller, Inc.
Client ID: MW-3
LAB ID: 301881-0003-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: NA

Received: 02 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Benzene	ND	ug/L	0.50	
Toluene	ND	ug/L	0.50	
Ethylbenzene	ND	ug/L	0.50	
Xylenes (total)	ND	ug/L	1.0	
Methyl-t-butyl ether (MTBE)	ND	ug/L	5.0	

Surrogate	Recovery	Acceptable Range
a,a,a-Trifluorotoluene	101 %	75 - 124

NA = Not Applicable
ND = Not Detected

Reported By: Robert White

Approved By: Rose Harrelson

The cover letter is an integral part of this report.
Rev 230787



Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX)
Method 8020

Client Name: Geraghty & Miller, Inc.
Client ID: MW-4
LAB ID: 301881-0004-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: NA

Received: 02 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 2.0

Parameter	Result	Units	Reporting Limit	Qualifier
Benzene	5.7	ug/L	1.0	o
Toluene	ND	ug/L	2.0	G
Ethylbenzene	ND	ug/L	10	G
Xylenes (total)	4.6	ug/L	2.0	
Methyl-t-butyl ether (MTBE)	ND	ug/L	10	

Surrogate	Recovery	Acceptable Range	
a, a, a-Trifluorotoluene	132 %	75 - 124	I

Note G = Reporting limit(s) raised due to matrix interference.
Note I = Surrogate recovery outside of limits due to sample matrix interference.
Note o = Reporting limit(s) raised due to high level of analyte present in sample.
NA = Not Applicable
ND = Not Detected

Reported By: Robert White

Approved By: Rose Harrelson

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Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX)
Method 8020

Client Name: Geraghty & Miller, Inc.
Client ID: MW-5
LAB ID: 301881-0005-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: NA

Received: 02 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Benzene	ND	ug/L	0.50	
Toluene	ND	ug/L	0.50	
Ethylbenzene	ND	ug/L	0.50	
Xylenes (total)	ND	ug/L	1.0	
Methyl-t-butyl ether (MTBE)	ND	ug/L	5.0	

Surrogate	Recovery	Acceptable Range
a,a,a-Trifluorotoluene	89 %	75 - 124

NA = Not Applicable
ND = Not Detected

Reported By: Robert White

Approved By: Rose Harrelson

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Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX)
Method 8020

Client Name: Geraghty & Miller, Inc.
Client ID: MW-7
LAB ID: 301881-0006-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: NA

Received: 02 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 2.0

Parameter	Result	Units	Reporting Limit	Qualifier
Benzene	39	ug/L	1.0	0
Toluene	2.4	ug/L	1.0	
Ethylbenzene	11	ug/L	1.0	
Xylenes (total)	31	ug/L	2.0	
Methyl-t-butyl ether (MTBE)	ND	ug/L	10	

Surrogate	Recovery	Acceptable Range
a,a,a-Trifluorotoluene	99 %	75 - 124

Note 0 = Reporting limit(s) raised due to high level of analyte present in sample.
NA = Not Applicable
ND = Not Detected

Reported By: Robert White

Approved By: Rose Harrelson

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Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX)
Method 8020

Client Name: Geraghty & Miller, Inc.
Client ID: MW-8
LAB ID: 301881-0007-SA
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: NA

Received: 02 OCT 98
Analyzed: 14 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Benzene	ND	ug/L	0.50	
Toluene	ND	ug/L	0.50	
Ethylbenzene	ND	ug/L	0.50	
Xylenes (total)	ND	ug/L	1.0	
Methyl-t-butyl ether (MTBE)	ND	ug/L	5.0	

Surrogate	Recovery	Acceptable Range
a,a,a-Trifluorotoluene	81 %	75 - 124

NA = Not Applicable
ND = Not Detected

Reported By: Robert White

Approved By: Rose Harrelson

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Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX)
Method 8020

Client Name: Geraghty & Miller, Inc.
Client ID: TB-LB
LAB ID: 301881-0008-TB
Matrix: AQUEOUS
Authorized: 02 OCT 98

Sampled: 01 OCT 98
Prepared: NA

Received: 02 OCT 98
Analyzed: 13 OCT 98

Dilution Factor: 1.0

Parameter	Result	Units	Reporting Limit	Qualifier
Benzene	ND	ug/L	0.50	
Toluene	ND	ug/L	0.50	
Ethylbenzene	ND	ug/L	0.50	
Xylenes (total)	ND	ug/L	1.0	
Methyl-t-butyl ether (MTBE)	ND	ug/L	5.0	

Surrogate	Recovery	Acceptable Range
a,a,a-Trifluorotoluene	98 %	75 - 124

NA = Not Applicable
ND = Not Detected

Reported By: Robert White

Approved By: Rose Harrelson

The cover letter is an integral part of this report.
Rev 230787



QC LOT ASSIGNMENT REPORT - MS QC
Volatile Organics by GC

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (BLANK/LCS)	MS QC Run Number (SA,MS,SD,DU)
301881-0001-SA	AQUEOUS	602-A		13 OCT 98-64A	13 OCT 98-64A
301881-0002-SA	AQUEOUS	602-A		13 OCT 98-64A	13 OCT 98-64A
301881-0003-SA	AQUEOUS	602-A		13 OCT 98-64A	13 OCT 98-64A
301881-0004-SA	AQUEOUS	602-A		13 OCT 98-64A	13 OCT 98-64A
301881-0005-SA	AQUEOUS	602-A		13 OCT 98-64A	13 OCT 98-64A
301881-0006-SA	AQUEOUS	602-A		13 OCT 98-64A	13 OCT 98-64A
301881-0007-SA	AQUEOUS	602-A		13 OCT 98-64A	13 OCT 98-64A
301881-0008-TB	AQUEOUS	602-A		13 OCT 98-64A	13 OCT 98-64A



METHOD BLANK REPORT
Volatile Organics by GC
Project: 301881

Test: 8020-BTX-A
Method: 8020
Matrix: AQUEOUS
QC Lot: 13 OCT 98-641
Analyzed: 13 OCT 98

Benzene, Toluene, Ethyl Benzene and Xylenes (BTEX)

QC Run: 13 OCT 98-64A
Time: 10:24

Analyte	Result	Units	Reporting Limit	Qualifier
Benzene	ND	ug/L	0.50	
Toluene	ND	ug/L	0.50	
Ethylbenzene	ND	ug/L	0.50	
Xylenes (total)	ND	ug/L	1.0	
Methyl-t-butyl ether (MTBE)	ND	ug/L	5.0	

Surrogate	% Recovery	Acceptable Range
a,a,a-Trifluorotoluene	105	75 -124

ND = Not Detected



LABORATORY CONTROL SAMPLE REPORT
Volatile Organics by GC
Project: 301881

Category: 602-A Aromatic Volatile Organics
Testcode: 8020-BTX-A
Matrix: AQUEOUS
QC Lot: 13 OCT 98-641
Analyzed Date: 13 OCT 98 Time: 11:03

Method: 8020
Concentration Units: ug/L
QC Run: 13 OCT 98-64A

Analyte	-----Concentration-----		Accuracy(%)	
	Spiked	Measured	LCS	Limits
Benzene	10.0	10.3	103	72-116
Toluene	10.0	9.47	95	78-118
Ethylbenzene	10.0	9.62	96	79-119
Xylenes (total)	30.0	27.8	93	79-119
1,3-Dichlorobenzene	10.0	9.87	99	75-126

Surrogate	-----Concentration-----		Accuracy(%)	
	Spiked	Measured	LCS	Limits
a,a,a-Trifluorotoluene	20.0	20.1	101	75-124

Calculations are performed before rounding to avoid round-off errors in calculated results.



MATRIX SPIKE/MATRIX SPIKE DUPLICATE QC REPORT

Volatile Organics by GC
Project: 301881

Category: 602-A Aromatic Volatile Organics

Test : 8020-BTX-A

Method: 8020

Matrix : AQUEOUS

Sample : 301873-0002

MS Run : 13 OCT 98-64A

Units : ug/L

-----Concentration-----

Analyte	Sample Result	MS Result	MSD Result	Amount Spiked		%Recovery		%RPD	Acceptance Limit	
				MS	MSD	MS	MSD		Recov.	RPD
Benzene	ND	11.6	11.3	10.0	10.0	116	113	2.5	72-116	15
Toluene	ND	9.65	9.38	10.0	10.0	97	94	2.8	78-118	15
Ethylbenzene	ND	9.79	9.55	10.0	10.0	98	96	2.4	79-119	15
Xylenes (total)	ND	28.2	27.5	30.0	30.0	94	92	2.7	79-119	15

Surrogates	Sample %Recovery	%Recovery		Acceptance Limit Recovery
		MS	MSD	
1,3,5-Trifluorotoluene	105	105	102	75-124

ND = Not Detected

Calculations are performed before rounding to avoid round-off errors in calculated results.

CALLAB-301881

Quanterra Environmental Services, Sacramento -
850 Riverside Parkway

West Sacramento, California 95605
(916) 373-5600

Date Received : 02 OCT 98 12:49

M. Paul Hehn
ARCADIS Geraghty & Miller, Inc. -
1050 Marina Way South
Richmond, California 94804

Project ID,
EPA Case, RMA Lot : Penske RC000019.0010
AQ/TPH-G/D 100298
P.O. Number : RC000019.0010

Delivered By :

Storage Location : W21C VB

(510) 233-3200 Fax: (510) 233-3204

Logged in by : MGARCIA

Aqueous(8) samples received in good condition under Chain-of-Custody.
Delivered OTC.

Sample ID	Client's label info	Date/Time Samp.	Containers
301881-0001-SA	MW-1	01 OCT 98 13:25	3-VOAh 2-AGB
301881-0002-SA	MW-2	01 OCT 98 12:00	3-VOAh 2-AGB
301881-0003-SA	MW-3	01 OCT 98 11:45	3-VOAh 2-AGB
301881-0004-SA	MW-4	01 OCT 98 12:50	3-VOAh 2-AGB
301881-0005-SA	MW-5	01 OCT 98 12:20	3-VOAh 2-AGB
301881-0006-SA	MW-7	01 OCT 98 13:05	3-VOAh 2-AGB
301881-0007-SA	MW-8	01 OCT 98 12:35	3-VOAh 2-AGB
301881-0008-TB	TB-LB	01 OCT 98	3-VOAh

Samples not destroyed in testing are retained a maximum
of thirty (30) days unless otherwise requested.

Project Manager: Calvin Tanaka

