

November 8, 1991
Project No. RC02705

Mr. Donald Code
United Parcel Service, Inc.
8400 Pardee Drive
Oakland, California 94621

SUBJECT: Results of Monthly Ground-Water Monitoring, June 1991 through August 1991, United Parcel Service, Inc. Facility, 8400 Pardee Drive, Oakland, California.

Dear Mr. Code:

This letter report presents the results of the monthly monitoring and sampling for the quarter ending August 1991 for the United Parcel Service, Inc. (UPS) facility referenced above. Ground water was sampled monthly to comply with the monitoring requirements of the Alameda Health Care Services Department of Environmental Health, as stated in their letter to UPS dated January 23, 1990. The scope of work for this project was contained in a previous Geraghty & Miller, Inc. (Geraghty & Miller) letter to UPS, dated February 11, 1991.

GROUND-WATER SAMPLING PROCEDURES

Ground-water samples were collected from Monitoring Wells MW-1 through MW-6 on June 19 and July 23, 1991, and from MW-1 through MW-5 on August 26, 1991 (Figure 1). Monitor Well MW-6 was inaccessible on August 26, 1991. Prior to sampling, depth to water was measured, and each well was checked for the presence of liquid-phase hydrocarbons. Liquid-phase hydrocarbons were not observed in any of the monitor wells.

Prior to sampling, each well was purged using an ARO 1-inch diaphragm pump with a new length of polyethylene tubing for each well. Approximately three to four casing volumes of water were purged from each of MW-1, MW-3, and MW-4. Because of slow recharge, less than three casing volumes were removed from each of MW-2, MW-5, and

MW-6. The depth to water was allowed to equilibrate in each of the wells prior to sampling. Purged water was monitored for pH, specific conductance, and temperature. A summary of the field sampling parameters is presented in Table 1. The purged water was placed into 55-gallon drums and stored on-site for proper handling and disposal by UPS.

Following purging, ground-water samples were collected from the wells using a new disposable polyethylene bailer for each well. The ground-water samples were placed into the appropriate U.S. Environmental Protection Agency (USEPA) approved containers, placed on ice, and transported to Superior Analytical Laboratory, Inc. of San Francisco, California, along with appropriate chain-of-custody documentation. The water samples were analyzed for total petroleum hydrocarbons as diesel (TPHD) by modified USEPA Method 8015 and benzene, toluene, total xylenes, and ethylbenzene (BTXE) by USEPA Method 8020. In addition, the samples collected from Monitor Wells MW-4 through MW-6 were analyzed for total petroleum hydrocarbons as gasoline (TPHG) by modified USEPA Method 8015. Copies of the chain-of-custody forms and laboratory reports are attached.

During the August sampling event, a trip blank was also submitted to the laboratory for analysis. The trip blank consisted of a sample vial containing laboratory grade water, which accompanied the sample bottles from the laboratory to the field and back to the laboratory. The purpose of the trip blank was to assess whether any volatile compounds of interest have been imparted to the samples by the sample container, the preservative (if used), air in the vicinity of the sample bottles during shipping, or other exogenous sources. The trip blank was analyzed for TPHG (modified USEPA Method 8015) and BTXE (USEPA Method 8020).

RESULTS

RESULTS OF DEPTH-TO-WATER MEASUREMENTS

Depth-to-water measurements and ground-water elevations for the wells are presented in Table 2. The data shows that, with the exception of MW-6, ground-water elevations decreased between June and August 1991. Ground-water elevations in MW-6 decreased between June and July 1991, then increased in August 1991. Based on the ground-water elevations, the direction of shallow ground-water flow in the vicinity of the southern fueling facilities is generally toward the southwest. In the vicinity of the northern

fueling facilities, the direction of shallow ground-water flow is generally toward the north to northwest (Figure 2).

GROUND-WATER SAMPLING RESULTS

The results of ground-water analyses for June, July, and August 1991 are summarized in Table 3. During this period, petroleum hydrocarbons were not detected in water samples collected from the wells in the vicinity of the northern fueling facilities, MW-4 through MW-6, except for the water sample collected from MW-6 in July 1991, which contained a TPHD concentration of 110 micrograms per liter ($\mu\text{g/L}$).

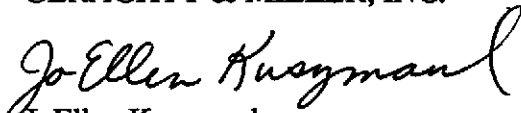
TPHD and BTXE were detected in the water samples from wells MW-1 and MW-3 near the southern fuel tanks. In June 1991, TPHD was detected at concentrations of 7,100 $\mu\text{g/L}$ (MW-1) and 1,300 $\mu\text{g/L}$ (MW-3). Benzene was detected at concentrations of 1.7 $\mu\text{g/L}$, 0.5 $\mu\text{g/L}$, and 0.4 $\mu\text{g/L}$ in the water samples collected from MW-1, MW-2, and MW-3, respectively.

In July 1991, TPHD was detected at concentrations of 8,700 $\mu\text{g/L}$, 660 $\mu\text{g/L}$, and 6,800 $\mu\text{g/L}$ in water samples collected from MW-1, MW-2, and MW-3. Benzene concentrations of 1.6 $\mu\text{g/L}$, 0.7 $\mu\text{g/L}$, and 0.3 $\mu\text{g/L}$ were detected in the water samples collected from MW-1, MW-2, and MW-3.

In August 1991, TPHD was detected at a concentration of 2,800 $\mu\text{g/L}$ in the water sample collected from MW-1. No TPHD was detected in the samples from MW-2 and MW-3. Benzene concentrations of 180 $\mu\text{g/L}$, 0.7 $\mu\text{g/L}$, and 13 $\mu\text{g/L}$ were detected from MW-1, MW-2, and MW-3. The trip blank analyzed in August 1991 did not contain detectable concentrations of petroleum hydrocarbons.

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

Sincerely,
GERAGHTY & MILLER, INC.



JoEllen Kuszmaul
Project Geologist/Project Manager



Gary W. Keyes, P.E.
Principal Engineer/Project Officer



- Table 1 Summary of Field Sampling Data
- Table 2 Depth-to-Water and Water Elevation Data
- Table 3 Ground-Water Analytical Results

- Figure 1 Site Plan
- Figure 2 Ground-Water Contour Map, August 1991

Attachment : Copies of Certified Analytical Results for Ground-Water Samples

**Table 1 - Summary of Field Sampling Data
United Parcel Service, 8400 Pardee Drive, Oakland, California**

Well	Date	Calculated Purge Volume(a) (Gallons)	Actual Purge Volume (Gallons)	FIELD PARAMETERS			Depth to Water(b) (Feet)	Well Depth(b) (Feet)	Casing Diameter (inches)
				pH	SC (µmhos/cm)	Temperature (°F)			
MW-1	19-Jun-91	27	29	7.54	1570	70.5	3.47	14.1	4
	23-Jul-91	27	30	6.94	1730	72.3	3.70		
	26-Aug-91	20	20	6.42	3730	73.5	3.92		
MW-2	19-Jun-91	25	23	7.71	4010	70.7	4.66	15.4	4
	23-Jul-91	27	10	7.07	5710	72.5	4.81		
	26-Aug-91	19	4	7.01	8890	72.1	4.89		
MW-3	19-Jun-91	28	28	7.49	1450	72	3.49	14.6	4
	23-Jul-91	27	18	7.71	2070	71.3	3.71		
	26-Aug-91	21	21	5.71	3630	70.5	3.94		
MW-4	19-Jun-91	30	30	6.79	8620	67.5	2.73	14.7	4
	23-Jul-91	28	32	6.44	11480	69.6	3.07		
	26-Aug-91	20	21	8.08	9120	71.8	4.32		
MW-5	19-Jun-91	27	23	8.43	4300	65.5	3.63	14.8	4
	23-Jul-91	25	14	7.33	9020	69	4.37		
	26-Aug-91	19	10	9.66	7950	71	4.19		
MW-6	19-Jun-91	66	35	8.68	4650	66.2	7.71	18.1	6
	23-Jul-91	59	25	6.37	8480	67.8	7.90		
	26-Aug-91	51	8	NA	NA	NA	7.71		

(a) Based on four casing volumes in June and July; based on three casing volumes in August.

(b) Measured from top of PVC casing.

NA = Not analyzed

SC = Specific conductance.

MSL = Mean Sea-Level

**Table 2 - Depth to Water and Ground-Water Elevations
United Parcel Service, 8400 Pardee Drive, Oakland, California**

Well	Date	Depth to Water (a) (feet)	Top of Casing Elevation (feet MSL)	Top of Water Elevation (feet MSL)	Measured Depth of Well (a) (feet)
MW-1	28-Aug-90	3.80	7.43	3.63	14.1
	20-Sep-90	3.99		3.44	
	19-Jun-91	3.47		3.96	
	23-Jul-91	3.70		3.73	
	26-Aug-91	3.92		3.51	
MW-2	28-Aug-90	4.98	7.15	2.17	15.4
	20-Sep-90	4.94		2.21	
	19-Jun-91	4.66		2.49	
	23-Jul-91	4.81		2.34	
	26-Aug-91	4.89		2.26	
MW-3	28-Aug-90	3.88	7.42	3.54	14.6
	20-Sep-90	3.99		3.43	
	19-Jun-91	3.49		3.93	
	23-Jul-91	3.71		3.71	
	26-Aug-91	3.94		3.48	
MW-4	28-Aug-90	3.15	5.71	2.56	14.7
	20-Sep-90	3.19		2.52	
	19-Jun-91	2.73		2.98	
	23-Jul-91	3.07		2.64	
	26-Aug-91	4.32		1.39	
MW-5	28-Aug-90	7.46	4.93	-2.53	14.8
	20-Sep-90	3.99		0.94	
	19-Jun-91	3.63		1.30	
	23-Jul-91	4.37		0.56	
	26-Aug-91	4.19		0.74	
MW-6	28-Aug-90	7.76	6.27	-1.49	18.1
	20-Sep-90	7.18		-0.91	
	19-Jun-91	7.71		-1.44	
	23-Jul-91	7.90		-1.63	
	26-Aug-91	7.71		-1.44	

(a) Measured from top of PVC casing.
MSL = Mean Sea-Level

Table 3 - Ground-Water Analytical Results
United Parcel Service, 8400 Pardee Drive, 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)
MW-1	28-Aug-90	NA	21,000	3.0	1.4	4.0	2.4
	19-Jun-91	NA	7,100	1.7	0.7	0.5	0.9
	23-Jul-91	220	8,700	1.6	1.1	0.5	1.5
	26-Aug-91	NA	2,800	180	120	31	160
MW-2	28-Aug-90	NA	3,500	0.6	0.4	0.6	0.7
	19-Jun-91	NA	ND(<50)	0.5	ND (<0.3)	ND (<0.3)	ND (<0.3)
	23-Jul-91	ND(<50)	660	0.7	ND (<0.3)	ND (<0.3)	ND (<0.3)
	26-Aug-91	NA	ND(<50)	0.7	ND (<0.3)	ND (<0.3)	ND (<0.3)
MW-3	28-Aug-90	NA	18,000	0.5	0.8	4.3	2.3
	19-Jun-91	NA	1,300	0.4	0.4	1.7	1.4
	23-Jul-91	330	6,800	0.3	ND (<0.3)	1.5	0.5
	26-Aug-91	NA	ND(<50)	13	13	5.8	26
MW-4	28-Aug-90	ND(<50)	ND(<50)	ND (<0.3)	ND (<0.3)	ND (<0.3)	ND (<0.3)
	19-Jun-91	ND(<50)	ND(<50)	ND (<0.3)	ND (<0.3)	ND (<0.3)	ND (<0.3)
	23-Jul-91	ND(<50)	ND(<50)	ND (<0.3)	ND (<0.3)	ND (<0.3)	ND (<0.3)
	26-Aug-91	ND(<50)	ND(<50)	ND (<0.3)	ND (<0.3)	ND (<0.3)	ND (<0.3)

Table 3 - Ground-Water Analytical Results
United Parcel Service, 8400 Pardee Drive, 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)
MW-5	28-Aug-90	ND(<50)	ND(<50)	ND (<0.3)	ND (<0.3)	ND (<0.3)	ND (<0.3)
	19-Jun-91	ND(<50)	ND(<50)	ND (<0.3)	ND (<0.3)	ND (<0.3)	ND (<0.3)
	23-Jul-91	ND(<50)	ND(<50)	ND (<0.3)	ND (<0.3)	ND (<0.3)	ND (<0.3)
	26-Aug-91	ND(<50)	ND(<50)	ND (<0.3)	ND (<0.3)	ND (<0.3)	ND (<0.3)
MW-6	7-Sep-90	ND(<50)	ND(<100)	ND (<0.3)	0.5	ND (<0.3)	1.0
	19-Jun-91	ND(<50)	ND(<50)	ND (<0.3)	ND (<0.3)	ND (<0.3)	ND (<0.3)
	23-Jul-91	ND(<50)	110	ND (<0.3)	ND (<0.3)	ND (<0.3)	ND (<0.3)
	26-Aug-91	NA	NA	NA	NA	NA	NA
Trip Blank	26-Aug-91	ND(<50)	NA	ND (<0.3)	ND (<0.3)	ND (<0.3)	ND (<0.3)

(a) Total Petroleum Hydrocarbons analyzed by USEPA Method 8015, modified.

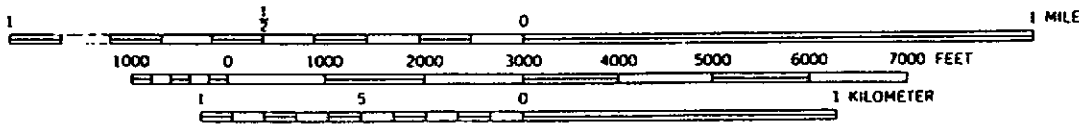
(b) Analyzed by USEPA Method 8020.

() - Reported detection limit

ND- Not Detected

NA - Not Analyzed.

Analysis by Superior Analytical Laboratories, Inc. Martinez, California.



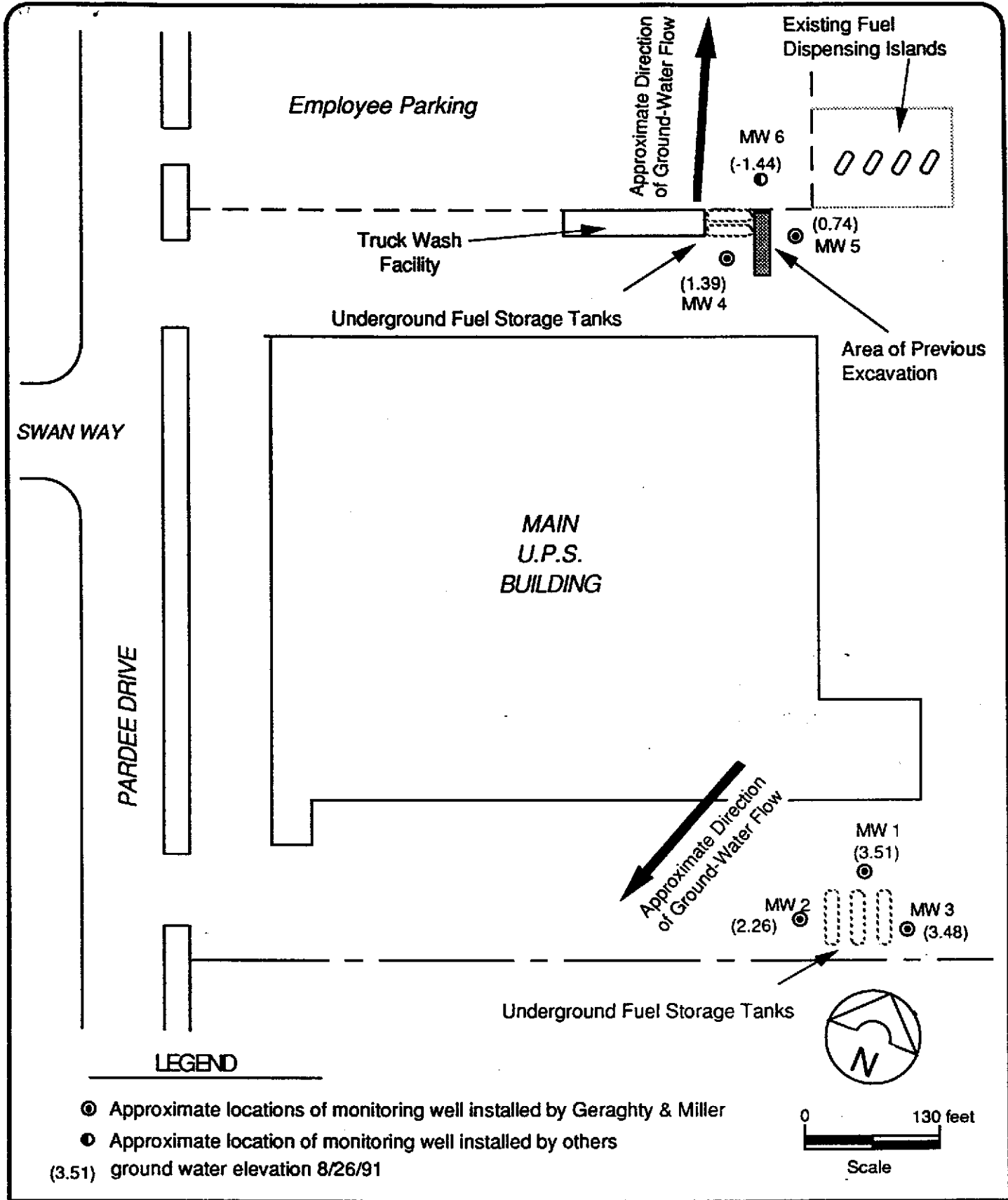
QUADRANGLE LOCATION



SITE LOCATION MAP
 United Parcel Service
 Package Distribution Facility
 Oakland, California

FIGURE

1



Proj. No. RC02705

**GROUND-WATER CONTOUR MAP
AUGUST 1991**

UNITED PARCEL SERVICE, INC.
8400 Pardee Drive
Oakland, California

FIGURE

2

ATTACHMENT

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

Project Number RC02705
Project Location UPS Oakland
Laboratory Superior
Sampler(s)/Affiliation M.M. BESSETTE
ENVER. SCI. I

SAMPLE IDENTITY Code Date/Time Sampled Lab ID

				SAMPLE BOTTLE / CONTAINER DESCRIPTION								
				TPH as gasoline (USEPA 8015)	TPH as diesel (USEPA 8015)	BTEX (USEPA 8015)	LEAD 8020	(CA. LUFT METHOD)				TOTAL
SPI-A	S			X	X	X	X					
SPI-B	S			X	X	X	X					
MW-1	L				X	X						4
MW-2	L				X	X						4
MW-3	L				X	X						4
MW-4	L			X	X	X						4
MW-5	L			X	X	X						4
MW-6	L			X	X	X						4
Trip Blank												

Please initial: EB
 Samples Stored in ice: ?
 Appropriate containers: Y
 Samples preserved: Y-N
 VOA's without headspace: Y
 Comments: Trip Blank received, Trip not on COC.
Hold pending call back per JoEllen

Total No. of Bottles/Containers 24

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

Relinquished by: Julie Perreault Organization: G&M Date: 6/20/91 Time: 0925 Seal Intact? Yes No N/A
 Received by: Ken Brown Organization: EXPERT HT
 Relinquished by: Ken Brown Organization: EXPERT HT Date: 6/20/91 Time: 1049 Seal Intact? Yes No N/A
 Received by: JoEllen Organization: SAC

Special Instructions/Remarks: Standard turnaround
Project mgr JoEllen Kuzmaul

Delivery Method: In Person Common Carrier Lab Courier Other _____ SPECIFY _____

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

DOHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 53784
CLIENT: Geraghty & Miller Inc.
CLIENT JOB NO.: RC02705

DATE RECEIVED: 06/20/91
DATE REPORTED: 06/26/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (ug/L) Diesel Range
1	MW-1	7100
2	MW-2	ND<50
3	MW-3	1300
4	MW-4	ND<50
5	MW-5	ND<50
6	MW-6	ND<50

ug/L - parts per billion (ppb)

Minimum Detection Limit for Diesel in Water: 50ug/L

QAQC Summary:

Daily Standard run at 200mg/L: %DIFF Diesel = <15%
MS/MSD Average Recovery = 125%: Duplicate RPD = <1%

Richard Srna, Ph.D.

Olga A. Novak (for)
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

SUPERIOR ANALYTICAL LABORATORY, INC.

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DOHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 53784
CLIENT: Geraghty & Miller Inc.
CLIENT JOB NO.: RC02705

DATE RECEIVED: 06/20/91
DATE REPORTED: 06/26/91

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/L)			
		Benzene	Toluene	Ethyl Benzene	Xylenes
1	MW-1	1.7	0.7	0.5	0.9
2	MW-2	0.5	ND<0.3	ND<0.3	ND<0.3
3	MW-3	0.4	0.4	1.7	1.4

ug/L - parts per billion (ppb)

Minimum Detection Limit in Water:0.3ug/L

QAQC Summary:

Daily Standard run at 20ug/L: %DIFF 8020 = <15%
MS/MSD Average Recovery = 105%: Duplicate RPD = 6.0%

Comments:

Richard Srna, Ph.D.

Amey A. Nwogu
Laboratory Director

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DOHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 53784
CLIENT: Geraghty & Miller Inc.
CLIENT JOB NO.: RC02705

DATE RECEIVED: 06/20/91
DATE REPORTED: 06/26/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (ug/L) Gasoline Range
4	MW-4	ND<50
5	MW-5	ND<50
6	MW-6	ND<50

ug/L - parts per billion (ppb)

Minimum Detection Limit for Gasoline in Water: 50ug/L

QAQC Summary:

Daily Standard run at 2mg/L: %DIFF Gasoline = <15%
MS/MSD Average Recovery = 96%: Duplicate RPD = 0.6%

Richard Srna, Ph.D.

Orly A. Nurovsky
Laboratory Director

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DOHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 53784
CLIENT: Geraghty & Miller Inc.
CLIENT JOB NO.: RC02705

DATE RECEIVED: 06/20/91
DATE REPORTED: 06/26/91

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/L)			
		Benzene	Toluene	Ethyl Benzene	Xylenes
4	MW-4	ND<0.3	ND<0.3	ND<0.3	ND<0.3
5	MW-5	ND<0.3	ND<0.3	ND<0.3	ND<0.3
6	MW-6	ND<0.3	ND<0.3	ND<0.3	ND<0.3

ug/L - parts per billion (ppb)

Minimum Detection Limit in Water:0.3ug/L

QAQC Summary:

Daily Standard run at 20ug/L: %DIFF 8020 = <15%
MS/MSD Average Recovery = 98% : Duplicate RPD = 1%

Richard Srna, Ph.D.

Erin A. Duggan (for)
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

Project Number RC02705
Project Location UPS Oakland
Laboratory Superior
Sampler(s)/Affiliation M. BESSETE
A. REOS GTM

SAMPLE BOTTLE / CONTAINER DESCRIPTION

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	TPH as gasoline (EPA 8015)	BTEX (EPA 8020)	TPH as diesel (EPA 8015)					TOTAL
MW-1	L	7/23/1550		X	X	X					4
MW-2	L	7/23/1745		X	X	X					4
MW-3	L	7/23/1755		X	X	X					4
MW-4	L	7/23/1240		X	X	X					4
MW-5	L	7/23/1645		X	X	X					4
MW-6	L	7/23/1714		X	X	X					4

Please initial: CSJ
 Samples Stored In Ice: Yes
 Appropriate containers: _____
 Samples preserved: _____
 VOA's without headspace: _____
 Comments: _____

Sample Code: L = Liquid; S = Solid; A = Air
 Total No. of Bottles/Containers: _____

Relinquished by: Michael Kerrel Organization: GTM INC Date: 7/24/91 Time: 0818 Seal Intact? Yes No N/A
 Received by: J. C. ... Organization: EXPRESS-IT
 Relinquished by: Bill Under # 854 Organization: EXPRESS IT Date: 7/24/91 Time: 9:05 Seal Intact? Yes No N/A
 Received by: Cecilia Jorgensen Organization: Superior Lab

Special Instructions/Remarks: _____

Delivery Method: In Person Common Carrier Lab Courier Other _____

SUPERIOR ANALYTICAL LABORATORY, INC.

1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

DOHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 53911
CLIENT: Geraghty & Miller Inc.
CLIENT JOB NO.: RC02705

DATE RECEIVED: 07/24/91
DATE REPORTED: 07/31/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (ug/L) Gasoline Range
1	MW-1	220
2	MW-2	ND<50
3	MW-3	330
4	MW-4	ND<50
5	MW-5	ND<50
6	MW-6	ND<50

ug/L - parts per billion (ppb)

Minimum Detection Limit for Gasoline in Water: 50ug/L

QAQC Summary:

Daily Standard run at 2mg/L: %Diff Gasoline = <15

MS/MSD Average Recovery = 102%: Duplicate RPD = 1.8%

Richard Srna, Ph.D.

Greg A. Newson (for)
Laboratory Director

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DOHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 53911
CLIENT: Geraghty & Miller Inc.
CLIENT JOB NO.: RC02705

DATE RECEIVED: 07/24/91
DATE REPORTED: 07/31/91

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/L)			
		Benzene	Toluene	Ethyl Benzene	Xylenes
1	MW-1	1.6	1.1	0.5	1.5
2	MW-2	0.7	ND<0.3	ND<0.3	ND<0.3
3	MW-3	0.3	ND<0.3	1.5	0.5
4	MW-4	ND<0.3	ND<0.3	ND<0.3	ND<0.3
5	MW-5	ND<0.3	ND<0.3	ND<0.3	ND<0.3
6	MW-6	ND<0.3	ND<0.3	ND<0.3	ND<0.3

ug/L - parts per billion (ppb)

Minimum Detection Limit in Water:0.3ug/L

QAQC Summary:

Daily Standard run at 20ug/L: %Diff 8020 = <15
MS/MSD Average Recovery =101% : Duplicate RPD = 2.5%

Richard Srna, Ph.D.

Angi A. Nwogu (for)
Laboratory Director

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SUPERIOR ANALYTICAL LABORATORY, INC.

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DOHS #1332

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 53911
CLIENT: Geraghty & Miller Inc.
CLIENT JOB NO.: RC02705

DATE RECEIVED: 07/24/91
DATE REPORTED: 07/31/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (ug/L) Diesel Range
1	MW-1	8700
2	MW-2	660
3	MW-3	6800
4	MW-4	ND<50
5	MW-5	ND<50
6	MW-6	* 110

ug/L - parts per billion (ppb)

Minimum Detection Limit for Diesel in Water: 50ug/L

QAQC Summary:

Daily Standard run at 200mg/L: %Diff Diesel =<15
MS/MSD Average Recovery = 97%: Duplicate RPD = 5.3%

* Does not match typical diesel pattern.

Richard Srna, Ph.D.

Richard Srna
Laboratory Director

OUTSTANDING QUALITY AND SERVICE

Project Number RC02705
 Project Location UPS Oakland
 Laboratory Superior
 Sampler(s)/Affiliation ALEX R305 /G+M

SAMPLE BOTTLE / CONTAINER DESCRIPTION

SAMPLE IDENTITY	Code	Date/Time Sampled	Lab ID	TPH as gasoline (EPA 8015)	TPH as diesel (EPA 8015)	BTEX (EPA 8020)				TOTAL
MW-1	L	8/26			X	X				4
MW-2	L	8/26			X	X				4
MW-3	L	8/26			X	X				4
MW-4	L	8/26		X	X	X				4
MW-5	L	8/26		X	X	X				4
MW-6				X	X	X				
PROP BLANK	L			X		X				1

Please initial: _____
 Samples stored in ice. _____
 Appropriate containers. _____
 Samples preserved. _____
 VOA's without headspace. _____
 Comments: (1/2 Liter for MW-5)

Sample Code: L = Liquid; S = Solid; A = Air Total No. of Bottles/Containers 21

Relinquished by: <u>M.M. Reynolds</u>	Organization: <u>G+M Inc.</u>	Date: <u>8/27/91</u> Time: <u>11:26</u>	Seal Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Received by: <u>[Signature]</u>	Organization: <u>Express-IT X519</u>		
Relinquished by: <u>[Signature]</u>	Organization: <u>Express-IT X519</u>	Date: <u>8/27/91</u> Time: <u>12:20</u>	Seal Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A
Received by: <u>M. Hollenberg</u>	Organization: <u>SAL</u>		

Special Instructions/Remarks: Standard turnaround. Please send results to Jo Ellen Kuszmaul, Geraghty + Miller, Inc., 1050 Marina Way South, Richmond, CA 94804 (415) 233-3200

Delivery Method: In Person Common Carrier Lab Courier Other _____



Superior Precision Analytical, Inc.

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

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 54008
CLIENT: Geraghty & Miller Inc.
CLIENT JOB NO.: RCO2705

DATE RECEIVED: 08/27/91
DATE REPORTED: 09/05/91

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/L)			
		Benzene	Toluene	Ethyl Benzene	Xylenes
1	MW-1	180	120	31	160
2	MW-2	0.7	ND<0.3	ND<0.3	ND<0.3
3	MW-3	13	13	5.8	26

ug/L - parts per billion (ppb)

Minimum Detection Limit in Water:0.3ug/L

QAQC Summary:

Daily Standard run at 20ug/L: %DIFF 8020 = <15%
MS/MSD Average Recovery = 102%: Duplicate RPD = 1.6%

Comments:

Richard Srna, Ph.D.

Laboratory Director



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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 54008
CLIENT: Geraghty & Miller Inc.
CLIENT JOB NO.: RCO2705

DATE RECEIVED: 08/27/91
DATE REPORTED: 09/05/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS by Modified EPA SW-846 Method 8015

LAB #	Sample Identification	Concentration (ug/L) Diesel Range
1	MW-1	2800
2	MW-2	ND<50
3	MW-3	ND<50
4	MW-4	ND<50
5	MW-5	ND<76*

* - Detection limit raised due to limited sample volume.

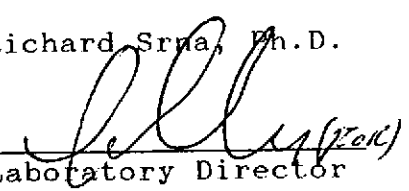
ug/L - parts per billion (ppb)

Minimum Detection Limit for Diesel in Water: 50ug/L

QAQC Summary:

Daily Standard run at 200mg/L: %DIFF Diesel = <15%
MS/MSD Average Recovery = 84%: Duplicate RPD = 1.0%

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Laboratory Director



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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 54008
CLIENT: Geraghty & Miller Inc.
CLIENT JOB NO.: RCO2705

DATE RECEIVED: 08/27/91
DATE REPORTED: 09/05/91

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/L)			
		Benzene	Toluene	Ethyl Benzene	Xylenes
4	MW-4	ND<0.3	ND<0.3	ND<0.3	ND<0.3
5	MW-5	ND<0.3	ND<0.3	ND<0.3	ND<0.3
6	Trip Blank	ND<0.3	ND<0.3	ND<0.3	ND<0.3

ug/L - parts per billion (ppb)

Minimum Detection Limit in Water:0.3ug/L

QAQC Summary:

Daily Standard run at 20ug/L: %DIFF 8020 = <15%
MS/MSD Average Recovery = 102% : Duplicate RPD = 1.6%

Richard Srna, Ph.D.

Laboratory Director



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C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 54008
CLIENT: Geraghty & Miller Inc.
CLIENT JOB NO.: RCO2705

DATE RECEIVED: 08/27/91
DATE REPORTED: 09/05/91

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (ug/L) Gasoline Range
4	MW-4	ND<50
5	MW-5	ND<50
6	Trip Blank	ND<50

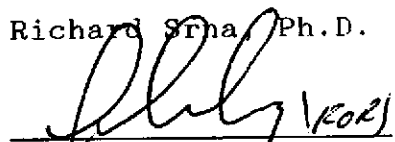
ug/L - parts per billion (ppb)

Minimum Detection Limit for Gasoline in Water: 50ug/L

QAQC Summary:

Daily Standard run at 2mg/L: %DIFF Gasoline = <15%
MS/MSD Average Recovery = 100%: Duplicate RPD = 2.4%

Richard Srna, Ph.D.



Laboratory Director