February 18, 1992
Project No. RC02705

DRAFT

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

SUBJECT: Results of Quarterly Ground-Water Monitoring, February 1992, United Parcel Service, Inc. Facility, 8400 Pardee Drive, Oakland, California.

Dear Mr. Code:

This letter report presents the results of the quarterly monitoring and sampling for the quarter ending February 1992 for the United Parcel Service, Inc. (UPS) facility referenced above. 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 February 3, 1992 (Figure 1). 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 1/2-inch diaphragm pump with a new length of polyethylene tubing for each well. Approximately three casing volumes of water were purged from each of the wells. The depth to water was allowed to equilibrate in each of the wells prior to sampling. 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 Precision Analytical Laboratory, Inc. of Martinez, 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, ethylbenzene, and total xylenes (BTEX) 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.

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 BTEX (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 increased between November 1991 and February 1992. 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 south. In the vicinity of the northern fueling facilities, the direction of shallow ground-water flow is generally toward the northwest (Figure 1).

GROUND-WATER SAMPLING RESULTS

The results of ground-water analyses for February 1992 are summarized in Table 3. In February 1992, TPHD was detected in the water samples from Monitor Wells MW-1, MW-2, and MW-3 near the southern fuel tanks at concentrations of 2,200 micrograms per liter (µg/L), 400 µg/L, and 1,100 µg/L respectively. Benzene was detected in the water samples from Monitor Wells MW-1, MW-2, MW-3 at concentrations of 0.9 µg/L, 0.7

µg/L, and 0.4 µgL respectively. Ethylbenzene was detected in the water samples from Monitor Wells MW-1 and MW-3 at concentrations of 0.8 µg/L and 1.3 µg/L respectively. Xylenes were detected in Monitor Wells MW-1, MW-2, MW-3, and MW-5 at concentrations of 0.7 µg/L, 0.5 µg/L, 0.6 µg/L, and 0.5 µg/L respectively.

No TPH or BTEX were detected in the water samples from Monitor Wells MW-4 and MW-6 near the northern fueling facilities. The trip blank did not contain detectable concentrations of petroleum hydrocarbons.

Geraghty & Miller appreciates the opportunity to be of service to UPS. If you have any questions regarding this letter report, please call the undersigned at (510) 233-3200.

Sincerely,
GERAGHTY & MILLER, INC.

JoEllen Kuszmaul
Project Geologist/Project Manager

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

Attachments:	Table 1	Summary of Field Sampling Data
	Table 2	Depth-to-Water and Ground-Water Elevations
	Table 3	Ground-Water Analytical Results
	Figure 1	Ground-Water Contour Map, February 1992
	Attachment:	Copies of Chain of Custody and Certified Analytical Results

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	3-Feb-92	19.50	20	NM	NM	NM	3.99	14	4
MW-2	3-Feb-92	20.59	21	NM	NM	NM	4.44	15	4
MW-3	3-Feb-92	19.48	20	NM	NM	NM	4.01	14	4
MW-4	3-Feb-92	19.77	20	NM	NM	NM	3.86	14	4
MW-5	3-Feb-92	20.41	21	NM	NM	NM	3.53	14	4
MW-6	3-Feb-92	47.34	30	NM	NM	NM	7.19	18	6

(a) Based on three casing volumes.
(b) Measured from top of PVC casing.

NM Not measured
SC Specific conductance
MSL Mean Sea-Level

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

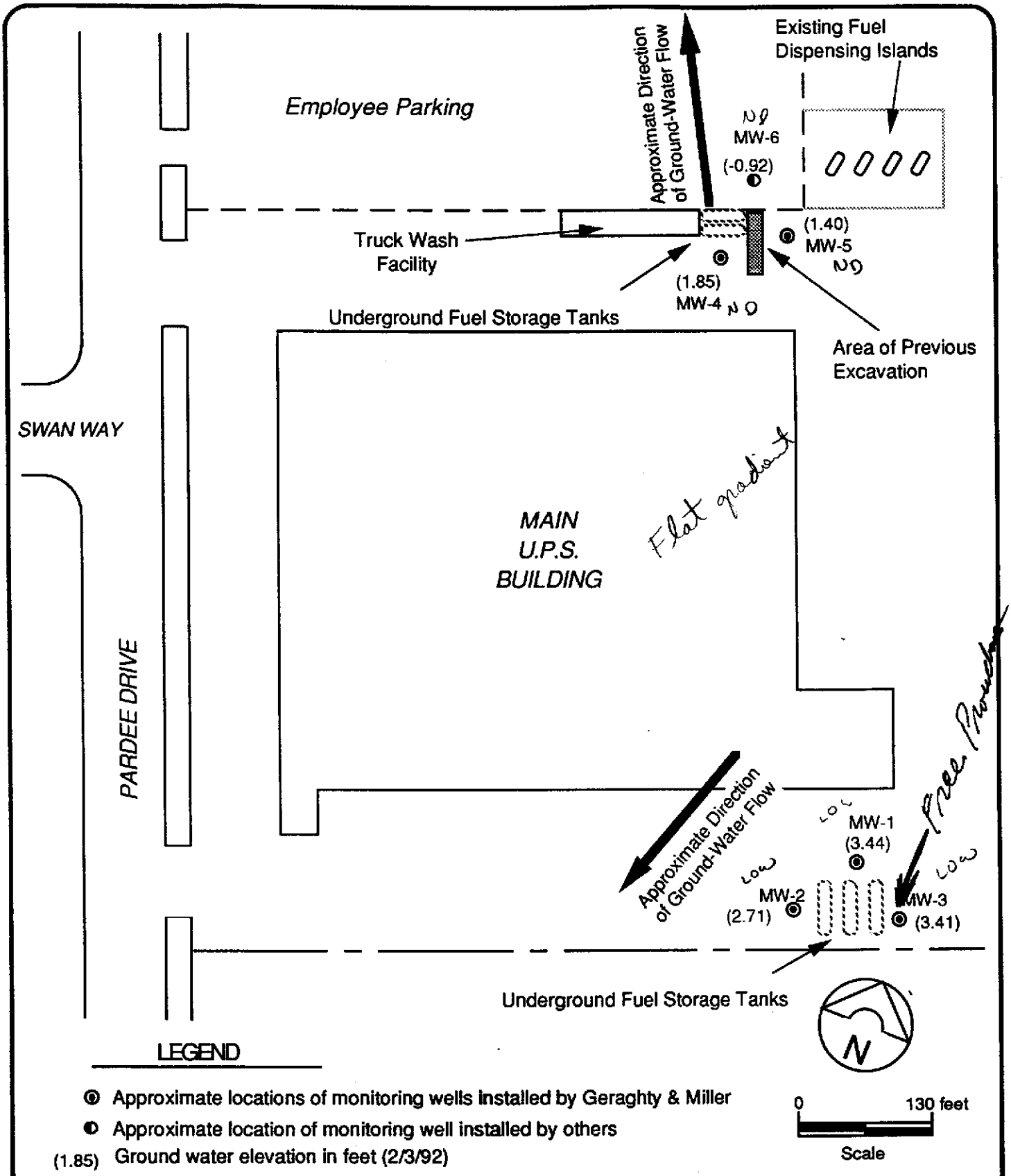
Well	Date	Depth to Water (a) (feet)	Top of Casing Elevation (feet MSL)	Top of Water Elevation (feet MSL)	Measured Depth of Well (a) (feet)
MW-1	28-Aug-90	3.80	7.43	3.63	14.1
	20-Sep-90	3.99		3.44	
	19-Jun-91	3.47		3.96	
	23-Jul-91	3.70		3.73	
	26-Aug-91	3.92		3.51	
	18-Nov-91	4.21		3.22	
	3-Feb-92	3.99		3.44	
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	
	18-Nov-91	4.93		2.22	
	3-Feb-92	4.44		2.71	
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	
	18-Nov-91	4.23		3.19	
	3-Feb-92	4.01		3.41	
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	
	18-Nov-91	4.03		1.68	
	3-Feb-92	3.86		1.85	
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	
	18-Nov-91	4.25		0.68	
	3-Feb-92	3.53		1.40	

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-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	
	18-Nov-91	6.99		-0.72	
	3-Feb-92	7.19		-0.92	

(a) Measured from top of PVC casing.

MSL Mean Sea-Level



GERAGHTY & MILLER, INC.
Environmental Services

Proj. No.RC02705

GROUND-WATER ELEVATION MAP
February 1992
UNITED PARCEL SERVICE, INC.
8400 Pardee Drive
Oakland, California

FIGURE
1

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.	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
	18-Nov-91	NA	6,600	1.1	0.4	0.5	ND(<0.3)
	3-Feb-92	NA	2,200	0.9	ND(<0.3)	0.8	0.7
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)
	18-Nov-91	NA	3,200	0.8	ND(<0.3)	ND(<0.3)	ND(<0.3)
	32175	NA	400	0.7	ND(<0.3)	ND(<0.3)	0.5
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
	18-Nov-91	NA	2,500	0.6	ND(<0.3)	ND(<0.3)	ND(<0.3)
	3-Feb-92	NA	1,100	0.4	ND(<0.3)	1.3	0.6
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)
	18-Nov-91	ND(<50)	60	0.3	ND(<0.3)	ND(<0.3)	ND(<0.3)
	3-Feb-92	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)
	18-Nov-91	ND(<50)	100	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)
	3-Feb-92	53	ND(<50)	ND(<0.3)	ND(<0.3)	ND(<0.3)	0.5
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
	18-Nov-91	ND(<50)	ND(<50)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)
	3-Feb-92	ND(<50)	ND(<50)	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)
Trip Blank	26-Aug-91	ND(<50)	NA	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)
	18-Nov-91	ND(<50)	NA	ND(<0.3)	ND(<0.3)	ND(<0.3)	ND(<0.3)
	3-Feb-92	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.

ND Not detected
NA Not analyzed.
µg/L micrograms per liter

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

ATTACHMENT

COPIES OF CERTIFIED LABORATORY REPORTS

AND CHAIN-OF-CUSTODY DOCUMENTATION

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.: 54516
CLIENT: Geraghty & Miller Inc.
CLIENT JOB NO.: RC02705

DATE RECEIVED: 02/05/92
DATE REPORTED: 02/11/92

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

LAB #	Sample Identification	Concentration (ug/L) Gasoline Range
1	MW-4	ND<50
2	MW-5	53
3	MW-6	ND<50
7	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 = 94%: Duplicate RPD = 0.2%

Richard Srna, Ph.D.

Laboratory Director

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

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 54516
CLIENT: Geraghty & Miller Inc.
CLIENT JOB NO.: RC02705

DATE RECEIVED: 02/05/92
DATE REPORTED: 02/11/92

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

LAB #	Sample Identification	Concentration (ug/L) Diesel Range
1	MW-4	ND<50
2	MW-5	ND<50
3	MW-6	ND<50
4	MW-2	400
5	MW-3	1100
6	MW-1	2200

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 = 102%: Duplicate RPD = 0.2%

Richard Srna, Ph.D.
Laboratory Director